

PHILCO . . . Models 39-30, 31 and 39-35, Code 121

Specifications

TYPE OF CIRCUIT:

Models 39-30 and 39-35 code 121 are similar with the exception of the type of Cabinets, Speakers and Power Transformers. These differences are shown on the Replacement Parts list and circuit diagram.

Models 39-31XF and 39-31XK are identical to Model 39-35, Code 121 with the exception of cabinets.

The Model 39-35, code 121 specifications, diagram and replacement parts listed below and on the following pages apply to Models 39-31XF and XK.

A.C. operated; superheterodyne circuit with two tuning ranges, covering standard broadcast (540 K.C. to 1720 K.C.) and short-wave (4.9 M.C. to 18.0 M.C.) frequencies; Automatic Volume Control; and pentode output.

The receiver is designed to operate from a "Philco Safety Aerial," Part No. 40-6371. This aerial system should be used to obtain maximum performance from the receiver.

POWER SUPPLY:

Voltage, 115 volts. Frequency, 50-60 cycles.
Power consumption 45 watts.

INTERMEDIATE FREQUENCY: 470 K.C.

TUNING RANGES:

540 K.C. to 1720 K.C.; 4.9 M.C. to 18.0 M.C.

PHILCO TUBES USED:

1-6A8G, 1st detector and oscillator; 1-7B, I.F.; 1-37, 2nd detector, Automatic Volume Control; 1-75, first audio; 1-41, output; and 1-84, Rectifier.

TUNING MECHANISM:

pulley and cable drive for Manual tuning. Electric Push-Button for Automatic tuning.

CABINETS:

Types: "T" for 39-30 and "XX" for 39-35.

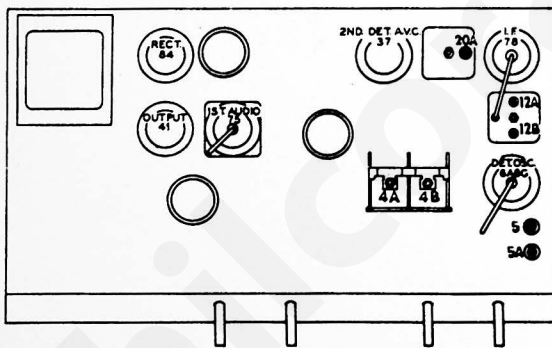


Fig. 4. Locations of Compensators—Top of Chassis

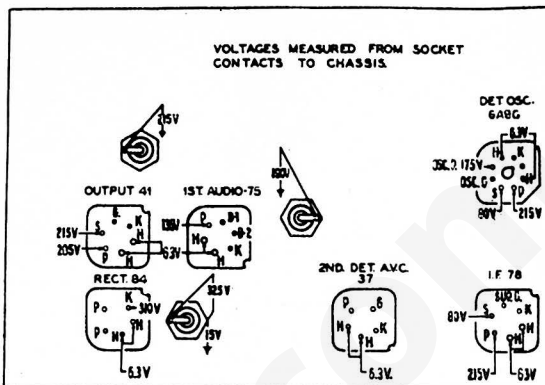


Fig. 1. Socket Voltages—Underside of Chassis

The voltages indicated by arrows were measured with a Philco 027 Circuit Tester which contains an accurate voltmeter./ Volume control at minimum, range switch in broadcast position, line voltage 115 A. C.

Instructions for setting up and operating the

electric push-button tuning will be found on page 3

Alignment of Compensators

EQUIPMENT REQUIRED:

(1) Signal Generator: philco Model 077 Signal Generator which has a fundamental frequency range from 115 to 36,000 K.C. is the correct instrument for this purpose.

(2) Output meter, Philco Model 027 Circuit Tester, incorporates a sensitive output meter and is recommended.

(3) Philco Fiber Handle Screw Driver, Part No. 27-7059, and Fiber Wrench, Part No. 3164.

OUTPUT METER:

Two indicating devices for aligning of the receiver can be used; either an audio output meter or a vacuum tube voltmeter. The method of connecting the audio output meter is given in the next paragraph. The procedure for connecting the vacuum tube voltmeter as an aligning indicator will be found on page 4. Where greater accuracy of the various tuned circuits is desired, the vacuum tube voltmeter is recommended as an aligning device.

The Philco 027 Output Meter is connected to the plate and cathode terminals of the type 41 tube. After connecting the Output Meter, adjust compensators in the order as given below.

