

SPECIFICATIONS

TYPE OF CIRCUIT: 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; 1-78, I. F.; 1-75, 2nd detector, Automatic Volume Control, and 1st 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" and "XF."

Instructions for setting up and operating the electric push-button tuning will be found on page 3

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 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. Set the meter to use the 0-30 volt scale. After connecting the output meter adjust compensators in the order as given below.

Alignment of Compensators

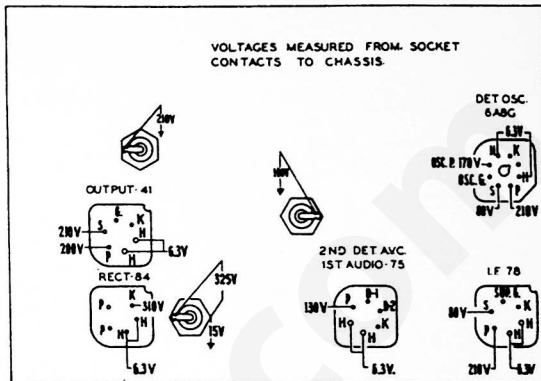


Fig. 1. Socket Voltage—Underside of Chassis
The voltages indicated by arrows were measured with a Philco 027 Circuit Tester, which contains a sensitive voltmeter. Volume Control at minimum—Tuning Condenser set for no signal—line voltage 115 A. C.

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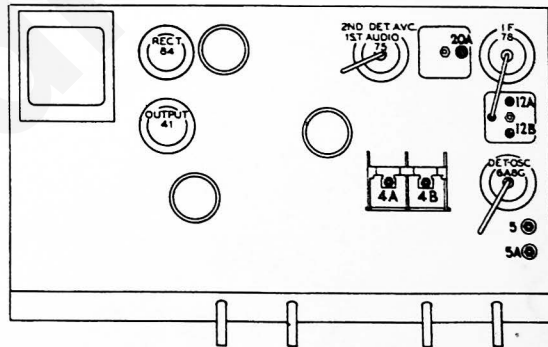
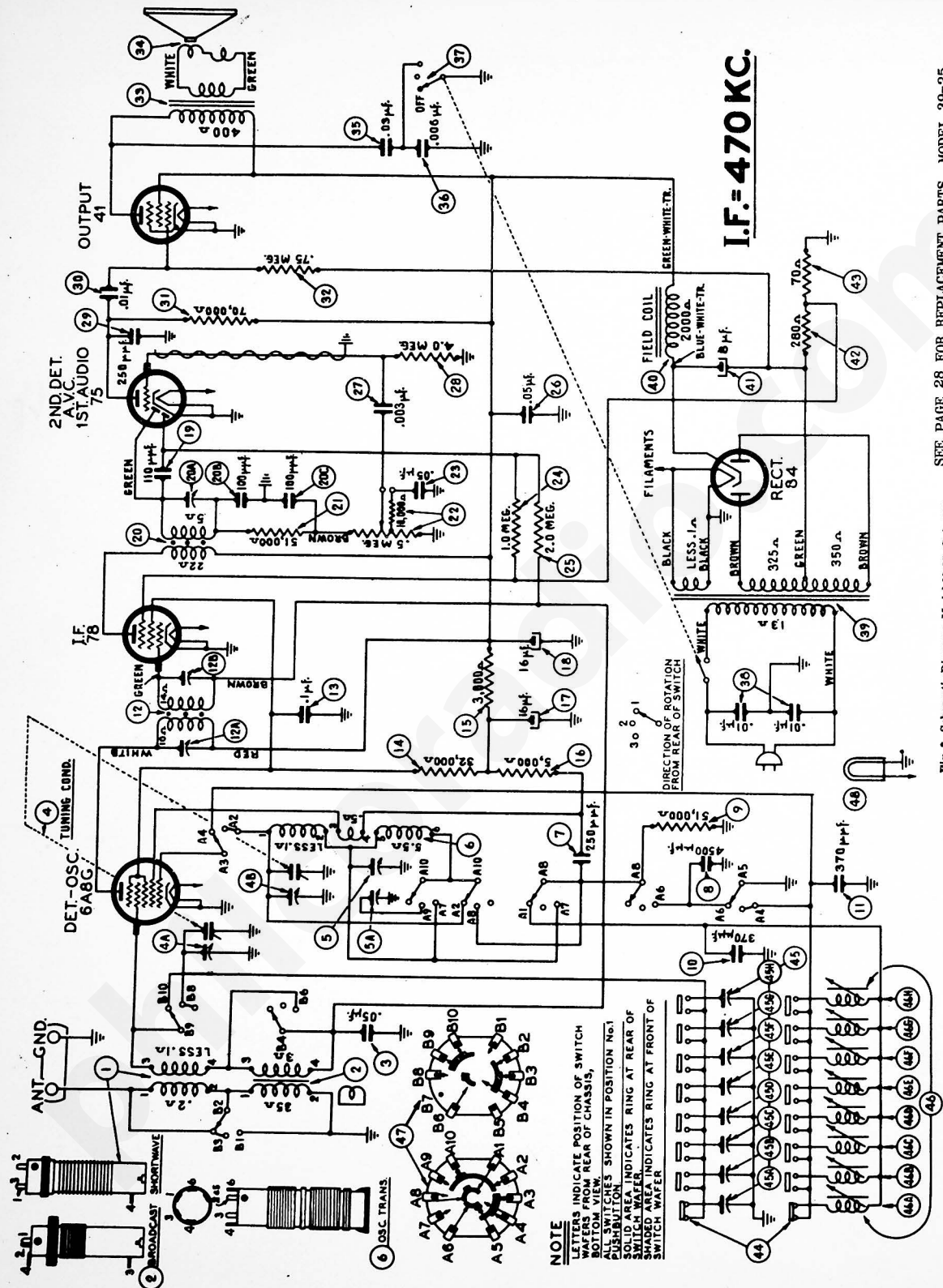


