# PHILCO
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# Radio Service Bulletin—No. 101

## Models 112 and 112-A Receivers

(Above Serial No. 174,001)

**Model 112 Receivers are for operation on 115 volt, 50-60 cycle AC lines**
**Model 112-A Receivers are for operation on 115 volt, 25-60 cycle AC lines**

### Table 1—Tube Socket Readings taken with A.C. Set Tester A.C. Line—115 volts

| Tube | | Filament Volts | Plate Volts | Screen Grid Volts | Control Grid Volts | Cathode Volts | Plate Milli-amperes | Screen-Grid Milli-amperes |
|---|---|---|---|---|---|---|---|---|
| Type | Circuit | | | | | | | |
| 24 | 1st R. F. | 2.25 | 160 | 75 | .2 | 5.0 | 4.0 | 1. |
| 27 | Osc. | 2.25 | 55 | ... | .6 | 7.5 | 1.8 | .. |
| 24 | 1st Det. | 2.25 | 160 | 75 | 2.5 | 8.0 | .8 | 1. |
| 24 | 1st I. F. | 2.25 | 160 | 75 | .2 | 5.0 | 4.0 | 1. |
| 24 | 2nd I. F. | 2.25 | 160 | 75 | 6.* | 4.0 | 4.0 | 1. |
| 27 | Det. Rect. | 2.25 | ... | ... | ... | ... | ... | .. |
| 27 | Det. Amp. | 2.25 | 20 | ... | ... | 4.0 | ... | .. |
| 27 | 1st A. F. | 2.30 | 150 | ... | ... | 4.0 | 3.0 | .. |
| 47 | 2nd A. F. | 2.30 | 245 | 255 | 16.5 | ... | 31** | 9. |
| 47 | 2nd A. F. | 2.30 | 245 | 255 | 16.5 | ... | 31** | 9. |
| 80 | Rect. | 5.0 | ... | ... | ... | ... | 54/54 | .. |

*60 Volt scale.

**Special adapter must be used for this test.

**Note**—Volume control off; station selector turned to low frequency end; range switch set in "Normal" position.

### Table 2—Power Transformer Voltages

| Terminals | A.C. Volts | |
|---|---|---|
| 1—2 | 115. | Primary |
| 3—4 | 2.67 | Heater for 24 and 27 Tubes |
| 6 | | Not used |
| 5—7 | 2.68 | Filaments for 47 Tubes |
| 10—12 | 750. | Plates 80 Tube |
| 11 | | Center Tap 80 Tube |
| 8—9 | 5.0 | Filament 80 Tube |
| Rubber Covered Lead | | Center Tap for 24 and 27 Tubes |

### Table 3—Condenser Data

| No. on Figs. | CAPACITY | COLOR |
|---|---|---|
| (6) (9) (19) (42) | .05 | Bakelite Container |
| (13) (14) (21) | .05 and 250 Ohms | Bakelite Container |
| (25) | .25 | Metal Container |
| (30) (59) | .00011 | Blue, Golden Yellow |
| (36) | .00025 | Yellow |
| (40) | .015 | Bakelite Container |
| (53) | .0007 | White, Golden Yellow |
| (60) | .015 Double | Bakelite Container |
| (65) (68) | 6 Mfd. | Electrolytic |

### Table 4—Resistor Data

| No. on Figs. | Resistance (Ohms) | Power (Watts) | COLOR | | |
|---|---|---|---|---|---|
| | | | Body | Tip | Dot |
| (69) | 2 Sections 70 ohms ea. | | Flat | Wire Wound Tubular | |
| (63) | 205 | | | | |
| (58) | 1,000 | 1 | Brown | Black | Red |
| (1) | 10,000 | ½ | Brown | Black | Orange |
| (47) (57) | 13,000 | 1 | Brown | Orange | Orange |
| (51) | 15,000 | 2 | Red | Orange | Black |
| (37) | 25,000 | 1 | Red | Green | Orange |
| (46) | 25,000 | ½ | Red | Green | Orange |
| (31) (32) (54) | 51,000 | ½ | Green | Brown | Orange |
| (26) | 70,000 | ½ | Violet | Black | Orange |
| (43) | 70,000 | 1 | Violet | Black | Orange |
| (8) (10) (33) (35) | 99,000 | ½ | White | White | Orange |
| (38) | 99,000 | 1 | White | White | Orange |
| (24) | 490,000 | ½ | Yellow | White | Yellow |
| (39) | 490,000 | 1 | Yellow | White | Yellow |

