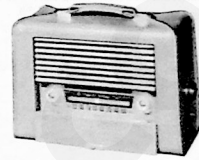


PHILCO RADIO

MODELS 53-656 AND 53-658



MODEL 53-656



MODEL 53-658

SPECIFICATIONS

CABINET

53-656 Molded plastic
 53-658 Covered, wooden

CIRCUIT Five-tube superheterodyne
 (plus selenium rectifier)

FREQUENCY RANGES

Standard broadcast 550—1600 kc.
 Special services 1700—3400 kc.

AUDIO OUTPUT 160 milliwatts

OPERATING VOLTAGES 117 volts, a.c. or d.c.; or 9-volt
 "A" battery and 90-volt "B" battery

POWER CONSUMPTION

A-c or d-c operation 15 watts
 Battery operation 55 ma. at 9 volts, and 15 ma.
 at 90 volts

AERIAL Magnecor high-impedance loop; provision for
 connecting external aerial

INTERMEDIATE FREQUENCY 265 kc.

PHILCO TUBES 1T4 r-f amplifier, 1R5 converter, 1U4 i-f
 amplifier, 1U5 det.—a.v.c.—1st audio 3V4 output

BATTERY TYPE Philco P-274

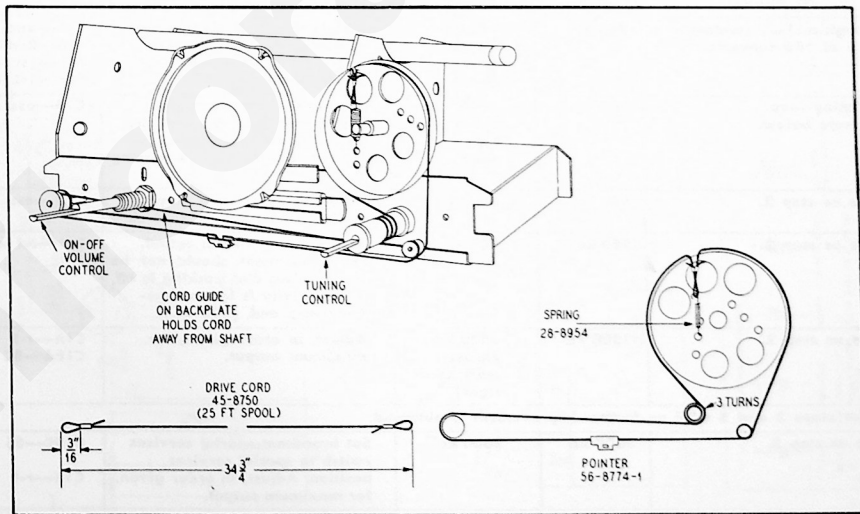


Figure 1. Drive-Cord Installation Details

TP2-1392

ALIGNMENT PROCEDURE

POINTER—Set pointer to coincide with first index mark from left side of dial backplate (looking at front of dial backplate).

RADIO CONTROLS—Set volume control to maximum; set broadcast-special services switch, SW1, as indicated in chart.

OUTPUT METER—Connect across voice-coil terminals.

SIGNAL GENERATOR—Use modulated output.

OUTPUT LEVEL—During alignment, adjust signal-

generator output to maintain output-meter indication below .5 volt.

CRITICAL LEAD DRESS—To secure proper padding capacity, the green lead from pin 6 of the 1R5 tube to Z1 must be dressed over the wiring panel, away from the chassis. The white lead which connects the low end of the aerial (LA1) to the broadcast-special services switch (SW1), must be dressed taut between the low-end tie lug and the retaining spring.

