

# TRIPLET



## INSTRUCTION MANUAL

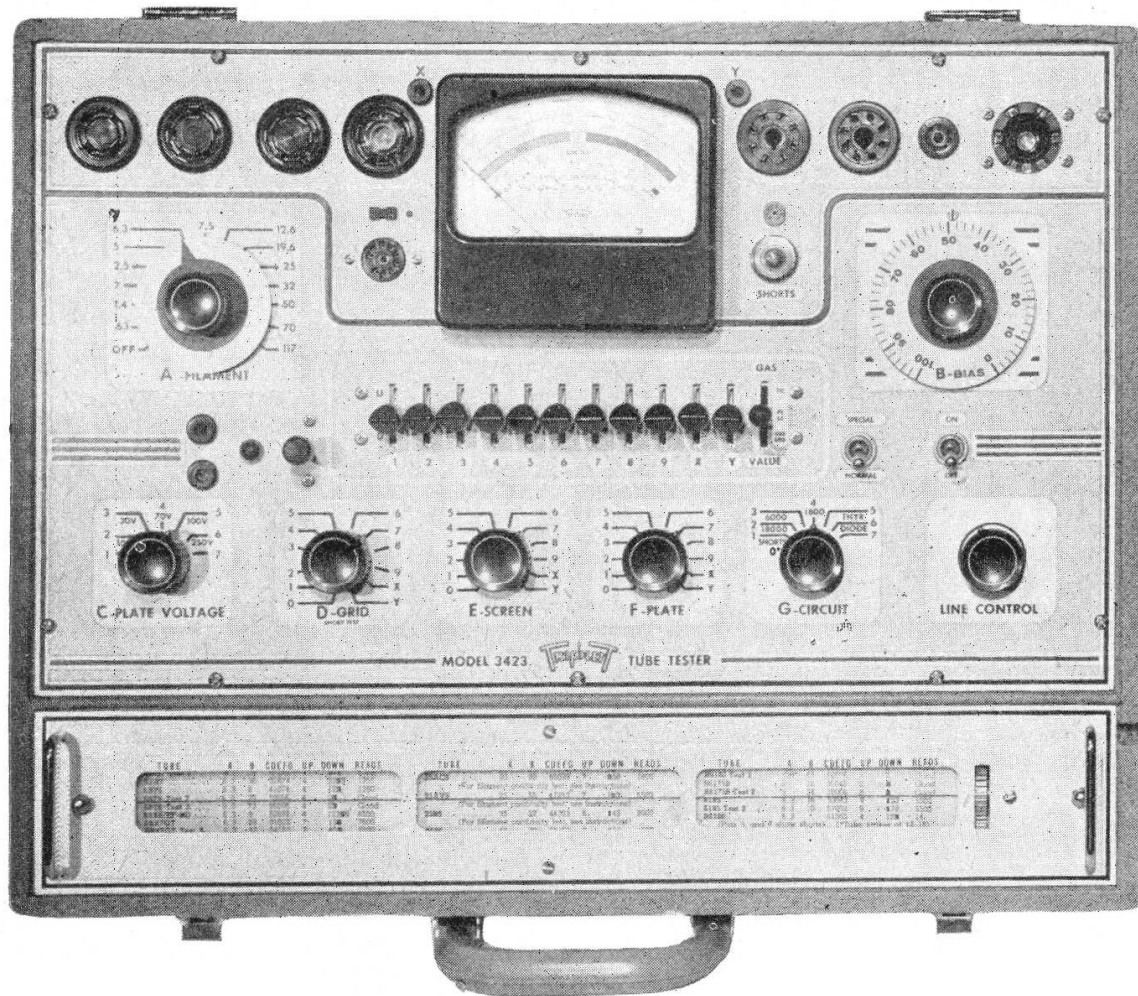
MODEL 3423

MUTUAL CONDUCTANCE  
TUBE TESTER

MANUAL ONLY - \$ .75

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Model 3423

# Model 3423 Specifications

TUBES TESTED .....	All types of receiving tubes, low power transmitting tubes, rectifiers, thyratrons, eye tubes, subminiature acorn, ballast tubes and pilot lamps. Also tests transistors and selenium rectifiers. The continuity test circuit may also be used to check electrical appliances for shorts or open circuits. Separate plate tests on rectifiers and diode types.
CIRCUIT .....	Gm measured in micromhos under dynamic conditions. Employs actual signal oscillator (4KC) to produce grid signal. Special circuits for testing thyatron, eye tubes, and rectifiers with plate tied to cathode. Also includes a special circuit which will indicate gassy tubes. A high (36,000 micromhos) range for future tubes with high Gm values. Two signal voltages available.
RANGE .....	0-1800, 0-6000, 0-18,000, 0-36,000 micromhos. Good-Bad scale for emission tests. 0-100 scale for thyatron.
SHORT TEST .....	Applies low voltage to tube elements to prevent damage to tube. Shorts indicated on neon lamp.
FILAMENT VOLTAGES.....	.63, 1.4, 2.0, 2.5, 5, 6.3, 7.5, 12.6, 19.6, 25, 32, 50, 70, and 117 volts.
LEAKAGE TEST .....	To measure resistance between elements 0 to 10 Meg.
SOCKETS .....	4 prong, 5 prong, 6 prong, 7 prong large and small with combination for pilot lights and flashlight bulbs, 8 prong octal, 8 prong loctal, 7 prong miniature, 7 pin subminiature (for hearing aid tubes) 8 pin subminiature (round), 8 pin acorn, 9 pin subminiature.
TUBE CHART .....	Removable Roll Chart. Accessory compartment underneath.
CASE .....	Wood 14 $\frac{3}{4}$ "x18 25/32"x6 13/32".
WEIGHT COMPLETE .....	21 pounds.
POWER .....	115 ACV, 50-60 cycles. Double fuses in line cord.
ACCESSORIES .....	One red and one black top cap lead included in tester.

