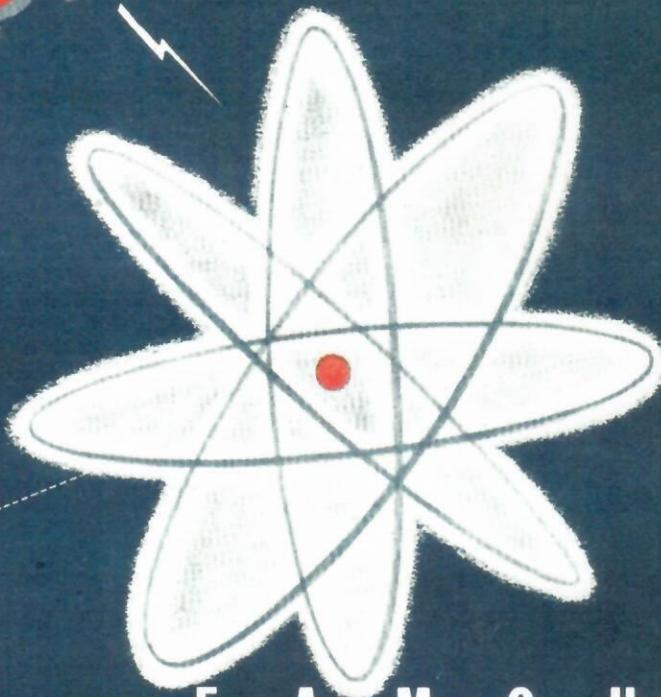


OPERATING INSTRUCTIONS

TRANSCONDUCTANCE TUBE TESTER

MODEL 539A

HICKOK



W O R L D F A M O U S

THE HICKOK ELECTRICAL INSTRUMENT COMPANY

10514 DUPONT AVENUE • CLEVELAND 8, OHIO

The Standard of Quality for Over 40 Years

OPERATING INSTRUCTIONS

FOR

MODEL 539A

TRANSCONDUCTANCE TUBE TESTER

THE HICKOK ELECTRICAL INSTRUMENT COMPANY
10514 DUPONT AVENUE
CLEVELAND 8, OHIO

539A-1052

STANDARD RTMA GUARANTEE

The Hickok 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, disclose 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 representatives 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.

RETURNING EQUIPMENT FOR REPAIR

Before returning any equipment for service, under warranty or otherwise, the factory must first be contacted giving the nature of the trouble. Instructions will then be given for either correcting the trouble or returning the equipment. Upon authorization, this equipment should be forwarded directly to the Hickok factory located at 10636 Leuer Avenue, Cleveland 8, Ohio, or to a designated service station in your locality. All correspondence pertaining to repairs should be directed to Hickok Electrical Instrument Company, 10514 Dupont Avenue, Cleveland 8, Ohio, or to the authorized service station designated.

REGISTRATION CARD

The above guarantee is contingent upon the attached registration card being returned to the factory immediately upon receipt of the equipment.

IMPORTANT

SEE INSTRUCTIONS FOR TESTING FILAMENT CONTINUITY ON PAGE 6.

THE INSTRUMENT PACKED HEREWITH IS:

PACKER'S CHECK

1 MODEL 539A TRANSCONDUCTANCE TUBE TESTER _____	
ACCESSORIES INCLUDED WITH THE TESTER ARE: _____	
1 - BOOKLET INSTRUCTIONS _____	
2 - GRID LEADS _____	

SERIAL NO. _____

SIGNED: _____

FOREWORD

The Model 539A Mutual Conductance (Transconductance) Tube Tester is designed for use by technicians, engineers and others who demand an instrument of the very highest quality for rapid and accurate testing of vacuum tubes. Like all Hickok Tube Testers, it is based upon the well known formula for mutual conductance, $\frac{i_p}{e_g} = G_m$, where i_p is the plate current change, e_g is the grid voltage change, and G_m is the Mutual Conductance (Transconductance). Mutual Conductance and Transconductance are used interchangeably.

This instrument is equipped with three meters, all made in our own plant, and calibrated with great accuracy.

(a) A sensitive Transconductance meter measuring micro-mhos in five ranges up to 30,000 micromhos,

(b) an A.C. voltmeter which insures standardized voltages to the tube's base, and

(c) a two range (0-10, 0-50) D.C. voltmeter to accurately adjust the negative bias on the tube's control grid.

Voltage adjustments are made while the tube being tested is delivering its rated load.

NOTE: Always check a tube for shorts before proceeding with Mutual Conductance test.

INSTRUCTIONS FOR THE OPERATION OF MODEL 539A

Read these instructions through before attempting to operate the tester.

1. There are two rectifier tubes, an 83 and a 5Y3GT necessary to operate this tester. They are included.

The Short Lamp is a 1/4 watt, 110 volt, candelabra base neon signal lamp made by The General Electric Company. This lamp will last indefinitely unless broken.

The Fuse Lamp is a standard No. 81, single contact auto bulb. This can be procured from any auto dealer or gasoline station attendant. This fuse lamp is in the primary circuit of the transformer.

2. Use on 60 cycles 110-125 volt circuit.

FUNCTIONS OF THE VARIOUS CONTROLS:

3. The line adjustment control rheostat in the 539A tester is connected with a

small A.C. voltmeter as a constant calibration indicator which is normally always in circuit. The small A.C. voltmeter may also be used to register 60 cycles A.C. line voltage fed to the set by operating the test button P7 designated "LINE TEST" in the lower right part of the control panel. Readjust after pressing the P4 Test Button.

4. SELECTORS - The row of selector dials across the center of the control panel is for the purpose of conducting proper voltages to the tube's base pins. The operation of setting these dials is similar to DIALING A TELEPHONE NUMBER. On the roll data chart, below the word SELECTORS, appear the dialing numbers. These dialing numbers consist of two letters and five figures. Example: JR-6237-5. Starting at the left, the first dial is turned until the letter "J" appears through the window. The second dial is turned until "R" appears. The third dial indicates 6; the fourth, 2; the fifth, 3; the sixth, 7 and the seventh, 5.

The lettered dials control the filament or heater connections. The numbered dials control the GRID, PLATE, SCREEN, CATHODE AND SUPPRESSOR in that order. In the example given above the heater terminals are connected to pins 8 and 1. The GRID is connected to pin 6; PLATE, to pin 2; SCREEN, to pin 3; CATHODE, to pin 7 and SUPPRESSOR, to pin 5.

These dial switches are electrically interlocked in such a way that it is impossible to connect two different voltage elements to the same pin. Thus accidental shorts are avoided.

The dialing system is designed so that a minimum of dial setting is required. For example, the heater setting is practically always JR so that these two dials seldom need resetting. It will also be noticed that when testing duodode triode tubes the amount of dialing has been reduced to a minimum.

5. SHORT TEST - Turning the SHORTS switch successively through the positions 1-2-3-4-5 connects the various pairs of elements in turn across the test voltage. Tubes having shorted elements will complete the circuit and cause the neon

SHORT lamp to glow. Tubes may be tested for shorts, either hot or cold.

A short is indicated by a steady glow of the neon lamp in certain positions of the SHORTS switch. A momentary flash of the lamp as the switch is turned from one position to another should be disregarded. This flashing is caused by the charging of a capacitor in the test circuit. A shorted tube should be discarded without further test.

6. LOCATING SHORTED ELEMENTS - In the following table (X) under any SHORT switch position indicates that the neon lamp glows in that position.

KIND OF SHORT	1	2	3	4	5
FIL -- CATHODE			X		
FIL -- GRID	X	X			X
FIL -- PLATE	X	X		X	X
FIL -- SCREEN	X		X	X	X
FIL -- SUP		X			
GRID -- CATHODE	X	X	X		X
GRID -- PLATE				X	
GRID -- SCREEN		X	X	X	
GRID -- SUP	X				X
PLATE -- SCREEN		X	X		
PLATE -- SUP	X			X	X
SCREEN -- SUP	X	X	X	X	X

7. NOISE TEST - The short test circuit is also used in making noise tests on vacuum tubes. Connections are made from the noise test jacks to the antenna and ground posts of any radio receiver. The tube under test is tapped with the finger as the SHORTS switch is turned through positions 1-2-3-4-5.

