



Model 53

SPECIFICATIONS

TYPE OF CIRCUIT—

Model 53 is a six (6) tube alternating current superheterodyne receiver with electric push-button tuning.

The Model 53 radio is designed for operation with standard aerial and ground installation. For demonstration purposes and local reception, a built-in aerial is also provided. The type of aerial recommended for use with this radio is the Philco Safety Aerial Part No. 40-6370.

Other features of design included in this radio are five tuning ranges, covering standard and overseas short wave frequencies; variable tone control; automatic volume control; and a pentode output system. Six (6) electric push buttons are provided for automatic station selection.

TUNING RANGES—

540-1600 K.C.
6-18 M.C.
9.55-9.74 M.C.
11.6-11.9 M.C.
14.9-15.59 M.C.

INTERMEDIATE FREQUENCY—460 K.C.

POWER SUPPLY—115 volts A.C., 25 cycle 115 volts A.C., 60 cycle

AUDIO OUTPUT—3 watts

PHILCO TUBES USED—1-6J8EG, 1st det. and osc. 1-78E, I.F. Amp. 1-6J5G, 2nd det. A.V.C. 1-6K5G, 1st audio 1-6F6EG, output 1-80, rectifier

PROCEDURE FOR SETTING AND OPERATING THE ELECTRIC PUSH BUTTON TUNING

The automatic tuning mechanism of this model consists of six (6) electric tuning push buttons, five (5) of the push buttons are used for selecting broadcast stations, and one to switch your set from automatic to manual tuning.

Select five of your favorite nearby broadcast stations and

remove their call letters from the station call letter tab sheets supplied. Place each call letter tab in the tab space above each button which includes the frequencies of the desired stations. The frequency range of the buttons and corresponding padders is as follows:

Padders (right to left from rear)	Circuit	Buttons (left to right from front)	Frequency Range
1	Osc }	1	540 to 980 kilocycles
2	Ant }		
3	Osc }	2	540 to 980 kilocycles
4	Ant }		
5	Osc }	3	710 to 1185 kilocycles
6	Ant }		
7	Osc }	4	850 to 1600 kilocycles
8	Ant }		
9	Osc }	5	1185 to 1600 kilocycles
10	Ant }		
		6	Manual Tuning

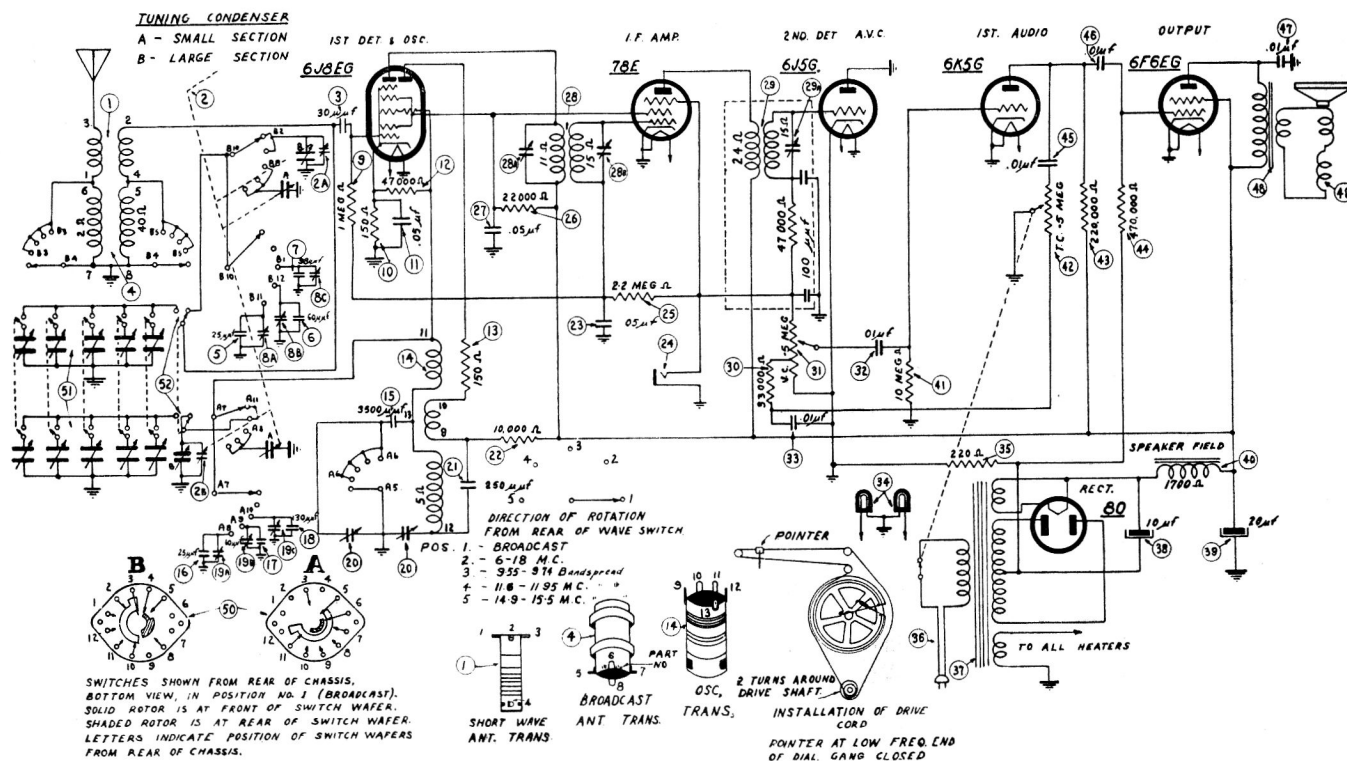
The second button from the left looking at the front of the cabinet corresponds to the two right-hand padder screws looking at the rear and covers the lowest frequency range.

