Models 42-PT-2, Code 121-122 42-PT-4, Code 121-122 42-PT-7, Code 121-122

SPECIFICATIONS

MODELS 42-PT-2, 42-PT-4 and 42-PT-7 are five (5) tube A. C. or D. C. operated superheterodyne compact radios employing a built-in loop aerial. In general these models are similar in design with the exception of the cabinets. Model 42-PT-2 is assembled in a walnut plastic cabinet, Model 42-PT-4 in an ivory plastic cabinet and Model 42-PT-7 in a walnut wood cabinet. Code numbers 121 and 122 of each model indicates the difference in the type of tuning condensers and oscillator transformer.

Each model includes a tuning band from 540 to 1600 K. C., automatic volume control; beam power pentode audio output stage electrodynamic speaker and Philco LOKTAL tubes.

Intermediate Frequency: 455 K. C.

Power Supply: 115 volts, A. C. or D. C.

Power Consumption: 30 watts.

PHILCO TUBES: 7A8, oscillator—converter; 7B7, I. F. amplifier; 7C6, 2nd detector, A.V.C. 1st audio; 50L6GT, beam power audio output and a 35Z3, rectifier.

Aerial and Ground: Under ordinary operating conditions an outside aerial or ground is not required. In some locations, however, such as steel reinforced buildings and other shielded areas, an outside aerial should be used for maximum performance. For this purpose an outside aerial connection is located on the rear lower left corner of the chassis. Simply remove the lug from under the screw and attach the aerial lead to the lug. The PHILCO safety aerial, Part No. 40-6370, is recommended for outdoor use.

ALIGNING R. F. AND I. F. COMPENSATORS

The following procedure covers all models.

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 Models 027 or 028 circuit testers contain both these meters.
3. **TOOLS:** Philco Fiber Screw Driver, Part No. 45-2610.

CONNECTING ALIGNING INSTRUMENTS

AUDIO OUTPUT METER: If this type of aligning meter is used, connect it to the voice coil terminals of the speaker or from the plate of the 50L6GT tube to the chassis. Adjust the meter for the 0 to 10 volt scale.

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.

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.

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

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.

After connecting the aligning instruments adjust the compensators as shown in the tabulation below. Locations are shown on Schematic.

If the indicating 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	Dial Setting	Dial Setting	Control Setting	Adjust Compensators In Order	
1	Ant. Section of tuning	455 K. C.	540 K. C. Tuning Cond. Closed	Vol. Max.	13B, 13A, 10A, 10B	Note B
*2	Loop see above instructions	1600 K. C.	1600 K. C.	Vol. Max.	(1B, Note C)	Note A
3	Loop see above instructions	1500 K. C.	1500 K. C.	Vol. Max.	(1A, Note D)	

NOTE A: DIAL POINTER CALIBRATION—In order to adjust the receiver correctly, the pointer must be adjusted to track properly with the tuning condenser. To do this, turn the tuning condenser to the maximum capacity (plates fully meshed). With the condenser in this position, set the tuning pointer on the first small line stamped in the scale plate on the left side.

NOTE B—Before adjusting compensators, turn down (10B) to tight position. Then adjust the compensators for maximum output in the following order: 12A, 12B, 10A and 10B.

NOTE C—When adjusting padder outside of cabinet, turn tuning condenser until dial pointer is on the first small line stamped in the scale plate from right side of chassis. Adjust padder (1B) to maximum at this point.

NOTE D—When adjusting padder outside of cabinet, turn tuning condenser until dial pointer is on the second small line stamped in the scale plate from right side of chassis. Adjust padder (1A) to maximum at this point.

