SUPREME

Testing Instruments

MODEL

592

SPEED TESTER

INSTRUCTION MANUAL

SUPREME INSTRUMENTS CORPORATION

GREENWOOD, MISSISSIPPI

U. S. A.

SUPREME MODEL 592

ELECTRICAL SPECIFICATIONS

Power Supply Requirements: (Unless otherwise specified on plate attached to instrument.)

Self-contained batteries:

Four #1, 1.5 volt cells
One 45 volt battery (Eveready #482)
(Burgess #M30)
(General #W30B)

MECHANICAL SPECIFICATIONS

Over-All Dimensions:

	Panel	Case
Height	6-3/8 inches	12 inches
Width	8-1/2 inches	9-1/8 in.
Depth		4-1/2 in.

Weight:

Net	11 pounds
Shipping	16 pounds

IMPORTANT

SEE ENCLOSED COLORED PAGE 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.

SUPREME INSTRUMENTS CORPORATION
GREENWOOD, MISSISSIPPI
U. S. A.

STANDARD EQUIPMENT SUPPLIED WITH THE SUPREME MODEL 592

QUANTITY INCLUDED	STOCK NUMBER	DESCRIPTION	PACKER'S CHECK
1	5753	Booklet, Operating Data	
1	6725	Card, Return Registration	

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

MODEL 592, SERIAL NO.....

MENTION ABOVE NUMBERS IN ALL CORRESPONDENCE.

(Signed).....
Shipping Department


SUPREME
PUSH BUTTON SET TESTE
OHMS
SUPREME
MODEL 592
DIRECT
A.C.V.
D.C.V.
OHMS
A.C.
OUTPUT
DECI
CURRENT
25MΩP
1000Ω/V
MEGOHM
VOLTS
VOLTS
BELLS
70 MICROAMPS 3.5 V
0.7 MA 7.0 V
7.0 MA 35 V
35 MA 140 V
140 MA 350 V
350 MA 700 V
14 AMPS 1400 V
500 OHMS DIRECT
5 M OHMS Rx10
50 M OHMS Rx100
500 M OHMS Rx1000
6 MEGOHMS Rx10 000
50 MEGOHMS Rx100 000
OHMS SHORT
SERIAL Nº

#5753

INSTRUCTION MANUAL

FOR

SUPREME MODEL 592

PUSH BUTTON SET TESTER

GENERAL DESCRIPTION

The SUPREME Model 592 is an automatic push-button operated multimeter with functions for the measurement of Direct Current, D.C. Voltage, Resistance, A.C. Voltage, Output Voltage and Decibels. This instrument is designed to meet the exacting requirements of the radio and electrical technician by the inclusion of a choice selection of ranges combined with simple operation and rugged construction.

All functions are designed around a d'Arsonval type meter with a basic sensitivity of 40 microamperes (25,000 ohms per volt). Automatic operation is accomplished by means of 14 fast-acting push buttons providing finger tip control on the total 46 ranges. To simplify the operation further, all of these ranges are available from only one set of pin jack terminals with the exception of the 14 ampere D.C. range which uses a set of heavy binding posts.

The Direct Current function uses a universal ring-type shunt circuit which has been standard on SUPREME instruments for over ten years. Current measurements can be made from 1 microampere to 14 amperes in eight ranges.

The D.C. Voltage function has provisions for making measurements at two sensitivities. On seven of the ranges the meter is unshunted permitting potentials to be checked at 25,000 ohms per volt. On an additional set of seven ranges, measurements

may be made at standard sensitivity of 1000 ohms per volt. Each of the D-C Voltage functions uses an individual set of selected multipliers and covers a range from 0.1 to 1400 volts.

The ohmmeter uses the ring-type parallel adjustment circuit powered by batteries contained within the instrument. Resistance measurements may be made from 1/4 ohm to 50,000,000 (50 meg.) ohms, with center scale reading of 8 ohms on the first range and decade multiples thereof on the remaining four ranges.

The A-C Voltage circuit is the double half-wave bridge type using a rugged copper-oxide rectifier. Alternating voltages may be measured from 0.2 volt to 1400 volts in six ranges. An isolation capacitor can be automatically switched in series with the A-C Volts circuit to provide an audio output voltage indicator.

The four decibel ranges use a separate set of multipliers and will read 0 to +46 db. or 0.006 to 200 watts.

Power Supply Requirements

The instrument is equipped with self-contained batteries and requires no other power source. After prolonged use, if it is found that the meter can no longer be 'zeroed', when making resistance measurements, it will be necessary to replace the batteries. If this becomes necessary the instructions listed under SERVICE AND MAINTENANCE should be followed.

Panel Markings and Components

METER:

Four inch, SUPREME full-vision type.