With the "Tuning Range Selector" in broadcast position, tune in the station whose call letters appear above the second button. Then depressing the second button, tune in this station by rotating the No. 1 "OSC" screw (next to the right end of the unit looking at the rear of the chassis). (NOTE: Inherent characteristics of these padders may cause some of them to cover a lower range than required to cover the broadcast band. This may cause the radio to howl or flutter when a station button is depressed. To correct this, loosen the "ANT" padder corresponding to the depressed station button.) Turn the "OSC" screw slowly and listen carefully or the station may be passed without noticing it. After the "OSC" screw

has been adjusted for maximum volume, the corresponding "ANT" screw should be adjusted for maximum. For some stations, it may be necessary to readjust the "OSC" screw after the "ANT" screw has been set. Pushing the "Manual tuning button No. 6 and then returning to the push button you are adjusting will enable you to make sure you have the correct station tuned in. When the first station has been set, the same procedure should be followed for the remaining buttons, first tuning in the desired station by means of the Station Selector.

To tune the set with the "Push Buttons", turn "Tuning Range Selector" to BC position and press in the button which corresponds to the call letters of the desired station. The volume of the program may be controlled with the manual volume control.

SCHEMATIC DIAGRAM — MODEL 53



REPLACEMENT PARTS — MODEL 53

Schem No.	Description	Part No.	Schem No.	Description	Part No.	Schem No.	Description	Part No.
1	Short Wave Antenna Coil	12-0021	37	Power Transf. 60 cycle	12-0016		Dial Plate	08-0007
2	Tuning Condenser	11-0003		25 cycle	12-0015		Pointer	08-0008
2a	R.F. General Coverage Padder (on Gang)		38	Electrolytic Cond. (10 mfd.)	10-0005		Tuning Shaft	08-0009
2b	Oscill. General Coverage Padder (on Gang)		39	Electrolytic Cond. (20 mfd.)	10-0004		Bracket (P.B. Unit)	08-0012
3	Mica Condenser (30 mmfd.)	60-030157	40	Speaker Field (Part of Speaker)			Bracket (Tuning Condenser)	08-0024
4	Broadcast Antenna Coil	12-0020	42	Tone Resistor (10 meg, 1/2 watt)	33-610254		Drive Cord	11-0004
5	Silver Mica Cond. (25 mmfd.)	30-1145	43	Tone Control (.5 meg)	13-0002		Speaker Cable Plug	27-4419
6	Silver Mica Cond. (60 mmfd.)	10-0006	44	Resistor (220,000 ohms, 1/2 watt)	33-422254		Dial Plate Pulley	27-4981
7	Silver Mica Cond. (98 mmfd.)	30-1186	45	Resistor (470,000 ohms, 1/2 watt)	33-447254		Socket (6J8EG)	27-6099
8a	15 M.C. Bandspread R.F. Padder	31-6374	46	Tubular Cond. (.01 mfd, 400v)	30-4572		Drive Cord Spring	28-8954
