RADIO MANUFACTURERS SERVICE — Your Guarantee of Best Radio Service — A PHILCO SERVICE PLAN

SERVICE BULLETIN No. 249B *for members of*
RADIO MANUFACTURERS SERVICE
A PHILCO Service Plan

Model 37-610—Codes 125-126

Electrical Specifications

Type of Circuit: Superheterodyne, with pentode output.
Model 37-610 code 125 is used in cabinets Types "B" and J. Code 126 receiver is used in the type T cabinet. Code 126 receiver differs from the code 125 only in the mounting of the rectifier tube socket. In this receiver the rectifier socket is mounted adjacent to the 6F6G output tube instead of on top of the power transformer as in code 125.
The circuit differences between codes 121-122 Bulletin 249 and codes 125, 126 is in the R. F. unit. These differences will be apparent on the schematic diagram of these receivers.

Dial Mechanism: Two Speed Vernier Tuning.

Power Supply:

Voltage	Frequency	Consumption
115	25 to 40	60 watts
115	50 to 60	60 watts

Intermediate Frequency: 470 K. C.

Undistorted Output: 3 watts.

Philco Tubes Used: one 6A8G; one 6F6G; one 6K7G; one 5Y4G and one 6Q7G.

Tuning 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.

Speaker: "B" cabinet S7.
"J" cabinet HS.

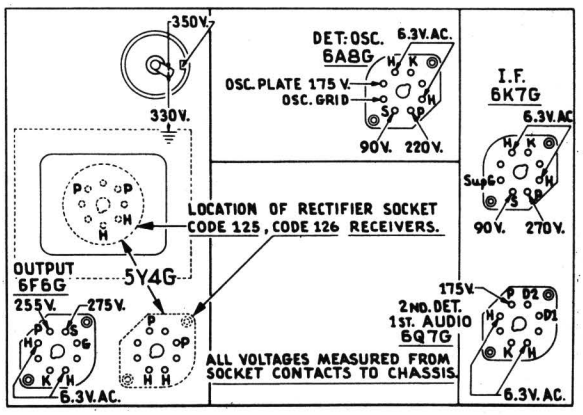

Fig. 1—Socket Voltages, measured from underside of Chassis

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.

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) Fibre wrench Part No. 3164.

OUTPUT METER: Connect the output meter across the Plate and Cathode terminals of the 6F6G tube. Adjust the meter to use the 0-30 volt scale.

DIAL CALIBRATION: See Bulletin 249.

INTERMEDIATE FREQUENCY CIRCUIT

1. Connect the signal generator output lead through a .1 mfd. condenser to the control grid of the 6A8G tube and the generator ground to the chassis. Set controls and adjust compensators as follows for maximum output:

Range Switch	Signal Generator	Receiver Dial	Compensators in Order
Broadcast	470 K. C.	580 K. C.	(26S), (26P), (21S) and (21P)

RADIO FREQUENCY CIRCUIT

Tuning Range 530 to 1720 K. C.

1. Connect the signal generator output lead through a 100 ohm carbon resistor to terminal 1 and the ground lead to terminal 3 of the aerial input panel. Terminals 2 and 3 must be connected with the shorting link provided on the aerial panel. Set controls and adjust compensators for maximum output as follows:

Range Switch	Signal Generator and Receiver Dials	Compensators in Order
Range 1	1600 K. C.	(11), (20A)
Range 1	580 K. C.	(13) Roll gang (see note A)
Range 1	1600 K. C.	(11)
Range 1	1500 K. C.	(20A)

Tuning Range 2.3 to 7.4 M. C.

Set controls and adjust compensator for maximum as follows:

Range Switch Position	Signal Generator and Receiver Dial	Compensators
2	6 M. C.	(11A)

Tuning Range 7.35 to 22 M. C.

Range Switch Position	Signal Generator and Receiver Dial	Compensators in Order
3	18 M. C.	(11B) Check image at 17.060 M. C. (See Note C)
3	18 M. C.	(3) Use a shunt condenser across the osc. section of gang condenser when adjusting this compensator (See Note B)
3	18 M. C.	(11B)

NOTE A—First tune compensator (13) for maximum output, then vary the tuning condenser of the receiver for maximum output about the 580 K. C. dial mark. Now turn compensator (13) slightly to the right or left and vary the receiver tuning condenser for maximum output. If the output reading increases, turn compensator (13) 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.

NOTE B—To eliminate the effects of the R. F. compensators detuning the Osc. circuit, a variable tuning condenser, 350 mmfd. is connected from the oscillator compensators to ground where designated in the padding instruction above. Tune the added condenser until the second harmonic of the receiver oscillator beats against the signal from the generator resulting in a maximum indication on the output meter. Then adjust compensators as noted for maximum output.

