



# SYLVANIA TUBE TESTER

TYPE 620

## OPERATING MANUAL

SYLVANIA ELECTRIC PRODUCTS INC.

PRICE \$1.00

## SYLVANIA TUBE TESTER TYPE 620

### TABLE OF CONTENTS

	Page
GENERAL DESCRIPTION .....	1
SPECIFICATIONS	
1. Power Requirements .....	1
2. Tube Complement .....	1
3. Basic Circuit .....	1
4. Mechanical Features .....	3
5. Cabinet Size .....	3
6. Weight .....	3
OPERATING INSTRUCTIONS	
1. General .....	3
2. Operation .....	3
3. Functions of Controls .....	5
4. Sockets and Terminals .....	6
APPLICATIONS	
1. What a Tube Tester Must Do .....	6
2. The Major Characteristics of Vacuum Tubes .....	6
3. Characteristics Which May Be Tested Individually Are .....	7
4. Characteristics Not Specifically Included In General Purpose Tube Testers .....	8
5. Effects of the Various Characteristics .....	8
A. Emission .....	8
B. Mutual Conductance .....	8
C. Heater-Cathode Leakage .....	8
D. Microphonism .....	9
E. Inter-Electrode Capacitance .....	9
6. How Tube Tester Settings Are Made Up .....	9
A. Reference Tubes .....	9
B. Switch Positions .....	9
C. Objectives of Settings .....	9
D. Reliability of Composite Test .....	9
MAINTENANCE .....	10
PARTS LIST .....	11, 14
TUBE TESTER SCHEMATIC .....	12, 13
SETTINGS FOR TESTING OBSOLETE AND SELDOM ENCOUNTERED TUBE TYPES .....	15 thru 22

# SYLVANIA TUBE TESTER TYPE 620

## GENERAL DESCRIPTION

The Sylvania Tube Tester Type 620 is intended for use by Radio and Television Servicemen and others to determine the condition of any commonly encountered radio receiving tubes, and of many low-power transmitting and industrial tubes, regardless of basing. The circuit used applies properly proportioned, self-rectified voltages to the tube under test, and the indication on the meter is a composite of transconductance and emission. The reading on a power type tube is predominantly influenced by the emission capability of the tube's cathode element, while the reading on a high gain, low power tube is predominantly influenced by its mutual conductance.

This instrument is also designed to test the 600 ma series string tubes under constant heavier current conditions. This feature enables the user to test these tubes under conditions similar to those used by tube manufacturers.

Settings are made up from average readings taken on several production tubes of each type, which have passed production tests. The average indication obtained from the sample tubes is set as 100 on the meter scale, and the tubes which read between 70 and 130 are in general within tolerances of composite characteristic variations. The probability of being within all tolerances is greatly increased if the tube reads between 80 and 120. If it reads below 70 it is definitely questionable, and if above 130 it is either gassy or is an exceptionally "hot" tube. Many tubes outside of these limits will operate satisfactorily in some circuits, but will cause trouble in others. Some receivers, on the other hand, are so designed that only tubes very close to 100 operate satisfactorily.

Short circuits, or excessive leakage between tube elements, will be indicated directly on the meter in megohms, using an ohmmeter circuit. This direct reading allows the user to select tubes for various circuits according

to the leakage that particular circuit will tolerate. .25 megohms is marked in red because a tube with more than .25 megohms leakage would probably be worthless in any circuit. The potentials applied to the tube under test, to obtain this reading, never exceed 50 volts rms. This is, furthermore, a very high impedance circuit, so that if this voltage is accidentally applied to delicate filaments, they will not be damaged. The test voltage is applied contrary to the conducting direction of the tube, so that conduction currents will not show up as leakage. When the test is applied between the cathode and the other elements, however, condition will occur until the H-K LEAKAGE switch is thrown. This switch reverses the polarity of the test and removes all elements except the heater and cathode, so that only heater-cathode leakage will be read on the meter.

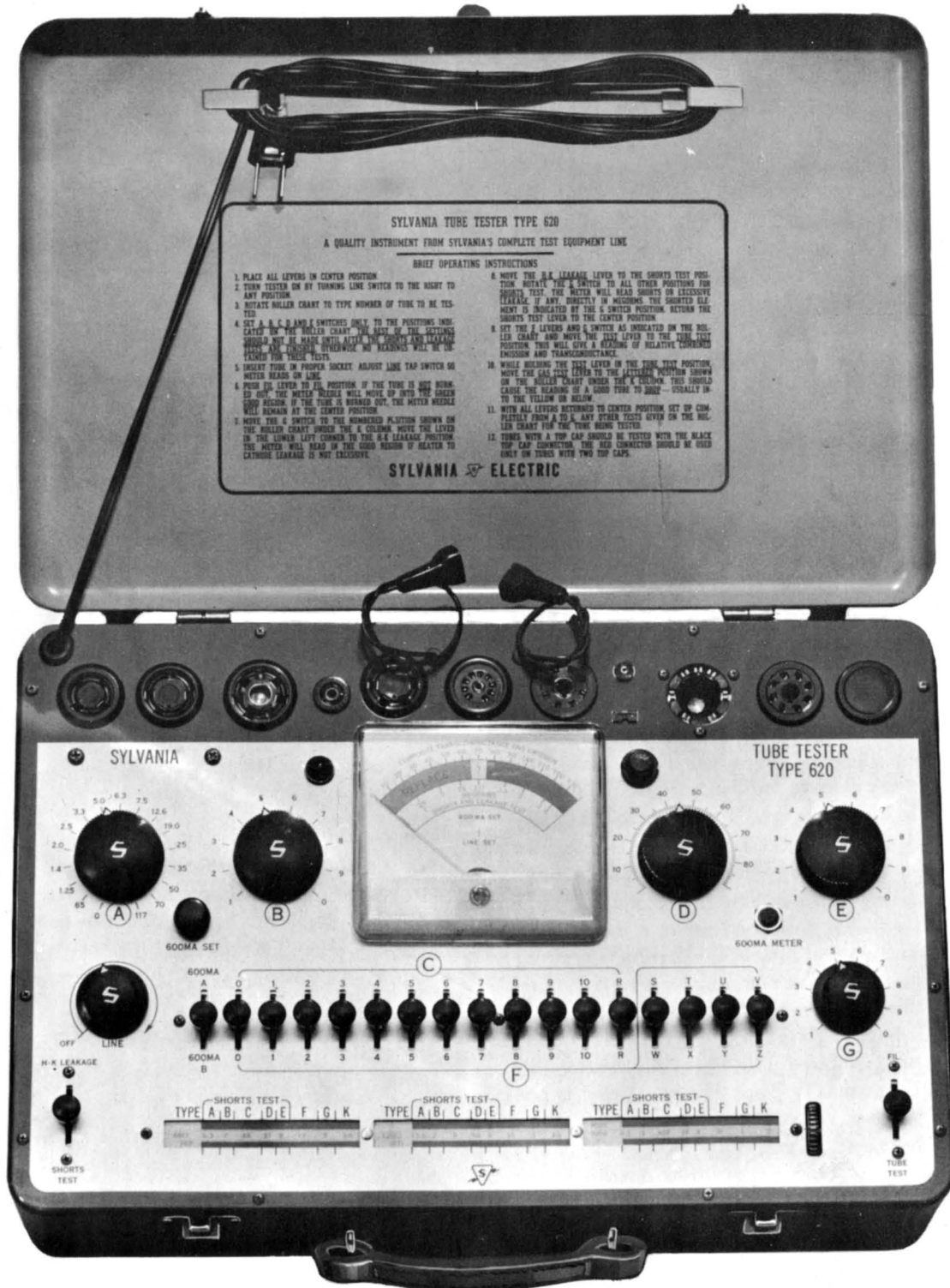
Only heater (or filament) voltage is applied to the tube under test, until the TEST switch is thrown to the TUBE TEST position. This avoids the possibility of the tube running with screen voltage and not plate voltage applied, and minimizes the chance of the tube being damaged by testing for an excessive period of time.

Due to the sensitivity of the shorts and leakage test, rapid intermittents of high resistance, which would cause noise in a set, will show up as erratic needle movement when the tube is tapped while this test is being applied.

## SPECIFICATIONS

1. Power line requirements: 105-125 volts, 50-60 cycles. Uses 25 watts at 117 volts, with no tube under test.
2. Tube complement:  
One Sylvania type 6C4-Line and leakage indicator.
3. Basic Circuit:  
Composite transconductance and emission. Free point, direct indicating switching. Proportional self-rectified voltages ap-

## SYLVANIA TUBE TESTER TYPE 620



Front Panel of the Type 620 Tube Tester

## SYLVANIA TUBE TESTER TYPE 620

plied to all elements of the tube under test, with selected AC signal on grid. Special heater-cathode leakage, shorts, constant current 600 ma and filament continuity tests provided.

4. Mechanical features:  
High speed, smooth running roller chart.  
Panel fuse. Modern styling.
5. Cabinet size:  
17 1/16" x 11 3/8" x 6"
6. Weight: 19 1/4 pounds.

Settings to test new tube types are brought to Sylvania test equipment users in the Sylvania News. Complete new roller charts are made available every 6 months.

