



Model 56

SPECIFICATIONS

TYPE OF CIRCUIT

Model 56 is an eight (8) tube, alternating current, super-heterodyne receiver with electric push button tuning.

Other design features are—Philco Built-in Domestic and Overseas Aerial System; six electric push buttons for automatically tuning stations in addition to manual tuning, five tuning ranges; variable tone control; push-pull pentode output tubes with screen phase inversion; loktal tubes; noise-reducing XXL converter tube; twelve inch (12) concert grand dynamic speaker.

TUNING RANGES—540 to 1,600 K.C.; 6 to 18 M.C.

Bandsread—9.55 to 9.74 M.C.

Bandsread—11.6 to 11.9 M.C.

Bandsread—14.9 to 15.59 M.C.

INTERMEDIATE FREQUENCY—460 K.C.

POWER SUPPLY—115 volts; 25-60 cycle, 90 watts consumption.

AUDIO OUTPUT—5 watts.

PHILCO TUBES USED—1-7C5E Oscillator; 1-XXL Converter; 2-7B7E I.F. Amplifiers; 1-7C6 2nd Det., 1st Audio, A.V.C.; 2-6F6EG 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:

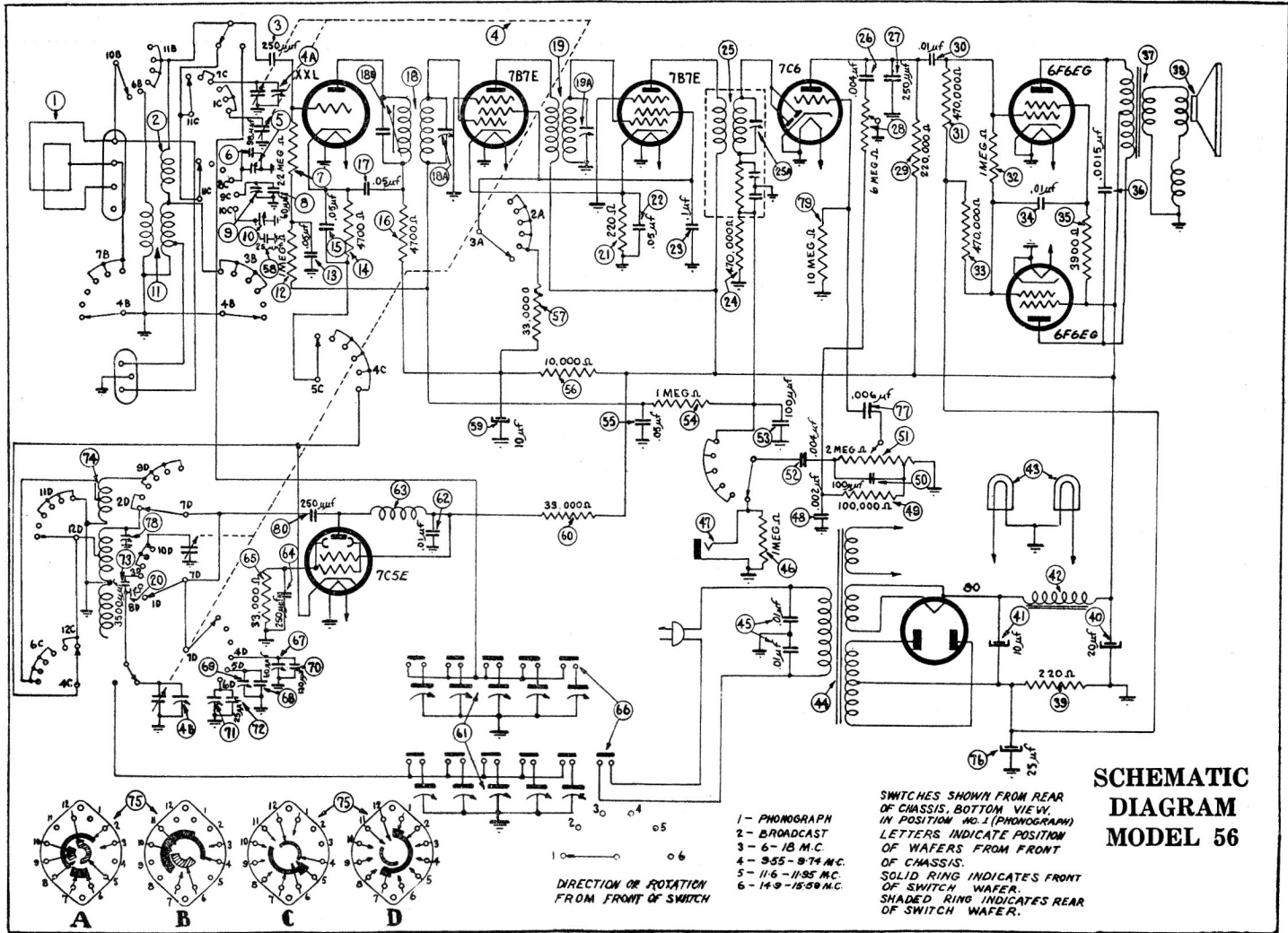
Padders (right to left from rear)	Circuit	Buttons (left to right from front)	Frequency Range
1	Osc }	1	540 to 980 kilocycles
2	Ant }		
3	Osc }	2	540 to 980 kilocycles
4	Ant }		
5	Osc }	3	710 to 1185 kilocycles
6	Ant }		
7	Osc }	4	850 to 1600 kilocycles
8	Ant }		
9	Osc }	5	1185 to 1600 kilocycles
10	Ant }		
		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 56**

