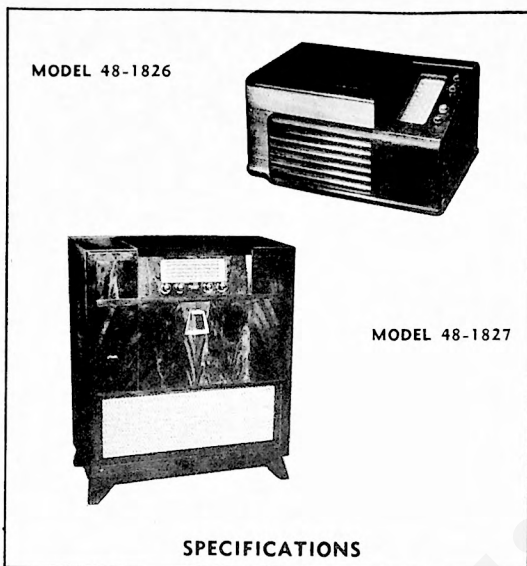


PHILCO-TROPIC RADIO-PHONOGRAPH MODELS 48-1826 AND 48-1827



| | |
|---|--|
| CABINET | |
| Model 48-1826 | Table model, wood, walnut finish |
| Model 48-1827 | Console, wood, walnut finish |
| CIRCUIT | |
| Five-tube superheterodyne | |
| FREQUENCY RANGES | |
| Broadcast (BC) | 540—1600 kc. |
| Short Wave 1 (SW1) | 2.9—6.0 mc. |
| Short Wave 2 (SW2) | 5.9—9.3 mc. |
| Short Wave 3 (SW3) | 9.2—12.0 mc. |
| Short Wave 4 (SW4) | 11.6—22.0 mc. |
| AUDIO OUTPUT | |
| 3.3 watts | |
| OPERATING VOLTAGES | |
| 105—125 volts or 210—250 volts, 50/60 cycles, a.c. only (for line- frequency-conversion informa- tion, see CIRCUIT DESCRIP- TION) | |
| POWER CONSUMPTION | |
| Radio | 47 watts at 115 volts; 60 watts at 230 volts |
| Phonograph | |
| Model 48-1826 | 60 watts at 115 volts; 70 watts at 230 volts |
| Model 48-1827 | 70 watts at 115 volts; 80 watts at 230 volts |
| AERIAL | |
| Philco Outdoor Aerial, Part No. 45-1494 | |
| INTERMEDIATE FREQUENCY | |
| 455 kc. | |
| PHILCO TUBES (5) | |
| 7J7, 7B7, 7B6, 7C5, 7Y4 | |
| PHONOGRAPH | |
| Model 48-1826 | Philco Automatic Record Changer, Model D-10 (for ser- vice information, see manual PR-1522) |
| Model 48-1827 | Philco Automatic Record Changer, Model M-8 (for ser- vice information, see Page 475) |

CALIBRATING DIAL BACKPLATE

With the radio out of the cabinet, dial calibration points should be located by making pencil marks on the backplate, below the pointer. Figure 1 shows the measurements for these points with respect to the extreme edge of the backplate, at the low-frequency end. (Although figure 1 shows the dial scale for Model 48-1826, the calibration measurements are the same for Model 48-1827.)