### OPERATING INSTRUCTIONS

#### 1. General.

##### A. Line Voltage:

This tube tester is designed to operate on a line of 50-60 cycles, 105 to 125 volts, only. Any other line voltage or frequency will result in inaccurate tests, or even damage to the equipment or to the tube under test. It is advisable to allow the 6C4 tube in the tester to warm up by leaving the unit turned on for about 30 seconds before making any tests. This insures more accurate results.

##### B. Switching:

Danger of short circuits, improperly applied voltages, and accidental tube damage is minimized by the design of the tube tester. However, the settings should be carefully made as given on the chart, and checked before making a test. ALWAYS double check the A switch position before inserting a tube for test so that excessive filament or heater voltage will not be applied. Only filament or heater voltage is applied, until the test switch is put in the TUBE TEST position. However, until you are quite familiar with all the functions of the tester, it is advisable to double check all settings before testing.

##### C. Fuse Protection:

Excessive overloads or shorted tubes may cause the fuse to blow. It should be replaced by a type 3AG, 1 ampere fuse.

##### D. Roller Chart:

The roller chart may be removed for addition of new settings or to install a new roller chart by removing the front panel. Simply remove the screws holding the panel in place and the entire unit may be lifted out without disturbing any wiring. (See instructions at bottom of roller chart).

#### 2. Operation.

- A. Place all levers in center (neutral) position.
- B. Turn tester on by turning LINE switch to the right.
- C. Rotate roller chart to type number of the tube to be tested.
- D. Set A, B, C, D and E switches only, to the positions indicated on the roller chart. THE REST OF THE SETTINGS SHOULD NOT BE MADE UNTIL AFTER THE SHORTS, FILAMENT, AND LEAKAGE TESTS ARE FINISHED. Otherwise, no readings could be obtained for these tests.
- E. For all types except series string 600 ma types, which are indicated on the chart by a letter (A or B) after the filament voltage, insert tube in proper socket and adjust LINE tap switch so that meter reads in exact center of scale. For series string 600 ma types, set 600 MA switch to A or B position as indicated under A column. Turn 600 MA SET control to approximately the center position. Insert tube in proper socket and adjust LINE switch so that meter reads on LINE SET. (Allow tube to warm up for at least 10 seconds before making adjustments) Press 600 MA METER push button and adjust 600 MA SET control until meter reads on 600 MA SET. Release push button.
- F. Push TEST lever forward to FIL position. If the tube is not burned out, the meter needle will move up into the

## SYLVANIA TUBE TESTER TYPE 620

green GOOD part of the scale. If the tube is burned out, the meter needle will remain at the center position.

- G. Now check the heater-to-cathode leakage of the tube (indirectly heated cathode types only) by moving the G switch to the position shown on the roller chart under the K column. Move the lever in the lower left hand corner to the H-K LEAKAGE position. The meter will read somewhere in the green GOOD region if heater-to-cathode leakage is not excessive.
- H. Now check for shorts and leakage by holding the H-K LEAKAGE lever in the SHORTS TEST position, and rotate the G switch to all the other positions. The meter will read the shorts or leakage directly in megohms. The shorted elements are directly indicated by the position of the G switch when the short is observed. The tube may be tapped in each G switch position to check for intermittent shorts. If the meter needle flicks when the tube is tapped, it is probably noisy. On the megohms scale, .25 is marked in red as any tube with this leakage reading or lower would probably be worthless in almost any application. Leakage readings higher than .25 megohms would be acceptable for most applications. However, high frequency, video, or pulse work might require higher inter-element leakage readings.

NOTE: When making shorts tests on indirectly heated cathode type tubes, a SHORT will be indicated when the G switch is on the position indicated under K on the roller chart, due to conduction. To obtain a true indication of leakage on this position, use the H-K LEAKAGE switch as indicated in paragraph G.

- I. Set the F levers and the G switch as indicated on the roller chart, and move the TEST lever to the TUBE TEST position. This will give a reading of the composite transconductance and

emission. (See APPLICATIONS). Note that S, T, U, V, W, X, Y, and Z positions are shown under F on the chart.

- J. With all levers returned to center position, set up completely from A to G, any other tests given on the roller chart for the tube being tested.

- K. Tubes with a top cap should be tested with the black top cap connector. The red connector should be used only on tubes with two top caps.

### L. Special Tube Types:

1. Tests on ballast tubes are not carried beyond the FIL test, as continuity is the only characteristic that has to be measured.
2. To test long lead circular header sub-miniature types, the leads should be inserted in the circular sub-miniature socket in rotation, counting socket points from right to left, viewed from the top of the panel. To test in-line subminiature types, if there is a red dot on an in-line miniature tube, it should be to the left as the tube is inserted.
3. Tapped heater rectifiers and double connection tubes usually have two or more tests. This is to check continuity of all leads.
4. Filament-centertapped 600 ma types will have one test for checking for shorts, heater-cathode leakage and filament continuity with the filaments connected in series, and a second test for emission and transconductance with the filaments in parallel. This feature subjects these types to tests simulating those conditions found in actual circuit practice.
5. Transmitting types, in many cases, can be tested on the Sylvania tube testers. Some are listed on the roller charts, and others will appear from time to time in the Sylvania News.
6. Pilot lights can be tested on the 7 pin large socket. The A switch



## SYLVANIA TUBE TESTER TYPE 620

should be set to the operating voltage of the pilot light. If the exact voltage isn't available on the A switch, use the next lower voltage. Set B switch on 1, E on 7 and all other switches on normal. If the pilot light glows it is good. If not it should be rejected.

7. New settings will appear in Sylvania News, and on the supplement sheets for the Sylvania Technical Manual.

8. Ballast tubes are tested by making the proper setting and then pushing the FIL lever to the FIL position. If the ballast tube is not burned out, the meter needle will move up into the green GOOD region. If the ballast tube is burned out, the meter needle will remain at the center position. Ballast tube types: 1A1/5E1, 1B1, 1C1, 1D1, 1E1, 1F1, 1G1, 1J1, 1K1, 1R1G, 1T1G, 1X1, 1Y1, 1Z1, and 6 use the following setting:

A	B	C	D	E	F	G	K
.75	1	4	0	4	-	0	-

Types 3, 4, 5, 7, 8 use the settings:

A	B	C	D	E	F	G	K
117.0	1	4	0	4	-	0	-

Type 2 uses                7.5 1 4 0 4 - 0 -

Type 4A1 uses            3.3 1 4 0 4 - 0 -

Type 9 uses              50.0 1 4 0 4 - 0 -

Type 46A1 uses        35.0 1 5 0 5 - 0 -  
46B1

Type 40A1 uses        3.5 2 7 0 7 - 0 -

### 3. Functions of Controls.

- A. The A switch selects the filament or heater voltage.
- B. The B switch applies one side of the filament or heater voltage to the selected socket point.
- C. Switches numbered from 1 to 9, when thrown to the C position, connect the corresponding socket point to a similar numbered contact on the E switch. Position 10 is for top cap switching.
- D. The D potentiometer shunts the meter so that it will read in the desired portion of the scale.

- E. The E switch is intended to connect the socket point selected by C, to the filament return circuit. The E switch will pick up only one point, the one to which it is set, in this manner. Other points connected to the other contacts on the E switch by the C switch are therefore open circuited.

- F. Levers numbered from 1 to 9, when thrown to the F position, apply the grid and screen grid voltages to the socket points corresponding to the number of the switch. The lowest numbered switch will apply the grid signal, and will automatically reverse the circuit so that the next highest numbered switch will apply the screen voltage to the socket point corresponding to the switch. If the basing of the tube under test calls for the screen voltage to be on a pin with a lower number than the grid pin, switch O must be thrown to the F position to reverse the circuit.

The S, T, U, V, W, X, Y, and Z switches choose the proper fixed meter shunts, plate loads, and plate potentials which will be applied when the test switch is thrown. The R switch applies varying grid signal and screen voltages.

- G. The G switch performs the double function of connecting together all socket points not selected by the other switches and returning them to ground with the exception of the one point selected by this switch. The plate voltage is applied to this selected point when the tube is being tested for composite emission and transconductance. When shorts tests are being made, the shorts test is applied between the point selected by the G switch and all other elements, except when the H-K LEAKAGE switch is thrown, in which case it tests between heater and cathode only.

- II. The 600 MA selector switch is to be used when testing 600 ma series string tubes. The A position inserts a variable resistor and a meter resistor in series

## SYLVANIA TUBE TESTER TYPE 620

with one side of the filament. The B position adds a fixed resistance in series with the variable resistance to increase the effective current range. The switch should remain in the center position for regular tube types.

- I. The 600 MA METER switch removes the meter from its normal circuit and connects it as a voltmeter to read the voltage drop across a resistor in series with the filament. Since this resistance is fixed, the voltage is proportional to the current flowing in the filament circuit and the meter is calibrated by means of a series variable resistance so that mid-scale equals 600 ma.
- J. The 600 MA SET potentiometer is the series resistance used to obtain a constant current of 600 ma through the tube under test. The tube is inserted and the potentiometer adjusted so that the meter reads on 600 MA SET with the 600 MA METER switch depressed.
- K. The H-K LEAKAGE switch opens the common connection from the G switch and reverses polarity, for application of the shorts test.
- L. The SHORTS TEST switch places elements of the tube under test between the grid and the cathode of the 6C4 in such a way that a short or high leakage between elements will put a bias on the 6C4 and cut down its plate current.
- M. The LINE tap switch chooses the proper tap for the available line voltage.
- N. The roller chart is of improved rapid and smooth-running design. Turn to the tube type to be tested, and set up the tube tester accordingly. Be sure to make all tests indicated for each type of tube tested. If any one test shows the tube bad, it should be replaced. When a dash (-) is indicated in any column, it means that the lever switches referred to by that column should all remain in neutral (center) position.

