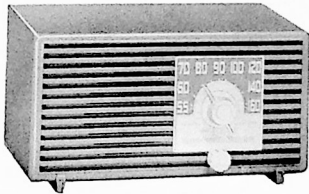


# PHILCO RADIO MODEL 53-559



MODEL 53-559

## SPECIFICATIONS

CABINET .....	Molded plastic
CIRCUIT .....	Four-tube superheterodyne (plus rectifier)
FREQUENCY RANGE	
Standard Broadcast .....	540—1620 kc.
Special Services .....	1700—3400 kc.
AUDIO OUTPUT .....	1 watt
OPERATING VOLTAGE .....	105—120 volts, a.c. or d.c.
POWER CONSUMPTION .....	30 watts
ANTENNA .....	High-impedance loop
INTERMEDIATE FREQUENCY .....	455 kc.
PHILCO TUBES .....	12BE6, converter; 12BA6, i-f amplifier; 12AV6, detector-a.v.c.-1st audio; 35C5, output; 35W4, rectifier

NOTE: The antenna is mounted on the cabinet back. When removing the cabinet back, use care to avoid breaking the antenna leads.

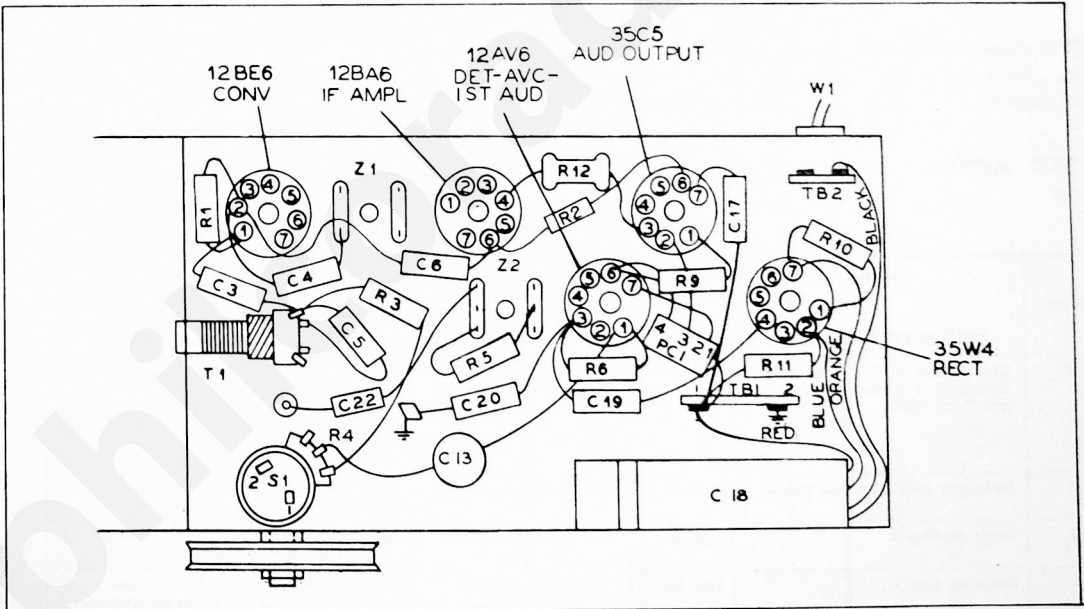


Figure 1. Base View, Showing Parts Placement

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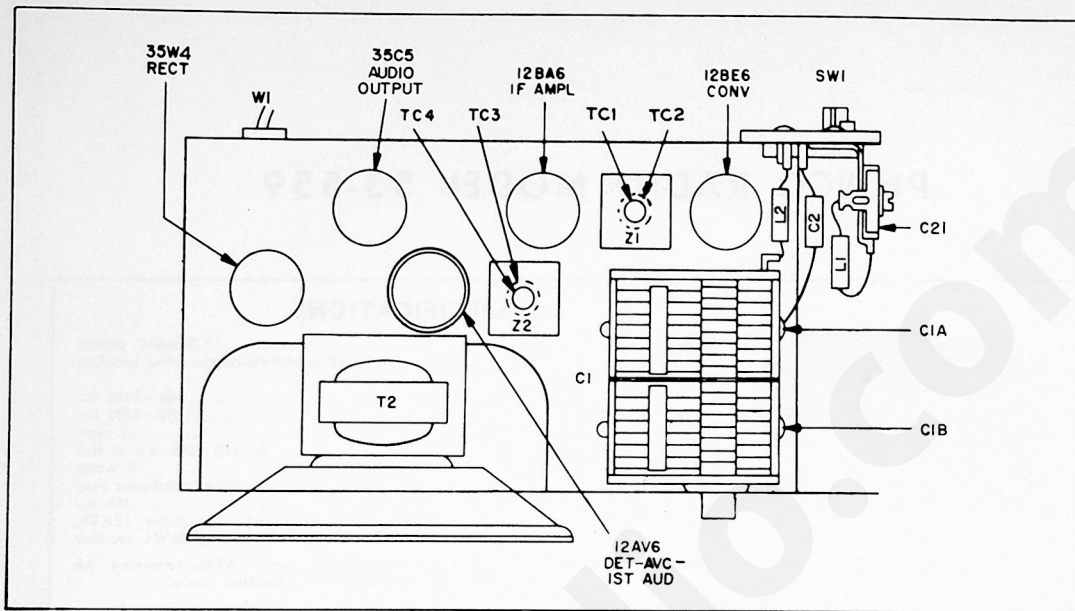