Intermittent disturbances which are too brief to register on the neon lamp will be reproduced by the loud speaker as static.

8. GAS TEST - The push switches P5 (Gas 1) and P6 (Gas 2) are used to test amplifier tubes for gas content.

a. Make Micromho test in the ordinary way.

b. Set the Bias Voltmeter switch to the 50 volt range. Hold down P5 and adjust the Bias knob to bring the meter reading down to a point about 1/5th or 1/4th of full scale, say near the mark DIODES O.K. This is not critical.

c. Hold down P5 and press P6. A gassy tube will cause the pointer to move UP the scale. If the upward movement is not more than one large division (two small divisions), the gas content is satisfactory.

Some tubes develop gas after being heated for a period of time. If a tube is suspected, allow it to heat for a few minutes. This constitutes a very sensitive gas test. Gas content on the order of 0.1 microampere can be detected.

Gas content is a very important factor in modern receivers of all types, containing AVC and AFC circuits as the presence of gas causes the grid to become conductive and as changes in grid bias operate through resistors of comparatively high value, correct functioning cannot be obtained with a gassy tube. The presence of gas results in actually changing the grid bias. Gas is especially harmful in television tubes.

9. DYNAMIC TRANSCONDUCTANCE - The Push Switch P4 is mechanically divided into two sections, non-locking and locking. Both sections perform identical electrical functions. If momentary contact is needed press the non-locking button. If extensive tests are to be made use the locking button. The locking button is released by pressing the non-locking button.

The indicating meter will register the tube's value in six ranges:

- A. 30,000 μ mho. at .25 volt signal
- B. 15,000 μ mho. at .25 volt signal
- C. 6,000 μ mho. at .5 volt signal
- D. 6,000 μ mho. at 2.5 volt signal
- E. 3,000 μ mho. at 2.5 volt signal
- F. Rectifiers and diodes, signal removed.

The Micromho switch automatically

changes the signal volts when the appropriate setting is made.

The chart setting for the tube to be tested will indicate where the Micromho switch should be set, such as A, B, C, D, E or F, in the column preceding Micromhos.

The Micromho values printed on the data roll are minimum values. Good tubes will read above these values.

In the column headed BIAS VOLTS is listed the exact voltage to which the BIAS VOLTS meter is to be set when testing a tube. Make final bias adjustment after the P4 button is pressed.

Certain pentode tubes, such as the 6AJ5, are tested with reduced screen voltage. This is accomplished by holding down P1 and pressing P4. Specific instructions are printed in the NOTATIONS column for each tube requiring reduced screen voltage.

10. RECTIFIER TEST - The push switches P1, P2 and P3 are used to test various types of rectifier elements.

a. The push switch P1 is used when testing detector diodes. It applies a low voltage which will not injure the delicate cathode. Good diodes will cause the meter pointer to read above mark, RECTIFIERS and DIODES O.K.

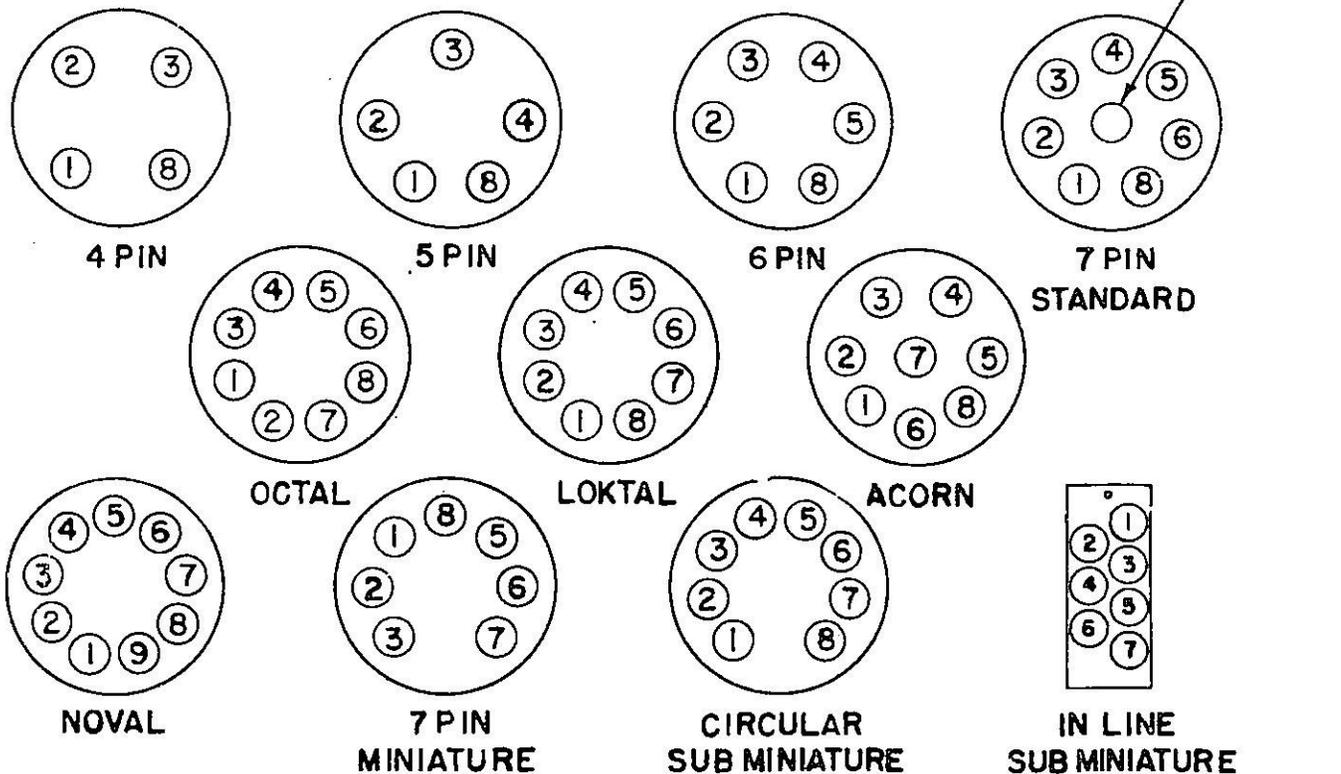
b. Push switch P2 is used when testing cold cathode rectifiers such as the OZ4. This applies a voltage sufficiently high to ionize the tube and start conduction. Good tubes will read above the mark, RECTIFIERS and DIODES O.K.

c. Push switch P3 is used when testing ordinary rectifier tubes such as the 5Y3. This switch applies a medium voltage which is best adapted to reveal defects in this type of tube. Good tubes will read above the mark, RECTIFIERS and DIODES O.K.

In the chart column headed SHUNT are listed the numbers to which the SHUNT dial is to be set when testing Rectifiers and Diodes.

11. SOCKET NUMBERING - In order to reduce dialing to a minimum, the sockets in the Model 539A Tube Tester are numbered as shown. The numerical values of the lettered dials are as follows:

SOCKET NUMBERING BOTTOM VIEWS



0	----	A	----	P
1	----	B	----	R
2	----	C	----	S
3	----	D	----	T
4	----	E	----	U
5	----	F	----	V
6	----	G	----	W
7	----	H	----	X
8	----	J	----	Y
9	----	K	----	Z

marked GRID and PLATE. These are used when making connection to the top cap of the tube being tested. On the data chart in the NOTATIONS column opposite tube types having top caps, is the notation CAP=G or CAP=P. G means that the top cap is connected to the GRID and P, to the PLATE jack.

