

PHILCO RADIO-CLOCK, MODELS 51-537 and 51-537-I

SPECIFICATIONS

CABINET

Model 51-537 Molded Phenolic, brown

Model 51-537-I Molded Phenolic, Ivory

FREQUENCY RANGE 540—1600 kc.

AUDIO OUTPUT 1 watt

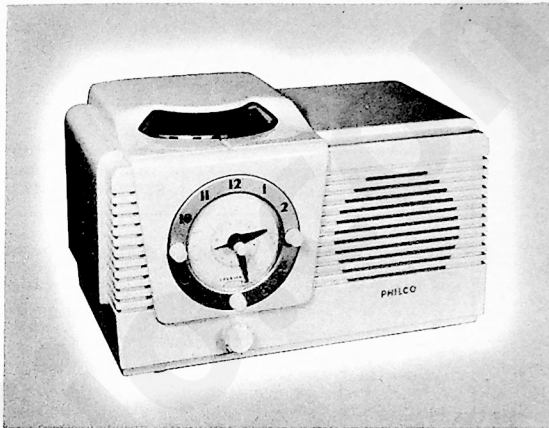
OPERATING VOLTAGE 117 volts, a.c.

POWER CONSUMPTION 30 watts

AERIAL High-impedance loop, connector for external aerial

INTERMEDIATE FREQUENCY 455 kc.

PHILCO TUBES (5) 7A8, 14A7, 14B6, 50L6GT, 35Y4



TP-7964

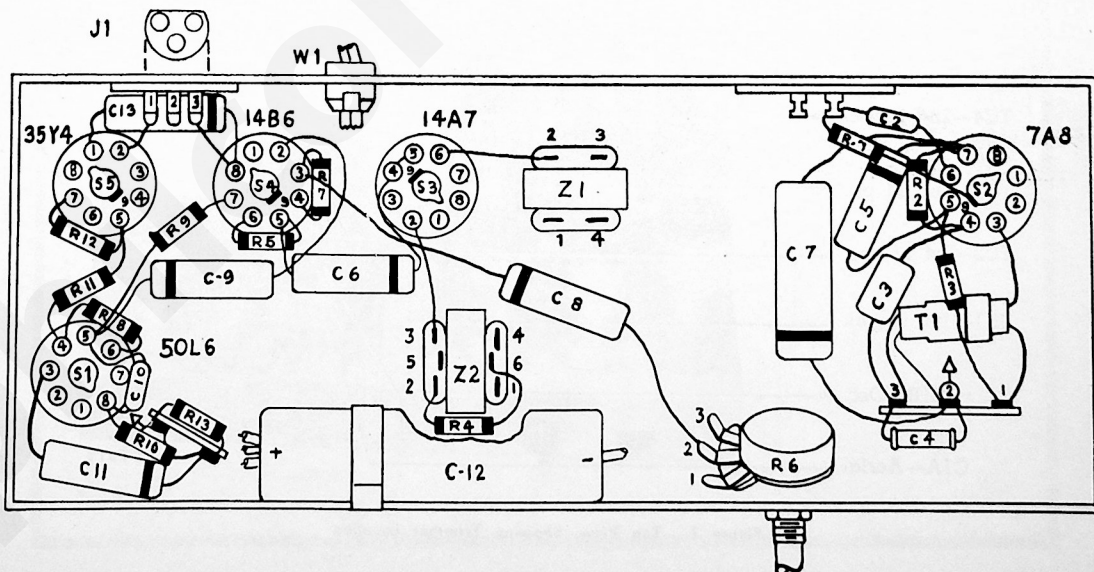


Figure 1. Base View, Showing Symbolized Chassis

ALIGNMENT PROCEDURE

CONTROLS: Turn on the radio, and set the volume control to maximum.

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

OUTPUT METER: Connect across the voice-coil terminals.

SIGNAL GENERATOR: Connect as indicated in the chart.

OUTPUT LEVEL: During the alignment, adjust the signal-generator output to hold the output-meter indication below 1.25 volts.

