

# PHILCO . . . . . Model 37-611

## Electrical Specifications

**Type Circuit:** superheterodyne, for alternating or direct current; Pentode Output and Built-in Connection for the PHILCO High-Efficiency Aerial.  
**Power Supply:** 115 volts, alternating or direct current.  
**Power Consumption:** 65 watts.  
**Philco Tubes Used:** 6A8G, 6K7G, 6Q7G, 25A6G, 25Z6G.  
**Frequency Ranges:**—Range 1—530 to 1720 K.C.; Range 2—2.3 to 7.4 M.C.; Range 3—7.35 to 22 M.C.  
**Intermediate Frequency:** 470 K.C.  
**Speakers:** S-15—"B", "F", "T" Cabinets. HS-2—"J" Cabinet.

## Alignment of Compensators

To accurately adjust this receiver, precision test equipment is necessary. A signal generator such as the Philco Model 088 Signal Generator, covering from 110 to 20,000 K.C. is recommended to adjust the compensators at the various frequencies specified. A visual indication of the receiver output is also necessary to obtain correct adjustment of the compensators. Philco Model 025 Circuit Tester contains a sensitive output meter and is recommended for these adjustments. Philco Fibre Handle Screw-driver No. 27-7059 and Tuning Condenser Part No. 45-2325 complete the necessary equipment for these adjustments. The locations of the various compensators are shown in Figs. 2 and 3.

The following procedure must be observed in adjusting the compensators:—  
**DIAL ADJUSTMENT**—In order to adjust this receiver correctly, the dial must be aligned to track properly with the tuning condenser. To do this, rotate the tuning condenser control to the extreme counter-clockwise position (maximum capacity). Loosen the set screw of dial hub, then turn dial until the glowing indicator is centered between the index lines of dial scale. Now tighten the dial hub set screw in this position.

**OUTPUT METER**—The 025 Output Meter is connected to the plate and cathode terminals of the 25A6G tube. Adjust the meter to use the (0-30) volt scale.

### INTERMEDIATE FREQUENCY CIRCUIT

Frequency 470 K. C.

1. Connect the 088 Signal Generator output lead through a .1 mfd. condenser to the control grid of the 6A8G, and the ground connection of output lead to the chassis.
2. The tuning range switch is set in position No. 1 (Broadcast). Rotate the tuning condenser of the receiver to the maximum capacity position (counter-clockwise), and adjust the signal generator for 470 K. C.
3. Adjust compensators (23S) 2nd I. F. Sec., (23P) 2nd I. F. Pri., (20S) 1st I. F. Sec. and (20P) 1st I. F. Pri. for maximum reading on the output meter.

### RADIO FREQUENCY CIRCUIT

Tuning Range—7.3 to 22.0 M. C.

1. Remove the signal generator output lead from the grid of the 6A8G tube and connect it with the .1 mfd. condenser to terminal No. 1 on the aerial input panel and the generator ground lead to terminal No. 3, rear of chassis. Terminals 2 and 3 must be connected by the shorting link provided on the panel.
2. Set the range switch in position 3. Turn the receiver and signal generator dials to 18 M. C. Now adjust compensator (9B) by turning the screw (clockwise) to the maximum capacity position, then slowly turning it (counter-clockwise) until a second peak signal is reached on the output meter. The first peak from maximum capacity is the image signal and must not be used. If the above procedure is correctly performed, the image signal will be found at 17.06 M. C. by advancing signal generator attenuator and turning receiver dial to this frequency mark on the scale.
3. The antenna compensator (9B) is now adjusted by connecting a variable condenser of approximately 350 mmfd., Philco Part No. 45-2325, across the oscillator section of the gang condenser and ground. Leaving the signal generator and receiver dials at 18 M. C. tune the added

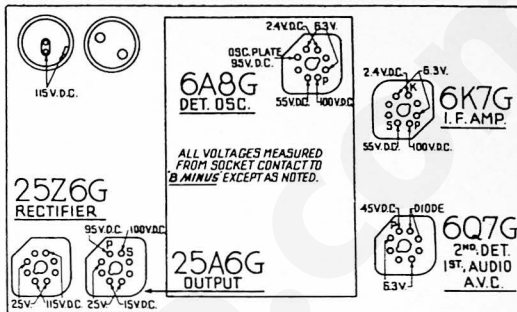


Fig. 1—Socket Voltages—Underside of Chassis View

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.

condenser from the maximum capacity point until the second harmonic of the receiver oscillator beats against the signal from the generator thereby bringing in the signal. The antenna compensator (9B) is then adjusted for maximum output. Now remove the external condenser and readjust compensator (9B) as given in paragraph 2 above.