NOTE

The letter "I" was omitted because of its resemblance to the figure "1". The letter "Q" was omitted because of its resemblance to the figure "0".

12. METER REVERSE - Directly below the indicating meter is a switch marked REVERSE-NORMAL. With certain tubes such as the 117N7, the meter, when set on NORMAL, will deflect backwards (to the left) when push switch P3 is pressed for rectifier test. In such case turn the meter switch to REVERSE which will cause the pointer to move up the scale. After this test has been made, return the switch to NORMAL.

13. TOP CAPS - There are two jacks in the upper center of the control panel

The center of the large 7-pin socket is used to check pilot lamps. Set the filament selector switches on JR. Set the filament voltage switch to the proper voltage for the lamp being tested.

14. SPECIAL NOTES - Power line voltage varies with different localities. It may also vary with the different hours of the day.

While a national survey indicates that the average voltage for the USA is about 117 volts, it does not mean that every locality maintains a constant voltage at that level.

Occasionally we have had the complaint that a used tube will test GOOD, but will not work in the radio receiver; but when a NEW tube is substituted, the receiver will operate correctly. The answer is this: Tubes are built to specifications. Our tube testers are designed to test tubes in conformity with these specifications.

The used tube that would not perform in a certain receiver was not receiving its specified filament voltage. The new tube performed because of its initial reserve capacity. The used tube would have performed if it had received its specified filament voltage.

Tube failure frequently occurs in A.C. D.C. sets where several tubes are connected with their heaters or filaments in series. Sometimes, even though the power line voltage is normal, a series tube with abnormally high filament resistance will rob its companion tube of its normal filament voltage. The robbed tube apparently fails; but when tested under specified conditions, the tube will test GOOD.

The Model 539A is valuable in matching tubes for push-pull stages and other applications where matched tubes are essential.

15. LIFE TEST - The Model 539A DYNAMIC MUTUAL CONDUCTANCE TUBE TESTER is equipped with a special feature to enable Life Test to be made on the tube. In the Lower Right of the control panel is a switch designated CATH. ACT., NORM. and TEST. While holding everything else at normal this switch reduces the filament voltage by 10%.

a. Measure the mutual conductance in the ordinary way with switch set on NORMAL.

b. Throw the CATH. ACT. switch to TEST position. The mutual conductance should not drop more than 20%.

c. After making life test return the switch to NORMAL for all other tests.

In testing the 35Z5 and 45Z5 rectifier tubes it is advisable to turn the power off for about 15 seconds after throwing the CATH. ACT. switch to TEST to allow the cathode to cool. Then turn the power on and note new reading of the meter.

16. SELF BIAS - Provision is made to test tubes under self bias condition. In the upper left of the control panel just above the line adjust meter are two binding posts designated SELF BIAS. These posts are normally shorted by an attached bar. To use SELF BIAS, connect a suitable bias resistor together with an electrolytic capacitor of 1000 μ fd in parallel across these binding posts. The positive terminal of the capacitor should be connected to the positive binding post.

The toggle switch in the lower left of the control panel is thrown from ADJUST BIAS position to the SELF BIAS position. The bias volts under self bias condition depends upon the value of the resistor inserted between the self bias posts mentioned above, and also upon the plate current flowing.

Tube handbooks can be used as a guide to the value of the self bias resistance to use. When completing the self bias test, reconnect the two binding posts by the normal shorting bar and throw the toggle switch back to the ADJUST BIAS position.

17. PLATE CURRENT - In the upper left of the control panel just to the left of the SELF BIAS posts are two posts designated PLATE CURRENT. These posts are normally shorted by an attached bar. A suitable low resistance D.C. milliammeter connected across these posts will measure the plate current flowing through the tube being tested. Connect the positive terminal of the meter to the positive binding post.

NOTE: A D.C. milliammeter connected into the SELF BIAS circuit will measure the total cathode current. In measuring rectifier tube current the meter reading must be multiplied by two, because rectifier tubes conduct only during a positive half-cycle, whereas the meter integrates over a complete cycle.

In checking thyratrons such as the 884 and 885, the bias voltmeter should be set initially at its highest negative value (about 40 volts). The designated button is held down while the bias voltage is gradually reduced until the tube "strikes", that is, begins to conduct which is indicated by a sudden deflection of the meter. The chart indicates

the approximate voltage at which the tube strikes. There may be a small variation above or below the given striking voltage. The meter indication for a good tube is above the point designated "RECTIFIERS OK".

18. FILAMENT AND HEATER CONTINUITY

1. Turn the Tester on.
2. Set the selectors as per chart for the tube to be tested.
3. Set the FILAMENT switch on BLST instead of voltage indicated on the chart.
4. Set the SHORT TEST switch on position 1.
5. Place the tube in the proper socket.

If the neon lamp glows, the filament is good and a complete test should then be made on the tube, by setting FILAMENT switch on the proper tap, and while the tube heats, rotate the SHORT TEST SWITCH several times thru all positions. If no shorts are indicated, set the switch in TUBE TEST position and proceed to test the tube as per chart.

If the neon lamp does not glow, the filament is open and further test is unnecessary. Certain tubes such as the 35Z5-50Z7, etc., with tapped filaments have special continuity test settings; see roll chart.

NOTE

It sometimes happens that a filament will show continuity when cold, but will open when it warms up.

TO TEST BALLAST TUBES

1. Turn the Tester on.
2. Set the filament switch to BLST.
3. Set the SHORT TEST switch on 1.
4. Set the first selector switch (lettered A to K) to the letter shown in the column marked (first selector) -- Set all numbered selectors on zero --
5. Rotate the second selector switch (lettered P to Z) from P to Z. THE NEON LAMP SHOULD LIGHT IN POSITIONS NOTED.

TUBE TYPE	First Selector	Neon lamp should light in these positions.						
		R						
1A1-1B1-1C1-1E1-1F1-1G1-1J1-1K1-1L1-1M1-1P1-1Q1-1R1G-1S1G-1T1G-1U1G-1V1-1Y1-1Z1-2	J	R						
2UR224	J			T				X
2LR212	H	R	S		U			
3	J	R						
03G	J			T				
4-5	J	R						
6-133	J			T				
6-6AA	J	R						
7-8-9	J	R						
10A-10AG	J			T				
10AB	J			T				X
K17B-M17C-BM17C	J			T				X
M17HG-M17H	J		S					X
	D	R						
K23B-K23C-KX23B-KX30C	J			T				X
M30H	J		S					X
	D	R						
30A-K30A	J			T				
K30D	J	R		T				X
33A-33AG	J			T				
K34B	J			T				X

TUBE TYPE	First Selector	Neon lamp should light in these positions.						
36A	J			T				
K36B-BK36B-L36B-BM-L36C-KX36C	J			T				X
KX36A	J	R						
36D-L36D	J	R		T				X
L36DJ	J	R		T	U			X
K36H-M36H-M36HG	J		S					X
L40S1-L40S2	D	R						
42A	J	R		T		V		
42A1	J			T				
42A1	H				U			
42A2-42B2	H		S		U			
K42B-L42B-M42B-KX42B-LX42B-L42BX-K42C-L42C-M42C	J			T				X
KB42D-K42D-L42D	J	R		T				X
LX42D-L42DX	J	R	S	T				
K42E-L42E	J			T				X
L42F	J							X
L42F	D	R						
42HA-K42HJ-M42H-M42HG	J		S					X
42HA-K42HJ-M42H-M42HG	E	R		T				X
KX42C	J			T				X
L42S1	J	R		T		V		
49A-49AJ-K49AJ	J			T				
KX49A	J			T				X
49A1	H				U			
49A2-49B2	H		S		U			
K49B-L49B-M49B-BM49B-K49C-M49C-BM49C-BK49C-K49E-L49E	J			T				X
K49D-BK49D-L49D	J			T				X
L49F	J							X
L49F	D	R						
M49H-M49HG	J		S					
KZ49B-KZ49C	D	R						
KZ49B-KZ49C	J	R				V		
K49BJ-L49BJ	J			T	U			X
L49S2	J	R		T		V		
49AJ-K49AJ	J			T				
KX49B-LX49B-LX49C	J			T				X
L49DJ	J	R		T	U			X
L49S3	J	R		T		V		
50A2	J	R		T				
50A2MG-50B2	J	R				V		
50X3	J	R						
50X3	J		S					X
K52H-M52H	D	R						

