

PHILCO

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Service Bulletin—No. 57-A

Models 70 and 70-A Receivers

(This Bulletin Supersedes Service Bulletin No. 57 for All Parts Replacements)

Model 70 Receivers are for operation on 100-130 volt, 50-60 cycle AC lines
 Model 70A Receivers are for operation on 100-130 volt, 25-60 cycle AC lines

Table 1—Tube Socket Readings Taken with AC Set Tester AC Line—115 volts

| Tube | | Filament Volts | Plate Volts | Screen Grid Volts | Control Grid Volts | Cathode Volts | Plate Milli-amperes |
|------|-----------|----------------|-------------|-------------------|--------------------|---------------|---------------------|
| Type | Circuit | | | | | | |
| 24 | 1st R. F. | 2.25 | 250 | 85 | 3. | 19.5 | 3. |
| 24 | 1st Det. | 2.25 | 250 | 87 | 5.5 | 21.5 | .5 |
| 27 | Osc. | 2.25 | 85 | ... | 2. | 19.5 | 2.5 |
| 24 | 1st I. F. | 2.25 | 250 | 87 | 3. | 19.5 | 3. |
| 24 | 2nd Det. | 2.25 | 105 | 75 | 6. | 22. | .1 |
| 47 | Audio | 2.25 | 245 | 255 | 1. | ... | ... |
| 80 | Rectifier | 4.7 | ... | ... | ... | ... | 40/plate |

Note—Volume Control Off; Station Selector turned to Low Frequency End.

Table 2—Power Transformer Voltages

| Terminals | A.C. Volts | | |
|-----------|------------|---------------------|----------------------|
| 1-2 | 105 to 125 | Primary | White |
| 3-5 | 2.5 | Filament of 47 | Dark Green |
| 6-8 | 2.5 | Filament of 24 | Black |
| 9-10 | 5. | Filament of 80 | Light Blue |
| 11-13 | 700. | Plates of 80 | Yellow |
| 4 | | Center Tap of 3-5 | Black, Green Tracer |
| 7 | | Center Tap of 6-8 | Black, Yellow Tracer |
| 12 | | Center Tap of 11-13 | Yellow, Green Tracer |

Table 3—Condenser Data

| No. on Figs. 1 and 2 | Capacity (mfd.) | Color |
|----------------------|---------------------|------------------------|
| (15) | .00011 | Blue and Golden Yellow |
| (26) | .00025 | Yellow |
| (9) | .00041 | Yellow and Orange |
| (25) | .0005 | Green |
| (31) | .01 | Black Bakelite |
| (45) | .015 (Double) | Black Bakelite |
| (21) | .05 | Black Bakelite |
| (5) (12) | .09 (Double) | Black Bakelite |
| (28) | .09 (with 250 ohms) | Black Bakelite |
| (40) | .09 (50-60 cycles) | Black Bakelite |
| (40) | .18 (25-40 cycles) | Black Bakelite |
| (33) | .25 | Metal |
| (28) | .5 | Metal |
| (38) | 6 (50-60 cycles) | Electrolytic |
| (38) | 10 (25-40 cycles) | Electrolytic |
| (41) | 6 (50-60 cycles) | Electrolytic |
| (41) | 10 (25-40 cycles) | Electrolytic |

Table 4—Resistor Data

| No. on Figs. 1 and 2 | Terminal | Power (watts) | Resistance (ohms) | Color | | |
|----------------------|-------------------|---------------|-------------------|----------------|--------|--------|
| | | | | Body | Tip | Dot |
| (28) | Combined with 1-2 | .09 mfd.) | 250 | Black Bakelite | | |
| | 2-3 | | (1060) | | | |
| (37) | 4-5 | | 2300 | | | |
| | 5-6 | | 70 | | | |
| (14) | | .5 | 5,000 | Green | Black | Red |
| (16) | | 1. | 13,000 | Brown | Orange | Orange |
| (30) | (50-60 cycles) | .5 | 45,000 | Yellow | Green | Orange |
| (11) (24) | | .5 | 51,000 | Green | Brown | Orange |
| (30) | (25-40 cycles) | .5 | 99,000 | White | White | Orange |
| (29) (32) | | .5 | 240,000 | Red | Yellow | Yellow |