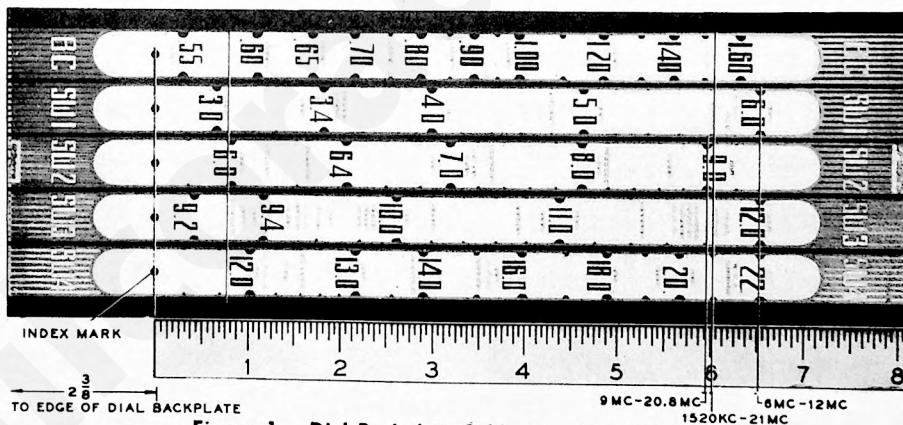


Figure 1. Dial-Backplate Calibration Measurements

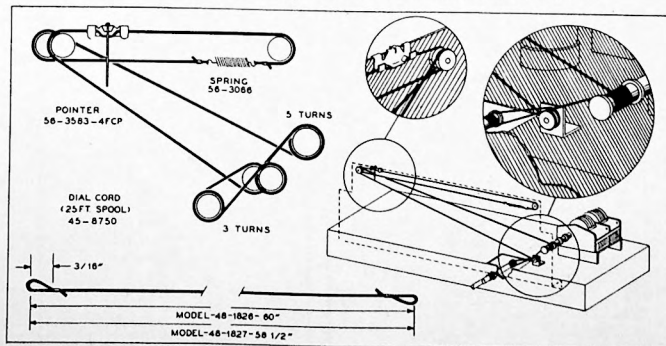


Figure 2. Drive-Cord Installation Details

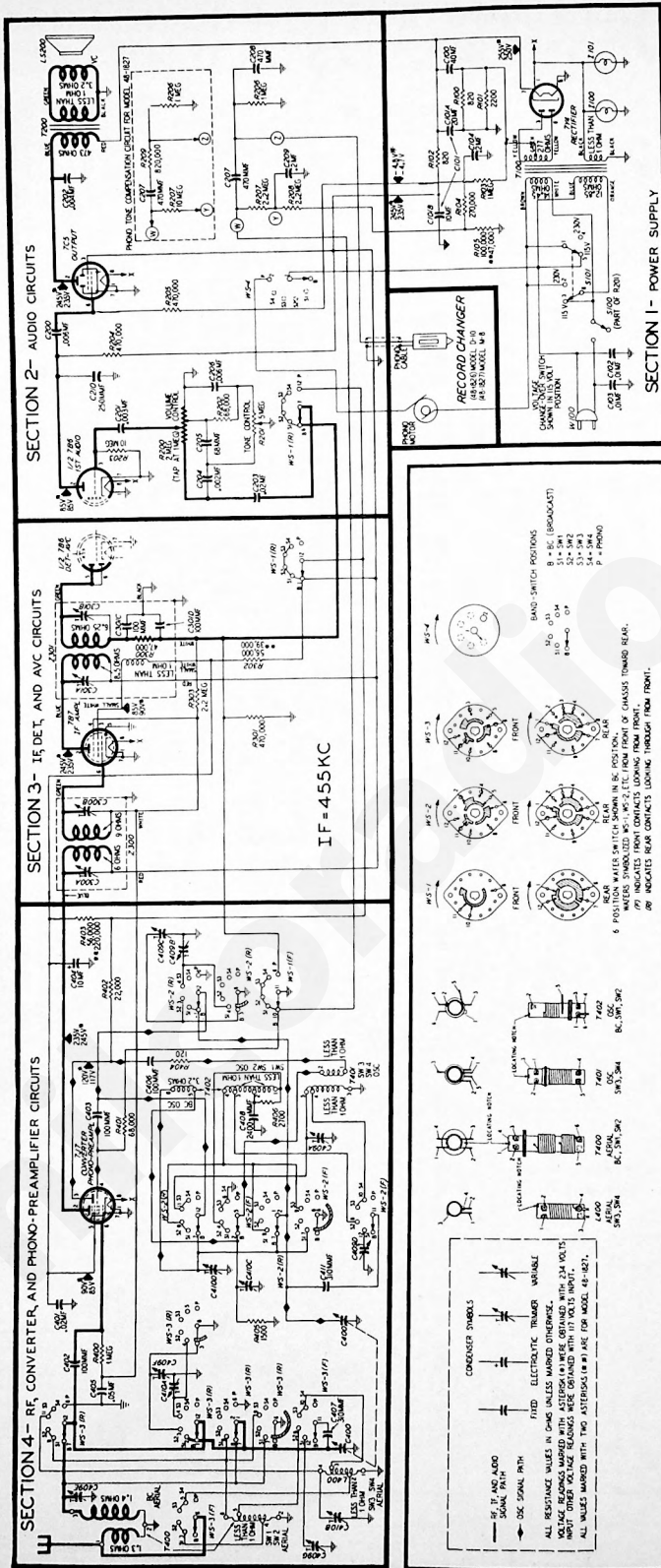


Figure 3. Philco-Tropic Radio-Phonograph Models 48-1826 and 48-1827, Sectionalized Schematic Diagram.

MODELS 48-1826 and 48-1827

ALIGNMENT PROCEDURE

CAUTION: BEFORE TURNING ON THE RADIO, MAKE CERTAIN THAT THE VOLTAGE CHANGE-OVER SWITCH, LOCATED ON THE REAR OF THE CHASSIS, IS CORRECTLY SET FOR THE LINE VOLTAGE.

DIAL POINTER—With tuning gang fully meshed, set pointer to coincide with index mark at low-frequency end of dial, below "55."

OUTPUT METER—Connect to speaker voice-coil terminals.
SIGNAL GENERATOR—Connect ground lead to chassis; connect output lead as indicated in chart. Use modulated output.

RADIO CONTROLS—See volume control to maximum and turn tone control fully clockwise.
OUTPUT LEVEL—During alignment, adjust signal-generator output to maintain output-meter indication below 1.5 volts.

| STEP | SIGNAL GENERATOR | | BAND SWITCH | DIAL SETTING | RADIO | |
|------|---|--------------|-------------|--------------|---|---|
| | CONNECTIONS TO RADIO | DIAL SETTING | | | SPECIAL INSTRUCTIONS | ADJUST |
| 1 | Through 05-mf. capacitor to aerial lead. | 455 kc. | BC | 540 kc. | Adjust in order given for maximum output from speaker. | C101B—2nd I.F. sec. C101A—2nd I.F. pri. C100B—I.F. II sec. C100A—I.F. III pri. |
