

PHILCO-TROPIC RADIO MODEL 3000

SPECIFICATIONS

CABINET	Bakelite, brown
CIRCUIT	5-tube, two-band superheterodyne
FREQUENCY RANGES	
BROADCAST	540—1600 kc.
SHORT WAVE	4.75—18 mc.
INTERMEDIATE FREQUENCY	455 kc.
AERIAL	External aerial, 100 ft. long, such as Philco Outdoor Aerial, Part No. 45-1494, should be used. Connect to blue lead at rear of chassis.
AUDIO OUTPUT	1.4 watts
OPERATING VOLTAGE	105—125 volts, a.c. or d.c.
POWER CONSUMPTION	25 watts
PHILCO TUBES (5)	14Q7 converter, 7B7 i-f ampl., 14B6 det.-a.v.c.-1st audio ampl., 50A5 output, 35Y4 rectifier.

CAUTION! One side of power line is connected to the chassis. DO NOT GROUND.

CRITICAL-LEAD-DRESS INFORMATION, PREPARATORY TO ALIGNMENT PROCEDURE

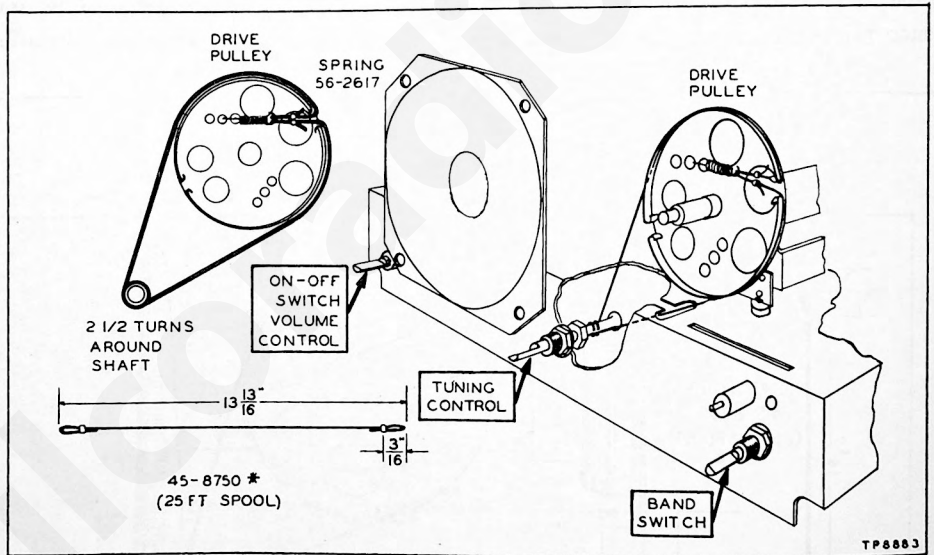
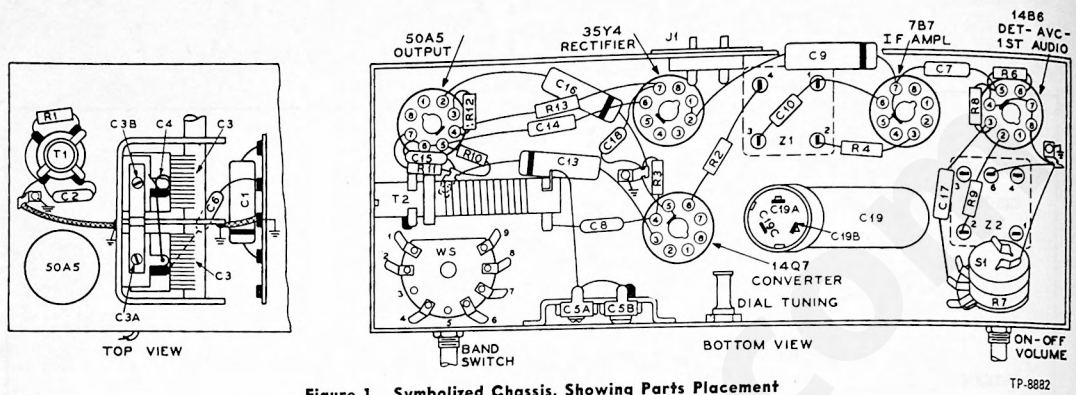
1. All wiring must be dressed away from C6, 100- μ f. condenser, toward the wiring panel. The condenser must be dressed upward from the chassis. Reason: To obtain proper adjustment of short-wave aerial trimmer.