Figure 2. Top View, Showing Tuning Adjustments

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### ALIGNMENT PROCEDURE

**RADIO CONTROLS**—Set volume control to maximum. Set tuning control and band switch as indicated in chart.

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

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

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

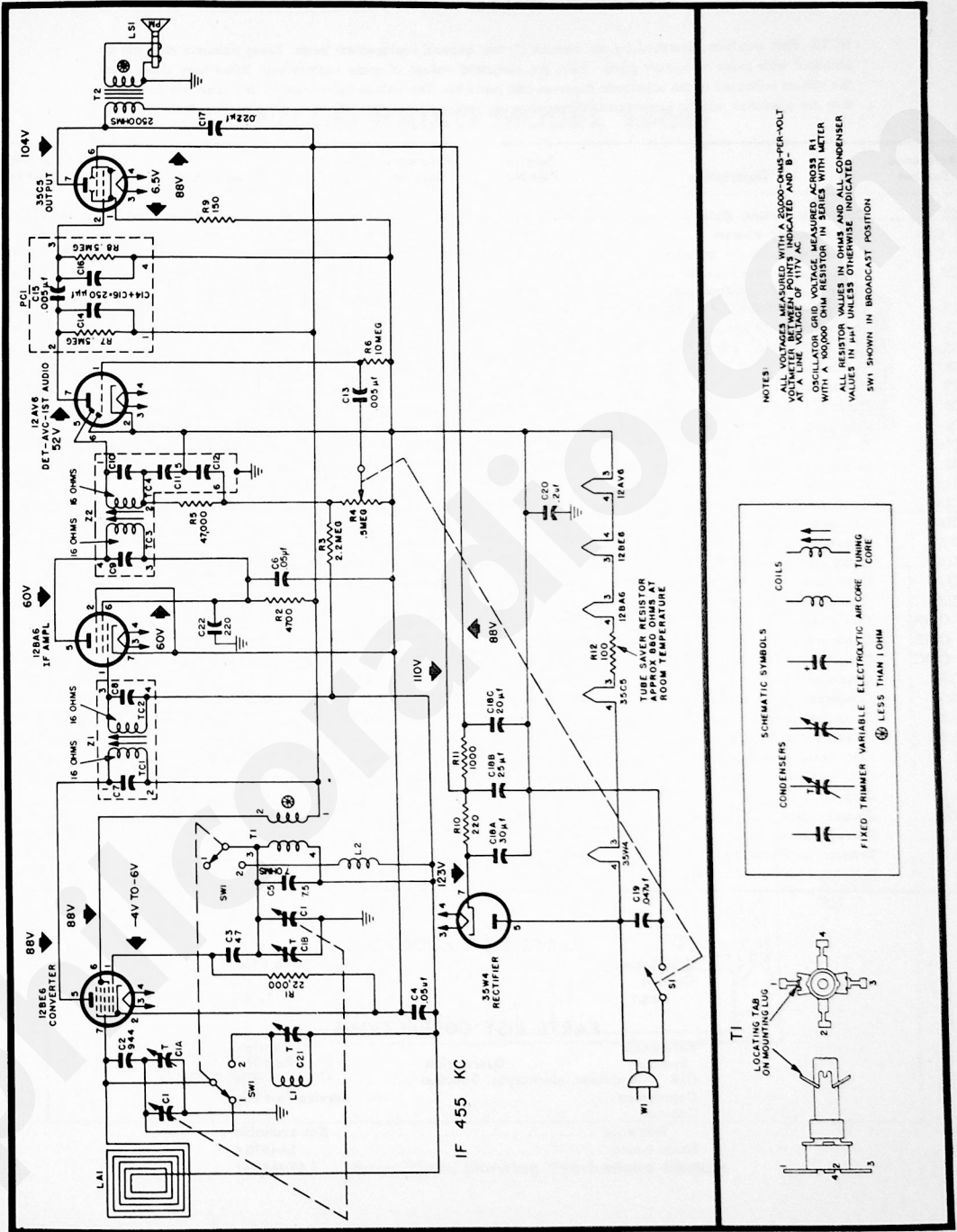
### ALIGNMENT CHART

STEP	SIGNAL GENERATOR		RADIO			ADJUST
	CONNECTION TO RADIO	DIAL SETTING	DIAL SETTING	BAND-SWITCH SETTING	SPECIAL INSTRUCTIONS	
1	Ground-lead to B-; output lead through a .1- $\mu$ f. condenser to grid (pin 7) of 12BE6.	455 kc.	Tuning gang fully open	Broadcast	Adjust tuning cores, in order given, for maximum output. (TC1 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 below).	1620 kc.	1620 kc.*	Broadcast	Adjust trimmer for maximum output.	C1B—osc.
3	Same as step 2.	1500 kc.	1500 kc.†	Broadcast	Adjust trimmer for maximum output.	C1A—antenna (broadcast)
4	Same as step 2.	3200 kc.	3200 kc.†	Special services	Adjust trimmer for maximum output.	C21—antenna (special services)

