Philco Radio & Television Corp.

	Model: 38-40 (121)	Chassis:	Year: Pre October 1938
	Power:	Circuit:	IF:
	Tubes:		
	Bands:		

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Replacement Parts
Model 38-40, Code 121

Schem. No.	Description	Part No.	List Price
1	Antenna Transformer (Range 2)	32-2558	$0.70
2	Antenna Transformer (Range 1)	32-2667	1.60
3	Condenser (.05 mf. tubular)	30-4519	.20
4	Tuning Condenser	31-2065	5.00
5	Osc. Transformer (Range 2)	32-2668	1.25
6	Osc. Transformer (Range 1)	32-2559	.50
7	Compensator (2 sections)	31-6188	.50
8	Resistor (120,000 ohms, ½ W)	33-412339	.20
9	Condenser (3500 mmf.)	30-1094	.40
19	Resistor (5,000 ohms, ½ W)	33-250339	.20
11	1st I.F. Transformer	32-2580	2.20
12	2nd I.F. Transformer	32-2582	2.20
13	Resistor, (51,000 ohms, 1 W)	33-351439	.20
14	Electrolytic Condenser (8-8 mf)	30-2291	
15	Condenser (.1 mf)	30-4455	.25
16	Resistor (10,000 ohms, 1W)	33-310439	.20
17	Resistor (1.0 meg. ½ W)	33-510339	.20
18	Condenser (110 mmf. mica)	30-1031	.20
19	Resistor (51,000 ohms, ½ W part (12)	33-351339	.20
20	Volume Control	33-5215	1.00
21	Condenser (.015 mf. tubular)	30-4358	.20
22	Resistor (1.0 meg. ½ W)	33-510339	.20
23	Resistor (1.0 meg. ½ W)	33-510339	.20
24	Condenser (.1 mf. tubular)	30-4499	.20
25	Resistor (10,000 ohms, 2 W)	30-310539	.30
26	Filter Choke	32-7543	1.35
27	Resistor (1.0 meg. ½ W)	33-510339	.20
28	Condenser (.05 mf tubular)	30-4444	.20
29	Condenser (.15 mf tubular)	30-4191	.25
30	Resistor (4,000 ohms, ½ W)	33-240339	.20
31	Electrolytic Condenser (25 mf.)	30-2219	1.50
32	Resistor (490,000 ohms, ½ W)	33-449339	.20
33	Resistor—Wire wound, (202-8—35 ohms)	33-3316	.35
34	Condenser (250 mmf. mica)	30-1032	.25
35	Condenser (.015 mf tubular)	30-4515	.20
36	Resistor (330,000 ohms, ½ W)	33-433339	.20
37	Resistor (490,000 ohms, ½ W)	33-449339	.20
38	Condenser (.03 mf tubular)	30-4447	.20
39	Output Transformer	32-7936	
40	Cone & Voice Coil Assembly (KR29)	36-3540	1.00
	Cone & Voice Coil Assembly (HR23)	36-3797	
41	Resistor (99,000 ohms, ½ W)	33-399339	.20
42	Condenser (.05 mf tubular)	30-4444	.20
43	Condenser (.008 mf tubular)	30-4112	.20
44	Tone and Power Switch	42-1393	
45	Pilot Lamp bulb	34-2058	.12
46	"A" Choke	32-2866	
47	"A" Choke	32-2038	.15
48	Condenser (.05—.05 mf bakelite)	3615DG	.40
49	Condenser (.5 mf tubular)	30-4551	
50	Condenser (.02 mf tubular)	30-4481	.20
51	"B" Choke	32-2836	
52	Condenser (.02 mf tubular)	30-4481	.20
53	"B" Choke (Part of 51)		
54	"A" Choke	32-1954	.40
55	Condenser (.5 mf metal housing)	30-4296	.60
56	Condenser (.015 mf tubular)	30-4552	
57	Condenser (.5 mf tubular)	30-4551	
58	Power Transformer	32-7934	
59	Vibrator	41-3367	
60	Range Switch	42-1358	.75
	Cable (A.C.)	L-2778	.40
	Cable (Battery)	41-3364	
	Cable-Vibrator ("K" and "X" Cabinet)	41-3369	
	Cable-Vibrator (T cabinet)	41-3368	
	Clip (Dial)	28-2488	C.90
	Clip Mtg. (R.F. Coil)	28-5002	.02
	Dial	27-5333	.60
	Dial Washer—Rubber	27-4598	.03
	Dial Clamp	28-5089	.03
	Knob (Tuning)	27-4330	.10
	Knob (Vernier)	27-4331	.10
	Knob (Volume)	27-4332	.10
	Mtg. Foot (Tuning Condenser)	28-5022	
	Mtg. Rubber (Tuning Condenser)	27-4599	.04

