

MODEL 41-714, CODE 121

SPECIFICATIONS

TYPE OF CIRCUIT: Six (6) tube A. C. operated super-heterodyne circuit with three tuning ranges for reception of standard and short-wave broadcast stations. Other features of design included in this model are:— High Gain R. F. Stage; Philco "Loktal" Tubes; Bass Compensation; Automatic Volume Control; Tone Control and a Pentode Audio Output Stage.

TUNING RANGES:

540 to 1600 K. C. 2.3 to 7.2 M. C. 7.0 to 24 M. C.

I. F. FREQUENCY: 455 K. C.

POWER SUPPLY: This model operates on 115 or 230 volts, 60 cycle, alternating current (A. C.). To operate the receiver on either of these voltages the power transformer wiring must be connected as indicated on the label at the rear of the set.

POWER CONSUMPTION: 115 or 230 volts, 40 watts.

PHILCO TUBES USED: 7A7E, R. F. Amplifier; 7J7E, Converter; 7B7E, I. F. Amplifier; 7B6, Second Detector, A. V. C., First Audio; 6K6E, Audio Output and a 7Y4, Rectifier.

AUDIO OUTPUT: 1.5 watts.

AERIAL AND GROUND: To obtain maximum sensitivity a Philco Aerial, Part No. 40-6383, should be used. In addition the ground connections should be securely attached to a water pipe or any other metal object that contacts moist earth.

CABINET DIMENSIONS:

Height, 11³/₁₆" Width, 16³/₁₆" Depth, 7³/₁₆"

ALIGNING R. F. AND I. F. COMPENSATORS

EQUIPMENT REQUIRED

1. Signal Generator, such as Philco Models 077 A. C. operated or Model 177 battery operated. These signal generators cover a frequency range from 115 to 36000 K. C.

2. Indicating Device: To obtain maximum signal strength and accurate adjustment of the padders, a vacuum tube voltmeter similar to Philco Models 027 and 028 are 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: Fibre 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 and screen terminals of the 6K6EG tube. Adjust the meter for the 0 to 30 volt A. C. scale.

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 schematic diagram.

If the output meter 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 to Receiver	Dummy Antenna Note A	Dial Setting	Dial Setting	Control Settings	Adjust Compensators	
1	Lug of Ant. Tuning Condenser Front Section	.1 mfd.	455 K. C.	580 K. C.	Range Switch Broadcast (Position 1) Vol. Max.	24A, 24B, 26A	
2	Ant. Lead	400 ohms	21 M. C.	21 M. C.	Range Switch S. W. Position 3	4B, 4A	Note B Note C
3	Ant. Lead	400 ohms	6.0 M. C.	6.0 M. C.	Range Switch S. W. Position 2	1S	Roll Gang
4	Ant. Lead	200 mmfd.	1500 K. C.	1500 K. C.	Range Switch Broadcast Position 1	15A	Roll Gang
5	Ant. Lead	200 mmfd.	580 K. C.	580 K. C.	Range Switch Broadcast Position 1	17	Roll Gang

NOTE A—The "Dummy Antenna" consists of a condenser or resistance connected in series with the signal generator output lead (high side). Use the capacity or resistance as specified in each step of the above procedure.

NOTE B—**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 first mark on the left edge (low frequency end) of the broadcast scale.

NOTE C—When adjusting compensator (4B) be sure to tune in the fundamental signal (21 M. C.) instead of the image signal. If the compensator is correctly adjusted the image signal will be found by turning dial 910 K. C. below the fundamental signal, which will be 20,090 M. C.