| 2 | Through 400-ohm resistor to aerial lead. | 21 mc. | SW4 | 21 mc. | Adjust for maximum image shield to be heard when radio is tuned to 20.1 mc. | C409A—SW4 sec. C410B—SW4 aerial |
| 3 | Same as step 2. | 20.8 mc. | SW4 | 20.8 mc. | Adjust for maximum. | C409B—SW3 sec. C410C—SW3 aerial |
| 4 | Same as step 2. | 18 mc. | SW3 | 18 mc. | Adjust for maximum. Image should be heard when radio is tuned to 11.1 mc. | C409C—SW2 sec. C409F—SW2 aerial |
| 5 | Same as step 2. | 12 mc. | SW3 | 12 mc. | Adjust for maximum. | C409D—SW1 sec. |
| 6 | Same as step 2. | 9 mc. | SW2 | 9 mc. | Adjust for maximum. Image should be heard when radio is tuned to 8.1 mc. | C408G—SW1 aerial C410C—BC sec. (airial) |
| 7 | Same as step 2. | 9 mc. | SW2 | 9 mc. | Adjust for maximum. | C410D—BC sec. (hvac) |
| 8 | Same as step 2. | 6 mc. | SW1 | 6 mc. | Adjust for maximum. Image should be heard when radio is tuned to 5.1 mc. | C408F—SW2 aerial C409D—SW1 sec. |
| 9 | Same as step 2. | 6 mc. | SW1 | 6 mc. | Adjust for maximum. | C408G—SW1 aerial C410C—BC sec. (airial) |
| 10 | Through 200-mf. capacitor to aerial lead. | 1520 kc. | BC | 1520 kc. | Loosen trimmer 1/2 turn from tight. Adjust for maximum. | C410D—BC sec. (hvac) |
| 11 | Same as step 11. | 1520 kc. | BC | 1520 kc. | Adjust for maximum. | C409E—BC aerial C410C—BC sec. (airial) |
| 12 | Same as step 11. | 1520 kc. | BC | 1520 kc. | Adjust for maximum. | |
| 13 | Same as step 11. | 1520 kc. | BC | 1520 kc. | Adjust for maximum. | |
| 14 | Repeat steps 11, 12, 13, and 12. | | | | | |