TUBE TYPE	First Selector	Neon lamp should light in these positions.					
K54B	J			T			X
55A-K55A	J			T			
55A1	H				U		
KX55A	J	R					
55B-K55B-M55B-BM55B-L55BG-LX55B	J			T			X
55A2-55B2	H		S		U		
K55C-L55C-KX55C	J			T			X
K55CP	J			T		V	X
K55D-L55D	J	R		T			X
L55E-M55E	J			T			X
L55F-M55F-BL55F	J						X
	D	R					
K55H-M55H-M55HG	J		S				X
	D	R					
L55S1-L55S2	J	R		T		V	X
60R30G	J	R		T			
64.23	J			T			
67A	J			T			
K67B-L67B	J			T			X
L73B-K74B-L74B-CX74C	J			T			X
80A	J			T			
K79B-K80B-M80B-K80C-KX80B-L80B	J			T			X
K80F	J						X
	D	R					
KX87B-LX87B-L90B	J			T			X
K90F-M90F-K92F-M92F	J						X
	D	R					
92A	J			T			
L92B-95K2	J			T			X
L99D	J	R		T			X
100R8	J			T			X
120R	J	R					
120RS-135K1	J			T			X
135K1A	J			T	U		X
140L4-140L8-140R4-140R8	J	R		T			
140R	J	R					
140L44-140R44	J	R	S	T			
165L4-165R4-165R8	J	R		T			
165R	J	R					
165L44-165R44	J	R	S	T			
185L4-185L8-185R4-185R8	J	R		T			
185R	J	R					
185L44-185R44	J	R	S	T			
200R-250R	J	R					
250R8-290L4	J			T			X
300R4-320R4	J			T			X
340	J	R					
808-1	J			T	U		X
E14980-W43357-W4588-3613	J			T			X
3334-3334A	J	R		T			X
8593-8598-8601-8664	J			T			X
3ER248	J	R		T	U		X
3CR241	J	R		T			X

TUBE TYPE	First Selector	Neon Lamp Should Light in These Positions							
B9M15822	B			T					
	E					V			
	G							X	Y
B9M16067	J	R		T		V	W	X	
B9M16275	B			T	U	V	W	X	Y
B9M16534	J	R		T		V	W	X	
B9M17571	H	R		T					
	J				U	V		X	
B9M18941	B		S	T					
	E					V			
	G							X	Y
17A470303	J	R	S			V			
	D				U				
	G							X	
17A485459	J	R	S				W		
	D				U				
TBR102D	B		S	T	U	V			
	G							X	Y
TBR103D	B		S		U	V			
	G							X	Y
TBR104D	B		S	T	U	V			
	G							X	Y
397021	B		S	T					
397022	E					V	W		
397023	J							X	
397036	C					V			
407100	J	R	S			V			
408100	J	R	S			V			
	D				U				
SW507300	J	R		T		V	W	X	
571606	B		S	T					
	E					V	W		
	J							X	

PARTS LIST FOR MODEL 539A TUBE TESTER

NOTE: There is a minimum billing charge of \$1.50 for any one parts order.