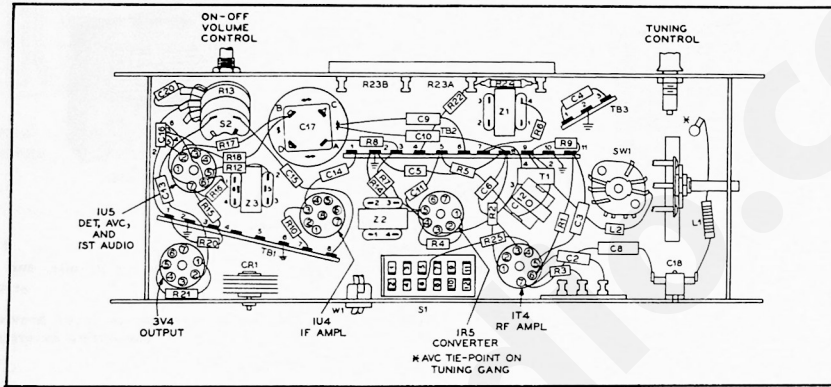


Figure 2. Top View, Showing Trimmer Locations

TP2-1393

| STEP | SIGNAL GENERATOR | | RADIO | | ADJUST TRIMMER |
|------|--|--------------|--------------------------------|--|--|
| | CONNECTION TO RADIO | DIAL SETTING | DIAL SETTING | SPECIAL INSTRUCTIONS | |
| 1 | Through a .1- μ f. condenser to pin 6 of 1R5 converter. | 265 kc. | 1630 kc. (gang fully open) | Set broadcast-special services switch to broadcast position. Adjust, in order given, for maximum output. | TC5—2nd i-f sec. TC4—2nd i-f pri. TC2—1st i-f pri. TC3—1st i-f sec. |
| 2 | Radiating loop. See note below. | 1630 kc. | *1630 kc. (gang fully open) | Adjust for maximum output. If low-frequency dial tracking is far off, make adjustments in steps 3 and 4 before making this adjustment. | C18—osc. shunt |
| 3 | Same as step 2. | 580 kc. | 580 kc. | Adjust for maximum output while rocking tuning control. | C12—osc. series |
| 4 | Same as step 2. | 580 kc. | 580 kc. | Adjust for maximum output. This adjustment should not be made unless dial tracking is off, or sensitivity is low at low-frequency end (580 kc.). | TC1—r-f sec. |
| 5 | Same as step 2. | 1500 kc. | 1500 kc. (Index mark at right) | Adjust, in order given, for maximum output. | C1A—r-f C19A—BC aerial |
| 6 | Repeat steps 3 and 5 until no further improvement is obtained. | | | | |
| 7 | Same as step 2. | 3000 kc. | 3000 kc. | Set broadcast-special services switch to special services position. Adjust, in order given, for maximum output. | C19C—SS aerial C18—r-f |
| 8 | Same as step 2. | 1900 kc. | 1900 kc. | Adjust, in order given, for maximum output. | C19B—SS aerial series tracker |
| 9 | Repeat steps 7 and 8, and then repeat step 5. | | | | |

NOTE: Make up a six-to-eight-turn, 6-inch diameter loop using insulated wire; connect to signal-generator leads and place near radio loop.

*For proper adjustment of the oscillator trimmer, fully open the tuning gang and insert a .006-inch, non-metallic shim between the heel of the rotor and the top of the stator plates. Close the tuning gang sufficiently to hold the shim in place, and then remove the shim without disturbing the gang setting.

