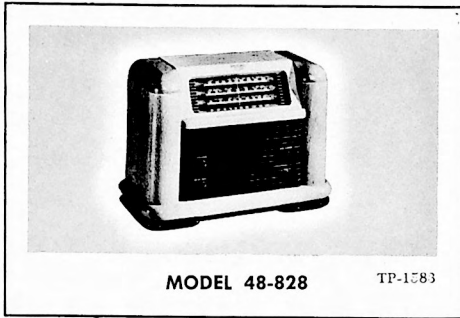


PHILCO-TROPIC RADIO, MODEL 48-828

SPECIFICATIONS



| | |
|------------------------|--|
| CABINET | Wood |
| CIRCUIT | Six-tube superheterodyne |
| FREQUENCY RANGES | |
| BROADCAST | 550—1600 kc. |
| SHORT WAVE: | |
| S.W. 1 | 3—9.8 mc. |
| S.W. 2 | 9.3—12 mc. |
| S.W. 3 | 11.8—22 mc. |
| AUDIO OUTPUT | 3 watts |
| OPERATING VOLTAGE | 115/230 volts, a.c., 60 cycles |
| POWER CONSUMPTION | 50 watts |
| AERIAL | Philco Outdoor Aerial, Part No. 45-1494 |
| INTERMEDIATE FREQUENCY | 455 kc. |
| PHILCO TUBES (6) | 7J7E, 7B7, 7C6, 7B5E (2), 6X5GT |
| PANEL LAMP, | |
| | 6—8-volt, bayonet base, Part No. 34-2064 |

SYMBOLIZATION AND TERMINOLOGY

All components in the radio circuit 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 ass'y |

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

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

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

400-series components are in Section 4—the aerial, r-f, and oscillator circuits.