Scales: OHMS - Green, with 0-500 calibrations.
A-C - Red - non-linear for 7 A-C volt range.
D-C - Black - linear 0/7/35/140 basic D-C volts, D-C milliamperes

scales. Also used for A-C volts with exception of 7 A-C volt ranges.
D-B - Black, -10 non-linear to +6. Basic decibel scale.

PUSH BUTTONS:

Left edge of panel - 7 buttons: For selecting functions as indicated on panel, 'Direct Current, D.C.V. Ohms, etc.'.

PUSH BUTTONS:

Right edge of panel - 7 buttons: For selecting ranges as indicated on panel, '7, 35, 140, etc.'

JACKS ('PIN' TYPE):

Directly below meter labeled '-' and '+': Common multimeter terminals for all ranges and functions except 14 ampere D-C.

POST BINDING:

Directly above meter labeled '-14A' and '+14A': Terminals for 14 ampere D-C range.

POTENTIOMETER:

Directly below meter and labeled 'ZERO ADJUST : For adjustment of ohmmeter to full scale deflection when leads are shorted or 'OHMS SHORT' is depressed.

MODEL NUMBER:

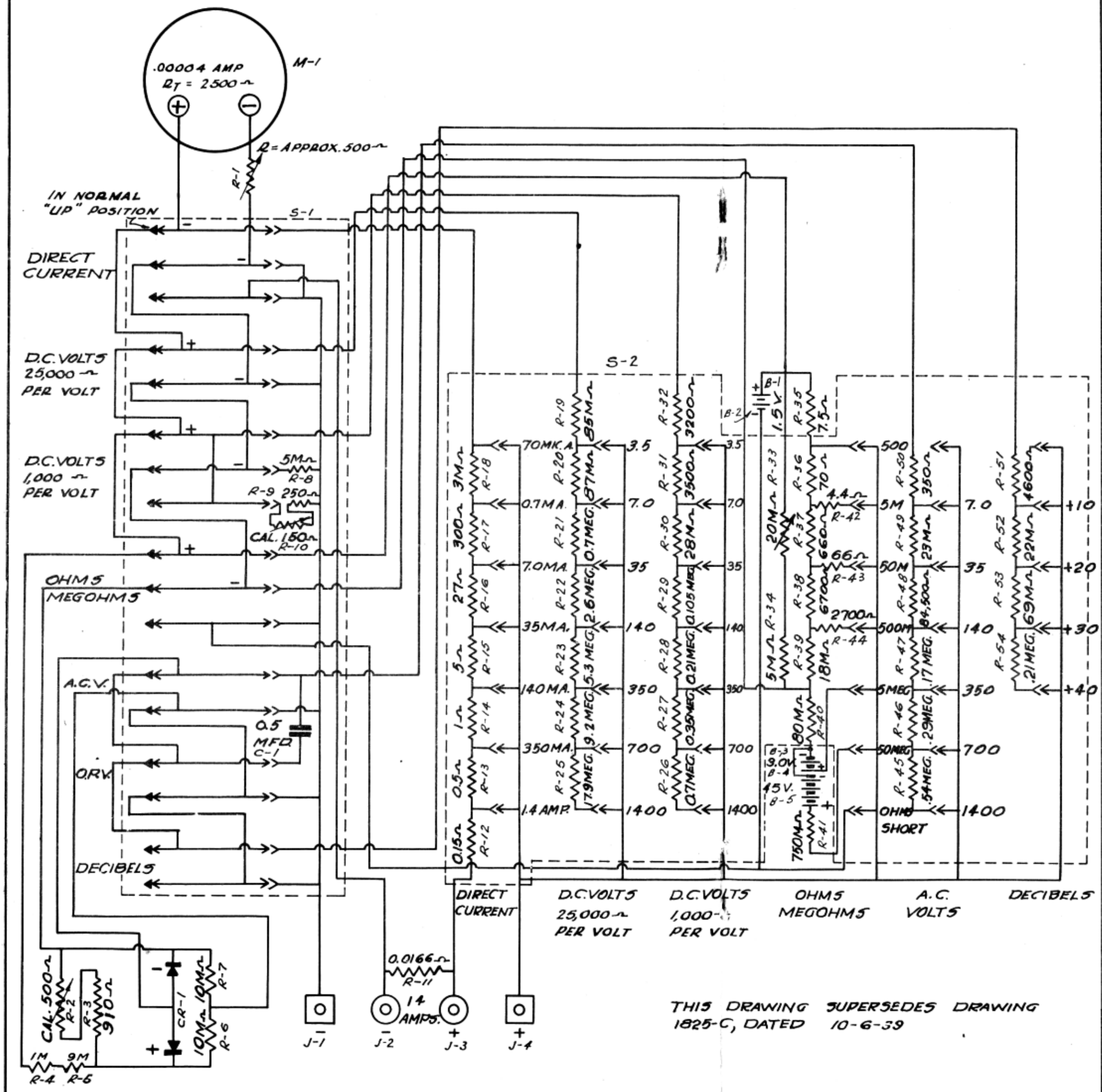
592 - printed on panel at lower left hand corner.

