Radio-Phonograph Model 42-1004, Code 121

SPECIFICATIONS

Model 42-1004, Code 121 is a six-tube, superheterodyne radio-phonograph combination covering standard broadcast frequencies.

RADIO SECTION

Features of design included in the radio are the Philco built-in Super Aerial System; two position, slide type tone control; automatic volume control; beam power pentode audio output stage; Philco LOKTAL tubes; dual volume control which controls the radio and phonograph output; and a ten (10) inch electro-dynamic speaker.

TUNING BAND FREQUENCIES: 540 to 1600 K.C.

INTERMEDIATE FREQUENCIES: 455 K.C.

POWER SUPPLY: 115 volts, 60 cycle, A.C.

POWER CONSUMPTION:

PHILCO TUBES: 7C7, R.F. amplifier; 7A8, oscillator converter; 7B7, I.F. amplifier; 7C6, second detector, first audio; 35L6GT audio output and a 50Y6GT rectifier.

AERIAL CONNECTIONS: In addition to the Loop Aerial System, provisions for connecting an outside aerial are located on the rear of the chassis. When operating the radio in steel reinforced buildings and other shielded locations where station signal strength is weak, an outside aerial is recommended. The Philco Outdoor Aerial, Part No. 45-2817, is specially designed for this model. This Outdoor Aerial can be easily connected by inserting the plug attached to the transformer unit into the socket at the rear of the chassis. A ground connection is not required with either type of installation.

PHONOGRAPH SECTION

The phonograph consists of a manually operated crystal pickup with a permanent jewel needle and a flexible lightweight tone arm; a 115-volt, 60-cycle A.C. rim drive induction motor, and an automatic plunger type motor switch which starts the motor in operation when the pickup is lifted.

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 Models 027 and 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 35L6GT tube to electrical ground. 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 electrical ground ("B" negative).

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. A paper aligning scale, Part No. 27-9985, is also attached to the metal dial plate for adjusting the radio outside of the cabinet. The scale is marked with three lines indicating from left to right—"Dial Calibration Point," "580 K.C." and "1500 K.C." After connecting the aligning instruments adjust the compensators as shown in the tabulation below. Locations of the compensators are shown in fig. 1.

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.	20A, 16B, 16A	
2	Loop see above instructions	1600 K.C.	1600 K.C.	Vol. Max.	3B, 3A	Note A

NOTE A:—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 small dot below 540 K.C.