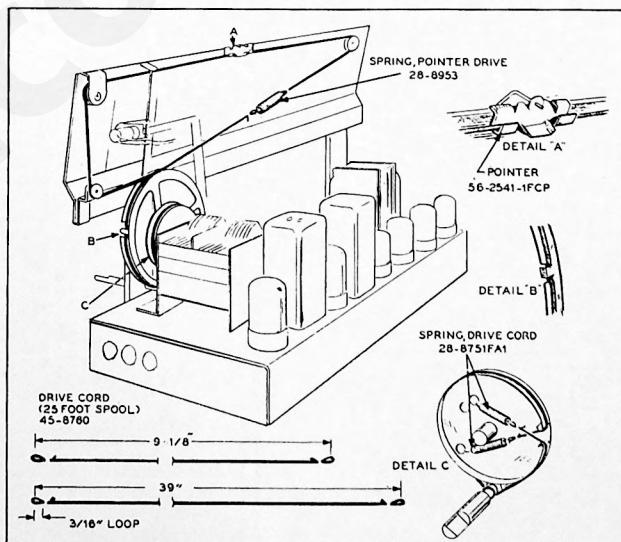


Figure 1. Drive-Cord Installation Details

TP-3358F

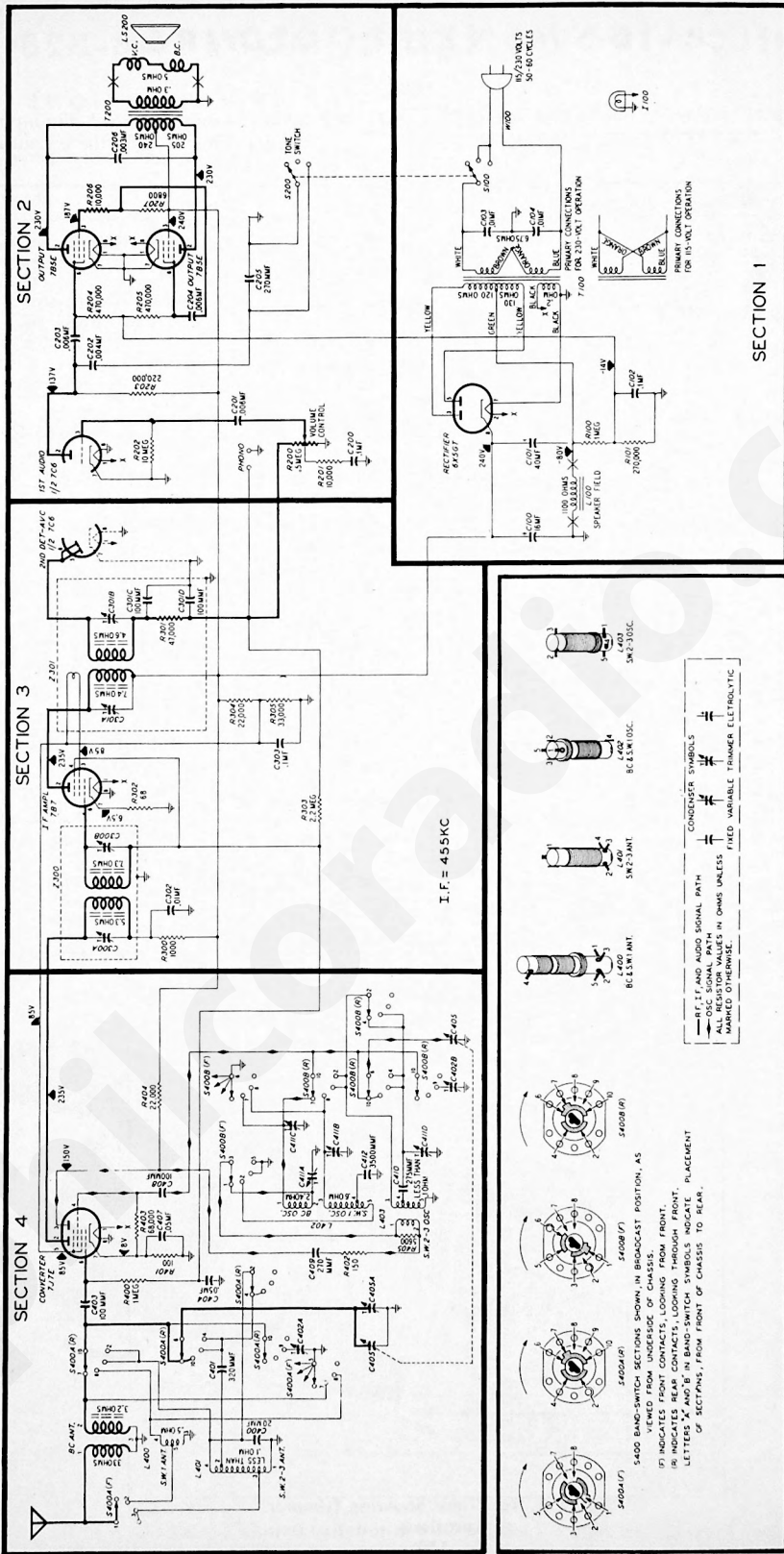


Figure 2. Philco Radio Model 48-828, Complete Sectionalized Schematic,

ALIGNMENT PROCEDURE

SET VOLUME CONTROL to maximum.

SET SIGNAL-GENERATOR FREQUENCY, RADIO BAND SWITCH, and RADIO DIAL as indicated in chart.