Fig. 4. Locations of Compensators

Operations in Order	Signal Generator			Receiver			Special Instructions
	Output Connections to Receiver	Dummy Antenna (Note A)	Dial Setting	Dial Setting	Control Settings	Adjust Compensators in Order	
1	6A8G Grid	.1 mf.	470 KC	580 KC	Vol. Cont. max.	(20A) (12B) (12A)	
2	Ant. Ter.	100 mmf.	18.0 MC	18.0 MC	Vol. Cont. max.	(4B)	See Note B
3	Ant. Ter.	100 mmf.	1550 KC	1550 KC	Vol. Cont. max.	(5) (4A)	
4	Ant. Ter.	100 mmf.	580 KC	580 KC	Vol. Cont. max.	(5A)	
5	Ant. Ter.	100 mmf.	1550 KC	1550 KC	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 receiver 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.



I.F. = 470 KC.

Fig. 2. Schematic Diagram, Model 39-25, Code 121

SEE PAGE 28 FOR REPLACEMENT PARTS, MODEL 39-25

NOTE
 LETTERS INDICATE POSITION OF SWITCH WAFERS FROM REAR OF CHASSIS, TOP VIEW.
 NUMBERS INDICATE POSITION OF SWITCH WAFERS SHOWN IN POSITION No. 1.
 SOLID AREA INDICATES RING AT REAR OF SWITCH WAFER.
 DOTTED AREA INDICATES RING AT FRONT OF SWITCH WAFER.