8b	11.7 M.C. Bandspread R.F. Padder (Part of 8a)	31-6374	47	Tubular Cond. (.01 mfd., 400v)	30-4572		Drum Assembly	38-9856
8c	9.6 M.C. Bandspread R.F. Padder (Part of 8a)	31-6374	48	Output Transformer	12-0073		Dial Plate Bracket	56-1433
9	Resistor (1 Meg, 1/2 watt)	33-510254	49	Bucking Coil (Part of Speaker)			Pilot Lamp Assembly	76-1115
10	Resistor (150 ohm, 1/2 watt)	33-115336	50	Wave Switch	22-0009		P.B. Knob	07-0049
11	Tubular Cond. (.05 mfd, 200v)	30-4519	51	Push Button Padder Strip	31-6316		Dial Scale	07-0050
12	Resistor (47,000 ohms, 1/2 watt)	33-347254	52	Push Button Switch	22-0010		Dial Mounting Clamp	08-0011
13	Resistor (150 ohms, 1/2 watt)	33-115354		Speaker Cable	03-0020		Antenna Strip	08-0033
14	Oscillator Coil	12-0022		Socket (Octal)	07-0037		Speaker	16-0004-2
15	Mica Condenser (3500 mmfd.)	60-235124		Socket (Four Prong)	07-0046		Cone & Voice Coil Assembly	25-0034
16	Silver Mica Cond. (25 mmfd.)	30-1145		Socket (Six Prong)	07-0048		Knob	27-4987
17	Silver Mica Cond. (60 mmfd.)	10-0006					P.B. Bezel	56-1893
18	Silver Mica Cond. (130 mmfd.)	10-0007						
19a	15 M.C. Oscillator Padder	31-6374						
19b	11.7 M.C. Oscillator Padder (Part of 19a)	31-6374						
19c	9.6 M.C. Oscillator Padder (Part of 19a)	31-6374						
20a	1500 K.C. Oscillator Padder	11-0007						
20b	600 K.C. Oscillator Padder (Part of 20a)	11-0007						
21	Mica Condenser (250 mmfd.)	60-125157						
22	Resistor (10,000 ohms, 1/2 watt)	33-310354						
23	Tubular Cond. (.05 mfd, 200v)	30-4519						
24	Phono Jack	27-6149						
25	Resistor (2.2 meg, 1/2 watt)	33-522254						
26	Resistor (22,000 ohms, 1/2 watt)	33-322354						
27	Tubular Cond. (.05 mfd, 200v)	30-4519						
28	First I.F. Transformer	12-0017						
28a	Padder (Primary—Part of 28)							
28b	Padder (Secondary—Part of 28)							
29	Second I.F. Transformer	12-0018						
29a	Padder (Secondary—Part of 29)							
30	Resistor (33,000 ohms, 1/2 watt)	33-333254						
31	Volume Control (.5 meg)	13-0001						
32	Tubular Cond. (.01 mfd, 400v)	30-4572						
33	Tubular Cond. (.01 mfd, 400v)	30-4572						
34	Pilot Lamps	34-2464						
35	Resistor (220 ohms, 1 watt)	33-122436						
36	A.C. Cord	03-0033						

PART LOCATIONS—BOTTOM VIEW OF CHASSIS

ALIGNING R.F. AND I.F. COMPENSATORS

EQUIPMENT REQUIRED

1. **SIGNAL GENERATOR:** Covering the frequency range of the receiver, such as Philco Model 070.
2. **ALIGNING INDICATOR:** Either a vacuum tube voltmeter or an audio output meter may be used as an aligning indicator. Philco Model 028 circuit tester contains both these meters.
3. **TOOLS:** Philco Fibre Screw Driver, Part No. 45-2610. Philco Fibre Wrench, Part No. 3164.

