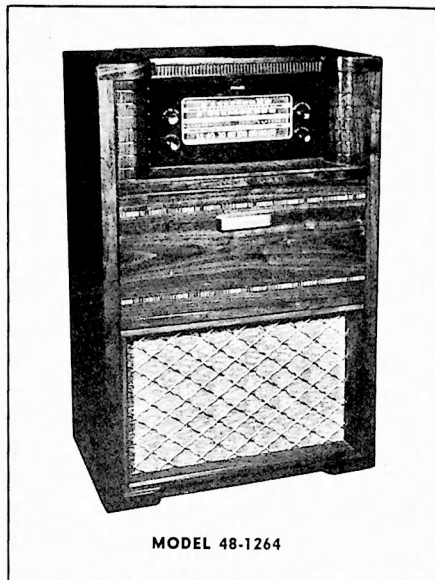


PHILCO RADIO-PHONOGRAPH MODEL 48-1264



SPECIFICATIONS

CABINET	Wood, light mahogany or walnut finish
CIRCUIT	Nine-tube superheterodyne
FREQUENCY RANGES:	
Broadcast	540—1720 kc.
FM	88—108 mc.
AUDIO OUTPUT	6 watts
OPERATING VOLTAGE	105—120 volts, 60 cycles, a.c.
POWER CONSUMPTION	110 watts
AERIALS	Built-in low-impedance loop, and FM dipole; provision for external aerial
INTERMEDIATE FREQUENCIES:	
AM	455 kc.
FM	9.1 mc.
PHONOGRAPH	Philco Automatic Record Changer, Model D-10 (for service information, see manual PR-1522)
SPEAKER	12" electrodynamic
PHILCO TUBES (9)	6AG5, 7F8, 6BA6, 7R7, 7X7, 6J5GT, 6K6GT (2), 5AZ4

CALIBRATING DIAL BACKPLATE

When the radio chassis has been removed from the cabinet, dial calibration and alignment points may be marked on the dial backplate below the pointer.

The measurements for these points are shown in figure 1. Hold a ruler against the scale backplate, with the start of the ruler at the reference line shown, and mark pencil dots at the proper points for the required

frequency settings. When the ruler is correctly placed, the index mark is approximately $1\frac{9}{16}$ " from the edge of the backplate.

With the tuning gang fully meshed, the pointer should be adjusted on the drive cord to coincide with the index mark.