STEP	SIGNAL GENERATOR		RADIO		ADJUST
	CONNECTION TO RADIO	DIAL SETTING	DIAL SETTING	SPECIAL INSTRUCTIONS	
1	Ground lead to B—; output lead through .1- μ f. condenser to pin 6 of 7A8 tube.	455 kc.	540 kc. (gang fully meshed).	Adjust tuning cores, in order given, for maximum output.	TC301B—2nd i-f sec. TC301A—2nd i-f pri. TC300B—1st i-f sec. TC300A—1st i-f-pri.
2	Radiating loop; see note below.	1600 kc.	1600 kc.	Adjust for maximum.	C400B—osc.
3	Same as step 2.	1500 kc.	1500 kc.	Adjust for maximum.	C400A—aerial

NOTE: TC300A AND TC301A ARE LOCATED ON UNDERSIDE OF CHASSIS

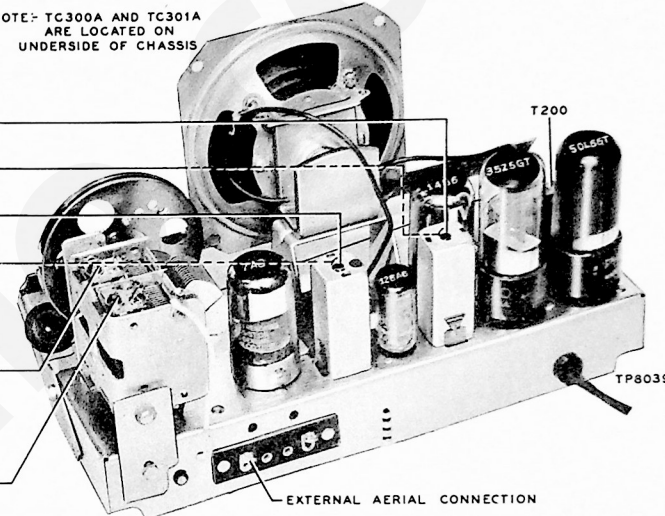


Figure 3. Top View, Showing Trimmer Locations

RADIATING LOOP: make up a 6—8 turn, 6-inch-diameter loop from insulated wire; connect to signal-generator leads and place near radio loop aerial.

SYMBOLIZATION

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

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 amplifier, detector, and a-v-c circuits.
- 400-series components are in Section 4—the r-f and converter circuits.

ALIGNMENT PROCEDURE

RADIO CONTROLS — Set volume control to maximum. Set tuning control as indicated in chart.

OUTPUT METER* — connect across voice-coil terminals.

SIGNAL GENERATOR — Connect generator and set frequency as indicated in chart. Use modulated output.

OUTPUT LEVEL — During alignment, adjust signal-generator output to hold output-meter reading below 1.25 volts.

STEP	SIGNAL GENERATOR		RADIO		ADJUST
	CONNECTION TO RADIO	DIAL SETTING	DIAL SETTING	SPECIAL INSTRUCTIONS	
1	Connect ground lead to B-; output lead through .1- μ f. condenser to grid (pin 6) of 7A8.	455 kc.	Tuning condenser fully meshed.	Adjust tuning cores, in order given, for maximum output.	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 below).	1600 kc.	1600 kc.	Adjust trimmer for maximum output.	C1B—Osc.
3	Same as step 2.	1500 kc.	1500 kc.	Adjust trimmer for maximum output.	C1A—Aerial

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

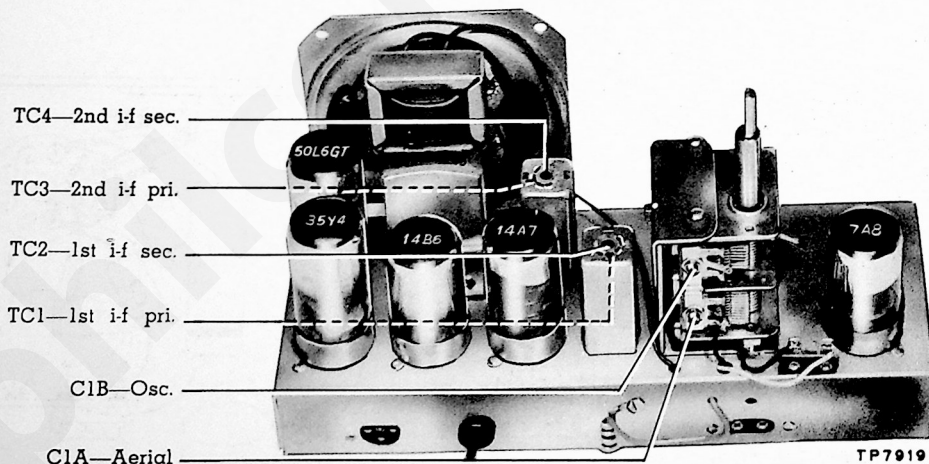


Figure 2. Top View, Showing Trimmer Location

NOTE: TC1 and TC3 are located on underside of chassis.