SERIAL NUMBER:

Stamped in panel at lower right hand corner.

OPERATION

Insert the pin points of a pair of standard test leads in the pin jacks marked '-' and '+'. Press the button on the left edge of the panel to select the function desired and then press one button on the right edge of the panel to select the range desired. Read the indication on the proper meter scale as explained in the operation chart on pages 10 and 11.



THIS DRAWING SUPERSEDES DRAWING 1825-C, DATED 10-6-39

SUPREME
INSTRUMENTS CORPORATION
GREENWOOD, MISS., U.S.A.

WIRING DIAGRAM, MODEL 592 FOR SERIAL NUMBERS ABOVE 1050

DECIMAL DIMENSIONS ±
OTHER DIMENSIONS ±
APPROXIMATE SCALE

QUANTITY	STOCK NO.	DESCRIPTION	ITEM

DATE	REVISED BY	WAS	INDEX

C.J. BOOTWELL		11-16-44
DRAWN BY	TRACED BY	DATE
CHECKED BY	APPROVED BY	DRAWING NO.
Raymond Soward		1825-C

TYPE MEASUREMENT	RANGE OF MEASUREMENT	BUTTONS PUSHED LEFT	BUTTONS PUSHED RIGHT	READ ON METER SCALE	INTERPRET READING
DIRECT CURRENT	0 to 70 Microamps	Direct Current	70 microamps	0-7 Black	Multiply by 10
	70 Microamps to 0.7 M.A.	Direct Current	0.7 M.A.	0-7 Black	Divide by 10
	0.7 to 7 M.A.	Direct Current	7.0 M.A.	0-7 Black	Direct
	7 to 35 M.A.	Direct Current	35 M.A.	0-35 Black	Direct
	35 to 140 M.A.	Direct Current	140 M.A.	0-140 Black	Direct
	140 to 350 M.A.	Direct Current	350 M.A.	0-35 Black	Multiply by 10
	350 M.A. to 1.4 Amp.	Direct Current	1.4 Amp.	0-140 Black	Divide by 100
	1.4 to 14 Amp.	Direct Current	Any button	0-140 Black	Divide by 10
D.C. VOLTS 25,000 OHMS/VOLT	0 to 3.5 V.	D.C.V. 25M Ohms/volt	3.5 V.	0-35 Black	Divide by 10
	3.5 to 7 V.	" "	7.0 V.	0-7 Black	Direct
	7 to 35 V.	" "	35 V.	0-35 Black	Direct
	35 to 140 V.	" "	140 V.	0-140 Black	Direct
	140 to 350 V.	" "	350 V.	0-35 Black	Multiply by 10
	350 to 700 V.	" "	700 V.	0-7 Black	Multiply by 100
	700 to 1400 V.	" "	1400 V.	0-140 Black	Multiply by 10
D.C. VOLTS 1000 OHMS/VOLT	0 to 3.5 V.	D.C.V. 1000 Ohms/volt	3.5 V.	0-35 Black	Divide by 10
	3.5 to 7 V.	" "	7.0 V.	0-7 Black	Direct
	7 to 35 V.	" "	35 V.	0-35 Black	Direct
	35 to 140 V.	" "	140 V.	0-140 Black	Direct
	140 to 350 V.	" "	350 V.	0-35 Black	Multiply by 10
	350 to 700 V.	" "	700 V.	0-7 Black	Multiply 100
	700 to 1400 V.	" "	1400 V.	0-140 Black	Multiply by 10

TYPE MEASUREMENT	RANGE OF MEASUREMENT	BUTTONS PUSHED LEFT	BUTTONS PUSHED RIGHT	READ ON METER SCALE	INTERPRET READING
OHMS MEGOHMS	0 to 30 ohms	Ohms-Meg.	500 ohms	0-500 Green Ohms	Direct
	30 to 300 ohms	"	5 M ohms	0-500 Green Ohms	Multiply by 10
	300 to 3M ohms	"	50 M ohms	0-500 Green Ohms	Multiply by 100
	3M to 30M ohms	"	500 M ohms	0-500 Green Ohms	Multiply by 1M
	30M to 300M ohms	"	5 Meg.	0-500 Green Ohms	Multiply by 10M
	300M to 50 Meg.	"	50 Meg.	0-500 Green Ohms	Multiply by 100M
A. C. VOLTS	0 to 7	A.C. VOLTS	7.0 V.	0-7 Red	Direct
	7 to 35	"	35 V.	0-35 Black	Direct
	35 to 140	"	140 V.	0-140 Black	Direct
	140 to 350	"	350 V.	0-35 Black	Multiply by 10
	350 to 700	"	700 V.	0-7 Black	Multiply by 100
	700 to 1400	"	1400 V.	0-140 Black	Multiply by 10
OUTPUT - VOLTS - (400 cycles)	0 to 7.0	O.P.V.	7.0 V.	0-7 Red	Direct
	7 to 35	"	35 V.	0-35 Black	Direct
	35 to 140	"	140 V.	0-140 Black	Direct
	140 to 350	"	350 V.	0-35 Black	Multiply by 10
	350 to 700	"	700 V.	0-7 Black	Multiply by 100
	700 to 1400	"	1400 V.	0-140 Black	Multiply by 10
DECIBELS	0 to +16	Decibels	+ 10 DB	-10 to +6DB	Algebraically add 10
	+10 to +26	"	+ 20 DB	-10 to +6DB	Algebraically add 20
	+20 to +36	"	+ 30 DB	-10 to +6DB	Algebraically add 30
	+30 to +46	"	+ 40 DB	-10 to +6DB	Algebraically add 40

