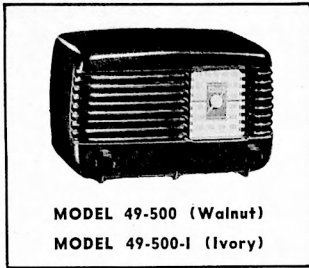


# PHILCO RADIO MODELS 49-500 AND 49-500-I



## SPECIFICATIONS

|                              |   |
|------------------------------|---|
| CABINET .....                | Bakelite  |
| CIRCUIT .....                | Five-tube superheterodyne   |
| FREQUENCY RANGE .....        | 540 to 1620 kc.   |
| OPERATING VOLTAGE .....      | 105 to 120 volts, a.c. or d.c.                                      |
| POWER CONSUMPTION .....      | 30 watts  |
| AERIAL .....                 | Loop fastened to cabinet; terminal also provided for outside aerial |
| INTERMEDIATE FREQUENCY ..... | 455 kc.   |
| PHILCO TUBES (5) .....       | 7A8, 14A7, 14B6, 50A5, 35Z5GT                                       |

TP-2667

## SYMBOLIZATION

All components in the radio circuits are symbolized and located as follows:

|                 |                 |                       |
|-----------------|-----------------|-----------------------|
| C—condenser     | LA—loop aerial  | S—switch              |
| I—pilot lamp    | LS—loud-speaker | T—transformer         |
| L—choke or coil | R—resistor      | Z—electrical assembly |

100-series components are in Section 1—the power supply.

200-series components are in Section 2—the audio circuits.

300-series components are in Section 3—the i-f, detector, and a-v-c circuits.

400-series components are in Section 4—the r-f and converter circuits.