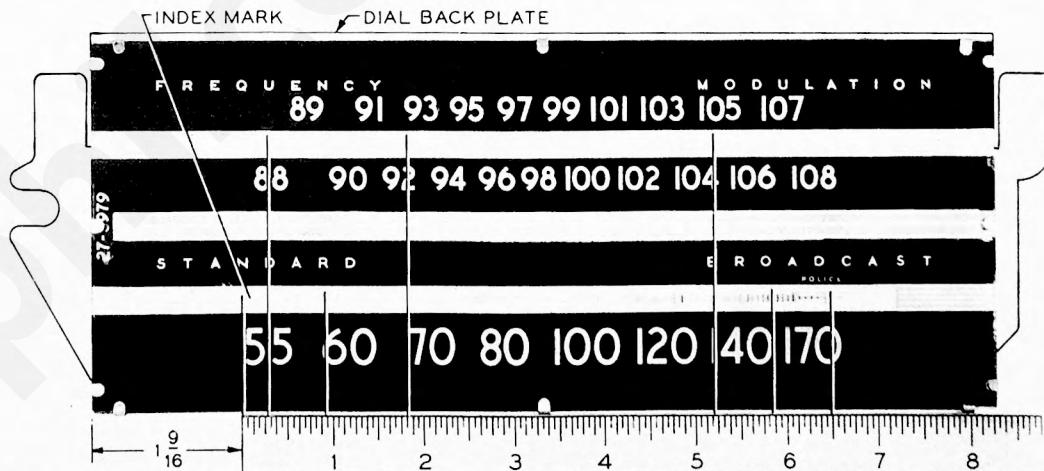


Figure 1. Dial-Backplate Calibration Measurements

TP-3882

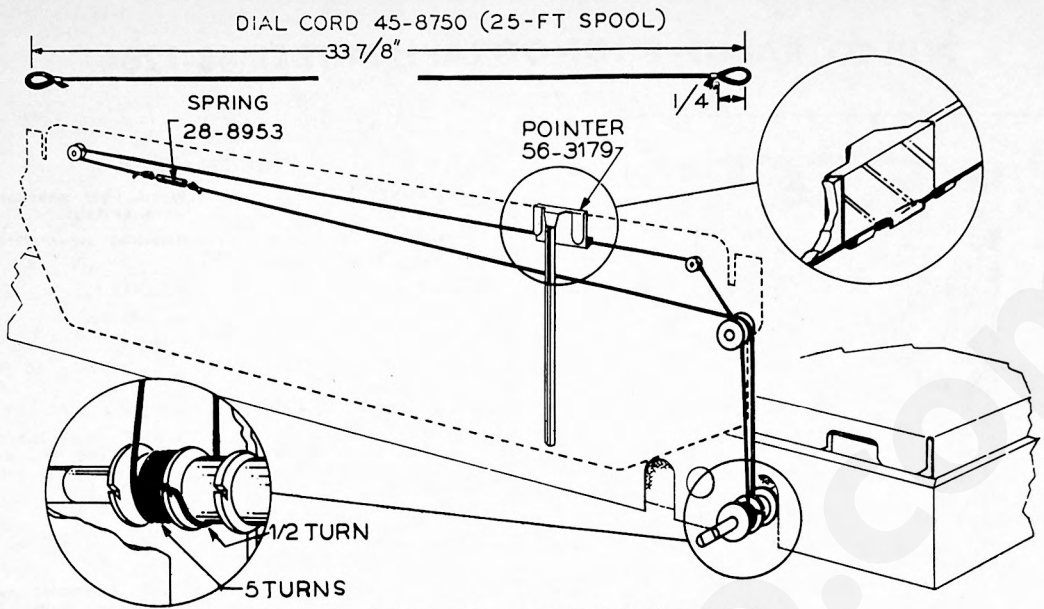


Figure 2. Pointer-Drive-Cord Installation Details

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 may differ from the value 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.
C100	Condenser, line filter, .01 mf.	61-0120*
C101	Condenser, line filter, .01 mf.	61-0120*
C102	Condenser, electrolytic, high-voltage, filter, 20 mf.	30-2555*
C103	Condenser, electrolytic, 2-section	30-2556*
C103A	Condenser, high-voltage filter, 25 mf.	Part of C103
C103B	Condenser, isolating filter, 10 mf.	Part of C103
I100	Lamp, bin	34-2039*
I101	Lamp, panel	34-2064*
I102	Lamp, panel	34-2064*
J100	Socket, a-c phono power.	27-6200
L100	Field, speaker	Part of LS200
R100	Resistor, bias, 165 ohms.	33-3435-1
R101	Resistor, voltage dropping, 15,000 ohms	66-3155340*
S100	Switch, power on-off	Part of R205
S101	Switch, bin lamp	42-1702
S102	Switch, a-c phono power	Part of 42-1803
T100	Transformer, a-c power	32-8248
W100	Line cord and plug	L3339

SECTION 2

Reference Symbol	Description	Service Part No.
C200	Condenser, filament by-pass, 100 mmf.	60-10105407*
C201	Condenser, r-f by-pass, 100 mmf.	60-10105407*
C202	Condenser, r-f by-pass, 100 mmf.	60-10105407*
C203	Condenser, d-c blocking, .006 mf.	45-3500-7*
C204	Condenser, filament by-pass, 100 mmf.	60-10105407*
C205	Condenser, audio by-pass, 100 mmf.	60-10105407*
C206	Condenser, plate by-pass, 100 mmf.	60-10105407*
C207	Condenser, bass compensation, .01 mf.	61-0120*
C208	Condenser, d-c blocking, .006 mf.	45-3500-7*
C209	Condenser, tone compensation, .01 mf.	61-0120*
C210	Condenser, d-c blocking, .006 mf.	45-3500-7*
C211	Condenser, d-c blocking, .006 mf.	45-3500-7*
C212	Condenser, d-c blocking, .006 mf.	45-3500-7*
C213	Condenser, audio by-pass, .1 mf.	61-0113*
C214	Condenser, tone compensation, .003 mf.	61-0117*
C215	Condenser, d-c blocking, .006 mf.	45-3500-7*
J200	Socket, FM test	27-6180
LS200	Speaker	36-1595

SECTION 2 (Cont.)

