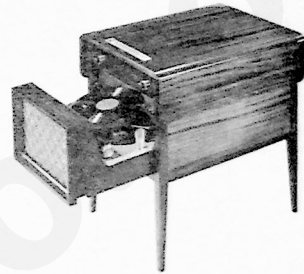


PHILCO RADIO-PHONOGRAPH MODEL 53-1750

SPECIFICATIONS

CABINET	Wood, mahogany or blond
CIRCUIT	Four-tube superheterodyne plus rectifier
FREQUENCY RANGES	
Broadcast	540-1620 kc.
Special Services	1700-3400 kc.
AUDIO OUTPUT	3 watts
OPERATING VOLTAGE	105-120 volts, 60 cycles, a.c.
POWER CONSUMPTION	
Radio	35 watts
Phonograph	60 watts
INTERMEDIATE FREQUENCY	455 kc.
ANTENNA	Built-in high-impedance loop
PHILCO TUBES	7A8 converter; 7B7 i-f amplifier; 7C6 detector-a.v.c.-1st audio; 35L6GT output; 50Y7GT rectifier
PHONOGRAPH	Philco Model M-24 All-Speed Automatic Record Changer



MODEL 53-1750

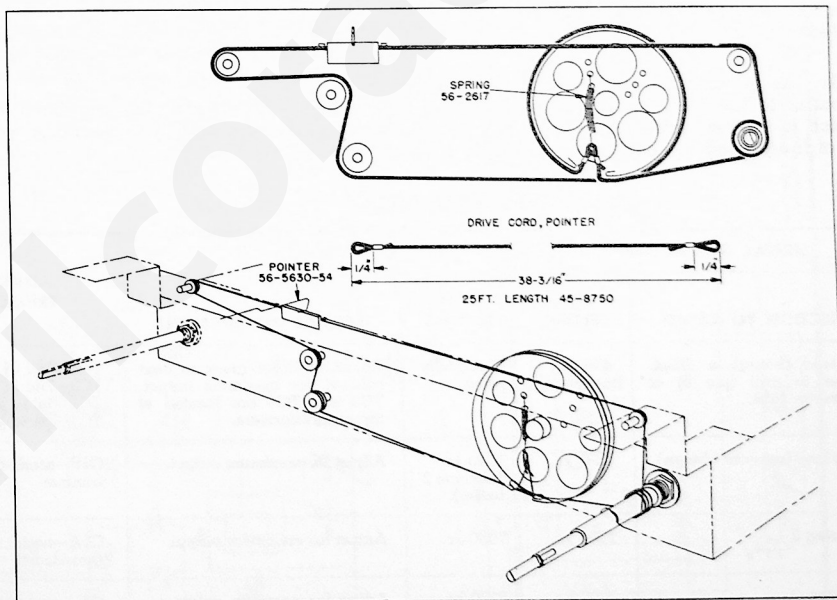
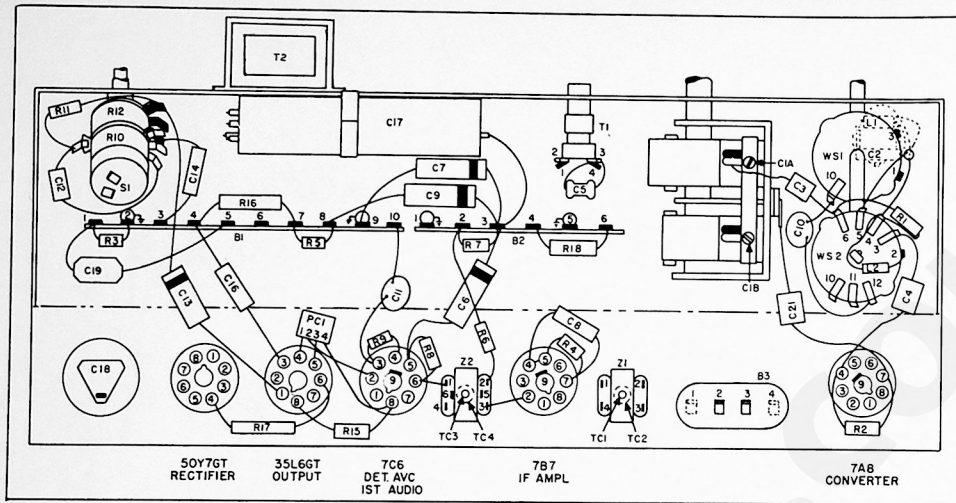


Figure 1. Drive-Cord Installation Details

TP2-2604



TP2-2588A

Figure 2. Base View, Showing Parts Placement and Tuning Adjustments

ALIGNMENT PROCEDURE

GENERAL—In order to make the i-f adjustments, it is necessary to lift the chassis away from the cabinet. This can be done by removing the securing bolts.