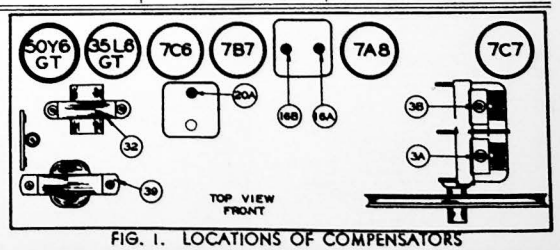

FIG. 1. LOCATIONS OF COMPENSATORS

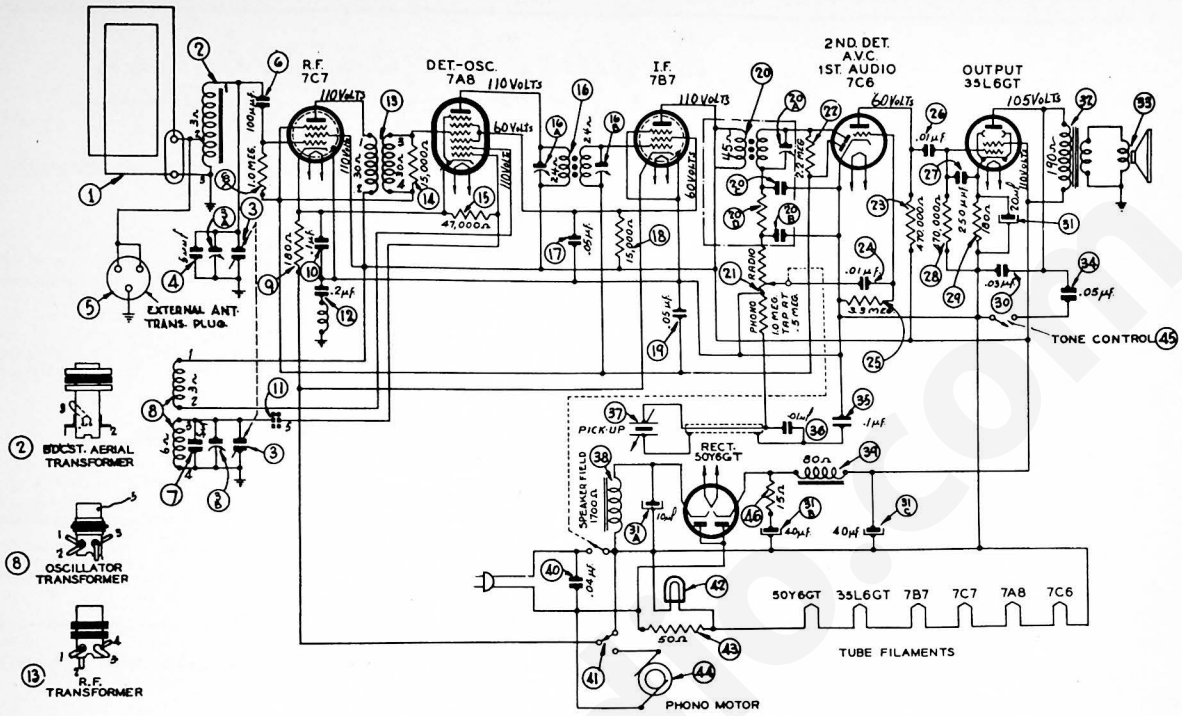

FIG. 2. SCHEMATIC DIAGRAM — MODEL 42-1004, CODE 121

REPLACEMENT PARTS — MODEL 42-1004, CODE 121

Schem. No.	Description	Part No.
1.	Loop Aerial	76-1368
	Terminal Panel	38-2477
	Mtg. Sleeve (Loop Mtg.)	28-3806
	Mtg. Washer	W-425
	Spring Washer	28-4186
	Mtg. Screw	W-1827
2.	Aerial Transformer	32-3776
	Mtg. Clip	28-5002
3.	Tuning Condenser	31-2587
3a.	Compensator (Aerial)	Part of 3
3b.	Compensator (Oscillator)	Part of 3
	Drive Cord	31-2573
	Spring	28-8954
	Pointer	56-2076
	Drive Shaft	31-2571
	Mtg. Nut	W-684FA3
	Mtg. Grommet	27-4610
	Mtg. Sleeve	28-5583
4.	Mica Condenser (5 mmfd.)	60-005157
5.	External Aerial Transformer Socket	27-6145
	Mtg. Rivets	W-207FA5
6.	Mica Condenser (100 mmfd.)	60-110158
6x.	Resistor (1 megohm)	33-510339
7.	Mica Condenser (5 mmfd.)	60-005157
8.	Oscillator Transformer	32-3613
	Mtg. Clip	28-5002
9.	Resistor (180 ohms)	33-118336
10.	Condenser (.1 mfd., 200 volts)	61-0104
11.	Condenser (1 mmfd.)	Part of 3
12.	Condenser (.2 mfd., 400 volts) and R. F. Choke	76-1318
13.	R. F. Transformer	32-3595
	Mtg. Clip	28-5002
14.	Resistor (15,000 ohms) Part of 13	33-315339
15.	Resistor (47,000 ohms)	33-347339
16.	First I. F. Transformer	32-3777
16a.	Primary Compensator	Part of 16
16b.	Secondary Compensator	Part of 16
	Mtg. Nut	W-1949
17.	Condenser (.05 mfd., 200 volts)	30-4519
18.	Resistor (15,000 ohms)	33-315339
19.	Condenser (.05 mfd., 200 volts)	30-4519
20.	Second I. F. Transformer	32-3848
20a.	Primary Compensator	Part of 20
20b.	Condenser	Part of 20a
	Mtg. Nut	W-1949
20c.	Condenser	Part of 20a
20d.	Resistor Part of 20	33-347339
21.	Volume Control	33-5466
	Mtg. Nut	W-2157
22.	Resistor (2.2 megohms)	33-522339
23.	Resistor (470,000 ohms)	33-447339
24.	Condenser (.01 mfd., 400 volts)	30-4572
25.	Resistor (3.3 megohms)	33-533339
26.	Condenser (.01 mfd., 400 volts)	30-4572
27.	Mica Condenser (250 mfd.)	60-125157
28.	Resistor (470,000 ohms)	33-447339
