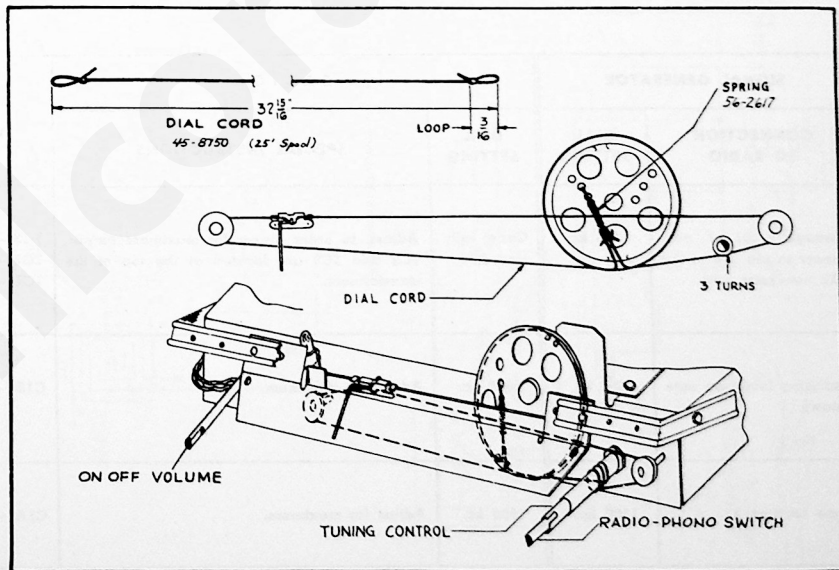


# PHILCO RADIO-PHONOGRAPH MODEL 51-1330

## SPECIFICATIONS

CABINET .....	Molded plastic, mottled mahogany
CIRCUIT .....	Five-tube superheterodyne
FREQUENCY RANGE .....	540—1620 kc.
AUDIO OUTPUT .....	One watt
OPERATING VOLTAGE .....	105—120 volts, 60 cycles, a.c.
POWER CONSUMPTION	
Radio .....	30 watts
Phonograph .....	45 watts
INTERMEDIATE FREQUENCY .....	455 kc.
AERIAL .....	Built-in high-impedance loop; provision for external aerial
PHILCO TUBES (5) .....	7A8 converter, 7B7 i-f amplifier, 7C6 2nd det. 1st audio, 50L6GT output, 35Z5GT rectifier
PHONOGRAPH .....	Philco Model M-22 All-Speed Automatic Record Changer. (For service information, refer to the Record Changer section of this Yearbook.)