# General Description

Mutual conductance has been a common rating applied to tubes for many years. Unfortunately, the equipment required to give actual mutual conductance readings at specified operating conditions has been so complicated and bulky that testing has been confined to manufacturers and laboratories. Portable testing equipment has generally been confined to elementary tests or to hybrid circuits which obviously do not duplicate conditions under which the tube was originally rated.

To provide a portable tube tester which more nearly duplicates the basic requirements of mutual conductance, the Model 3423 has been developed. The circuit consists of a straight forward system of applying an audio signal (4KC) to the grid and detecting the effects of this signal in the output by a tuned indicator. Hybrid or trick circuits are thus eliminated and the deviation from laboratory practice essentially reduces to the proportion of ideal conditions imposed on the tube. While each tube may not operate at identical conditions to those of the original rating, it is possible to produce conditions which yield proportional readings.

The use of a 4KC signal on the grid and tuning the output indicating circuit eliminate the possibility of false readings from pick-up of the 60-cycle line frequency. Actually, it has been found that with this method 60-cycle voltages can be applied to the plate and screen without disturbing the proportional readings.

Five different plate and screen potentials are used which permit closer approximation to original rating conditions than is possible in hybrid circuits where only one voltage is available.

The detecting circuit is isolated from the normal plate current since it is responsive only to the 4KC component. Tubes of widely varying plate current requirements can therefore be effectively tested.

Two grid signals one of .6, the other 1.2 volts are employed. Overloading of the grid is avoided while retaining an extremely wide range of Gm readings.

To obtain accurate readings under different line voltages, a line control is provided on the panel. Correct line adjustment is indicated on the meter and can be continuously adjusted during the testing procedure.

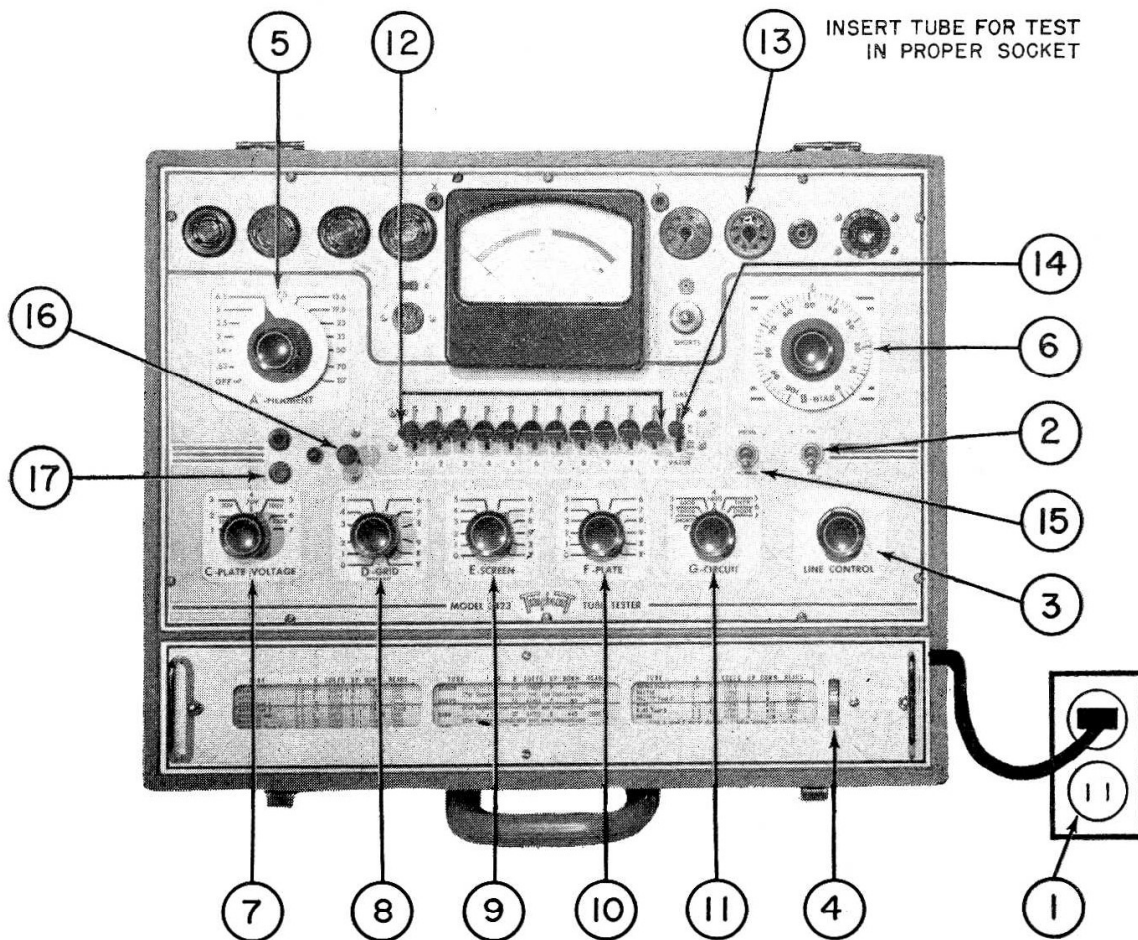
Diode tubes are of course tested for their emission characteristics since no mutual conductance is involved. Proper voltages are used to avoid overload.

Low power thyratrons are tested for their actual striking condition.

Lever switches connect each socket pin individually thus allowing extreme flexibility for setting up new tubes as they are announced.

The roll chart is removable for convenient replacement of chart as new listings are made. The compartment serves also as a place for accessories and small tools.

# Operating Instructions



## FIRST MAKE SHORT TEST — SETTING CONTROLS

1. Insert power cord into a 110 volt AC 60 cycle outlet.
2. Turn line switch to ON position.
3. Set "Line Control" so meter pointer will rest over "Line test" mark.
4. Set roll chart to type tube to be tested.

Example

	A	B	C	D	E	F	G	UP	DOWN	READS
6AU5	6.3	36	5	1	8	5	2	7	123	6000

5. Set filament switch "A" as shown in column "A" on chart.
6. Set control "B" as shown in column "B" on chart.
7. Set all levers UP shown on chart and all remaining levers should be down for short test only.

