

# PHILCO-TROPIC RADIO MODEL 3002

## SPECIFICATIONS

CABINET .....	Table model, brown, molded plastic
CIRCUIT .....	5-tube superheterodyne
<b>FREQUENCY RANGES</b>	
Standard broadcast .....	540—1600 kc.
Short Wave 1 .....	2.3—7 mc.
Short Wave 2 .....	7—22 mc.
AUDIO OUTPUT .....	1.2 watts at 117 volts; 1.8 watts at 234 volts
OPERATING VOLTAGES .....	105—125 volts, or 220—240 volts, a.c. or d.c.
POWER CONSUMPTION .....	25 watts at 117 volts; 54 watts at 234 volts
INTERMEDIATE FREQUENCY .....	455 kc.
PHILCO TUBES (5) .....	14Q7 converter, 7B7 i-f ampl., 14B6 det.-a.v.c.-1st audio ampl., 50A5 audio output, 35Y4 rectifier
AERIAL .....	Conventional L-type, such as Philco Outdoor Aerial, Part No. 45-1494

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

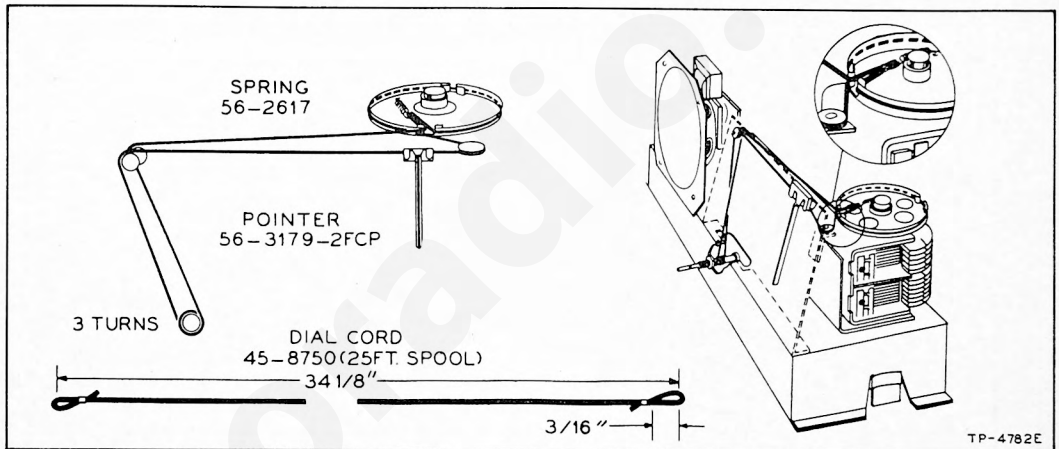


Figure 1. Drive-Cord-Installation Details

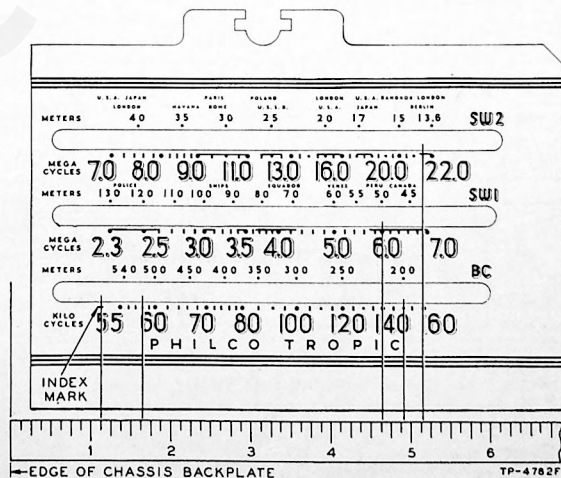


Figure 2. Dial-Backplate-Calibration Measurements

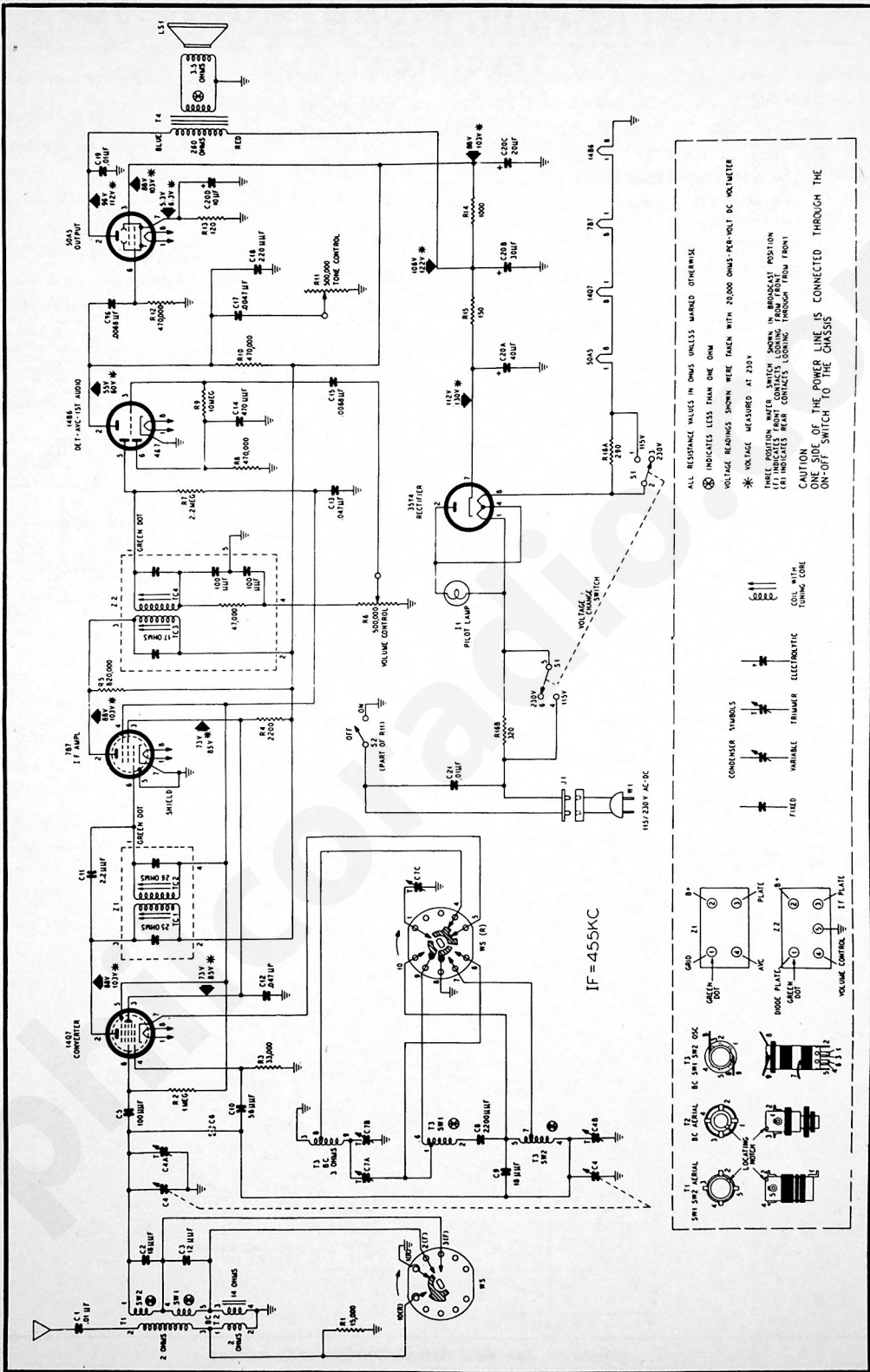


Figure 3. Philco-Tropic Radio Model 3002, Schematic Diagram

# ALIGNMENT PROCEDURE

**CAUTION:** Before connecting the radio to the power source, make certain that the voltage-change-over switch, located on the rear of the chassis, is correctly set for the line voltage.

**DIAL POINTER** — With the tuning condenser fully meshed, set the pointer to coincide with the index mark at the low-frequency end of the dial, to the left of "55".