New roller charts will be available at a nominal charge every six months upon request, and will include all ad-

ditions and corrections made up to the time they are issued. Address all requests for charts to Sylvania Electric Products Inc., 1221 W. Third St., Williamsport, Pa., attention J. H. Mintzer. Watch Sylvania News for announcement of these charts, and for other information on Sylvania test equipment.

### 4. Sockets and Terminals.

- A. The following sockets are provided on the main tube tester panel: Four, five, six, seven (combination large and small, and pilot lamp test), octal, lock-in, acorn, noval 9-pin, miniature 7-pin, and sub-miniature circular and in-line types. A blank socket is provided for future modernization, if required.

## APPLICATIONS

### 1. What a Tube Tester Must Do.

There are two principal reasons for a serviceman buying a tube tester. He buys it so he can discover defective tubes among those brought in for test, or in receivers brought in for repair, and so increases his tube sales; or perhaps he buys it primarily to help him solve difficult repair problems by accurately picking out tubes which are not serviceable, and are causing trouble in the set. Also, many tube testers are bought for the purpose of preventive maintenance—that is, it is used for regular checks on tubes so that they can be replaced before they cause actual failure of equipment.

Therefore the duty of the tube tester is to pick out tubes which will not operate properly in circuits designed for them, or which are near the borderline for such operation.

### 2. The Major Characteristics of Vacuum Tubes.

The characteristics which the tube tester must measure, or coordinate in a single measurement, are:

- A. **Emission.** This characteristic is of foremost importance, as a tube is primarily an electron emitting device,



## SYLVANIA TUBE TESTER TYPE 620

and if insufficient electrons are emitted from the cathode, it cannot work under all the conditions it is expected to. The symbol for emission is  $I_s$ , and is measured under conditions which draw practically all available electrons from the cathode. Poor emission results from faulty cathodes, excessive plate current, or may be caused by low heater voltage. It shows up as generally decreased performance, particularly in oscillators, rectifiers, or in circuits where high irregular peak currents must be handled.

- B. **Transconductance.** This characteristic is the measure of the change in current to any one element of a tube under test, as the voltage applied to any other element is varied. Mutual Conductance is a special case, which refers specifically to the change in plate current resulting from a given change in control grid voltage. The symbol for Transconductance is  $G$ , and for Mutual Conductance is  $G_m$ . Transconductance is important in that it is a measure of effectiveness of the tube as an amplifier or control device. It is largely determined by the geometry of the tube elements. The Sylvania Composite Transconductance and Emission test applies predetermined voltages to all elements and applies an actual AC signal to the control grid, thus introducing a dynamic mutual conductance factor which is a summation of the relative mutual conductance over a considerable part of the operating curve. The resultant plate current thus furnishes a composite indication of the transconductance between all elements and the plate. Furthermore, there is sufficient current drawn from the tube in all tests so that if the emission is down it will show bad, regardless of the other characteristics.

It can be seen that some tubes rejected by the Sylvania Tube Tester Type 620 may function temporarily in circuits which do not require them to furnish

appreciable current. However, such tubes should be replaced as preventive maintenance.

- C. **Life.** The condition of the tube emitter is an important factor in its life expectancy. The Sylvania Tester requires enough cathode current for a test of "good" to enable the operator to determine the tube's quality without necessitating a reduced heater voltage test.
3. **Characteristics Which Can Be Tested Individually Are:**
- A. **Leakage and Shorts.** Improper leakage paths across mica, glass, or other insulating material within the tube, may cause circuit loading and improper bias conditions. Such leakage paths may result from "getter" material depositing in thin film on micas, cathode sputtering, or similar circumstances. The Sylvania Tube Tester Type 620 utilizes an exclusive, very sensitive test for leakage, which reads directly in megohms on a continuous scale, with one megohm as the center scale reading. Very high leakage resistance tubes may be selected for special applications if desired. Often leakage can be reduced by thoroughly cleaning the base of the tube between pins.
- If any two elements within the tube are in contact, the leakage will of course be very great, and the indicator needle will drop to zero. Such shorts may result from bowed side rods, peeled off heater insulation, sagging filaments, particles of foreign material in the tube, etc. The sensitivity of the leakage test is sufficient to show easily noticeable movement of the needle when quick intermittent shorts are present, if the tube is tapped while testing for shorts. Such shorts are the cause of noise and other intermittent set behavior.
- B. **Open Elements.** There are a great many very small spot welds within a tube. It sometimes happens that these welds become open due to shock in shipping

## SYLVANIA TUBE TESTER TYPE 620

or handling, or due to thermal expansion within the tube. The latter, of course, would not appear until the tube is thoroughly warmed up. The circuit used in the Sylvania Type 620 will immediately indicate an open circuit as a much reduced or zero reading on the meter. There is one exception which should be guarded against, and that is the case of the low  $\mu$  power tube. Here the steady state plate current is so high (if the emission is good) that disconnecting the control grid will sometimes leave the indication up in the green part of the scale, although usually this indication will waver and be unsteady due to accumulated grid charges.

#### 4. Characteristics Not Specifically Included in General Purpose Tube Testers.

- A. In addition to the most important of the characteristics of a vacuum tube (those which cause operation or non-operation) there are many other characteristics which the tube manufacturer must control in production, but which are not necessarily measured in a general purpose tube tester. Actually, many of these factors automatically enter into the reading obtained on the Sylvania Tube Tester Type 620.

On the large, expensive vacuum tube bridges in the laboratory, individual readings are made of the actual current to each element of the tube. Emission is read, as well as mutual conductance, plate resistance, gas current, conversion conductance (in converters), inter-electrode capacitance, heater-cathode leakage, power output, distortion, noise (direct and radiated), microphonism, hum, and many special measurements. The equipment necessary to make these measurements, and to maintain test conditions exactly as required by the tube specifications, costs many thousands of dollars. In addition to these tests, the tube manufacturers maintain banks of life test racks, where samples from each lot of tubes are allowed to run under rated condi-

tions, day and night, for hundreds of hours. No lot of tubes is released until this sample passes the life test.

#### 5. Effects of the Various Tube Characteristics.

- A. **Emission.** Poor emission will cause a slump in all characteristics. However, mutual conductance, and rectifier output voltage (for instance) will sometimes measure good until a load is applied, then will slump rapidly. This is like a defective dry cell battery, where the voltage looks good until some current is drawn. In a battery this is caused by poor chemical action and in a tube by lack of available electrons.

- B. **Mutual conductance**, coupled with plate resistance ( $R_p$ ), indicates the maximum attainable amplification possible in the tube: Amplification Factor =  $G_m R_p$ . The symbol for amplification factor is the Greek letter  $\mu$ , and it indicates the change in plate voltage resulting from a given change in grid voltage, with plate current kept constant. This characteristic is most important in voltage amplifier tubes. It is a complex characteristic to measure, and requires carefully controlled conditions. A tube with low  $\mu$  or  $G_m$  will have low gain.

Conversion Transconductance ( $G_c$ ) measures the effectiveness of a tube as a converter. It is the most complex characteristic to measure. Poor  $G_c$  results in noise or inefficient conversion.

- C. **Heater-Cathode Leakage.** When the insulating coating applied to the heater wires in a cathode type tube becomes damaged, or contains impurities, it is possible for the resistance between the heater and cathode to decrease and cause an ac potential from the heater to appear in part on the cathode. With an ungrounded and un-bypassed cathode, this will result in the introduction of hum into the circuit, particularly in high-gain tubes. Limits for this characteristic vary greatly, depending on the application. The heater-cathode leakage test on the Sylvania Tube

## SYLVANIA TUBE TESTER TYPE 620

Tester 620 makes it possible to select tubes which are exceptionally good for this characteristic, for critical applications like high gain audio amplifiers.