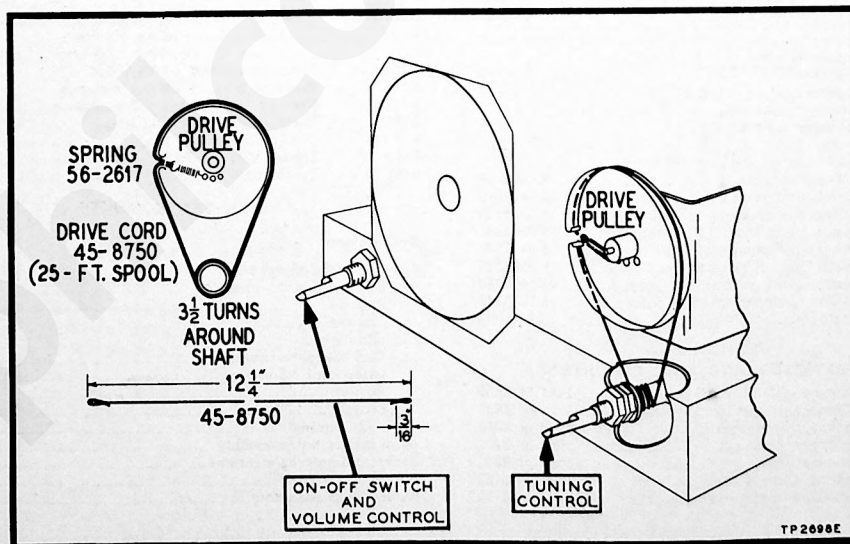
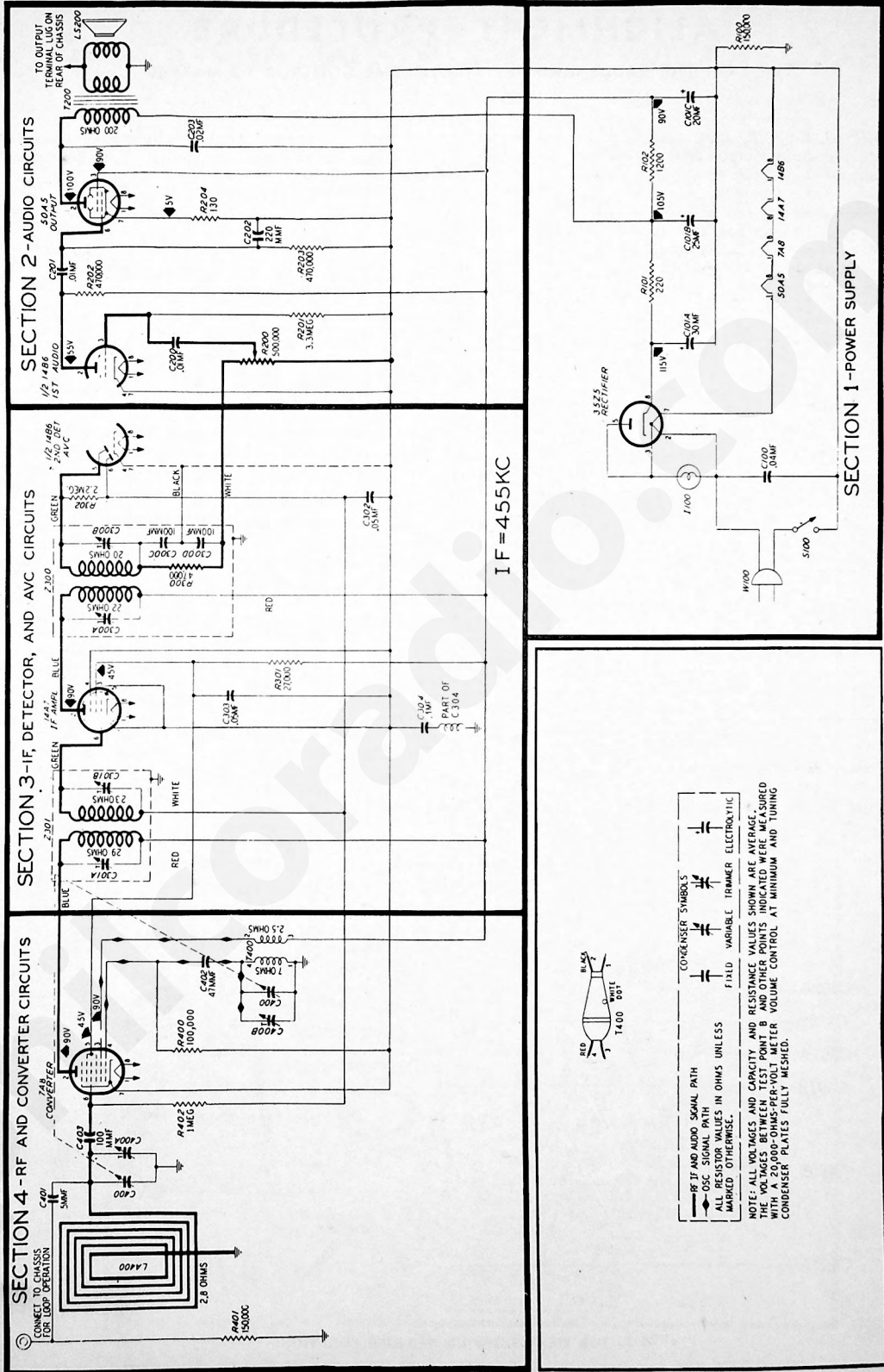


FIGURE 1. DRIVE-CORD INSTALLATION DETAILS



SECTION 2. PHILCO RADIO MODELS 49-500 AND 49-500-1, SECTIONALIZED SCHEMATIC DIAGRAM.

# ALIGNMENT PROCEDURE

TURN ON THE RADIO, AND SET THE VOLUME CONTROL TO MAXIMUM.

**SIGNAL GENERATOR** — Connect ground lead to B; connect output lead as indicated in the chart.

**OUTPUT LEVEL** — During alignment, adjust signal-generator output to maintain output-meter indication below 1.25 volts.

| STEP | SIGNAL GENERATOR   |              | RADIO        |   | ADJUST                           |
|------|--|--------------|--------------|---|----------------------------------|
|      | CONNECTIONS TO RADIO                                     | DIAL SETTING | DIAL SETTING | SPECIAL INSTRUCTIONS  |                                  |
| 1    |  |              |              | Turn C301B (copper screw) down tight.   |                                  |
| 2    | Through .1-mf. condenser to pin 6 of 7A8 converter.      | 455 kc.      | 540 kc.      | Adjust trimmers, in order given, for maximum output.                            | C300A<br>C300B<br>C301A<br>C301B |
| 3    | Through 100-mmf. condenser to external aerial connector. | 1600 kc.     | 1600 kc.     | Disconnect external aerial lug from chassis. Adjust trimmer for maximum output. | C400B                            |
| 4    | Same as step 3.  | 1500 kc.     | 1500 kc.     | Adjust for maximum output.  | C400A                            |

**DIAL POINTER** — Turn tuning condensers to full-mesh position. Set dial pointer to index dot, located to the left of "55."

