



FOR MEMBERS OF RADIO MANUFACTURERS SERVICE A PHILCO SERVICE PLAN

SERVICE BULLETIN
No. 270-C

Electrical Specifications

Type Circuit: Superheterodyne, with Class B audio output, battery operated.

Batteries Required:

"A" Supply—A 2-volt storage battery, or an air cell battery, type A-600, or a 3-volt dry "A" battery may be used, providing proper means, such as a voltmeter, is provided for adjusting the voltage to 2 volts.

"B" Batteries—Three 45-volt, heavy-duty, plug-in type "B" batteries are required.

"C" Batteries—Two 4½-volt, plug-in type "C" batteries are required.

Connections for Use with 2-Volt Storage "A" Battery: Connect the white wire to the negative (—) terminal of the "A" battery. Connect the white wire with black tracer to the positive (+) terminal of the "A" battery. Tape up the air cell lead, the only remaining lead, in such a manner that it cannot come in contact with any of the batteries.

Connections for Use with Air Cell Battery: If an air cell battery is used in place of the storage battery, connect the white wire to the negative (—) terminal of the air cell. Connect the brown wire to the positive (+) terminal of the air cell. Tape up the white wire with black tracer in such a manner that it cannot come in contact with any of the batteries.

Current Drain: "A" battery—660 M.A.; "B" battery—12 M.A.

Tubes Used: 1A4, R.F. amplifier; 1A6, detector oscillator; 1A4, I.F. amplifier; 1B5, 2nd detector and 1st audio; 30, driver tube; 1J6G Class B output.

Speakers: Large furniture: KR-19
Small furniture: Quam Magnetic.

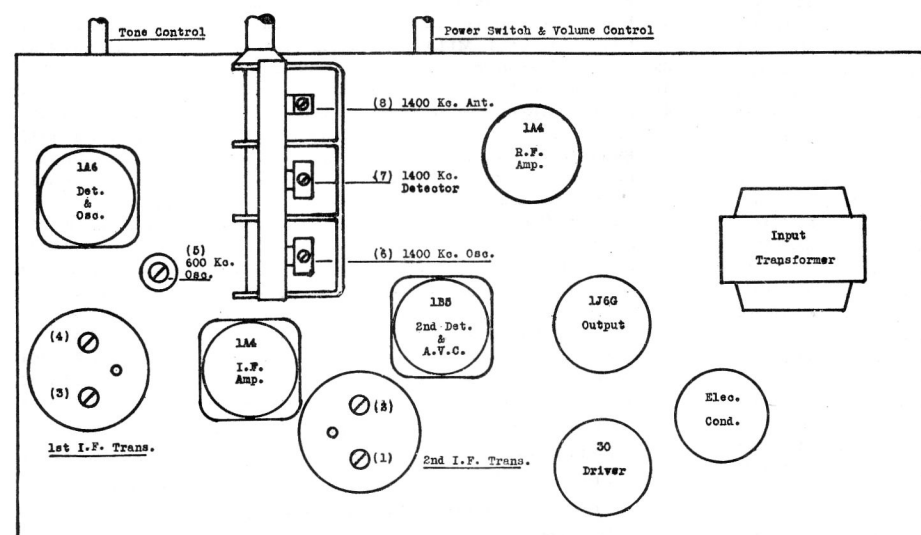


Fig. 1.—Location of Compensators

Aligning Compensators

To accurately adjust this receiver, precision test equipment is necessary. A signal generator such as the Philco Model 088, covering from 110 to 20,000 K.C., is recommended for adjusting the various compensators at the frequencies specified. A visual indication of the receiver output is also necessary. The Philco Model 025 circuit tester contains a sensitive output meter, and is recommended for this purpose.

Philco fibre handle screw-driver, No. 27-7059, completes the equipment necessary for the following adjustments. The locations of the various compensators are shown in Fig. 1.

