

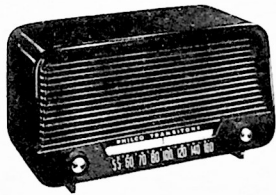
# PHILCO RADIO MODELS 52-540, 52-540-I, 52-541, 52-541-I, AND 52-542-I

## SPECIFICATIONS

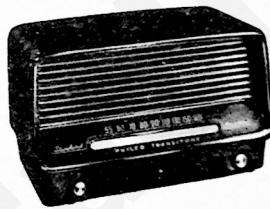
### CABINET

Model 52-540 .....	Phenolic, mottled mahogany
Model 52-540-I .....	Phenolic, ivory
Model 52-541 .....	Phenolic, mottled mahogany
Model 52-541-I .....	Phenolic, ivory
Model 52-542-I .....	Phenolic, ivory

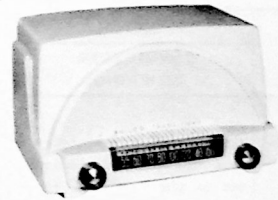
CIRCUIT .....	5-tube superheterodyne
FREQUENCY RANGE .....	540—1630 kc.
AUDIO OUTPUT .....	1.2 watts
OPERATING VOLTAGE .....	105—125 volts, a.c. or d.c.
POWER CONSUMPTION .....	.30 watts
AERIAL .....	High-impedance loop; connector for external aerial
INTERMEDIATE FREQUENCY .....	455 kc.
PHILCO TUBES (5) .....	7A8, 12BA6, 12AV6, 50L6GT, 35Z5GT



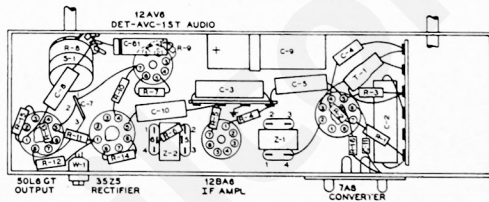
MODEL 52-540



MODEL 52-541



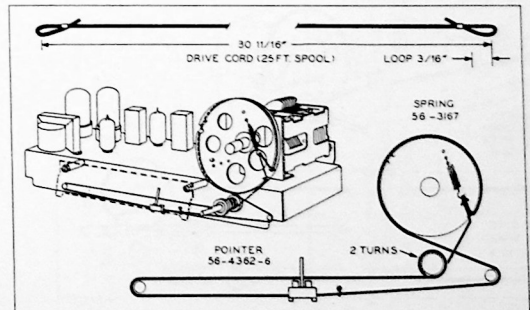
MODEL 52-542-I



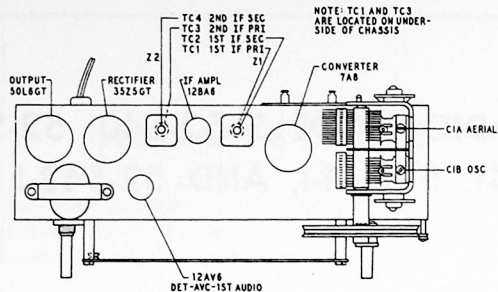
TP1-1136

← Figure 1. Symbolized Chassis, Showing Parts Placement

Figure 2. Drive-Cord Installation Details, →  
Models 52-540 and 52-540-I



TP-7865F-1



TP1-1130

Figure 3. Top View, Showing Trimmer Locations

### ALIGNMENT PROCEDURE

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

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

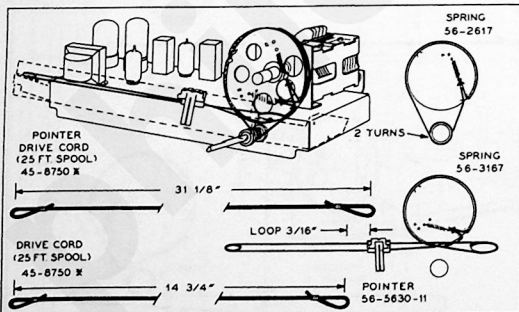
**OUTPUT METER:** Connect across voice-coil terminals.

