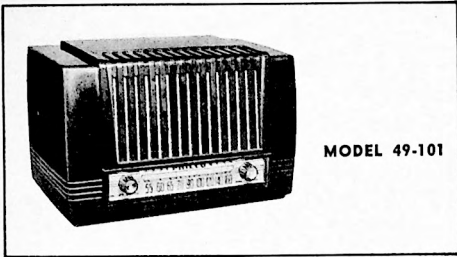


PHILCO RADIO MODEL 49-101

SPECIFICATIONS



MODEL 49-101

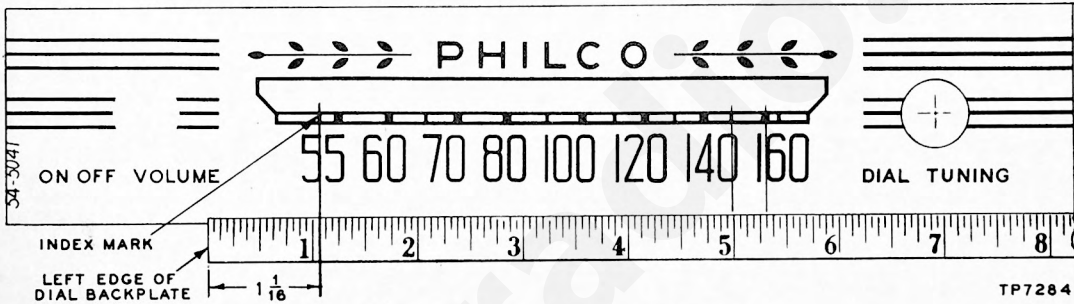
CABINET	Molded Polystyrene (dark brown)
CIRCUIT	Four-tube superheterodyne
FREQUENCY RANGE	540-1600 kc.
AUDIO OUTPUT	160 milliwatts
OPERATING VOLTAGES	Battery: "B", 90 volts; "A", 7.5 volts. A.c./d.c.: 105-120 volts
POWER CONSUMPTION	Battery: "B", 13 ma. at 90 volts; "A", 50 ma. at 7.5 volts. A.c./d.c.: 25 watts
AERIAL	Terminal provided for external aerial
INTERMEDIATE FREQUENCY	455 kc.
PHILCO TUBES (4)	1R5, 1T4, 1U5, 3V4
BATTERY TYPE	Philco P-326

TP-6524

CALIBRATING DIAL BACKPLATE

When the radio chassis has been removed from the cabinet, dial-calibration and alignment points may be marked on the dial (chassis) backplate at the end of the pointer with a pencil. The method of measuring for these points is illustrated in figure 1.

With the tuning gang fully meshed, the pointer should be adjusted on the dial-drive cord to coincide with the index mark.



TP7284

Figure 1. Dial-Backplate Calibration Measurements

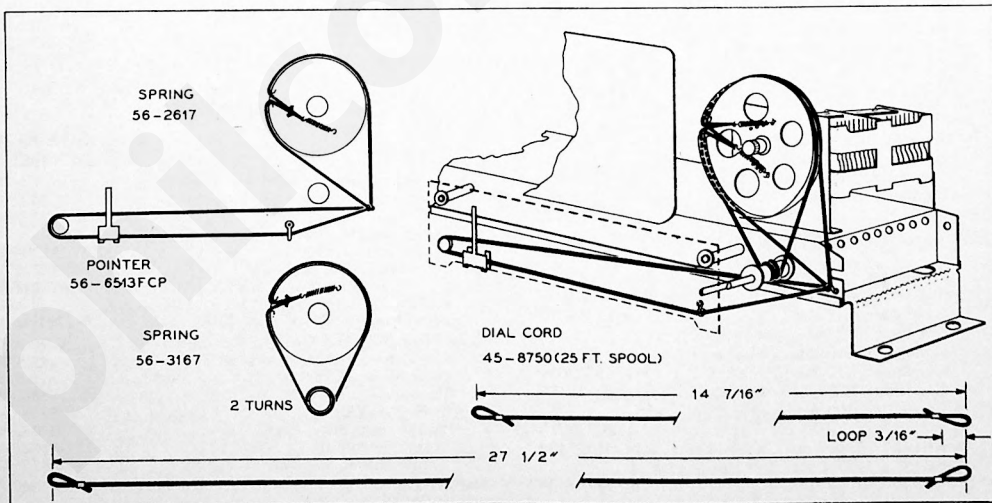


Figure 2. Drive-Cord Installation Details

TP-6983C

ALIGNMENT PROCEDURE

DIAL—Calibration and pointer-index measurements are shown in figure 1. With tuning condenser fully meshed, set pointer to index mark.