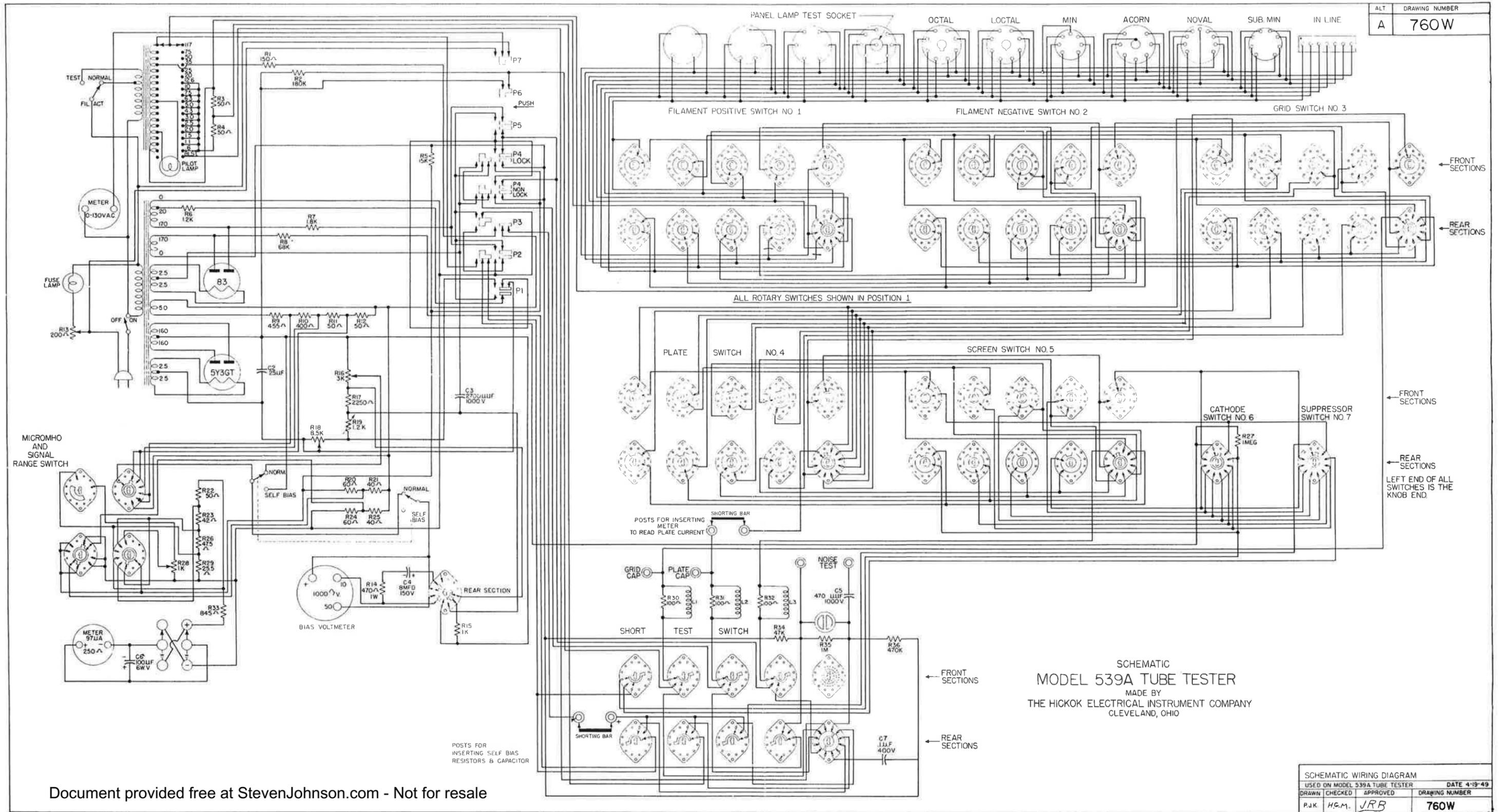
HICKOK CODE NO.	NAME AND DESCRIPTION	REF. SYMBOL OR FUNCTION
2490-161	BOOKLET: Instructions	
2920-7	BUTTON-Push: molded, black	
2920-8	BUTTON-Push: molded, red	
3085-40	CAPACITOR: 100 mfd, 6 V, electrolytic Cornell-Dubilier BRH-601	C6
3085-50	CAPACITOR: 8 mfd, 150 V, electrolytic	C4
3095-8	CAPACITOR: 470 mmf, 500 V, 10%	C5
3095-41	CAPACITOR: .0027 mfd, 500 V, 10%	C3
3105-24	CAPACITOR: .1 mfd, 400 V, paper	C7
3200-42	CHART: Data Roll	
4160-66	DIAL, Ass'y: with knob, beveled	ENGLISH
10300-1	JACK, Pin: red, Eby #52	
10300-2	JACK, Pin: black, Eby #52	
11500-11	KNOB, Ass'y: with pointer, Hickok bar	
12270-1	LAMP: neon glow, 1/4 watt, 115 volt	
12270-2	LAMP: #81 auto, Tung-Sol, bayonet type	
12270-12	LAMP: G.E. #47, 6-8 volts, .15 amp	PILOT
12450-145	LEAD, Ass'y: Plate	
12450-180	LEAD, Ass'y: Grid, Amphenol #63-1W	
16925-88	POTENTIOMETER: 1000 ohms, Mallory #M1MPX	R28
16925-63	POTENTIOMETER: 3000 ohms, linear, wire wound Mallory M3MPX	R16
3250-44	CHOKES ASS'Y: retarding	R30(L1), R31(L2), R32(L3)
18414-182	RESISTOR: 180,000 ohms, 1/2 W, 10%, fixed, comp.	R2
18415-102	RESISTOR: 1 meg, 1/2 W, 10%, fixed, composition	R27
18422-122	RESISTOR: 1200 ohms, 1 W, 10%, fixed, comp.	R6
18423-151	RESISTOR: 15,000 ohms, 1 W, 5%, fixed, comp.	R5
18525-395	RESISTOR: 47,000 ohms, 1/2 W, 1%, Wilkor CP 1/2-1A	R34
18525-396	RESISTOR: 68,000 ohms, 1/2 W, 1%, Wilkor, CP 1/2-1A	R8
18525-397	RESISTOR: 470,000 ohms, 1/2 W, 1%, Wilkor CP 1/2-1A	R36
18525-398	RESISTOR: 1 meg, 1/2 W, 1%, Wilkor CP 1/2-1A	R35
18575-12	RESISTOR: 1800 ohms, 10 W, 10%, fixed	R7
18575-19	RESISTOR: 100 ohms, 10%, center-tapped	R3, R4
18575-89	RESISTOR: 8500 ohms, 10 W, 10%, wire wound	R18
18411-472	RESISTOR: 470 ohms, 1/2 W, 10%, fixed	R14
18670-109	RESISTOR, Spool: small, 25.5 ohms	R29
18670-111	RESISTOR, Spool: small, 40 ohms, 1/2 %	R21, R25
18670-112	RESISTOR, Spool: small, 42 ohms	R23
18670-112	RESISTOR, Spool: small, 50 ohms	R11, R12, R22
18670-112	RESISTOR, Spool: small, 47.5 ohms	R26
18670-113	RESISTOR, Spool: small, 60 ohms 1/2 %	R20, R24
18670-122	RESISTOR, Spool: small, 400 ohms	R10
18670-123	RESISTOR, Spool: small, 455 ohms	R9
18670-126	RESISTOR, Spool: small, 845 ohms	R33
18670-127	RESISTOR, Spool: small, 1000 ohms	R15
18670-128	RESISTOR, Spool: small, 1200 ohms	R19
18670-133	RESISTOR, Spool: small, 2250 ohms	R17
18670-418	RESISTOR, Spool: medium, 150 ohms	R1
18750-2	RHEOSTAT: 200 ohms, 25 W, Mod. D, Ohmite #2878-3 SC	R13
19350-1	SOCKET: bayonet, small, Drake #614-CH-LT	
19350-2	SOCKET: candelabra, Drake #414-14L-LT	
19350-43	SOCKET: acorn, 7 contact, Alden #457V1M	
19350-58	SOCKET: 9 pin yellow, Cinch #53F12884	
19350-76	SOCKET: 7 pin miniature, Amphenol #147-170-24	
19350-156	SOCKET: wafer, octal, Cinch #11961	
19350-157	SOCKET: 4 pin wafer, Cinch #X154	

PARTS LIST FOR MODEL 539A TUBE TESTER

NOTE: There is a minimum billing charge of \$1.50 for any one parts order.

HICKOK CODE NO.	NAME AND DESCRIPTION	REF. SYMBOL OR FUNCTION
19350-93	SOCKET: 4 pin, with ring retainer, Amphenol #78-S4 M	
19350-94	SOCKET: 5 pin, with ring retainer, Amphenol #78-S5 M	
19350-95	SOCKET: 6 pin, with ring retainer, Amphenol #78-S6 M	
19350-96	SOCKET: 7 pin, with ring retainer, Amphenol #78-7CDM	
19350-97	SOCKET: 8 pin loktal, Amphenol #78-8L M	
19350-98	SOCKET: 8 pin octal, Amphenol #78-S8TM	
19350-101	SOCKET: subminiature, saddle mtg, Cinch #EXP8694	
19350-112	SOCKET, Ass'y: panel light, Drake #40	PILOT
19350-119	SOCKET: 7 contact, sub-miniature, Cinch #EXP-8736-B1	IN-LINE
19910-61	SWITCH: gang, 8 buttons, Oak #44983-130 (A5123)	PUSHBUTTON
19911-7	SWITCH: D.P.D.T., Oak #16743-78	METER REVERSE
19911-9	SWITCH: toggle, S.P.S.T., A.H. & H. #20994-DA	OFF-ON
19911-16	SWITCH: toggle, D.P.D.T., bat handle, A.H. & H.	NORMAL-SELF BIAS
19911-19	SWITCH: toggle, S.P.D.T., A.H. & H. #21350, with bat handle	CATH. ACT.
19912-227	SWITCH: 2 deck, 6 position, non-shorting	MICROMHO
19912-175	SWITCH: rotary, 5 section, 6 position, Oak #12782-H-5	SHORT TEST
19912-176	SWITCH: rotary, 1 section, 10 position	CATHODE-SUPPRESSOR
19912-177	SWITCH: rotary, 5 section, 10 position Oak #31595-H5	SELECTORS
19912-202	SWITCH: rotary, 1 section, 20 position	FILAMENT
19912-224	SWITCH: rotary, 3 pole, double throw, 1 section	METER RANGE
20800-69	TRANSFORMER: plate	
20800-103	TRANSFORMER: filament	
20875-6	TUBE: 5Y3GT/G	LOW VOLT. RECT.
20875-28	TUBE: 83	HIGH VOLT. RECT.

In ordering parts or materials for this instrument, the serial number must be given in order to identify properly the material required.



SCHEMATIC
MODEL 539A TUBE TESTER
 MADE BY
 THE HICKOK ELECTRICAL INSTRUMENT COMPANY
 CLEVELAND, OHIO

SCHEMATIC WIRING DIAGRAM			
USED ON MODEL 539A TUBE TESTER			DATE 4-19-49
DRAWN	CHECKED	APPROVED	DRAWING NUMBER
P.J.K.	H.G.M.	J.R.B.	760W

Test Data for the Model 532-533-533DM-534-534A-534B-600 Tube Testers (cont'd.)