DIAL POINTER—With the tuning-condenser plates fully meshed, set the dial pointer to coincide with the index mark located to the left of "55" on the dial scale.

CONTROLS—Set the volume control to maximum and the tone control to the treble position. Set the radio-phono switch to the broadcast position for the first three steps of the procedure, and to the special

services position for the last step. Set the tuning control as indicated in the chart.

OUTPUT METER—Connect the output indicator (a 1000-ohms-per-volt voltmeter or an oscilloscope) across the voice-coil terminals.

SIGNAL GENERATOR—Use an amplitude-modulated r-f generator. Connect the ground lead to B-, and the output lead as indicated in the chart.

OUTPUT LEVEL—During the alignment, attenuate the signal-generator output to maintain the output below 1 volt.

ALIGNMENT CHART

STEP	SIGNAL GENERATOR		RADIO		ADJUST TRIMMER
	CONNECTION TO RADIO	DIAL SETTING	DIAL SETTING	SPECIAL INSTRUCTIONS	
1	Output lead through a .01- μ f. condenser to grid (pin 6) of 7A8 converter tube.	455 kc. (modulated)	Gang fully open.	Adjust, in order given in next column, for maximum output. TC2 and TC4 are located at top of transformers.	TC4—2nd i-f sec. TC3—2nd i-f pri. TC2—1st i-f sec. TC1—1st i-f pri.
2	Radiating loop (see note 1 below).	1620 kc.	1620 kc. (see note 2 below).	Adjust for maximum output.	C1B—oscillator trimmer
3	Same as step 2.	1500 kc.	1500 kc.	Adjust for maximum output.	C1A—aerial trimmer (broadcast)
4	Same as step 2.	3200 kc.	3200 kc.	Adjust for maximum output.	C2—aerial trimmer (special services)

NOTE 1: Make up a 6–8 turn, 6-inch-diameter loop from insulated wire; connect to signal-generator leads, and place near radio loop.

NOTE 2: The tuning gang can be set to 1620 kc. by placing a piece of 6-mil flat shim stock between the heel of the rotor and the top of the stator plates, and moving the rotor until it holds the shim in place. Remove the shim before proceeding with the alignment.