MODELS 70 AND 70-A

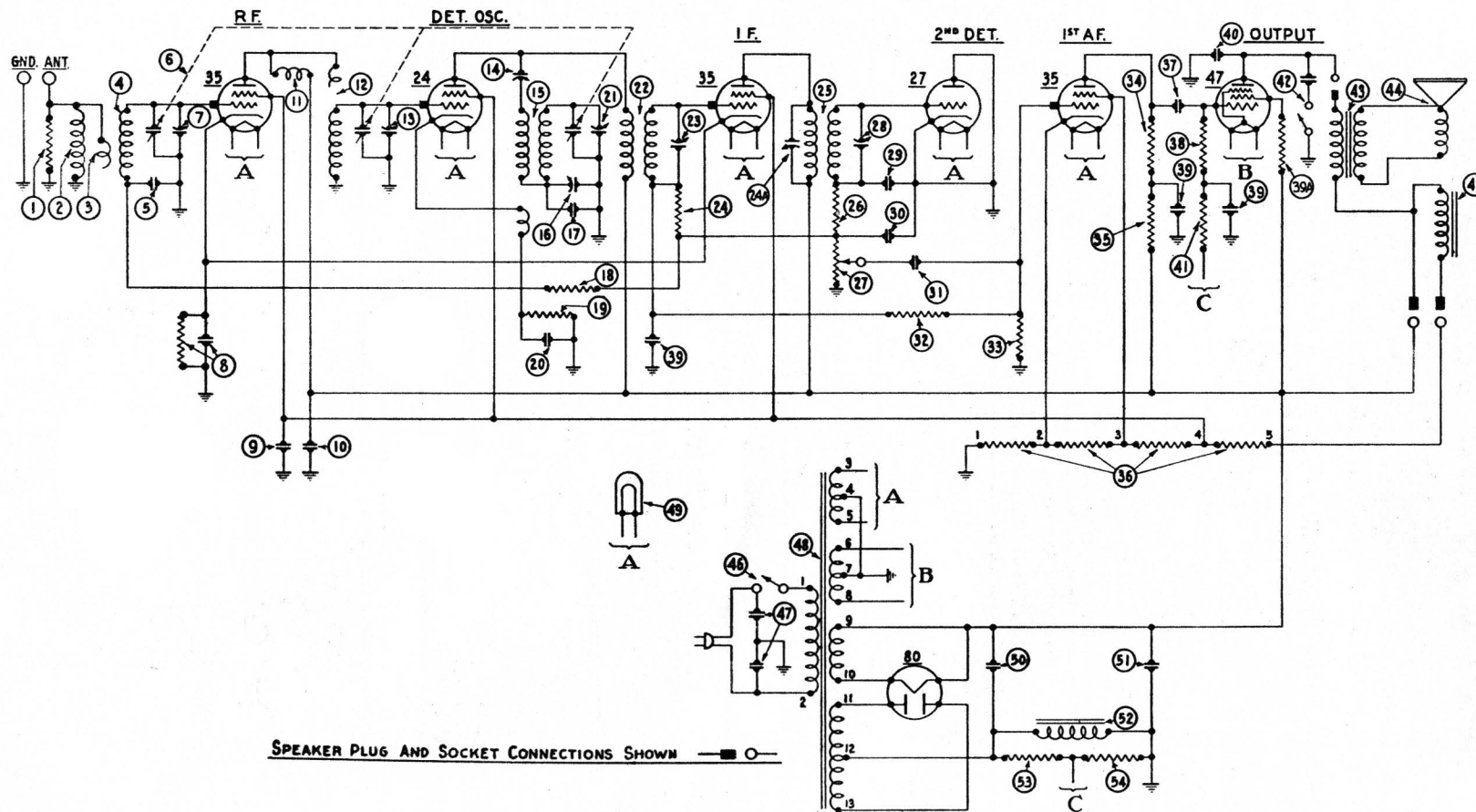


Fig. 1

MODELS 70 AND 70-A

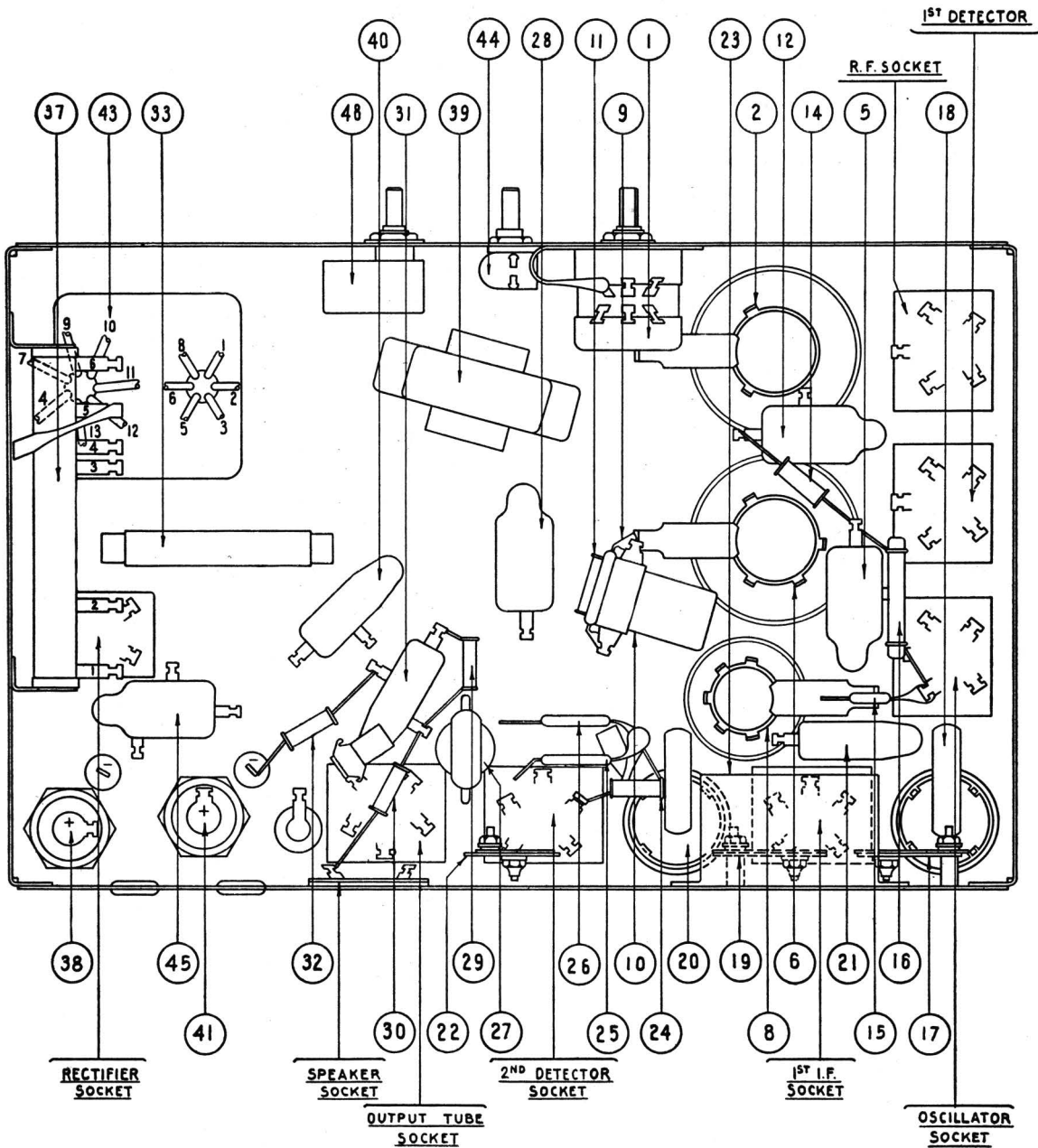


Fig. 2

PHILCO**ADJUSTMENT OF MODELS 70 AND 70-A**

These Receivers are accurately adjusted at the Factory prior to their shipment. Under no circumstances are the adjusting condensers to be changed in the field. This alignment requires special oscillator equipment, which all Philco Distributors have. If for any reason the Receiver needs adjustment it must be returned to the Distributor's Service Department.