- D. **Microphonism.** Measurements for microphonism must be made in special sockets, which are known to be free from the usual design faults which cause this phenomenon. Tubes should not be subject to vibration from speakers or phonograph motors, and should not be in strong magnetic fields from speakers. Microphonism causes an intermittent or sustained howl when the tube is tapped.
  - E. **Inter-Electrode Capacitance.** This characteristic is not measurable on general purpose tube testers, because of the small capacitances involved (of the order of a fraction of micromicrofarad). However, it will have considerable effect on the operation of a tube in circuits involving high frequencies. This is an instance where a tube testing good on the tube tester may not function properly. Fortunately, when something has happened to a tube to make its interelectrode capacitances badly out of line, other characteristics are frequently affected, and this shows up on the tube tester.
6. **How Tube Tester Settings Are Made Up.**
- A. **Reference Tubes.** All settings on the Sylvania Tube Tester Type 620 are made from readings taken on sample tubes which have passed all production tests. It is possible that these tubes will vary somewhat in characteristics, but all must be within specification limits. Averages of readings made on all sample tubes are used to make up the settings, based on a meter reading of 100 for an "average" tube.
  - B. **Switch Positions.** All switches on the Sylvania Tube Tester Type 620 are numbered to correspond to the socket point to which they are connected. This makes it possible to know just what you are doing when you set up to test a tube, by referring to a basing diagram of that tube. Voltages applied and current drawn are proportioned so that an effective test is applied, without damage to the tube. Although it is possible for the serviceman to make up settings for tubes which are not provided for on the roller chart, it is not recommended, except for temporary emergency use until settings are available from the factory. New roller charts are prepared every six months and are available at \$1.00 each from the factory service station. Watch Sylvania News for announcement of new charts, and for new settings.
  - C. The main objective of proper settings is to pick out tubes which do not come up to the original production standards. This does not necessarily mean that they will not work in any circuit, but does mean that for best set performance they are not to be recommended for use in circuits of proper design. Due to the constantly changing requirements imposed by set designers, the tube manufacturer is in a better position to make up the tests most likely to do the job of eliminating tubes which will not function properly in all known circuits.
  - D. It is obvious that a tube tester which combines tests for all characteristics into one quality test will occasionally miss when, for instance, one characteristic is abnormally low and one abnormally high. There is the possibility of exact compensation here, but it is unlikely. Even if exact compensation should occur, there is some chance that this same compensation will take place in the circuit in which the tube is used, and the tube will work properly. This brings the margin of error down quite low. On the other hand, a tester which tests for only one main characteristic will ignore to a considerable extent other important characteristics which may be vital to proper operation of the tube. Thus it appears that the use, as references, of standard production tubes

## SYLVANIA TUBE TESTER TYPE 620

known to be good in all respects, is more reliable than depending on one characteristic only, no matter how important that characteristic may be.

### MAINTENANCE

#### 1. Line and Shorts Test Adjustment.

A. After several months' use of the tube tester, it is advisable to re-set the line and shorts circuit to compensate for 6C4 aging and possible small shift in resistor values. The tester may be sent to the nearest Sylvania Service Station, or if an accurately measured and controlled AC source is available, the serviceman can make this adjustment according to the following procedure:

1. Remove the entire tester from the cabinet. Set the LINE switch to position 4 (do not count the OFF position).
2. Set the AC supply to exactly 117.5 volts.
3. Set R-106 so that the meter needle comes exactly to the center of the scale.  
R-106 is the potentiometer closest to the bottom of the cabinet on the terminal board.
4. With all C and F switches in neutral position, throw the TEST switch to SHORTS TEST position. Adjust R-115 so that the meter on the tester reads about half-way between 130 and full scale.  
R-115 is the potentiometer closest to the panel on the terminal board.
5. Re-check R-106, and readjust slightly for center scale reading, if necessary. (There is some interaction between these two adjustments). Re-seal both potentiometers with lacquer.

#### 2. Resetting The "D" Potentiometer Knob.

Caution: We don't recommend changing the setting of the knob as described below unless it has become loose, but this is a good test if you suspect this has occurred.

We have found that new 7Y4's are so uniform that only a point or so difference can be found in the readings of either plate for several tubes. Making use of this fact you can, therefore, reset your D potentiometer as follows:

1. Set line adjustment until the meter reads to the center of the meter scale as usual.
2. Tighten the D knob temporarily so that it is approximately at zero when the potentiometer is turned as far as possible counterclockwise.
3. Set the controls, including D potentiometer, for a type 7Y4.
4. Insert a new or slightly used 7Y4 and after warming up for one minute, test each side in turn.
5. Adjust the setting of the D potentiometer to get a reading of 100 average on both plates.
6. Loosen the set screw on the knob and reset it so the dial reading is 11 when the arm is in the position giving the 100 average reading in Step 5.
7. Repeat Steps 5 and 6 on several new tubes if possible to get a better average. Ignore the readings of any one tube that is distinctly different from the rest of the lot.

#### 3. General.

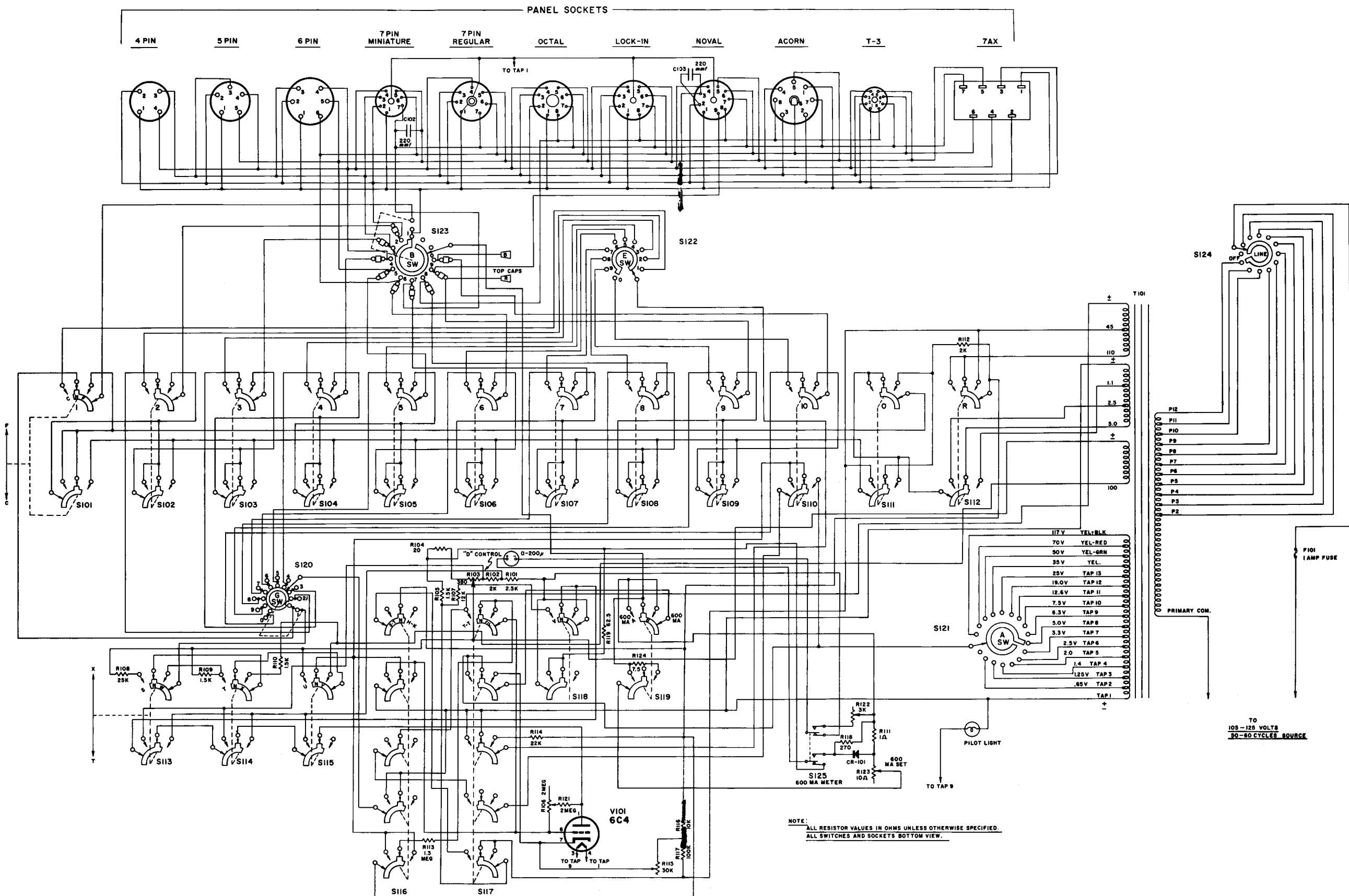
After months of continual use it may be necessary to replace sockets or switches. If these are not available in the shop, they may be obtained from your nearest Sylvania Service Station.