TP1-1835

Figure 1. Drive-Cord Installation Details

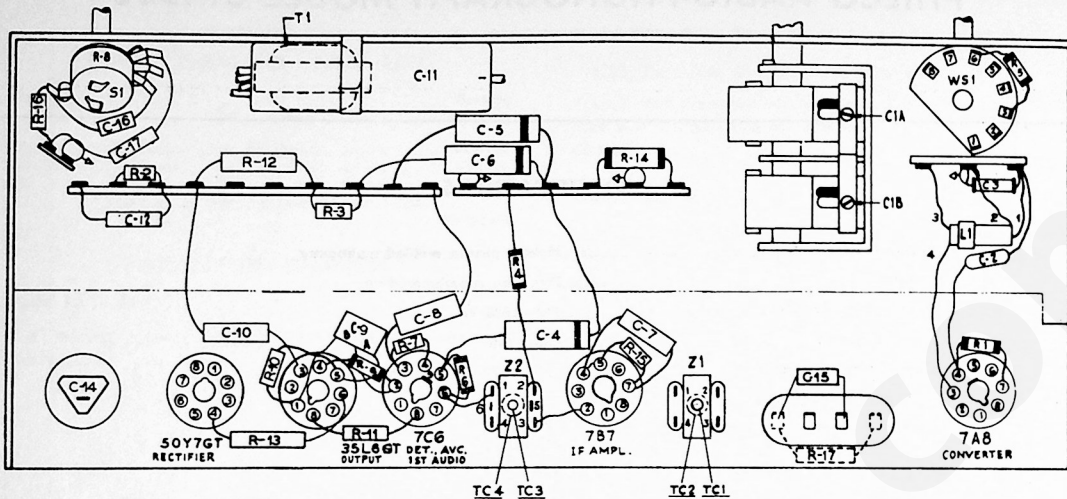


Figure 2. Base View, Showing Parts Placement and Alignment Points

TP1-1837

### ALIGNMENT PROCEDURE

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

**CONTROLS**—Set volume control to maximum, "Phono-Radio" switch to Radio position, and the tuning control as indicated in the chart.

**OUTPUT METER**—Connect across voice coil terminals.

**SIGNAL GENERATOR**—Ground lead to B-, output lead as indicated in chart.

**OUTPUT LEVEL**—During alignment, attenuate signal-generator output to hold output-meter indication below 1.25 volts.

STEP	SIGNAL GENERATOR		RADIO		ADJUST TRIMMER
	CONNECTION TO RADIO	DIAL SETTING	DIAL SETTING	SPECIAL INSTRUCTIONS	
1	Through a .01 $\mu$ f. condenser to pin #6 of the 7A8 converter tube.	455 kc.	Gang fully closed.	Adjust, in order given, for maximum output. TC2 and TC3 are located at the top of the transformers.	TC3—2nd i-f sec. TC2—1st i-f sec. TC1—1st i-f pri.
2	Radiating loop (see note below).	1600 kc.	1600 kc.	Adjust for maximum.	C1B—osc. trimmer
3	Same as Step 2.	1500 kc.	1500 kc.	Adjust for maximum.	C1A—ant. trimmer

**RADIATING LOOP:** Make up a 6–8-turn, 8-inch-diameter loop from insulated wire, connect to signal generator output leads, and place near radio loop.



**Run No. 2**

The 2nd i-f transformer, Z2, is now part number 32-4240. This transformer is double tuned and has two 100  $\mu\text{f}$ . i-f filter condensers built-in. The transformer wiring is shown in figure 4.

When aligning, tune the primary following the secondary as given in the alignment instructions.

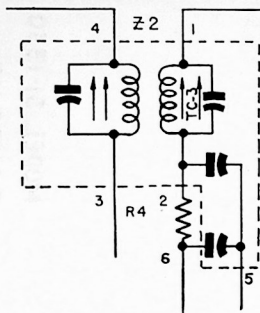


Figure 4. Run 2 I-F Transformer

Also, the 1st i-f transformer, Z1, is reversed. The transformer is rotated 180° on the chassis and the wiring is as follows: No. 1 is plate, No. 2 is B+, No. 3 is grid, No. 4 is a-v-c.

**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 receiver will be either unchanged or improved. When ordering replacements, use only the "Service Part No."