RADIO CONTROLS—Set volume control to maximum.

OUTPUT METER—Connect across voice-coil terminals.

SIGNAL GENERATOR—Use modulated output.

STEP	SIGNAL GENERATOR		RADIO		ADJUST
	CONNECTION TO RADIO	DIAL SETTING	DIAL SETTING	SPECIAL INSTRUCTIONS	
1	Ground lead to B- (test point B in figure 4). Positive lead through .05-mf. condenser to external-aerial lead. Make sure that radio loop aerial is connected to radio.	455 kc.	Tuning condenser fully meshed.	Adjust in order given, for maximum output.	C301A—2nd i-f sec. TC300B—1st i-f sec. TC300A—1st i-f pri.
2	Radiating loop (see note below).	1600 kc.	1600 kc.	Adjust for maximum output.	C400A—osc.
3	Same as step 2.	1500 kc.	1500 kc.	Adjust for maximum output while rocking tuning condenser.	C400B—aerial.

RADIATING LOOP: Make up a 6–8-turn, 6-inch-diameter loop, using insulated wire; connect to signal-generator leads and place near radio loop aerial. Make sure that radio loop aerial is connected to radio.

OUTPUT LEVEL—During alignment, adjust signal-generator output to maintain output-meter indication below .5 volt.

SPECIAL NOTE—The orientation of the loop with respect to the chassis is critical for correct tracking. During alignment, with the cabinet back (containing the loop) laid down on the bench, the chassis should be laid on its back, in approximately its normal relation to the loop.

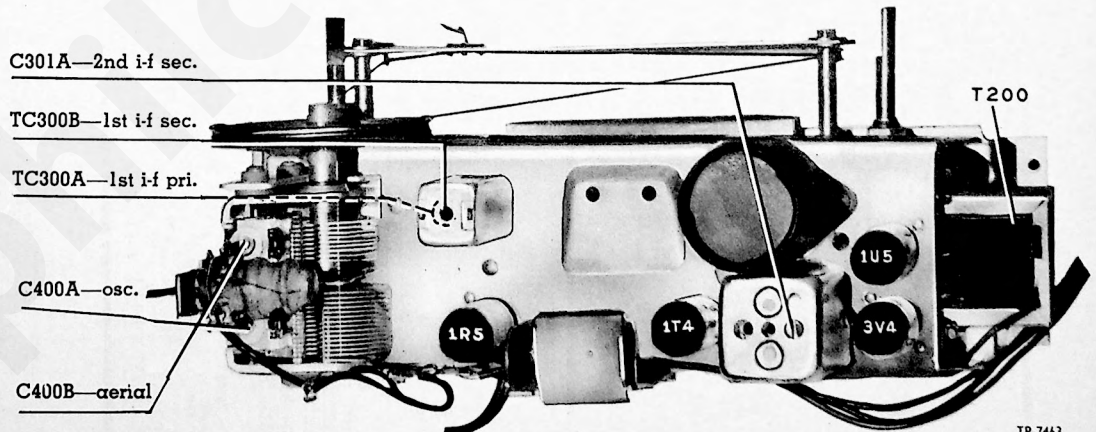
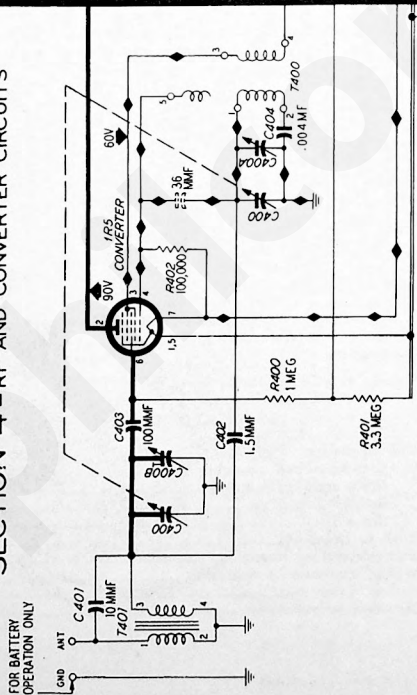
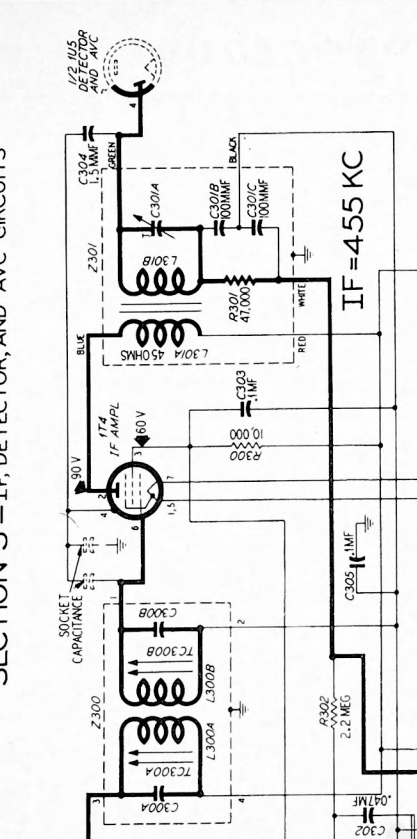