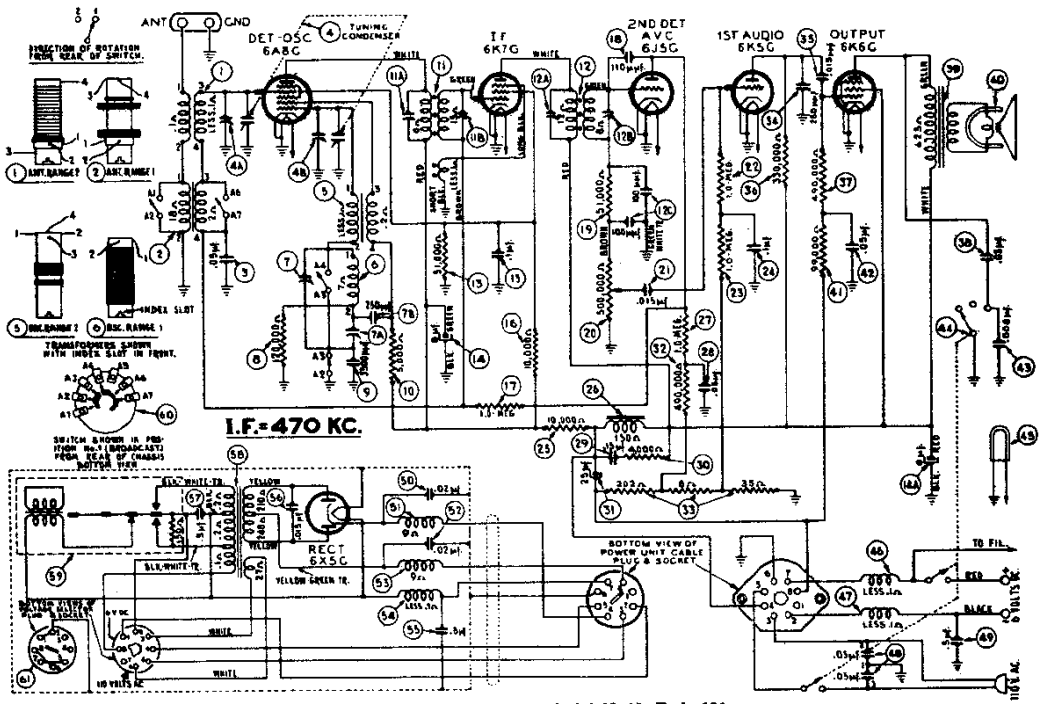

Fig. 4. Schematic Diagram—Model 38-40, Code 121

Schem. No.	Description	Part No.	List Price
	Mtg. Rubber (Vibrator Unit)	5189	$0.03
	Mtg. Rubber (Vibrator Unit)	27-4585	
	Mtg. Screw (Vibrator Unit)	W-767	
	Mtg. Spacer (Vibrator Unit)	28-6772	
	Pilot lamp Ass'y	38-8844	.35
61	Plug (Voltage Selector)	28-9247	
	Rubber Sleeve (Vibrator)	27-4637	
	Rubber Bumper (Dial)	27-4570	
	Screen	27-5320	.10
	Shield (Vibrator)	38-9245	
	Socket (Voltage Selector)	27-6054	.15
	Socket (Rectifier Tube)	27-6058	.11
	Socket (6 prong)	27-6086	.11
	Socket (7 prong)	27-6087	.11
	Socket (Vibrator)	27-6090	
	Vernier Drive	31-2128	
	"T" CABINET		
	Bezel Plate & Frame	40-6124	.90
	Bezel Gasket	27-8311	.01
	Bezel Glass	27-8298	.05
	Bezel Ring	28-5078	.55
	Bezel Screw	W-1821	C.60
	Speaker KR29	36-1379	
	"K" and "X" CABINETS		
	Bezel Plate & Frame Ass'y	40-6128	1.05
	Bezel Gasket	27-8313	.01
	Bezel Glass	27-8300	.06
	Bezel Ring	28-5080	.70
	Speaker HR23	36-1380	