**OUTPUT METER** — Connect across the speaker voice-coil terminals.

STEP	SIGNAL GENERATOR		RADIO			ADJUST
	CONNECTION TO RADIO	DIAL SETTING	BAND SWITCH	DIAL SETTING	SPECIAL INSTRUCTIONS	
1	Through .05- $\mu$ f. condenser to stator of aerial tuning condenser.	455 kc.	BC	Gang fully meshed.	Adjust in order given, for maximum output; then repeat.	TC4—2nd i-f sec. TC3—2nd i-f pri. TC2—1st i-f sec. TC1—1st i-f pri.
2	Through 400-ohm non-inductive resistor to aerial lead.	21.5 mc.	SW2	21.5 mc.	Adjust for maximum.	C4B—SW2 osc. C4A—SW2 aerial
3	Same as step 2.	6 mc.	SW1	Tune to signal.	Adjust for maximum while rocking tuning control. Image should be heard when radio is tuned to 5.1 mc.	C7C—SW1 osc.
4	Through 200- $\mu$ f. condenser to aerial lead.	1500 kc.	BC	Tune to signal.	Adjust for maximum while rocking tuning control.	C7B—BC osc. (shunt)
5	Same as step 4.	580 kc.	BC	Tune to signal.	Adjust for maximum while rocking tuning control.	C7A—BC osc. (series)
6	Repeat steps 4, 5, and 4 until no further improvement is obtained.					

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

**CONTROLS** — Set the radio volume control to maximum. Set the band switch, the radio dial, and the signal-generator dial as indicated in the chart.

**OUTPUT LEVEL** — During alignment, adjust the signal-generator output to hold the output-meter indication below 1 volt.