Operations	Signal Generator			Receiver			Special Instructions
	Output Connections To Receiver	Dummy Antenna (Notes)	Dial Setting	Dial Setting	Control Settings	Adjust Compensators In Order	
1	6A8G Grid	.1 mf.	470 K.C.	580 K.C.	Vol. Cont. Max.	(20A) (12B) (12A)	
2	Ant. Ter.	100 muf.	18.0 M.C.	18.0 M.C.	Vol. Cont. Max.	(4B)	See Note B
3	Ant. Ter.	100 muf.	1550 K.C.	1550 K.C.	Vol. Cont. Max.	(5) (4A)	
4	Ant. Ter.	100 muf.	580 K.C.	580 K.C.	Vol. Cont. Max.	(5A)	
5	Ant. Ter.	100 muf.	1550 K.C.	1550 K.C.	Vol. Cont. Max.	(5)	

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

NOTE B--DIAL CALIBRATION: In order to adjust the re-

ceiver correctly the dial pointer must be aligned to track properly with the tuning condenser. To adjust the dial proceed as follows: With the tuning condenser closed, set the dial pointer on the extreme left index line at the low frequency end of the scale.

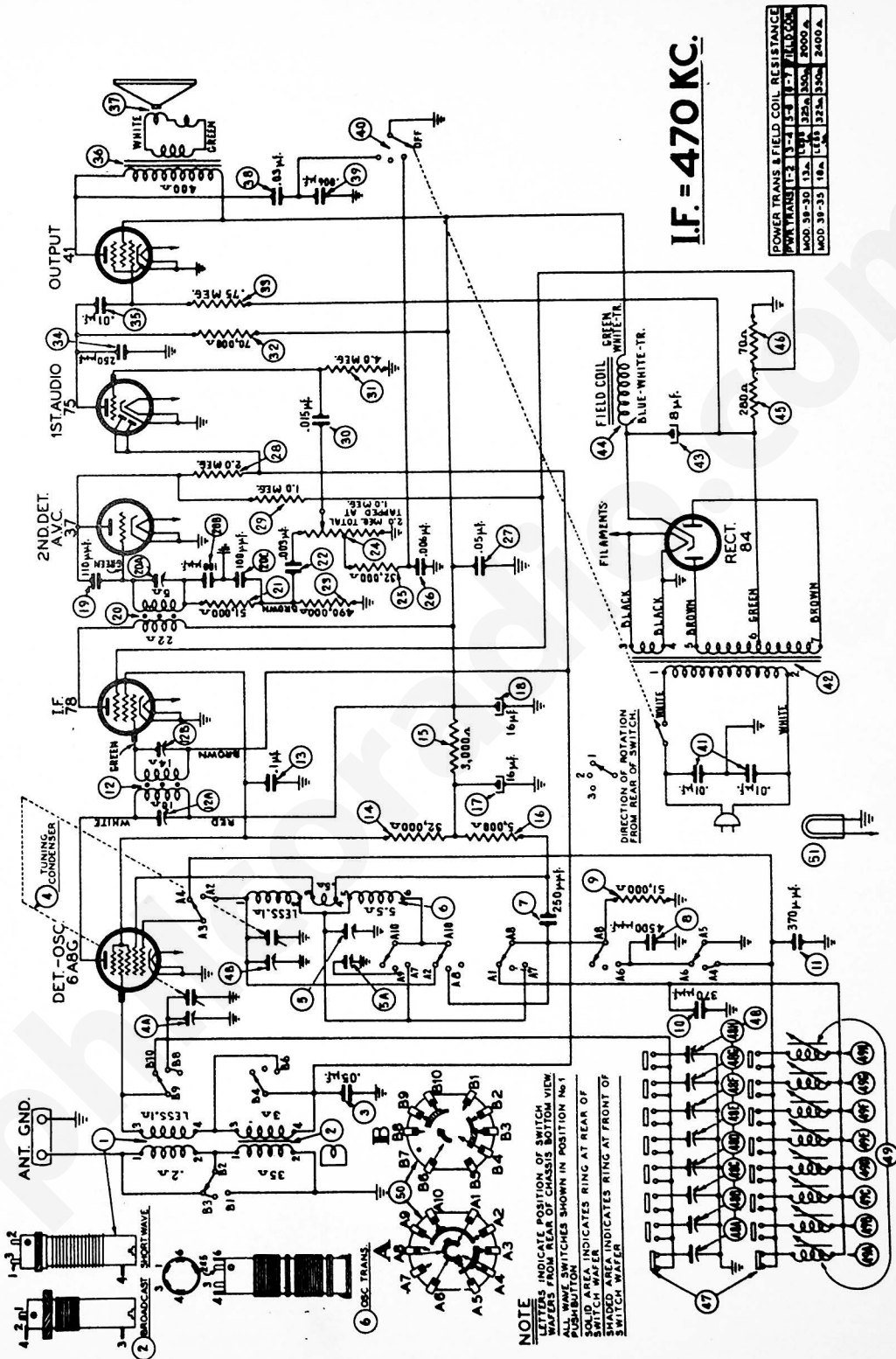


Fig. 2. Schematic Diagram—Models 89-30; 89-35, Code 121

REPLACEMENT PARTS

Schem. No.	Description	Part No.	Schem. No.	Description	Part No.
1	Antenna Transformer (short wave)	32-3027	47	Push-Button Switch	42-1446
2	Antenna Transformer (broadcast)	32-3026	48	Padder Strip Assembly	31-6256
3	Condenser (.05 mf., tubular)	30-4519	48A	Compensator, No. 1, 540—1030 KC.	31-6274
4	Tuning Condenser Assembly	31-2267	48B	Compensator, No. 2, 540—1030 KC.	31-6274
5	Dual Padder Unit	31-6255	48C	Compensator, No. 3, 670—1160 KC.	31-6276
6	Oscillator Transformer	32-3028	48D	Compensator, No. 4, 670—1160 KC.	31-6276
7	Condenser (250 mmf., mica)	30-1032	48E	Compensator, No. 5, 900—1470 KC.	31-6278
8	Condenser (4500 mmf., mica)	30-1109	48F	Compensator, No. 6, 900—1470 KC.	31-6278
9	Resistor (51,000 ohms, ½ watt)	33-351339	48G	Compensator, No. 7, 1170—1600 KC.	31-6280
10	Condenser (370 mmf., silver plated mica)	30-1110	48H	Compensator, No. 8, 1170—1600 KC.	31-6280
11	Condenser (.370 mmf., silver plated mica)	30-1110	49	Electric Push-Button Coil Assembly	32-3031
12	1st I. F. Transformer Assembly	32-3018	49A	Osc. Coil, No. 1, 540—1030 KC.	32-3042
13	Condenser (.1 mf., tubular)	30-4455	49B	Osc. Coil, No. 2, 540—1030 KC.	32-3042
14	Resistor (32,000 ohms, ½ watt)	33-332339	49C	Osc. Coil, No. 3, 670—1160 KC.	32-3042
15	Resistor (3000 ohms, ½ watt)	33-230339	49D	Osc. Coil, No. 4, 670—1160 KC.	32-3042
16	Resistor (5000 ohms, ½ watt)	33-250339	49E	Osc. Coil, No. 5, 900—1470 KC.	32-3041
