

Electrical Specifications

Type of Circuit: Superheterodyne, with magnetic tuning control on the broadcast range, and a push-pull pentode audio output circuit.

Dial Mechanism: Philco Automatic Dial Tuning System.

Power Supply: Voltage	Frequency Cycles	Consumption
115	50 to 60	110 watts
115	25 to 40	110 watts

Intermediate Frequency: 470 K. C.

Undistorted Output: 5 watts.

Philco Tubes Used: Nine. Two 6K7G; one 6A8G; one 6N7G; one 6H6G; one 6Q7G; two 6F6G; and one 5Y4G.

Tuning Ranges: Three. Range 1—530 to 1720 K. C.; Range 2—2.3 to 7.4 M. C.; Range 3—7.35 to 22 M. C.

Tone Control: 3 positions.

Speaker: H-30.

Alignment of Compensators

EQUIPMENT REQUIRED: (1) Signal Generator; Philco Model 088 (fundamental frequency 110 to 20,000 K. C.) is the correct instrument for this purpose; (2) Output meter; Philco Model 025 Circuit Tester incorporates a sensitive output meter and is recommended; (3) Fibre handle screw-driver (Philco Part No. 27-7059); (4) Special variable condenser (Philco Part No. 45-2325).

OUTPUT METER: The 025 Output Meter is connected to the plate and cathode terminals of one of the (6F6G) tubes. Adjust the meter to use the (0-30) volt scale.

INTERMEDIATE FREQUENCY CIRCUIT

1. Set controls as follows:

- Magnetic Tuning "off" (19)
- Base compensation minimum
- Volume control maximum (67)
- Receiver Dial 580 K. C.
- Signal Generator 470 K. C.
- Range switch position 1

2. Adjust the I. F. compensators for maximum with signal generator output lead connected through a .1 mfd. condenser to the grid of the tubes as follows:

Input Point	Compensators in Order
6A8G—1st Det.	(54) (53P) (43S) (43P)

RADIO FREQUENCY CIRCUIT

Tuning Range 530 to 1720 K. C.

1. Connect the signal generator output lead through a .1 mfd. condenser to terminal 1 and the generator ground to terminal 3 on aerial input panel. Terminals 2 and 3 must be connected with the shorting link provided on the aerial panel.

2. Other controls set as given under intermediate frequency circuit, with the exception of those as follows:

Adjust compensators for maximum output as follows:

Range Switch	Signal Generator	Receiver Dial	Compensators in Order
1	1800 K. C.	1600 K. C.	(21) (36B) (36A)
1	580 K. C.	580 K. C.	(22) Roll gang through signal when padding this compensator
1	1600 K. C.	1600 K. C.	(21)
1	1500 K. C.	1500 K. C.	(36A) (36B)

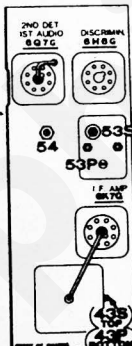


Fig. 2—I. F. Compensators

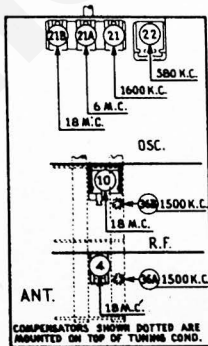


Fig. 3—R. F. Compensators

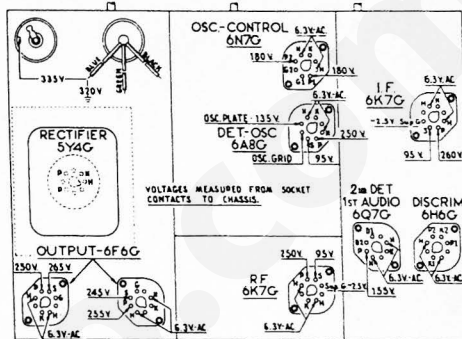


Fig. 1—Receiver Socket Voltages

The voltages indicated by arrows were measured with a Philco 025 Circuit Tester which contains a voltmeter having a resistance of 1000 ohms per volt. Volume Control at minimum, range switch in broadcast position, line voltage 115 A. C.

Tuning Range 2.3 to 7.4 M. C.

Adjust compensators for maximum output as follows:

Range Switch	Signal Generator	Receiver Dial	Compensators in Order
2	6 M. C.	6 M. C.	(21A)

Tuning Range 7.35 to 22 M. C.