Tube	Fil.	Selectors	Bias	Eng.	Gress	Aver. Mut. Cond.	Notations
5BK7A	5.0	EV-7608-9	22	85	P4	4000	Triode No. 1
5BK7A	5.0	EV-2103-9	22	85	P4	4000	Triode No. 2
5J6	5.0	JR-5207-0	20	81	P4	3000	Triode No. 1
5J6	5.0	JR-6307-0	20	81	P4	3000	Triode No. 2
5T8	5.0	EV-8907-6	11	56	P4	1200	Triode Sect.
5T8	5.0	EV-0607-1	0	50	P1*	----	Diode No. 1
5T8	5.0	EV-0203-7	0	50	P1*	----	Diode No. 2
5T8	5.0	EV-0107-8	0	50	P1*	----	Diode No. 3
5U8	5.0	EV-2637-0	15	76	P4	2250	Pent. Sect.
5U8	5.0	EV-9108-0	16	87	P4	4500	Triode Sect.
5V6	5.0	JR-5347-0	21	85	P4	3700	
6AU7	6.3	EV-7608-0	24	75	P4	2200	Triode No. 1
6AU7	6.3	EV-2103-0	24	75	P4	2200	Triode No. 2
6AW8	6.3	EV-7986-3	20	86	P4	4000	Pent. Sect.
6AW8	6.3	EV-2301-9	22	65	P4	1500	Triode Sect.
6AX7	6.3	EV-7608-0	12	58	P4	1250	Triode No. 1
6AX7	6.3	EV-2103-0	12	58	P4	1250	Triode No. 2
6AZ5	6.3	DW-0807-0	0	45	P1*	----	Diode No. 1
6AZ5	6.3	DW-0102-0	0	45	P1*	----	Diode No. 2
6BY6	6.3	JR-3562-7	21	56	P4	1200	
6RZ6	6.3	JR-3562-7	20	78	P4	2500	
6DC6	6.3	JR-3562-7	18	78	P4	2500	
6S4A	6.3	EV-6902-0	17	87	P4	4150	
6SN7GTB	6.3	JX-4506-1	23	73	P4	2000	Triode No. 1
6SN7GTB	6.3	JX-2103-5	23	73	P4	2000	Triode No. 2
12AX4GTA	12.6	JX-0503-0	0	60	P3*	----	
12B4A	12.6	EV-2901-0	52	90	P4	6500	
12BH7A	12.6	EV-7608-2	35	78	P4	2380	Triode No. 1
12BH7A	12.6	EV-2103-7	35	78	P4	2380	Triode No. 2
12BK5	12.6	EV-3186-0	0	91	P4	7000	
12BQ6	12.6	JR-5047-0	50	87	P4	4500	Cap = P
12BY7A	12.6	EV-2781-3	13	90	P4	6000	
12CU6	12.6	JR-5047-0	50	87	P4	4500	Cap = P
12L6	12.6	JR-5347-0	30	90	P4	6500	
12W6	12.6	JR-5347-0	30	90	P4	6500	
19AU4	20.0	JX-C503-0	0	72	P3*	----	
25C06GA	25.0	JR-5073-0	42	90	P4	6500	Cap = F
25CU6	25.0	JR-5047-0	50	87	P4	4500	Cap = P
6203	6.3	EV-0907-1	0	38	P3*	----	Plate No. 1
6203	6.3	EV-0107-9	0	38	P3*	----	Plate No. 2
6265	6.3	JR-3562-7	15	73	P4	2000	
6417	12.6	EV-9167-3	8	91	P4	7000	

Nov. 1, 1955
Bulletin T-125

Supplementary test data to the 3200-44 chart dated 9-1-55 for the Model 532-533-533DM-534-534A-534B-600 Tube Testers is as follows:

TUBE	FIL	SELECTORS	BIAS	ENG	PRESS	AVER. MUT. COND.	NOTATIONS
5AV8	5.0	EV-6987-0	9	86	P4	4000	Pent. Sect.
5AV8	5.0	EV-2301-0	21	83	P4	3300	Triode Sect.
6BE8	6.3	EV-9678-3	15	76	P4	2250	Pent. Sect. Short on 2-3
6BE8	6.3	EV-1203-0	16	87	P4	4500	Triode Sect.
6BJ8	6.3	EV-8709-0	24	80	P4	2800	Triode Sect.
6BJ8	6.3	EV-0603-0	0	61	P1☆	----	Diode No. 1
6BJ8	6.3	EV-0102-0	0	61	P1☆	----	Diode No. 2
6CM7	6.3	EV-7603-0	24	73	P4	2000	Triode No. 1
6CM7	6.3	EV-8109-0	20	87	P4	4400	Triode No. 2
6CS7	6.3	EV-7608-0	17	75	P4	2200	Triode No. 1
6CS7	6.3	EV-3109-0	24	87	P4	4500	Triode No. 2
6DN6	6.3	JR-5073-0	43	90	P4	6000	CAP=P
6DQ6	6.3	JR-5047-0	32	90	P4	6000	CAP=P
12AB5	12.6	EV-3917-0	21	85	P4	3700	
12DQ6	12.6	JR-5047-0	32	90	P4	6000	CAP=P
25DN6	25.0	JR-5073-0	43	90	P4	6000	CAP=P
25DQ6	25.0	JR-5047-0	32	90	P4	6000	CAP=P

Supplementary test data to the 3200-47 chart dated 9-1-55 for the Model 533A-533DM (Series 600)-535-600A-605-605A Tube Testers is as follows:

TUBE	FIL	SELECTORS	BIAS	ENG	PRESS	AVER. MUT. COND.	NOTATIONS
5AV8	5.0	EV-6987-0	7	86	P4	4000	Pent. Sect.
5AV8	5.0	EV-2301-0	24	83	P4	3300	Triode Sect.
6BE8	6.3	EV-9678-3	7	80	P4	2800	Pent. Sect. Short on 2-3
No Shorts for Testers having Serial Numbers above 135-, 136-, or 138-10000							
6BE8	6.3	EV-1203-0	12	90	P4	6200	Triode Sect.
6BJ8	6.3	EV-8709-0	27	80	P4	2800	Triode Sect.
6BJ8	6.3	EV-0603-0	0	78	P1☆	----	Diode No. 1
6BJ8	6.3	EV-0102-0	0	78	P1☆	----	Diode No. 2
6CM7	6.3	EV-7603-0	27	73	P4	2000	Triode No. 1
6CM7	6.3	EV-8109-0	24	87	P4	4400	Triode No. 2
6CS7	6.3	EV-7608-0	22	75	P4	2200	Triode No. 1
6CS7	6.3	EV-3109-0	27	87	P4	4500	Triode No. 2
6DN6	6.3	JR-5073-0	28	93	---	9000	CAP=P. Hold down P1 and Press P4
6DQ6	6.3	JR-5047-0	25	90	---	6000	CAP=P. Hold down P1 and Press P4
12AB5	12.6	EV-3917-0	13	86	P4	4100	
12DQ6	12.6	JR-5047-0	25	90	---	6000	CAP=P. Hold down P1 and Press P4
25DN6	25.0	JR-5073-0	28	93	---	9000	CAP=P. Hold down P1 and Press P4
25DQ6	25.0	JR-5047-0	25	90	---	6000	CAP=P. Hold down P1 and Press P4

Supplementary test data to the 3200-43 chart dated 9-1-55 for the Model 536-538-538A Tube Testers is as follows:

TUBE	FIL	SELECTORS	BIAS	ENG	PRESS	MIN MUT. COND.	NOTATIONS
5AV8	5.0	EV-6987-0	7	LowSig.	P4	3900	Pent. Sect.
5AV8	5.0	EV-2301-0	22	LowSig.	P4	2100	Triode Sect.
6BE8	6.3	EV-9678-3	9	LowSig.	P4	2400	Pent. Sect. Short on 2-3
6BE8	6.3	EV-1203-0	8	LowSig.	P4	5000	Triode Sect.
6BJ8	6.3	EV-8709-0	25	LowSig.	P4	1750	Triode Sect.
6BJ8	6.3	EV-0603-0	0	6I	P1	----	Diode No. 1
6BJ8	6.3	EV-0102-0	0	6I	P1	----	Diode No. 2
6CM7	6.3	EV-7603-0	24	---	P4	1260	Triode No. 1
6CM7	6.3	EV-8109-0	20	---	P4	2800	Triode No. 2
6CS7	6.3	EV-7608-0	17	---	P4	1400	Triode No. 1
6CS7	6.3	EV-3109-0	24	---	P4	2840	Triode No. 2
6DN6	6.3	JR-5073-0	43	---	P4	3800	CAP=P
6DQ6	6.3	JR-5047-0	40	---	P4	3800	CAP=P
12AB5	12.6	EV-3917-0	21	---	P4	2300	
12DQ6	12.6	JR-5047-0	40	---	P4	3800	CAP=P
25DN6	25.0	JR-5073-0	43	---	P4	3800	CAP=P
25DQ6	25.0	JR-5047-0	40	---	P4	3800	CAP=P

