

Victor Model 7-25

VICTOR RADIOLA 17 (As Used in Model 7-25)

The Radiola used in combination with the Orthophonic Victrola in the Model 7-25 is a six tube tuned radio frequency receiver of the antenna type, employing three stages of radio frequency amplification, a detector, and two stages of audio frequency amplification. The UX-171-A power tube is used in the last stage of audio amplification; the UX-226 tubes in all the other amplifier stages; and the UY-227 in the detector.

A snap switch controlling the 110 volt input power to the socket power unit is mounted on the front of the Radiola panel. When removing the radio set from the cabinet, it is first necessary to remove this switch which is held to the escutcheon with a small ring. The switch can be readily removed by unscrewing the ring.

A two position switch in the primary circuit of the power transformer in the socket power unit serves to compensate for high and low voltage in the power supply. The switch should be placed in the 120 volt position when the power line voltage is above 115 volts and in the 110 volt position when the voltage is 115 or lower.

When servicing the installation, make the preliminary tests described in subjects 1, 2, 3, and 4, below before assuming that the trouble lies in the set. In making these tests a period of approximately 45 seconds must elapse each time the power switch is turned on. This interval is required for the Radiotron UY-227 to heat properly.

1. RADIOTRON TESTS—In making the Radiotron tests, and the radio set tests described later, the

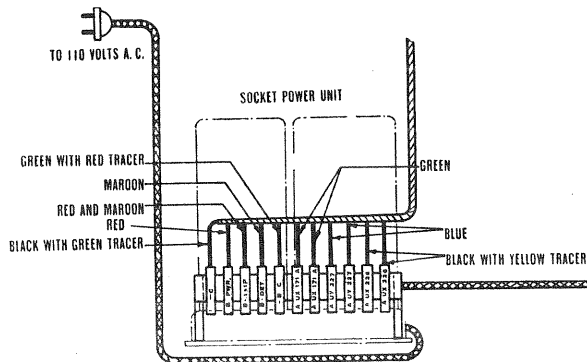


Fig. 1

use of a Weston Radio Set Tester Type 519 is recommended. The radio set tests, however, can be made with a high resistance voltmeter of reliable manufacture such as the Weston Model No. 489. All voltage readings listed in this bulletin were made with a Weston Radio Set Tester, Type 519, having a 0-8, 0-200 volt scale (high resistance type) with a line voltage of 110 volts; with the voltage switch of the socket power unit in the 110 volt position, and with all tubes in place. Readings will vary according to the meter used, the line voltage, and the condition of the tubes. Readings with the 0-150 volt meter will be lower than those listed because of the lower meter resistance.

The tests for the Amplifier Radiotrons should be made in accordance with the instructions furnished with the Radio Set Tester. Do not attempt to make a filament voltage setting. A special adaptor will be made available by the Weston Electrical Instrument Co. for use in connection with the Weston Radio Set Tester for testing the UY-227 Radiotrons.

Any Radiotrons which have been found to be defective in these tests, should be replaced.

If the Weston Radio Set Tester is not available, each Radiotron should be replaced successively with a new one of the proper type, so that the poor ones can be located and permanently replaced.

2. INTERCHANGING RADIOTRONS—Changing the Radiotrons UX-226 in their respective sockets will often improve reception. *Never place the UX-171-A Radiotron in any socket but the one to the extreme left. Never place a UX-226 Radiotron in the UX-171-A socket as the higher filament voltage would burn out the UX-226 Radiotron.*

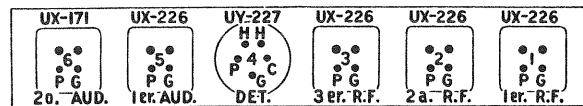


FIG. 2. TOP FRONT VIEW OF RADIO TUBE SOCKETS.

3. CABLE TESTS—Examine the cable terminals at the socket power unit terminal strip and on the radio set. Be sure that all of these terminals are making proper contact and are properly spaced.

4. TESTING SOCKET POWER UNIT—Using the high range voltmeter binding posts of the Set Tester or the high range scale of the separate voltmeter.