Adjust compensators for maximum output as follows:

Range Switch	Signal Generator	Receiver Dial	Compensators in Order
3	18 M. C.	18 M. C.	(21B) Check image at 17.06 M. C.
3	18 M. C.	18 M. C.	(10) (4) Use shunt condenser on (21B) or rock gang through signal when padding compensator No. 10
3	18 M. C.	18 M. C.	(21B)

MAGNETIC TUNING ADJUSTMENT—Set the range switch in position one (530 to 1720 K. C.) and the magnetic tuning switch in the "out" position. Now turn the signal generator and receiver dial to any frequency in the Broadcast band. The receiver dial must be adjusted very accurately for maximum output.

Set the magnetic tuning control in the "on" position (clockwise). Compensator (35S) of the magnetic tuning transformer is now adjusted for maximum output.

The above adjustment is now checked for accuracy, by turning the magnetic tuning control "off" and "on." When this is done, there should be no change in the tone of the received signal. If a change of tone or hiss develops, it indicates a shift in frequency and the adjustment must be made again.

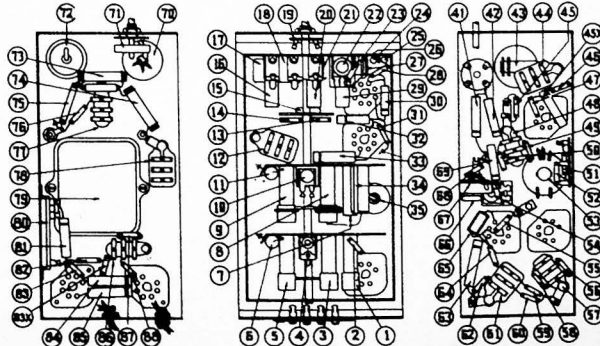


Fig. 4—Part Locations, Underside of Chassis

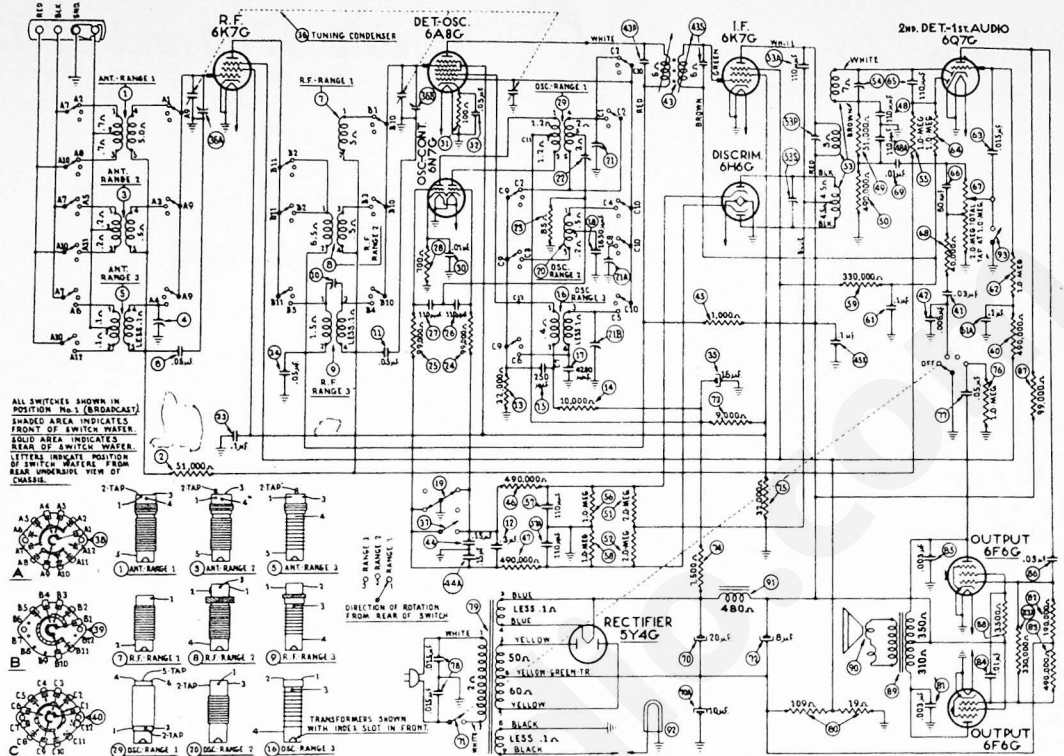


Fig. 5—Schematic Diagram

Replacement Parts—Model 37-9

Schem. No.	Description	Part No.	List Price	Schem. No.	Description	Part No.	List Price	Schem. No.	Description	Part No.	List Price
1	Antenna Transformer (Range 1)	32-2378	\$1.60	51	Resistor (2 megohm, 1/2 watt)	33-520339	\$0.20		Automatic Dial (complete)	31-1960	\$25.00
2	Resistor (51,000 ohms, 1/2 watt)	33-361339	.20	52	Resistor (2 megohm, 1/2 watt)	33-520339	.20		Brace	28-4119	.05
3	Antenna Transformer (Range 2)	32-2381	1.20	53	2nd I. F. Transformer (Discrim)	31-6147	.40		Cable (A. C.)	L-2183	.40
4	Compensator (Single)	31-6101	.30	54	Compensator	31-6147	.40		Cable (speaker)	41-3258	.50
5	Antenna Transformer (Range 3)	32-2384	1.20	55	Resistor (1 megohm, 1/2 watt)	33-510339	.20		Coupling (Tuning Condenser)	31-1961	.80
6	Condenser (.05 mfd. tubular)	30-4444	.20	56	Resistor (1 megohm, 1/2 watt)	33-510339	.20		Coupling (Range Switch)	28-7198	.15
7	R. F. Transformer (Range 1)	32-2379	.40	57	Condenser (110 mmfd. dual bakelite)	8035-DG	.25		Cip (Volume Shaft)	28-4394	.01
8	R. F. Transformer (Range 2)	32-2382	1.00	58	Resistor (1 megohm, 1/2 watt)	33-510339	.20		Control Screws (Station Index)	31-1968	.15