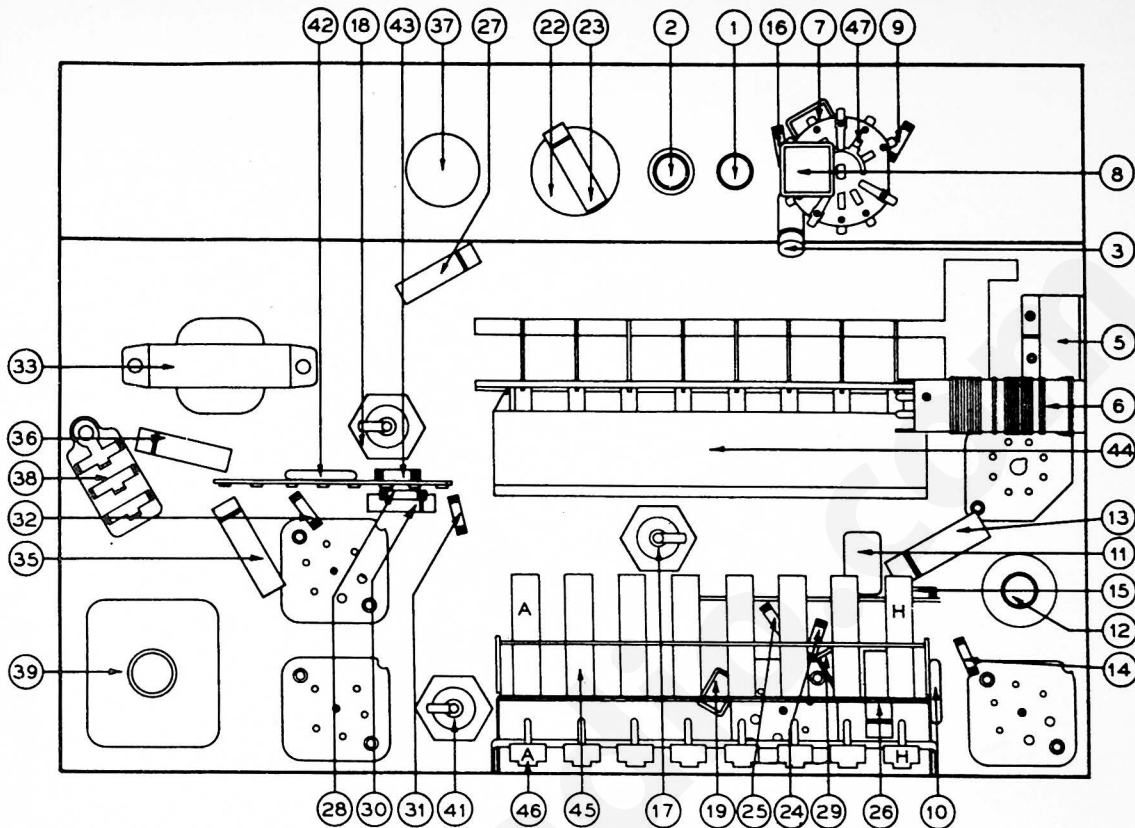


Fig. 3. Part Locations, Underside of Chassis

REPLACEMENT PARTS—MODEL 39-25, CODE 121

Schem. No.	Description	Part No.
1	Antenna Transformer (short wave)	32-3027
2	Antenna Transformer (broadcast)	32-3026
3	Tubular Condenser (.05 mf.)	30-4519
4	Tuning Condenser Assembly	31-2267
5	Dual Padder Unit	31-6255
6	Oscillator Transformer	32-3028
7	Condenser (250 mmf., mica)	30-1032
8	Condenser (4500 mmf., mica)	30-1109
9	Resistor (51,000 ohms, ½ watt)	33-351339
10	Condenser (370 mmf., silver plated mica)	30-1110
11	Condenser (370 mmf., silver plated mica)	30-1110
12	1st I. F. Transformer Assembly	32-3018
13	Condenser (.1 mf., tubular)	30-4455
14	Resistor (32,000 ohms, ½ watt)	33-332339
15	Resistor (3000 ohms, ½ watt)	33-230339
16	Resistor (5000 ohms, ½ watt)	33-250339
17	Electrolytic Condenser (16 mf., 250 V.)	30-2331
18	Electrolytic Condenser (16 mf., 250 V.)	30-2331
19	Condenser (110 mmf., mica)	30-1031
20	2nd I. F. Transformer Assembly	32-3030
21	Resistor (51,000 ohms, ½ watt)	33-351339
22	Volume Control (500,000 ohms)	33-5289
23	Condenser (.05 mf., tubular)	30-4444
24	Resistor (1 meg., ½ watt)	33-510339
25	Resistor (2 meg., ½ watt)	33-520339
26	Condenser (.05 mf., tubular)	30-4518
27	Condenser (.003 mf., tubular)	30-4469
28	Resistor (4.0 megs., ½ watt)	33-540339
29	Condenser (250 mmf., mica)	30-1032
30	Condenser (.01 mf., tubular)	30-4572
31	Resistor (70,000 ohms, ½ watt)	33-370339
32	Resistor (750,000 ohms, ½ watt)	33-475339
33	Output Transformer	32-7978
34	Voice Coil and Cone Assembly (for "T" Speaker, part No. 36-1439)	36-4087
	(for "XF" Speaker, part No. 36-1437)	36-4088
35	Condenser (.03 mf., tubular)	30-4449
36	Condenser (.006 mf., tubular)	30-4445
37	Tone Control and On-Off Switch	42-1443
38	Condenser (.01 mf., .01 mf., bakelite)	3903-DG
39	Power Transformer	32-7976
40	*Field Coil for Speaker, part No. 36-1439	
	*Field Coil for Speaker, part No. 36-1437	
41	Electrolytic Condenser (8 mf., 400 V.)	30-2330