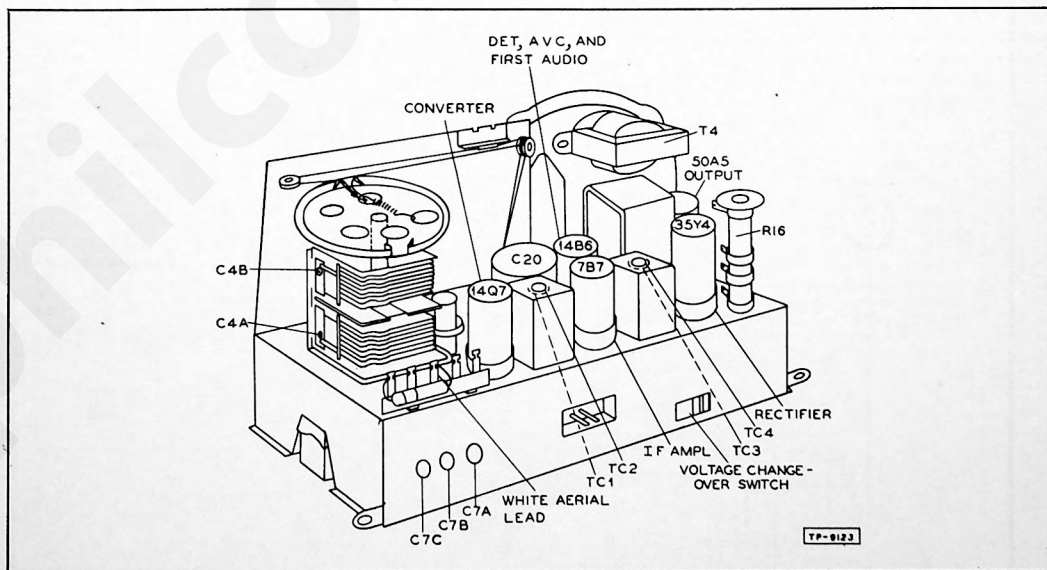


Figure 4. Top View, Showing Trimmer Locations

# 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.
C1	Condenser, aerial coupling, .01 $\mu$ f.	30-4650-58
C2	Condenser, fixed trimmer, SW2, 18 $\mu$ f.	62-018209021*
C3	Condenser, fixed trimmer, SW1, 12 $\mu$ f.	62-012309021*
C4	Condenser, tuning gang, 2-section	31-2722-3
C4A	Condenser, trimmer, SW2 aerial	Part of C4
C4B	Condenser, trimmer, SW2 osc.	Part of C4
C5	Condenser, d-c blocking 100 $\mu$ f.	62-110001001*
C6	Condenser, neutralizing (1 turn insulated wire, aerial to osc.)	
C7	Condenser assembly, trimmer, 3-section	31-6477-9
C7A	Condenser, series padder, BC osc.	Part of C7
C7B	Condenser, trimmer, BC osc.	Part of C7
C7C	Condenser, trimmer, SW1 osc.	Part of C7
C8	Condenser, tracker, SW1, 2200 $\mu$ f.	60-20245304*
C9	Condenser, fixed trimmer, SW2, 18 $\mu$ f.	62-018209021*
C10	Condenser, d-c blocking, 56 $\mu$ f.	62-056409001*
C11	Condenser, neutralizing, 2.2 $\mu$ f.	30-1221-6
C12	Condenser, screen by-pass, .047 $\mu$ f.	30-4650-45
C13	Condenser, a-v-c filter, .047 $\mu$ f.	30-4650-45
C14	Condenser, bias filter, 470 $\mu$ f.	62-147001001*
C15	Condenser, d-c blocking, .0068 $\mu$ f.	30-4650-57
C16	Condenser, d-c blocking, .0068 $\mu$ f.	30-4650-57
C17	Condenser, tone compensation, .0047 $\mu$ f.	30-4650-56
C18	Condenser, plate by-pass, 220 $\mu$ f.	62-122001001*
C19	Condenser, tone compensation, .01 $\mu$ f.	30-4650-58
C20	Condenser, electrolytic, 4-section	30-2570-20
C20A	Condenser, filter, 40 $\mu$ f., 20Cv	Part of C20
C20B	Condenser, filter, 30 $\mu$ f., 20Cv	Part of C20
C20C	Condenser, filter, 20 $\mu$ f., 20Cv	Part of C20
C20D	Condenser, cathode by-pass, 10 $\mu$ f., 25v	Part of C20
C21	Condenser, line filter, .01 $\mu$ f.	30-4650-58
I1	Pilot lamp	34-2068
J1	Socket, male, a-c	27-6240
LS1	Speaker, p-m, 5"	36-1625-9
R1	Resistor, BC aerial primary loading, 15,000 ohms	66-3158340*
R2	Resistor, grid return, 1 megohm	66-5108340*
R3	Resistor, grid return, 33,000 ohms	66-3338340*
R4	Resistor, screen dropping, 2200 ohms	62-2228340*
R5	Resistor, plate load, 820,000 ohms	66-4828340*

Reference Symbol	Description	Service Part No.
R6	Volume control, 500,000 ohms	33-5565-7
R7	Resistor, diode load, 2.2 megohms	66-5228340*
R8	Resistor, bias, 470,000 ohms	66-4478340*
R9	Resistor, grid return, 10 megohms	66-6108340*
R10	Resistor, plate load, 470,000 ohms	66-4478340*
R11	Tone control (with off-on switch), 500,000 ohms	33-5566-10
R12	Resistor, grid return, 470,000 ohms	66-4478340*
R13	Resistor, cathode bias, 120 ohms	66-1128340*
R14	Resistor, filter, 1000 ohms, 1 watt	66-2104340*
R15	Resistor, filter, 150 ohms, 1 watt	66-1154340*
R16	Resistor, wire-wound, 2-section	33-3440-1
R16A	Resistor, filament-voltage dropping, 290 ohms	Part of R16
R16B	Resistor, line dropping, 320 ohms	Part of R16
S1	Switch, slide, voltage-change-over	42-1569
S2	Switch, off-on	Part of R11
T1	Transformer, aerial, SW1 and SW2	32-4204-1
T2	Transformer, aerial BC	32-4205
T3	Transformer, oscillator, BC SW1 and SW2	32-4246
T4	Transformer, output	Part of LS1
TC1	Tuning core, 1st i-f primary	Part of Z1
TC2	Tuning core, 1st i-f secondary	Part of Z1
TC3	Tuning core, 2nd i-f primary	Part of Z2
TC4	Tuning core, 2nd i-f secondary	Part of Z2
W1	Line-cord-and-plug assembly	41-3865
WS	Water switch, band change, 1-section	42-1828
Z1	Transformer, 1st i-f	32-4377
Z2	Transformer, 2nd i-f	32-4378

## MISCELLANEOUS

Description	Service Part No.
Cabinet	10693C
Back	54-7801
Baffle	54-7802
Dial-scale assembly	27-5984-1
Grille	54-4520
Continental a-c adapter	I-3275
Drive cord (25-ft. spool)	45-8750*
Knob, band switch	54-4527-15
Knob, off-on-tone	54-4527-18
Knob, tuning	54-4527-14
Knob, volume	54-4527-20
Plate, electrolytic-condenser mounting	56-1643-1FA22
Pointer	56-3179-2FCP
Scale-backplate assembly	76-3377-1
Socket assembly, pilot lamp	76-1179
Socket, Loktal (5 required)	27-6207
Spring, gang drive	56-2617
Tuning shaft	76-4830-1