17	Electrolytic Condenser (16 mf., 250 V.)	30-2331	49F	Osc. Coil, No. 6, 900—1470 KC.	32-3041
18	Electrolytic Condenser (16 mf., 250 V.)	30-2331	49G	Osc. Coil, No. 7, 1170—1600 KC.	32-3041
19	Condenser (110 mmf., mica)	30-1031	49H	Osc. Coil, No. 8, 1170—1600 KC.	32-3041
20	2nd I. F. Transformer Assembly	32-3030	50	Wave Switch	42-1445
21	Resistor (51,000 ohms, ½ watt)	33-351339	51	Pilot Lamp	34-2210
22	Condenser (.003 mf., tubular)	30-4469		Bezel Assembly	40-6365
23	Resistor (490,000 ohms, ½ watt)	33-449339		Bezel Gasket	27-9175
24	Volume Control (2.0 megs)	33-5275		Bezel Screw	W-1834
25	Resistor (32,000 ohms, ½ watt)	33-332339		Cable (Speaker)	41-3443
26	Condenser (.008 mf., tubular)	30-4467		Cable (Power)	L-2778
27	Condenser (.05 mf., tubular)	30-4518		Dial Scale	27-5403
28	Resistor (2.0 meg., ½ watt)	33-520339		Dial Spring	28-8908
29	Resistor (1.0 meg., ½ watt)	33-510339		Dial Pointer	28-5941
30	Condenser (.015 mf., tubular)	30-4515		Dial Drive Cord Assembly	31-2269
31	Resistor (4.0 megs, ½ watt)	33-540339		Dial Drive Cord Spring	28-8913
32	Resistor (70,000 ohms, ½ watt)	33-370339		Dial Drive Drum	31-2281
33	Resistor (750,000 ohms, ½ watt)	33-475339		Dial Tuning Shaft Assembly	31-2260
34	Condenser (250 mf., mica)	30-1032		Knob	27-4332
35	Condenser (.01 mf., tubular)	30-4572		Mounting Rubber (Chassis)	27-4571
36	Output Transformer	32-7978		Mounting Rubber (Chassis Corner)	27-4564
37	Cone and Voice Coil Assembly			Mounting Screw (Chassis)	W-1345
	for 39-30 T. speaker pt. No. 36-1439-3	36-4091		Pilot Lamp Socket Assembly	38-9607
	for 39-30 T. speaker pt. No. 36-1439-2	36-4087		Push-Button	27-4759
	for 39-35 XX, speaker pt. No. 36-1438-2	36-4089		Speaker (T Cabinet 39-30 optional)	36-1439-1
38	Condenser (.03 mf., tubular)	30-4449		Speaker (XX Cabinet 39-35)	36-1438-2
39	Condenser (.006 mf., tubular)	30-4445		Socket (5 Prong)	27-6035
40	Tone Control and On-Off Switch	42-1444		Socket (6 Prong)	27-6036
41	Condenser (.01 mf., .01 mf., bakelite)	3903 DG		Socket (7 Prong)	27-6099
42	Power Transformer: 115 V., 60 cycle:			Tab Kit	40-6392
	for 39-30	32-7976			
	for 39-35	32-7977			
43	Electrolytic Condenser (8 mf., 400 V.)	30-2330			
44	Field Coil for Speaker, part No. 36-1439				
45	Field Coil for Speaker, part No. 36-1438				
45	Resistor (280 ohms, wire wound)	33-128431			
46	Resistor (70 ohms, ½ watt)	33-070339			