If there is a top cap or caps on the tube, connect the "X" or "Y" top cap lead to the top cap. Use X or Y according to roll chart (i. e. use X if X is noted on roll chart and Y if Y is noted). Two leads are provided with banana jacks to plug in at these jacks.

8. Insert tube in socket.
9. Set switch G-Circuit in number one short position.

10. Rotate "D-Grid" knob and tap tube at each position.

Shorted tube pins or those with internal connections are indicated by a steady bright red glow of the neon "Short Indicator" on the right side of the panel. Pin numbers in dark face type on the roll chart will indicate red glow, except as noted under certain tube type. Shorts or leaks less than 250,000 ohm will be indicated as short.

General note on Shorts Test

In multi-purpose tubes which require more than one test, it is necessary to make only one shorts test.

Position 7 on the "G Circuit" (switch No. 11) is used for tubes which have the plate internally connected to the cathode or filament such as types 117N7 and 117P7.

Testing tubes with what seems to be low heater voltage, e. g. 12.6 v tubes tested with 6.3 V., 35 V tubes tested with 25 V., and 50 V. tubes tested with 35V. Where lower voltage is used than shown in the tube manual, this will indicate a tapped heater. By testing the tube through the tapped pin a complete test on all heater leads is possible.

This also prevents any possible damage to the tube in shorts test.

**LEAKAGE MEASUREMENT**

Follow the same procedure as given for shorts test on page 5 except the "G" control should be placed in the extreme counter-clockwise position marked "O". Adjust line control, hold value lever down and rotate control "D" Leakage between element will read on 0-10 megohm scale. All levers in dark face type will show short.

Cathodes will show short due to mission except when button (number 16 shown on page 5) is pressed.

Remember when the meter shows leakage, press button number 16 down. If it still shows leakage that is exactly what you have. If it returns to infinity there is no leakage.

Conversely open element tests may be made by pressing No. 16 when no short is indicated. Upscale reading indicates active element. Reference to a tube manual may be helpful at times.

**EMISSION TEST**

Tubes such as rectifiers and eye tubes are tested by emission test when not possible to give them Gm test.

**Gm VALUE TEST**

Having completed the shorts test, set roll chart to type tube for test, having set "A" filament switch correctly, "B" control set, and tube in socket. Now set all remaining controls and levers according to roll chart. Levers not mentioned in either up or down position should be in center position. If there is a top cap or caps on the tube connect the "X" or "Y" top cap lead to the top cap. Use X or Y according to roll chart (i. e. use X if X is noted on roll chart and Y if Y is noted). Two leads are provided with banana plugs for X and Y jacks.

Example

Type	A	B	C	D	E	F	G	UP	DOWN	READS
6AU5										
Set Control	No. 5	6	7	8	9	10	11			
To	6.3	36	5	1	8	5	2	7	123	6000

After all controls and levers have been set readjust line control No. 3 so the pointer is over the line mark on meter. Hold value lever No. 14 in "Value" position and read meter.

A tube may read 25% up or down of figure given and still be good. The figure given is an average taken by testing several tubes and of different makes. Due to the wide use of electronic tubes and circuits, only the circuit can determine the tolerance on the tube.

The word "Good" on the roll chart indicates you should read the tube value on the "Good-Bad" scale.

The special note under the control setting such as (Good tube reads 30) means to read 0-100 linear scale under the "Good-Bad" scale. The figure given is then equivalent to 70 on the "Good" portion of the "Good-Bad" scale if the "Good-Bad" scale were used.

For "G Circuit" position	Read Scale
2 .....	0-18,000 (10×1800)
3 .....	0-6,000
4 .....	0-1,800
"Normal - Special" 2 .....	0-36,000
Switch in "Special" Position	

Switch No. 15 marked "Special" and "normal" should be kept in "normal" position unless a note appears under the tube setting such as 1AJ5. This switch changes the grid signal, normal 1.2 Volts to special .6 Volt.

#### **GAS TEST (for amplifier tubes)**

Set all controls as indicated on roll chart. "Normal-Special" switch should be in "Normal" position, unless special note is made on roll chart to use the "Special" position. If there is a top cap or caps on the tube connect the "X" or "Y" top cap lead to the top cap. Use X or Y according to roll chart (for example, use X if X is noted on roll chart and Y if Y is noted). Two leads are provided with banana jacks to plug in at these jacks.

First place "B-Bias" control in 100 position. Set "G Circuit" or control No. 11 on number 4 position which is the 0-1800 micromhos range. Rotate "B-Bias" Control No. 6 until meter reads 300 on the 0-1800 scale. Hold lever switch No. 14 in "Value" position while making the above adjustments. If 300 cannot be obtained, set "B-Bias" for lowest obtainable value. Now move lever switch No. 14 to "Gas" position and note change in meter reading. If the reading changes plus or minus 1 division on the 0-1800 scale, the tube is gassy.

#### **NOISE TEST**

This test checks microphonic noises of an extremely short duration. Use the following procedure.

Set up levers and switches for a normal shorts test for the tube to be checked. The "G Circuit" switch is in shorts position.