29.	Resistor (180 ohms)	33-118336
30.	Condenser (.03 mfd., 400 volts)	30-4517
31.	Electrolytic Condenser (20 mfd., 25 volts)	30-2528
31a.	Electrolytic Condenser (10 mfd., 150 volts)	Part of 31
31b.	Electrolytic Condenser (40 mfd., 150 volts)	Part of 31
31c.	Electrolytic Condenser (40 mfd., 150 volts)	Part of 31
	Mtg. Clamp	56-1466
32.	Output Transformer	32-8203
33.	Speaker 36-1513-4 or	36-1564-4
	Cone Assem. (for Spkr. 36-1513-4)	36-4169
	Cone Assem. (for Spkr. 36-1564-4)	36-4169
	Cable	41-3651
	Rubber Grommet (Mtg. Speaker)	27-4596
	Mtg. Washer	28-3320
	Mtg. Sleeve	56-2044
	Mtg. Nut	W-124FA3
34.	Condenser (.05 mfd., 400 volts)	30-4518
35.	Condenser (.1 mfd., 200 volts)	30-4586
36.	Condenser (.01 mfd., 400 volts)	30-4572
37.	Crystal Pickup and Tone Arm Complete	35-2524
	Pickup Cable	41-3624
	Pickup Needle	76-1285
	Mtg. Washer	W-894
	Rubber Mtg. Grommet (2 required)	54-4095
	Rubber Mtg. Grommet (1 required)	54-4096
	Rubber Bumper	54-4070
38.	Speaker Field Coil (Replace Spkr. 33)	
39.	Filter Choke	32-8168
	Mtg. Rivet	97-0065
40.	Condenser (.04 mfd., 400 volts)	30-4119
41.	Motor Switch	42-1651
	Mtg. Washer	W-467
	Switch Plate	56-1793
	Mtg. Nut	W-684
	Mtg. Screw	W-560
	Switch Cover	56-2109
42.	Pilot Lamp	34-2477
	Socket Assembly	76-1282
43.	Filament Resistor	33-3412
44.	Phono Motor (115 volts, 60 cycle)	35-1265-2
	Cable and Plug Assembly	41-3641
	Mtg. Rubber Grommet	27-4596
	Mtg. Sleeve	28-5665
	Mtg. Screw	W-333FE11
	Motor Plug	54-4142
	Turntable	35-3047-2
45.	Tone Control Switch	42-1562-2
	MISCELLANEOUS PARTS	
	Bezel	54-4093
	Mtg. Screw	W-2073
	Cable (Power)	L-3245
	Cabinet	10584
	Dial Scale	27-5788
	Mtg. Grommet	4169
	Mtg. Clip	56-1876FE7
	Knob (Tuning, Volume)	54-4105
	Rubber Grommet (Chassis Mtg.)	3915
	Rubber Grommet (Chassis Mtg.)	27-4307
	Screw (Chassis Mtg.)	W-443FA3
	Socket (Output Tube)	27-6174
	Socket (Loktal Tubes)	27-6177
	Mtg. Rivets	W-239FA5
	Wiring Panel	38-8369
	Wiring Panel	38-9117

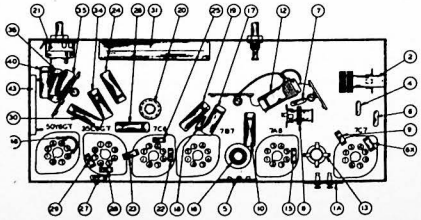

FIG. 3. LOCATIONS OF PARTS — UNDER CHASSIS