



SERVICE BULLETIN No. 283 for members of RADIO MANUFACTURERS SERVICE

A PHILCO Service Plan

Electrical Specifications

TYPE OF CIRCUIT: Five tube, A. C. operated superheterodyne circuit with features, such as two tuning ranges covering the frequencies shown under "Tuning Ranges"; Automatic Volume Control; and a Pentode Audio Output Stage.

POWER SUPPLY:	Voltage	Frequency Cycles	Power Consumption
	115	50 to 60	60 watts
	115	25 to 40	60 watts
	115/230	50 to 60	60 watts

Different transformers are required to operate the receiver on the voltage and frequency ratings listed above. The part number of these transformers are shown on the Parts List Page 2.

INTERMEDIATE FREQUENCY: 470 K. C.

TUNING RANGES: Two—Range 1, 540 to 1720 K. C.
Range 2, 5.7 to 18 M. C.

UNDISTORTED OUTPUT: 3 watts.

TUBES USED: Five—one 6A8G, Det. osc.; one 6K7G, I. F.; one 6Q7G, 2nd Det. 1st audio; one 6F6G, output, and one 5Y4G, Rectifier.

TONE CONTROL: Two position with A. C. switch attached.

SPEAKERS: Type S7 in T Cabinet. HS in F and K Cabinets.

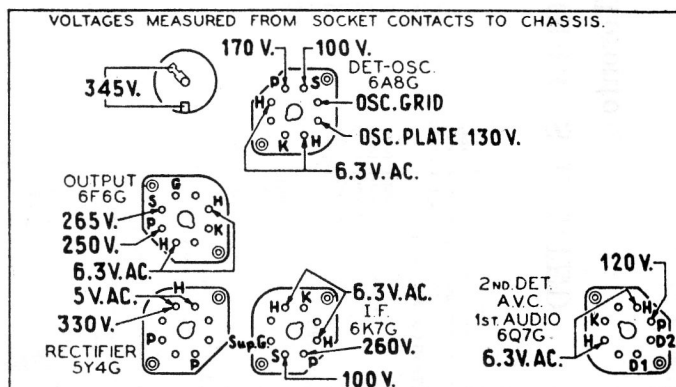


Fig. 1. Socket Voltages, Underside of Chassis
The voltages indicated by arrows were measured with a **Philco 025A Circuit Tester** which contains an accurate voltmeter. Volume Control at minimum, range switch in broadcast position, line voltage 115 A. C.

Alignment of Compensators

EQUIPMENT REQUIRED: (1) Signal Generator, using a fundamental frequency range covering the tuning and intermediate frequencies of the receiver. Philco Model 088 Signal Generator which has a fundamental frequency range from 110 to 20,000 K. C. is the correct instrument for this purpose; (2) Output Meter, Philco Model 025A Circuit Tester incorporates a sensitive output meter and is recommended; (3) Philco Fibre Handle Screw Driver, part No. 27-7059, and Fibre Wrench, part No. 3164.

OUTPUT METER: The 025A Output Meter is connected to the plate and cathode terminals of the 6F6G tubes. Adjust the meter to use the (0-30) volt scale and advance the attenuator control of the generator until a readable indication is noted on the output meter after signal is applied.

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

1. Turn the tuning condenser to maximum capacity position (plate fully meshed).
2. Holding the tuning condenser in this position, loosen the clamp and turn the dial until the indicator is centered on the middle index line (See Fig. 3). Tighten clamp with dial in this position.