The jacks to the left of the panel shown on Page 5 No. 17 are to be used for checking intermittent shorts and noises. Ordinary head phones may be



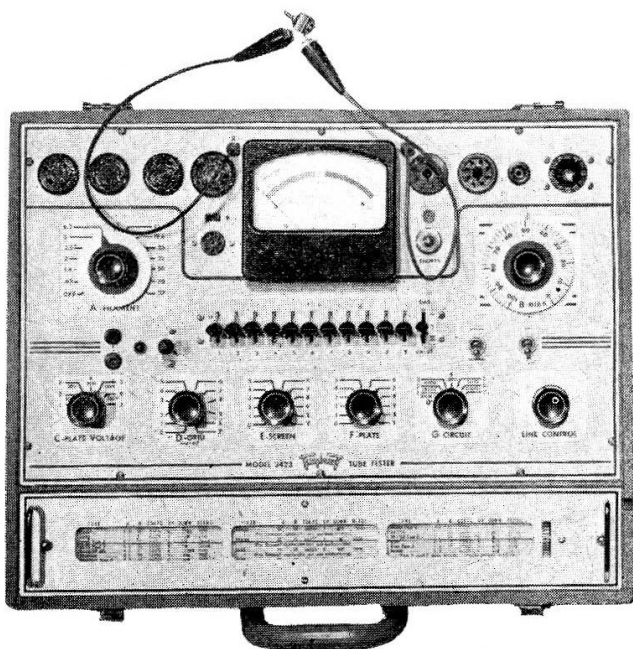
connected across these terminals, or they may be connected to the aerial and ground terminals of any ordinary radio receiver. This will amplify noise pulse which will be heard in the speaker. Oscilloscopes may be used to visually detect noise in a tube. To use an oscilloscope as visual indicator connect a line from the noise test jacks to the vertical input of your scope.

### THYRATRON VALUE TEST

Set all controls according to the roll chart.

If there is a top cap or caps on the tube connect the "X" or "Y" top cap lead to the top cap. Use X or Y according to roll chart (for example use X if X is noted on roll chart and Y if Y is noted).

Hold "Value" lever No. 14 in "Value" position and change "B-Bias" control from 100 to value shown on chart at which tube will fire i. e. "Tube strikes at 60-65 move "B-Bias" from 100 to 65 and note that tube fires between 60 and 65 and as soon as it has fired, the meter should read in the good portion of "Good-Bad" scale, or as noted on chart on the thyatron scale.



### TESTING SELENIUM RECTIFIERS

Use "X" and "Y" top cap leads and connect the "X" lead to negative side of rectifier and "Y" lead to positive side. Use value switch for test as with tubes. No short test is necessary. Ratings 130 Volts.

Testing data is listed on the roll chart. The "Good-Bad" scale should be used on the meter.

### EYE TUBE TEST

Set all controls according to the roll chart.

If there is a top cap (or caps) on the tube connect the "X" or "Y" top cap lead to the top cap.

Use X or Y according to roll chart (i. e. use X if X is noted on roll chart and Y if Y is noted.) Two leads are provided with banana jacks to plug in at these jacks.

Hold "Value" lever in "Value" position and change "B-Bias" control from value shown on chart for eye closed to value shown for eye open and note proper indication on the eye tube. No meter reading is made on this test. For eye tubes with two sections a note is made on chart "Right section open."

### TESTING TRANSISTORS

**Caution**—Do not make shorts test on transistor. You will note there is an extra position No. 7 on the "C" Plate Voltage Control. This No. 7 position is for transistor testing.

Due to the rapid changes in transistor data a separate sheet is supplied with testing data.

The 7 pin subminiature socket left of the meter is used for connecting transistors for test.

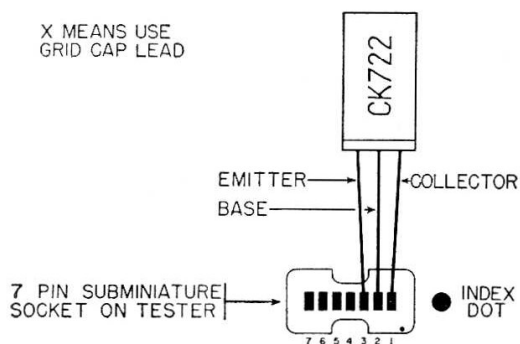
### Example

Transistor Type	Control settings				Lever Settings		Socket Connection		
	A	B	CDEFG	Up	Down	Good Reads	E	B	C
CK722	1.4	64	72014	—	23	70	3	2	1

### CAUTION

It will be necessary to check data sheets on transistors to determine correct element lead location.

The 0-100 linear scale is used in testing transistors.



### CRYSTAL DIODES TEST

Set up tester in proper specified positions. Put leads in X and Y jacks. The black lead is in the X jack and the red lead is in the Y jack. Connect the cathode of the diode to the X leads and the anode to the Y lead.

Pull value lever down. Meter reads good or bad. Be sure to have line control adjusted correctly before taking reading.

### Example

Crystal Diode Type	Control Settings			Lever Settings		Meter Reads
	A	B	CDEFG	Up	Down	
IN2I	off	83	1 00 Y6	—	X	Good

Due to the rapid changes in crystal diodes test data a separate sheet is supplied with tests set ups.

### FILAMENT CONTINUITY TEST

Repeat Short Test procedure. When the "D-Grid (short test)" selector is rotated to the position corresponding to the filament pin number which is noted on the roll chart in dark face type, a short should be indicated by a red glow of the neon short test lamp. This applies to center tap filament pin also. For those tubes with note "For filament continuity test" proceed as follows:

Follow the Short Test procedure above except turn the "A-Filament" switch to .63 volts. It is sometimes possible to obtain short tests on these tubes with the filament set at rated voltage, but the neon lamp may not glow brightly enough for a positive check.

### PILOT LIGHT TEST

Set "A-Filament" Switch No. 5 to the proper rated voltage of the lamp to be tested.

Insert the pilot lamp in the center of the 7 pin combination socket and lamp will glow when good.

### CONTINUITY TEST FOR APPLIANCES

Set "G Circuit" Switch No. 11 to 1 or shorts position, rotate "D-Grid" Switch No. 8 to X position. Move "X" and "Y" levers to down position.