- Test between the -B+C terminal and B+ Det. and B+ Ampl. terminals (See Fig. 1).
- Test between either of the A UX-171-A terminals and B+ Pwr. for the UX-171-A plate voltage. The following are the approximate readings which should be obtained:

B+ Det.	50 Volts
B+ Ampl.	155 "
B+ Pwr.	160 "

- A lack of voltage at any of these points may be caused by:
 - Broken wires or connections.
 - Open resistor unit, No. 34, Fig. 6.
 - Shorted condenser unit, No. 26, Fig. 5.
 - Open choke, No. 25, Fig. 5.
 - Burnt out UX-280 filament.
- If the readings vary radically from those given above, the Radiotron UX-280 should be replaced.
- If the filaments in the radio set fail to light, refer to Fig. 1 and check the various filament terminals of the socket power unit in the following manner:

- Remove the pilot lamp from its socket.
- Make temporary connections to the two terminals of the lamp with two wires about one foot long.
- Test the filament power supply by touching the pair of wires across each separate pair of filament terminals on the power unit terminal strip; that is, across the two UX-171-A terminals, the two UX-226 terminals, and the two UY-227 terminals.

NOTE:—The UX-226 and UY-227 will not illuminate the lamp as brightly as the UX-171-A.

5. TESTING RADIOLA PANEL.—If the trouble has not been located in the socket power unit or in the tubes, make the following tests to localize the trouble in the set itself.

- a. FILAMENT TESTS—Assuming that filament voltage is present at the socket power unit terminal strip, trouble in the filament circuit of the radio set can be traced to:
- (1) Broken wire in cable.
 - (2) Poor or shorted contact on radio terminal strip.
 - (3) Broken filament leads from radio terminal strip to socket contacts.
 - (4) Poor socket contacts.
- b. GRID TESTS.—Snap the power switch to the "on" position. Using the "C" position of the Weston Radio Set Tester, or the high scale of the separate voltmeter, test the "C" voltage in all sockets except the detector.

The following "C" voltage readings were made at a line voltage of 110 volts, with the voltage switch of the socket power unit in the 110 volt position and with all tubes in place. These readings will vary with different tubes, different meters, and different line voltages.

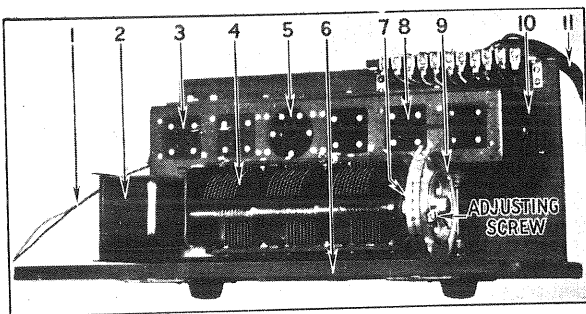


Fig. 3

Normal	Faulty	Fault
G1 10 volts	0	Open volume control, poor contact, or broken wire.
G2 10 "	0	Open grid resistor 12, Fig. 4. Open 1st R. F. transformer secondary, or broken wire.
G3 10 "	0	Open grid resistor 13, Fig. 4. Open 2nd R. F. transformer secondary, or broken wire.
G5 10 "	0	Open 1st audio transformer secondary, or broken wire.
G6 28 "	0	Open 2nd audio transformer secondary, or broken wire.

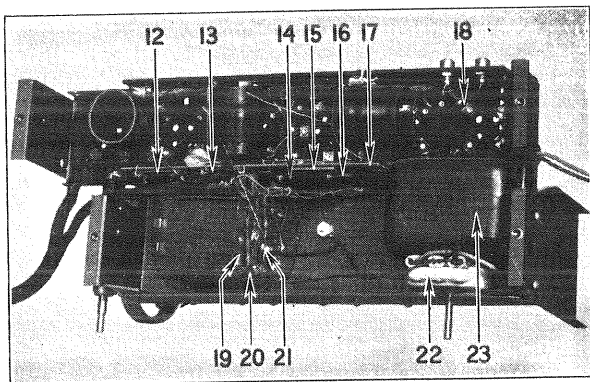


Fig. 4

c. PLATE TESTS WITH WESTON RADIO SET TESTER—Using the "B" scale of the Set Tester, test the plate voltages in the various sockets with the tubes in place. These readings will also vary with different tubes, and different line voltages.

Normal	Faulty	Fault
P1 155 volts	0	Open primary of 1st R. F. transformer or broken wire.
P2 155 "	0	Open primary of 2nd R. F. transformer or broken wire.
P3 155 "	0	Open primary of 3rd R. F. transformer or broken wire.
P4 150 "	0	Open primary of 1st audio transformer or broken wire.
P5 150 "	0	Open primary of 2nd audio transformer or broken wire.
P6 145 "	0	Open primary of output transformer or broken wire.