REPLACEMENTS PARTS — MODEL 56

Schem. No.	Description	Part No.	Schem. No.	Description	Part No.	Schem. No.	Description	Part No.
1	Loop Antenna Assembly	18-0054	46	Resistor (1 meg, 1/2 watt)	33-510254	60	Resistor (33,000 ohms, 1/2 watt)	33-333354
2	Short Wave Ant. Coil	12-0040	47	Phono. Jack	27-6149	61	Push Button Padders Assembly	31-6316
3	Tuning Cond. (250 mmfd.)	60-125357	48	Tubular Cond. (.002 mfd, 400v)	30-4579	62	Tubular Cond. (.01 mfd, 400v)	30-4572
4	Mica Cond.	11-0003	49	Resistor (100,000 ohms, 1/2 watt)	33-410254	63	Plate Choke	32-3615
5	9.6 M.C. R.F., Padder	31-6374	50	Mica Cond. (100 mmfd.)	60-110157	64	Mica Cond. (250 mmfd.)	60-125357
6	Silver Mica Cond. (98 mmfd.)	20-009807	51	Volume Control (2 meg.)	13-0004	65	Resistor (33,000 ohms, 1/2 watt)	33-333354
7	Resistor (2.2 meg, 1/2 watt)	33-522254	52	Tubular Cond. (.004, 400v)	30-4578	66	Push Button Switch	22-0010
8	Silver Mica Cond. (60 mmfd.)	10-0006	53	Mica Cond. (100 mmfd.)	60-110157	67	9.6 M.C. Osc. Padder	31-6374
9	11.7 M.C. R.F. Padder	31-6374	54	Resistor (1 meg, 1/2 watt)	33-510254	68	Silv. Mica Cond. (60 mmfd.)	10-0006
10	15.5 M.C. R.F. Padder (Part of 5)	33-510254	55	Tubular Cond. (.05 mfd, 200v)	30-4519	69	11.7 M.C. Osc. Padder (Part of 67)	31-6374
11	Broadcast Antenna Coil	12-0039	56	Resistor (10,000 ohms, 1/2 watt)	33-310354	70	Silv. Mica Cond. (.130 mmfd.)	10-0007
12	Resistor (1 meg, 1/2 watt)	33-510254	57	Resistor (33,000 ohms, 1/2 watt)	33-333354	71	15.5 M.C. Osc. Padder (Part of 67)	31-6374
13	Tubular Cond. (.05 mfd, 200v)	30-4519	58	Silver Mica Cond. (25 mmfd.)	20-002507	72	Silv. Mica Cond. (25 mmfd.)	20-002507
14	Resistor (4700 ohms, 1/2 watt)	33-247354	59	Electrolytic Cond. (10 mfd, 350v)	30-2459	73	Mica Cond. (3500 mmfd.)	60-235124
15	Tubular Cond. (.05 mfd, 200v)	30-4519	60	Resistor (33,000 ohms, 1/2 watt)	33-333354	74	Oscillator Coil	12-0041
16	Resistor (4700 ohms, 1/2 watt)	33-247354	61	Push Button Padders Assembly	31-6316	75	Wave Switch Ass'y.	22-0014
17	Tubular Cond. (.05 mfd, 400v)	30-4518	62	Tubular Cond. (.01 mfd, 400v)	30-4572	76	Elect. Cond. (25 mfd, 250v)	10-0011
18	First I.F. Transformer	32-3465	63	Plate Choke	32-3615	77	Tub. Cond. (.006 mfd, 400v)	30-4591