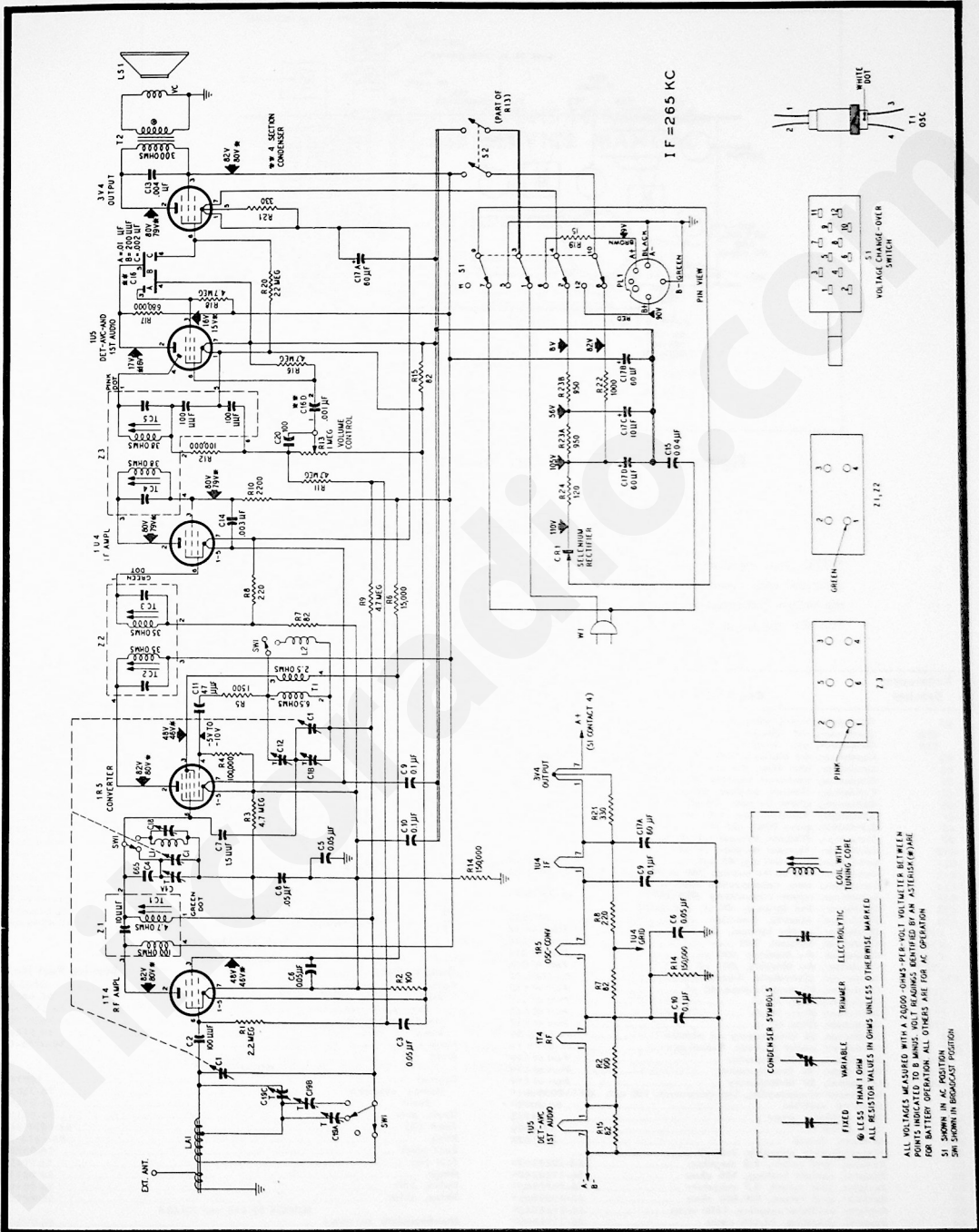


Figure 3. Philco Radio Models 53-656 and 53-658, Schematic Diagram

TP2-1395

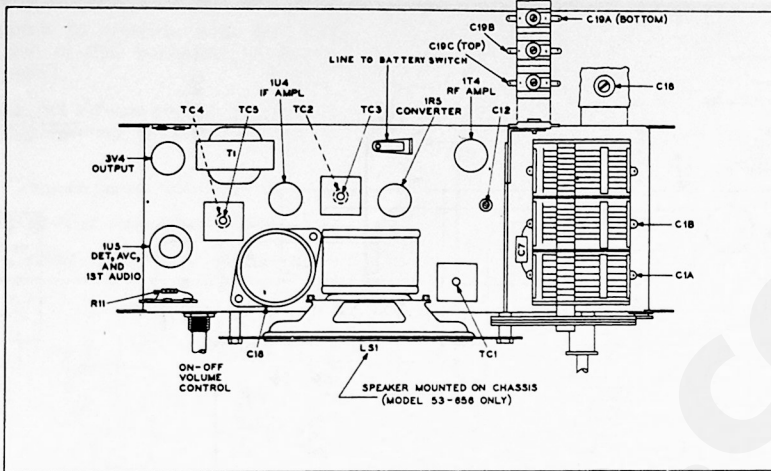


Figure 4. Bottom View, Showing Symbolized Chassis

TP2-1394

REPLACEMENT PARTS LIST

NOTE: Part numbers identified by an asterisk (*) are general replacement items. These numbers may not be identical with those on factory parts. Also, the electrical values of some replacement items 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 will be unchanged. When ordering replacements, use only the "Service Part No."