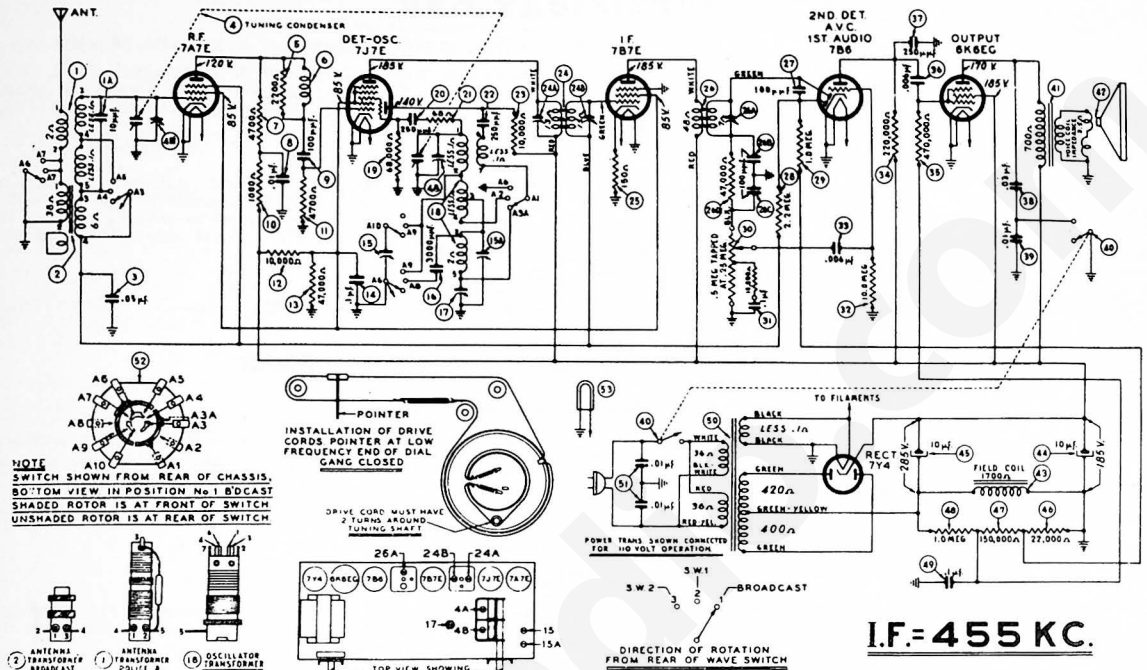
PRODUCTION CHANGES

To reduce power line noise pickup on Model 41-714, the following changes were made:

Remove condenser (51) on the diagram and replace with two resistors, 150,000 ohms, Part No. 33-415339. The resistors

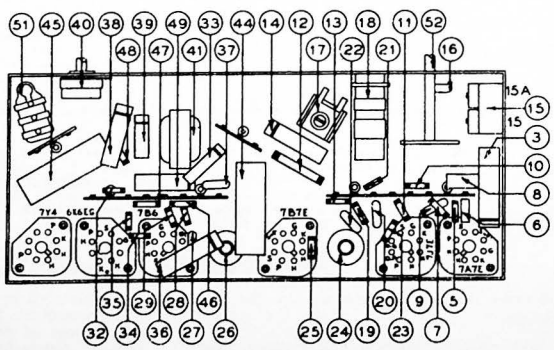
are connected in series and attached to each side of the power line connection from which the condenser was removed. The center tap of the resistors is connected to ground. A condenser, .003 mfd., 1500 volts, Part No. 30-4608, is also connected from each plate of the 7Y4 rectifier tube to ground.

MODEL 41-714, CODE 121 (CONTINUED)



