

MODEL 41-110

SPECIFICATIONS

Model 41-110 is a six (6) tube battery operated super-heterodyne radio incorporating electric push-button tuning in addition to manual tuning—and the new Philco Built-in Directional Loop Aerial. The aerial can be turned in any direction and is controlled from the instrument panel.

Other features included in this model are an R. F. stage (noise excluding signal amplifier); Low current drain tubes; Automatic Volume Control; Automatic Bass Compensation; Specially designed high output speaker; two tuning bands covering standard and short wave frequencies and a Push-pull pentode audio output stage.

INTERMEDIATE FREQUENCY: 455 K. C.

BATTERY REQUIRED: One Philco Plug-in "AB" battery pack, Type No. P60D1IL.

PHILCO TUBES USED: One 1N5G, R. F. Amplifier; one 1A7G, First Detector-oscillator; one 1N5G, I. F. Amplifier; one 1H5G, Second Detector, Automatic Volume Control and Audio Amplifier; and two 1A5G, Push-pull Audio Power Output pentodes.

AERIAL AND GROUND: Under ordinary receiving conditions neither outside aerial nor ground is necessary with this model. Unusual circumstances, however, may necessitate the use of an external antenna for maximum performance in which case the Philco 1941 Outdoor Aerial is recommended. This can be conveniently connected to the radio by inserting the plug attached to the transformer unit into the socket provided at the rear of the chassis. This aerial, Part No. 45-2817, can be obtained from your Philco dealer. **WHEN USING THE OUTDOOR AERIAL IT IS NECESSARY TO CONNECT A GOOD GROUND TO THE POST MARKED "GND." A GOOD GROUND MAY BE A WATER PIPE, RADIATOR PIPE, OR A FOUR FOOT LENGTH OF METAL PIPE DRIVEN INTO MOIST EARTH.**

ELECTRIC PUSH-BUTTON ADJUSTMENTS: The procedure for setting up and operating the electric push-button will be found in the owner's "Installing and Operating" instructions, Part No. 39-6913.

CABINET DIMENSIONS: 37½" high, 26¾" wide, 11" deep.

ALIGNING R. F. AND I. F. COMPENSATORS

EQUIPMENT REQUIRED

1. **Signal Generator:** Covering frequency ranges of the radios. Philco Model 077 A. C. operated or Model 177 battery operated, have a frequency range from 115 to 36,000 K. C. and are recommended.
2. **Indicating Device:** To obtain maximum signal strength and accurate adjustment of padders, a vacuum tube voltmeter similar to Philco Models 027 and 028 is recommended. These instruments also contain an audio output meter which may be used as an indicating device. The method of connecting either of these instruments is listed below.
3. **Aligning Tools:** Fiber handle screwdriver, Philco Part No. 45-2610.

CONNECTING ALIGNING INSTRUMENTS

Vacuum Tube Voltmeter: To use the vacuum tube voltmeter as an aligning indicator it should be connected to the A. V. C. circuit as follows:

1. Connect the negative (—) terminal of the vacuum tube voltmeter through a 2 megohm resistor to any point in the circuit where the A. V. C. voltage can be measured.
2. Connect the positive (+) terminal to the chassis ground terminal.

Audio Output Meter: If this type of meter is used as an aligning indicator, it should be connected to the plate of the output and ground.

Signal Generator: When adjusting the I. F. padders the high side of the signal generator is connected through a

.1 mfd. condenser to the aerial tuning condenser stator lug which connects to the grid of the first detector oscillator tube. The ground or low side of the signal generator is connected to the chassis of the receiver.

When aligning the R. F. padders connect the signal generator as given below in the column "Output Connections to Receiver" with a dummy aerial as indicated.

After connecting the aligning meter, adjust the compensators in the order as shown in the tabulation below. Locations of the compensators are shown in the diagram.

If the output pointer goes off scale when adjusting the compensators, reduce the strength of the signal from the generator.