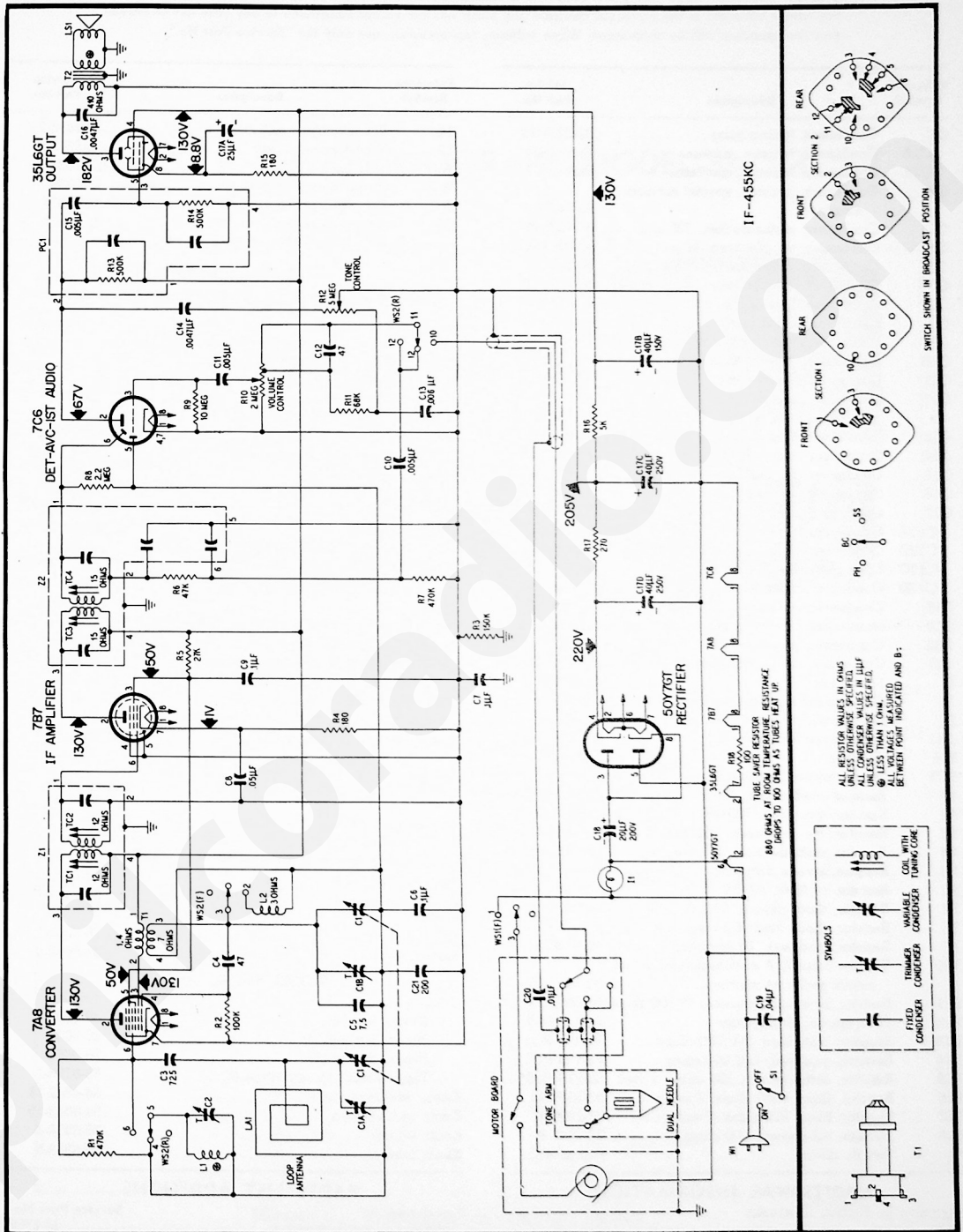


Figure 3. Philco Radio-Phonograph Model 53-1750, Schematic Diagram

TP2-2589A

REPLACEMENT PARTS LIST

NOTE: Part numbers identified by an asterisk (*) are general replacement items. These numbers may not be identical with those on factory parts. 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 will be unchanged. When ordering replacements, use only the "Service Part No."

Reference Symbol	Description	Service Part No.
C1	Condenser, tuning gang	31-2751-10
C1A	Condenser, trimmer, antenna	Part of C1
C1B	Condenser, trimmer, oscillator	Part of C1
C2	Condenser, trimmer, special services antenna	31-6473-31
C3	Condenser, series tracker, 725 $\mu\mu\text{f}$.	30-1220-69
C4	Condenser, d-c blocking, 47 $\mu\mu\text{f}$.	60-00475420
C5	Condenser, fixed trimmer, 7.5 $\mu\mu\text{f}$.	30-1224-65
C6	Condenser, a-v-c by-pass, .1 μf .	30-4650-47*
C7	Condenser, by-pass, .1 μf .	30-4650-47*
C8	Condenser, cathode by-pass, .05 μf .	30-4650-45*
C9	Condenser, screen by-pass, .1 μf .	30-4650-47*
C10	Condenser, d-c blocking, .005 μf .	30-1238-1*
C11	Condenser, d-c blocking, .005 μf .	30-1238-1*
C12	Condenser, high-frequency compensation, 47 $\mu\mu\text{f}$.	60-00475420
C13	Condenser, bass compensation, .006 μf .	30-4650-57*
C14	Condenser, tone, .0047 μf .	30-4650-56*
C15	Condenser, d-c blocking, .005 μf .	Part of PC1
C16	Condenser, tone compensation, .0047 μf .	30-4650-56*
C17	Condenser, electrolytic, 4-section	30-2575-32
C17A	Condenser, cathode by-pass, 25 μf , 50v	Part of C17
C17B	Condenser, filter, 40 μf , 150v	Part of C17
C17C	Condenser, filter, 40 μf , 250v	Part of C17
C17D	Condenser, filter, 40 μf , 250v	Part of C17
C18	Condenser, voltage doubling, 20 μf , 200v	30-2568-22
C19	Condenser, line by-pass, .04 μf .	30-1226-17*
C20	Condenser, phono isolation, .01 μf .	30-4650-58*
C21	Condenser, a-v-c decoupling, 220 $\mu\mu\text{f}$.	62-122001001*
I1	Lamp, pilot	34-2064*
L1	Coil, antenna, special services	32-4561-6
L2	Coil, oscillator shunt	32-4562-1
LA1	Loop assembly, antenna	76-2127-13
LS1	Speaker	36-1626-5
PC1	Printed circuit, d-c blocking	30-6001
R1	Resistor, grid return, 470,000 ohms	66-4478340*
R2	Resistor, grid leak, 100,000 ohms	66-4108340*
R3	Resistor, B- to chassis, 150,000 ohms	66-4158340*
R4	Resistor, cathode bias, 180 ohms	66-1188340*
R5	Resistor, screen dropping, 27,000 ohms	66-3278340*
R6	Resistor, i-f filter, 47,000 ohms	66-3478340*
R7	Resistor, diode return, 470,000 ohms	66-4478340*
R8	Resistor, diode load, 2.2 megohms	66-5228340*
R9	Resistor, grid leak, 10 megohms	66-6108340*
R10	Volume control, 2 megohms (with off-on switch and tone control)	33-5563-60
R11	Resistor, bass compensation, 68,000 ohms	66-3688340*
R12	Tone control, 5 megohms	Part of R10
R13	Resistor, plate load, 500,000 ohms	Part of PC1
R14	Resistor, grid leak, 500,000 ohms	Part of PC1
R15	Resistor, cathode bias, 180 ohms, 1 watt	66-1184340*
R16	Resistor, filter, 5000 ohms, 7 watts	33-1335-95
R17	Resistor, filter, 270 ohms, 7 watts	33-1335-91
R18	Resistor, tube saver, 100 ohms	33-1343-3
S1	Switch, off-on	Part of R10