# **SYLVANIA TUBE TESTER TYPE 620**

## **PARTS LIST**

<u>Symbol</u>	<u>Description</u>	<u>Rating</u>	<u>Tol.</u>	<u>Part No.</u>
<b>CAPACITORS</b>				
C102	Fixed-Mica	220mmf., 500 v.	±10%	4M-622110-252
C103	Fixed-Mica	220mmf., 500 v.	±10%	4M-622110-252
<b>RESISTORS</b>				
R101	Fixed-Comp.	2.5k., ½ w.	±1%	3C-11927
R102	Fixed-Comp.	2k., ½ w.	±1%	3C-11928
R103	Variable-W.W.	380 ohm., 4 w.	±2%	3R-18330-2
R104	Fixed-Comp.	20 ohm., ½ w.	1%	3C-18164
R105	Fixed-W.W.	1.5k., 20 w.	1%	3W-18200-1
R106	Variable-Comp.	2 meg., ¼ w.	±20%	3V-18274-2
R107	Fixed-Comp.	12k., ½ w.	1%	3C-28513
R108	Fixed-Comp.	25k., ½ w.	1%	3C-25814
R109	Fixed-W.W.	1.5k., 4 w.	±1%	3P-18198-1
R110	Fixed-W.W.	1.5k., 4 w.	±1%	3P-18198-1
R111	Fixed-W.W.	1 ohm., 2 w.	±10%	3W-2536
R112	Fixed-W.W.	2k., 4 w.	±1%	3P-18198-2
R113	Fixed Deposited Metal	1.3 meg., ½ w.	±1%	3M-20248-37
R114	Fixed-Comp.	22k., ½ w.	±10%	3C-422373-1
R115	Variable-Comp.	30k., ¼ w.	±20%	3V-18274-1
R116	Fixed-Comp.	10k., ½ w.	±10%	3C-410373-1
R117	Fixed-Comp.	100k., ½ w.	±10%	3C-410473-1
R118	Fixed-W.W.	270 ohm., 1 w.	±10%	3W-2532
R119	Fixed-Comp.	62.5 ohm., ½ w.	±1%	3C-25720
R121	Fixed-Comp.	2 meg., ½ w.	±5%	3C-420553-1
R122	Variable-W.W.	3k., 1 w.	±10%	3R-13201-5
R123	Variable-W.W.	10 ohm., 25 w.	±10%	3R-26465
R124	Fixed-W.W.	7.5 ohm., 5 w.	±10%	3W-23759-3
<b>OTHER ITEMS</b>				
	Bumper-Rubber			8N-14511
	Cable Assembly-Power			2A-25448-4
	Chart-Tube Tester			8A-25700
	Clip-Tube Contact (black)			7C-11933-1
	Clip-Tube Contact (red)			7C-11933-2
F101	Fuse-Cartridge	1 amp.		2F-24125-1
	Gasket-Rubber			7X-15877
	Gear-Spur			7Z-18076
	Grommet-Rubber (1/8 " I.D., 1/4 " Mtg. Hole)			7G-106
	Grommet-Rubber (5/16 " I.D., 7/16 " Mtg. Hole)			7G-24091-2
	Holder-Fuse			7S-7605
	Jewel-Red			7Z-25983
	Knob-Round (black)			7K-26274
	Knob-Control			7K-25625
	Knob-Lever (black)			7K-12681-1

# SYLVANIA TUBE TESTER TYPE 620



# **SYLVANIA TUBE TESTER TYPE 620**

## **PARTS LIST (Contd.)**

<u>Symbol</u>	<u>Description</u>	<u>Rating</u>	<u>Tol.</u>	<u>Part No.</u>
	Knob-Lever (red)			7K-12681-2
	Knob-Round (black)			7K-26386
	Lamp-Incandescent	6-8 volts		6T-26290
M101	Meter-Microammeter	200 $\mu$ a.		6M-25484
	Panel-Etched			8M-25501
CR101	Rectifier-Metallic			5Y-25918
	Ring-Retainer (large)			7Z-15752
	Ring-Retainer (for Pc. 7S-18156)			7Z-18373
	Ring-Retainer (small)			7Z-15751
	Ring-Retainer (for Pc. 7S-11940)			7Z-18441
	Ring-Retainer (for Pc. 7S-18171)			7Z-26095
	Roller-Chart			8N-18074-1
	Holder-Lamp			7S-25984
	Socket-Acorn			7S-11884-1
	Socket-Sub-Miniature (Type 7AX)			7S-18156-1
	Socket-Sub-Miniature (T-3)			7S-18171-1
	Socket-7 Pin Miniature			7S-11940-1
	Socket-Noval			7S-17571-1
	Socket-Four Pin			7S-11934-1
	Socket-Five Pin			7S-11935-1
	Socket-Six Pin			7S-11936-1
	Socket-7 Pin Regular			7S-11937-1
	Socket-Octal			7S-18155-1
	Socket-Lock-In			7S-11939-1
	Socket-Miniature (6C4)			7S-26126-1
	Socket-Blank			7S-11942-1
	Staple-Short			9Z-13039
	Strap-Carrying			7H-24953
S101-S115 & S118, S119	Switch-Lever (2 pole, 3 position)			2R-11920-4
S116	Switch-Lever (5 pole, 3 position)			2R-25611
S117	Switch-Lever, Spring Return (5 pole, 3 position)			2R-25610
S120	Switch-Rotary			2R-25609
S121	Switch-Rotary			2R-18137
S122	Switch-Rotary			2R-25847
S123	Switch-Rotary			2R-25849
S124	Switch-Rotary			2R-25615
S125	Switch-Push-Button (DPDT)			2P-26466
T101	Transformer-Power			5P-18126-2
V101	Tube-Electron (Type 6C4)			6R-20710
	Window-Chart			8N-25778



# **SYLVANIA TUBE TESTER TYPE 620**

## **OBSOLETE AND SELDOM ENCOUNTERED SETTINGS FOR TESTING TUBE TYPES ON THE SYLVANIA TYPE 620 TUBE TESTER**

TYPE	A	B	C	D	E	F	G	K
01A	5.0	1	4	75	4	3W	2	3
OY4G	0	1	8	12	8	Y	5	
* OZ4A	-	1	8	11	8	Z	3	
	-	1	8	11	8	Z	5	
1A3	1.4	1	567	42	7	T	2	
1A4P	2.0	1	4R	74	4	0310W	2	
1A6	2.0	1	6	38	6	0510S	2	
	2.0	1	6	49	6	45S	3	
1AB5	1.25	1	78	77	8	036W	2	
1AC5	1.25	4	5	35	5	28RT	7	
1AD5	1.25	4	5R	23	5	28T	7	
1B4P (951)	2.0	1	4R	85	4	0310U	2	
1B5/25S	2.0	1	6	49	6	5S	2	
	2.0	1	6	52	6	S	3	
	2.0	1	6	52	6	S	4	
1B7GT	1.4	2	7	68	7	0410RT	3	
	1.4	2	7	48	7	045RT	6	
1C6	2.0	1	6	37	6	0510S	2	
	2.0	1	6	16	6	45T	3	
1C7G	2.0	2	7R	17	7	0410T	3	
	2.0	2	7R	20	7	045T	6	
1C8	1.25	4	15	28	5	2RT	7	
	1.25	4	15	69	5	078RT	6	
1D5GP	2.0	2	7R	72	7	0410U	3	
1D7G	2.0	2	7	47	7	045S	6	
	2.0	2	7	38	7	0410S	3	
1D8 (GT)	1.4	2	7R	42	7	045W	3	
	1.4	2	7	30	7	9T	6	
	1.4	2	7	61	7	S	8	
1E5 (GTG)	2.0	2	7R	38	7	0410S	3	
1E7GT	2.0	2	7R	62	7	58X	6	
1E8	1.25	4	15	70	5	078RT	6	
	1.25	4	15	31	5	2RT	7	
1F4	2.0	1	5	45	5	34U	2	
1F5G	2.0	2	7	44	7	045W	3	
1F6	2.0	1	6R	18	6	0310T	2	
	2.0	1	6	48	6	S	4	
	2.0	1	6	55	6	S	5	
1G5G	2.0	2	7R	37	7	045W	3	

\* CATHODE CONNECTED TO HEATER MUST SHOW H-K SHORT

**SYLVANIA TUBE TESTER TYPE 620**

TYPE	A	B	C	D	E	F	G	K
1H4G	2.0	2	7R	74	7	5U	3	
1H6(G)(GT)	2.0	2	7	55	7	6S	3	
	2.0	2	7	40	7	S	4	
	2.0	2	7	40	7	S	5	
1J6(G)(GT)	2.0	2	7	49	7	4X	3	
	2.0	2	7	49	7	5X	6	
1N6(G)(GT)	1.4	2	7R	56	7	045X	3	
	1.4	2	7	48	7	S	6	
1Q6	1.25	4	15R	41	5	28S	7	
	1.25	4	15	43	5	S	6	
1R4/1294	1.4	1	82	39	8	S	4	7
1S6	1.25	4	5R	25	5	38T	1	
	1.25	4	5	46	5	S	6	
1T6	1.25	5	4R	43	4	38S	1	
	1.25	5	4	40	4	S	6	
1V	6.3	1	4	11	4	Y	2	3
1V5	1.25	4	5	35	5	28RT	7	
1W4	1.4	1	7R	44	7	036X	2	
2A3	2.5	1	4	17	4	3Y	2	
2A4G	2.5	2	7	11	7	5Y	3	
2A5	2.5	1	6	43	6	034Y	2	5
2A6	2.5	1	6R	47	6	9S	2	5
	2.5	1	6	40	6	S	3	5
	2.5	1	6	40	6	S	4	5
2A7	2.5	1	7	80	7	03910U	2	6
	2.5	1	7	23	7	5T	4	6
2B7(S)	2.5	1	7	54	7	03910X	2	6
	2.5	1	7	42	7	S	4	6
	2.5	1	7	42	7	S	5	6
2C4	2.5	1	7	25	7	3W	5	4
2D21	6.3	3	45	10	4	17Y	6	2
	6.3	3	47	10	4	15Y	6	2
2E5	2.5	1	6	39	6	34S	2	5
2V3G	2.5	2	7	19	7	T	0	
2Z2/G84	2.5	1	4	14	4	Y	2	
3A5	2.5	1	47	62	7	3W	2	
	2.5	1	47	62	7	5W	6	
3A8GT	2.5	2	17R	59	7	0410S	3	
	2.5	2	17	42	7	5T	6	
	2.5	2	17	45	7	S	8	
3B7	2.5	1	48R	23	8	3T	2	
	2.5	1	48R	17	8	6T	7	
3D6	2.5	1	78R	31	8	036W	2	
3E6	2.5	1	58	67	8	036U	2	
4A6G	3.3	2	78	80	7	4X	3	
	3.3	2	78	62	7	5X	6	