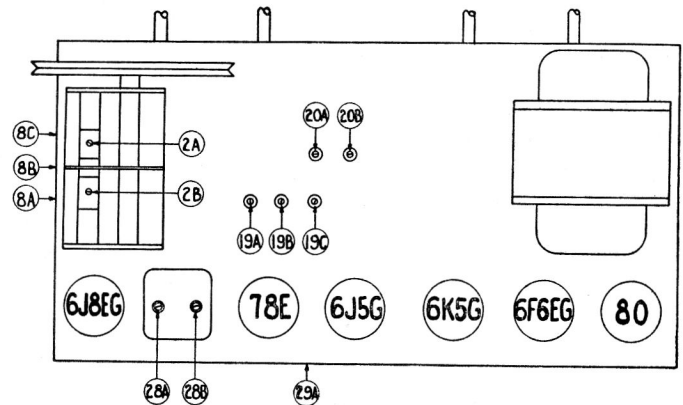
CONNECTING ALIGNING INSTRUMENTS

Either a vacuum tube voltmeter or an audio output meter may be used as a signal indicator when adjusting the receiver.

Vacuum Tube Voltmeter: To use the vacuum tube voltmeter as an aligning indicator, make the following connections: Attach the negative (—) terminal of the voltmeter to any point in the circuit where the A.V.C. voltage can be obtained. Connect the positive (+) terminal of the vacuum tube voltmeter to the chassis.

Audio Output Meter: The audio output meter is connected between the plate of the output tube and the ground of the chassis. When using these connections, the lowest A.C. scale of the meter must be used. (0 to 10 volts).

Signal Generator: When adjusting the "I.F." padders, the high side of the signal generator is connected through a .1 mfd. condenser to the grid cap of the 78E tube. The ground or low side of the signal generator is connected to the ground of the receiver.



LOCATION OF COMPENSATORS

Operations in Order	SIGNAL GENERATOR		RECEIVER			SPECIAL INSTRUCTIONS
	Output Connections to Receiver	DIAL SETTING	DIAL SETTING	CONTROL SETTING	ADJUST COMPENSATORS	
1	High Side to Grid Cap of 6J8EG	460 K.C.	580 K.C.	Volume Maximum Band SW-Bdest	28A, 28B, 29A	NOTE A
2	High Side to Antenna Lead	15 M.C.	15 M.C.	Volume Maximum Band SW-SW	2B, 2A	NOTE B
3	High Side to Antenna Lead	1500 K.C.	1500 K.C.	Volume Maximum Band SW-Bdest	20A	NOTE D
4	High Side to Antenna Lead	580 K.C.	580 K.C.	Volume Maximum Band SW-Bdest	20B	NOTE C
5	High Side to Antenna Lead	9.6 M.C.	9.6 M.C.	Volume Maximum Band SW-31M	19C, 8C	
6	High Side to Antenna Lead	11.7 M.C.	11.7 M.C.	Volume Maximum Band SW-25M	19B, 8B	
7	High Side to Antenna Lead	15 M.C.	15 M.C.	Volume Maximum Band SW-19M	19A, 8A	
8	High Side to Antenna Lead	1500 K.C.	1500 K.C.	Volume Maximum Band SW-Bdest	2A	Pad to Maximum

NOTE A—DIAL CALIBRATION: In order to adjust the receiver correctly, the dial must be aligned to track properly with the tuning condenser. To adjust the dial, proceed as follows: With the tuning condenser closed (maximum capacity), set the dial pointer on the extreme left index line at the low frequency end of the broadcast scale.

NOTE B—For all short wave padding, a 400 ohm non-inductive resistor must be placed between the high side of the signal generator and the antenna lead.

NOTE C—When adjusting the compensator the receiver Tuning Condenser must be adjusted (rolled) as follows: First tune the compensator for maximum output, then vary the tuning condenser of the receiver for maximum output. Now turn the compensator slightly to the right or left and again vary the receiver tuning condenser for maximum output. This procedure of first setting the compensator and then varying the tuning condenser is continued until maximum output reading is obtained.

NOTE D—When adjusting R.F. padders in broadcast position a 200 mmfd. condenser must be placed in series with Ant. lead and generator.

PARTS AND SERVICE DIVISION **PHILCO** TORONTO, CANADA

PHILCO CORPORATION of Canada Limited