| Reference Symbol | Description | Service Part No. |
|------------------|--|------------------|
| C1 | Condenser, tuning gang, 3-section | 31-2748-5 |
| C1A | Condenser, r-f trimmer | Part of C1 |
| C1B | Condenser, osc. trimmer | Part of C1 |
| C2 | Condenser, d-c blocking, 100 μf. | 62-110009001* |
| C3 | Condenser, bias filter, .05 μf. | |
| C4 | Condenser, converter tracking, 665 μf. | 30-1220-66 |
| C5 | Condenser, filament by-pass, .05 μf. | |
| C6 | Condenser, screen by-pass, .03 μf. | |
| C7 | Condenser, neutralization, 1.5 μf. | 30-1221-3 |
| C8 | Condenser, a-v-c filter, .05 μf. | |
| C9 | Condenser, filament by-pass, .1 μf. | |
| C10 | Condenser, filament by-pass, .1 μf. | |
| C11 | Condenser, d-c blocking, .47 μf. | 60-00475420 |
| C12 | Condenser, osc. series padder, 700 to 900 μf. | 31-6473-28 |
| C13 | Condenser, tone compensation .004 μf. | |
| C14 | Condenser, screen neutralizing, .003 μf. | 45-3505-61 |
| C15 | Condenser, line by-pass, .04 μf. | |
| C16 | Condenser, ceramic, 4-section | 30-1237 |
| C16A | Condenser, screen by-pass, .01 μf. | Part of C16 |
| C16B | Condenser, by-pass, 200 μf. | Part of C16 |
| C16C | Condenser, d-c blocking, .002 μf. | Part of C16 |
| C16D | Condenser, d-c blocking, .001 μf. | Part of C16 |
| C17 | Condenser, electrolytic, 4-section | 30-2568-58 |
| C17A | Condenser, filament by-pass, 60 μf. | Part of C17 |
| C17B | Condenser, filter, 60 μf. | Part of C17 |
| C17C | Condenser, filter, 10 μf. | Part of C17 |
| C17D | Condenser, filter, 60 μf. | Part of C17 |
| C18 | Condenser, 55 hi-frequency r-f trimmer | 31-6476-27 |
| C19 | Condenser, aerial trimmer, 3-section | 31-6477-16 |
| C19A | Condenser, 55 hi-frequency | Part of C19 |
| C19B | Condenser, 55 low-frequency | Part of C19 |
| C19C | Condenser, 55 hi-frequency | Part of C19 |
| C20 | Condenser, compensating, high-frequency, 100 μf. | 62-110009001* |
| CR1 | Selenium rectifier | 34-8003* |
| L2 | Coil, oscillator shunt | 32-4562 |
| LA1 | Coil, aerial | 32-4565 |
| LS1 | Speaker, 5-inch | 56-1625 |
| PL1 | Plug-and-cable assembly, battery | |
| R1 | Resistor, grid return, 2.2 megohms | 66-5228340* |
| R2 | Resistor, current limiting, 100 ohms | 66-1108340* |
| R3 | Resistor, grid return, 4.7 megohms | 66-5478340* |
| R4 | Resistor, grid return, 100,000 ohms | 66-4108340* |
| R5 | Resistor, oscillator coupling, 1500 ohms | 66-2158340* |
| R6 | Resistor, dropping, 15,000 ohms | 66-3158340* |
| R7 | Resistor, grid return, 82 ohms | 66-0828340* |
| R8 | Resistor, grid return, 220 ohms | 66-1228340* |
| R9 | Resistor, a-v-c filter, 4.7 megohms | 66-5478340* |
| R10 | Resistor, neutralization, 2200 ohms | 66-2228340* |
| R11 | Resistor, grid return, 82 ohms | 66-5478340* |
| R12 | Resistor, i-f filter, 100,000 ohms | 66-4108340* |
| R13 | Resistor, volume control, 1 megohm | |
| R14 | Resistor, leakage, 150,000 ohms | 66-4158340* |
| R15 | Resistor, current limiting, 82 ohms | 66-0828340* |
| R16 | Resistor, grid return, 4.7 megohms | 66-5478340* |

| Reference Symbol | Description | Service Part No. |
|------------------|--|------------------|
| R17 | Resistor, plate load, 680,000 ohms | 66-4688340* |
| R18 | Resistor, screen dropping, 4.7 megohms | 66-5478340* |
| R19 | Resistor, filament, 15 ohms | 66-0153546 |
| R20 | Resistor, grid return, 2.2 megohms | 66-5228340* |
| R21 | Resistor, current limiting, 330 ohms | 66-1238340* |
| R22 | Resistor, filter, 1000 ohms | 66-2108340* |
| R23 | Resistor, wire-wound, 2-section | 33-3431-7 |
| R23A | Resistor, filament dropping, 950 ohms | Part of R23 |
| R23B | Resistor, filament dropping, 950 ohms | Part of R23 |
| R24 | Resistor, wire-wound, current limiting, 120 ohms | 33-1334-14 |
| S1 | Switch, change-over | 42-1899 |
| S2 | Switch, on-off | Part of R13 |
| SW1 | Band switch | 42-1986 |
| T1 | Transformer, oscillator | 32-4263-6 |
| T2 | Transformer, output | 32-8528 |
| W1 | Line cord | L2183 |
| X1 | Transformer, r-f | 32-4399-6A |
| Z1 | Transformer, 1st i-f | 32-4160-2A |
| Z2 | Transformer, 2nd i-f | 32-4240-6A |