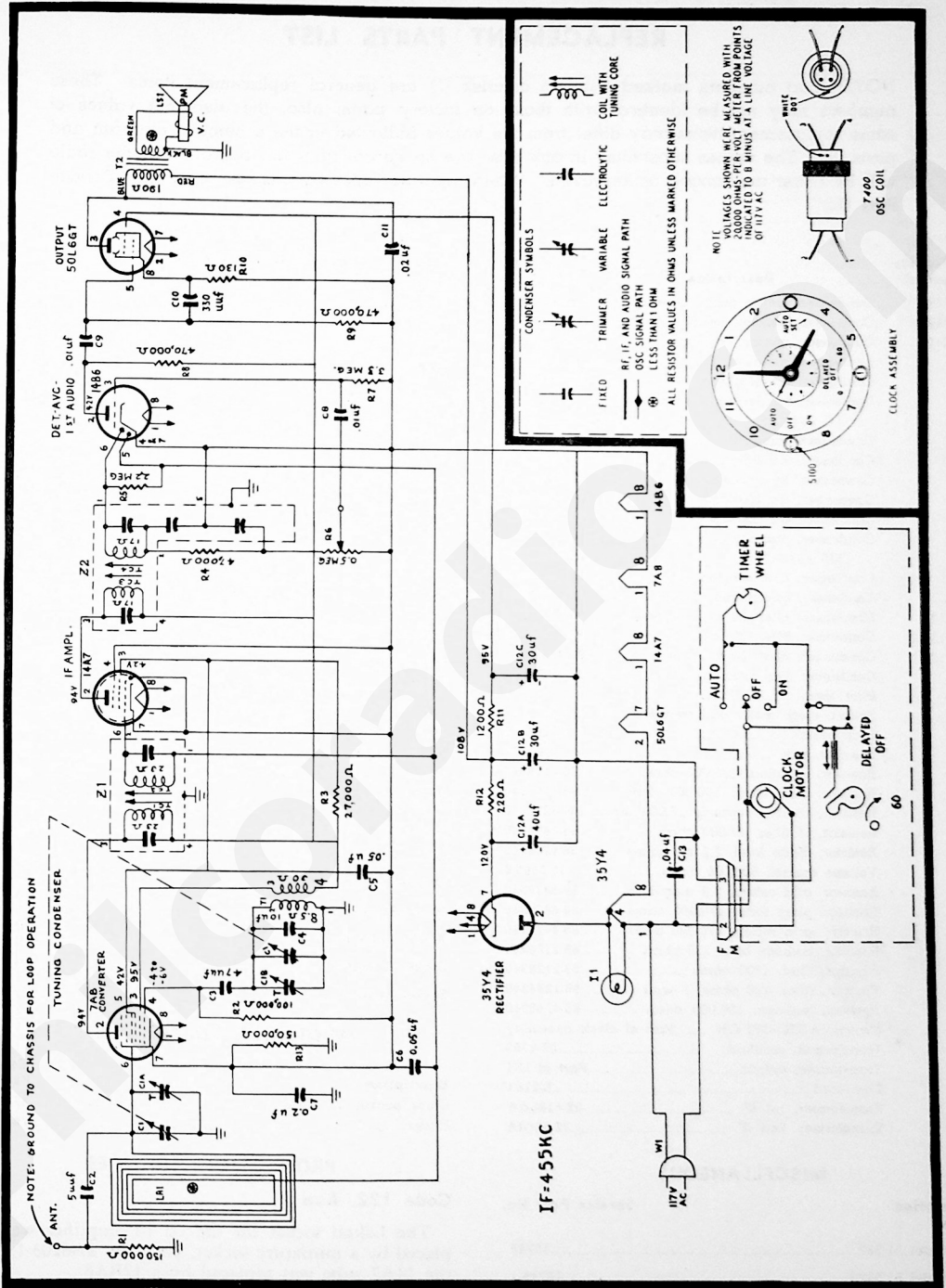


Figure 3. Philco Radio-Clock Models 51-537 and 51-537-1

REPLACEMENT PARTS LIST

NOTE: Part numbers marked with 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, tuning gang, 2-section	31-2751-5
C1A	Condenser, trimmer, aerial	Part of C1
C1B	Condenser, trimmer, oscillator	Part of C1
C2	Condenser, aerial coupling, 5 μ f.	30-1230
C3	Condenser, d-c blocking, 47 μ f.	60-00475417*
C4	Condenser, temperature compensating, 7.5 μ f.	30-1224-65
C5	Condenser, screen by-pass, .05 μ f.	61-0122*
C6	Condenser, a-v-c by-pass, .05 μ f.	61-0122*
C7	Condenser, by-pass, .2 μ f.	45-3500-3*
C8	Condenser, d-c blocking, .01 μ f.	61-0120*
C9	Condenser, d-c blocking, .01 μ f.	61-0120*
C10	Condenser, parasitic suppressor, 330 μ f.	62-133001001*
C11	Condenser, tone compensation, .02 μ f.	61-0108*
C12	Condenser, electrolytic, 3-section	30-2575-27
C12A	Condenser, filter, 30 μ f., 150 wvdc	Part of C12
C12B	Condenser, filter, 25 μ f., 150 wvdc	Part of C12
C12C	Condenser, filter, 20 μ f., 150 wvdc	Part of C12
C13	Condenser, line filter, .04 μ f.	45-3500-2*
I1	Pilot lamp	34-2068
J1	Socket, clock motor and switch	27-6123
LA1	Loop aerial	32-4052-32
LS1	Speaker, p-m	36-1627
R1	Resistor, isolating, 150,000 ohms	66-4158340*
R2	Resistor, grid return, 100,000 ohms	66-4108340*
R3	Resistor, screen dropping, 27,000 ohms	66-3278340*
R4	Resistor, i-f filter, 47,000 ohms	66-3478340*
R5	Resistor, diode load, 2.2 megohms	66-5228340*
R6	Volume control, 500,000 ohms	33-5565-6
R7	Resistor, grid return, 3.3 megohms	66-5338340*
R8	Resistor, plate load, 470,000 ohms	66-4478340*
R9	Resistor, grid return, 470,000 ohms	66-4478340*
R10	Resistor, cathode bias, 130 ohms	66-1128340*
