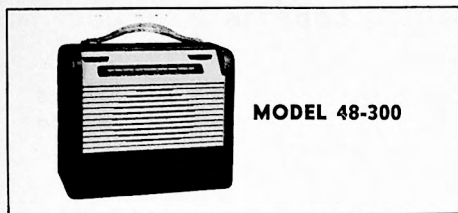


PHILCO RADIO MODEL 48-300



MODEL 48-300

SPECIFICATIONS

CABINET Leatherette-covered wood
CIRCUIT Five-tube superheterodyne

FREQUENCY RANGE..... 540—1620 kc.
AUDIO OUTPUT 160 milliwatts
OPERATING VOLTAGES .. Battery pack: "B", 90
volts; "A", 7.5 volts
A.c./d.c.: 105—120 volts
POWER CONSUMPTION .. Battery: "B", 13ma. at 90
volts; "A", 50 ma. at 7.5
volts
A.c./d.c.: 25 watts
AERIAL Built-in loop; terminal
also provided for external
aerial
INTERMEDIATE
FREQUENCY 455 kc.
PHILCO TUBES (5) 1R5, 1T4, 1U5, 3V4, 11T3
BATTERY TYPE Philco P-841A

TP-3980

SYMBOLIZATION

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

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.

A suffix letter identifies the part as a component of the assembly which bears an identical number without a suffix letter, and with perhaps a different prefix letter.

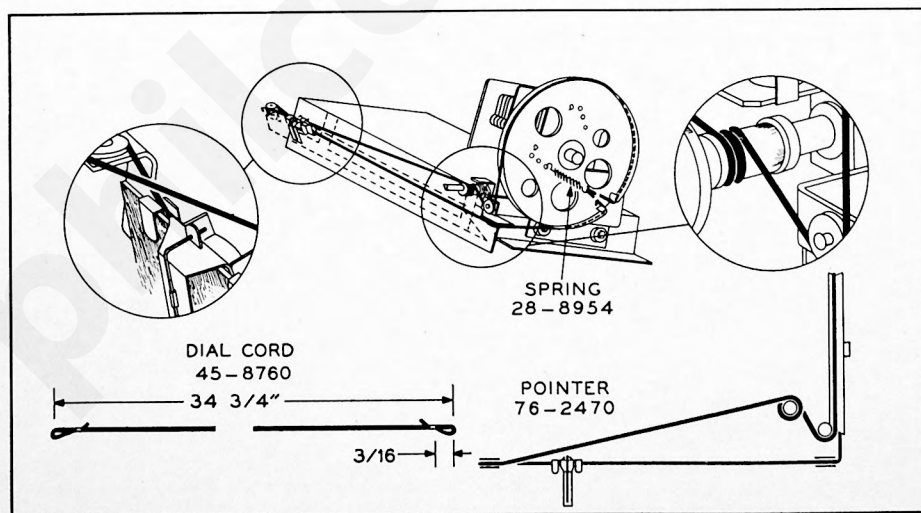


FIGURE 1. DRIVE-CORD INSTALLATION DETAILS

TP-4099E

ALIGNMENT PROCEDURE

OUTPUT METER—Connect between chassis and voice-coil terminal of output transformer T200.

VOLUME CONTROL—Set to maximum (counterclockwise).

OUTPUT LEVEL—Input signal should be attenuated, as alignment progresses, to hold output-meter reading below 1 volt.

SIGNAL GENERATOR—Connect as indicated in chart.

STEP	SIGNAL GENERATOR		RADIO		ADJUST
	CONNECTIONS TO RADIO	DIAL	DIAL	SPECIAL INSTRUCTIONS	
1	Ground lead to B-; output to external aerial lead (disconnected from chassis).	455 kc.	Gang fully meshed.	Adjust trimmers, in order given, for maximum output (chassis out of cabinet).	C301A—2nd i-f sec. C300B—1st i-f sec. C300A—1st i-f pri.
2	Install chassis in cabinet, and adjust dial pointer.				
3	Radiating loop (see note below).	1600 kc.	1600 kc.	Adjust for maximum.	C400B—Oscillator (shunt)
4	Same as step 3.	1600 kc.	1600 kc.	Adjust for maximum.	C400A—Aerial (shunt)

RADIATING LOOP: Make up a coil of insulated wire, consisting of 6 to 8 turns, about 6" in diameter. Connect coil ends to signal-generator leads, and suspend coil near radio loop.

