

PHILCO RADIO MODEL 49-100

SPECIFICATIONS



MODEL 49-100

CABINET Plastic, brown finish
 CIRCUIT Four-tube superheterodyne
 FREQUENCY RANGE 540 to 1720 kc.
 AUDIO OUTPUT220 mw.
 POWER SUPPLY Battery pack, Philco P-60B-6L
 PLATE VOLTAGE AND CURRENT 90 volts, 10 ma.
 FILAMENT VOLTAGE AND CURRENT, 1.5 volts, .25 amp.
 POWER CONSUMPTION (total,1 watt
 plate and filament)
 AERIAL External, Philco Part No. 45-1469
 INTERMEDIATE FREQUENCY 455 kc.
 PHILCO TUBES (4) 1LA6, 1LN5, 1LH4, 3LF4
 TP-3125

SYMBOLIZATION AND TERMINOLOGY

All components in the radio circuit are symbolized and located as follows:

C—condenser	LA—loop aerial	S—switch
I—pilot lamp	LS—loud-speaker	T—transformer
L—choke or coil	R—resistor	Z—electrical assembly

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, detector, and a-v-c circuits.

400-series components are in Section 4—the r-f and converter circuits.

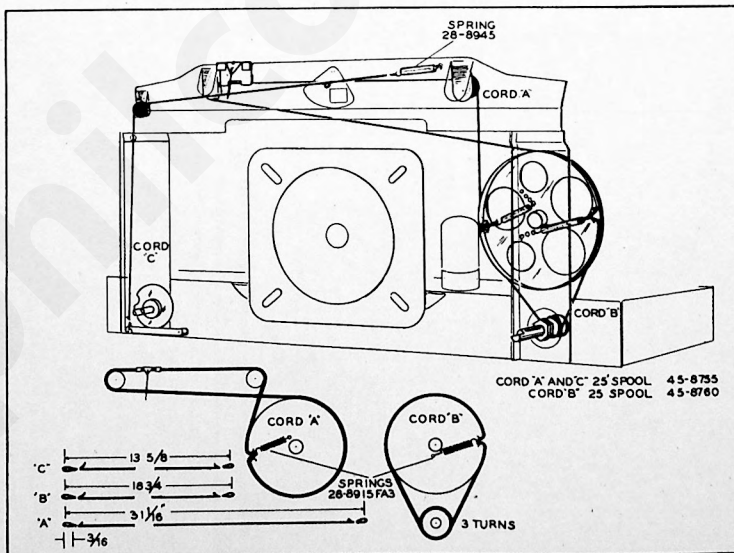
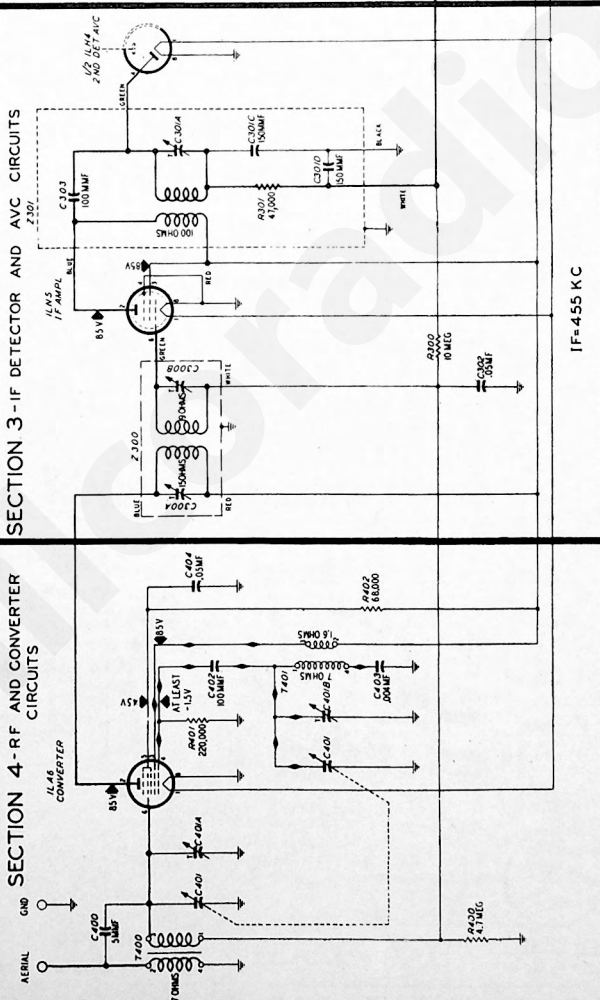


