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PHILCO . . . . . Models 37-10 & 37-11—Code 125

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

SERVICE BULLETIN No. 268A for members of RADIO MANUFACTURERS SERVICE

A PHILCO Service Plan

Models 37-10 and 37-11, code 125 differs from code 121 of these models in the R. F. unit only. The Electrical Specifications, Intermediate Frequency Unit and Power Unit remain the same in both codes.

Fig. 4 of this bulletin shows the circuit arrangement and base layout of the R. F. unit of code 125 receivers. The same numbering system as is used in bulletin 268 for the code 121 receiver is used in this bulletin for the code 125. However, certain parts used in code 121 receiver are not used in code 125. Therefore, some schematic numbers will not appear on the code 125 diagram and parts list.

The wires connecting the R. F. unit to the I. F. and Power units are marked on schematic diagram (fig. 4) indicating the parts to which they connect in the I. F. and power units. Use bulletin 268 for location of these parts.

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) and Fibre wrench part No. 3164.

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.

DIAL CALIBRATION: In order to adjust this receiver correctly the dial must be aligned to track properly with the tuning condenser. To do this proceed as follows:

1. Loosen the shaft coupling set screws. Then turn the tuning condenser fully closed and the dial to the first index line. Now tighten the shaft coupling set screws, and rotate the dial until the 520 K. C. mark is midway between the index line and the glowing beam indicator.
2. With condenser in this position loosen the set screws of the shaft coupling on the tuning condenser.
3. Then turn the tuning dial until the glowing beam indicator is centered on the index line.

NOTE: Be careful when turning the dial that the position of the tuning condenser is not disturbed.

4. Now tighten the shaft coupling set screws.

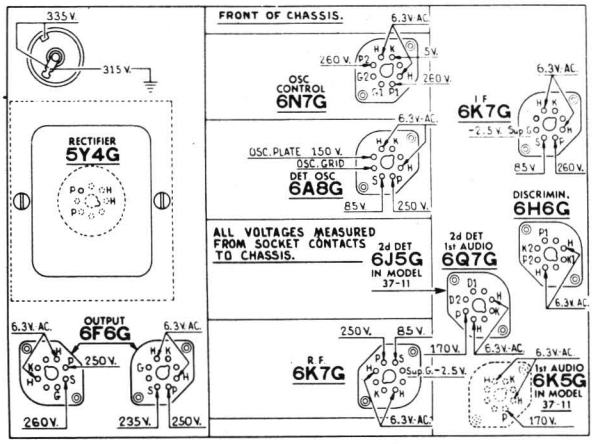

Fig. 1. Socket Voltages, Underside of Chassis

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.

INTERMEDIATE FREQUENCY CIRCUIT

1. Set controls as follows:
   - **a.** Magnetic Tuning "off"
   - **b.** Bass compensation minimum
   - **c.** Volume control maximum
   - **d.** Receiver Dial 580 K. C.
   - **e.** Signal Generator 470 K. C.
   - **f.** 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 tube as follows:

Input Point	Compensators in Order
6A8G—1st Det.	(59) (48P) (54S) (54P)

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 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	1600 K. C.	1600 K. C.	(24) (93B) (93A)
1	580 K. C.	580 K. C.	(25) Roll gang through signal when padding this compensator. Note C
1	1600 K. C.	1600 K. C.	(24)
1	1500 K. C.	1500 K. C.	(93B) (93A)

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.	(24A)

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.	(24B) Check image at 17.06 M. C. (See Note A)
3	18 M. C.	18 M. C.	(10) (2) Use shunt condenser on (24B), (See Note B) when padding compensator No. 10
3	18 M. C.	18 M. C.	(24B)

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 (48S) 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.

NOTE A—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 counterclockwise 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.

NOTE B—To eliminate the effect of the R. F. compensator detuning the Osc. circuit, a variable tuning condenser of approximately 350 mmfd. is connected from the oscillator compensator to ground when 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—First tune compensator (25) for maximum output, then vary the tuning condenser of the receiver for maximum output about the 580 K. C. dial mark. Now turn compensator (25) slightly to the right or left and vary the receiver tuning condenser for maximum output. If the out reading increases, turn compensator (25) 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.