NOTE C—To accurately adjust the compensator to the fundamental and not the image signal, turn the oscillator compensator to the maximum capacity position clockwise, then slowly turn the compensators counter-clockwise until a second maximum peak is obtained on the output meter. The first peak is the image signal and the receiver must not be adjusted to it. If the above procedure is correctly performed, the image signal will be found 940 K. C. below the frequency being used on any high frequency band.

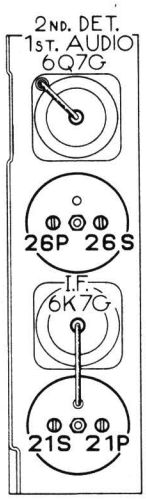

Fig. 2—I. F. Compensators

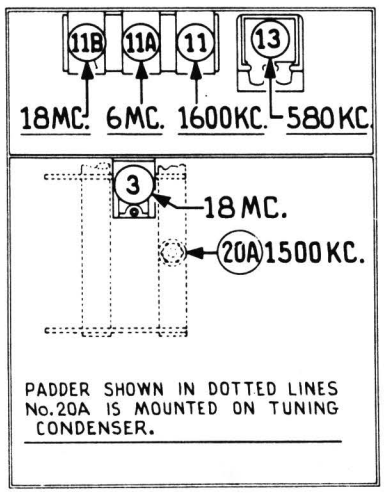

Fig. 3—R. F. Compensators

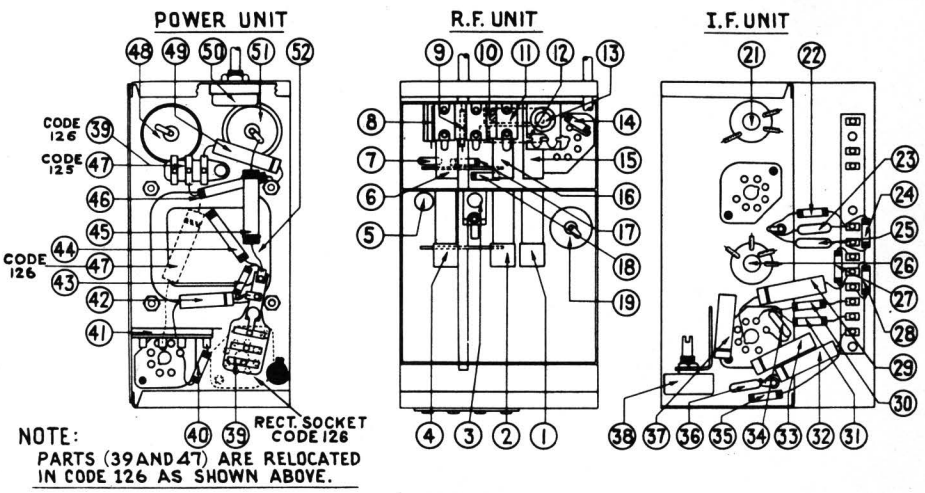

Fig. 4—Location of Parts under Chassis

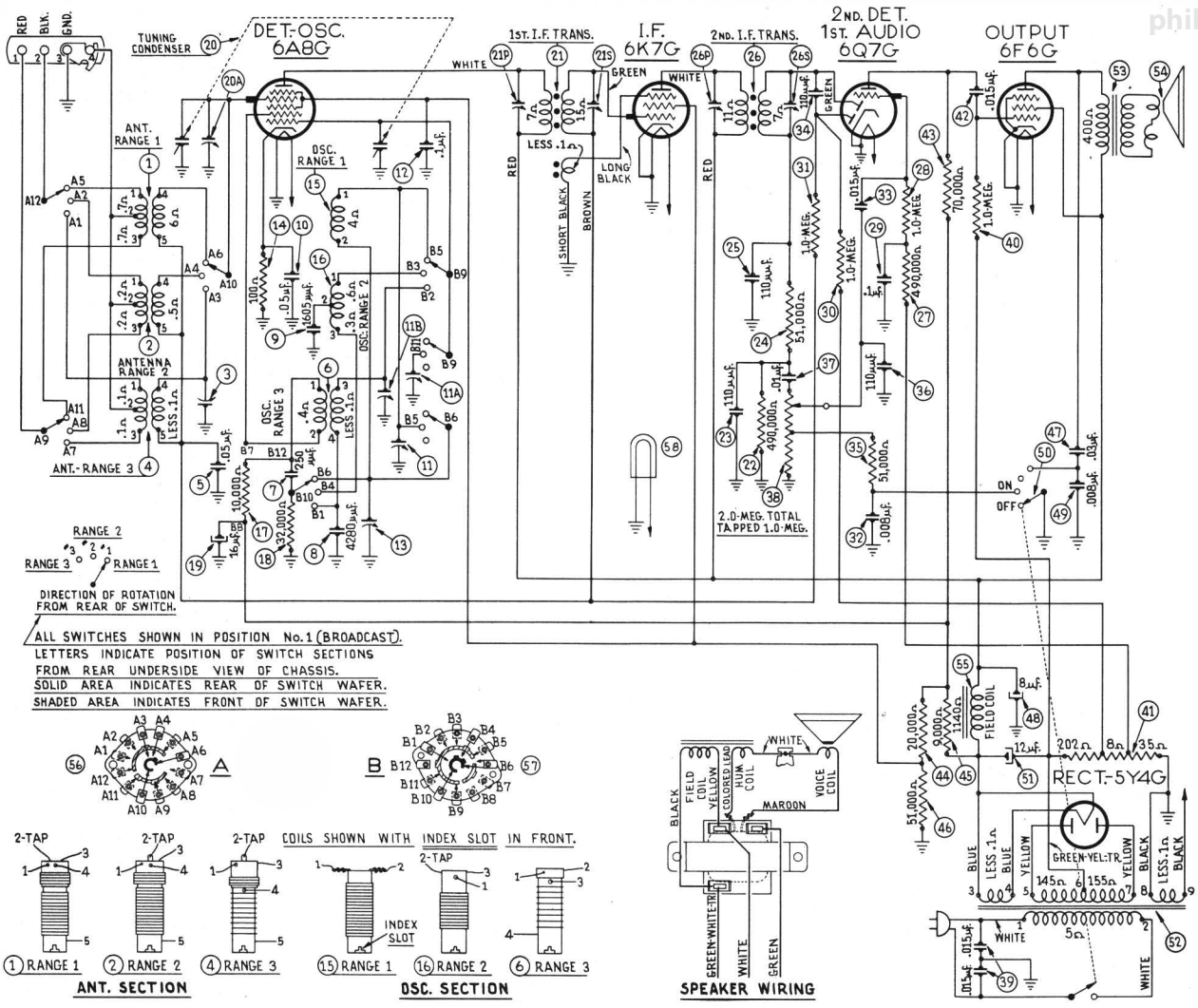

Fig. 5—Schematic Diagram

Replacement Parts — Model 37-610, Code 125-126

Schem. No.	Description	Part No.	List Price
1	Ant. Trans. (Range 1)	32-2378	$1.60
2	Ant. Trans. (Range 2)	32-2381	1.20
3	Compensator (Range 3)	31-6161	.30
4	Ant. Trans. (Range 3)	32-2384	1.20
5	Condenser (.05 mfd. Tubular)	30-4020	.20
6	Osc. Trans. (Range 3)	32-2386	.70
7	Condenser (250 mmfd. mica)	30-1032	.25
8	Condenser (4280 mmfd.)	31-6156	.60
9	Condenser (1605 mmfd.)	31-6155	.40
10	Condenser (.05 mfd. Tubular)	30-4020	.20
11	Compensator (Three section osc.)	31-6171	.75
12	Condenser (.1 mfd. tubular)	30-4455	.25
13	Compensator (Osc. series Range 1)	31-6056	.55
14	Resistor (100 ohms ½ watt)	33-110339	.20
15	Osc. Trans. (Range 1)	32-2380	.50
16	Osc. Trans. (Range 2)	32-2383	.70
17	Resistor (10,000 ohms ½ watt)	33-310339	.20
18	Resistor (32,000 ohms ½ watt)	33-332339	.20
19	Electrolytic Cond. (16 mfd.)	30-2118	1.65
20	Tuning Condenser	31-1970	3.75
21	1st I. F. Trans., Ass'y	32-2274	
22	Resistor (490,000 ohms ½ watt)	33-449339	.20
23	Condenser (110 mmfd. mica)	30-1031	.20
24	Resistor (51,000 ohms ½ watt)	33-351339	.20