OUTPUT LEVEL: During alignment, the input signal must be attenuated to hold the output-meter reading below 1.5 volts.

| SIGNAL GENERATOR | | | RADIO | | | |
|------------------|--|-----------|-------------|-----------|--|----------------------------------|
| STEP | CONNECTIONS TO RADIO | FREQUENCY | BAND SWITCH | FREQUENCY | SPECIAL INSTRUCTIONS | ADJUST |
| 1 | Through .1-mf. condenser to aerial lead. | 455 kc. | B.C. | 550 kc. | Adjust trimmers for maximum output-meter reading. Align ONCE ONLY, in the order given. | C301B C301A C300B C300A |
| 2 | Through 400-ohm resistor to aerial lead. | 20 mc. | S.W.3 | 20 mc. | Adjust for maximum (for C405A, rock tuning control). | C411D C405A |
| 3 | Same. | 11.5 mc. | S.W.2 | 11.5 mc. | Adjust for maximum (for C402A, rock tuning control). | C402B C402A |
| 4 | Same. | 9 mc. | S.W.1 | 9 mc. | Adjust for maximum. | C411B |
| 5 | Same. | 580 kc. | B.C. | 580 kc. | Adjust for maximum while rocking tuning control. | C411A |
| 6 | Through 200-mmf. condenser to aerial lead. | 1400 kc. | B.C. | 1400 kc. | Adjust for maximum while rocking tuning control. | C411C |
| 7 | Repeat steps 5 and 6 until no further increase is noted. | | | | | |

CONNECT OUTPUT METER across speaker voice coil.

ADJUST RADIO DIAL POINTER, with tuning-condenser plates fully meshed, to make pointer coincide with index mark at low-frequency end of dial.

CONNECT SIGNAL GENERATOR ground lead to radio chassis; connect output lead as indicated in chart.

SET TONE CONTROL fully counterclockwise.

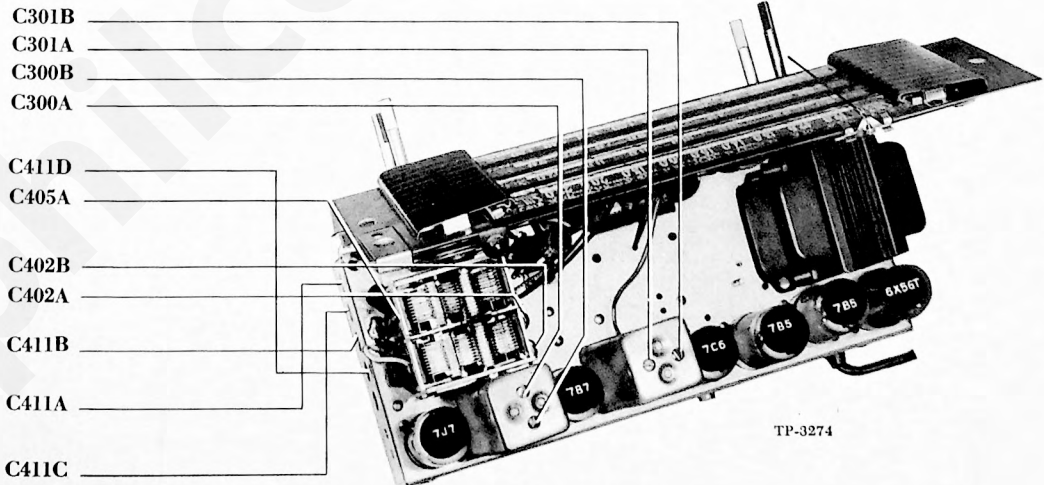


Figure 3. Top View, Showing Trimmer Locations

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 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." in this parts list.

SECTION 1

| Symbol | Description | Service Part No. |
|--------|--|------------------|
| C100 | Condenser, electrolytic, 16 mf., power-supply filter | 45-3016* |
| C101 | Condenser, electrolytic, 40 mf., power-supply filter | 30-2520 |
| C102 | Condenser, .1 mf., bias filter | 61-0113* |
| C103 | Condenser, .01 mf., line filter | 30-1226-1 |
| C104 | Condenser, .01 mf., line filter | 30-1226-1 |
| I100 | Panel lamp, 6—8-volt, bayonet base | 34-2064 |
| L100 | Speaker field | Part of LS200 |
| R100 | Resistor, 1 megohm, bias filter | 66-5103340 |
| R101 | Resistor, 270,000 ohms, bias bleeder | 66-4273340 |
| S100 | Switch, a-c power | Part of S200 |
| T100 | Transformer, power | 32-8269 |
| W100 | Line cord | L-3216 |