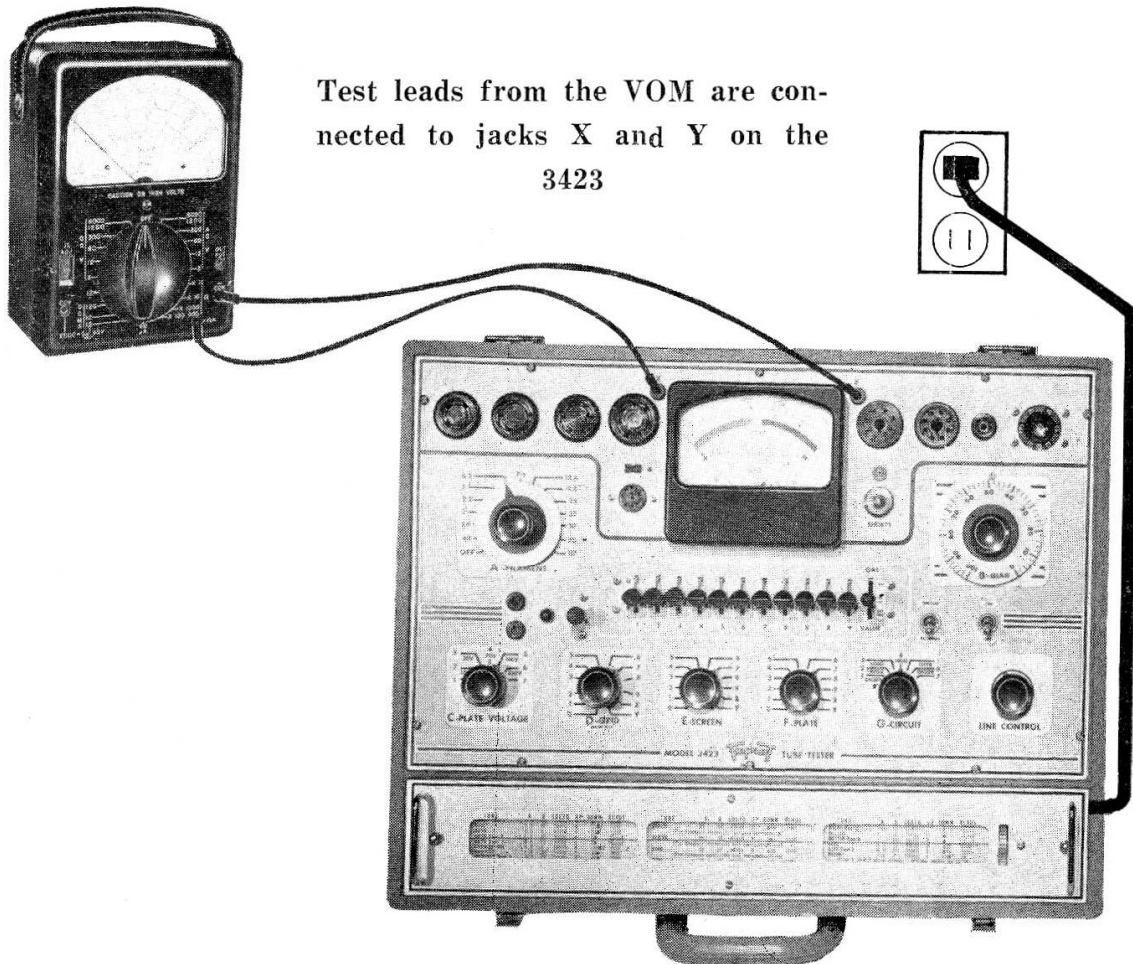
Connect leads to "X" and "Y" jacks and to circuit for continuity test. Continuity is noted if the neon lamp for short test glows.

# Maintenance

Because there is a tube in this Mutual Conductance tube tester it will be necessary to check the tube from time to time. This can be done externally with a Triplet Model 630 VOM which has DC sensitivity 20,000 ohms per volt and AC sensitivity 5000 ohms per volt.

The 4KC signal voltage is generated with one half of the 117L7 tube. The signal voltage may be checked as follows.

Voltage readings may vary 10% but do not become alarmed, the tester has been calibrated accordingly.



Test leads from the VOM are connected to jacks X and Y on the 3423

## TESTING SIGNAL VOLTAGE

Set the selector switch on the 630 to 3V AC position.

Controls and levers on the Model 3423 should be set as follows:

With the line cord connected to a live socket and the line switch in the "on" position, set "Line Control" so meter pointer will rest over "Line Test" mark.

	A	B	C	D	E	F	G
Set Controls	off	0	1	X	0	0	2
Set Levers	X - Y and Value Down						

(All other levers in center position)

With the Normal-Special Switch in Normal position the meter should read 1.2 volts; with the switch in Special position meter should read .6 volt. If voltage is found to be low, replace 117L7 tube.

### TESTING DC GRID VOLTAGE

The meter is connected to the tube tester at the same points X-Y jacks.

Set the selector switch on the 630 to 60V DC position.

	A	B	C	D	E	F	G
Set Controls	off	0	1	X	0	0	2

Set Levers X - Y Value Down

(All other levers in center position)

With "B" control on "O", meter should read 0; with "B" control in 100 position, meter should read 40 volts.

If voltage is low on 100 position, replace the 117L7 tube.

### TESTING PLATE VOLTAGE

The plate voltage should never become a problem as it is taken directly from the power transformer. Should you wish to check plate voltage, use the following settings. The meter is connected to the same points X - Y jacks.

Set the selector switch on the 630 to correct AC range according to voltage to be read.

Set controls	A	B	C	D	E	F	G
	off	100		0	0	Y	2

Levers X, Down and, Value Down	1 - 10 volts AC
	2 - 10 " "
	3 - 30 " "
	4 - 70 " "
	5 - 100 " "
	6 - 250 " "

To read the variable voltage on position 1 of "C" control use the following settings.

Set the selector switch on the 630 to 12V. AC position.