Operations in Order	SIGNAL GENERATOR			RECEIVER			SPECIAL INSTRUCTIONS
	Output Connections	Dummy Aerial	Dial Setting	Dial Setting	Control Settings	Adjust Compensators	
1	1A7G (Grid)	.1 mmfd.	455 K. C.	540 K. C.	Vol. Max. Range Switch Brdcast.	15A, 15B 22A	
2	Aerial Connection Receiver	225 mmfd.	1500 K. C.	1500 K. C.	Vol. Max. Range Switch Brdcast.	Osc., R. F., aerial 6B, 6A, 2B	
3	Aerial Connection Receiver	225 mmfd.	580 K. C.	580 K. C.	Vol. Max. Range Switch Brdcast.	19B	Roll Gang
4	Aerial Connection Receiver	Recheck Operation No. 2					
5	Aerial Connection Receiver	400 Ohms	12 M. C.	12 M. C.	Range Switch S. W.	Osc., R. F., Ant. 19A, 13A, 2A	

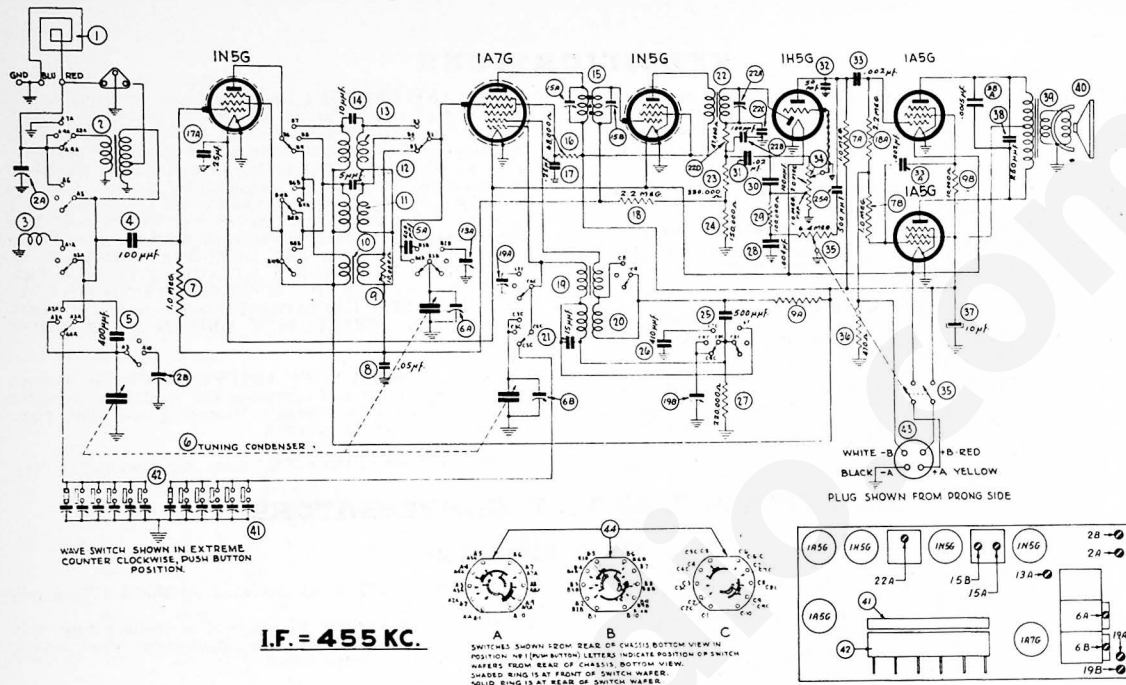
NOTE A: DIAL CALIBRATION: Before adjusting the R. F. padders the dial must be aligned to track properly with the tuning condenser. To adjust the dial proceed as follows: With the tuning condenser in the closed position (maximum capacity) set the dial pointer on the small dash below 540 K. C.

PRODUCTION CHANGES

Beginning with Run 2, the speaker on this model was changed from Part No. 36-1622 to No. 36-1534-3. The cone assembly for the new speaker is Part No. 36-4187.

When new speaker No. 36-1534-3 was incorporated in Run 2 receivers, condenser (38A) on diagram was removed.

MODEL 41-110 (CONTINUED)