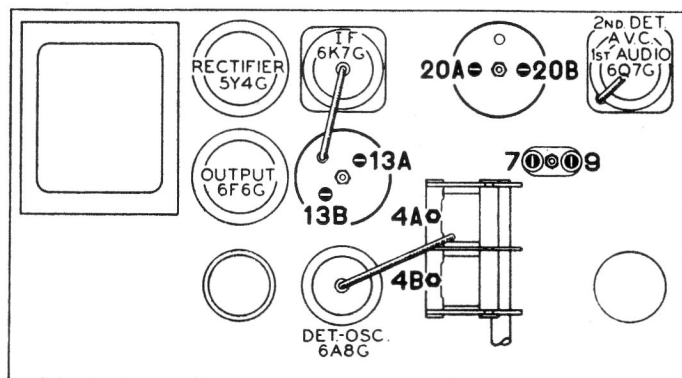


Fig. 2. Locations of Compensators—Top of Chassis

INTERMEDIATE FREQUENCY CIRCUIT

Insert the signal generator shielded output lead into the "Med" jack on the panel of the generator. Connect the other end of the output lead through a .1 mfd. condenser to the grid of the 6A8G, det. osc. tube and the ground connection of the signal generator to the chassis. Set the Signal Generator and receiver controls, and adjust the I. F. compensators as follows:

1. Set Signal Generator at 470 K. C. Turn the "Attenuator" for maximum output.
2. Turn the receiver dial to 580 K. C.
3. Receiver volume control maximum.
4. Range Switch Broadcast Position.
5. Adjust compensators (20B), (20A), (13B), (13A) for maximum output.

If the output meter goes off scale when adjusting the compensators retard signal generator attenuator.

RADIO FREQUENCY CIRCUIT

Tuning Range: 5.7 to 18 M. C.

1. With one end of the shielded lead of the signal generator output lead in the "Med" jack, connect the other end through the .1 mfd. condenser to the "Red" terminal of the aerial panel of the receiver. The output lead ground must be connected to the black terminal or to the chassis.

- | Volume Control | Range Switch | Signal Generator and Receiver Dial | Compensators in Order |
|----------------|--------------|------------------------------------|-----------------------|
| Max. | 2 | 18 M. C. | 4B |

Tuning Range: 530 to 1720 K. C.

Range Switch	Signal Generator and Receiver Dial	Compensators in Order
1	1500 K. C.	7, 4A
1	580 K. C.	(9)
1	1500 K. C.	7, 4A

NOTE A—To accurately adjust the high frequency oscillator compensator to the fundamental instead of the image signal, turn the oscillator compensator to the maximum capacity position (clockwise). From this position slowly turn the compensator counterclockwise until a second maximum peak is obtained on the output meter. Adjust the compensator for maximum output using this second peak. The first peak from maximum capacity position of the compensator is the image signal, and must not be used in adjusting this compensator.

If the above procedure is correctly performed, the image signal will be found (much weaker) by turning the receiver dial 940 K. C. below the frequency being used on the high frequency range.