Set controls	A	B	C	D	E	F	G
	0		1	0	0	Y	6

Levers X, Down and Value Down	"B" control at 0 voltage should read 0, "B" control at 100 voltage should read 10 volts.
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## Cross Reference To Tube Type

For information a cross reference listing of these tubes with two type numbers is given:

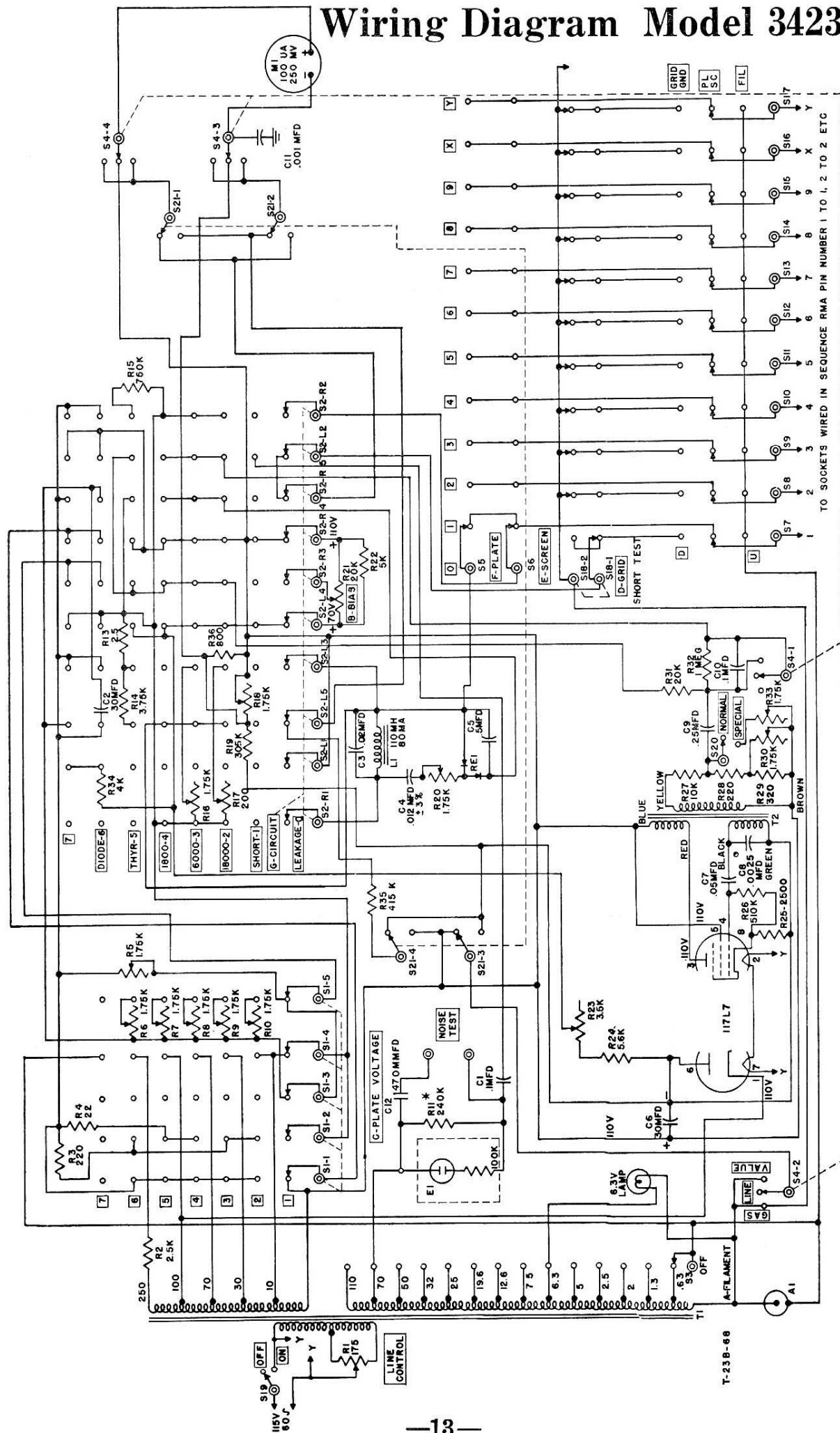
Tube Type	Listed Under	Tube Type	Listed Under
VR-75	OA3	CK568AX	CK5677
VR-90	OB3	CK569AX	CK5678
VR-105	OC3	CK605CX	CK5702
VR-150	OD3	CK608CX	CK5703
6A4	6A4/LA	1006	CK1006
6Q5	884	1203-A	7C4/1203A
6U5	6G5	1232	7G7
14A7	12B7/14A7	1852	6AC7
12Z5	6Z5	1853	6AB7
25S	1B5	2523NI	128A/2523NI
44	39	8016	1B3
40Z5	45Z5	AS	57AS/57A
51	35	ECL-80	6AB8
82V	82	EF-80	6BX6
G84	2Z2	KR-1	1V
99	X99	KR-5	6A4/LA
482-B	182-B	KR-25	2A5
483	183	KR-98	6Z4/84
GL-502-A	502-A	PL-83	15A6
585	50	XXB	3C6
879	2X2	XXD	14AF7
951	1B4P	XL	7A4

## Adapter for TV Picture Tube

With the Triplet BV Adapter No. T-2247 BV Model 3423 will test TV Picture tubes. A picture tube can be tested in the shipping carton or in the receiver without removing the tube from carton or receiver. A time saver and safety factor.

Instructions for setting tester is supplied with the adapter.

# Wiring Diagram Model 3423



\* CALIBRATING RESISTOR  
 ○ CALIBRATING CAPACITOR  
 ○ VOLTAGES MEASURED FROM PINS 1 & 6 OF  
 ○ X 4 WITH 20,000 OHMS/V INSTRUMENT.