2. The green mixer grid lead from pin 6 of the 14Q7 socket to the panel referred to in item 1 must be dressed upward from the chassis and other wiring on the bottom side of the chassis. Reason: Same as item 1.

3. The blue output-transformer lead to the 50A5 plate must be wired around the 14Q7 and 35Y4 sockets, toward the i-f section of the set, and away from the mixer grid and its lead. Reason: To prevent regeneration.

4. The neutralizing capacitance (wire), between the tuning-condenser sections, must be fed through the lug-hole in the oscillator section, and bent over the lug once only.

MODEL 3000



SYMBOLIZATION

The components in the radio circuit are identified by reference symbols in which the prefix letter indicates the type of part. Prefix letter designations are as follows:

C —condenser
 I —pilot lamp
 L —choke or coil
 LS—loudspeaker

R—resistor
 S—switch

T —transformer
 W —line cord
 WS—water switch
 Z —electrical assembly

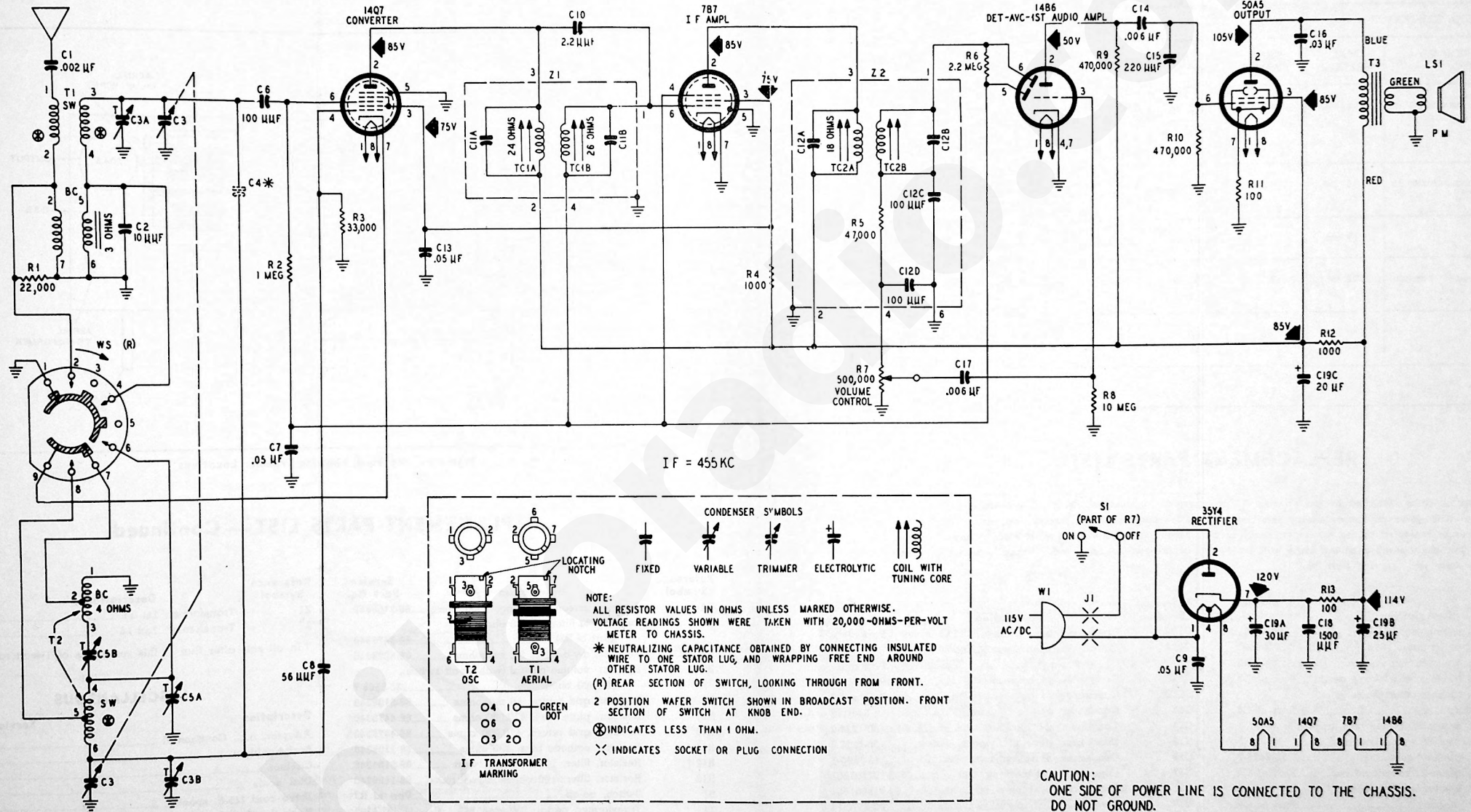


Figure 3. Philco-Tropic Radio Model 3000, Schematic Diagram

DIAL POINTER—With the tuning-condenser plates fully meshed, adjust the dial pointer to coincide with the index mark in the lower right-hand corner of the dial (just to the left of the "160" mark).