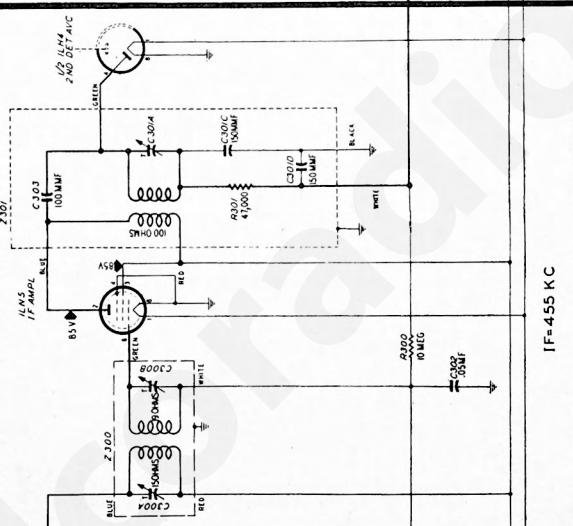
Figure 1. Drive-Cord Installation Details
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SECTION 4-RF AND CONVERTER CIRCUITS



SECTION 3-IF DETECTOR AND AVC CIRCUITS



SECTION 2-AUDIO CIRCUITS

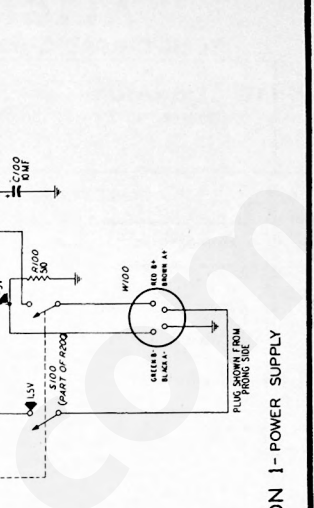
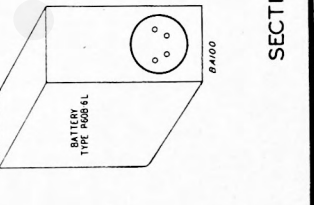
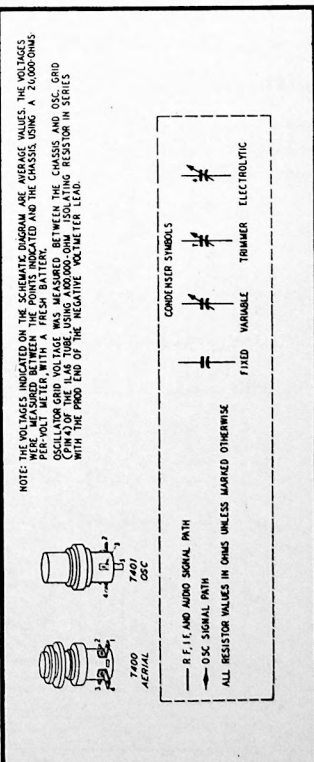
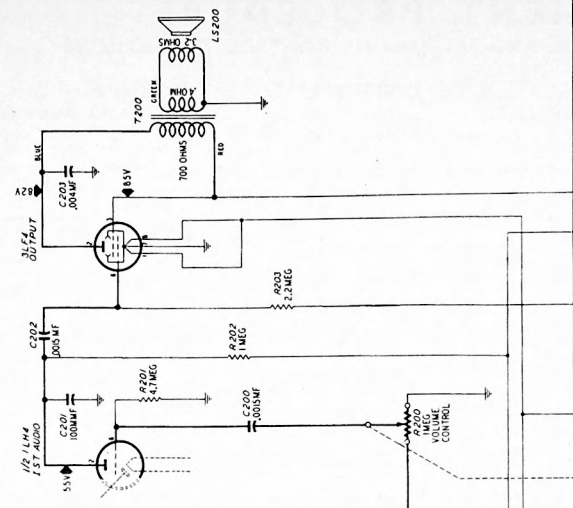


FIGURE 2. PHILCO RADIO MODEL 49-100, COMPLETE SECTIONALIZED SCHEMATIC.

