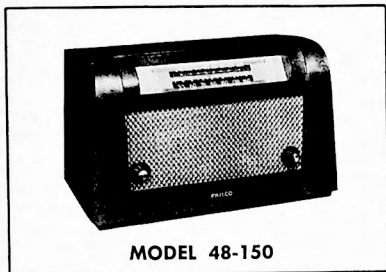


# PHILCO RADIO MODEL 48-150

## SPECIFICATIONS



MODEL 48-150

CABINET ..... Wood  
 CIRCUIT ..... Five-tube superheterodyne  
 FREQUENCY RANGE ..... 540 to 1720 kc.  
 AUDIO OUTPUT ..... 220 mw.  
 POWER INPUT .. Battery pack, Philco Type P-60D-  
 11L; plate supply, 12 ma. at 90  
 volts; filament supply, 300 ma. at  
 1.5 volts; total power consump-  
 tion, 1.4 watts  
 AERIAL ..... External, Philco Part No. 45-1469  
 INTERMEDIATE FREQUENCY ..... 455 kc.  
 PHILCO TUBES (5),  
 1LA6, 1LG5, 1LH4, 1LN5, 3LF4  
 TP-3411A

## 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 assembly

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, detector, and a-v-c circuits.

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

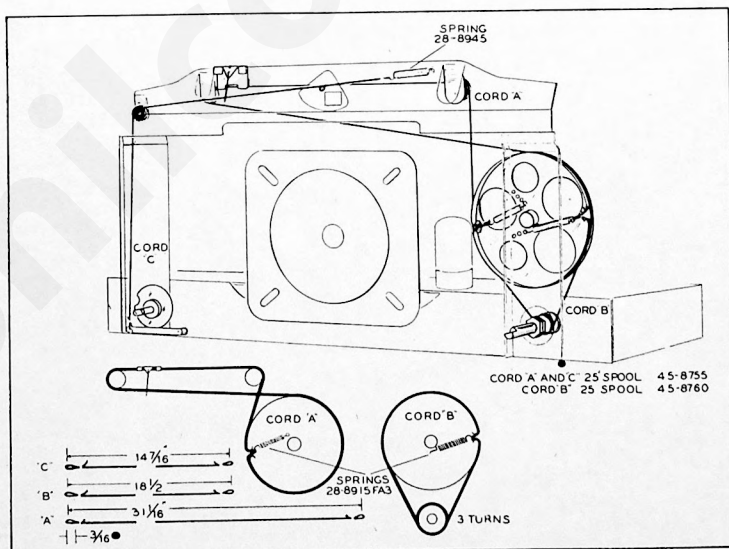


Figure 1. Drive-Cord Installation Details

TP-3320E

# ALIGNMENT PROCEDURE

## TURN ON RADIO AND SET VOLUME CONTROL FULLY ON

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

**OUTPUT LEVEL**—During alignment, adjust signal-generator output to maintain output-meter indication below 1 volt.

STEP	SIGNAL GENERATOR		RADIO		ADJUST
	CONNECTIONS TO RADIO	DIAL SETTING	DIAL SETTING	SPECIAL INSTRUCTIONS	
1	Through .1-mf. condenser to stator of aerial tuning condenser.	455 kc.	Tuning condenser fully meshed.	Turn C300B fully clockwise. Adjust trimmers, in order given, for maximum output.	C301A C300A C300B
2	Through 200-mmf. condenser to aerial lead.	600 kc.	600 kc.	Adjust for maximum output.	C405
3	Same as step 2.	1700 kc.	1700 kc.	Same as step 2.	C401C
4	Same as step 2.	1500 kc.	1500 kc. (approx.)	Tune radio to generator signal and adjust trimmers for maximum output.	C401B C401A
5	Same as step 2.	600 kc.	600 kc. (approx.)	Adjust trimmers for maximum output while rocking tuning control.	C405
6	Repeat steps 3 and 5 until no further increase in output is noted.				

**DIAL**—Alignment points should be marked on the dial backplate as shown in figure 4. Turn tuning gang until fully meshed, and set dial pointer to index mark.