Supplementary test data to the 3200-42 chart dated 9-1-55 for the Model 539A Tube Tester is as follows:

TUBE	FIL	SELECTORS	BIAS VOLTS	SHUNT	PRESS	RANGE	MIN. MUT. COND.	NOTATIONS
5AV8	5.0	EV-6987-0	0.8	---	P4	B	3900	Pent. Sect.
5AV8	5.0	EV-2301-0	4.6	---	P4	C	2100	Triode Sect.
6BE8	6.3	EV-9678-3	0.8	---	P4	C	2400	Pent. Sect.
Short on 2-3 for testers having serial numbers below 130-10000								
6BE8	6.3	EV-1203-0	1.2	---	P4	B	5350	Triode Sect.
6BJ8	6.3	EV-8709-0	5.7	---	P4	C	1750	Triode Sect.
6BJ8	6.3	EV-0603-0	0.0	0	P1	F	☆	Diode No. 1
6BJ8	6.3	EV-0102-0	0.0	0	P1	F	☆	Diode No. 2
6CM7	6.3	EV-7603-0	5.6	---	F4	C	1260	Triode No. 1
6CM7	6.3	EV-8109-0	4.5	---	P4	B	2800	Triode No. 2
6CS7	6.3	EV-7608-0	4.5	---	P4	C	1400	Triode No. 1
6CS7	6.3	EV-3109-0	6.0	---	P4	B	2840	Triode No. 2
6DN6	6.3	JR-5073-0	7.5	---	---	B	5650	CAP=P. Hold down P1 and Press P4
6DQ6	6.3	JR-5047-0	12.0	---	P4	B	3800	CAP=P
12AB5	12.6	EV-3917-0	2.2	---	P4	D	2600	
12DQ6	12.6	JR-5047-0	12.0	---	P4	B	3800	CAP=P
25DN6	25.0	JR-5073-0	7.5	---	---	B	5650	CAP=P. Hold down P1 and Press P4
25DQ6	25.0	JR-5047-0	12.0	---	P4	B	3800	CAP=P

We trust this information will be of value to you.

THE HICKOK ELECTRICAL INSTRUMENT COMPANY
10514 Dupont Avenue
Cleveland 8, Ohio

Supplementary test data to the 3200-44 chart dated 9-1-55 for the Model 532-533-533DM-534-534A-534B-600 Tube Testers is as follows:

TUBE	FIL	SELECTORS	BIAS	ENG	PRESS	AVER. MUT. COND.	NOTATIONS
4BS8	4.3	EV-7608-9	20	86	P4	4000	Triode No. 1
4BS8	4.3	EV-2103-9	20	86	P4	4000	Triode No. 2
5AV8	5.0	EV-6987-0	9	86	P4	4000	Pent. Sect.
5AV8	5.0	EV-2301-0	21	83	P4	3300	Triode Sect.
6BE8	6.3	EV-9678-3	15	76	P4	2250	Pent.Sect.Short on 2-3
6BE8	6.3	EV-1203-0	16	87	P4	4500	Triode Sect.
6BH8	6.3	EV-7986-0	11	87	P4	4500	Pent. Sect.
6BH8	6.3	EV-2301-0	27	83	P4	3300	Triode Sect.
6BJ8	6.3	EV-8709-0	24	80	P4	2800	Triode Sect.
6BJ8	6.3	EV-0603-0	0	61	P1☆	----	Diode No. 1
6BJ8	6.3	EV-0102-0	0	61	P1☆	----	Diode No. 2
6BS8	6.3	EV-7608-9	20	86	P4	4000	Triode No. 1
6BS8	6.3	EV-2103-9	20	86	P4	4000	Triode No. 2
6BW4	6.3	EV-0709-1	0	20	P3	----	Plate No. 1
6BW4	6.3	EV-0109-7	0	20	P3	----	Plate No. 2
6CH7	6.3	EV-7608-0	18	88	P4	5000	Triode No. 1
6CH7	6.3	EV-2103-0	18	88	P4	5000	Triode No. 2
6CM7	6.3	EV-7603-0	24	73	P4	2000	Triode No. 1
6CM7	6.3	EV-8109-0	20	87	P4	4400	Triode No. 2
6CS7	6.3	EV-7608-0	17	75	P4	2200	Triode No. 1
6CS7	6.3	EV-3109-0	24	87	P4	4500	Triode No. 2
6DN6	6.3	JR-5073-0	43	90	P4	6000	CAP=P
6DQ6	6.3	JR-5047-0	32	90	P4	6000	CAP=P
12AB5	12.6	EV-3917-0	21	85	P4	3700	
12DQ6	12.6	JR-5047-0	32	90	P4	6000	CAP=P
25DN6	25.0	JR-5073-0	43	90	P4	6000	CAP=P
25DQ6	25.0	JR-5047-0	32	90	P4	6000	CAP=P
X-155	6.3	EV-7608-9	20	86	P4	4000	Triode No. 1
X-155	6.3	EV-2103-9	20	86	P4	4000	Triode No. 2
5851	2.5	HR-8360-0	30	67	P4	1600	
6397	2.5	HR-8360-0	30	72	P4	1950	

Supplementary test data to the 3200-47 chart dated 9-1-55 for the Model 533A-533DM (Series 600) 535-600A-605-605A Tube Testers is as follows:

TUBE	FIL	SELECTORS	BIAS	ENG	PRESS	AVER. MUT. COND.	NOTATIONS
4BS8	4.3	EV-7608-9	19	87	P4	4500	Triode No. 1
4BS8	4.3	EV-2103-9	19	87	P4	4500	Triode No. 2
5AV8	5.0	EV-6987-0	7	86	P4	4000	Pent. Sect.
5AV8	5.0	EV-2301-0	24	83	P4	3300	Triode Sect.
6BE8	6.3	EV-9678-3	7	80	P4	2800	Pent.Sect. Shorts on 23
No Shorts for Testers having Serial Numbers above 135-, 136-, or 138-10000							
6BE8	6.3	EV-1203-0	12	90	P4	6200	Triode Sect.
6BH8	6.3	EV-7986-0	7	88	P4	5000	Pent. Sect.
6BH8	6.3	EV-2301-0	27	83	P4	3300	Triode Sect.