R11	Resistor, filter, 1200 ohms	63-2128340*
R12	Resistor, filter, 220 ohms, 1 watt	66-1224340*
R13	Resistor, leakage, 150,000 ohms	66-4158340*
S1	Switch, AUTO-OFF-ON	Part of clock assembly
T1	Transformer, oscillator	32-4263
T2	Transformer, output	Part of LS1
W1	Line cord	L-2183*
Z1	Transformer, 1st IF	32-4160-6A
Z2	Transformer, 2nd IF	32-4200A

MISCELLANEOUS

Description	Service Part No.
Cabinet	
Model 51-537	10745
Model 51-537-I	10745-1
Back	54-7631
Fastener (4), back mounting	W2235-2FA9

MISCELLANEOUS (Cont.)

Description	Service Part No.
Baffle and cloth assembly	
Model 51-537	40-7730
Model 51-537-I	40-7730-1
Jewel	54-4304
Knobs	
Model 51-537 Volume control	27-4820
"AUTO-OFF-ON" and "DELAYED OFF"	54-4736
"AUTO SET"	54-4735-2
"TIME SET"	54-4736-4
Model 51-537-I Volume control	54-4118
"AUTO-OFF-ON" and "DELAYED OFF"	54-4736-1
"AUTO SET"	54-4736-3
"TIME SET"	54-4736-4
Clamp, electrolytic mounting	56-1466
Clip, pilot lamp mounting	56-3545-6
Clock and cable assembly	
Model 51-537, 60v	76-4640
50v	78-5117
Model 51-537-I, 60v	78-4840
50v	76-5118
Clock cover	56-6710
Dial scale, tuning knob	54-5055-2
Leak assembly, aerial	76-1472
Mounts, rubber, gang mounting (3)	27-4771-1
Pilot lamp assembly	27-6233-6
Shield, pilot lamp	56-6307-4FA3
Socket, Loktal (4)	27-6207
Socket, octal	27-6174

ADDITIONS TO PARTS LIST

Description	Service Part No.
Clock socket	27-6273
Outlet	76-3931

PRODUCTION CHANGES

Code 122, Run 1

The Loktal socket for the 1st i-f amplifier was replaced by a miniature socket, Part No. 27-6203-1, and the 14A7 tube was replaced by a 12BA6.

A 68-ohm, 1/2-watt resistor, Part No. 66-0688340, was added, in series with the cathode of the 12BA6.