Figure 3. Top View, Showing Trimmer Locations

SECTION 4 - RF AND CONVERTER CIRCUITS

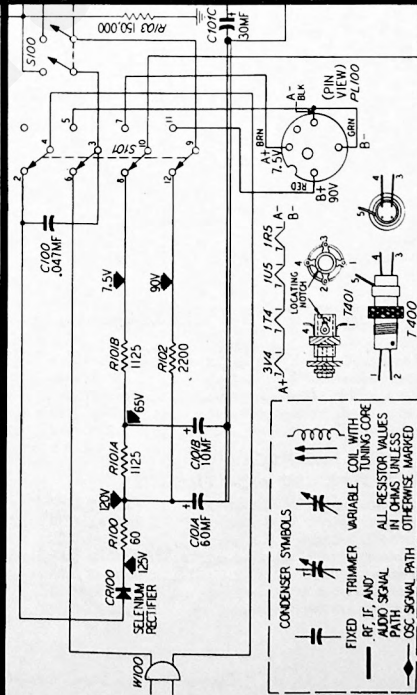


SECTION 3 - IF, DETECTOR, AND AVC CIRCUITS



IF = 4.55 KC

SECTION 1 - POWER SUPPLY



SECTION 2 - AUDIO CIRCUITS

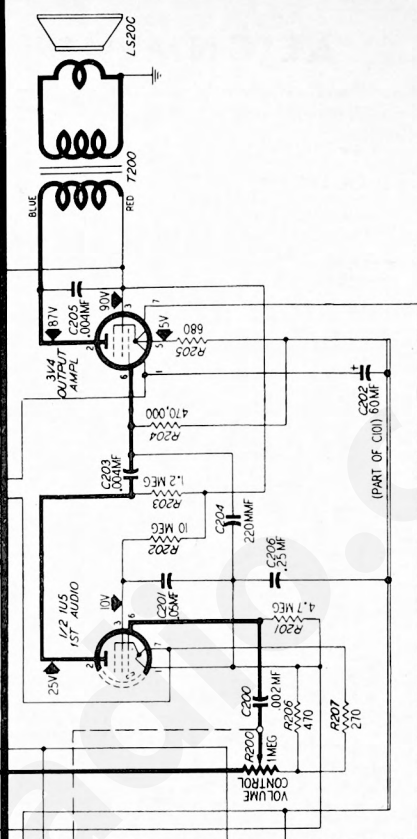


Figure 4. Philco Model 49-101, Sectionalized Schematic Diagram.

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

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, 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.

NOTE: Part numbers identified by 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."

REPLACEMENT PARTS LIST

**SECTION 1
POWER SUPPLY**

Reference Symbol	Description	Service Part No.
C100	Condenser, line filter, .047 mf.	61-0122*
C101	Condenser, electrolytic, filter, 4-section	30-2568-26
C101A	Condenser, filter, 60 mf., 150v	Part of C101
C101B	Condenser, filter, 10 mf., 150v	Part of C101
C101C	Condenser, filter, 30 mf., 150v	Part of C101
CR100	Rectifier, selenium	34-8003
PL100	Battery-cable-and plug assembly	41-3712-4
R100	Resistor, current-limiting, 60 ohms, 1w	33-1334
R101	Resistor, 2-section	33-3431-5
R101A	Resistor, filament dropping, 1125 ohms	Part of R101
R101B	Resistor, filament dropping, 1125 ohms	Part of R101
R102	Resistor, filter, 2200 ohms	66-2223340*
R103	Resistor, leakage, 150,000 ohms	66-4153340*
S100	Switch, on-off	Part of R200
S101	Switch, change-over	42-1821
W100	Line-cord-and-plug assembly	L-2183*