The button nearest the bottom edge of the panel in the right hand row is non-locking and must be held down by the operator when using the 1.4 ampere or 1400 volt ranges. It is also used as an 'OHMS SHORT' button. Care must be exercised to see that all other buttons are up when using this button to measure current or voltage. Any button that happens to be down may be released by lightly pressing any of the remaining non-momentary buttons in the right hand row.

RESISTANCE MEASUREMENTS:

Press the 'OHMS-MEGOHMS' button in the left hand row of buttons and press a button in the right hand row to select the range desired. Press the 'OHMS SHORT' momentary button and rotate the 'ZERO ADJUST' control until the meter 'zeroes' at full scale or '0' ohms. The use of the momentary button as 'OHMS SHORT' is only possible if one of the non-momentary buttons in the right hand row is in the down position. Since pressing the 'OHMS SHORT' button is the equivalent of connecting the test leads together, its use is optional with the operator. When using the 'DIRECT' range it is preferable to 'zero' the meter by touching the leads together to compensate for lead and contact resistance which are usually found in old and corroded test leads.

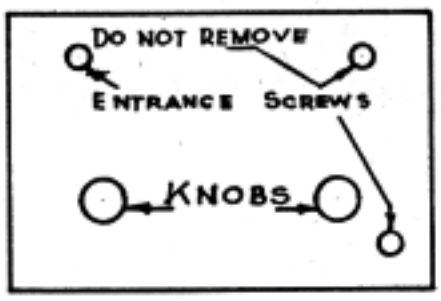
DIRECT CURRENT MEASUREMENTS:

In the measurement of Direct Current between 1.4 and 14 amperes the two binding posts located directly above the meter should be used. Press the button in the left hand row marked 'DIRECT CURRENT' and any button in the right hand row.

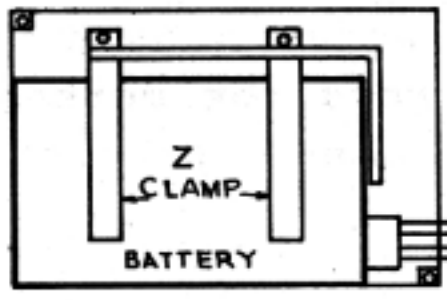
BATTERY REPLACEMENT:

The batteries used in the resistance measuring circuits are accessible by removing the wooden panel located immediately above the instrument panel. This wooden panel may be removed by unscrewing two screws located in opposite corners as shown on the drawing.

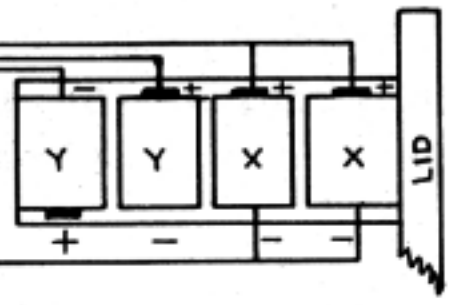
When it is found that the meter will not 'zero' on the first four ranges the cells marked 'XX' should be replaced. When the 5 megohm range will not 'zero', the cells marked 'YY' should be replaced. These cells are located in the special retaining bracket fastened to the wooden panel mentioned above. When replacing these cells care should be exercised to replace them in *exactly* the same position as that from which the old cells were removed in order to keep the polarity the same. The positive '+' terminal of the cell is the center pole. If the 50 megohm (R x 100M) will not 'zero', the large 45 volt battery marked 'Z' should be replaced. Remove the screws which fasten the brackets to the bottom of the case, exchange batteries, make connections by means of the polarized plug, and replace the battery bracket by means of the screws.



Battery compartment lid with screws and knobs showing.



View of battery compartment with lid removed.



Section of lid with cell cartridge attached.

All functions and ranges of the SUPREME Model 592 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 592 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 distributor by describing the item and giving the Model and Serial numbers of your unit.