### Model 112 Condenser Block Part No. 3754

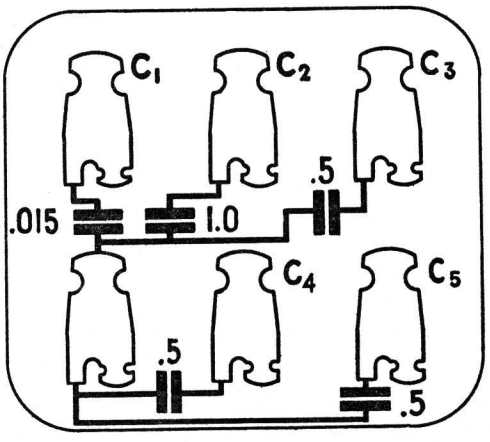


Fig. 1

### Model 112-A Condenser Block Part No. 3755

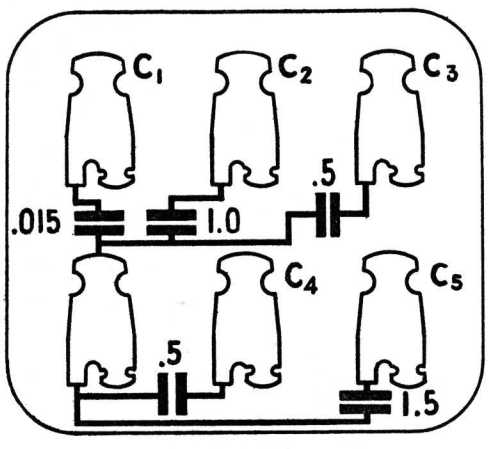


Fig. 2

# MODELS 112 AND 112-A

(Above Serial No. 174,001)