**OUTPUT METER**—Connect meter to voice-coil lugs on loud-speaker. Set meter to 2.5-volt or similar range.

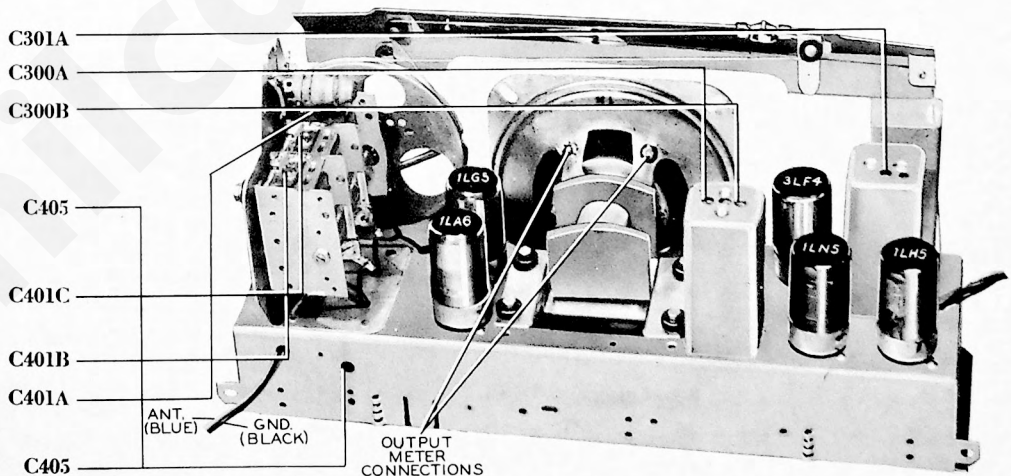
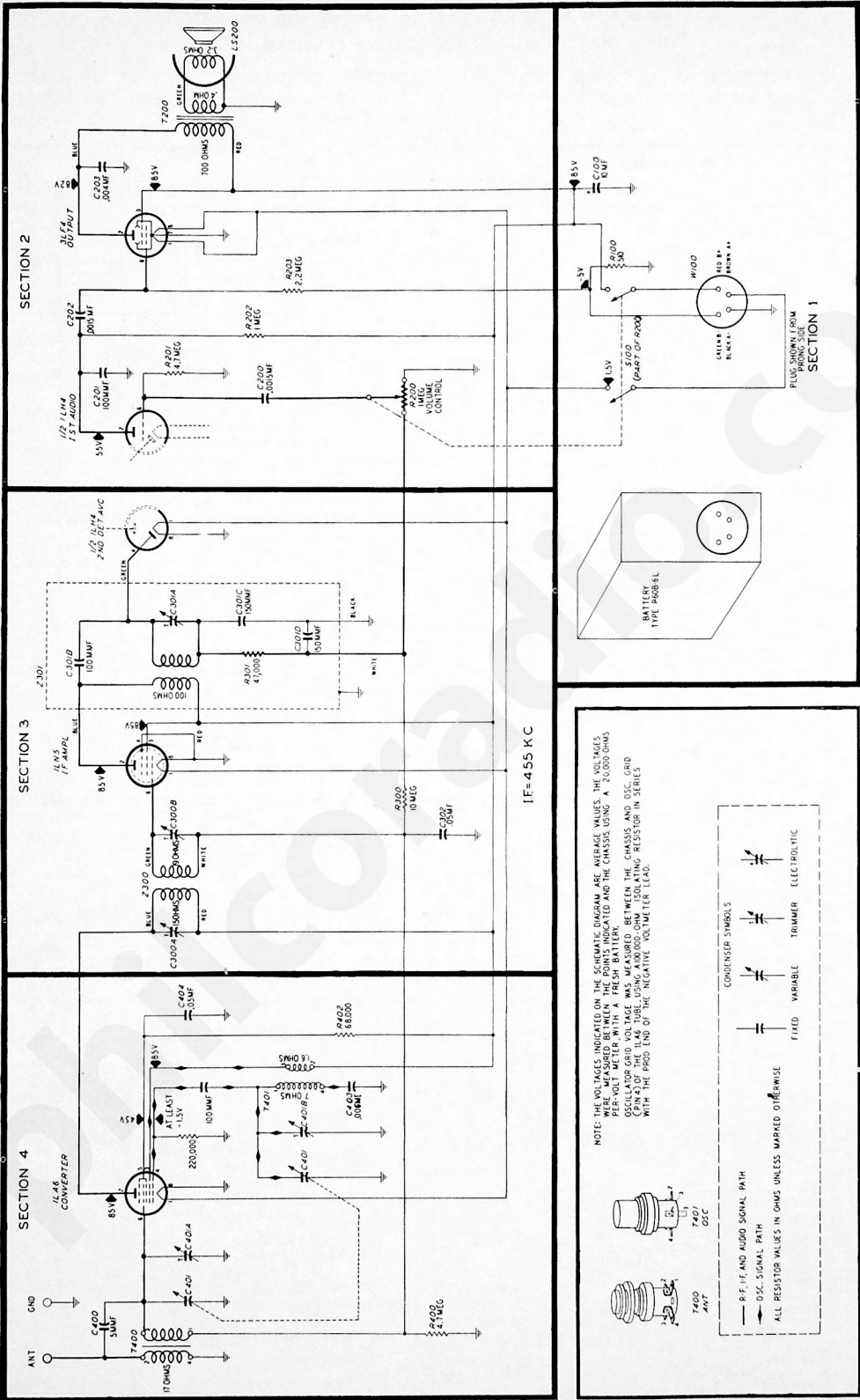