**NOTE:** Make up a 6–8 turn, 6-inch-diameter loop from insulated wire; connect to signal-generator leads, and place about 1 foot from radio loop. The position of the radio loop, with respect to the chassis, should be approximately the same as when both are mounted in the cabinet.

\* To set the tuning gang to 1620 kc., fully open the tuning gang and insert a .006-inch nonmetallic shim between the heel of the rotor and the top of the stator plates. Close the tuning gang sufficiently to hold the shim in place, and then remove the shim without disturbing the gang setting.

† To set the radio to this frequency, place chassis in cabinet, attach knob, and tune until pointer indicates the correct frequency. Then remove knob and take chassis from cabinet without disturbing the setting of the gang.



NOTES:  
 ALL VOLTAGES MEASURED WITH A 5000-OHMS-PER-VOLT VOLTMETER BETWEEN POINTS INDICATED AND B - AT A LINE VOLTAGE OF 117V.  
 OSCILLATOR FREQUENCY MEASURED ACROSS R1 WITH 50000 OHM RESISTOR IN SERIES WITH METER.  
 ALL RESISTOR VALUES IN OHMS AND ALL CONDENSER VALUES IN μF UNLESS OTHERWISE INDICATED.  
 SW1 SHOWN IN BROADCAST POSITION.

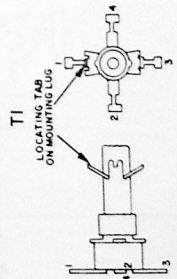
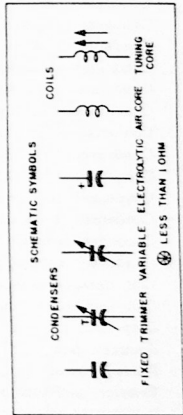