ADDITIONAL INFORMATION

Access to Radio Chassis

To lift the top to gain access to the radio chassis, merely loosen the screws holding the top in place. These screws are located on each side of the cabinet near the front, beneath the top leaves.

Reference Symbol	Description	Service Part No.
T1	Transformer, oscillator	32-4453-2
T2	Transformer, output	32-8242-9
W1	Line cord	L-2183*
WS	Wafer switch, 2-section	42-1989-1
Z1	Transformer, 1st i-f	32-4160A
Z2	Transformer, 2nd i-f	32-4240A

MISCELLANEOUS

Description	Service Part No.
Changer Mounting Hardware	
Sleeve, rubber (3)	54-7798
Speed nut (3)	W2554
Spring, mounting, top (3)	56-7059FA9
Spring, mounting, bottom (3)	56-7059-1FCP
Dial scale and bezel assembly	76-8116
Drive cord, 25 ft. spool	45-8750*
Foot, cabinet (4)	3363-3
Mount, rubber (3)	27-4596
Panel, diffusing	54-8832
Spring clip, diffusing panel	56-3587-1
Pilot-lamp socket assembly	76-1179-7
Fastener, pilot-lamp shield (2)	W2235-1FA9
Pointer	56-5630-54
Rail assembly, pointer	76-8119
Spring, pointer drive	56-2617*
Slide assembly, changer support (2)	76-6742-1
Socket, Loktal (3)	27-6207*
Socket, octal (2)	27-6174*
Spring, hairpin	56-6552
Tuning shaft	56-8370-2

MODEL 53-1750 (MAHOGANY)

Cabinet	10962
Hinge, top (2)	45-6200
Hinge, top leaf (4)	28-9055
Hinge, spring (2)	28-9054
Tapped stud, spring hinge (8)	56-6296-1
Knob, off-on-volume	54-4842-8
Knob, radio-phono	54-4842-9
Knob, tuning	76-6353
Knob, tone	76-6353-1
Metal grille	56-8660-5

MODEL 53-1750 (BLOND)

Cabinet	10962-1
Hinge, top (2)	45-6200
Hinge, top leaf (4)	28-9055
Hinge, spring (2)	28-9054
Tapped stud, spring hinge (8)	56-6296-1
Knob, off-on-volume	54-4842-11
Knob, radio-phono	54-4842-10
Knob, tuning	76-6353-4
Knob, tone	76-6353-5

PARTS LIST ADDITIONS

Description	Service Part No.
Center panel, top (mahogany)	45-6758
Center panel, top (blond)	45-6759
Screw, top mounting (2)	1W18737FA9
Speed nut (2)	W2566-1
Washer (2)	1W5116FA9