Reference Symbol	Description	Service Part No.
PL200	Cable-and-plug assembly, phono input.	41-3735-2
R200	Volume control, 2 meg. (tap at 1 meg.)	33-5535-1
R201	Resistor, r-f decoupling, 100,000 ohms	66-4103340*
R202	Resistor, bass compensation, 33,000 ohms	66-3333340
R203	Resistor, phono grid load, 1 megohm.	66-5103340
R204	Resistor, inverse feedback, 4.7 ohms	66-9473340
R205	Tone control, 6 megohms	33-5538-1
R206	Resistor, grid leak, 1st audio, 10 megohms	66-6103340*
R207	Resistor, plate load, 220,000 ohms	66-4223340*
R208	Resistor, grid load, 1 megohm	66-5103340*
R209	Resistor, cathode bias, 4700 ohms	66-2473340*
R210	Resistor, cathode load, 47,000 ohms	66-3473340*
R211	Resistor, inverse feedback, 68 ohms	66-0683340*
R212	Resistor, plate load, 56,000 ohms	66-3563340*
R213	Resistor, filter, 150,000 ohms	66-4153340*
R214	Resistor, grid load, 330,000 ohms	66-4333340*
R215	Resistor, grid load, 330,000 ohms	66-4333340*
T200	Transformer, output	32-8274

SECTION 3

Reference Symbol	Description	Service Part No.
C300A	Condenser, FM trimmer	Part of Z300
C300B	Condenser, AM tuning, 3000 mmf.	Part of Z300
C300C	Condenser, i-f coupling, 6 mmf.	Part of Z300
C300D	Condenser, FM trimmer	Part of Z300
C300E	Condenser, AM trimmer	Part of Z300
C301A	Condenser, FM trimmer	Part of Z301
C301B	Condenser, AM tuning, 300 mmf.	Part of Z301
C301C	Condenser, FM trimmer	Part of Z301
C301D	Condenser, AM tuning	Part of Z301
C302A	Condenser, AM tuning, 470 mmf.	Part of Z302
C302B	Condenser, AM trimmer	Part of Z302
C302C	Condenser, FM coupling, 27 mmf.	Part of Z302
C302D	Condenser, FM trimmer	Part of Z302
C302E	Condenser, FM tuning, 25 mmf.	Part of Z302
C302F	Condenser, FM tuning, 15 mmf.	Part of Z302
C303	Condenser, plate by-pass, .01 mf.	61-0120*
C304	Condenser, a-v-c by-pass, .01 mf.	61-0120*
C305	Condenser, a-v-c by-pass, 100 mmf.	60-10105407*
C306	Condenser, filament by-pass, 100 mmf.	60-10105407*
C307	Condenser, screen by-pass, .01 mf.	61-0120*
C308	Condenser, plate by-pass, 100 mmf.	60-10105407*
C309	Condenser, plate decoupling, .01 mf.	61-0120*
C310	Condenser, plate by-pass, .01 mf.	30-4641.

SECTION 3 (Cont.)