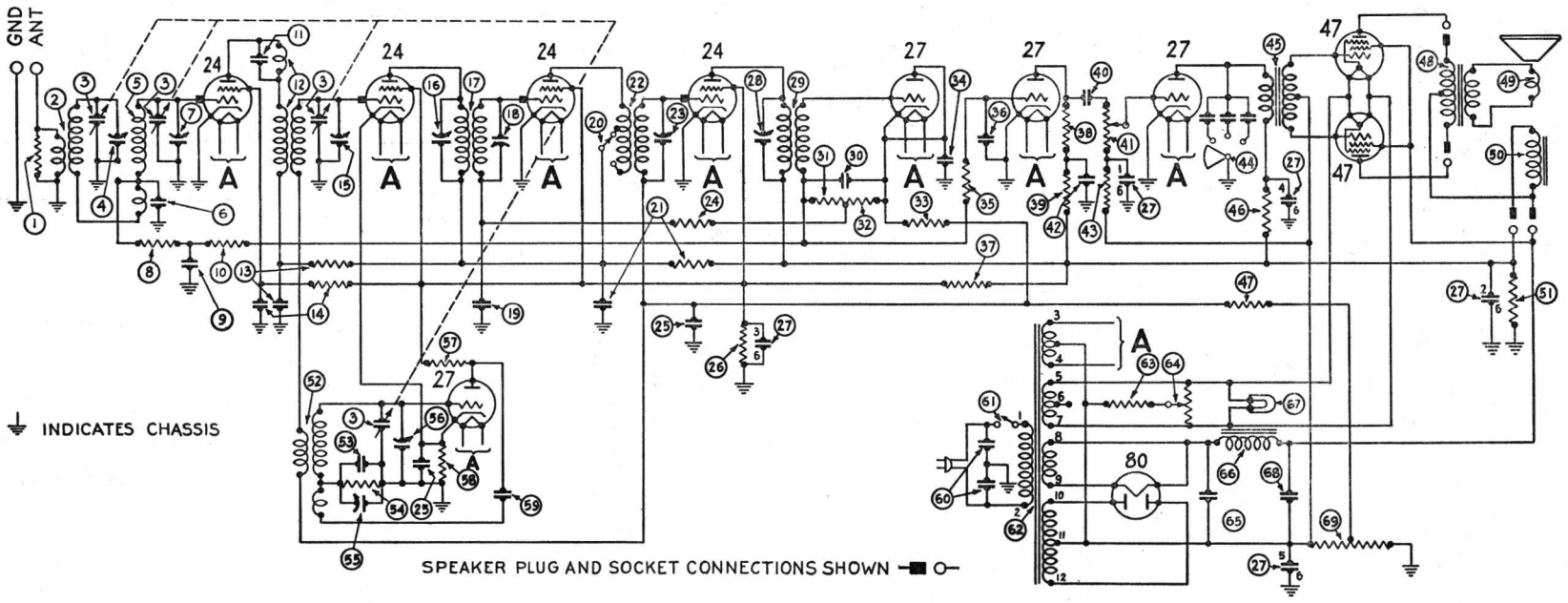


Fig. 3

# MODELS 112 AND 112-A

(Above Serial No. 174,001)