SIGNAL GENERATOR—Connect the ground lead to the chassis, and the output lead as indicated in the chart. Use modulated output.

STEP	SIGNAL GENERATOR		RADIO			
	CONNECTION TO RADIO	DIAL SETTING	BAND SWITCH	DIAL SETTING	SPECIAL INSTRUCTIONS	ADJUST
1	Through .1- μ f. condenser to rear section of gang.	455 kc.	BC	580 kc.	Adjust, in order given, for maximum output; then repeat.	TC2B (2nd i-f sec.) TC2A (2nd i-f pri.) TC1B (1st i-f sec.) TC1A (1st i-f pri.)
2	Through 400-ohm resistor to aerial lead.	18 mc.	SW	18 mc.	Adjust for maximum output.	C3B (SW osc.)
3	Same as step 2.	17 mc.	SW	17 mc.	Adjust for maximum output.	C3A (SW aerial)
4	Through 200- μ f. condenser to aerial lead.	1500 kc.	BC	1500 kc.	Adjust for maximum output.	C5A (BC osc.)
5	Same as step 4.	580 kc.	BC	580 kc.	Adjust for maximum output while rocking gang condenser.	C5B (BC osc. tracking)
6	Repeat step 4.					

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

Reference Symbol	Description	Service Part No.	Reference Symbol	Description	Service Part No.
C1	Condenser, aerial coupling, .002 μ f.	61-0062	C12A	Condenser, fixed trimmer, 2nd i-f primary	Part of Z2
C2	Condenser, r-f by-pass, 10 μ f.	60-00105407	C12B	Condenser, fixed trimmer, 2nd i-f secondary	Part of Z2
C3	Condenser, gang tuning	31-2722	C12C	Condenser, r-f by-pass, 100 μ f.	Part of Z2
C3A	Condenser, trimmer, short-wave aerial	Part of C3	C12D	Condenser, r-f by-pass, 100 μ f.	Part of Z2
C3B	Condenser, trimmer, short-wave oscillator	Part of C3	C13	Condenser, screen by-pass, .05 μ f.	61-0122
C4	Condenser, neutralizing (one turn, approx. 1 1/2 inches of solid, insulated wire)		C14	Condenser, d-c blocking, .006 μ f.	30-1226-2
C5	Condenser, trimmer assembly	31-6476-7	C15	Condenser, plate r-f by-pass, .006 μ f.	30-1226-2
C5A	Condenser, trimmer, broadcast osc.	Part of C5	C16	Condenser, plate audio by-pass, .03 μ f.	45-3500-1
C5B	Condenser, low-frequency padder, broadcast osc.	Part of C5	C17	Condenser, d-c blocking, 220 μ f.	62-122001001
C8	Condenser, d-c blocking, 100 μ f.	62-110009001	C18	Condenser, filter by-pass, 1500 μ f.	62-215001001
C7	Condenser, a-v-c filter, .05 μ f.	61-0122	C19	Condenser, electrolytic, 3-section	30-2570-14
C8	Condenser, d-c blocking, 56 μ f.	62-056409001	C19A	Condenser, filter, 30 μ f.	Part of C19
C9	Condenser, line by-pass, .05 μ f.	61-0122	C19B	Condenser, filter, 25 μ f.	Part of C19
C10	Condenser, neutralizing, 2.2 μ f.	30-1221-4	C19C	Condenser, filter, 20 μ f.	Part of C19
C11A	Condenser, fixed trimmer, 1st i-f primary	Part of Z1	J1	Jack, a-c line cord plug-in, male	27-6240
C11B	Condenser, fixed trimmer, 1st i-f secondary	Part of Z1	LS1	Speaker, p-m, 4-inch	36-1614
			R1	Resistor, aerial loading, 22,000 ohms	66-3228340
			R2	Resistor, grid return, 1 megohm	66-5108340
			R3	Resistor, grid return, 33,000 ohms	66-3338340

RADIO CONTROLS—Set the volume control to maximum. Set the band switch, tuning control, and signal-generator frequency as indicated in the chart.

OUTPUT METER—Connect between the voice-coil lug on the speaker, and the chassis.