19	Second I.F. Transformer	12-0056	64	Mica Cond. (250 mmfd.)	60-125357	78	1500 K.C. Osc. Padder	11-0007
20	600 K.C. Osc. Padder	11-0007	65	Resistor (33,000 ohms, 1/2 watt)	33-333354			
21	Resistor (220 ohms, 1/2 watt)	33-122336	66	Push Button Switch	22-0010			
22	Tubular Cond. (.05 mfd, 200v)	30-4519	67	9.6 M.C. Osc. Padder	31-6374			
23	Tubular Cond. (.1 mfd, 400v)	30-4455	68	Silv. Mica Cond. (60 mmfd.)	10-0006			
24	Resistor (470,000 ohms, 1/2 watt)	33-447254	69	11.7 M.C. Osc. Padder (Part of 67)	31-6374			
25	Third I.F. Transformer	12-0057	70	Silv. Mica Cond. (.130 mmfd.)	10-0007			
26	Tubular Cond. (.004 mfd, 400v)	30-4578	71	15.5 M.C. Osc. Padder (Part of 67)	31-6374			
27	Mica Cond. (250 mmfd.)	60-125157	72	Silv. Mica Cond. (25 mmfd.)	20-002507			
28	Tone Control (6 meg.)	13-0002	73	Mica Cond. (3500 mmfd.)	60-235124			
29	Resistor (220,000 ohms, 1/2 watt)	33-422254	74	Oscillator Coil	12-0041			
30	Tubular Cond. (.01 mfd, 400v)	30-4572	75	Wave Switch Ass'y.	22-0014			
31	Resistor (470,000 ohms, 1/2 watt)	33-447254	76	Elect. Cond. (25 mfd, 250v)	10-0011			
32	Resistor (1 meg, 1/2 watt)	33-510254	77	Tub. Cond. (.006 mfd, 400v)	30-4591			
33	Resistor (470,000 ohms, 1/2 watt)	33-447254	78	1500 K.C. Osc. Padder	11-0007			
34	Tubular Cond. (.01 mfd, 400v)	30-4572						
35	Resistor (3900 ohms, 1/2 watt)	33-239334						
36	Tubular Cond. (.0015 mfd, 1000v)	30-4616						
37	Output Transformer	12-0077						
38	Cone & Voice Coil Assy. (16-0007 speaker)	25-0038						
39	Resistor (220 ohms, 2 watt)	33-122336						
40	Electrolytic Cond. (20 mfd, 400v)	10-0004						
41	Electrolytic Cond. (10 mfd, 400v)	10-0005						
42	Speaker Field (Part of Speaker)	33-239334						
43	Pilot Lamp	34-2064						
44	Power Transf.—25 cycle	12-0031						
	60 cycle	12-0032						
45	Tubular Cond. (.01 mfd, 400v)	30-4572						

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.

CONNECTING ALIGNING INSTRUMENTS

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: Connect the meter to the voice coil of the speaker. The other lead of the meter is connected to the chassis. When using these connections, the lowest A.C. scale of the meter must be used. (0 to 10 volts).

The audio output meter can also be connected between the plate of the output tube and the ground of the chassis.