**OUTPUT METER** — Connect to left (output) lug and center (chassis) lug of terminal panel, shown in figure 3.

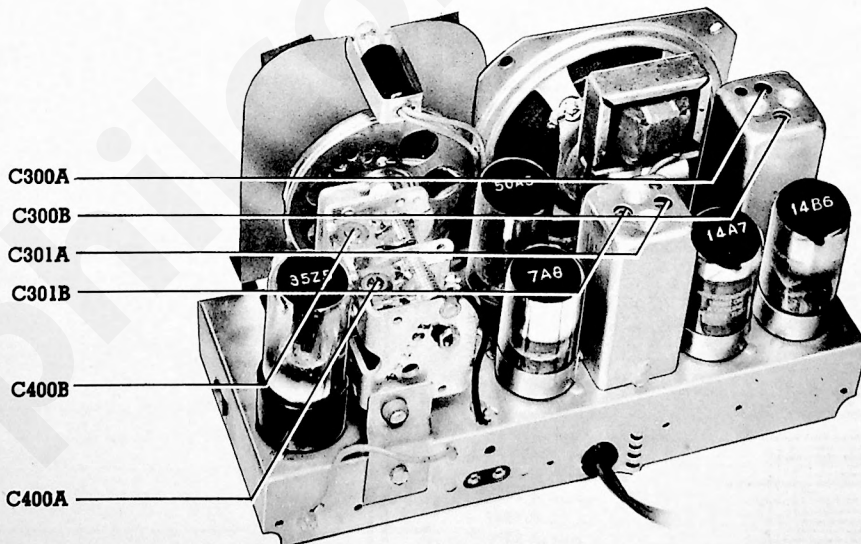


FIGURE 3. TOP VIEW, SHOWING TRIMMER LOCATIONS

# MODELS 49-500 AND 49-500-I

## REPLACEMENT PARTS LIST

NOTE: Parts marked with an asterisk (\*) are general replacement items, and the numbers listed may not be identical with those on factory assemblies; also, the electrical values of some replacement items furnished may differ from the values indicated in the schematic diagram and parts list. The values substituted in any case are so chosen that the operation of the radio will be either unchanged or improved. When ordering replacements, use only the "Service Part No."

### SECTION 1

#### POWER SUPPLY

| Reference Symbol | Description                               | Service Part No. |
|------------------|---|------------------|
| C100             | Condenser, line filter, .04 mf.           | 45-3500-2*       |
| C101             | Condenser, electrolytic, 3-section filter | 30-2573          |
| C101A            | Condenser, electrolytic, 30 mf.           | Part of C101     |
| C101B            | Condenser, electrolytic, 25 mf.           | Part of C101     |
| C101C            | Condenser, electrolytic, 20 mf.           | Part of C101     |
| I100             | Panel lamp                                | 34-2068          |
| R100             | Resistor, leakage, 150,000 ohms           | 66-4153340*      |
| R101             | Resistor, filter, 220 ohms                | 66-1224340*      |
| R102             | Resistor, filter, 1200 ohms               | 66-2123340*      |
| S100             | Switch, power                             | Part of R200     |
| W100             | Power cord and plug                       | L2183*           |

### SECTION 2

#### AUDIO CIRCUITS

|       |   |               |
|-------|---|---------------|
| C200  | Condenser, coupling, .01 mf.                        | 61-0120*      |
| C201  | Condenser, coupling, .01 mf.                        | 61-0120*      |
| C202  | Condenser, by-pass, 220 mmf.                        | 62-122001001  |
| C203  | Condenser, by-pass, .02 mf.                         | 61-0108*      |
| LS200 | Speaker   | 36-1614       |
| R200  | Volume control (with power switch),<br>500,000 ohms | 33-5429       |
| R201  | Resistor, grid load, 3.3 megohms                    | 66-5333340*   |
| R202  | Resistor, plate load, 470,000 ohms                  | 66-4473340*   |
| R203  | Resistor, grid load, 470,000 ohms                   | 66-4473340*   |
| R204  | Resistor, bias, 130 ohms                            | 66-1123340*   |
| T200  | Output transformer                                  | Part of LS200 |