Figure 3. Top View, Showing Trimmer Locations



IF= 455 KC

NOTE: THE VOLTAGES INDICATED ON THE SCHEMATIC DIAGRAM ARE AVERAGE VALUES. THE VOLTAGES WERE MEASURED BETWEEN THE POINTS INDICATED AND THE CHASSIS, USING A 20,000 OHM OSCILLATOR GRID VOLTAGE WAS MEASURED BETWEEN THE CHASSIS AND OSC. GRID (PIN 3) OF THE 6X4 TUBE, USING A 100,000-OHM ISOLATING RESISTOR IN SERIES WITH THE PROD. END OF THE NEGATIVE VOLTMETER LEAD.

CONDENSER SYMBOLS

- FIXED
- VARIABLE
- TRIMMER
- ELECTROLYTIC

RESISTOR SYMBOLS

- ALL RESISTOR VALUES IN OHMS UNLESS MARKED OTHERWISE

FIGURE 2. PHILCO RADIO MODEL 48-150, SECTIONALIZED SCHEMATIC.

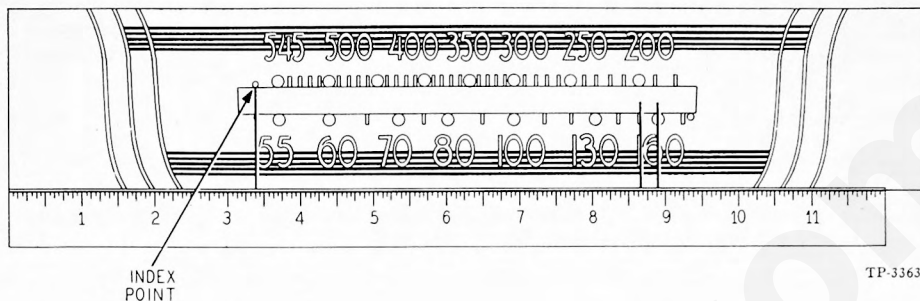


Figure 4. Composite Dial and Backplate, Calibration Details

## REPLACEMENT PARTS LIST

NOTE: Part numbers marked with an asterisk (\*) in the following parts list are general replacement items. These numbers may not be identical with those on factory assemblies; 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 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.
BA100	Battery pack	P-60D-11L
C100	Condenser, electrolytic, 10 mf.	30-2540*
R100	Resistor, bias, 470 ohms	66-1473340*
S100	Power switch	Part of R200
W100	Battery-cable assembly	41-3710