* Back tuning gang while adjusting this trimmer.

REPLACEMENT PARTS LIST

NOTE: Part numbers marked with an asterisk (*) are general replacement items. These numbers may not be identical with those on factory assemblies; also, the electrical values of some replacement items 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

| Reference Symbol | Description | Service Part No. |
|------------------|--|------------------|
| C100 | Condenser, electrolytic filter, .40 mf., 450v. | 45-1300-3* |
| C101 | Condenser, filter, 20 mf., 450v. | 45-1300-1* |
| C101A | Condenser, filter, 20 mf., 450v. | Part of C101 |
| C101B | Condenser, filter, 10 mf., 450v. | Part of C101 |
| C101C | Condenser, line filter, .01 mf. | 34-1084 |

SECTION 1 (Continued)

| Reference Symbol | Description | Service Part No. |
|------------------|---------------------------------|------------------|
| R100 | Condenser, line filter, .01 mf. | 45-1300-3* |
| R101 | Condenser, line filter, .01 mf. | 45-1300-1* |
| R102 | Pilot lamp | 34-1084 |
| R103 | Pilot lamp | 34-1084 |
| R104 | Resistor, filter, 820 ohm | 66-192240* |

SECTION 1 (Continued)

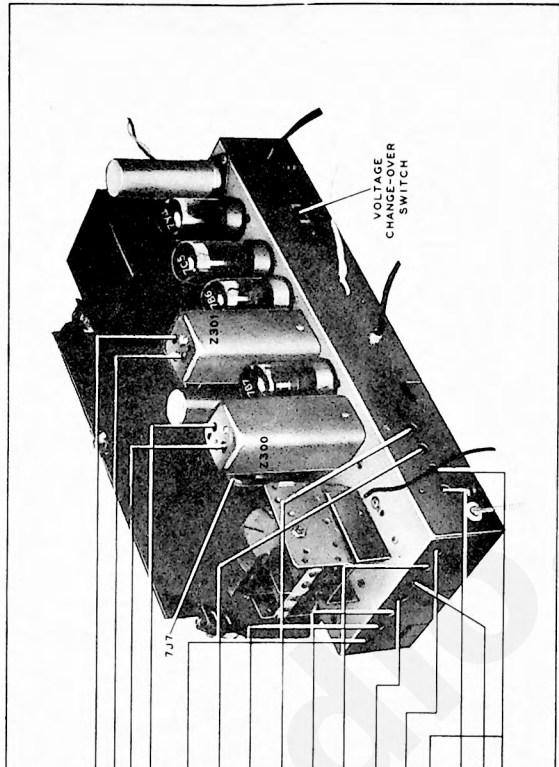
| Reference Symbol | Description | Service Part No. |
|------------------|--|------------------|
| R105 | Resistor, line divider (Model 48-1826) | 66-410340* |
| R106 | Resistor, line divider (Model 48-1827) | 66-410340* |
| R107 | Switch, power on/off | Part of R101 |
| R108 | Transformer, power | 31-9379 |
| R109 | Transformer, power | 31-9379 |
| R110 | Line cord and plug | 13-3393 |