Dial Adjustment—With the gang condenser full in, the glowing arrow should be set on the centre line of the three vertical lines beyond 530 K.C.

Output Meter—The 025 output meter is connected between one of the plate prongs of the 1J6G tube and the chassis. Then adjust the meter to use the 0 to 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 1A6 tube and the ground connection of the output lead to the chassis. Then turn the tuning condenser to approximately 580 K.C., and adjust the signal generator for 470 K.C.
2. Now adjust compensators (1) and (2) on the second I.F. transformer, and (3) and (4) on the first I.F. transformer for maximum output.

Radio Frequency Circuit. 530 to 1550 K.C.

1. Remove the signal generator output lead from the 1A6 tube and connect it through a 200 Mmfd. condenser to the white antenna lead of the receiver, and the generator ground lead to the brown ground lead of the receiver.
2. Turn the signal generator to 1400 K.C. Then tune the receiver dial to the 1400 K.C. mark and adjust compensators (6), (7), and (8) for maximum output.
3. Turn the signal generator and receiver dials to 600 K.C., and adjust compensator (5) as follows:
First tune compensator (5) for maximum output. Then vary the tuning condenser for maximum output. Now re-tune the compensator (5) and again vary the tuning condenser back and forth about 600 K.C. for maximum output. This operation of first tuning the compensator and then the tuning condenser is continued until maximum output is obtained at the 600 K.C. frequency.
4. Re-adjust the 1400 K.C. end of the dial as given above. The receiver will then be properly adjusted.