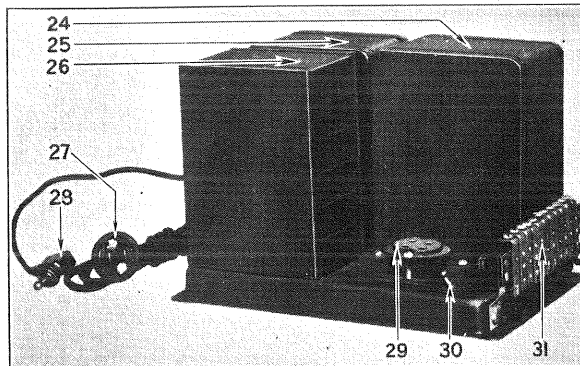


Fig. 5

PLATE TESTS WITH SEPARATE VOLTMETER—When using the separate voltmeter for the plate tests, the low voltage scale of the meter should be connected in series with a 4½ volt "C" battery.

- (1) Snap the power switch to the "off" position.
- (2) Test between either filament contact of socket No. 1 and the plate "P" contact. (See Fig. 2).
- (3) Make the same tests for all the other amplifier sockets.
- (4) When testing the detector socket, place the leads in the "C" and the "P" contacts.
- (5) Assuming that voltage was present at the radio terminal strip, a lack of voltage in the sockets can be traced to:

Socket	Fault
1	Open primary 1st R. F. transformer or broken wire.
2	Open primary 2nd R. F. transformer or broken wire.
3	Open primary 3rd R. F. transformer or broken wire.
4	Open primary 1st A. F. transformer or broken wire.
5	Open primary 2nd A. F. transformer or broken wire.
6	Open primary output transformer or broken wire.

NOTE:—A shorted condenser, either 19 or 20, Fig. 4, will cause a lack of plate voltage.

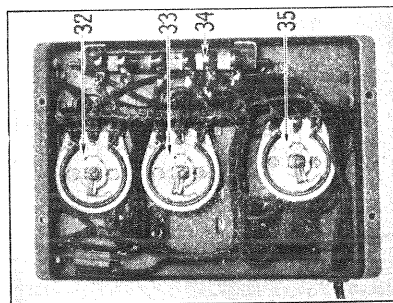


Fig. 6

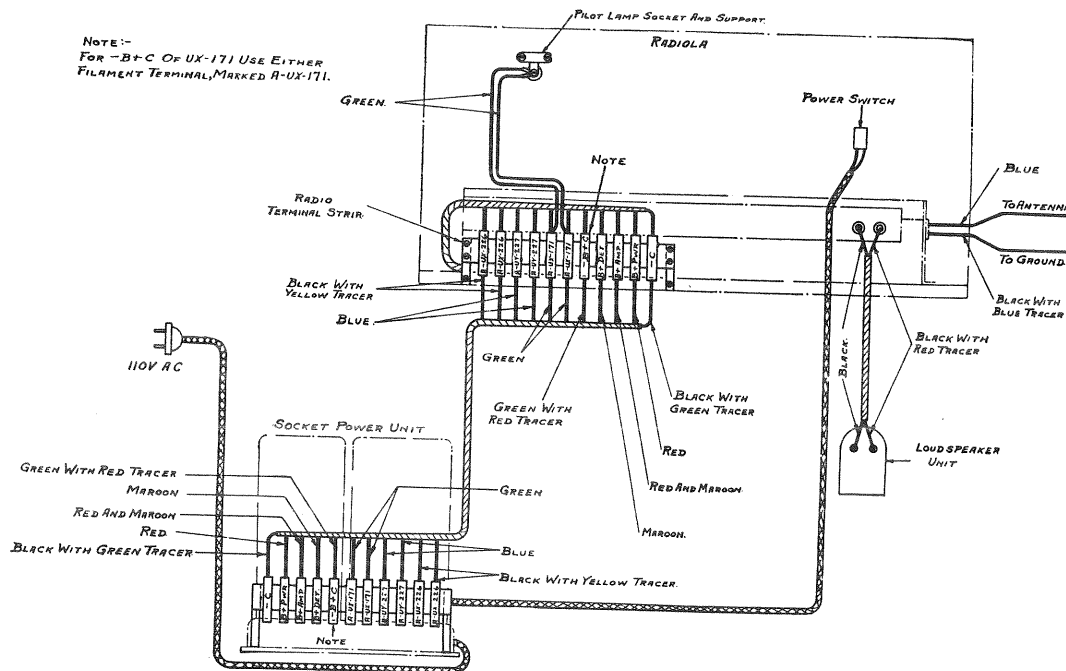
6. **CONDENSER TESTS**—If the trouble has not yet been located, connect a 4½ volt "C" battery in series with the low voltage binding posts of the Radio Set Tester or the separate voltmeter, and proceed as follows:

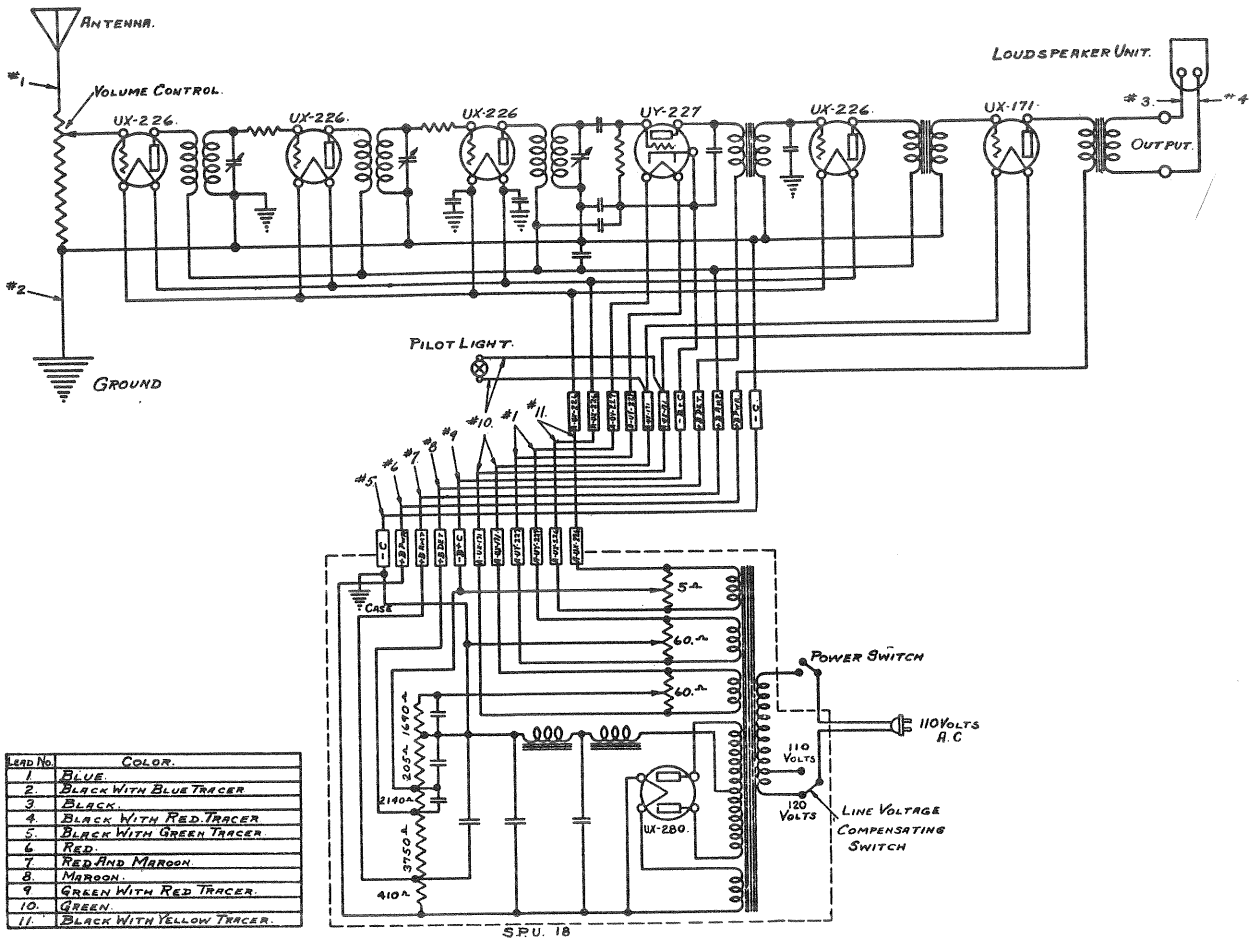
- a. Disconnect the cable from the socket power unit terminal strip.
- b. Test between the stator (stationary) plates and rotor (rotating) plates of each tuning condenser. No deflection of the meter will indicate that there is a broken or loose connection between the condensers and their respective coils or open circuits in the coils themselves.
- c. Check all condensers to see that the rotor plates do not touch the stator plates as the Station Selector is being turned.
- d. Re-connect the cable to the socket power unit.

GENERAL

1. **ADJUSTMENT OF CONDENSER DRIVE CABLE**—Any slack in the condenser drive cable can be taken up by tightening the adjusting screw shown in Fig. 3.

2. **LOOSE VOLUME CONTROL CONTACT**—A loose volume control contact may often be a cause of noisy reception or no reception. If such a condition is found, the contact arm should be bent until it makes a firm contact against the resistance strip.





Wiring Diagram for Victor Radiola 17
(As Used in Model 7-25)