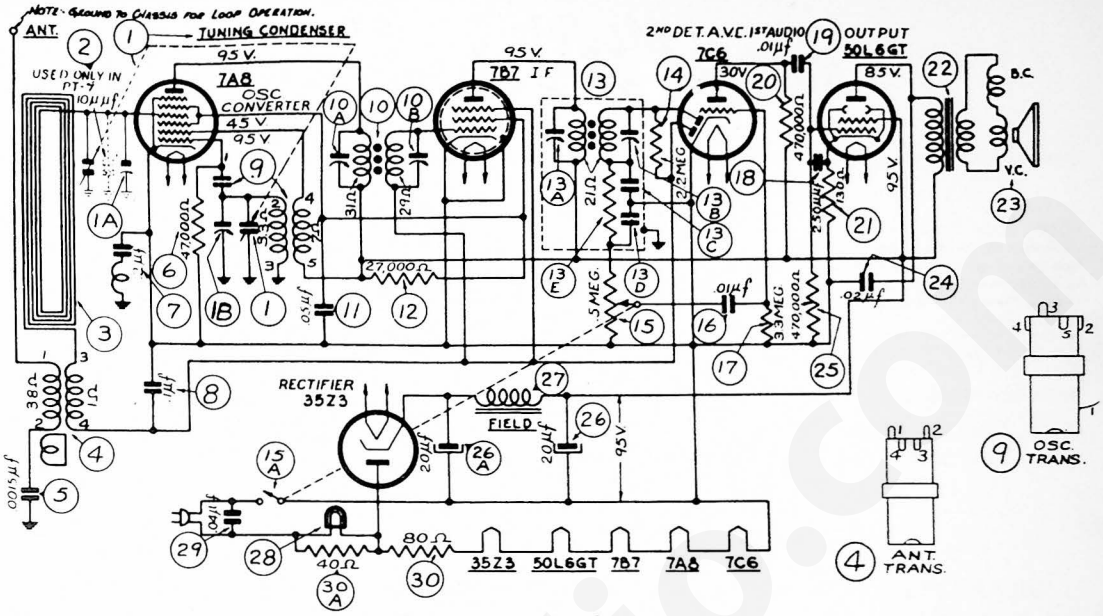

FIG. 1. SCHEMATIC DIAGRAM

Models 42-PT-2, Code 121-122; 42-PT-4, Code 121-122; 42-PT-7, Code 121-122

The D. C. Voltages indicated at the tube elements in the above diagram were measured with a 100C ohms per voltmeter, Philco Model 027. Line voltage 117 volts A. C.

REPLACEMENT PARTS

Schem. No.	Description	Part No.
1.	Tuning Condenser (PT-2, 4, 7, Code 121)	31-2527
	Tuning Condenser (PT-2, 4, 7, Code 122)	31-2610
	Drive Shaft	31-2531
	Mtg. Nut	W-2157
	Drive Cord	31-2529
	Spring	28-8954
	Mtg. Grommet	27-4610
	Pointer	56-2076
1a.	Aerial Compensator (Part of Tuning Condenser)	
1b.	Oscillator Compensator (Part of Tuning Condenser)	
2.	Mica Condenser (10 mmfd., used in PT-7 only)	60-010137
3.	Loop Aerial (PT-2, Code 121-122)	318-2773
	Loop Aerial (PT-4, Code 121-122)	318-2773
	Loop Aerial (PT-7, Code 121)	76-1196
	Loop Aerial (PT-7, Code 122)	76-1196
	Mtg. Washer	W-152
	Mtg. Screw	W-881
4.	Aerial Transformer	32-3391
	Mtg. Clip	28-5002
5.	Condenser (.0015 mfd., 200 volts)	30-4621
6.	Resistor (47,000 ohms)	33-347339
7.	R. F. Choke and Condenser (.2 mfd.)	76-1161
8.	Condenser (.1 mfd., 200 volts)	30-4586
9.	Oscillator Transformer (PT-2, 4, 7, Code 121)	32-3562
	Oscillator Transformer (PT-2, 4, 7, Code 122)	32-3839
	Mtg. Clip	28-5302
10.	First I.F. Transformer	32-3603
	Mtg. Nut	W-1949FA3
10a.	Primary Compensator (Part of 10)	
10b.	Secondary Compensator (Part of 10)	
11.	Condenser (.05 mfd., 400 volts)	30-4519
12.	Resistor (27,000 ohms)	33-327339
13.	Second I.F. Transformer	32-3604
	Mtg. Nut	W-1949
13a.	Primary Compensator (Part of 13)	
13b.	Secondary Compensator (Part of 13)	
13c.	Condenser (Part of 13a and 13b)	
13d.	Condenser (Part of 13a and 13b)	
13e.	Resistor (Part of 13)	
14.	Resistor (2.2 megohms)	33-522339
15.	Volume Control	33-5434
	Mtg. Nut	W-2157
15a.	Power Switch (Part of 15)	
16.	Condenser (.01 mfd., 400 volts)	30-4572
17.	Resistor (3.3 megohms)	33-533339
18.	Mica Condenser (250 mmfd.)	60-125157
19.	Condenser (.01 mfd., 400 volts)	30-4572
20.	Resistor (470,000 ohms)	33-473339
21.	Resistor (130 ohms)	33-113336
22.	Output Transformer	32-8164
23.	Speaker	36-1533-9
	Cone Assembly	36-4190
24.	Condenser (.02 mfd., 400 volts)	30-4516
25.	Resistor (470,000 ohms)	33-447339
26.	Electrolytic Condenser (20 mfd.)	30-2382
26a.	Electrolytic Condenser (20 mfd.)	(Part of 26)
	Mtg. Clamp	56-1348
27.	Field Coil (Replace Speaker	36-1533)
28.	Pilot Lamp	34-2068
	Socket Assembly	76-1177