SECTION 2

| | | |
|-------|---|--------------|
| C200 | Condenser, .1 mf., tone compensation | 61-0113* |
| C201 | Condenser, .006 mf., coupling | 30-1226-2 |
| C202 | Condenser, .004 mf., tone compensation | 61-0179* |
| C203 | Condenser, .006 mf., coupling | 30-1226-2 |
| C204 | Condenser, .006 mf., coupling | 30-1226-2 |
| C205 | Condenser, 270 mmf., tone compensation | 60-10245307* |
| C206 | Condenser, .003 mf., high-frequency (audio) by-pass | 61-0109* |
| R200 | Volume control, 500,000 ohms | 33-5510 |
| R201 | Resistor, 10,000 ohms, tone compensation | 66-3103340 |
| R202 | Resistor, 10 megohms, grid load | 66-6103340* |
| R203 | Resistor, 220,000 ohms, plate load | 66-4223340* |
| R204 | Resistor, 470,000 ohms, grid load | 66-4473340* |
| R205 | Resistor, 470,000 ohms, grid load | 66-4473340* |
| R206 | Resistor, 10,000 ohms, voltage divider | 66-3103340 |
| R207 | Resistor, 6800 ohms, voltage divider | 66-2683340 |
| T200 | Transformer, output | 32-8189 |
| LS200 | Loud-speaker | 36-1551 |
| S200 | Switch, tone control and a-c power | 42-1753 |

SECTION 3

| | | |
|--------|---|--------------|
| C302 | Condenser, .01 mf., r-f by-pass | 61-0120* |
| C303 | Condenser, .1 mf., r-f by-pass | 61-0113* |
| R300 | Resistor, 1,000 ohms, plate load | 66-2103340 |
| R301 | Not used | |
| R302 | Resistor, 68 ohms, cathode (degeneration) | 66-0683340* |
| R303 | Resistor, 2.2 megohms, a-v-c filter | 66-5223340* |
| R304 | Resistor, 22,000 ohms, screen voltage divider | 66-3224340 |
| R305 | Resistor, 33,000 ohms, screen voltage divider | 66-3333340 |
| Z300 | Transformer, 1st i-f | |
| C300A: | Condenser, primary trimmer | Part of Z300 |
| C300B: | Condenser, secondary trimmer | Part of Z300 |
| Z301 | Transformer, 2nd i-f | |
| C301A: | Condenser, primary trimmer | Part of Z301 |
| C301B: | Condenser, secondary trimmer | Part of Z301 |
| C301C: | Condenser, 100 mmf., r-f by-pass | Part of Z301 |
| C301D: | Condenser, 100 mmf., r-f by-pass | Part of Z301 |
| R301: | Resistor, 47,000 ohms, diode load | Part of Z301 |

SECTION 4

| | | |
|------|---|--------------|
| C400 | Condenser, 20 mmf., shunt, S. W. 2-3 aerial coil | Part of L401 |
| C401 | Condenser, 320 mmf., band spread, S. W. 2-3 aerial coil | 30-1220-12 |
| C402 | Condenser, trimmer and padder assembly, 2-section | 31-6416 |

SECTION 4 (Cont.)