# **SYLVANIA TUBE TESTER TYPE 620**

TYPE	A	B	C	D	E	F	G	K
5AX4GT	5.0	2	8	14	8	Y	4	
	5.0	2	8	14	8	Y	6	
5T4	5.0	2	8	12	8	Y	4	
	5.0	2	8	12	8	Y	6	
5Z4	5.0	2	8	11	8	Y	4	8*
	5.0	2	8	11	8	Y	6	8*
6A3	6.3	1	4	16	4	3Y	2	
6A5G	6.3	2	78	18	7	5Y	3	8*
6A6	6.3	1	7	40	7	3X	2	4
	6.3	1	7	40	7	5X	6	4
6A7(S)	6.3	1	7	71	7	0310U	2	6
	6.3	1	7	19	7	5T	4	6
6AB5/6N5	6.3	1	6	48	6	34S	2	5
6AB7/1853	6.3	2	7	22	7	46X	8	5
6AD6(G)	6.3	2	7	10	7	03X	5	8
	6.3	2	7	10	7	04X	5	8
6AD7G	6.3	2	7	65	7	1X	6	8
	6.3	2	7	20	7	045X	3	8
6AE5	6.3	2	7R	35	7	5W	3	8
6AF6G	6.3	2	7	10	7	34X	5	8
6AH5G	6.3	2	7	15	7	016Y	4	8
6AN6	6.3	1	7	37	7	S	2	6
	6.3	1	7	37	7	S	3	6
	6.3	1	7	37	7	S	4	6
	6.3	1	7	37	7	S	5	6
6AQ7GT	6.3	7	28	64	8	4X	5	6
	6.3	7	68	39	8	S	3	2
	6.3	7	68	39	8	S	1	2
6AS7G	6.3	7	68	11	8	1Y	2	3
	6.3	7	38	11	8	4Y	5	6
6B5	6.3	1	6	55	6	4X	3	5
	6.3	1	6	85	6	4X	2	5
6B6G	6.3	2	7	37	7	10S	3	8
	6.3	2	7	39	7	S	4	8
	6.3	2	7	39	7	S	5	8
6B7S	6.3	1	7	58	7	0310W	2	6
	6.3	1	7	39	7	S	4	6
	6.3	1	7	39	7	S	5	6
6B8(G)	6.3	2	7	49	7	0610X	3	8
	6.3	2	7	40	7	S	4	8
	6.3	2	7	40	7	S	5	8
6BA7	6.3	4	5	7	5	017T	9	3
	6.3	4	5R	31	5	2W	1	3
6BK6	6.3	3	4R	20	4	1T	7	2
	6.3	3	4	39	4	S	6	2
	6.3	3	4	39	4	S	5	2
6C6	6.3	1	6R	67	6	010U	2	5
6C8G	6.3	2	78R	67	7	10X	3	4
	6.3	2	47R	67	7	5X	6	8

# **SYLVANIA TUBE TESTER TYPE 620**

TYPE	A	B	C	D	E	F	G	K
6D6	6.3	1	6R	38	6	0310X	2	5
6D7	6.3	1	7R	71	7	0310W	2	6
6D8G	6.3	2	7	73	7	0410U	3	8
	6.3	2	7	62	7	5S	6	8
6E7	6.3	1	7	29	7	0310X	2	6
6F7(S)	6.3	1	7	57	7	0310W	2	6
	6.3	1	7	60	7	5X	4	6
6F8(G)	6.3	2	78	36	7	10U	3	4
	6.3	2	47	36	7	5U	6	8
6J4	6.3	3	456	23	4	1W	7	2
6K4(A)	6.3	3	4	24	4	2W	1	5
6L5G	6.3	2	7R	38	7	5X	3	8
6N6G	6.3	2	7	16	7	5T	3	8
	6.3	2	7	13	7	5T	4	8
6P5(GT/G)	6.3	2	7	42	7	5W	3	8
6P7G	6.3	2	3	58	3	0510X	4	8
	6.3	2	3	73	3	7X	6	8
6SB7Y	6.3	2	7R	60	7	048W	3	6
	6.3	2	7	43	7	5RY	4	6
6SD7(GT)	6.3	2	7R	47	7	46W	8	5
6SR7(GT)	6.3	7	8	36	8	2X	6	3
	6.3	7	8	40	8	S	4	3
	6.3	7	8	40	8	S	5	3
6ST7(GTY)	6.3	7	8	32	8	2X	6	3
	6.3	7	8	40	8	S	4	3
	6.3	7	8	40	8	S	5	3
6SV7	6.3	7	8	30	8	24X	6	3
	6.3	7	8	36	8	S	5	3
6T7G(6Q6G)	6.3	2	7	37	7	10S	3	8
	6.3	2	7	43	7	S	4	8
	6.3	2	7	43	7	S	5	8
6U6GT	6.3	2	7R	10	7	045X	3	8
6V7/G	6.3	2	7	30	7	10X	3	8
	6.3	2	7	40	7	S	4	8
	6.3	2	7	40	7	S	5	8
6W5(G)	6.3	2	7	12	7	Y	3	8
	6.3	2	7	12	7	Y	5	8
6W7(G)	6.3	2	7R	74	7	0410X	3	8
6Y7(G)	6.3	2	7	54	7	4X	3	8
	6.3	2	7	54	7	5X	6	8
6Z5(12Z5)	12.6	2	16	10	6	Y	3	4
	12.6	2	16	10	6	Y	5	4
6Z7(G)	6.3	2	7	68	7	4U	3	8
	6.3	2	7	68	7	5U	6	8
6ZY5G	6.3	2	7	12	7	Y	3	8
	6.3	2	7	12	7	Y	5	8
7AJ7	6.3	1	8R	55	8	036W	2	7

# **SYLVANIA TUBE TESTER TYPE 620**

TYPE	A	B	C	D	E	F	G	K
7B5	6.3	1	8	43	8	036Y	2	7
7B6	6.3	1	48R	49	8	3S	2	7
	6.3	1	48	41	8	S	5	7
	6.3	1	48	41	8	S	6	7
7B8	6.3	1	8	68	8	056U	2	7
	6.3	1	8	44	8	4S	3	7
7C4/1203A	6.3	1	28	36	8	S	4	7
7C5	6.3	1	8	14	8	036X	2	7
7E5(1201)	6.3	2	5678R	55	8	1Y	3	4
	6.3	2	1348R	55	8	5Y	7	6
7G8(1206)	6.3	1	8R	40	8	034X	2	6
	6.3	1	8R	40	8	035X	7	6
10(Y)	7.5	1	4	54	4	3Y	2	
12A	5.0	1	4R	60	4	3W	2	
12A6(GT)	12.6	2	7	24	7	045W	3	8
12A7	12.6	1	47	48	7	0310S	2	6
	12.6	1	67	36	7	S	5	4
12AH7(GT)	12.6	7	48	31	8	1X	3	2
	12.6	7	28	31	8	5X	6	4
12C8	12.6	2	7	43	7	0610X	3	8
	12.6	2	7	41	7	S	4	8
	12.6	2	7	41	7	S	5	8
12F5(GT)	12.6	2	7	36	7	10S	4	8
12L8	12.6	6	7	40	7	15W	8	2
	12.6	6	7	40	7	35W	4	2
12S8(GT)	12.6	7	58	38	8	10S	6	2
	12.6	7	58	39	8	S	4	2
	12.6	7	58	39	8	S	3	5
	12.6	7	58	39	8	S	1	2
12SC7	12.6	7	8	14	8	3T	2	6
	12.6	7	8	14	8	4T	5	6
12SF5(GT)	12.6	7	8	36	8	3S	5	2
12Z3/14Z3	12.6	1	4	10	4	Y	2	3
14A4	12.6	1	8R	28	8	6X	2	7
14A5	12.6	1	8	26	8	036W	2	7
14E6	12.6	1	48	43	8	3U	2	7
	12.6	1	48	40	8	S	5	7
	12.6	1	48	40	8	S	6	7
14W7	12.6	1	48R	33	8	036X	2	7
	12.6	1	78R	33	8	036X	2	4
14X7	12.6	1	78	72	8	3X	2	4
	12.6	1	78	35	8	S	5	4
	12.6	1	48	35	8	S	6	7
14Y4	12.6	1	8	12	8	Y	3	7
	12.6	1	8	12	8	Y	6	7
15	2.0	1	5R	14	5	0310T	2	4
18	12.6	1	6	45	6	034Y	2	5

