

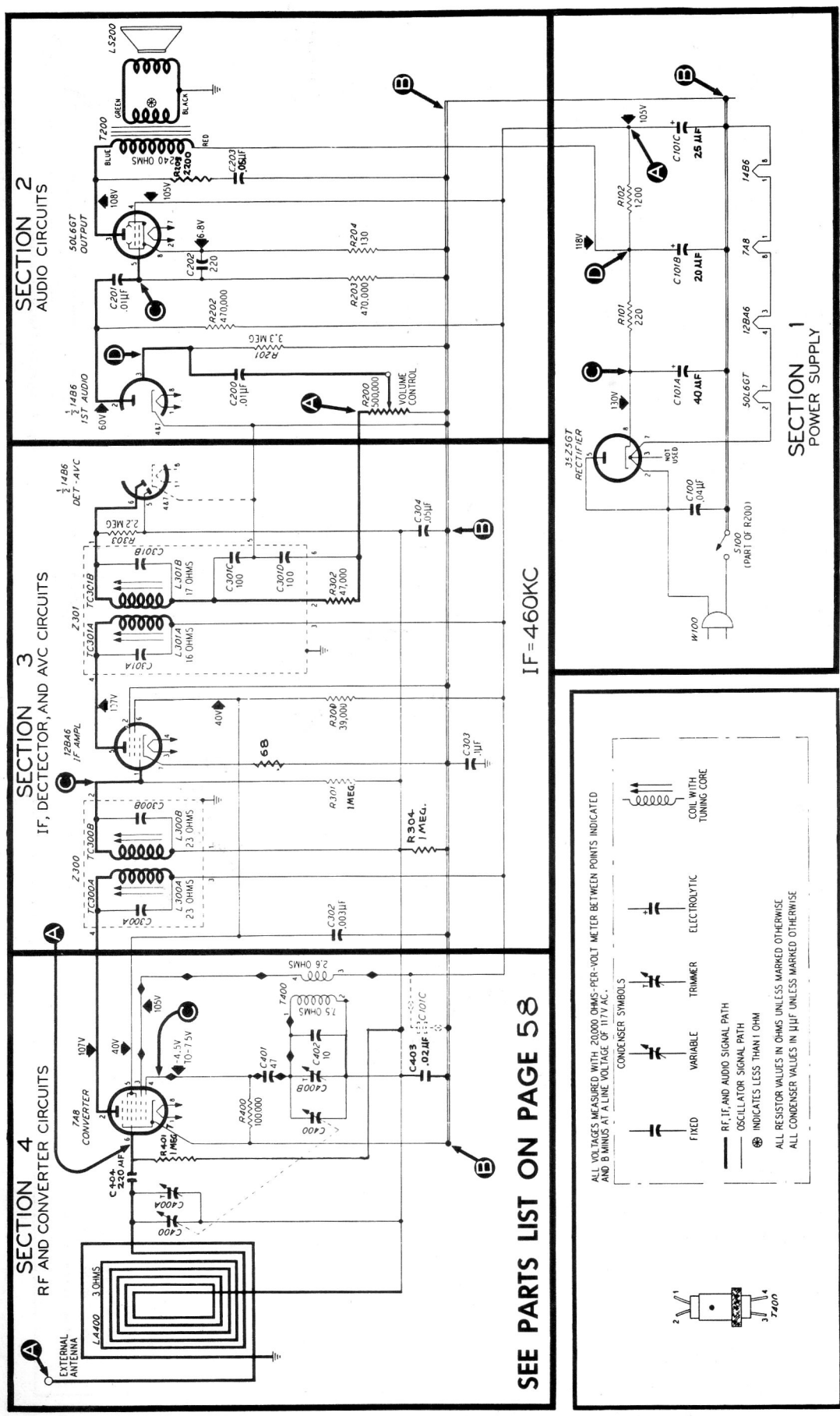


Figure 5. Philco Radio Models 83, 83-1, and 84, Sectionalized Schematic Diagram, Showing Test Points

Circuit Description

Philco Models 83, 83-1 and 84 are 5-tube, table-model superheterodyne radios, providing reception in the standard and broadcast band. These three models are identical except for the cabinets, certain cabinet parts and pilot lamp as indicated in the Replacement Parts List.

The high-impedance loop aerial normally provides adequate signal pickup. An external aerial may be connected, if desired, by attaching the lead to lug No. 4 (shown in figure 6) on the rear of the chassis. Do not use a ground.

The converter employs a 7A8 tube. Variable-condenser tuning is used; the rotor plates of the oscillator section are

Preliminary Checks

To avoid possible damage to the radio, the following preliminary checks should be made before it is turned on:

1. Inspect both the top and the bottom of the chassis. Make sure all tubes are in their proper sockets and look for any broken or shorted components, burned resistors, or other obvious indications of trouble.
2. Measure the resistance between B+— (test point C) and B— (test point B). See figure 1. When the ohmmeter test leads are connected in the proper polarity, the highest resistance reading will be obtained. If the reading is lower than 150 ohms, check condensers C101/A, C101/B, C101/C, and C208 for leakage or shorts. The resistance reading given is that of the condensers; the value indicated is a reading of each of the condensers; the value given is the lowest at which the rectifier will operate safely while the voltage checks of Section 1 (power supply) are performed.