REPLACEMENT PARTS—MODELS 70 AND 70-A

| No. on Figs. 3 and 4 | Description | Part No | No. on Figs. 3 and 4 | Description | Part No. |
|-------------------------|-------------------------------------------------------------------------------------------|---------|-------------------------|------------------------------------------------------------|----------|
| ① | Volume Control | 5039 | ③① | Condenser (.01 mfd.) | 3903-L |
| ② | R. F. Transformer | 03082 | ③② | Resistor (240,000 ohms) | 4410 |
| ③ | Tuning Condenser (50-60 cycles) | 03076 | ③③ | Condenser (.25 mfd.) | 4264 |
| | Tuning Condenser (25-40 cycles) | 03077 | ③④ | Output Transformer | 2673 |
| ④ | Compensating Condenser — Antenna—(Part of Gang Con- denser Assembly) | | ③⑤ | Voice Coil and Cone Assembly | 02996 |
| ⑤ | Condenser (.09 mfd. Double) | 4989-C | ③⑥ | Field Coil (Assembled with Pot) | 02966 |
| ⑥ | Detector Transformer | 03083 | ③⑦ | B. C. Resistor | 03079 |
| ⑦ | Compensating Condenser — Detector—(Part of Gang Con- denser Assembly) | | ③⑧ | Electrolytic Condenser (6 mfd.) 50-60 cycles | 4916 |
| ⑧ | Oscillator Coil | 03084 | | Electrolytic Condenser (10 mfd.) 25-40 cycles | 5142 |
| ⑨ | Condenser (410 mmf.) | 5120 | ③⑨ | Choke | 4819 |
| ⑩ | Compensating Condenser—Low Frequency | 04000-F | ④① | Condenser (.09 mfd.) 50-60 cycles | 4989-J |
| ⑪ | Resistor (51,000 ohms) | 4518 | | Condenser (.18 mfd.) 25-40 cycles | 4989-K |
| ⑫ | Condenser (.09 mfd. Double) | 4989-C | ④② | Electrolytic Condenser (6 mfd.) 50-60 cycles | 4916 |
| ⑬ | Compensating Condenser—High Frequency — (Part of Gang Condenser Assembly) | | | Electrolytic Condenser (10 mfd.) 25-40 cycles | 5142 |
| ⑭ | Resistor (5,000 ohms) | 5310 | ④③ | Pilot Light | 3463 |
| ⑮ | Condenser (110 mmf.) | 4519 | ④④ | Power Transformer (50-60 cycles) | 5117 |
| ⑯ | Resistor (13,000 ohms) | 3766 | | Power Transformer (25-40 cycles) | 5118 |
| ⑰ | Compensating Condenser—1st I. F. Primary | 04000-J | | Power Transformer (50-60 cycles, 230 volts) | 5119 |
| ⑱ | First I. F. Transformer | 03091 | ④⑤ | "On-Off" Switch | 4095 |
| ⑲ | Compensating Condenser—1st I. F. Secondary | 04000-H | | Condenser (.015 mfd. Double) | 3793-K |
| ⑳ | Second I. F. Transformer | 03092 | | Tube Shield | 03987 |
| ㉑ | Condenser (.05 mfd.) | 3615-L | | Bezel | 5312 |
| ㉒ | Compensating Condenser—2nd I. F. Secondary | 04000-K | | Knob (Large) | 03064 |
| ㉓ | Condenser (.5 mfd.) | 3583 | | Knob (Small) | 03437 |
| ㉔ | Resistor (51,000 ohms) | 4518 | | Spring (Small) | 4147 |
| ㉕ | Condenser (500 mmf.) | 3910 | | Spring (Large) | 5262 |
| ㉖ | Condenser (250 mmf.) | 3082 | | Grid Clip | 4897 |
| ㉗ | R. F. Choke | 03086 | | Five Prong Socket Assembly | 4956 |
| ㉘ | Condenser (.09 Combined with 250 ohm Resistor) | 4989-E | | Four Prong Socket Assembly | 4955 |
| ㉙ | Resistor (240,000 ohms) | 4410 | | Dial Complete | 03031 |
| ㉚ | Resistor (45,000 ohms) 50-60 cycles | 5256 | | | |
| ㉛ | Resistor (99,000 ohms) 25-40 cycles | 4411 | | | |

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