I-F ALIGNMENT—I-f alignment should be made with chassis out of cabinet.

R-F ALIGNMENT—R-f alignment should be made with chassis in cabinet, built-in loop connected, and external aerial lead connected to chassis.

DIAL POINTER—With tuning condensers fully meshed, adjust dial pointer to coincide with index mark at low-frequency end of dial scale.

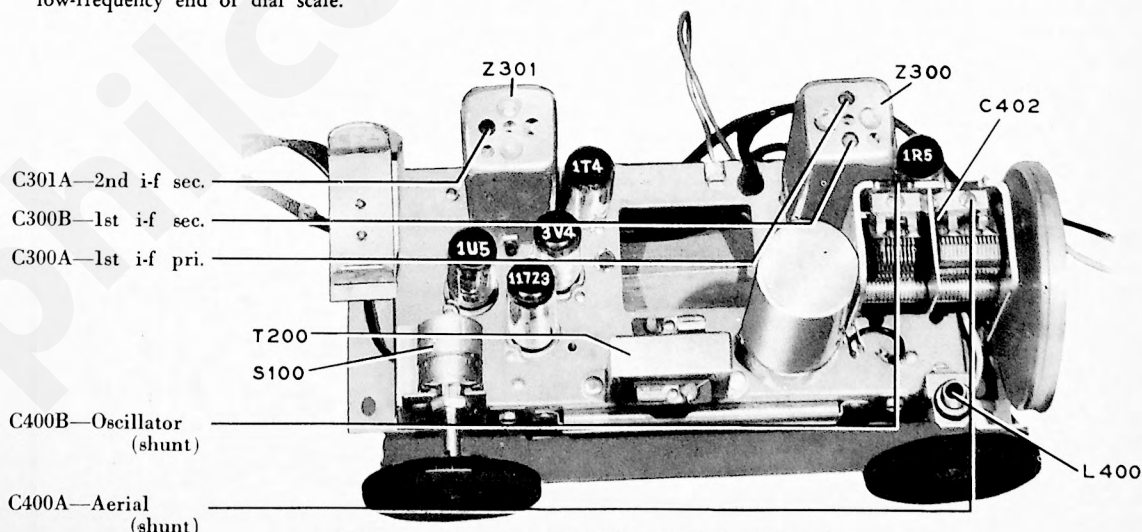
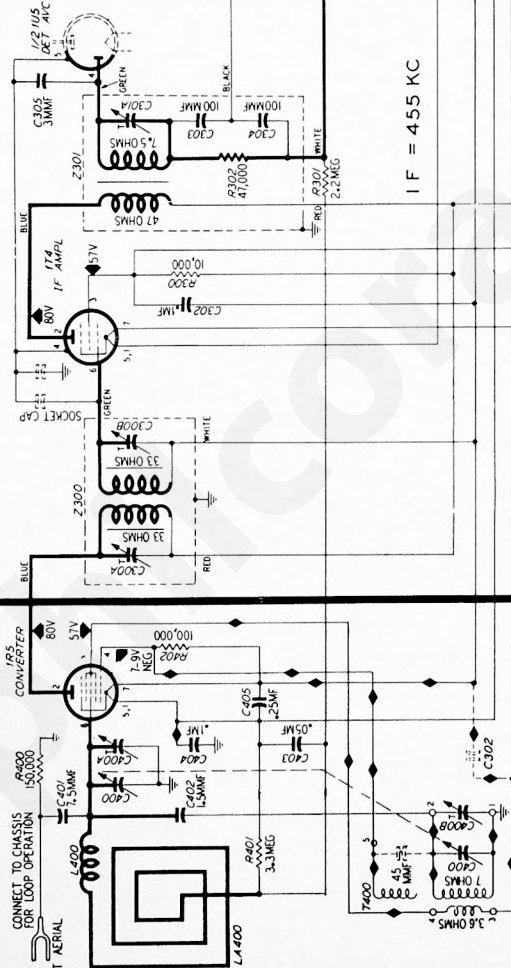