Reference Symbol	Description	Service Part No.
C311	Condenser, plate by-pass, .01 mf.	61-0120*
C312	Condenser, a-v-c by-pass, 250 mmf.	60-10255237*
C313	Not used	
C314	Condenser, a-v-c filter, .01 mf.	61-0120*
C315	Not used	
C316	Condenser, cathode by-pass, .05 mf.	61-0122*
C317	Condenser, filament by-pass, 100 mmf.	60-10105407*
C318	Condenser, d-c blocking, 100 mmf.	60-10105407*
C319	Condenser, screen by-pass, .01 mf.	61-0120*
C320	Condenser, r-f by-pass, 100 mmf.	60-10105407*
C321	Condenser, r-f by-pass, 100 mmf.	60-10105407*
C322	Condenser, plate decoupling, .05 mf.	61-0122*
C323	Condenser, r-f by-pass, 100 mmf.	60-10105407*
C324	Condenser, r-f by-pass, .008 mf.	61-0174*
C325	Condenser, noise suppressor, 5 mf.	30-2417*
C326	Condenser, r-f by-pass, 100 mmf.	60-10105407*
C327	Condenser, coupling, 6 mmf.	30-1224-9
C328	Not used	
R300	Resistor, plate dropping, 47,000 ohms	66-3473340*
R301	Resistor, a-v-c decoupling, 2.2 megohms	66-5223340*
R302	Resistor, plate dropping, 4700 ohms	66-2473340*
R303	Resistor, plate dropping, 33,000 ohms	66-3333340*
R304	Resistor, cathode bias, 68 ohms	66-0683340*
R305	Resistor, screen dropping, 27,000 ohms	66-3273340*
R306	Resistor, plate decoupling, 1000 ohms	66-2103340*
R307	Resistor, grid return, 2.2 megohms	66-5223340*
R308	Resistor, a-v-c filter, 3.3 megohms	66-5333340*
R309	Resistor cathode bias, 150 ohms	66-1153340*
R310	Resistor, a-v-c load, 1 megohm	66-5103340*
R311	Not used	
R312	Resistor, screen dropping, 68,000 ohms	66-3683340*
R313	Resistor, diode load, 330,000 ohms	66-4333340*
R314	Resistor, plate decoupling, 1000 ohms	66-2103340*
R315	Resistor, diode decoupling, 47,000 ohms	66-3473340*
R316	Resistor, noise suppressor, 47,000 ohms	66-3473340*
R317	Resistor, diode decoupling, 100,000 ohms	66-4103340*
R318	Resistor, FM decoupling, 100,000 ohms	66-4103340*
R319	Resistor, FM-detector load, 6.8 megohms	66-5683340*
TC300A	Tuning core, AM tuning	Part of Z300
TC302A	Tuning core, FM tuning	Part of Z302
Z300	Transformer, 1st i-f, including C300A, C300B, C300C, C300D, C300E, and TC300A	32-4146*
Z301	Transformer, 2nd i-f, including C301A, C301B, C301C, and C301D	32-4156*
Z302	Transformer, 3rd i-f, including C302A, C302B, C302C, C302D, C302E, C302F, and TC302A	32-4147*

REPLACEMENT PARTS LIST (Continued)

SECTION 4

Reference Symbol	Description	Service Part No.
C400	Condenser, tuning gang	31-2703-2
C400A	Condenser, FM aerial trimmer	Part of C400
C400B	Condenser, FM r-f trimmer	Part of C400
C400C	Condenser, FM oscillator trimmer	Part of C400
C401	Condenser, 1500-kc. trimmer	31-6473
C402	Condenser, trimmer assembly, 2-section	31-6476-5
C402A	Condenser, shunt trimmer, BC oscillator	Part of C402
C402B	Condenser, series trimmer, BC oscillator	Part of C402
C403	Not used	
C404	Condenser, filament by-pass, 100 mmf.	60-10105407*
C405	Condenser, cathode by-pass, 100 mmf.	60-10105407*
C406	Condenser, screen by-pass, 100 mmf.	60-10105407*
C407	Condenser, d-c blocking, 33 mmf.	60-00305307*
C408	Condenser, plate by-pass, 1500 mmf.	60-20155404*
C409	Condenser, screen by-pass, 1500 mmf.	60-20155404*
C410	Condenser, d-c blocking, 220 mmf.	60-10245307*
C411	Condenser, d-c blocking, 750 mmf.	60-10755301*
C412	Condenser, grid return, 100 mmf.	60-10105407*
C413	Condenser, d-c blocking, 220 mmf.	60-10245307*
C414	Condenser, filament by-pass, 100 mmf.	60-10105407*
J400	Socket, 4-prong, external aerial	27-6214-1
L400	Coil, BC aerial	32-4033-2
L401	Coil, FM aerial	32-4158
L402	Choke, plate	32-4061
L403	Coil, FM r-f	32-4159
L404	Coil, BC oscillator	32-4019-4
L405	Coil, FM oscillator	32-4018-2
L406	Choke, parasitic suppressor, including R408	32-4157
LA400	Loop assembly, broadcast	76-2262-1
R400	Resistor, parasitic suppressor, 10 ohms	66-0103340*
R401	Resistor, cathode bias, 150 ohms	
R402	Resistor, screen dropping, 47,000 ohms	66-3473340*
R403	Resistor, plate decoupling, 1000 ohms	66-2103340*
R404	Resistor, grid return, 2.2 megohms	66-5223340*
R405	Resistor, cathode bias, 1500 ohms	66-2153340*
R406	Resistor, grid leak, 15,000 ohms	66-3153340*
R407	Resistor, grid return, 470,000 ohms	66-4473340*

SECTION 4 (Cont.)