25	Condenser (110 mmfd. mica)	30-1031	.20
*26	2nd I. F. Trans., Ass'y	32-2276	
27	Resistor (490,000 ohms ½ watt)	33-449339	.20
28	Resistor (1 megohm ½ watt)	33-510339	.20
29	Condenser (.1 mfd. Tubular)	30-4499	.20
30	Resistor (1 megohm ½ watt)	33-510339	.20
31	Resistor (1 megohm ½ watt)	33-510339	.20
32	Condenser (.008 mfd. Tubular)	30-4112	
33	Condenser (.015 mfd. Tubular)	30-4358	.20
34	Condenser (110 mmfd. Mica)	30-1031	.20
35	Resistor (51,000 ohms ½ watt)	33-351339	.20
36	Condenser (110 mmfd. mica)	30-1031	.20
37	Condenser (.01 mfd. Tubular)	30-4479	.20
38	Volume Control	33-5158	1.00
39	Condenser (.015 mfd. Dual Bakelite)	3793DG	.40
40	Resistor (1 megohm ½ watt)	33-510339	$0.20
41	Bias Resistor (Two taps)	33-3284	.30
42	Condenser (.015 mfd. Tubular)	30-4226	.20
43	Resistor (70,000 ohms ½ watt)	33-370339	.20
44	Resistor (20,000 ohms 1 watt)	33-320439	.20
45	Resistor (9000 ohms 2 watt)	33-290539	.30
46	Resistor (51,000 ohms 1 watt)	33-351439	.20
47	Condenser (.03 mfd. Bakelite)	8328SU	.35
48	Elect. Condenser (8 mfd.)	30-2024	1.10
49	Condenser (.008 mfd. Tubular)	30-4317	.20
50	Tone Control & A. C. Switch	42-1182	.75
51	Elect. Cond. (12 mfd.)	30-2117	1.20
52	Power Trans. 115 volts 50 to 60 cycles	32-7583	
	Power Trans. 115 volts 25 to 40 cycles	32-7584	
	Power Trans. 115 volts 50 to 60 cycles (Code 126)	32-7526	
	Power Trans. 115 volts 25 to 40 cycles (Code 126)	32-7527	
53	Output Trans. (S7, HS)	32-7019	
54	Cone Ass'y S7	36-3014	
	Cone Ass'y HS	36-3796	
55	Field Coil Ass'y S7	36-3039	
	HS	36-3690	
56	Ant. Range Switch	42-1282	
57	Osc. Range Switch	42-1290	
58	Pilot Lamp	34-2039	
	Clip (Vol. Shaft)	28-4394	.01
	Dial	27-5285	.50
	Dial Guard	27-8324	.02
	Dial Hub	28-7187	.12
	Dial Clamp	28-2837	.10
	Dial Set Screw	W-1641	.02
	Dial Drive Gear	31-1884	.25
	Dial Gear	28-7185	.10
	Dial Thrust Spring	28-8611	.01
	Dial Washer	28-3976	.30 C