9	R. F. Transformer (Range 3)	32-2385	1.20	59	Resistor (500,000 ohms, 1/2 watt)	33-433339	.20		Dial	27-5283	.05
10	Compensator (Single)	31-6160	.30	60	Resistor (490,000 ohms, 1/2 watt)	33-449339	.20		Dial Escutcheon Assembly	45-2324	.40
11	Condenser (.05 mfd. tubular)	30-4020	.20	61	Condenser (.1 mfd. dual bakelite)	4989-DG	.40		Gear "Front" (Dial Assembly)	45-2347	.60
12	Condenser (.15 double bakelite both sections used)	6287-DU	.40	62	Resistor (1 megohm, 1/2 watt)	33-510339	.20		Gear "Rear" (Dial Assembly)	45-2348	.60
13	Resistor (32,000 ohms, 1/2 watt)	33-332339	.20	63	Condenser (.015 mfd. tubular)	30-4358	.20		Guide (Maak)	28-4118	.25
14	Resistor (10,000 ohms, 1/2 watt)	33-310339	.20	64	Resistor (1 megohm, 1/2 watt)	33-510339	.20		Handle (Dial)	45-2389	.50
15	Condenser (250 mmfd. mica)	30-1032	.25	65	Condenser (110 mmfd. mica)	30-1031	.20		Housing (Control Screws)	45-2344	.50
16	Oscillator Transformer (Range 3)	32-2386	.40	66	Condenser (60 mfd. mica)	30-1040	.20		Maak and Link Assembly	45-2401	.10
17	Condenser (3800 mmfd.)	31-6156	.60	67	Volume Control	33-5158	1.00		Plate Drive Mfg. Assembly	31-1969	.25
18	Condenser (1650 mmfd.)	31-6155	.40	68	Resistor (40,000 ohms, 1/2 watt)	30-4479	.20		Pilot Lamp Assembly	38-7706	.35
19	Switch (Magnetic Tuning, manual)	42-1281		69	Resistor (7,500 ohms, 1/2 watt)	30-2183	2.00		Reflector Ring	28-4630	.25
20	Oscillator Transformer (Range 2)	32-2383	.70	70	Electrolytic Condenser (10, 20 mfd.)	42-1267	.75		Ring (Retaining Maak Assembly)	28-7195	.20
21	Compensator (Three sections)	31-6170	.75	71	Tone Control and A. C. Switch	30-2024	1.10		Rubber Synchr. (Chassis Mfg.)	27-4116	.08
22	Compensator (Osc. series)	31-6161	.40	72	Electrolytic Condenser (6 mfd.)	33-290539	.30		Screen Holder Assembly	31-1968	.30
23	Resistor (85 ohms, 1/2 watt)	33-399339	.20	73	Resistor (9,000 ohms, 2 watt)	33-332339	.20		Shield (Chassis Bottom)	28-4626	.30
24	Resistor (99,000 ohms, 1/2 watt)	33-399339	.20	74	Resistor (7,500 ohms, 1/2 watt)	33-510339	.20		Shield (Tube—Square)	28-2726	.10
25	Resistor (99,000 ohms, 1/2 watt)	33-399339	.20	75	Resistor (32,000 ohms, 1/2 watt)	33-332339	.20		Shield (Tube—Round)	8005	.10
26	Condenser (110 mmfd. mica)	30-1031	.20	76	Resistor (1 megohm, 1/2 watt)	33-510339	.20		Shaft (Volume Control)	28-2835	.25