Figure 3. Philco Radio Model 53-559, Schematic Diagram

## 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.	Reference Symbol	Description	Service Part No.
C1	Condenser, tuning gang .....	31-2751-13	R3	Resistor, a-v-c filter, 2.2 megohms .....	66-5228340*
C1A	Condenser, r-f trimmer .....	Part of C1	R4	Resistor, volume control, .5 megohm .....	33-5566-41
C1B	Condenser, oscillator trimmer .....	Part of C1	R5	Resistor, diode load, 47,000 ohms .....	66-3478340*
C2	Condenser, antenna series tracker, 944 $\mu$ f. ....	30-1220-65	R6	Resistor, grid return, 10 megohms .....	66-6108340*
C3	Condenser, oscillator grid, 47 $\mu$ f. ....	30-1230-4	R7	Resistor, plate load, 500,000 ohms .....	Part of PC1
C4	Condenser, a-v-c by-pass, .05 $\mu$ f. ....	30-4650-45*	R8	Resistor, grid return, 500,000 ohms .....	Part of PC1
C5	Condenser, drift compensation, 7.5 $\mu$ f. ....	30-1224-83	R9	Resistor, cathode bias, 150 ohms .....	66-1158340*
C6	Condenser, screen by-pass, .05 $\mu$ f. ....	30-4650-45*	R10	Resistor, B plus filter, 220 ohms .....	66-1224340*
C7	Condenser, i-f tuning .....	Part of Z1	R11	Resistor, B plus filter, 1000 ohms .....	66-2108340*
C8	Condenser, i-f tuning .....	Part of Z1	R12	Resistor, tube saver, 100 ohms .....	33-1343-3
C9	Condenser, i-f tuning .....	Part of Z2	S1	Switch, off-on .....	Part of R4
C10	Condenser, i-f tuning .....	Part of Z2	SW1	Switch, broadcast-special services .....	42-1796-2
C11	Condenser, detector filtering .....	Part of Z2	T1	Transformer, oscillator .....	32-4453-6
C12	Condenser, detector filtering .....	Part of Z2	T2	Transformer, output .....	32-8384-2*
C13	Condenser, audio coupling, .005 $\mu$ f. ....	30-1238-1	W1	Line cord .....	L-2183*
C14	Condenser, plate by-pass .....	Part of PC1	Z1	Transformer, 1st i-f .....	32-4161A
C15	Condenser, audio coupling, .005 $\mu$ f. ....	Part of PC1	Z2	Transformer, 2nd i-f .....	32-4240A
C16	Condenser, compensating .....	Part of PC1	<b>MISCELLANEOUS</b>		
C17	Condenser, tone compensation, .022 $\mu$ f. ....	30-4650-43	<b>Description</b>		
C18	Condenser, electrolytic, 3-section .....		<b>Service Part No.</b>		
C18A	Condenser, filter, 30 $\mu$ f., 150v .....	Part of C18	Back-and-loop ass'y. ....	76-7705-1	
C18B	Condenser, filter, 25 $\mu$ f., 150v .....	Part of C18	Cabinet		
C18C	Condenser, filter, 20 $\mu$ f., 150v .....	Part of C18	Driftwood .....		
C19	Condenser, line by-pass, .047 $\mu$ f. ....	30-4650-45*	Mahogany .....	10921-6	
C20	Condenser, B- to chassis, .2 $\mu$ f. ....	30-4650-49*	Dial scale .....	28-9292	
C21	Condenser, trimmer, special services .....	31-6473-29	Drive cord (25-ft. spool) .....	45-8750*	
C22	Condenser, r-f by-pass, 220 $\mu$ f. ....	60-10225417	Fastener, back .....	W2235FA9	
L1	Coil, antenna, special services .....	32-4561-3	Knob, tuning .....		
L2	Coil, oscillator shunt .....	32-4562-2	Knob, volume .....		
LA1	Loop .....	Part of cabinet back	Shield, tube .....	56-5629FA3	
LS1	Speaker, p-m .....	36-1627-8	Socket, tube (4) .....	27-6265*	
PC1	Printed circuit .....	30-6001	Socket, tube (12AV6) .....	27-6203-14*	
R1	Resistor, oscillator grid, 22,000 ohms .....	66-3228340*			
R2	Resistor, i-f screen dropping, 4700 ohms .....	66-2478340*			

### PARTS LIST ADDITIONS

Description	Service Part No.
Cabinet	
Sand .....	10921-8

### PARTS LIST CORRECTIONS

Reference Symbol	Description	Service Part No.
C18	Condenser, electrolytic, 3-section .....	45-3037
<b>Description</b>		
<b>Cabinet</b>		
	Driftwood .....	Not available
	Knob, tuning .....	54-4978-4
	Knob, volume .....	27-4815-11