OUTPUT LEVEL—During alignment, the signal-generator output must be attenuated to hold the output-meter reading below 1.5 volts.

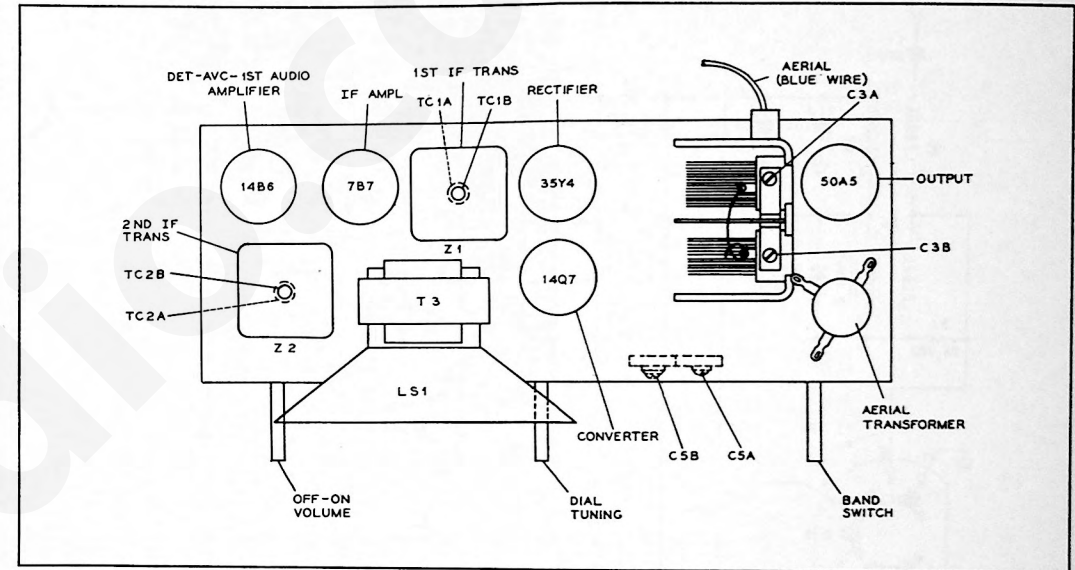


Figure 4. Top View, Showing Trimmer Locations

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REPLACEMENT PARTS LIST — Continued

Reference Symbol	Description	Service Part No.	Reference Symbol	Description	Service Part No.
R4	Resistor, screen dropping, 1000 ohms	66-2108340	Z1	Transformer, 1st i-f	32-4377
R5	Resistor, i-f filter, 47,000 ohms (part of Z2)	66-3478340	Z2	Transformer, 2nd i-f	32-4378
R6	Resistor, a-v-c filter, 2.2 megohms	66-5228340			
R7	Resistor, volume control (with on-off switch), 500,000 ohms	33-5566-7			
R8	Resistor, grid return, 10 megohms	66-5108340			
R9	Resistor, plate load, 470,000 ohms	66-4478340			
R10	Resistor, grid return, 470,000 ohms	66-4478340			
R11	Resistor, cathode bias, 100 ohms	66-1108340			
R12 †	Resistor, filter, 1000 ohms, 1 watt	66-2104340			
R13	Resistor, filter, 100 ohms	66-1108340			
S1	Switch, on-off	Part of R7			
T1	Transformer, aerial, SW and BC	32-4191			
T2	Transformer, oscillator, SW and BC	32-4192			
T3	Transformer, output	Part of LS1			
TC1A	Tuning core, 1st i-f pri.	Part of Z1			
TC1B	Tuning core, 1st i-f sec.	Part of Z1			
TC2A	Tuning core, 2nd i-f pri.	Part of Z2			
TC2B	Tuning core, 2nd i-f sec.	Part of Z2			
W1	Line cord, plug, and bracket assembly	76-4285-1			
WS	Wafer switch, band change, 1-section	42-1806-1			

† In all sets after Run 1, this resistor is of 1-watt rating.

MISCELLANEOUS

Description	Service Part No.
Adaptor, a.c., Continental	L-3275
Back cabinet	54-7796
Cabinet	10542G
Dial scale	54-5003
Drive cord (25-ft. spool)	45-8750*
Knob, band switch	54-4527-32
Knob, off-on-volume	54-4527-13
Knob, tuning	54-4527-14
Pointer	27-4891
Socket, Loktal (5 required)	27-6177
Spring, gang drive	58-2817
Tuning-shaft assembly	31-2718-8
Window	54-4088
Fasteners (6)	28-4279FA1