27	Condenser (110 mmfd. mica)	30-1031	.20	77	Condenser (.05 mfd. bakelite)	8326-SU	.35		Shaft and Plate (Range Switch)	42-1287	.50
28	Resistor (700 ohms, 1/2 watt)	30-1123	1.60	78	Condenser (.015 mfd. dual bakelite)	3793-DG	.40		Spring (Volume Shaft)	28-4117	40 C
29	Osc. Transformer (Range 1)	32-2373	1.60	79	Power Transformer (115 A. C., 50 to 60 cycles)	32-7606	6.25		Sprout (2 prong)	27-6057	.11
30	Condenser (.01 mfd. tubular)	30-4479	.20			32-7607	9.00		Socket (8 prong)	27-6058	.11
31	Resistor (100 ohms, 1/2 watt)	33-110339	.20	80	Resistor Bias (128 ohms)	33-3280	.30		Socket (Rectifier)	27-6062	.11
32	Condenser (.05 mfd. tubular)	30-4020	.20	81	Condenser (.03 mfd. tubular)	30-4469	.20		Straer (Wood)	27-2116	.05
33	Condenser (.1 mfd. tubular)	30-4455	.20	82	Resistor (100,000 ohms, 1/2 watt)	33-110339	.20		Terminal Panel (Ant.)	38-7714	.15
34	Condenser (.05 mmfd. mica)	30-1123	.20	83	Resistor (330,000 ohms, 1/2 watt)	33-449339	.20		Vernier Drive	45-2342	2.40
35	Electrolytic Condenser (16 mfd.)	30-2118	1.65	84	Resistor (490,000 ohms, 1/2 watt)	33-449339	.20		Washer (Dial Scale)	27-8398	.01
36	Tuning Condenser	31-1963	4.00	85	Condenser (.01 mfd. tubular)	30-4169	.20				
37	Magnetic Tuning Switch (Automatic Dial)	45-2230	1.20	86	Condenser (.01 mfd. tubular)	30-4469	.20				
38	Range Switch (Ant.)	42-1282	.75	87	Condenser (.03 mfd. bakelite)	8318-SU	.35				
39	Range Switch (R. F.)	42-1283	.75	88	Resistor (99,000 ohms, 1/2 watt)	33-399339	.20				
40	Range Switch (Osc.)	42-1284		89	Resistor (3500 ohms, 1/2 watt)	33-238339	.20				
41	Condenser (.03 mfd. tubular)	30-4449	.20	90	Output Transformer (H-30)	32-7754	1.50				
42	Condenser (.006 mfd. tubular)	30-4445	.20	91	Cone and Voice Coil (H-30)	38-3801	1.20				
43	1st I. F. Transformer	32-2449	2.20	92	Field Coil (H-30)	36-3687	4.00				
44	Condenser (.15 dual bakelite)	6287-DG	.40	93	Pilot Lamp	34-2039	.07				
45	Resistor (1000 ohms, 1/2 watt)	33-210339	.20			28-4110	.15				
46	Resistor (490,000 ohms, 1/2 watt)	33-449339	.20			28-4110	.15				
47	Resistor (490,000 ohms, 1/2 watt)	33-449339	.20			45-2360	.15				
48	Condenser (10 mmfd. dual bakelite)	8035-DG	.25			27-8361	.01				
49	Resistor (51,000 ohms, 1/2 watt)	33-351339	.20			27-8361	.01				
50	Resistor (490,000 ohms, 1/2 watt)	33-449339	.20			27-8389					

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