**Tuning Range: 2.3 to 7.4 Megacycles.**

1. Turn the range switch to position No. 2 (Police). Rotate the signal generator and receiver dials to 7.0 M. C. Then adjust compensator (9A) for maximum output. Now turn the signal generator and receiver dials to 6.0 M. C. and adjust compensator (9A) for maximum reading on output meter.

**Tuning Range: 530 to 1720 Kilocycles.**

1. Set the range switch in position No. 1 (Broadcast). Rotate the signal generator and receiver dials to 1600 K. C. Now adjust compensators (9) Osc. and (5) Ant. for maximum output.
2. Rotate the signal generator and receiver dials to 580 K. C. Compensator (10) Osc. series is now adjusted for maximum output as follows:  
 First tune compensator (10) for maximum output, then vary the tuning condenser of the receiver for maximum output about the 580 K. C. dial mark. Now turn the compensator (10) slightly to the right or left and vary the receiver tuning condenser for maximum output. If the output reading increases, turn compensator (10) in the same direction a trifle more, and again vary the tuning condenser for maximum output. If the output decreases, set the compensator in the opposite direction. This procedure of first setting the compensator and then varying the tuning condenser is continued until there is no further gain in output reading.
3. Readjust compensator (9) for maximum output, by turning signal generator and receiver dials to 1600 K. C.
4. Turn the signal generator and receiver dials to 1500 K. C. and adjust compensator (5) Ant. for maximum output.