Replacement Parts

Schem. No.	Description	Part No.
1	Antenna Transformer (Range 2)	32-2565
2	Antenna Transformer (Range 1)	32-2566
3	Condenser (0.05 mfd., tubular)	32-2567
4	Transformer (range 2)	31-2026
5	Osc. Transformer (range 2)	32-2569
6	Osc. Transformer (range 1)	31-6188
7	Compensators (dual, 1500 K. C.)	42-1325
8	Range Switch	
9	Compensator (Part of 7, 580 K. C.)	30-1094
10	Condenser (3500 ohms, mica)	33-370344
11	Resistor (70,000 ohms, 1/2 watt)	30-2217
12	Condenser (dual electrolytic, 4 and 8 mfd.)	
13	1st I. F. Transformer	
14	Condenser (250 mfd., Part of 7)	33-250844
15	Resistor (5000 ohms, 1/2 watt)	33-310633
16	Resistor (10,000 ohms, 3 watts)	30-4455
17	Condenser (0.1 mfd., tubular)	33-510344
18	Resistor (10,000 ohms, 1/2 watt)	33-510344
19	Resistor (10,000 ohms, 1/2 watt)	33-2529
20	2nd I. F. Transformer	33-251344
21	Resistor (50,000 ohms, 1/2 watt)	30-1031
22	Condenser (100 mfd., Part of No. (20))	
23	Condenser (100 mfd., Part of No. (20))	
24	Volume Control	
25	Resistor (51,000 ohms, 1 watt)	33-5215
26	Resistor (51,000 ohms, 1 watt)	33-521534
27	Resistor (1.0 megohm, 1/2 watt)	33-510844
28	Condenser (0.015 mfd., tubular)	30-4358
29	Resistor (1.0 megohm, 1/2 watt)	33-510344
30	Condenser (0.1 mfd., tubular)	30-4499
31	Resistor (1.0 megohm, 1/2 watt)	33-510344
32	Resistor (380,000 ohms, 1/2 watt)	33-433344
33	Condenser (0.015 mfd., tubular)	30-4515
34	Resistor (480,000 ohms, 1/2 watt)	33-435844
35	Condenser (0.02 mfd., tubular)	30-2094
36	Resistor (50,000 ohms, 1/2 watt)	33-250844
37	Phone Coupler (0.08 mfd., shielded)	42-1344
38	Condenser (0.008 mfd., tubular)	30-4447
39	Output Transformer	32-7019
40	Cone and Voice Coil Assembly (S-7)	36-3157
41	Cone and Voice Coil Assembly (HS)	36-3796
42	Pilot Lamp	34-2064
43	Bias Resistor	33-3316
44	Field Coil Assembly (HS)	36-3039
45	Condenser (electrolytic, 12 mfd.)	30-2210
46	Power Transformer	
	110 volt, 50 to 60 cycle	32-7833
	110 volt, 25 to 40 cycle	32-7627
47	Power Trans. 115/230, 50 to 60 cycles	32-7835
	Condenser (0.015 mfd., dual bakelite)	3785-DG
	Cable (Power)	1-2580
	Cable (Speaker)	27-4327
	Dial Washer	27-4328
	Dial Clamp	27-4329
	Knob (Tuning)	28-5089
	Knob (Volume)	27-4330
	Knob (Tone and Volume)	27-4331
	Mic. Cushions (Tuning Condenser)	27-4332
	Mic. Cushions (Chassis)	27-4333
	Pilot Lamp Assembly	38-8844
	Screen Bracket Assembly	31-2047
	Socket (6 prong)	27-6086
	Socket (7 prong)	27-6087
	Socket (7 prong)	27-6053
	Terminal Panel (Ant.)	27-6057
	Vernier Drive	31-2072