Reference Symbol	Description	Service Part No.
C1	Condenser, tuning gang	31-2751-9
C2	Condenser, osc. grid, d-c blocking, 47 $\mu\text{f}$ .	60-00515307*
C3	Condenser, temperature compensating, 7.5 $\mu\text{f}$ .	30-1224-65
C4	Condenser, a-v-c by-pass, .1 $\mu\text{f}$ .	61-0113*
C5	Condenser, by-pass, .1 $\mu\text{f}$ .	61-0113*
C6	Condenser, screen by-pass, .1 $\mu\text{f}$ .	61-0113*
C7	Condenser, i-f filter, 100 $\mu\text{f}$ .	62-110009001*
C8	Condenser, d-c blocking, .01 $\mu\text{f}$ .	61-0120*
C9	Condenser, dual ceramic	30-1239-4
C9A	Condenser, d-c blocking, .007 $\mu\text{f}$ .	Part of C9
C9B	Condenser, grid by-pass, 220 $\mu\text{f}$ .	Part of C9
C10	Condenser, tone compensation, .022 $\mu\text{f}$ .	45-3505-43*
C11	Condenser, electrolytic, 4 section	30-2575-32*
C11A	Condenser, cathode by-pass, 25 $\mu\text{f}$ .	Part of C11
C11B	Condenser, filter, 40 $\mu\text{f}$ .	Part of C11
C11C	Condenser, filter, 40 $\mu\text{f}$ .	Part of C11
C11D	Condenser, filter, 40 $\mu\text{f}$ .	Part of C11
C12	Condenser, line by-pass, .04 $\mu\text{f}$ .	45-3505-62*
C13	Condenser, phono isolation, .01 $\mu\text{f}$ .	61-0120*
C14	Condenser, r-f by-pass, .1 $\mu\text{f}$ .	61-0113*

Reference Symbol	Description	Service Part No.
I1	Pilot lamp, type 47	34-2068
L1	Coil, oscillator	32-4263
LA1	Loop antenna	76-2127-11
LS1	Speaker, 5 1/4" round	36-1639
R1	Resistor, grid return, 100,000 ohms	66-4108340*
R2	Resistor, leakage, 150,000 ohms	66-4158340*
R3	Resistor, dropping, 27,000 ohms	66-3274340*
R4	Resistor, i-f filter, 47,000 ohms	66-3478340*
R5	Resistor, diode return, 470,000 ohms	66-4478340*
R6	Resistor, diode load, 2.2 megohms	66-5228340*
R7	Resistor, grid return, 10 megohms	66-6108340*
R8	Volume control, 2 megohms (with switch)	33-5564-11
R9	Resistor, plate load, 470,000 ohms	66-4478340*
R10	Resistor, grid return, 470,000 ohms	66-4478340*
R11	Resistor, cathode bias, 130 ohms	66-1128340*
R12	Resistor, filter, 1200 ohms	66-2128340*
R13	Resistor, filter, 220 ohms, 2 watts	66-1225340*
R14	Resistor, surge limiting, 880 $\Omega$ cold, 100 $\Omega$ hot	33-1343-3
S1	Switch, off-on	Part of R8
T1	Transformer, output	32-8384*
W1	Line cord	
WS1	Wafer switch, radio-phono	42-1949
Z1	Transformer, 1st i-f	32-4160A
Z2	Transformer, 2nd i-f	32-4454-1A

**MISCELLANEOUS**

Description	Service Part No.
Backplate assembly	76-6232
Cabinet, complete	10840-2
Hinge (2)	56-6603
Lid	54-4838
Lid support	56-6604
<b>Changer Mounting Hardware</b>	
Sleeve, rubber (3)	54-7798
Speed nut (3)	W-2554
Spring, heavy, top (3)	56-7059FA9
Spring, light, bottom (3)	56-7059-1FJ47
Dial scale	54-5107
Knob, off-on-volume	54-4843
Knob, phono-radio	54-4842
Knob, tuning	54-4841
Pilot lamp socket assembly	76-1179-1
Fastener, pilot lamp shield	W2235-1FA9
<b>Pointer</b>	
Spring, pointer drive	56-2617
Socket, Loktal (3)	27-6207
Socket, octal (2)	27-6174
<b>Tuning shaft</b>	



## CORRECTIONS TO PARTS LIST

Reference Symbol	Description	Service Part No.
W1	Line cord .....	L2183*
	Pointer .....	56-5630-31
	Tuning shaft .....	56-8370

## PRODUCTION CHANGES

## Run 3

C10, the tone compensation condenser, was changed to .0068  $\mu$ f., Part No. 45-3505-57\*.

The connections of C9A were interchanged. (This change makes C9B serve as a plate by-pass for the 7C6; C9A still functions as the d-c blocking condenser.)