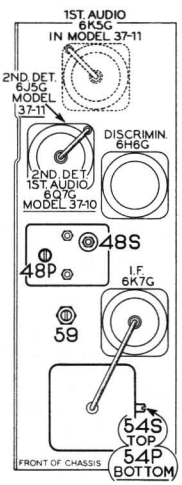

Fig. 2. I. F. Compensators Top of Chassis

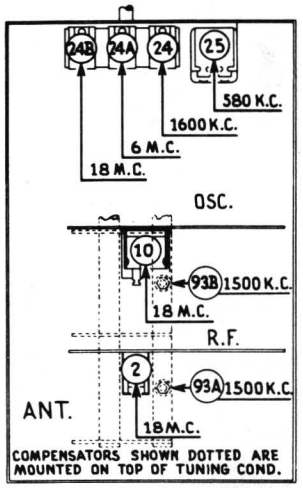

Fig. 3. R. F. Compensators Underside of Chassis

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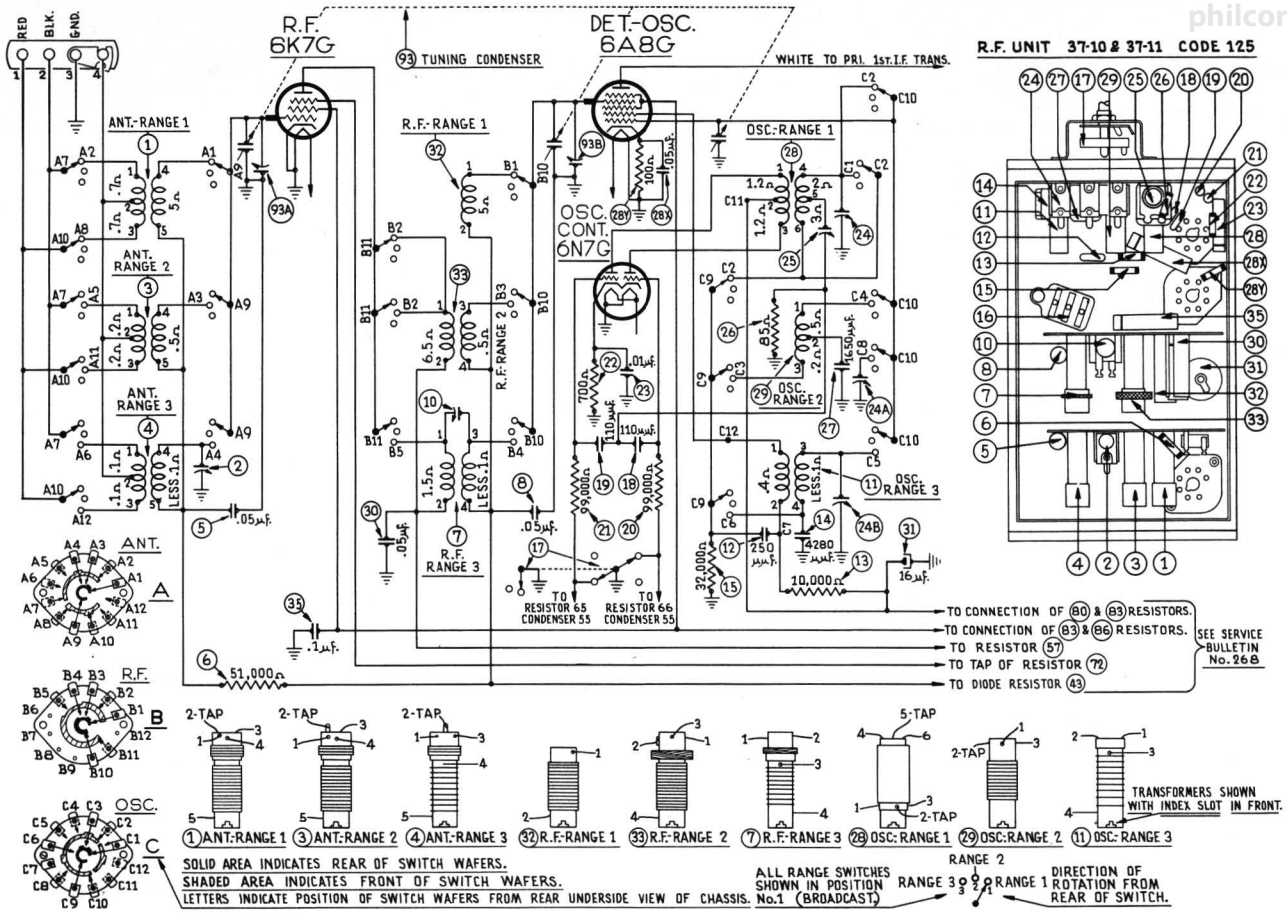