# Replaceable Parts, 3423

Ref. No.	Quan.	Part Name	Description	Triplet Part No.	
C1	1	Capacitor	.1 MFD-400 WVDC	T-2631-P27	
C2-C6	2	Capacitor	30 MFD-150 WVDC	T-43-103	
C3	1	Capacitor	.02 MFD-400 WVDC	T-43-67	
C4	2	Capacitor	.006 MFD-400 WVDC $\pm 3\%$	T-43-116	
C5	1	Capacitor	.5 MFD-200 WVDC	T-43-108	
C7	1	Capacitor	.05 MFD-200 WVDC	T-2631-P3	
C8	1	Capacitor	.0022 MFD-Mica $\pm 5\%$	T-43-141	
C9	1	Capacitor	.25 MFD-400 WVDC	T-43-38	
C10	1	Capacitor	.1 MFD-200 WVDC	T-2631-P1	
C11	1	Capacitor	.001 MFD-Ceramic	T-43-74	
C12	1	Capacitor	.00047 MFD $\pm 20\%$ 1000WV	T-43-149	
R1	1	Resistor	175 ohm, variable	8595	
R2	1	Resistor	2.5 K ohms, 10 W $\pm 5\%$	T-15-873	
R3	1	Resistor	220 ohms, $\frac{1}{2}$ W, $\pm 10\%$	T-2601-1/2-220	
R4	1	Resistor	22 ohms, $\frac{1}{2}$ W, $\pm 10\%$	T-15-2443	
R5, 6, 7, 8, 9, 10, 16, 18, 20, 30, 33	11	Resistor	1.75 K ohms, Variable $\pm 20\%$	T-16-62	
R11	{	*	Resistor	470K, $\frac{1}{2}$ W, $\pm 10\%$	T-15-1465
		*	Resistor	510K, $\frac{1}{2}$ W, $\pm 10\%$	T-2601- $\frac{1}{2}$ -510K
R13	1	Resistor	2.5 ohms, W. W. $\pm 1\%$	T-15-1976	
R14	1	Resistor	3750 ohms, 1 W, $\pm 1\%$	T-15-1857	
R15	1	Resistor	750 K ohms, $\frac{1}{2}$ W, $\pm 10\%$	T-15-1801	
R17	1	Resistor	200 ohms, Variable $\pm 10\%$	T-16-86	
R19	1	Resistor	305 K ohms, $\frac{1}{2}$ W, $\pm 1\%$	T-15-1856	
R21	1	Resistor	20 K ohms, Variable 2W, $\pm 5\%$	T-16-98	
R22	1	Resistor	5 K ohms, 1W, $\pm 1\%$	T-15-912	
R23	1	Resistor	3.5 K ohms, Variable $\pm 10\%$	T-16-90	
R24	1	Resistor	5.6 K ohms, 2W, $\pm 10\%$	T-15-2306	
R25	1	Resistor	2.5 ohms, W. W., $\pm 1\%$	T-15-2210	
R26	1	Resistor	510 K ohms, $\frac{1}{2}$ W, $\pm 10\%$	T-15-2364	
R27	1	Resistor	10 K ohms, 1W, $\pm 1\%$	T-15-856	
R28	1	Resistor	220 ohms, 2W, $\pm 5\%$	T-15-1798	
R29	1	Resistor	330 ohms, $\frac{1}{2}$ W, $\pm 10\%$	T-15-2364	
R31	1	Resistor	20 K ohms, $\pm 10\%$	T-2601- $\frac{1}{2}$ -20K	
R32	1	Resistor	1 meg. $\frac{1}{2}$ W	T-2601- $\frac{1}{2}$ -1 meg	
R34	1	Resistor	4 K ohms, 1W, $\pm 1\%$	T-15-911	
R35	1	Resistor	415K, $\frac{1}{2}$ W, $\pm 1\%$	T-15-1228	
R36	1	Resistor	800 ohms, $\pm 1\%$	T-15-2461	
A-1	1	Socket	4 hole, black	T-2455-168	
	1	Socket	5 hole, black	T-2455-167	
	1	Socket	6 hole, black	T-2455-166	
	1	Socket	7 hole, black with pilot socket	T-2455-165	
	1	Socket	8 hole, black, octal	T-2455-164	
	1	Socket	8 hole, black, loctal	T-2455-163	
	1	Socket	9 hole, miniature, black	T-2455-92	
	1	Socket	7 hole, miniature, black	T-2455-59	
	1	Socket	7 hole, subminiature	T-2455-80	
	1	Socket	Acorn, black	T-2455-159	
	1	Socket	8 hole, subminiature	T-2455-162	
	1	Socket	8 octal, for tube mtg.	T-2455-82	
	S1	1	Switch	14 pos, 5 deck, 6 active	T-22B-230
S2	1	Switch	20 pos, 5-2 pole decks, 8 active	T-22B-255	
S3	1	Switch	20 pos, 1 deck, 15 active	T-22A-234	
S4	1	Switch	3 pos, 4 pole, lever, spring return to center	T-22A-202	
S5-6	2	Switch	14 pos, 1 deck	T-22A-233	
S7-17	10	Switch	3 pos, lever	T-22A-229	

\* Calibrating resistor, only 1 is used in a tester.

# Replaceable Parts, 3423

Ref. No.	Quan.	Part Name	Description	Triplet Part No.
S-18	1	Switch	12 pos, 2 deck	T-22A-161
S-19-20	2	Switch	Toggle, bat handle SPST	T-22-116
T1	1	Transformer	Power	T-23B-68
T2	1	Transformer	Audio	T-23-17A
	1	Tube	117L7/M7GT	T-2600-117L7
L1	1	Choke	110 MH $\approx$ 80 ma	T-3022B-28
	1	Lamp	Assembly, pilot red	T-67-70
	1	Lamp	6-8 V Bayonet base	T-67-65
	1	Plug	for line cord	T-2455-136
	1	Cord	Line 7 ft.	T-2566-48
M1	1	Instrument	100 $\mu$ A, 250 MV	T-52-1029
	2	Fuse	2 Amp	10423
	1	Lamp	Neon NE. 51 bayonet base	T-3024-3
E1	1	Lamp Assem	Clear neon with built in resistor	T-67-76
	6	Knobs	1 $\frac{1}{4}$ round x $\frac{5}{8}$ high	T-34-40
	1	Knob	Push button	T-34-7
S21	1	Switch	Push button type	T-22-259
	2	Lead Assem.	1 red, 1 black, 15 $\frac{1}{2}$ " L	T-79A-146
RE-1	1	Rectifier	Conant, BHS 3 lead	9686
	1	Roll Chart	Paper printed 72" L x 14" W	T-84-37-( )
	1	Assembly	Roll chart	10647A
	1	Case	Carrying	T-10A-1129
	11	Knobs	Round, black (11 springs T-42-116)	T-34-37
	4	Contact	Jack	8944



# WARRANTY FOR RADIO AND TELEVISION INSTRUMENT AND TEST EQUIPMENT

(Including Maintaining Parts of Discontinued Models)

Adopted and Recommended by the Radio-Television Manufacturers  
Association, 1951

The Triplett Electrical Instrument Company warrants instruments manufactured by it to be free from defective material or factory workmanship and agrees to repair such instruments which under normal use and service, discloses the defect to be the fault of our manufacturing. Our obligation under this warranty is limited to repairing any instrument or test equipment which proves to be defective, when returned to us, transportation prepaid, within ninety (90) days from the date of original purchase and provided the serial number has been made known to us promptly for our records.