	Dial "C" Washer	28-3904	.01
	Indicator Bracket and Lens Assembly	38-7912	.30
	Knobs (Tuning)	27-4330	.10
	Knobs (Vernier)	27-4331	.10
	Knob (Vol. & Tone)	27-4332	.10
	Knob (Range Switch)	27-4326	.10
	Mask	27-5276	.20
	Mask Arm & Link	31-1959	$0.30
	Mask Washer	27-8318	.50 C
	Mask Guide & Lamp Support	38-7844	.15
	Mtg. Grommet R. F. Unit	27-4317	.04
	Mtg. Sleeve R. F. Unit (rear)	28-2257	
	Mtg. Screw R. F. Unit (rear)	W-729	.45 C
	Mtg. Rubber (Tuning Condenser)	27-4325	.02
	Mtg. Rubber (Chassis 4 required)	5189	.03
	Mtg. Spacer Bushing (Chassis)	27-4360	.04
	Mtg. Bolt (Chassis B & T Cabinets)	W-1358	2.60 C
	Mtg. Bolt (Chassis T Cabinet)	W-1495	1.50 C
	Mtg. Washer B & T	28-2089	.50 C
	Pilot Lamp Socket Assembly	38-7706	.35
	Shaft (Vol. Cont.)	38-8059	.10
	Shaft & Plate (Range Switch)	42-1300	.50
	Socket (8 prong)	27-6058	.11
	Socket (7 prong)	27-6057	.11
	Spring (Vol. Shaft)	28-4117	.40 C
	Terminal Panel I. F. Unit	38-7703	.25
	B CABINET CODE 125		
	Baffle & Silk Ass'y (10276A Cabinet)	40-6081	.30
	Baffle & Silk Ass'y (10229A Cabinet)	40-5968	.30
	Bezel Plate & Frame	40-5939	.75
	Bezel Gasket	27-8311	.01
	Bezel Screw	W-1644	.50 C
	Bezel Glass	27-8298	.05
	Bezel Ring	28-3967	.35
	Speaker S7	36-1009	5.75
	J CABINET CODE 125		
	Baffle & Silk Ass'y (10230A Cabinet)	40-5963	.80
	Speaker (HS)	36-1220	6.25
	T CABINET CODE 126		
	Baffle & Silk Ass'y (10235G Cabinet)	40-6082	.30
	Speaker S7	36-1009	5.75
	T CABINET CODE 126		
	Baffle & Silk Ass'y (10235A Cabinet)	40-5969	.30
	Baffle	27-8410	.08
	J CABINET SPECIAL CODE 125		
	Baffle & Silk Ass'y (10231A Cabinet)	40-5971	.80
	Speaker (HS)	36-1220	6.25

*Beginning with run 2, part number changed to 32-2445 ass'y. Condensers (23) and (25) are assembled in the compensator, and resistor (24) wire to lugs of the compensator.

Prices Subject to Change Without Notice

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