MISCELLANEOUS
MODEL 53-656

| Description | Service Part No. |
|---------------------------|------------------|
| Cabinet, light beige | 10833-4 |
| Back | 54-4903 |
| Clip, back (2) | 56-3807-3 |
| Handle assembly | 76-7719 |
| Scale | 54-5148 |
| Knob (2) | 54-4773-1 |
| Knob (1) | |
| MODEL 53-658 | |
| Cabinet | 10919 |
| Handle assembly | 76-7681 |
| Scale | 54-5149 |
| Knob, door | 56-9812 |
| Knob (2) | 54-4527-36 |
| Knob | 54-4816-5 |
| Back catch | 76-2273 |
| Foot (4) | 56-8765 |
| Hinge | 56-9815 |
| Strike, bolt | 56-9811 |
| Strike, catch | 56-9814 |
| MODELS 53-656 and 53-658 | |
| Dial-backplate assembly | 76-7720 |
| Drive cord, 25-ft. spool | 45-8750* |
| Pointer | 56-8774-1 |
| Spring, drive cord | 28-8954 |
| Shaft-and-pulley assembly | 76-7657 |
| Mount, rubber (3) | 27-4596 |
| Spring, retaining | 57-1887A11 |
| Shield, 1U5 tube | 56-5629FA3 |
| Socket (3) | 27-6203 |
| Socket, 1U5 tube (1) | 27-6203-22 |
| Socket, 3V4 tube (1) | 27-6203-12 |

REVISIONS AND ADDITIONS TO MODELS
53-656 AND 53-658 SERVICE MANUAL

PARTS LIST ADDITIONS

| Reference Symbol | Description | Service Part No. |
|------------------|----------------|------------------|
| L1 | Coil, rf shunt | 32-4561 |

MODEL 53-656

| Description | Service Part No. |
|-------------------|------------------|
| Cabinet | |
| Light beige | 10883-7 |
| Pine green | 10883-8 |
| Charcoal gray | 10883-9 |
| Back, cabinet | |
| Light beige | 54-4903-1 |
| Pine green | 54-4903-2 |
| Charcoal gray | 54-4903-3 |
| Knob (2 required) | |
| Light beige | 54-4773-1 |
| Pine green | 54-4773-5 |
| Charcoal gray | 54-4773-6 |
| Knob, function | |
| Light beige | 54-4816-4 |
| Pine green | 78-6206-1 |
| Charcoal gray | 54-4816-6 |

MODEL 53-658

| | |
|--------------------------|------------|
| Cabinet | |
| Tan | 10919-1 |
| Green | 10919-2 |
| Gray | 10919-3 |
| Back, cabinet | |
| Tan | 45-6794-1 |
| Green | 45-6794-2 |
| Gray | 45-6794-3 |
| Knob (2 required) | |
| Any color | 54-4527-36 |
| Knob, assembly, function | |
| Any color | 54-4816-5 |

PARTS LIST CORRECTIONS

| Reference Symbol | Description | Service Part No. |
|------------------|---|------------------|
| C3 | Condenser, bias filter, .047 μ f | 30-4650-45 |
| C5 | Condenser, filament by-pass, .047 μ f | 30-4650-45 |
| C6 | Condenser, screen by-pass, .047 μ f | 30-4650-45 |
| C8 | Condenser, a-v-c filter, .047 μ f | 30-4650-45 |
| C9 | Condenser, filament by-pass, .1 μ f | 30-4650-47 |
| C10 | Condenser, filament by-pass, .1 μ f | 30-4650-47 |
| C15 | Condenser, line by-pass, .047 μ f | 30-4650-45 |
| PL1 | Plug-and-cable assembly, battery | 41-3712-7 |
| R13 | Resistor, volume control, 1 megohm | 33-5566-11 |