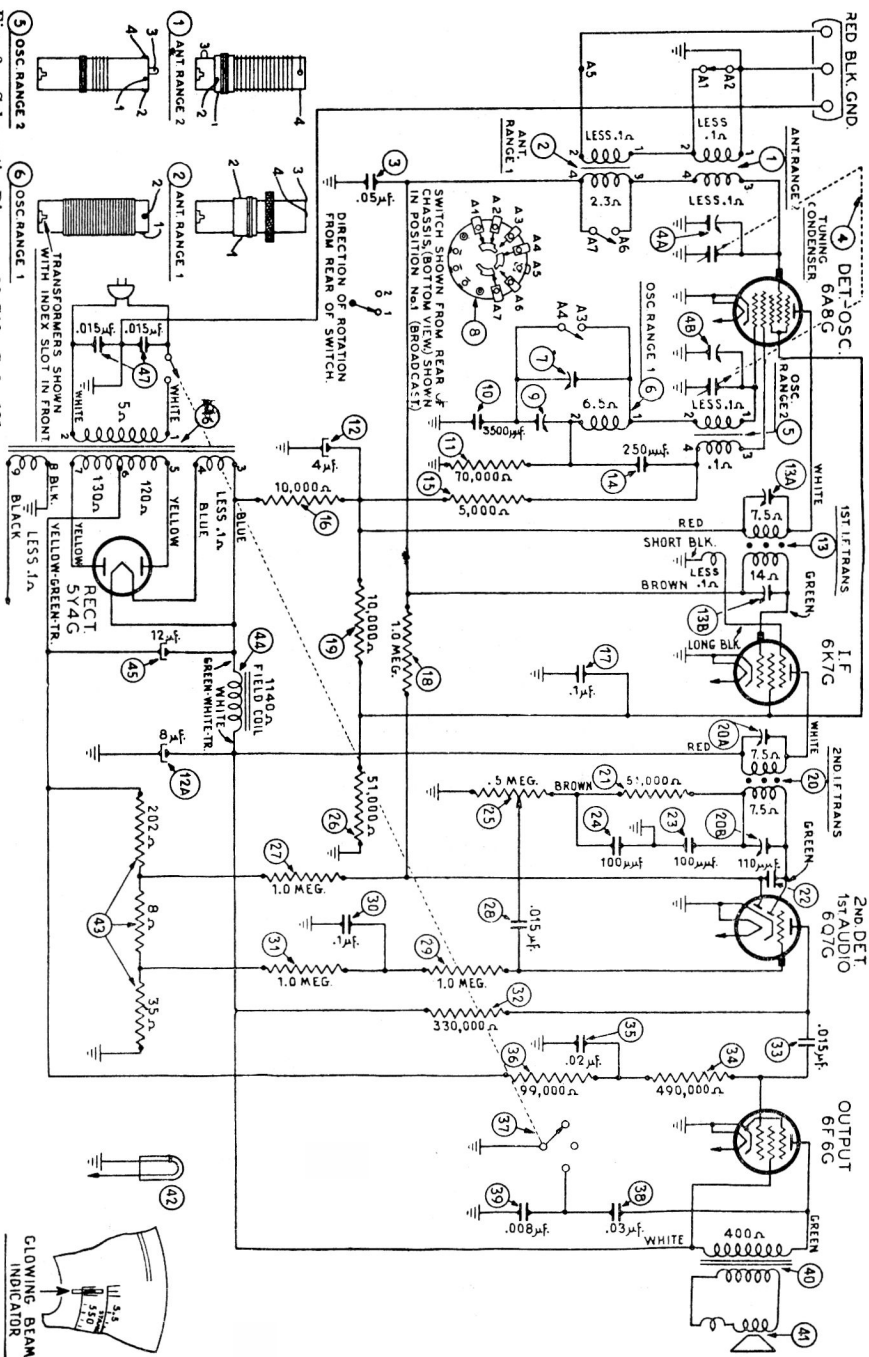


Fig. 3. Schematic Diagram 38-C10, Code 121

SCHEMATIC MODEL 38-C10 I. F. = 470 K. C. CODE 121

Schem. No.	Description	Part No.
	38-C10 F CABINET	
	Speaker (HS)	36-1220
	Bezel Plate and Frame	40-6126
	Bezel Gasket	27-8312
	Bezel Glass	27-8299
	Bezel Ring	28-5079
	38-C10 T CABINET	
	Speaker S-7	36-1009
	Bezel Plate and Frame	40-6124
	Bezel Gasket	27-8311
	Bezel Glass	27-8298
	Bezel Ring	28-5078
	38-C10 K CABINET	
	Speaker HS	36-1220
	Bezel Plate and Frame	40-6128
	Bezel Gasket	27-8313
	Bezel Glass	27-8300
	Bezel Ring	28-5080

PHILCO PRODUCTS LIMITED

Toronto

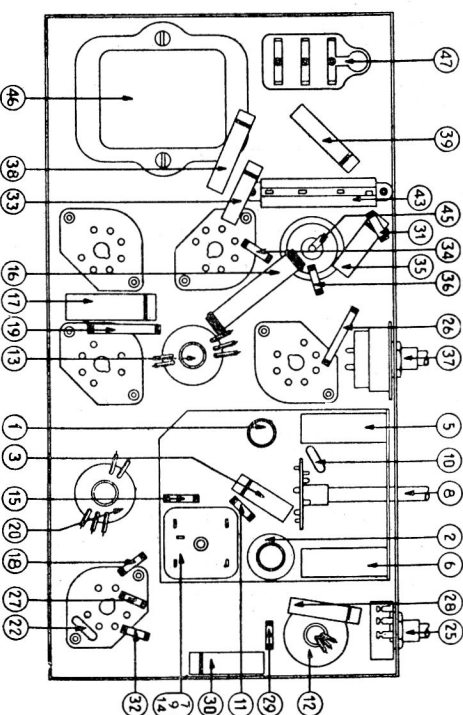


Fig. 4. Part Locations, Underside of Chassis