SECTION 2

| Reference Symbol | Description | Service Part No. |
|------------------|--|------------------|
| C200 | Condenser, d-c blocking, .006 mf. | 45-1300-3* |
| C201 | Condenser, d-c blocking, .003 mf. | 45-1300-1* |
| C202 | Condenser, tone compensation, .004 mf. | 81-0119* |
| C203 | Condenser, tone compensation, .003 mf. | 81-0083* |
| C204 | Condenser, tone compensation, .002 mf. | 80-0081409* |
| C205 | Condenser, bass compensation, .006 mf. | 45-1300-3* |
| C206 | Condenser, phone tone compensation, .470 | 45-147001001* |
| C207 | Condenser, phone tone compensation, .470 | 45-147001001* |
| C208 | Condenser, phone tone compensation, .470 | 45-147001001* |

TP-4335

Figure 4. Top View, Showing Trimmer Locations
 REPLACEMENT PARTS LIST (Continued)



REPLACEMENT PARTS LIST (Continued)

SECTION 2 (Continued)

AUDIO CIRCUITS (Continued)

| Reference Symbol | Description | Service Part No. |
|------------------|--|------------------|
| C209 | Condenser, niter, .2 mf. | 45-3500-3* |
| LS200 | Speaker | 36-1613-2 |
| R200 | Volume control, 2 megohms (tap at 1 megohm) | 33-5535-13 |
| R201 | Tone control (with power on-off switch), 5 megohms | 33-5538-19 |
| R202 | Resistor, bass compensation, | |
| R203 | Resistor, grid return, 10 megohms | 66-6103340* |
| R204 | Resistor, plate load, 470,000 ohms | 66-4473340* |
| R205 | Resistor, grid return, 470,000 ohms | 66-4473340* |
| R206 | Resistor, phono tone compensation, 1 megohm | 66-5103340* |
| R207 | Resistor, audio grid return (Model 48-1826), 2.2 megohms | 66-5223340* |
| R207 | Resistor, audio grid return (Model 48-1827), 10 megohms | 66-6101340* |
| R208 | Resistor, filter, 2.2 megohms | 66-5223340* |
| R209 | Resistor, phono tone compensation (Model 48-1827), | |
| T200 | Transformer, output | 32-8330 |
| WS-1(R) | Switch-wafer section | Part of 42-1820† |
| WS-4 | Phono on-off switch | Part of 42-1820† |

SECTION 3

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

| | | |
|---------|--|------------------|
| C300A | Condenser, trimmer | Part of Z300 |
| C300B | Condenser, trimmer | Part of Z300 |
| C301A | Condenser, trimmer | Part of Z301 |
| C301B | Condenser, trimmer | Part of Z301 |
| C301C | Condenser, filter (part of Z301), 100 mmf. | 60-10105407* |
| C301D | Condenser, filter (part of Z301), 100 mmf. | 60-10105407* |
| R300 | Resistor, filter (part of Z301), 47,000 ohms | 66-3473340* |
| R301 | Resistor, diode load, 470,000 ohms | 66-4473340* |
| R302 | Resistor, screen dropping (Model 48-1826), 56,000 ohms | 66-3563340 |
| R302 | Resistor, screen dropping (Model 48-1827), 39,000 ohms | 66-3394340 |
| R303 | Resistor, a-v-c filter, 2.2 megohms | 66-5223340* |
| WS-1(R) | Switch-wafer section | Part of 42-1820† |
| Z300 | Transformer, 1st i-f | 32-3895-1 |
| Z301 | Transformer, 2nd i-f | 32-3908-1 |