ALIGNMENT PROCEDURE

TURN ON RADIO POWER, AND SET VOLUME CONTROL TO MAXIMUM

SIGNAL GENERATOR—Connect ground lead to chassis; connect output lead as indicated in chart.

OUTPUT LEVEL—During alignment, adjust signal-generator output to maintain output-meter indication below 1 volt.

STEP	SIGNAL GENERATOR		RADIO		ADJUST
	CONNECTIONS TO RADIO	DIAL SETTING	DIAL SETTING	SPECIAL INSTRUCTIONS	
1	Through .1-mf. condenser to stator of aerial tuning condenser.	455 kc.	Tuning condenser fully meshed.	Adjust trimmers, in order given, for maximum output.	C301A C300A C300B
2	Through 200-mmf. condenser to external aerial connector.	1700 kc.	1700 kc.	Adjust for maximum output.	C401B
3	Same as Step 2.	1500 kc.	1500 kc. (approx.)	Tune radio to generator signal, and adjust trimmer for maximum output.	C401A

DIAL—Alignment points should be marked on the dial backplate. Measurements for these points are shown in the composite dial-and-backplate photo, figure 4. With tuning condensers fully meshed, set dial pointer to index mark.

OUTPUT METER—Connect across speaker voice coil.

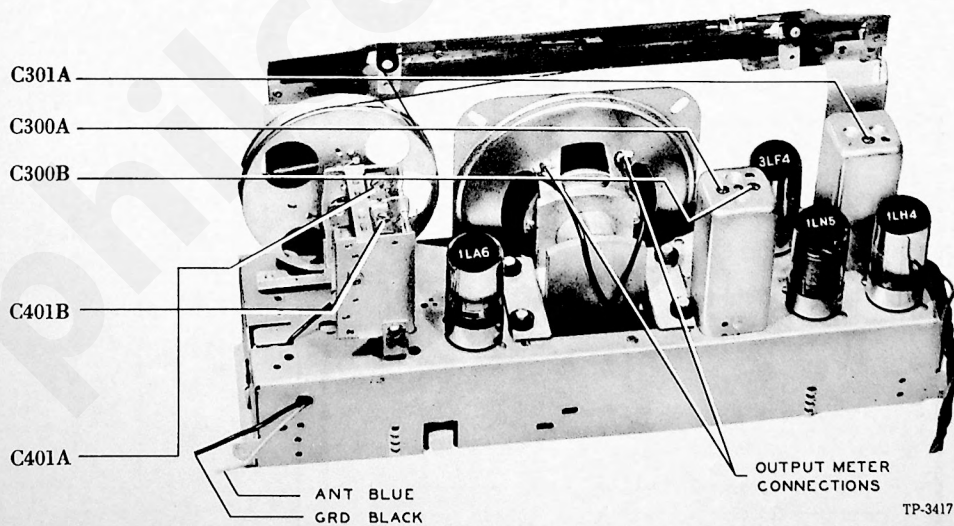


Figure 3. Top View, Showing Trimmer Locations

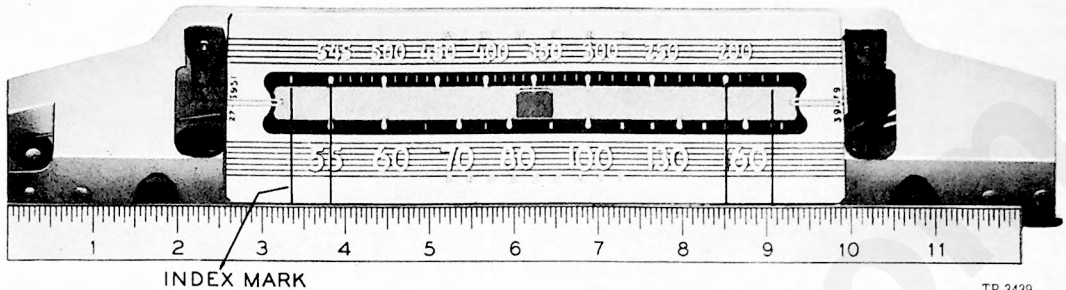


Figure 4. Composite Dial and Backplate, Calibration Details

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REPLACEMENT PARTS LIST

NOTE: Part numbers marked with an asterisk (*) in the following parts list are general replacement items. These numbers may not be identical with those on factory assemblies; also, the electrical values of some replacement items may differ from the values indicated in the schematic diagram and parts list. The values substituted in any case are so chosen that the operation of the radio will be either unchanged or improved. When ordering replacements, use only the "Service Part No."