**SIGNAL GENERATOR:** Connect as indicated in chart. Use modulated output.

**OUTPUT LEVEL:** During alignment, attenuate signal-generator output to maintain 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-uf. condenser to pin 6 of 7A8 converter.	455 kc.	540 kc. (gang 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

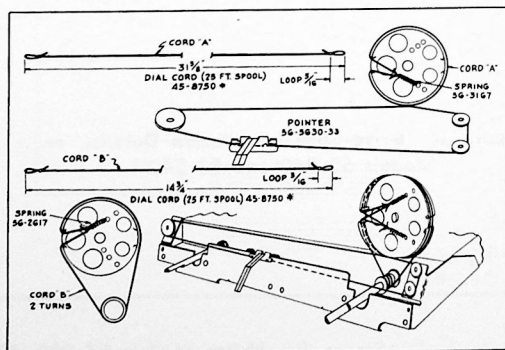
**RADIATING LOOP:** Make up a 6—8 turn, 6-inch-diameter loop from insulated wire; connect to signal-generator leads and place near radio loop antenna.



TP-7865E-1

Figure 5. Drive-Cord Installation Details, Model 52-542-1

Figure 4. Drive-Cord Installation Details, Models 52-541 and 52-541-1



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## 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	
	Model 52-540 .....	31-2751-6
	Models 52-541 and 52-542 .....	31-2751
C2	Condenser, i-f bypass, .1 $\mu$ f. ....	61-0113*
C3	Condenser, a-v-c by-pass, .05 $\mu$ f. ....	61-0122*
C4	Condenser, d-c blocking, 47 $\mu$ f. ....	60-00475417*
C5	Condenser, screen by-pass, .003 $\mu$ f. ....	61-0109*
C6	Condenser, d-c blocking, .01 $\mu$ f. ....	61-0120*
C7	Condenser, dual ceramic .....	30-1239-4
C7A	Condenser, d-c blocking, .007 $\mu$ f. ....	Part of C7
C7B	Condenser, grid by-pass, 220 $\mu$ f. ....	Part of C7
C8	Condenser, tone compensation	
	Models 52-540 and 52-541: .05 $\mu$ f. ....	61-0122*
	Model 52-542: .02 $\mu$ f. ....	61-0108*
C9	Condenser, electrolytic, 3-section .....	30-2573
C9A	Condenser, filter, 20 $\mu$ f., 150v .....	Part of C9
C9B	Condenser, filter, 25 $\mu$ f., 150v .....	Part of C9
C9C	Condenser filter, 30 $\mu$ f., 150v .....	Part of C9
C10	Condenser, line by-pass, .04 $\mu$ f. ....	45-3500-2*
C11	Condenser, external-aerial coupling, 4.7 $\mu$ f. ....	30-1230
I1	Pilot lamp (Models 52-541 and 52-542-1 only) .....	34-2068
LA1	Loop aerial	
	Models 52-540 and 52-540-I .....	32-4052-33
	Models 52-541 and 52-541-I .....	32-4052-31
	Model 52-542-I .....	32-4052-38
LS1	Speaker, p-m	
	Models 52-540, 52-540-I, 52-541 and 52-541-I .....	36-1627-5
	Model 52-542-I .....	36-1625-3
R1	Resistor, leakage, 150,000 ohms .....	66-4158340*
R2	Resistor, grid return, 100,000 ohms .....	66-4108340*
R3	Resistor, screen dropping, 39,000 ohms .....	66-3398340*
R4	Resistor, grid return, 2.2 megohms .....	66-5228340*
R5	Resistor, cathode bias, 68 ohms .....	66-0688340*
R6	Resistor, i-f filter, 47,000 ohms .....	66-3478340*
R7	Resistor, diode load, 2.2 megohms .....	66-5228340*
R8	Volume control, 500,000 ohms	
	Models 52-540 and 52-540-I .....	33-5538-7
	Models 52-541 and 52-541-I .....	33-5566-4
	Model 52-542-I .....	33-5566-4
R9	Resistor, grid return, 3.3 megohms .....	66-5338340*
R10	Resistor, plate load, 470,000 ohms .....	66-4478340*
R11	Resistor, grid return, 470,000 ohms .....	66-4478340*
R12	Resistor, cathode bias, 130 ohms .....	66-1133260*
R13	Resistor, filter, 1200 ohms .....	66-2128340*
R14	Resistor, filter, 220 ohms, 1 watt .....	66-1224340*
R15	Resistor, tone compensation, 2200 ohms (Models 52-540, 52-540-I, 52-541 and 52-541-I only) .....	66-2228340
	Resistor, aerial isolating, 150,000 ohms .....	66-4158340
R16	Switch, off-on .....	Part of R8
T1	Transformer, oscillator .....	32-4263
T2	Transformer, output .....	32-8384
W1	Line cord .....	L-2183*
Z1	Transformer, at i-f .....	32-4180-6A
Z2	Transformer, 2nd i-f .....	32-4240-A