Schem. No.	Description	Part No.
42	Resistor (280 ohms, wire wound)	33-128431
43	Resistor (70 ohms, ½ watt)	33-070339
44	Push-Button Switch	42-1446
45	Compensator Strip Assembly	31-6256
45A	Compensator, No. 1, 540-1030 K. C.	31-6274
45B	Compensator, No. 2, 540-1030 K. C.	31-6274
45C	Compensator, No. 3, 670-1160 K. C.	31-6276
45D	Compensator, No. 4, 670-1160 K. C.	31-6276
45E	Compensator, No. 5, 900-1470 K. C.	31-6278
45F	Compensator, No. 6, 900-1470 K. C.	31-6278
45G	Compensator, No. 7, 1170-1600 K. C.	31-6280
45H	Compensator, No. 8, 1170-1600 K. C.	31-6280
46	Electric Tuning Coil Assembly (complete)	32-3031
46A	Osc. Coil, No. 1, 540-1030 K. C.	32-3042
46B	Osc. Coil, No. 2, 540-1030 K. C.	32-3042
46C	Osc. Coil, No. 3, 670-1160 K. C.	32-3042
46D	Osc. Coil, No. 4, 670-1160 K. C.	32-3042
46E	Osc. Coil, No. 5, 900-1470 K. C.	32-3041
46F	Osc. Coil, No. 6, 900-1470 K. C.	32-3041
46G	Osc. Coil, No. 7, 1170-1600 K. C.	32-3041
46H	Osc. Coil, No. 8, 1170-1600 K. C.	32-3041
47	Range Switch	42-1445
48	Pilot Lamp	34-2210
	Bezel Assembly	40-6365
	Bezel Gasket	27-9175
	Bezel Screw	W-1834
	Cable (speaker)	41-3443
	Cable (power)	L-2778
	Dial Scale	27-5403
	Dial Spring	28-8908
	Dial Pointer	28-5941
	Dial Drive Cord Assembly	31-2269
	Dial Drive Spring	28-8913
	Dial Tuning Shaft Assembly	31-2260
	Dial Tuning Drum	31-2281
	Knob	27-4332
	Socket (5 Prong)	27-6035
	Socket (6 Prong)	27-6036
	Socket (7 Prong)	27-6099
	Pilot Lamp Socket Assembly	38-9607
	Pushbutton	27-4749
	Speaker (T Cabinet)	36-1439
	Speaker (XF Cabinet)	36-1437
	*Replace Speaker.	

PRODUCTION CHANGES

Run 1-1
Mica condenser (8), 4500 mfd. part no. 30-1109 replaced by two condensers part nos. 30-1068 and 30-1094 wired in parallel. The original condenser, however, can be used when replacement is necessary.

Run 1-2
Electrolytic condenser (17) 16 mfd., 250 V. 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 on diagram.

MODEL 39-25, CODE 124

Replacement Parts which differ from those shown for Code 121

17	Electrolytic Cond. (16 mfd., 250 V.)	30-2386
18	Electrolytic Cond. (16 mfd., 450 V.)	30-2386
41	Electrolytic Cond. (8 mfd., 450 V.)	30-2386

Code Assembly for
Speaker 36-1471-3 36-4086
Speaker (code 124) 36-1471-3