Replacement Parts — Model 41-714

SCHE. No.	DESCRIPTION	PART No.	SCHE. No.	DESCRIPTION	PART No.	SCHE. No.	DESCRIPTION	PART No.	
1	Antenna Trans. (Police and Short-Wave)	32-3395	51	Bakelite Condenser (.01-.01 mfd.)	3903-000		Drive Cord Assembly (Pointer)	31-2442	
1A	Mica Condenser (10 mfd.)	60-010337	52	Wave Switch	42-1580		Drive Shaft	56-6052	
2	Antenna Transformer (Broadcast)	32-3186	53	Pilot Lamp	34-2064K		Drive Drum Assembly (Tone and Wave Switch)	38-9883	
3	Tubular Condenser (.05 mfd.)	30-4800	MISCELLANEOUS PARTS					Pointer	27-4332
4	Tuning Condenser Assembly	31-2440		Bearing (Front, Wave Switch)	27-9424		Pilot Lamp Assembly	38-9796	
5	Resistor (2200 ohms, 1/2 watt)	32-22239		Bearing (Rear, Drive Shaft)	10470A		Rubber Hose (Drive Shaft)	27-9432	
6	R. F. Choke	32-3397		Cabinet and Plug (Power Supply)	L-3246		Socket (Loktal Type)	55-0575	
7	Resistor (4700 ohms, 1/2 watt)	32-24739		Clip (Ant. Coil Mounting)	28-5002		Socket (Octal Type)	27-6137	
8	Tubular Condenser (.01 mfd.)	30-4572		Clip (Osc. Coil Mounting)	28-5003		Special Plug (Power Supply)	L-1387	
9	Mica Condenser (100 mfd.)	60-110457		Dial	27-5569		Spring (Tuning Cond. Drive Cord)	28-8751	
10	Resistor (1000 ohms, 1/2 watt)	32-210339		Dial Clamp	56-1710		Spring (Pointer Drive Cord)	28-8953	
11	Resistor (10,000 ohms, 1 watt)	33-310439		Dial Bracket	56-1711		Spring (Hairpin Type, Drive Shaft)	57-1468	
12	Resistor (47,000 ohms, 1/2 watt)	33-347339		Drive Cord Assembly (Tuning Cond.)	31-2441		Washer ("C" Type, Drive Shaft)	28-2043	
13	Tubular Condenser (.1 mfd.)	30-4556							
14	Compensator (2 section)	31-6343							
15	Mica Condenser (3000 mfd.)	60-230124							
16	Compensator (Broadcast Tracker)	31-6289							
17	Oscillator Transformer	32-3296							
18	Resistor (68,000 ohms, 1/2 watt)	33-368339							
19	Mica Condenser (250 mfd.)	60-128457							
20	Mica Condenser (250 mfd.)	60-128457							
21	Resistor (68 ohms, 1/2 watt)	33-068339							
22	Mica Condenser (250 mfd.)	60-128457							
23	Resistor (10,000 ohms, 1/2 watt)	33-310339							
24	1st I. F. Transformer Assembly	32-3398							
25	Resistor (180 ohms, 1/2 watt)	33-115339							
26	2nd I. F. Transformer Assembly	32-3399							
27	Mica Condenser (100 mfd.)	60-110457							
28	Resistor (2.2 meg., 1/2 watt)	33-522339							
29	Resistor (1.0 meg., 1/2 watt)	33-510339							
30	Volume Control (.8 meg.)	33-5391							
31	Tubular Condenser (.1 mfd.)	30-4586							
32	Resistor (10.0 meg., 1/2 watt)	33-610339							
33	Tubular Condenser (.008 mfd.)	30-4591							
34	Resistor (220,000 ohms, 1/2 watt)	33-422339							
35	Resistor (470,000 ohms, 1/2 watt)	33-447339							
36	Tubular Condenser (.008 mfd.)	30-4591							
37	Mica Condenser (250 mfd.)	60-128457							
38	Tubular Condenser (.03 mfd.)	30-4517							
39	Tubular Condenser (.01 mfd.)	30-4572							
40	Tone Control and On-Off Switch	32-1820							
41	Output Transformer	32-8106							
42	Cone and Voice Coil Assembly (Speaker Part No. 38-1804-2)	38-4126							
43	Field Coil (Replace Spkr. Part No. 38-1804-2)	30-4126							
44	Electrolytic Condenser (10 mfd., 350V.)	30-2489							
45	Electrolytic Condenser (10 mfd., 350V.)	30-2489							
46	Resistor (22,000 ohms, 1/2 watt)	33-222339							
47	Resistor (180,000 ohms, 1/2 watt)	33-415339							
48	Resistor (1.0 meg., 1/2 watt)	33-510339							
49	Tubular Condenser (.1 mfd.)	30-4586							
50	Power Trans. (115-230 V., 50-80 cycles)	32-8094							



MANY OF THE PARTS IN THIS PHILCO, SUCH AS CONDENSERS AND RESISTORS, ARE HELD TO MUCH CLOSER TOLERANCE THAN STANDARD REPLACEMENT PARTS. GENUINE PHILCO REPLACEMENT PARTS MUST BE USED TO OBTAIN SATISFACTORY PERFORMANCE OF THIS MODEL.