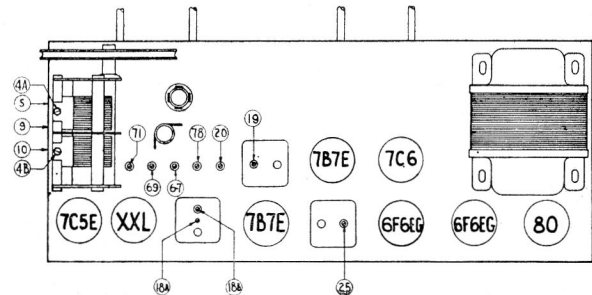
Signal Generator: When adjusting the "I.F." padders, the high side of the signal generator is connected through a .1 mfd. condenser to the antenna section of the tuning condenser. Connect the ground or low side of the generator to the chassis.

When aligning the R.F. padders a loop is made from a few turns of wire and connected to the signal generator output terminals; the signal generator is then placed close to the loop of the radio.

When adjusting the radio outside the cabinet the loop aerial should be placed in approximately the same position around or near the chassis as when assembled.

The receiver can be adjusted in the cabinet or removed from the cabinet.

After connecting the aligning instruments, adjust the compensators as shown in the tabulation below. Location of the compensators are shown in the schematic diagram. If the indicating meter pointer goes off scale when adjusting the compensator, reduce the strength of the signal from the generator. Keep volume control of radio at maximum position.



LOCATION OF COMPENSATORS

Operations in Order	SIGNAL GENERATOR		RECEIVER			SPECIAL INSTRUCTIONS
	OUTPUT CONNECTIONS TO RECEIVER	DIAL SETTING	DIAL SETTING	CONTROL SETTING	ADJUST COMP. IN ORDER	
1	Ant. section of Tuning Condenser in series with a .1 mfd. Condenser	460 K.C.	Tuning Cond. Closed	Volume Max. Band Switch B.C.	25 19 18B-18A	
2	Loop, Signal Gen.	15 M.C.	15 M.C.	Volume Max. Band Switch S.W.	4B	Note B
3	Loop, Signal Gen.	1500 K.C.	1500 K.C.	Volume Max. Band Switch B.C.	78	
4	Loop, Signal Gen.	600 K.C.	600 K.C.	Volume Max. Band Switch B.C.	20	
5	Loop, Signal Gen.	1500 K.C.	1500 K.C.	Volume Max. Band Switch B.C.	4A	
6	Loop, Signal Gen.	9.6 M.C.	9.6 M.C.	Volume Max. Band Switch S.W. 31 Metre	67	
7	Loop, Signal Gen.	9.6 M.C.	9.6 M.C.	Volume Max. Band Switch S.W. 31 Metre	5	Note D
8	Loop, Signal Gen.	11.6 M.C.	11.6 M.C.	Volume Max. Band Switch S.W. 25 Metre	69	
9	Loop, Signal Gen.	11.6 M.C.	11.6 M.C.	Volume Max. Band Switch S.W. 25 Metre	9	Note D
10	Loop, Signal Gen.	15.5 M.C.	15.5 M.C.	Volume Max. Band Switch S.W. 19 Metre	71	Note C
11	Loop, Signal Gen.	15.5 M.C.	15.5 M.C.	Volume Max. Band Switch S.W. 19 Metre	10	

NOTE A—Compensator (25) must be adjusted before compensator (19) and should be done in the following manner: Turn (19) all the way up, then turn down selecting the first I.F. peak, compensator (25) is now padded to maximum.

NOTE B—DIAL CALIBRATION: In order to adjust the receiver correctly, the dial must be aligned to track properly with the tuning condenser. To do this, proceed as follows: Turn the tuning condenser to the

maximum capacity position (plates fully meshed). With the condenser in this position, set the tuning pointer on the extreme left index line at the low frequency end of the broadcast scale.

NOTE C—Antenna compensator should be preset at approximately two turns from tight position.

NOTE D—Reset oscillator padders after padding R.F. padders on Short Wave due to slight pull from antenna padder on oscillator.