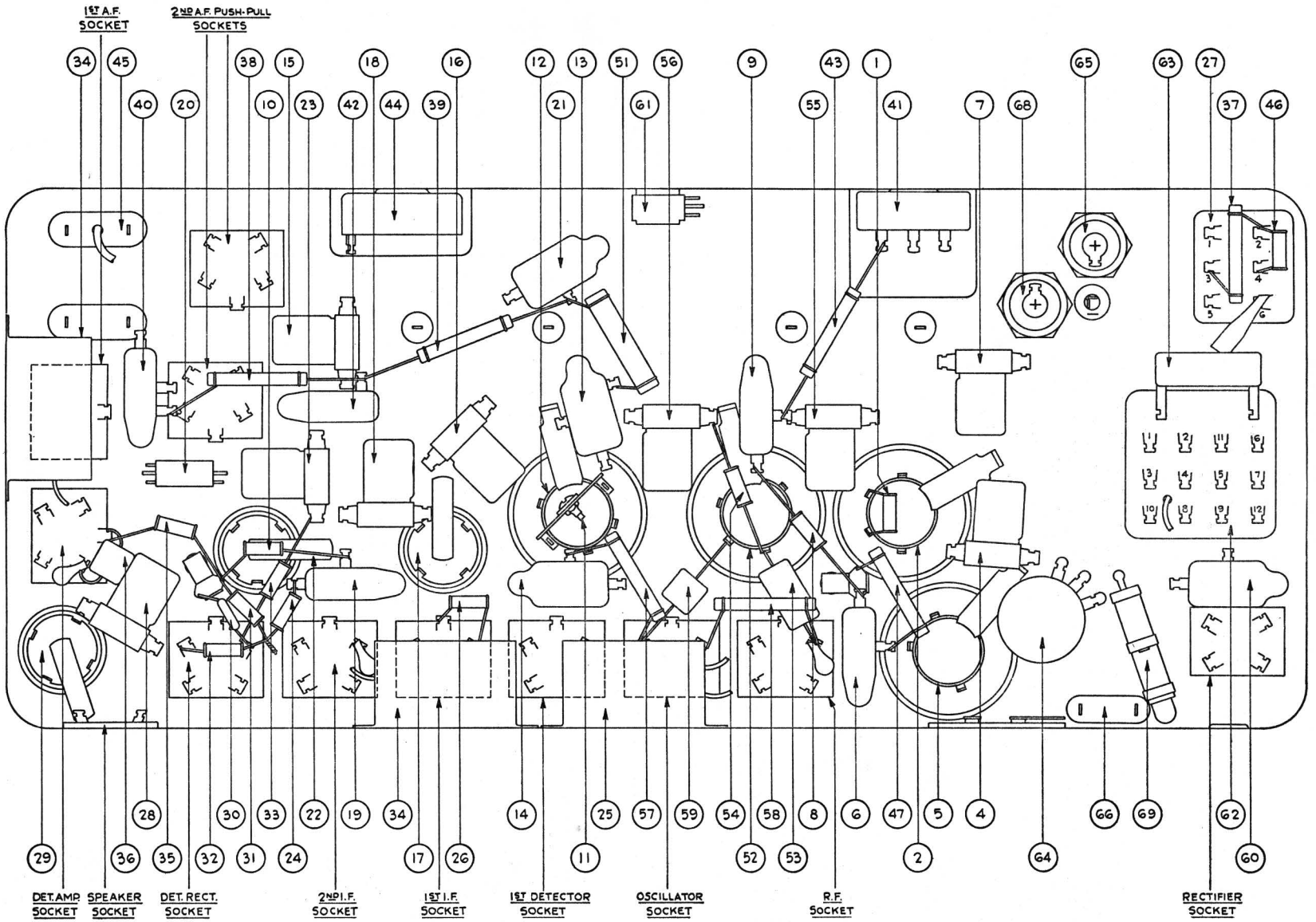


Fig. 4

# ADJUSTMENT OF MODELS 112 AND 112-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.

# RANGE SWITCH

The Range Switch, No. ⑳ in Fig. 3, is placed in the NORMAL position when the Receiver is shipped. This gives great distance range and is the setting which will be found most satisfactory in practically all locations. In places far from broadcasting stations, however, the Range Switch may be changed to the MAXIMUM position. This will make the Receiver super-sensitive and will give extreme distance range. Do not use the Range Switch in the MAXIMUM position if there are one or more powerful broadcasting stations near you. In any location there will be less noise between stations with the Range Switch in the NORMAL position.