SECTION 4

R-F, CONVERTER AND PHONO PREAMPLIFIER CIRCUITS

| | | |
|-------|--|--------------|
| C400 | Condenser, tuning gang | 31-2723 |
| C401 | Condenser, by-pass, .02 mf. | 61-0108* |
| C402 | Condenser, d-c blocking, 100 mmf. | 60-10105407* |
| C403 | Condenser, d-c blocking, 100 mmf. | 60-10105407* |
| C404 | Condenser, filter, 10 mf. | Part of C101 |
| C405 | Condenser, a-v-c filter, .05 mf. | 61-0122* |
| C406 | Condenser, d-c blocking, 100 mmf. | 60-10105407* |
| C407 | Condenser, loading, 310 mmf. | 30-1220-11* |
| C408 | Condenser, loading, 2400 mmf. | 60-20245304* |
| C409 | Condenser, trimmer assembly, 7-section | 31-6414-1 |
| C409A | Condenser, trimmer, SW4 osc. | Part of C409 |
| C409B | Condenser, trimmer, SW3 osc. | Part of C409 |
| C409C | Condenser, trimmer, SW2 osc. | Part of C409 |
| C409D | Condenser, trimmer, SW1 osc. | Part of C409 |
| C409E | Condenser, trimmer, BC aerial | Part of C409 |
| C409F | Condenser, trimmer, SW2 aerial | Part of C409 |
| C409G | Condenser, trimmer, SW1 aerial | Part of C409 |

SECTION 4 (Continued)

R-F, CONVERTER AND PHONO PREAMPLIFIER CIRCUITS (Continued)

| Reference Symbol | Description | Service Part No. |
|------------------|---|------------------|
| C410 | Condenser, trimmer assembly, 4-section | 31-6414-2 |
| C410A | Condenser, trimmer, SW3 aerial | Part of C410 |
| C410B | Condenser, trimmer, SW4 aerial | Part of C410 |
| C410C | Condenser, padder (series), BC osc. | Part of C410 |
| C410D | Condenser, trimmer (shunt), BC osc. | Part of C410 |
| C411 | Condenser, loading, 310 mmf. | 30-1220-11* |
| R400 | Resistor, grid return, 1 megohm | 66-5103340* |
| R401 | Resistor, grid return, 68,000 ohms | 66-3683340* |
| R402 | Resistor, plate shunt feed, | |
| R403 | Resistor, screen dropping (Model 48-1826), 56,000 ohms | 66-3563340* |
| R403 | Resistor, screen dropping (Model 48-1827), 220,000 ohms | 66-4223340 |
| R404 | Resistor, osc. stabilizing, 120 ohms | 66-1123340* |
| R405 | Resistor, osc. stabilizing, 1500 ohms | 66-253340* |
| R406 | Resistor, osc. stabilizing, 2700 ohms | 66-2273340* |
| L400 | Coil, aerial, SW3, SW4 | 32-4195 |
| T400 | Coil assembly, aerial, BC, SW1, SW2 | 32-4197 |
| T401 | Coil assembly, oscillator, SW3, SW4 | 32-4194 |
| T402 | Coil assembly, oscillator, BC, SW1, SW2 | 32-4196 |
| WS-1(F) | Switch-wafer section | Part of 42-1820† |
| WS-2(F) | Switch-wafer section | Part of 42-1820† |
| WS-2(R) | Switch-wafer section | Part of 42-1820† |
| WS-3(F) | Switch-wafer section | Part of 42-1820† |
| WS-3(R) | Switch-wafer section | Part of 42-1820† |