### SECTION 2

C200	Condenser, d-c blocking, .0015 mf.	45-3500-6*
C201	Condenser, r-f by-pass, 100 mmf.	60-10105407*
C202	Condenser, d-c blocking, .0015 mf.	45-3500-6*
C203	Condenser, tone compensation, .004 mf.	61-0179*
LS200	Loud-speaker	36-1507-3
R200	Volume control (with power switch), 1 megohm	33-5554
R201	Resistor, grid return, 1 megohms	66-5473340*
R202	Resistor, plate load, 1 megohm	66-5103340*
R203	Resistor, grid return, 2.2 megohms	66-5223340*
T200	Output transformer.	32-8323

### SECTION 3

C300A	Condenser, trimmer	Part of Z300
C300B	Condenser, trimmer	Part of Z300
C301A	Condenser, trimmer	Part of Z301
C301B	Condenser, i-f filter, 150 mmf.	Part of Z301
C301C	Condenser, i-f filter, 150 mmf.	Part of Z301
C302	Condenser, r-f by-pass, .05 mf.	61-0122*
C303	Condenser, a-v-c filter, .05 mf.	61-0122*
C304	Condenser, coupling, 100 mmf., part of Z301.	60-10105407*
R300	Resistor, grid return, 1 megohm.	66-5103340*
R301	Resistor, a-v-c filter, 10 megohms.	66-6103340*
R302	Resistor, a-v-c filter, 10 megohms.	66-6103340*
R303	Resistor, i-f filter, 47,000 ohms, part of Z301.	66-3473340*
Z300	Transformer, 1st i.f., includes C300A and C300B.	32-3949-1
Z301	Transformer, 2nd i.f., includes C301A, C301B, C301C, C304, and R303.	32-3897-2

### SECTION 4

Reference Symbol	Description	Service Part No.
C400	Condenser, coupling, 4.7 mmf.	30-1221-5*
C401	Condenser, three-section tuning	31-2726
C401A	Condenser, trimmer	Part of C401
C401B	Condenser, trimmer	Part of C401
C401C	Condenser, trimmer	Part of C401
C402	Condenser, a-v-c filter, .05 mf.	61-0122*
C403	Condenser, r-f by-pass, .05 mf.	61-0122*
C404	Condenser, coupling, 10 mmf.	Part of T401
C405	Condenser, oscillator trimmer	31-6473-7
C406	Condenser, oscillator coupling, 100 mmf.	60-10105407*
R400	Resistor, a-v-c filter, 4.7 megohms	66-5473340*
R401	Resistor, grid return, 220,000 ohms	66-4223340*
R402	Resistor, screen dropping, 47,000 ohms	66-3473340*
T400	Transformer, aerial	32-3919-3
T401	Transformer, r-f	32-3974-2
T402	Transformer, oscillator	32-3385-3

### MISCELLANEOUS

Description	Service Part No.
Cabinet, less accessories	
Baffle-and-felt assembly	
Felt foot	W2190
Knob	76-3051
Scale, dial	27-5966
Scale strap	56-4756
Scale plate, flag-and-upright assembly	
Cam plate	56-2700-1FA3
Drive cord, flag and pointer (25-foot spool)	45-8755
Drive cord, tuning gang (25-foot spool)	45-8760
Lever assembly	76-1655-1
Pointer	
Spring, flag and pointer drive	28-8913FA3
Spring, cam drive	
Spring, cam plate	57-0701FA1
Spring, retaining	57-1468FA1
Socket, Loktal	27-6138
Tuning Shaft	31-2484-2

## REVISIONS TO 48-150 SERVICE MANUAL

Description	Service Part No.
<b>Parts List Corrections</b>	
Cabinet .....	10675B
Baffle-and-felt assembly .....	40-6987
Scale plate, flag-and-upright assembly .....	76-3332
Pointer .....	56-2896FCP
Spring, flag drive .....	28-8945FA3

### PRODUCTION CHANGES

No production changes were made in this model.