# **SYLVANIA TUBE TESTER TYPE 620**

TYPE	A	B	C	D	E	F	G	K
19	2.0 2.0	1 1	6 6	51 55	6 6	3X 4X	2 5	
19C8	19.0 19.0 19.0 19.0	4 4 4 4	35 35 35 75	72 35 35 35	5 5 5 5	8U S S S	9 6 1 2	7 7 7 3
20	3.3	1	4	49	4	3U	2	
22	3.3	1	4R	60	4	0310X	2	
24A(S)	2.5	1	5R	54	5	0310X	2	4
25A7(GT/G)	25.0 25.0	2 2	17 78	13 9	7 7	045X X	3 6	8 1
25AC5(GT)	25.0	2	7	50	7	5X	3	8
25B8(GT)	25.0 25.0	2 2	67R 17R	39 37	7 7	0410W 8S	3 5	1 6
25C6(G)	25.0	2	7R	10	7	045Y	3	8
25Y5	25.0 25.0	1 1	46 36	11 11	6 6	Y Y	2 5	3 4
26	1.4	1	4	52	4	3U	2	
26A6	25.0	3	4R	24	4	16X	5	7
26A7(GT)	25.0 25.0	6 6	7 7	42 42	7 7	15RY 35RY	8 4	2 2
26C6	25.0 25.0 25.0	3 3 3	4 4 4	30 41 41	4 4 4	1X S S	7 6 5	2 2 2
26D6	25.0 25.0	3 3	4 4	75 26	4 4	067W 1W	5 6	2 2
27(S)	2.5	1	5	47	5	3U	2	4
30	2.0	1	4R	78	4	3U	2	
31	2.0	1	4	23	4	3X	2	
32	2.0	1	4R	22	4	0310T	2	
32L7(GT)	35.0 35.0	2 2	17R 78	18 35	7 7	045Y S	3 6	8 1
33	2.0	1	5	38	5	34Y	2	
34	2.0	1	4R	69	4	0310X	2	
35/51(S)	2.5	1	5	44	5	0310X	2	4
35A5	35.0	1	8	12	8	036Y	2	7
35Z3	35.0	1	8	9	8	Y	2	7
35Z6	35.0 35.0	2 2	78 74	10 10	7 7	Y Y	3 5	4 8
36	6.3	1	5R	63	5	0310X	2	4
37	6.3	1	5R	37	5	3X	2	4
38	6.3	1	5	28	5	0310X	2	4
39/44	6.3	1	5	47	5	0310X	2	4
40	5.0	1	4	57	4	3S	2	

# **SYLVANIA TUBE TESTER TYPE 620**

TYPE	A	B	C	D	E	F	G	K
41	6.3	1	6R	28	6	034W	2	5
42	6.3	1	6	18	6	034X	2	5
43	25.0	1	6	21	6	034Y	2	5
45	2.5	1	4	23	4	3Y	2	
46	2.5	1	5	35	5	34Y	2	
47	2.5	1	5	24	5	34X	2	
49	2.0	1	5	52	5	34W	2	
50	7.5	1	4	29	4	3Y	2	
53	2.5	1	7	44	7	3X	2	4
	2.5	1	7	44	7	5X	6	4
55(S)	2.5	1	6R	34	6	10X	2	5
	2.5	1	6	41	6	S	3	5
	2.5	1	6	41	6	S	4	5
56(S) (AS)	2.5	1	5	53	5	3W	2	4
57(S)	2.5	1	6R	70	6	0310U	2	5
58(S) (AS)	2.5	1	6	27	6	0310X	2	5
59	2.5	1	7	21	7	034X	2	6
71A	5.0	1	4	21	4	3Y	2	
75(S)	6.3	1	6	12	6	10T	2	5
	6.3	1	6	41	6	S	3	5
	6.3	1	6	41	6	S	4	5
76	6.3	1	5	48	5	3W	2	4
77	6.3	1	6	48	6	0310X	2	5
78	6.3	1	6	36	6	0310X	2	5
79	6.3	1	6	57	6	3X	2	4
	6.3	1	6	57	6	10X	5	4
81	7.5	1	4	16	4	Y	2	
84/6Z4	6.3	1	5	12	5	Y	2	4
	6.3	1	5	12	5	Y	3	4
85	6.3	1	6	30	6	10X	2	5
	6.3	1	6	40	6	S	3	5
	6.3	1	6	40	6	S	4	5
85AS	6.3	1	6	63	6	10U	2	5
	6.3	1	6	40	6	S	3	5
	6.3	1	6	40	6	S	4	5
89(Y)	6.3	1	6	40	6	0310Y	2	5
(X)99	3.3	1	4	15	4	3T	2	
117L7/M7GT	117	2	17	17	7	45Y	3	8
	117	2	78	10	7	Y	6	1
117N7GT	117	2	78R	10	7	45X	3	6
	117	2	67	69	7	TV	8	**8
117P7(GT)	117	2	78	16	7	45Y	3	6
	117	2	67	69	7	TV	8	**8
117Z4(GT)	117	2	7	10	7	Y	5	8



# **SYLVANIA TUBE TESTER TYPE 620**

TYPE	A	B	C	D	E	F	G	K
815	12.6 12.6	1 1	568 358	25 26	8 8	24Y 047Y	0 0	(RT. CAP) 3 (LT. CAP) 6
864	1.25	1	4	41	4	3X	2	
950	2.0	1	5	46	5	34W	2	
1229	2.5	1	4	66	4	039RT	2	
1231	6.3	1	8R	30	8	036X	2	7
1273	6.3	1	8R	55	8	036W	2	7
1275	5.0 5.0	1 1	4 4	12 12	4 4	Y Y	2 3	
1276	5.0	1	4	17	4	3Y	2	
1280	12.6	1	8R	45	8	036X	2	7
1612	6.3 6.3	2 2	7 7R	80 39	7 7	045U 10U	3 4	8 8
1626	12.6	2	7	26	7	5Y	3	8
1629	6.3	2	7	52	7	045S	3	8
5679	6.3 6.3	1 1	478 248	25 25	8 8	W W	3 6	2 7
5691	6.3 6.3	7 7	68 38	80 80	8 8	U U	2 5	3 6
5692	6.3 6.3	7 7	68R 38R	33 33	8 8	1X 4X	2 5	3 6
5693	6.3	2	17	34	7	46X	8	5
9001	6.3 6.3	3 3	24R 47R	70 70	4 4	16X 16X	5 5	7 2
9002	6.3 6.3	3 3	124R 457R	54 54	4 4	6U 6U	5 1	7 2
9003	6.3 6.3	3 3	47 24	40 40	4 4	16X 16X	5 5	2 7
9006	6.3 6.3	3 3	457 124	28 28	4 4	W W	1 5	2 7

\* CATHODE CONNECTED TO HEATER MUST SHOW H-K SHORT

## SYLVANIA TUBE TESTER TYPE 620

## Notes

[illegible]

## SYLVANIA TUBE TESTER TYPE 620

## Notes

This image shows a full page of blank, lined paper. It features approximately 28 horizontal black lines spaced evenly across the page, typical of standard notebook paper. The lines are thin and extend from the left edge to the right edge. There is no handwriting or other markings on the page.

## **SYLVANIA TUBE TESTER TYPE 620**

### **AUTHORIZED SYLVANIA SERVICE STATIONS** A Nationwide Service Network For Your Convenience

#### **EAST COAST STATES**

**HOFFMAN ELECTRONICS CORP.**  
253 East 72nd Street  
New York 21, New York  
Attn: Mr. J. Hoffman

**RADIO TELEVISION COMPANY**  
723 Ponce de Leon Avenue, N.E.  
Atlanta, Georgia  
Attn: Mr. G. F. Johnson

**SYLVANIA ELECTRIC PRODUCTS  
INC.**  
1221 West Third Street  
Williamsport, Pennsylvania  
Attn: J. H. Mintzer

#### **CANADA**

**BAYLY ENGINEERING, LTD.**  
5 First Street  
Ajax, Ontario, Canada  
Attn: Mr. B. DeF. Bayly

#### **CENTRAL STATES**

**CHICAGO ELECTRONICS  
LABORATORIES**  
1214 West Madison Ave.  
Chicago 7, Illinois

**MISSOURI ELECTRONICS  
CORPORATION**  
6058 Maple Avenue  
St. Louis 12, Missouri

#### **WEST COAST STATES**

**SERVICE RADIO WHOLESALE**  
1357 Post Street  
San Francisco 9, Calif.  
Attn: Mr. Jerry Shireck

**CROFT ELECTRICAL LABS.**  
821 W. Olympic Blvd.  
Los Angeles 15, Calif.

For service, carefully pack the COMPLETE equipment and ship it to your nearest Sylvania Service Station by PREPAID EXPRESS. Accompany it with a letter describing the trouble and giving the PURCHASE DATE.

## ADDENDA SHEET

Please note that the following items should be added to or changed in the Operating Manual for the Sylvania Tube Tester Type 620.

Page 3; Paragraph 1. D. In addition to the screws on the panel, the two #8-32 screws holding the transformer to the back of the case must be removed before the unit can be lifted out.

Pages 11 and 14. Correct Parts List as follows:

Change Part No. 3C-28513 to 3C-25813. Delete R118.

Change R119 to Variable W. W. 100 ohm, 1 watt, + or -10% 3R-13201-1.

Change R123 tolerance from + or - 10% to +20% -10%

Change Part No. 5Y-25918 to 5Y-25919.

Pages 12 and 13. Change R119 from fixed 62.5 ohm to variable 100 ohm. Delete R118 and replace with half of dual rectifier, which replaces present CR101.

Pages 15 to 22. Correct the "Obsolete and Seldom Encountered Settings" as follows:

Whenever "10" appears in the F column, it should be construed as meaning switch 10 and not switches 1 and 0, and should be underlined: 10

<u>Type</u>	<u>Change</u>
0Z4A	Delete asterisk before type number.
1A3	In F column, change T to S.
1D8(GT)	In F column, change 9T to <u>10</u> T for second test.
1E7GT	In C column, change 7R to 17R. Add second test, "2.0, 2, 17R, 58, 7, 48X, 3".
1W4	In F column, change 036X to 036W.
2A6	In F column, change 9S to <u>10</u> S for first test.
6C6	In F column, change 010U to <u>0310</u> U.
117N7GT and 117P7(GT)	In K column, change double asterisk to single asterisk in second test.
1229	In F column, change 039RT to <u>0310</u> RT.
5691	In F column, change U to 1U for first test; change U to 4U for second test.