**SECTION 2
AUDIO CIRCUITS**

C200	Condenser, d-c blocking, .002 mf.	61-0108*
C201	Condenser, screen by-pass, .05 mf.	61-0122*
C202	Condenser, filter, 60 mf., 25v	Part of C101
C203	Condenser, d-c blocking, .004 mf.	61-0179*
C204	Condenser, r-f by-pass, 220 mmf.	30-1224-20*
C205	Condenser, tone compensation, .004 mf.	61-0179*
C206	Condenser, by-pass, .25 mf.	61-0125*
LS200	Speaker, p-m	36-1629-1
R200	Volume control (with on-off switch), 1 megohm	33-5538-28
R201	Resistor, grid return, 4.7 megohms	66-5473340*
R202	Resistor, screen dropping, 10 megohms	66-6103340*
R203	Resistor, plate load, 1.2 megohms	66-5123340*
R204	Resistor, grid return, 470,000 ohms	66-4473340*
R205	Resistor, bias, 680 ohms	66-1683340*
R206	Resistor, diode return, 470 ohms	66-1473340*
R207	Resistor, diode return, 270 ohms	66-1273340*
T200	Transformer, output	32-8259-3

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

C300A	Condenser, shunt, fixed trimmer	Part of Z300
C300B	Condenser, shunt, fixed trimmer	Part of Z300
C301A	Condenser, trimmer	Part of Z301
C301B	Condenser, filter	Part of Z301
C301C	Condenser, filter	Part of Z301
C302	Condenser, a-v-c filter, .047 mf.	61-0122*
C303	Condenser, screen by-pass, .1 mf.	61-0113*

**SECTION 3 (Continued)
I-F, DETECTOR, AND A-V-C CIRCUITS**

Reference Symbol	Description	Service Part No.
C304	Condenser, neutralizing, 1.5 mmf.	30-1221-3
C305	Condenser, i-f by-pass, .1 mf.	61-0113*
L300A	Transformer primary, 1st i-f	Part of Z300
L300B	Transformer secondary, 1st i-f	Part of Z300
L301A	Transformer primary, 2nd i-f	Part of Z301
L301B	Transformer secondary, 2nd i-f	Part of Z301
R300	Resistor, screen dropping, 10,000 ohms	66-3103340*
R301	Resistor, filter, 47,000 ohms (part of Z301)	66-3473340*
R302	Resistor, a-v-c filter, 2.2 megohms	66-5223340*
TC300A	Tuning core, 1st i-f pri.	Part of Z300
TC300B	Tuning core, 1st i-f sec.	Part of Z300
Z300	Transformer, 1st i-f	32-4160-4
Z301	Transformer, 2nd i-f	32-3987-3

**SECTION 4
R-F AND CONVERTER CIRCUITS**

C400	Condenser, tuning gang	31-2727-2
C400A	Condenser, trimmer, oscillator	Part of C400
C400B	Condenser, trimmer, aerial	Part of C400
C401	Condenser, isolating, 10 mmf.	30-1224-26*
C402	Condenser, neutralizing, 1.5 mmf.	30-1221-3
C403	Condenser, d-c blocking, 100 mmf.	62-110009001
C404	Condenser, fixed paddler, .004 mf.	61-0179*
R400	Resistor, a-v-c divider, 1 megohm	66-5103340*
R401	Resistor, grid return, 3.3 megohms	66-5333340*
R402	Resistor, oscillator grid bias, 100,000 ohms	66-4103340*
T400	Transformer, oscillator	32-4282-1
T401	Transformer, aerial	32-3919-4

MISCELLANEOUS

Description	Service Part No.
Cabinet and Cabinet Parts	
Baffle-and-cloth assembly	40-7600
Back	54-7695
Cabinet	10732
Dial Hardware	
Dial-backplate assembly	76-4357
Drive cord (25-ft. spool)	45-8750*
Pointer	56-651
Scale	54-5041
Knob (2 required)	54-4227-5
Shaft-and-pulley assembly	76-3671-1
Socket, miniature (4 required)	27-6203
Spring, drive cord	56-2617
Switch-lever assembly	76-3666