Fig. 4. R. F. Unit Schematic Diagram and Base Layout of Parts

Replacement Parts

Schem. No.	Description	Part No.	List Price
1	Ant. Trans. (Range 1)	32-2378	$1.60
2	Compensator (Range 3) Ant.	31-6161	.30
3	Ant. Trans. (Range 2)	32-2381	1.20
4	Ant. Trans. (Range 3)	32-2384	1.20
5	Condenser (.05 mfd.)	30-4444	.20
6	Resistor (51,000 ohms, ½ watt)	33-351339	.20
7	R. F. Trans. (Range 3)	32-2385	1.20
8	Condenser (.05 mfd. Tubular)	30-4020	.20
9	Eliminated in code 125		
10	Compensator (Range 3) R. F.	31-6160	.30
11	Osc. Trans. (Range 3)	32-2386	.70
12	Condenser (250 mmfd. mica)	30-1032	.25
13	Resistor (10,000 ohms, ½ watt)	33-310339	.20
14	Condenser (4280 mmfd. Fixed)	31-6156	.60
15	Resistor (32,000 ohms, ½ watt)	33-332339	.20
16	(.15 mfd. Dual Both section used)	6287-DU	.40
17	Magnetic Tuning Switch	42-1269	.75
18	Condenser (110 mmfd. Mica)	30-1031	.20
19	Condenser (110 mmfd. Mica)	30-1031	.20
20	Resistor (99,000 ohms, ½ watt)	33-399339	.20
21	Resistor (99,000 ohms, ½ watt)	33-399339	.20
22	Resistor (700 ohms, ½ watt)	33-170339	.20
23	Condenser (.01 mfd. Tubular)	30-4020	.20

Schem. No.	Description	Part No.	List Price
24	Compensator (Three Section) Osc.	31-6170	$0.75
25	Compensator (Osc. Series)	31-6151	.40
26	Resistor (85 ohms, ½ watt)	33-085339	.20
27	Condenser (1650 mmfd.)	31-6155	.40
28	Osc. Trans. (Range 1)	32-2373	1.60
28X	Condenser (.05 mfd. Tubular)	30-4020	.20
28Y	Resistor (100 ohms, ½ watt)	33-110339	.20
29	Osc. Trans. (Range 2)	32-2383	.70
30	Condenser (.05 mfd. Tubular)	30-4123	.20
31	Elect. Cond. (16 mfd.)	30-2194	1.60
32	R. F. Trans. (Range 1)	32-2379	.40
33	R. F. Trans. (Range 2)	32-2382	1.00
34	Eliminated in code 125		
35	Condenser (.1 mfd. Tubular)	30-4455	.25
	Automatic Dial (Complete)	31-1986	25.00
	Dial	27-5283	.90
	Mask and Link Assembly	45-2401	.70
	Pilot and Flood Light Assembly	38-8487	1.00
	Range Switch (Ant.)	42-1282	.75
	Range Switch (R. F.)	42-1283	.75
	Range Switch (Osc.)	42-1284	.75
	Range Switch Shaft Coupling	38-8693	

The GENUINE PHILCO REPLACEMENTS listed above
MUST BE USED
to obtain the Accurate Balanced Performance
BUILT INTO THIS PHILCO MODEL

PHILCO RADIO AND TELEVISION CORPORATION
Parts and Service Division
Philadelphia, Pa.

February 1937

Printed in U. S. A.