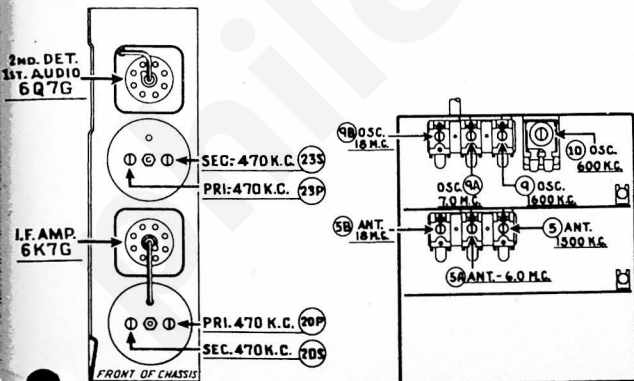


Fig. 2—I. F. Compensators

Fig. 3—R. F. Compensators

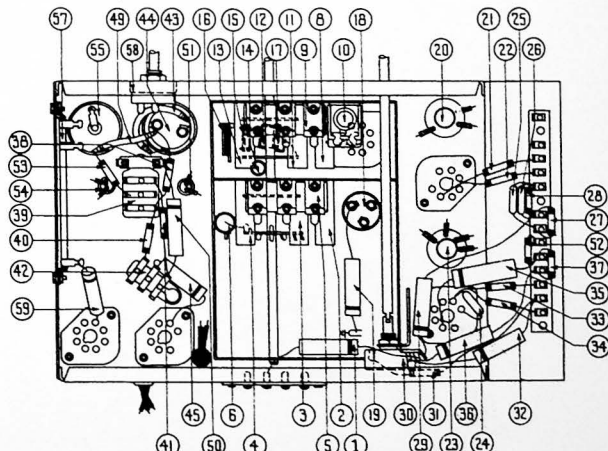


Fig. 4—View of Parts from Underside of Chassis

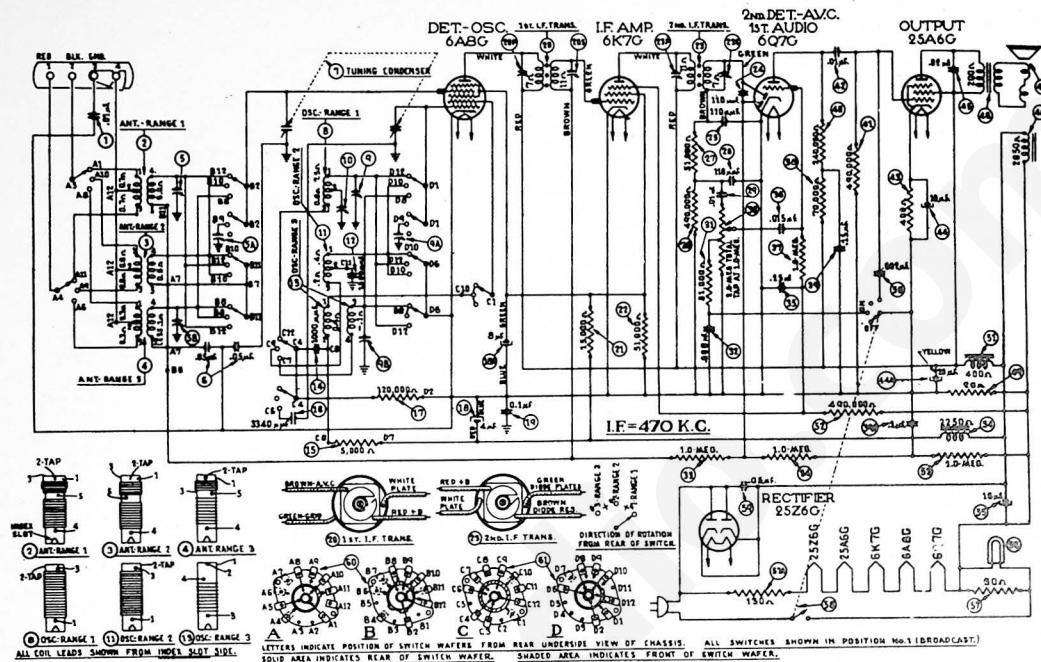


Fig. 5—Schematic Diagram

## Replacement Parts—Model 37-611

Schem. No.	Description	Part No.	List Price	Schem. No.	Description	Part No.	List Price	Schem. No.	Description	Part No.	List Price
1	Condenser .01 mfd. tubular	30-4145	\$0.20	44	Electrolytic Condenser (10-20 mfd.)	30-2186		Shield Base	28-3898	\$0.03	
2	Antenna Transformer (Range 1)	32-2108	.80	45	Condenser (.02 mfd. tubular)	30-4113	\$0.20	Mtg. Grommet R. F. Unit	27-4317	.04	
3	Antenna Transformer (Range 2)	32-2110	.65	46	Output Transformer HS-2, 8-15	32-7385	1.10	Mtg. Sleeve R. F. Unit	28-2257	.01	
4	Antenna Transformer (Range 3)	32-2109	.75	47	Cone Voice Coil HS-2	36-3627	1.00	Mtg. Screw R. F. Unit	W-729	.45 C	
5	Compensator (3 sections)	31-6092	.60	48	Cone Voice Coil S-15	36-3157	.80	Mtg. Washer R. F. Unit	28-3927	.01	
6	Condenser (.05 mfd. dual tubular)	30-4394	.35	49	Field Coil HS-2	36-3519	2.80	Mtg. Washer Felt R. F. Unit	27-7807	.50 C	
7	Tuning Condenser	31-1821	3.50	50	Field Coil S-15	36-3519	2.80	Mtg. Rubber Tuning Condenser	27-4322	.02	
8	Oscillator Transformer (Range 1)	32-2120	.65	51	Resistor (20 ohms variable)	33-3043	.25	Mt. Transformer Plate	28-3808	.02	
9	Compensator (3 sections Osc.)	31-6092	.60	52	Condenser (.002 mfd. tubular)	30-4177	.25	Spacer	27-8228	.01	
10	Compensator (Osc. series 580 K.C.)	31-6096	.55	53	Choke	32-7668	1.20	Screw	W-1635	.30 C	
11	Oscillator Transformer (Range 2)	32-2121	.40	54	Resistor (490000 ohms 1/2 watt)	33-448339	.20	Rubber Washer	27-4380	.04	
12	Condenser (1860 mmfd.)	31-6098	.40	55	Resistor (1.0 megohm 1/2 watt)	32-7667	1.60	Chassis Mtg. Screw	W-1495	1.50 C	
13	Oscillator Transformer (Range 3)	32-2110	.75	56	Electrolytic Condenser (16 mfd.)	30-2124	.75	Washer	28-2088	.50 C	
14	Condenser (1000 mmfd. tubular)	30-4453	.20	57	Pilot Lamp	33-3992	.60	Knob Tuning Control	27-4321	.10	
15	Resistor (5000 ohms 1/2 watt)	33-200339	.20	58	Resistor (90-130 ohms wirewound)	32-1224	.75	Knob Vernier	28-4379	.10	
16	Condenser (3500 mmfd.)	31-6097	.50	59	Condenser (.05 mfd. tubular)	30-4020	.20	Knob Tone Volume	27-4332	.10	
17	Resistor (150000 ohms 1/2 watt)	33-412339	.20	60	Range Switch (Ant.)	42-1200	1.20	Knob Range Switch	27-4326	.10	
18	Electrolytic Condenser (4-8 mfd.)	30-2157	.20	61	Range Switch (Avt.)	42-1200	1.20	Bottom Shield Plate	28-4234	.75 C	