# REPLACEMENT PARTS—MODELS 112, 112-A AND 112-E

**(Above Serial No. 174,001)**

| No. on Figs. 3 and 4 | Description | Part No. |
|---|---|---|
| ① | Resistor (10,000 ohms) | 4412 |
| ② | First R. F. Coil | 3884-S |
| ③ | Tuning Condenser | 4000-D |
| ④ | Compensating Condenser | 04000-E |
| ⑤ | Second R. F. Coil | 3884-T |
| ⑥ | By-pass Condenser (.05 mfd.) | 3615-J |
| ⑦ | Compensating Condenser | 04000-D |
| ⑧ | Resistor (99,000 ohms) | 4411 |
| ⑨ | By-pass Condenser (.05 mfd.) | 3615-D |
| ⑩ | Resistor (99,000 ohms) | 4411 |
| ⑪ | Condenser | 3892-A |
| ⑫ | First Detector Coil | 3884-V |
| ⑬ | By-pass Condenser & Resistor (.05 mfd. and 250 ohms) | 3615-*Z* |
| ⑭ | By-pass Condenser & Resistor (.05 mfd. and 250 ohms) | 3615-B |
| ⑮ | Compensating Condenser | 04000-E |
| ⑯ | Compensating Condenser | 04000-J |
| ⑰ | First I. F. Transformer | 03038 |
| ⑱ | Compensating Condenser | 04000-J |
| ⑲ | By-pass Condenser (.05 mfd.) | 3615-J |
| ⑳ | Range Switch | 3116 |
| ㉑ | By-pass Condenser & Resistor (.05 mfd. and 250 ohms) | 3615-B |
| ㉒ | Second I. F. Transformer | 03039 |
| ㉓ | Compensating Condenser | 04000-J |
| ㉔ | Resistor (490,000 ohms) | 4517 |
| ㉕ | By-pass Condenser (¼ mfd.) | 3557 |
| ㉖ | Resistor (70,000 ohms) | 5385 |
| ㉗ | Filter Condenser Block (50-60 cycles) | 03489 |
| | Filter Condenser Block (25-40 cycles) | 03589 |
| ㉘ | Compensating Condenser | 04000-L |
| ㉙ | Third I. F. Transformer | 03040 |
| ㉚ | Condenser (110 mmf.) | 4519 |
| ㉛ | Resistor (51,000 ohms) | 4518 |
| ㉜ | Resistor (51,000 ohms) | 4518 |
| ㉝ | Resistor (99,000 ohms) | 4411 |
| ㉞ | By-pass Condenser (.5 mfd.) 2 used | 3583 |
| ㉟ | Resistor (99,000 ohms) | 4411 |
| ㊱ | Condenser (250 mmf.) | 3082 |
| ㊲ | Resistor (25,000 ohms) | 3656 |
| ㊳ | Resistor (99,000 ohms) | 3769 |
| ㊴ | Resistor (490,000 ohms) | 3768 |
| ㊵ | Condenser (.015 mfd.) | 3793-F |
| ㊶ | Volume Control | 4093 |
| ㊷ | By-pass Condenser (.05 mfd.) | 3615-S |
| ㊸ | Resistor (70,000 ohms) | 3542 |
| ㊹ | Tone Control | 03137 |
| ㊺ | Push-pull Input Transformer | 5662 |
| ㊻ | Resistor (25,000 ohms) | 4516 |
| ㊼ | Resistor (13,000 ohms) | 3766 |
| ㊽ | Push-pull Output Transformer | 2635 |
| ㊾ | Voice Coil and Cone Assembly | 02997 |
| ㊿ | Speaker Field (assembled with pot and frame) | 02892 |
| (51) | Resistor (15,000 ohms) | 5718 |
| (52) | Oscillator Coil | 3884-U |
| (53) | Condenser (700 mmf.) | 4520 |
| (54) | Resistor (50,000 ohms) | 4518 |
| (55) | Compensating Condenser | 04000-F |
| (56) | Compensating Condenser | 04000-E |
| (57) | Resistor (13,000 ohms) | 3766 |
| (58) | Resistor (1,000 ohms) | 4590 |
| (59) | Condenser (110 mmf.) | 4519 |
| (60) | By-pass Condenser (.015 mfd. double) | 3793-E |
| (61) | On-Off Switch | 4095 |
| (62) | Power Transformer (115 volts 50-60 cycles) | 5594 |
| | Power Transformer (115 volts 25-40 cycles) | 5595 |
| | Power Transformer (230 volts 50-60 cycles) | 5596 |
| (63) | Resistor (205 ohms) | 03513 |
| (64) | Hum Control Potentiometer | 5650 |
| (65) | Electrolytic Condenser (6 mfd.) | 4916 |
| (66) | Filter Choke | 5643 |
| (67) | Pilot Light | 3463 |
| (68) | Electrolytic Condenser (6 mfd.) | 4916 |
| (69) | Resistor (2 sections 70 ohms each) | 3764 |
| | Knob (Large) | 03063 |
| | Knob (Small) | 03064 |
| | Knob (Switch) | 03437 |
| | Spring (for Switch Knob) | 5262 |
| | Spring (for Dial Knob) | 4147 |
| | Tube Shield | 03518 |
| | Grid Clip | 4897 |
| | Four Prong Socket Assembly | 5026 |
| | Five Prong Socket Assembly | 4956 |
| | Volume Control Insulator | 4286 |
| | Dial Scale | 4276 |
| | Bezel | 5010 |
| | Pilot Bracket Complete | 4027-A |

PHILADELPHIA STORAGE BATTERY COMPANY
Ontario and C Streets, Philadelphia, Pa.

September, 1931 Form No. 2779 Printed in U. S. A.