FIGURE 3. TOP VIEW, SHOWING TRIMMER LOCATIONS

TP-4185

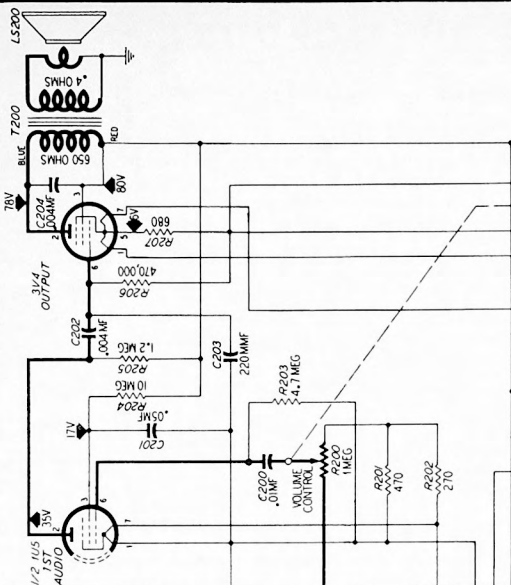
SECTION 3

IF DETECTOR AND AVC CIRCUITS



SECTION 2

AUDIO CIRCUITS



SECTION 1 POWER SUPPLY

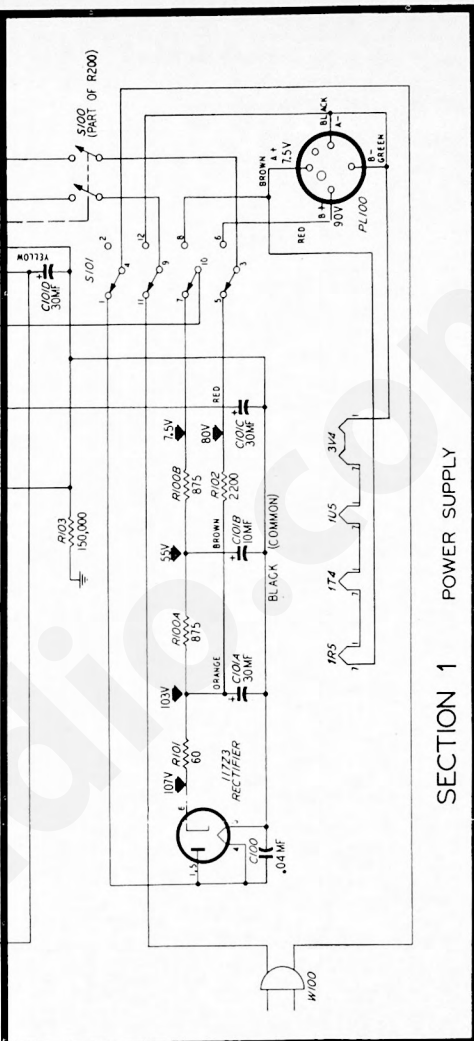
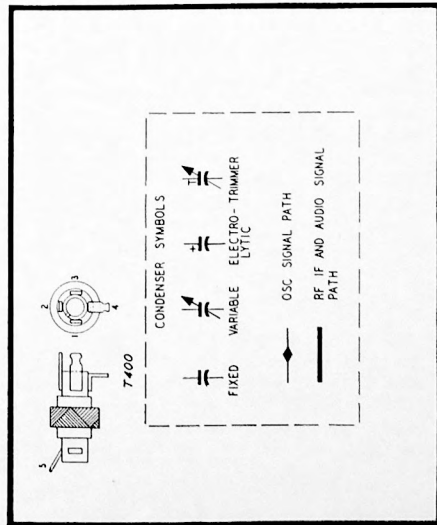


FIGURE 2. PHILCO RADIO MODEL 48-300, SECTIONALIZED SCHEMATIC DIAGRAM.



REPLACEMENT PARTS LIST

NOTE: Part numbers marked with an asterisk (*) 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 POWER SUPPLY

Reference Symbol	Description	Service Part No.
C100	Condenser, line filter, .04 mf.	45-3500-2*
C101	Condenser, electrolytic, 4-section	30-2560*
C101A	Condenser, filter, 30 mf., 150v	Part of C101
C101B	Condenser, filter, 10 mf., 150v	Part of C101
C101C	Condenser, filter, 30 mf., 150v	Part of C101
C101D	Condenser, filter, 30 mf., 25v	Part of C101
PL100	Plug-and-cable assembly	41-3712-2
R100	Resistor, 2-section	33-3431-4
R100A	Resistor, filament dropping, 875 ohms	Part of R100
R100B	Resistor, filament dropping, 875 ohms	Part of R100
R101	Resistor, limiting, 60 ohms	
R102	Resistor, dropping, 2200 ohms	66-2223340*
R103	Resistor, leakage, 150,000 ohms	66-4153340*
S100	Switch, on-off	Part of R200
S101	Switch, battery—a-c./d.c.	42-1821
W100	Power cord and plug	41-3755-17