### SECTION 3

#### I-F, DETECTOR, AND A-V-C CIRCUITS

|       |  |              |
|-------|--|--------------|
| C302  | Condenser, a-v-c by-pass, .05 mf.      | 61-0122      |
| C303  | Condenser, screen by-pass, .05 mf.     | 61-0122*     |
| C304  | Condenser, special i-f by-pass, .1 mf. | 30-4644-1    |
| R300  | Resistor, diode load, 47,000 ohms      | Part of Z300 |
| R301  | Resistor, screen, 27,000 ohms          | 66-3273340*  |
| R302  | Resistor, a-v-c, 2.2 megohms           | 66-5223340*  |
| Z300  | Transformer, 2nd i-f                   | 32-3952*     |
| C300A | Condenser, trimmer                     | Part of Z300 |
| C300B | Condenser, trimmer                     | Part of Z300 |
| C300C | Condenser, by-pass, 100 mmf.           | Part of Z300 |
| C300D | Condenser, by-pass, 100 mmf.           | Part of Z300 |
| Z301  | Transformer, 1st i-f                   | 32-3967      |
| C301A | Condenser, trimmer                     | Part of Z301 |
| C301B | Condenser, trimmer                     | Part of Z301 |

\* 30-4644-1 special inductive capacitor should be replaced by a .1 mfd. capacitor part #61-0113 to conform with latest run.

### SECTION 4

#### R-F AND CONVERTER CIRCUITS

| Reference Symbol | Description                                 | Service Part No. |
|------------------|---|------------------|
| C400             | Condenser, tuning, 2-section                | 31-2727-1        |
| C400A            | Condenser, trimmer                          | Part of C400     |
| C400B            | Condenser, trimmer                          | Part of C400     |
| C401             | Condenser, coupling, 5 mmf.                 | 60-90505007*     |
| C402             | Condenser, isolating, 47 mmf.               | 60-00515307*     |
| C403             | Condenser, blocking, 100 mmf.               | 60-10105407*     |
| *C404            | Condenser, fixed trimmer, 10 mmf.           | 30-1224-26       |
| LA400            | Loop aerial                                 | 32-4052-5        |
| R400             | Resistor, osc., grid, 100,000 ohms          | 66-4103340*      |
| R401             | Resistor, aerial discharge,<br>150,000 ohms | 66-4153340*      |
| R402             | Resistor, grid return, 1 megohm             | 66-5103340*      |
| T400             | Transformer, oscillator                     | 32-4263          |

### MISCELLANEOUS

| Description                  | Service Part No. |
|------------------------------|------------------|
| Cabinet                      |                  |
| Model 49-500                 | 10542D           |
| Model 49-500-I               | 10542E           |
| Cabinet Hardware             |                  |
| Back                         |                  |
| Model 49-500                 | 27-9879          |
| Model 49-500-I               | 27-9922          |
| Fastener, acetate window (6) | 28-4279FA1       |
| Foot, felt                   | W2190            |
| Knob                         |                  |
| Model 49-500                 | 27-4820          |
| Model 49-500-I               | 54-4118          |
| Window, acetate              | 54-4088          |
| Dial-Scale Hardware          |                  |
| Cord, drive (25-ft. spool)   | 45-8750          |
| Pointer                      | 27-4891-1        |
| Scale, dial                  |                  |
| Model 49-500                 | 27-5965          |
| Model 49-500-I               | 27-5965-1        |
| Screw, scale mounting        | 1W19674FA3       |
| Spring, drive cord           | 56-2617          |
| Washer, scale mounting       | 2W54094          |
| Panel, terminal, loop aerial | 76-2148          |
| Panel, lamp assembly         | 76-1280          |
| Shaft, drive assembly        | 31-2718          |
| Socket, Loktal               | 27-6138*         |
| Socket, octal                | 27-6174*         |

\* Added in parallel across oscillator section of gang condenser to overcome oscillator drift.