ALIGNMENT PROCEDURE

CONTROLS: Turn on the radio, and set the volume control to maximum.

DIAL POINTER: Turn the tuning condenser to the full-mesh position. Set the dial pointer to the index mark, located to the left of "55."

OUTPUT METER: Connect across the voice-coil terminals.

SIGNAL GENERATOR: Connect as indicated in the chart.

OUTPUT LEVEL: During the alignment, adjust the signal-generator output to hold the output-meter indication below 1.25 volts.

STEP	SIGNAL GENERATOR		RADIO		ADJUST
	CONNECTION TO RADIO	DIAL SETTING	DIAL SETTING	SPECIAL INSTRUCTIONS	
1	Ground lead to B-; output lead through .1-uf. condenser to pin 6 of 7A8 tube.	460 kc.	540 kc. (gang fully meshed).	Adjust tuning cores, in order given, for maximum output.	TC301B—2nd i-f sec. TC301A—2nd i-f pri. TC300B—1st i-f sec. TC300A—1st i-f pri.
2	Radiating loop; see note below.	1600 kc.	1600 kc.	Adjust for maximum.	C400B—osc.
3	Same as step 2.	1500 kc.	1500 kc.	Adjust for maximum.	C400A—aerial

NOTE: TC300A AND TC301A ARE LOCATED ON UNDERSIDE OF CHASSIS

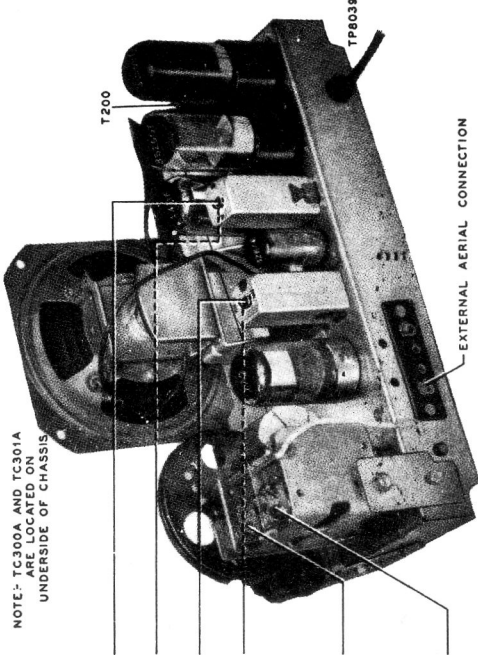


Figure 6. Top View, Showing Trimmer Locations

RADIATING LOOP: make up a 6-8 turn, 6-inch-diameter loop from insulated wire; connect to signal-generator leads and place near radio loop aerial.

SYMBOLIZATION

The components in the radio circuit are symbolized according to the types of parts and the sections of the radio in which the parts are located. The prefix letter of the symbol designates the type of part, as follows:

C—condenser
I—pilot lamp
L—choke or coil
LA—loop aerial
LS—loud-speaker

R—resistor
S—switch
T—transformer
W—line cord
Z—electrical assembly

The number of the symbol designates the section in which the part is located, as follows:

- 100-series components are in Section 1—the power supply.
- 200-series components are in Section 2—the audio circuits.
- 300-series components are in Section 3—the i-f amplifier, detector, and a-v-c circuits.
- 400-series components are in Section 4—the r-f and converter circuits.

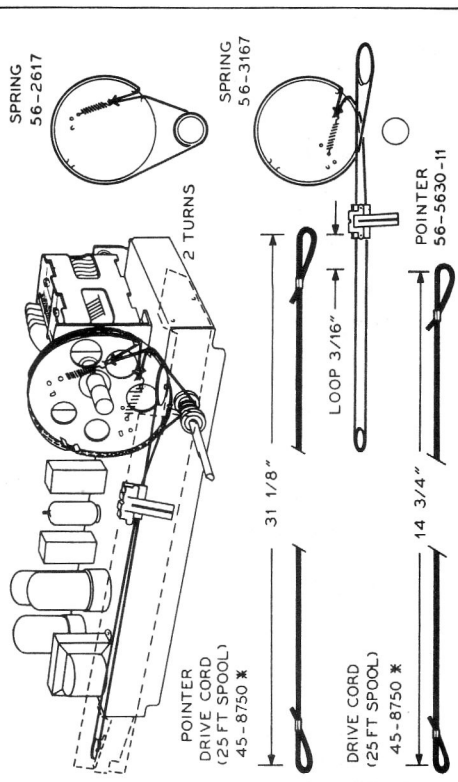


Figure 7 Drive-Cord-Installation Details

TROUBLE SHOOTING

Section 1—Power Supply

For the tests in this section, use a d-c voltmeter. Connect the negative lead to B—, test point B; connect the positive lead to the test points indicated in the chart. The voltage readings given were taken at a line voltage of 117 volts, a.c.

Turn on the power, and set the volume control to minimum.

If the "NORMAL INDICATION" is obtained in step 1, proceed with the tests for Section 2 (audio circuits); if not, isolate and correct the trouble in this section.