19	Condenser (.01 mfd. tubular)	30-4122	.20		Pilot Lamp Assembly	42-1246	1.20	Bottom Shield Plate T Cabinet	28-4358	.75 C	
20	1st I. F. Transformer Assembly	32-2100	1.50		Switch Index Plate & Shaft	42-1173	.50	Base/Plate & Frame	40-4939	.75	
21	Resistor (15000 ohms 1/2 watt)	33-315339	.20		Dial	27-5203	.50	Gasket	27-8311	.01	
22	Resistor (51000 ohms 1/2 watt)	33-313339	.20		Hub	28-7187	.12	Screw	W-1644	.50 C	
23	2nd I. F. Transformer Assembly	32-2102	1.50		Clamp	W-154	.02	A. C. Cable	L-2183	.40	
24	Condenser (110 mmfd. mica)	30-1031	.20		Set Screw	28-7187	.12	Speaker Cable	L-2218	.75	
25	Condenser (110 mmfd. mica)	30-1031	.20		Diaphragm	28-2637	.10	Speaker HS-2 ("B", "T", "F" Cabinets)	36-1173	5.75	
26	Condenser (110 mmfd. mica)	30-1031	.20		Drive Gear & Hub Assembly	31-1884	.25	Speaker HS-2 ("J" cabinet)	36-1256		
27	Resistor (51000 ohms 1/2 watt)	33-313339	.20		Thrust Spring	28-8611	.01				
28	Resistor (490000 ohms 1/2 watt)	33-448339	.20		Thrust Washer	38-3076	.30 C				
29	Condenser (.01 mfd. tubular)	30-4124	.25		Mask	28-3904	.01	"B" CABINET			
30	Volume Control	33-5158	1.00		Mask Arm & Link Assembly	31-1866	.35	Baffle Silk Assembly	40-5968	.30	
31	Resistor (51000 ohms 1/2 watt)	33-313339	.20		Mask Guide & Pilot Lamp Bracket	38-7844	.15	"F" CABINET			
32	Condenser (.008 mfd. tubular)	30-4112	.20		Mask Washer	27-8318	.50 C	Baffle Silk Assembly	40-5933	.75	
33	Resistor (1.0 megohm 1/2 watt)	33-510339	.20		C. Washer	38-7912	.30	"J" CABINET			
34	Resistor (1.0 megohm 1/2 watt)	33-510339	.20		Ind. Bracket & Lens Assembly	27-8324	.02	"T" CABINET			
35	Condenser (.25 mfd. tubular)	30-4446	.25		Scale Guard	28-8059		Baffle Silk Assembly	40-5971	.80	
36	Condenser (.015 mfd. tubular)	30-4358	.20		Volume Control Shaft	28-4117					
37	Resistor (1.0 megohms 1/2 watt)	33-510339	.20		Shaft Spring	28-4394	.01				
38	Resistor (70000 ohms 1/2 watt)	33-370339	.20		Retaining Clip	27-6057	.11				
39	Condenser (.15 mfd. dual bakelite)	4989-DU	.40		Tube Socket (7 Prong)	27-6058	.11				
40	Resistor (240000 ohms 1/2 watt)	33-424339	.20		Tube Socket (6 Prong)	27-6058	.11				
41	Resistor (490000 ohms 1/2 watt)	33-448339	.20		Tube Shield	28-4726	.10				
42	Condenser (.01 mfd. bakelite)	3903-SU	.25								
43	Resistor (400 ohms wirewound)	33-3122	.25								

Figures in black type indicate circled figures in Base View.

Prices Subject to Change without Notice

**PHILCO PARTS & SERVICE DIVISION**  
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