SUPPLEMENT TO 620 TUBE TESTER ROLL CHART  
PC25700-B

The model 620 Tube Tester was originally introduced to the market as an instrument capable of a true constant current test to accommodate the new 600 MA series string tube types. Since it's introduction however, several new versions of series string types have made their appearance. The model 620 is fully capable of testing these new types at their rated constant current values.

We are listing a number of new types which we did not have settings for at the time the PC25700-B chart was printed. Among these types are many in the series string 600 MA, 450 MA and 300 MA categories. From past experience in using your model 620, you know that those types having a letter following the filament or "A" switch settings are to be tested as 600 MA according to the procedure outlined in the instruction manual. Of the types listed below, you will note that some have one (1) asterisk following the letter such as the 3AF4A whose "A" settings is 5.0A\*. One asterisk signifies that the type is to be tested at 450 MA constant current. The same procedure used in testing the 600 MA types is followed with one exception; using the "600 MA SET" control the meter pointer should now be set at 47.5 on the upper scale rather than center scale as in the case of the 600 MA test. Those tube types listed below having two (2) asterisks following the "A" switch settings are the 300 MA types. Again the same procedure is followed except that in this case the meter pointer is set to 30 on the upper scale using the "600 MA SET" control.

Most of the tube types listed here have been released recently and could not be put on the latest chart for several reasons.. Mainly, it requires several months from the time a new chart is sent to the printer until a supply is received for distribution.

The settings for approximately fifty new types have been added to the PC25700-B chart and together with this list, more than one hundred new settings have been made available for your convenience.

TYPE	A	B	C	D	E	F	G	K
2B3	2.0	2	78	55	7	S	9	
2BN4	3.3A	3	467	26	4	2W	5	1
	3.3A	3	124	26	4	7W	5	6
3AF4A	5.0A*	3	467	14	4	2U	1	5
	5.0A*	3	124	14	4	6U	7	5
3B2	3.3	2	13567	70	7	S	0	
3BU8	5.0A	4	5R	20	5	027T	9	1
	5.0A	4	5R	23	5	027T	3	1
3DT6	5.0A	3	4R	18	4	16T	5	2
4BC5	5.0A*	3	47R	59	4	16Y	5	2
	5.0A*	3	24R	59	4	16Y	5	7
4BN6	5.0A*	3	4	31	4	25T	7	1
	5.0A*	3	4	22	4	056T	7	1
4BS8	7.5A	4	58	26	5	2W	1	3
	7.5A	4	35	26	5	7W	6	8
4BU8	7.5A*	4	5R	15	5	027T	9	1
	7.5A*	4	5R	17	5	027T	3	1
4CB6	5.0A*	3	4R	34	4	16X	5	2
5BT8	6.3A	4	35	75	5	078RX	6	9
	6.3A	4	59	37	5	S	1	3
	6.3A	4	59	37	5	S	2	3
5CG8	6.3A	4	35R	50	5	079U	6	8
	6.3A	4	58R	46	5	1W	2	3
5CL8	6.3A	4	35R	27	5	079U	6	8
	6.3A	4	58	25	5	1W	2	3
5CM8	6.3A	4	58R	69	5	27Y	6	3
	6.3A	4	35	36	5	9S	1	8
5V3	5.0	2	8	12	8	Y	4	
	5.0	2	8	12	8	Y	6	
6AT8	6.3	4	5R	36	5	079X	6	3
	6.3	4	5R	47	5	1W	2	3
6BK4	6.3	2	34678	46	7	05TZ	0	1
6BL4	6.3	7	8	11	8	Y	5	3
6BN8	7.5A	4	235	30	5	8W	7	9

TYPE	A	B	C	D	E	F	G	K
6BN8	7.5A	4	259	36	5	S	6	3
	7.5A	4	359	36	5	S	1	2
6BS8	6.3	4	58R	31	5	2W	1	3
	6.3	4	35R	31	5	7W	6	8
6CG8	6.3	4	35R	57		079U	6	8
	6.3	4	58R	38	5	1W	2	3
6CL8	6.3	4	35R	25	5	079X	6	8
	6.3	4	58	25	5	1W	2	3
6CU5	6.3	3	45R	11	4	26U	7	1
	6.3	3	24R	11	4	56U	7	1
6CM8	12.6A*	4	58	62	5	27RX	6	3
	12.6A*	4	35	35	5	9S	1	8
6DT6	6.3	3	4R	45	4	16S	5	2
8AU8	12.6B*	4	15	69	5	78RX	9	6
	12.6B*	4	56	53	5	2RX	3	1
8AW8A	12.6B*	4	15	50	5	78RX	9	6
	12.6B*	4	56	38	5	2S	3	1
8BA8A	12.6A*	4	56R	43	5	2W	3	1
	12.6A*	4	15R	15	5	78X	9	6
8BH8	12.6B*	4	15R	45	5	78W	9	6
	12.6B*	4	56	25	5	2W	3	1
8BN8	12.6B*	4	235	30	5	8W	7	9
	12.6B*	4	259	35	5	S	6	3
	12.6B*	4	359	35	5	S	1	2
8CG7	12.6B*	4	35	22	5	7X	6	8
	12.6B*	4	58	22	5	2X	1	3
8CM7	12.6A*	4	59R	29	5	7X	6	3
	12.6A*	4	35R	39	5	8W	1	9
8CS7	12.6A*	4	58	20	5	3Y	1	9
	12.6A*	4	59	48	5	7Y	6	8
9CL8	12.6A**	4	35R	25	5	079X	6	8
	12.6A**	4	58	25	5	1W	2	3
9U8A	12.6A**	4	58R	60	5	23Y	6	7
	12.6A**	4	57R	18	5	9X	1	8

TYPE	A	B	C	D	E	F	G	K
12AC6	12.6	3	4	32	4	16W	5	7
12AD6	12.6	3	4	35	4	167S	5	2
	12.6	3	4	34	4	1S	6	2
12AD7	12.6	4	589	37	5	2S	1	3
	12.6	4	359	37	5	7S	6	8
	6.3	4	589	37	9	2S	1	3
12AE6	12.6	3	4	62	4	1W	7	2
	12.6	3	4	41	4	S	5	2
	12.6	3	4	41	4	S	6	2
12AF6	12.6	3	4	34	4	16W	5	7
12CU5	12.6	3	45R	11	4	26U	7	1
	12.6	3	24R	11	4	56U	7	1
12F8	12.6	4	5	32	5	028W	3	7
	12.6	4	5	40	5	S	1	7
	12.6	4	5	40	5	S	6	7
12J8	12.6	4	57	36	5	13RU	6	2
	12.6	4	25	36	5	S	8	7
	12.6	4	25	36	5	S	9	7
12R5	12.6A	3	45R	11	4	26U	7	1
	12.6A	3	24R	11	4	56U	7	1
17AV5GA	19.0A*	2	7	12	7	18Y	5	3
17AX4GT	19.0A*	7	8	11	8	Y	5	3
17C5	19.0B*	3	45	11	4	26U	7	1
	19.0B*	3	24	11	4	56U	7	1
17D06	19.0B*	2	7	28	7	045RY	0	8
25C5	25	3	45	13	4	26Y	7	1
	25	3	24	13	4	56Y	7	1
25F5	25	3	45R	11	4	26U	7	1
	25	3	24R	11	4	56U	7	1
26Z5W	25	4	359	15	5	RX	6	8
	25	4	589	15	5	RX	1	3
5963	12.6	4	589R	53	5	2W	1	3
	12.6	4	359A	53	5	7W	6	8

## *Warranty*

Sylvania Electric Products Inc., warrants each new Tube Tester manufactured by it to be free from defective material and workmanship and agrees to remedy any such defect or to furnish a new part in exchange for any part of any unit of its manufacture which under normal installation, use and service discloses any defect, provided the unit is delivered by the owner to a Sylvania Authorized Service Station or to our authorized wholesaler from whom purchased, intact, for our examination, with all transportation prepaid, within 90 days from the date of the sale to original purchaser and provided examination discloses in our judgment that it is thus defective.

This warranty does not extend to any Tube Tester which has been subjected to misuse, neglect, accident, incorrect wiring not our own, improper installation or to use in violation of instructions furnished by us, nor to units which have been repaired or altered outside of our factory, nor to cases where the serial number thereof has been removed, defaced or changed, nor to accessories used therewith not of our own manufacture.

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 warranty liability.

This warranty is void unless warranty card included with instrument is filled out completely and mailed upon initial sale of the instrument by the distributor.

This warranty applies only in the United States and its possessions and the Dominion of Canada where Sylvania maintains service establishments. In other countries, write to the International Sales Division, Sylvania Electric Products Inc., 1740 Broadway, New York 19, New York, or the local Sylvania Representative in your country.

### **SYLVANIA ELECTRIC PRODUCTS INC.**

**RADIO & TELEVISION DIVISION**

**1221 W. THIRD STREET**

**WILLIAMSPORT, PA.**

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