This warranty does not apply to any of our products which have been repaired or altered by unauthorized persons or service stations in any way so as, in our judgment, to injure their stability or reliability or which have been subject to misuse, negligence, or accident, or which have had the serial number altered, effaced, or removed. Neither does this warranty apply to any of our products which have been connected, installed, or adjusted otherwise than in accordance with the instructions furnished by us. Accessories including all vacuum tubes not of our manufacture used with this product are not covered by this warranty.

This warranty is in lieu of all other warranties expressed or implied and no representative or person is authorized to assume for us any other liability in connection with the sale of our products.

Parts will be made available for a minimum period of five (5) years after the manufacture of this equipment has been discontinued. Parts include all materials, charts, instructions, diagrams, accessories, et cetera, which have been furnished in the standard model.

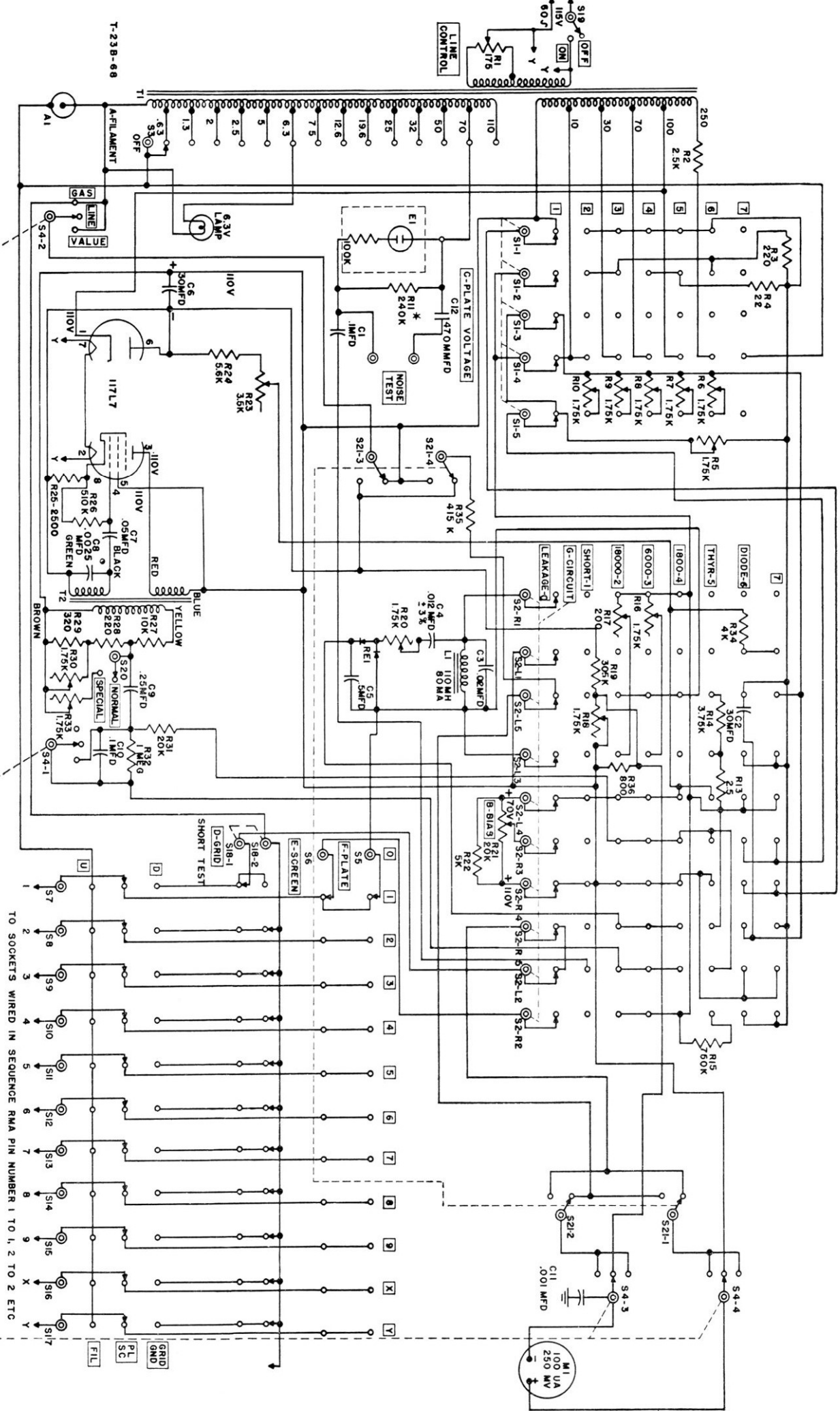
## RED-DOT LIFETIME GUARANTEE

The Red-Dot Lifetime Guarantee made only by Triplett warrants the meter to be free from defects in material and workmanship for the life of its original user.

**The Triplett Electrical Instrument Co.**  
Manufacturers of  
**PRECISION MEASURING INSTRUMENTS**  
Bluffton, Ohio

\* CALIBRATING RESISTOR  
OR  
VOLTAGES MEASURED FROM PINS 1 & 6 OF  
6 X 4 WITH 20,000 OHMS/V INSTRUMENT.

# Wiring Diagram, Model 3423



TO SOCKETS WIRED IN SEQUENCE RMA PIN NUMBER 1 TO 1, 2 TO 2 ETC.