SECTION 2 AUDIO CIRCUITS

C200	Condenser, d-c blocking, .01mf.	61-0120*
C201	Condenser, screen by-pass, .05 mf.	61-0122*
C202	Condenser, d-c blocking, .004 mf.	61-0179*
C203	Condenser, r-f by-pass, 220 mf.	
C204	Condenser, tone compensating, .004 mf.	61-0179*
LS200	Speaker	36-1598
R200	Volume control (with on-off switch), 1 megohm	33-5526
R201	Resistor, diode return, 470 ohms	66-1473340*
R202	Resistor, diode return, 270 ohms	
R203	Resistor, grid return, 4.7 megohms	66-5473340*
R204	Resistor, screen dropping, 10 megohms	66-6103340*
R205	Resistor, plate load, 1.2 megohms	66-5123340*
R206	Resistor, grid return, 470,000 ohms	66-4473340*
R207	Resistor, cathode bias, 680 ohms	66-1683340*
T200	Transformer, output	32-8259

SECTION 3 I-F, DETECTOR, AND A-V-C CIRCUITS

C300A	Condenser, trimmer	Part of Z300
C300B	Condenser, trimmer	Part of Z300
C301A	Condenser, trimmer	Part of Z301
C302	Condenser, screen by-pass, .1 mf.	61-0113*
C303	Condenser, i-f by-pass (part of Z301), 100 mmf.	30-1225-2*

SECTION 3 (Continued)

Reference Symbol	Description	Service Part No.
C304	Condenser, i-f by-pass (part of Z301), 100 mmf.	30-1225-2*
C305	Condenser, neutralizing, 3 mmf.	30-1221
R300	Resistor, screen dropping, 10,000 ohms	66-3103340*
R301	Resistor, a-v-c filter, 2.2 megohms	66-5223340*
R302	Resistor, i-f filter (part of Z301), 47,000 ohms	66-3473340*
Z300	Transformer, 1st i-f	32-3968-4
Z301	Transformer, 2nd i-f	32-3987-1

SECTION 4

R-F AND CONVERTER CIRCUITS

C400	Condenser, tuning gang	31-2692
C400A	Condenser, aerial trimmer	Part of C400
C400B	Condenser, oscillator trimmer	Part of C400
C401	Condenser, isolating, 7.5 mmf.	30-1224-8
C402	Condenser, neutralizing, 1.5 mmf.	30-1221-3
C403	Condenser, a-v-c filter, .05 mf.	61-0122*
C404	Condenser, filament by-pass, .1 mf.	61-0113*
C405	Condenser, filament by-pass, .25 mf.	61-0125*
L400	Coil, aerial loading	32-4260
LA400	Loop aerial	32-4052-17
R400	Resistor, discharge, 150,000 ohms	66-4153340*
R401	Resistor, a-v-c filter, 3.3 megohms	66-5333340*
R402	Resistor, oscillator grid bias, 100,000 ohms	66-4103340*
T400	Transformer, oscillator	32-4095-3

MISCELLANEOUS

Description	Service Part No.
Cabinet	10692
Back-catch assembly	76-2273
Foot	45-6041
Handle	54-7416-1
Handle loop	56-4919
Scale	27-5982
Scale strap	56-3846
Cord, drive (25-ft. spool)	45-8760*
Dial-backplate assembly	76-2023
Pulley (small)	11W29741
Knob	
Pointer	76-2470
Pully (large)	11W29743FA3
Shaft and pulley	76-2028
Socket (miniature)	27-6203
Spring, drive-cord	28-8954
Stud (pulley)	11W29752FA5
Switch plunger	76-3061

REVISIONS AND ADDITIONS TO 48-300 SERVICE MANUAL

Reference Symbol	Description	Service Part No.
Parts List Addition		
	Cabinet back	45-6485
Parts List Corrections		
R101	Resistor, limiting, 60 ohms	33-1334
C203	Condenser, r-f by-pass, 220 mmf.	62-122001001*
R202	Resistor, diode return, 270 ohms	66-1273340*
	Knob	54-4214

PRODUCTION CHANGES

Run 2

B- circuit wiring was changed (physically), to facilitate production.