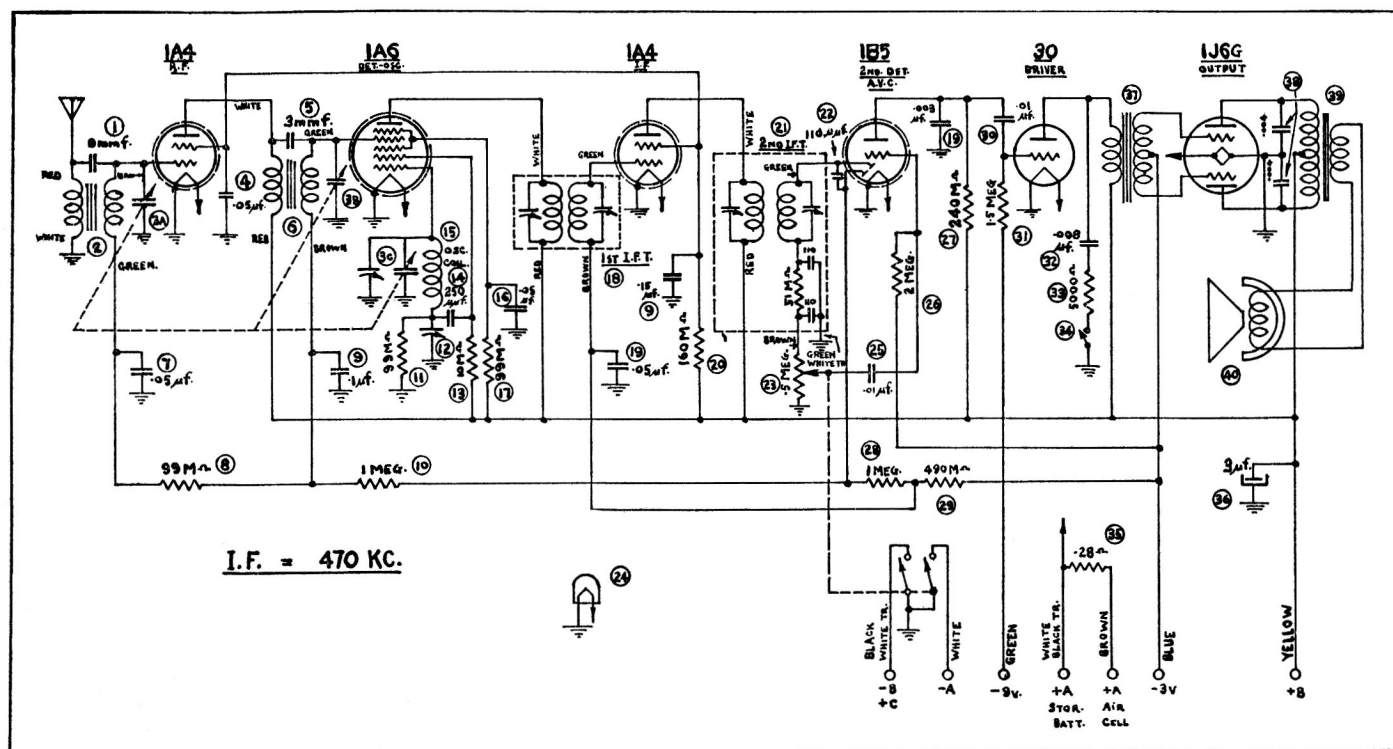


Fig. 2.—Schematic Diagram, Model 38-C325

Replacement Parts—Model 38-C325

Schem. No.	Description	Part No.	Schem. No.	Description	Part No.
1	Condenser (9 Mmfd.)	31-6198	31	Resistor (1.5 Megohms)	33-515344
2	Antenna Transformer	32-2641	32	Condenser (.008 Mfd.)	30-4112
3	Gang Condenser	31-2085	33	Resistor (5000 ohms)	33-250344
4	Condenser (.05 Mfd.)	30-4444	34	Tone Control Switch	42-1364
5	Condenser (3 Mmfd.)	38-8184	35	Resistor (.28 ohms)	30-2158
6	R.F. Transformer	32-2701	36	Elec. Cond. (3 Mfd.)	30-2158
7	Condenser (.05 Mfd.)	30-4519	37	Input Transformer	32-7637
8	Resistor (99,000 ohms)	33-399344	38	Condenser (.004 Mfd.)	30-4456
9	Condenser (.1 & .15 Mfd.)	4989-HG	39	Output Transformer	32-7932
10	Resistor (1 Megohm)	33-510344	40	Speaker CR-2 (Small Furn.)	36-1368
11	Resistor (99,000 ohms)	33-399344	40	Speaker KR-19 (Large Furn.)	KR-19
12	Low Frequency Padder	Part of 15	Bezel		40-6117
13	Resistor (10,000 ohms)	33-310344	Bezel Glass		27-8298
14	Condenser (250 Mmfd.)	Part of 15	Bezel Ring		28-5078
15	Oscillator Coil	32-2700	Grille Silk		44-1212
16	Condenser (.05 Mfd.)	30-4444	Speaker Cone (KR-19)		36-3540
17	Resistor (99,000 ohms)	33-399344	Bezel		40-6130
18	1st I.F. Transformer	32-2703	Bezel Glass		27-8299
19	Cond. (.05 & .003 Mfd.)	8320-CG	Bezel Ring		28-5079
20	Resistor (160,000 ohms)	33-416344	Grille Silk		44-1213
21	2nd I.F. Transformer	32-2705	Battery Cable		41-3359
22	Condenser (110 Mmfd.)	30-1031	Dial Scale		27-5366
23	Volume Control & Switch	33-5226	Knobs		27-4332
24	Pilot Light	34-2150	Tuning Knob		27-4321
25	Condenser (.01 Mfd.)	30-4479	Mask Assembly		31-2104
26	Resistor (2 Megohms)	33-520344	4 Prong Socket		27-6044
27	Resistor (240,000 ohms)	33-424344	6 Prong Socket		27-6036
28	Resistor (1 Megohm)	33-510344	7 Prong Octal Socket		27-6087
29	Resistor (490,000 ohms)	33-449344	Tube Shield		28-2726
30	Condenser (.01 Mfd.)	30-4479			