| Symbol | Description | Service Part No. |
|--------|--|------------------|
| C402A: | Condenser, aerial trimmer, S. W. 2 | Part of C402 |
| C402B: | Condenser, osc. trimmer, S. W. 2 | Part of C402 |
| C403 | Condenser, 100 mmf., coupling | 60-10105407* |
| C404 | Condenser, .05 mf., a-v-c filter | 30-1226 |
| C405 | Condenser, main tuning | 31-2690 |
| C405A: | Condenser, aerial trimmer, S. W. 3 | Part of C405 |
| C407 | Condenser, .05 mf., cathode by-pass | 61-0122* |
| C408 | Condenser, 100 mmf., oscillator feedback | 60-10105407* |
| C409 | Condenser, 270 mmf., blocking | 60-10245307* |
| C410 | Condenser, 275 mmf., band spread, S. W. 2-3 osc. | 30-1220-7 |
| C411 | Condenser, trimmer, and padder assembly, 4-section | |
| C411A: | Condenser, series padder, broadcast osc. | Part of C411 |
| C411B: | Condenser, shunt trimmer, S. W. 1 osc. | Part of C411 |
| C411C: | Condenser, shunt trimmer, broadcast osc. | Part of C411 |
| C411D: | Condenser, shunt trimmer, S. W. 3 osc. | Part of C411 |
| C412 | Condenser, 3500 mmf., r-f by-pass | 60-20335404* |
| R400 | Resistor, 1 megohm, grid load | 66-5103340* |
| R401 | Resistor, 100 ohms, cathode bias | 66-1103340 |
| R402 | Resistor, 150 ohms, oscillator damping | 66-1153340* |
| R403 | Resistor, 68,000 ohms, grid leak | 66-3683340* |
| R404 | Resistor, 22,000 ohms, plate load | 66-3223340* |
| S400 | Band switch | 42-1752 |
| S400A: | Band-switch wafer | Part of S400 |
| S400B: | Band-switch wafer | Part of S400 |
| L400 | Coil, aerial, B. C. and S. W. 1 | 32-3655 |
| L401 | Coil, aerial, S. W. 2—3 (with C400 attached) | 32-3652 |
| L402 | Coil, oscillator, B. C. and S. W. 2 | 32-3656 |
| L403 | Coil, oscillator, S. W. 2—3 | 32-3651 |

MISCELLANEOUS

| Description | Service Part No. |
|--|------------------|
| Back, cabinet | 54-7105 |
| Baffle | |
| Grille, wood | 16612 |
| Cabinet, less scale | 10624A |
| Clamp, dial scale (2) | 56-3236FA1 |
| Cord, drive (25-foot spool) | 45-8760 |
| Dial plate assembly | 76-1915 |
| Dial indicator lever and link assembly | 76-1522 |
| Dial scale, B. C. | 27-5901 |
| Dial scale, S. W. 1 | 27-5901-1 |
| Dial scale, S. W. 2 | 27-5901-2 |
| Dial scale, S. W. 3 | 27-5901-3 |
| Dial channel (3) | 54-4303 |
| Drive drum assembly | 38-9883FA33 |
| Drive shaft | |
| Escutcheon (2) | 56-3237FA21 |
| Knob (4) | 54-4376 |
| Panel-lamp socket | 76-2169 |
| Pointer | 56-2541-1FCP |
| Screw, scale mtg. (2) | 1W-25328FA3 |
| Socket, Loktal | 27-6138* |
| Socket, octal | 27-6174 |
| Socket, phono | |
| Spring, drive cord (2) | 28-8751FA1 |
| Spring, pointer drive | 28-8953 |
| Speaker cable | 41-3713 |
| Speaker plug (for cable) | 27-4419-2 |
| Window, glass | 54-7158 |

**REVISIONS AND ADDITIONS TO 48-828
SERVICE MANUAL**

| Reference Symbol | Description | Service Part No. |
|-------------------------------|--|-----------------------------|
| Parts List Additions | | |
| R405 | Resistor, parasitic suppressor, 5600 ohms | 66-2568340* |
| Parts List Corrections | | |
| Z300 | Transformer, 1st i-f | 32-3899 |
| Z301 | Transformer, 2nd i-f | 32-3907 |
| C411 | Condenser, trimmer, and padder assembly, 4-section | 31-6411 |
| | Baffle and cloth | 40-6940 |
| | Pointer | 56-2541-1 |
| | Socket, phono | 27-6186 |

PRODUCTION CHANGES

No production changes were made in this model.