Schem. No.	Description	Part No.
29.	Condenser (.04 mfd., 400 volts)	30-4119
30.	Filament Resistor (80 ohms)	33-3408
30a.	Filament Resistor (40 ohms)	(Part of 30)

MISCELLANEOUS PARTS

Cabinet and Loop (PT-2, code 121-122)	76-1195
Back	27-9817
Mtg. Stud	W-2235FA9
Cabinet and Loop (PT-4, code 121-122)	76-1219
Back	27-9870
Cabinet (PT-7, code 121)	105x3A
Cabinet (PT-7, code 122)	105x3B
Back	27-9944
Mtg. Screw	W-2023
Cord (Power)	L-3199
Dial Scale (PT-2, code 121)	27-5679
Dial Scale (PT-2, code 122)	27-5810
Mtg. Strap	56-2059
Mtg. Screw	W-2249FA3
Dial Scale (PT-4, code 121)	27-5695
Dial Scale (PT-4, code 122)	27-5811
Mtg. Strap	56-2059
Mtg. Screw	W-2249
Dial Scale (PT-7, code 121)	27-5781
Dial Scale (PT-7, code 122)	27-5812
Mtg. Strap	56-2068
Knob (PT-2, code 121, 122)	54-4052
Knob (PT-4, code 121, 122)	27-4805
Knob (PT-7, code 121, 122)	54-4135
Socket (50L6GT)	27-6174
Socket (LOKTAL TUBES)	27-6177
Screw (Chassis Mtg. PT-2-4)	W-1921FA9
Screw (Chassis Mtg. PT-7)	W-2063
Washer (Chassis Mtg. PT-2-4)	28-2615
Washer (Chassis Mtg. PT-7)	W-410

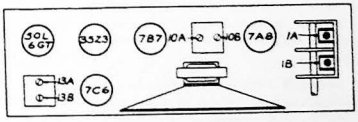

FIG. 2. COMPENSATOR LOCATIONS

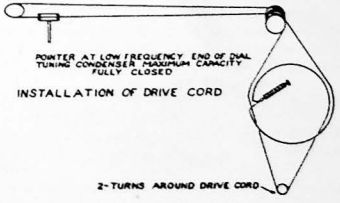

FIG. 3. DRIVE CORD ARRANGEMENT

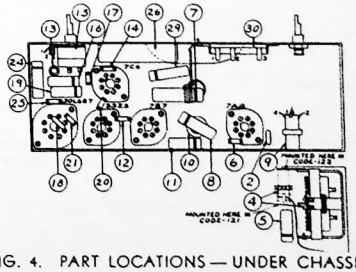

FIG. 4. PART LOCATIONS — UNDER CHASSIS