MODEL 39-30, CODE 121 PRODUCTION CHANGES

Run 1-1 Mica condenser (8), 4500 mmfd. part no. 30-1109 replaced by two condensers part no. 30-1068 and 30-1094 wired in parallel.

Run 1-1 Electrolytic condenser (17) 16 mfd. 250 volts, part no. 30-2331 changed to part no. 30-2134, 8-4 mfd. dual capacity type.

Electrolytic condenser (18) part no. 30-2331 changed to 30-2270, 8-12 mfd. dual capacity type. The two sections of the above dual capacity condensers are wired in parallel and connected in the circuit as a single capacity as shown in the diagram.

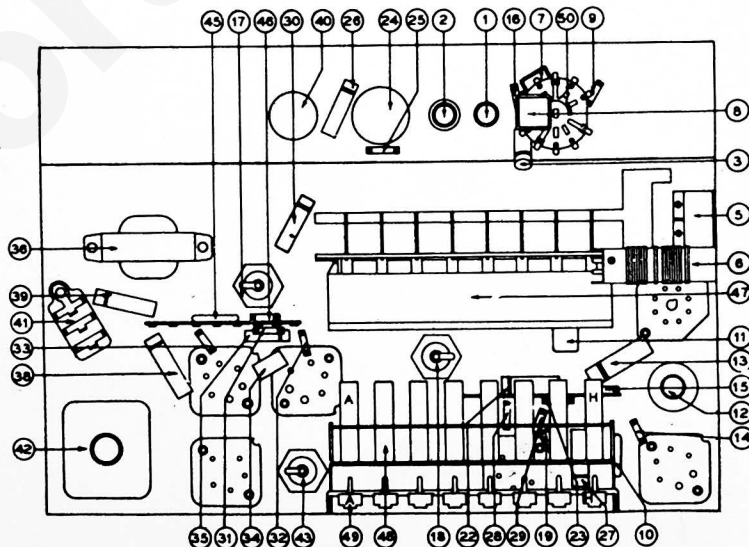


Fig. 3. Parts Locations—Underside of Chassis