TUBE	FIL	SELECTORS	BIAS	ENG	PRESS	AVER. MUT. COND.	NOTATIONS
6BJ8	6.3	EV-8709-0	27	80	P4	2800	Triode Sect.
6BJ8	6.3	EV-0603-0	0	78	P1☆	---	Diode No. 1
6BJ8	6.3	EV-0102-0	0	78	P1☆	---	Diode No. 2
6BS8	6.3	EV-7608-9	19	87	P4	4500	Triode No. 1
6BS8	6.3	EV-2103-9	19	87	P4	4500	Triode No. 2
6BW4	6.3	EV-0709-1	0	20	P3	---	Plate No. 1
6BW4	6.3	EV-0109-7	0	20	P3	---	Plate No. 2
6CH7	6.3	EV-7608-0	15	91	P4	6800	Triode No. 1
6CH7	6.3	EV-2103-0	15	91	P4	6800	Triode No. 2
6CM7	6.3	EV-7603-0	27	73	P4	2000	Triode No. 1
6CM7	6.3	EV-8109-0	24	87	P4	4400	Triode No. 2
6CS7	6.3	EV-7608-0	22	75	P4	2200	Triode No. 1
6CS7	6.3	EV-3109-0	27	87	P4	4500	Triode No. 2
6DN6	6.3	JR-5073-0	28	93	---	9000	CAP=P Hold down P1 and Press P4
6DQ6	6.3	JR-5047-0	25	90	---	6000	CAP=P. Hold down P1 and Press P4.
12AB5	12.6	EV-3917-0	13	86	P4	4100	
12DQ6	12.6	JR-5047-0	25	90	---	6000	CAP=P. Hold down P1 and Press P4.
25DN6	25.0	JR-5073-0	28	93	---	9000	CAP=P. Hold down P1 and Press P4.
25DQ6	25.0	JR-5047-0	25	90	---	6000	CAP=P. Hold down P1 and Press P4.
X-155	6.3	EV-7608-9	20	88	P4	5000	Triode No. 1
X-155	6.3	EV-2103-9	20	88	P4	5000	Triode No. 2
5851	2.5	HR-8360-0	33	67	P4	1600	
6397	2.5	HR-8360-0	33	72	P4	1950	

Supplementary test data to the 3200-43 chart dated 9-1-55 for the Model 536
538-538A Tube Testers is as follows:

TUBE	FIL	SELECTORS	BIAS	ENG	PRESS	MIN MUT. COND.	NOTATIONS
4BS8	4.3	EV-7608-9	15	Low Sig.	P4	3800	Triode No. 1
4BS8	4.3	EV-2103-9	15	Low Sig.	P4	3800	Triode No. 2
5AV8	5.0	EV-6987-0	7	Low Sig.	P4	3900	Pent. Sect.
5AV8	5.0	EV-2301-0	22	Low Sig.	P4	2100	Triode Sect.
6BE8	6.3	EV-9678-3	9	Low Sig.	P4	2400	Ret. Sect. Short on 2-3
6BE8	6.3	EV-1203-0	8	Low Sig.	P4	5000	Triode Sect.
6BH8	6.3	EV-7986-0	10	Low Sig.	P4	3800	Pent. Sect.
6BH8	6.3	EV-2301-0	25	Low Sig.	P4	2100	Triode Sect.
6BJ8	6.3	EV-8709-0	25	Low Sig.	P4	1750	Triode Sect.
6BJ8	6.3	EV-0603-0	0	61	P1	---	Diode No. 1
6BJ8	6.3	EV-0102-0	0	61	P1	---	Diode No. 2
6BS8	6.3	EV-7608-9	15	Low Sig.	P4	3800	Triode No. 1
6BS8	6.3	EV-2103-9	15	Low Sig.	P4	3800	Triode No. 2
6BW4	6.3	EV-0709-1	0	20	P3	---	Plate No. 1
6BW4	6.3	EV-0109-7	0	20	P3	---	Plate No. 2
6CH7	6.3	EV-7608-0	17	Low Sig.	P4	4300	Triode No. 1
6CH7	6.3	EV-2103-0	17	Low Sig.	P4	4300	Triode No. 2
6CM7	6.3	EV-7603-0	24	---	P4	1260	Triode No. 1
6CM7	6.3	EV-8109-0	20	---	P4	2800	Triode No. 2

TUBE	FIL	SELECTORS	BIAS	ENG	PRESS	MIN MUT. COND.	NOTATIONS
6CS7	6.3	EV-7608-0	17	---	P4	1400	Triode No. 1
6CS7	6.3	EV-3109-0	24	---	P4	2840	Triode No. 2
6DN6	6.3	JR-5073-0	43	---	P4	3800	CAP=P
6DQ6	6.3	JR-5047-0	40	---	P4	3800	CAP=P
12AB5	12.6	EV-3917-0	21	---	P4	2300	
12DQ6	12.6	JR-5047-0	40	---	P4	3800	CAP=P
25DN6	25.0	JR-5073-0	43	---	P4	3800	CAP=P
25DQ6	25.0	JR-5074-0	40	---	P4	3800	CAP=P
X-155	6.3	EV-7608-9	14	Low Sig.	P4	3800	Triode No. 1
X-155	6.3	EV-2103-9	14	Low Sig.	P4	3800	Triode No. 2
5851	2.5	HR-8360-0	33	Low Sig.	P4	1000	
6397	2.5	HR-8360-0	33	Low Sig.	P4	1200	

Supplementary test data to the 3200-42 chart dated 2-1-55 for the Model 539A
Tube Tester is as follows:

TUBE	FIL	SELECTORS	BIAS VOLTS	SHUNT	PRESS	RANGE	MIN. MUT. COND.	NOTATIONS
4BS8	4.3	EV-7608-9	2.5	---	P4	B	4500	Triode No. 1
4BS8	4.3	EV-2103-9	2.5	---	P4	B	4500	Triode No. 2
5AV8	5.0	EV-6987-0	0.8	---	P4	B	3900	Pent. Sect.
5AV8	5.0	EV-2301-0	4.6	---	P4	C	2100	Triode Sect.
6BE8	6.3	EV-9678-3	0.8	---	P4	C	2400	Pent. Sect.
Short on 2-3 for testers having serial numbers below 130-10000								
6BE8	6.3	EV-1203-0	1.2	---	P4	B-	5350	Triode Sect.
6BH8	6.3	EV-7986-0	0.8	---	P4	B	4400	Pent. Sect.
6BH8	6.3	EV-2301-0	5.7	---	P4	C	2100	Triode Sect.
6BJ8	6.3	EV-8709-0	5.7	---	P4	C	1750	Triode Sect.
6BJ8	6.3	EV-0603-0	0.0	0	P1	F	☆	Diode No. 1
6BJ8	6.3	EV-0102-0	0.0	0	P1	F	☆	Diode No. 2
6BS8	6.3	EV-7608-9	2.5	---	P4	B	4500	Triode No. 1
6BS8	6.3	EV-2103-9	2.5	---	P4	B	4500	Triode No. 2
6BW4	6.3	EV-0709-1	0.0	50	P3	F	☆	Plate No. 1
6BY4	6.3	EV-0109-7	0.0	50	P3	F	☆	Plate No. 2
6CH7	6.3	EV-7608-0	2.8	---	P4	B	4300	Triode No. 1
6CH7	6.3	EV-2103-0	2.8	---	P4	B	4300	Triode No. 2
6CM7	6.3	EV-7603-0	5.6	---	P4	C	1260	Triode No. 1
6CM7	6.3	EV-8109-0	4.5	---	P4	B	2800	Triode No. 2
6CS7	6.3	EV-7608-0	4.5	---	P4	C	1400	Triode No. 1
6CS7	6.3	EV-3109-0	6.0	---	P4	B	2840	Triode No. 2
6DN6	6.3	JR-5073-0	7.5	---	---	B	5650	CAP=P, Hold down P1 and Press P4.
6DQ6	6.3	JR-5047-0	12.0	---	P4	B	3800	CAP=P
12AB5	12.6	EV-3917-0	2.2	---	P4	D	2600	
12DQ6	12.6	JR-5047-0	12.0	---	P4	B	3800	CAP=P
25DN6	25.0	JR-5073-0	7.5	---	---	B	5650	CAP=P Hold down P1 and Press P4
25DQ6	25.0	JR-5047-0	12.0	---	P4	B	3800	CAP=P
X-155	6.3	EV-7608-9	1.7	---	P4	B	5000	Triode No. 1
X155	6.3	EV-2103-9	1.7	---	P4	B	5000	Triode No. 2
5851	2.5	HR-8360-0	9.0	---	P4	E	1000	
6397	2.5	HR-8360-0	8.5	---	P4	E	1200	

We trust this information will be of value to you.

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