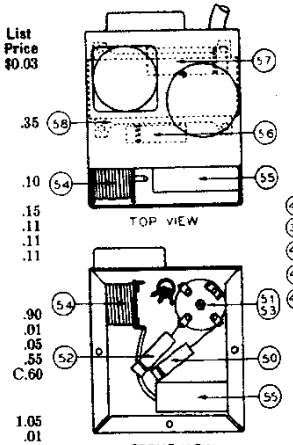

Fig. 5. Vibrator Unit Part Locations

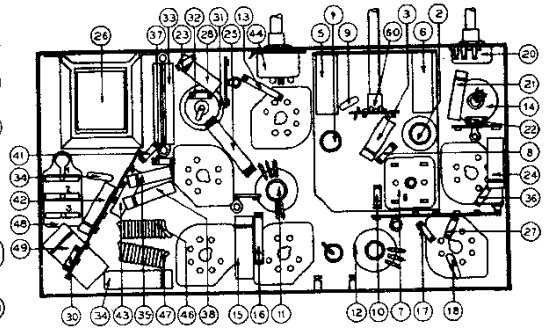

Fig. 6. Part Locations, Underside of Chassis

Sept. 1937.

MODEL 38-40(121)
Socket,Trimmers
Voltage,Alignment
Specs.,Notes

PHILCO RADIO & TELEV. CORP.

To obtain maximum performance from the receiver, a Philco Aerial, part number 45-2428 should be used.

POWER SUPPLY: 6 volt storage battery Philco type 116R or a 115 volt 60 cycle A.C. power supply.

INTERMEDIATE FREQUENCY: 470 K.C.

TUNING RANGES: 530 to 1720 K. C.—5.7 to 18.0 M. C.

POWER OUTPUT: 1.5 watts

PHILCO TUBES USED: 6A8G, converter and oscillator; 6K7G, I.F.; 6J5G, 2nd detector; 6K5G, 1st audio; 6K6G output; 6X5G, rectifier.

SPEAKER USED: HR-23
KR29

Fig. 2. Locations of Compensators

TYPE OF CIRCUIT: 6 tube superheterodyne circuit covering standard and shortwave broadcasts with automatic volume control; and a pentode output circuit. The receiver is designed to operate from either a 6 volt storage battery or a 115 volt 60 cycle A.C. supply. A Plug-Switch is provided on the power unit for selection of either voltage supply. Place the plug with arrow pointing toward voltage being used. With a 6 volt storage battery supply, a vibrator in conjunction with a 6X5G tube is used for supplying "B" voltage to the receiver. When using a 115 volt supply, the vibrator is removed from the circuit. (See schematic diagram page 2).

Fig. 1. Socket Voltages, Underside of Chassis

The voltages indicated by arrows were measured with a **Philco 026 Circuit Tester** which contains a sensitive voltmeter. Volume Control minimum. Storage Battery fully charged or 115 V. A.C. Power Supply.

Alignment of Compensators

EQUIPMENT REQUIRED: (1) Signal Generator, having a fundamental frequency range covering the tuning and intermediate frequencies of the receiver. Philco Model 077 A.C. operated Signal Generator or Model 088 Battery operated, Signal Generator, which have the required frequency range are the correct instruments for this purpose; (2) Output meter, Philco Model 026 circuit tester incorporates a sensitive output meter and is recommended; (3) Philco Fibre Handle Screw Driver, part No. 27-7059 and Fibre Wrench, part No. 3164.

OUTPUT METER: The 026 output meter is connected to the plate and cathode terminals of the 6K6G tube. Adjust the meter to use the (0-30) volt scale and advance the attenuator control of the generator until a readable indication is noted on the output meter after signal is applied.

Operations in Order	SIGNAL GENERATOR Cable Connections	Dummy Antenna Note A	Dial Freq.	RECEIVER Control Positions	Dial Freq.	Adjust Compensators In Order	NOTES
1	6A8G Grid	.1 mfd.	470 K. C.	Vol. Control Max. Range Switch (1)	580 K. C.	(12B)*, (12A) (11B), (11A)	Adjust all compensators for "Max." output
2	Antenna and ground of receivers	400 ohms	18.0 M. C.	Range Switch (2)	18.0 M. C.	(4B)	Check image at 17.060 M. C.
3	Antenna and ground of receivers	200 mmfd.	1550 K. C.	Range Switch (1)	1550 K. C.	(7), (4A)	
4	Antenna and ground of receivers	200 mmfd.	580 K. C.	Range Switch (1)	580 K. C.	(7A)	
5	Antenna and ground of receivers	200 mmfd.	1550 K. C.	Range Switch (1)	1550 K. C.	(7), (4A)	

NOTE "A"—The Dummy Antenna is a condenser connected in series with the signal generator output lead. 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:

1. Turn the tuning condenser to maximum capacity position (plate fully meshed).
2. Holding the tuning condenser in this position, loosen the dial clamp; then turn the dial until the indicator is centered on the middle index line (See Fig. 3). Tighten clamp in this position.

Fig. 3. Dial Calibration