## MISCELLANEOUS

Description	Service Part No.
MODELS 52-540 AND 52-540-I	
Cabinet, mottled mahogany .....	10750
Cabinet, ivory .....	10750-1
Back .....	54-7777
Fastener, back mounting (4) .....	W2235-2FA9
Baffle, speaker .....	
Dial-backplate assembly .....	76-4658
Knob (2) .....	54-4527-11
Mount, rubber (3) .....	27-4771-1
Pointer .....	56-4362-6
Pulley-and-shaft assembly .....	76-3671-3
MODELS 52-541 AND 52-541-I	
Cabinet, mahogany .....	10747
Knob (2) .....	54-4674
Cabinet, ivory .....	10747-1
Knob (2) .....	54-4674-1
Back .....	54-7767
Fastener, back mounting (4) .....	W2235FA9
Baffle, speaker .....	
Backplate, bracket and pulley assembly .....	76-6235
Dial-backplate assembly .....	76-4570
Fastener, pilot-lamp shield mounting (2) .....	W2235-1FA9
Speed clip, grille mounting (4) .....	1W56920FE7
Jewel .....	54-4304
Mount, rubber (3) .....	27-4771-1
Pointer .....	56-5630-11
Spring, pointer drive .....	56-3167
Pulley-and-shaft assembly .....	76-3671-2
Scale strap, dial mounting	
LH .....	56-7373
RH .....	56-7373-1
Socket assembly, pilot lamp .....	27-6233-6
MODEL 52-542-I	
Cabinet, ivory .....	10769-8
Back .....	54-7911
Fastener, back mounting (4) .....	W2235FA9
Clips, baffle mounting .....	1W56920FE7
Baffle, speaker .....	
Dial scale .....	54-5132
Screw, scale mounting (2) .....	1W14504FA1
Dial-backplate assembly .....	Part of 76-7048
Knob (2) .....	54-4718-33
Backplate, bracket-and-pulley assembly .....	76-7048
Fastener, pilot-lamp shield mounting (2) .....	W2235-1FA9
Grille, plastic .....	54-4919-1
Mount, rubber (3) .....	27-4771-1
Pointer .....	56-5630-33
Spring, pointer drive .....	56-3167
Pulley-and-shaft assembly .....	76-3671-2
Socket assembly, pilot lamp .....	27-6233-6
PARTS COMMON TO ALL MODELS	
Bushing, pulley and shaft .....	27-9437
Clamp, electrolytic mounting .....	58-1466
Drive cord, 25-foot spool .....	45-8750*
Fastener, hairpin, pulley and shaft .....	57-1468FA3
Socket, Loktal (1) .....	27-6269
Socket, miniature (2) .....	27-6265
Socket, octal (2) .....	27-6174
Spring, gang drive .....	56-2617

**PRODUCTION CHANGES  
ALL MODELS**

**Code 122, Run 1**

The 50L6 output tube was replaced by a 35L6, with necessary wiring changes.

The "tube saver" resistor, Part No. 33-1343-3, was added, and is connected in series in the filament string, between the 35L6 output tube and the 12BA6 i-f amplifier.

**MODEL 52-541**

**Code 123, Run 1**

Dial lighting change. An illuminated vinylite dial backplate, Part No. 76-7556, was added.

The position of the pilot lamp socket and mounting clip was changed from under the speaker to about the center of the front side of the subbase.

**MODEL 52-540**

**Code 122, Run 2**

To improve sensitivity, resistor R3, screen dropping, was changed to 33,000 ohms, Part No. 66-3338340.

**Code 122, Run 3**

A wiring-point change was made, to facilitate production.

**MODELS 52-541 and 52-542**

**Code 121, Run 2**

Start of production.

**Code 121, Run 3**

A wiring-point change was made, to facilitate production.

**IMPORTANT LEAD DRESS INFORMATION**

1. All wiring and components must be dressed away from R14, the 220-ohm filter resistor, and R12, the 130-ohm output tube cathode resistor.
2. C6, the 12AV6 grid coupling condenser, must be dressed against the front of the chassis, away from C8, the output tube plate by-pass condenser. This is done to prevent audio regeneration.
3. The white lead from the 2nd i-f transformer to the volume control must be dressed to the chassis, and away from the rectifier socket and its components. This is done to reduce hum.
4. The tube-saver resistor must be dressed up and away from the chassis, and all wiring must be dressed away from the resistor.
5. The pilot-light leads must be dressed up from chassis and away from the 12AV6 tube socket and the volume control. This is done to reduce hum.
6. The loop must be wired as follows: The loop lead from the back or rear edge of the cabinet must wire to the antenna section of the tuning condenser; the inner lead must wire to the frame lug of the tuning condenser.