SCHMATIC DIAGRAM — MODEL 41-110

Replacement Parts — Model 41-110

SCH. No.	DESCRIPTION	PART No.	SCH. No.	DESCRIPTION	PART No.	SCH. No.	DESCRIPTION	PART No.
1	Loop Aerial	76-1130	42	Push-button Switch	42-1625		Escutcheon (Push-button)	27-4983
	Loop Drive Assembly	76-1149	43	Cable Battery	41-3505		Screw (Mounting Escutcheon)	W-2071
	Loop Drive Spring	28-8913	44	Band Switch	42-1606		Knob (Tuning Volume)	27-4332
	Spring Washer	28-4186					Knob (Push-button)	27-4824
	Sleeve	28-5665					Rubber Corners (Chassis)	27-4564
	Drive Cord	W-437					Rubber Mtgs. (Tuning Cond., P. B. Sw.)	27-4596
	Washer	W-410					Spring (Indicator Drive)	56-1566
	Screw	W-437					Shield (Tube-R. F., Converter, I. F.)	56-1567
2	Aerial Transformer (Broadcast)	32-3543		Airm Assembly (Indicator Drive)	76-1049		Shield Clip (Tube-R. F., Converter, I. F.)	56-1567
	Shunt Transformer (Short Wave)	32-3548		Bezel Glass	27-5610		Socket (6 Prong)	27-6087
4	Condenser (100 mmfd.)	60-110157		Cone Assembly (Indicator Drive)	38-9861		Socket (7 Prong)	27-6087
5	Condenser (400 mmfd.)	30-1191		Cable (Speaker)	41-3448		Socket (Speaker)	27-6115
5A	Condenser (400 mmfd.)	31-2499		Cabinet	104958		Socket (Aerial)	27-6145
6	Tuning Condenser	31-2508		Dial Scale	27-5679		Screw (Chassis Mounting)	W-1345
	Shaft (Tuning)	28-2043		Drive Cord (Indicator)	31-2505		Tab Kit	40-8594
	"C" Washer	W-437					Washer (Spring Type, Indicator)	56-1866
	Spring (Condenser Drive Cord)	28-8751						
	Spring (Pointer Drive Cord)	28-8953						
	Pointer (Dial)	56-1918						
	Drive Cord (Tuning Condenser)	31-2400						
	Drive Cord (Pointer)	31-2487						
	Rubber Connector (Tuning Condenser)	27-9432						
	Drum (Tuning Condenser)	38-9883						
7	Resistor (1 megohm)	33-510339						
7A	Resistor (1 megohm)	33-510339						
7B	Resistor (1 megohm)	33-510339						
8	Condenser (.05 mfd., 200 volts)	30-4519						
9	Resistor (10,000 ohms)	33-510339						
9A	Resistor (10,000 ohms)	33-510339						
9B	Resistor (10,000 ohms)	33-510339						
10	R. F. Transformer (Untuned, Broadcast)	32-3544						
11	R. F. Transformer (Tuned, Broadcast)	32-3545						
12	Condenser (5 mmfd.)	60-005457						
13	R. F. Transformer (Short Wave)	32-3550						
14	Condenser (10 mmfd.)	60-010437						
15	1st I. F. Transformer	33-36839						
16	Resistor (80,000 ohms)	33-36839						
17	Condenser (.25 mfd., 100 volts)	61-0112						
17A	Condenser (.25 mfd., 100 volts)	31-11212						
18	Resistor (2.2 megohms)	33-522339						
18A	Resistor (2.2 megohms)	33-522339						
19	Oscillator Transformer (Short Wave)	32-3547						
20	Oscillator Transformer (Broadcast)	32-3548						
21	Condenser (15 mmfd.)	60-015337						
22	2nd I. F. Transformer	32-3549						
22A	Compensator, Part of 22							
22B	Condenser (100 mmfd.), Part of 22A							
22C	Condenser (100 mmfd.), Part of 22A							
22D	Resis. (47,000 ohms, 1/2 watt), Part of 22							
23	Resistor (330,000 ohms)	33-423339						
24	Resistor (150,000 ohms)	33-415339						
25	Condenser (500 mmfd.)	60-150157						
25A	Condenser (500 mmfd.)	60-150157						
26	Condenser (430 mmfd.)	30-1195						
27	Resistor (250 ohms)	33-523339						
28	Condenser (.004 mfd., 400 volts)	30-4578						
29	Resistor (420 ohms)	33-523339						
30	Condenser (100 mmfd.)	60-110157						
31	Condenser (.02 mfd., 400 volts)	30-4578						
32	Condenser (.02 mfd., 400 volts)	60-050157						
33	Condenser (.002 mfd., 400 volts)	30-4579						
33A	Condenser (.002 mfd., 400 volts)	33-523339						
34	Volume Control	33-5412						
35	Tone Control and On-Off Switch	33-5416						
36	Resistor (470 ohms)	33-147326						
37	Electrolytic Cond. (15 mfd., 150 volts)	32-230157						
38	Condenser (250 mmfd.)	60-125157						
38A	Condenser (.0018 Condenser)	30-4555						
39	Output Transformer	33-5152						
40	Cone Assembly (For Speaker 36-1522-4)	38-4171						
41	Push-button Compensator Assembly	31-6354						

PART LOCATIONS, UNDERSIDE OF CHASSIS