MISCELLANEOUS

| Description | Model | Service Part No. |
|---|-------------|------------------|
| Cabinet | 48-1826 | 10681 |
| Cabinet | 48-1827 | 10695A |
| Baffle, wood | 48-1827 | 219100 |
| Baffle and cloth | 48-1826 | 40-6930 |
| Baffle and cloth | 48-1827 | 40-6961 |
| Bin mechanism, r.h. | 48-1827 | |
| Bin mechanism, l.h. | 48-1827 | |
| Bolt, speaker mtg. | 48-1827 | W1587 |
| Dial scale | 48-1826 | 27-5975 |
| Dial scale | 48-1827 | 27-5995 |
| Rubber band | 48-1826, 27 | 54-4480 |
| Scale strap | 48-1826, 27 | 56-4860 |
| Backplate-and-pulley assembly | 48-1826 | 76-3155 |
| Backplate-and-pulley assembly | 48-1827 | 76-3626 |
| Dome | 48-1827 | 45-6190 |
| Door pull | 48-1827 | 56-4420 |
| Frame assembly, changer mtg. | 48-1827 | 76-3222-1 |
| Hinge (pair) | 48-1827 | 56-4066 |
| Hinge, butt | 48-1826 | 45-6306 |
| Hinge, lid support | 48-1826 | 45-6305 |
| Knob | 48-1826 | 54-4154 |
| Knob | 48-1827 | 54-4541 |
| Spring, bin mechanism | 48-1827 | |
| Clip, coil mtg. | 48-1826, 27 | 28-5002FA1 |
| Cord, drive (25-ft. spool) | 48-1826, 27 | 45-8750 |
| Corner plate | 48-1826 | 56-3103 |
| Drive shaft | 48-1826, 27 | 31-2718-3 |
| Motor, phono, 60-cycle | 48-1826 | 35-1304-2 |
| Motor, phono, 50-cycle | 48-1826 | 35-1304-4 |
| Motor, phono, 50/60 cycle (conversion spring required for 50 cycle) | 48-1827 | 35-1332-2 |
| Pilot-lamp clamp | 48-1827 | 56-3545-5 |
| Pilot-lamp-socket assembly (18") | 48-1826, 27 | 27-6233-4 |
| Pilot-lamp-socket assembly (12") | 48-1826, 27 | 27-6233-8 |
| Plug, a-c | 48-1826, 27 | L3275 |
| Pointer | 48-1826 | 56-3583-4FCP |
| Pointer | 48-1827 | 56-3583-4FCP |
| Socket, Loktal | 48-1826, 27 | 27-6138* |
| Spring, conversion, 50-cycle | 48-1827 | 56-3630 |
| Spring, gang and pointer | 48-1826, 27 | 56-3066 |

† 42-1820—Band switch, 4-section.

REVISIONS AND ADDITIONS TO 48-1826 AND 48-1827 SERVICE MANUAL

| Reference Symbol | Description | Service Part No. |
|-------------------------------|--|------------------|
| Parts List Additions | | |
| C210 | Condenser, plate by-pass, 250 mmf. | 60-10255237* |
| | Shield, pilot lamp | 54-7550 |
| Parts List Corrections | | |
| C101 | Condenser, electrolytic, 2-section | 30-2570-15* |
| C102 | Condenser, line filter, .01 mf. | 30-1226-1 |
| C103 | Condenser, line filter, .01 mf. | 30-1226-1 |
| R102 | Resistor, filter, 820 ohms | 66-1823340 |
| R202 | Resistor, bass compensation, 68,000 ohms | 66-3683340* |
| R209 | Resistor, phono tone compensation (Model 48-1827), 820,000 ohms | 66-4828340* |
| R402 | Resistor, plate shunt feed, 22,000 ohms | 66-3223340* |
| | Bin mechanism, r.h. (Model 48-1827) | 76-3223-6 |
| | Bin mechanism, l.h. (Model 48-1827) | 76-3223-5 |
| | Door pull (Model 48-1827) | 56-5272 |

PRODUCTION CHANGES

Run 2

To suppress parasitic oscillations, a 6800-ohm resistor, Part No. 66-2688340*, was added, in the screen lead of the 7C5 tube.

CRITICAL LEAD DRESS

1. To prevent audio regeneration, the blue plate lead of the 7C5 tube should be dressed down to the chassis, and away from the 7B6 grid coupling condenser, C201.
2. To reduce hum pickup, the white a-c leads from the voltage change-over switch, the phono motor cable, and the a-c phono switch should be dressed under the hold-down lugs provided, and down to the corner of the chassis.
3. To reduce circuit capacitance, for proper alignment, the leads from C409E (BC aerial trimmer) and C409G (SW1 aerial trimmer) should be dressed upward from the chassis and away from other metal parts.