SECTION 1

Reference Symbol	Description	Service Part No.
BA100	Battery pack	P-60B-6L
C100	Condenser, electrolytic, 10 mf., a-f and r-f by-pass	30-2540*
R100	Resistor, 510 ohms, bias	66-1513340*
S100	Switch, power	Part of R200
W100	Battery-cable assembly	41-3477-1

SECTION 2

C200	Condenser, .0015 mf., d-c blocking	45-3500-6*
C201	Condenser, 100 mmf., r-f by-pass	60-10105407*
C202	Condenser, .0015 mf., d-c blocking	45-3500-6*
C203	Condenser, .004 mf., tone compensation	61-0179*
LS200	Speaker	36-1507-3
R200	Volume control, 1 megohm	33-5554
R201	Resistor, 4.7 megohms, d-c grid return	66-5473340*
R202	Resistor, 1 megohm, plate load	66-5103340*
R203	Resistor, 2.2 megohms, d-c grid return	66-5223340*
T200	Output transformer	32-8323

SECTION 3

C300A	Condenser, trimmer	Part of Z300
C300B	Condenser, trimmer	Part of Z300
C301A	Condenser, trimmer	Part of Z301
C301B	Not used	
C301C	Condenser, 150 mmf., i-f filter	Part of Z301
C301D	Condenser, 150 mmf., i-f filter	Part of Z301
C302	Condenser, .05 mf., a-v-c filter	61-0122*
C303	Condenser, 100 mmf., coupling, part of Z301	62-110009001*
R300	Resistor, 10 megohms, a-v-c filter	66-6103340*
R301	Resistor, 47,000 ohms, i-f filter, part of Z301	66-3473340*
Z300	Transformer, 1st i-f, includes C300A and C300B	32-3949-1*
Z301	Transformer, 2nd i-f, includes C301A, C301C, C301D, C303, and R301	32-3897*

SECTION 4

Reference Symbol	Description	Service Part No.
C400	Condenser, 5 mmf., coupling	60-90505007
C401	Condenser, main tuning	31-2721-1
C401A:	Condenser, trimmer, aerial coil	Part of C401
C401B:	Condenser, trimmer, osc. coil	Part of C401
C402	Condenser, 100 mmf., osc. grid	62-110009001*
C403	Condenser, .004 mf., osc. tracking	61-0179*
C404	Condenser, .05 mf., r-f by-pass	61-0122*
R400	Resistor, 4.7 megohms, a-v-c voltage divider	66-5473340*
R401	Resistor, 220,000 ohms, osc. grid leak	66-4223340*
R402	Resistor, 68,000 ohms, screen dropping	66-3683340*
T400	Transformer, aerial	32-3919-2
T401	Transformer, oscillator	32-3385-4

MISCELLANEOUS

Description	Service Part No.
Cabinet, Less Dial Scale	10618A
Cabinet Hardware	
Baffle and cloth assembly	40-6910
Dial Scale	27-5951
Dial-Scale Hardware	
Screw, strap mtg.	1W23129FA3
Strap, scale mtg., r.h.	56-2672FA3
Strap, scale mtg., l.h.	56-2671FA3
Knob (2)	54-4323
Stud, baffle mtg.	W2235-2FA9
Scale Plate, Flag and Upright Assembly	76-3131
Cord, drive (25-ft. spool), for flag	45-8755
Cord, drive (25-ft. spool), for pointer	45-8755
Pointer	56-2896
Spring, flag drive	28-8945FA3
Spring, cam plate, flag drive	57-0701FA1
Spring, retaining	57-1468FA1
Transfer-lever assembly	76-1655-2
Socket, Loktal	27-6138
Tuning-Condenser Hardware	
Cord, drive (25-ft. spool), for tuning condenser	45-8760
Spring, tuning-condenser drive	28-8913FA3
Tuning-shaft assembly	31-2640