Reference Symbol	Description	Service Part No.
R408	Resistor, parasitic suppressor, 1500 ohms	Part of L406
TB400	Aerial terminal panel	38-9942
WS	Wafer switch	42-1803
WS1	1st section, wafer switch	Part of WS
WS2	2nd section, wafer switch	Part of WS
WS3	3rd section, wafer switch	Part of WS
WS4	4th section, wafer switch	Part of WS

MISCELLANEOUS

Description	Service Part No.
Bin Hardware	
Cable-socket-and-switch assembly, bin light	76-2728-5
Door, bin, changer 48-1264W	45-6396
Door, bin, changer 48-1264L	45-6397
Cabinet and Cabinet Hardware	
Baffle and cloth	40-6932
Baffle, wood	219087
Bezel, metal	56-4878
Cabinet, walnut, less scale	10683
Cabinet, light mahogany, less scale	10683A
Frame assembly	76-3222
Grille, wire	56-4985
Loop assembly, FM cabinet dipole	76-2029-10
Scale, dial	76-3187-1
Strap, dial-scale mounting	56-4916
Cable, shielded	41-3754-11
Cable, speaker	41-3734-7
Dial Backplate and Associated Hardware	
Backplate and pulley assembly	76-2005-3
Cord, pointer drive (25-ft. spool)	45-8750*
Pointer	56-3179
Spring, pointer-drive-cord	28-8953
Knob	54-4486
Lamp-socket assembly, pilot	76-2109
Plug, speaker	27-4419-2
Record-Changer Mounting Hardware	
Bolt	56-3295-1FA15
Grommet	54-4313
Nut	1W56643FA3
Palnut	1W29061FA3
Spring	56-3043-FA15
Socket, loktal (7F8 only)	27-6213
Socket, loktal	27-6138*
Socket, miniature (6AG5)	27-6203-1
Socket, miniature (6BA6)	27-6226

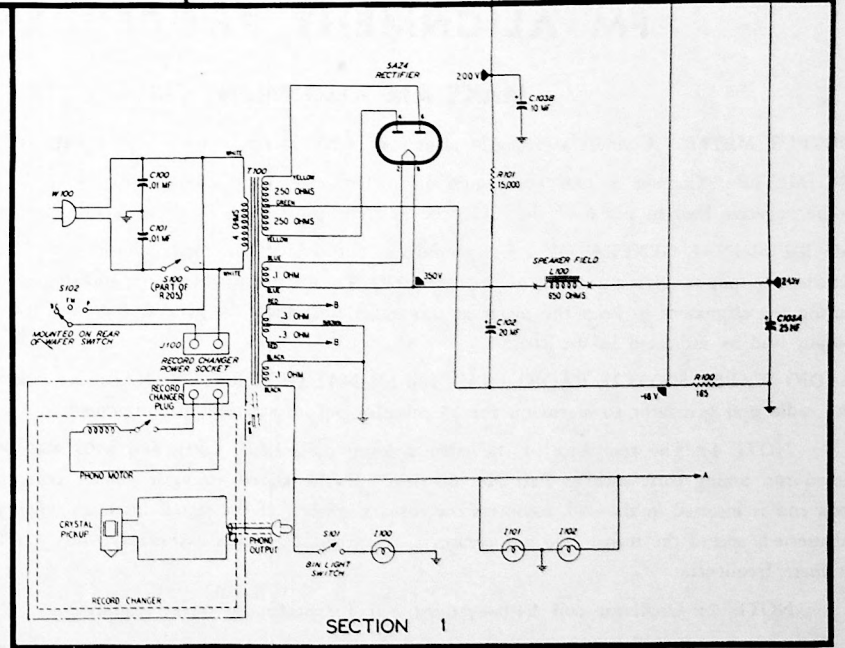
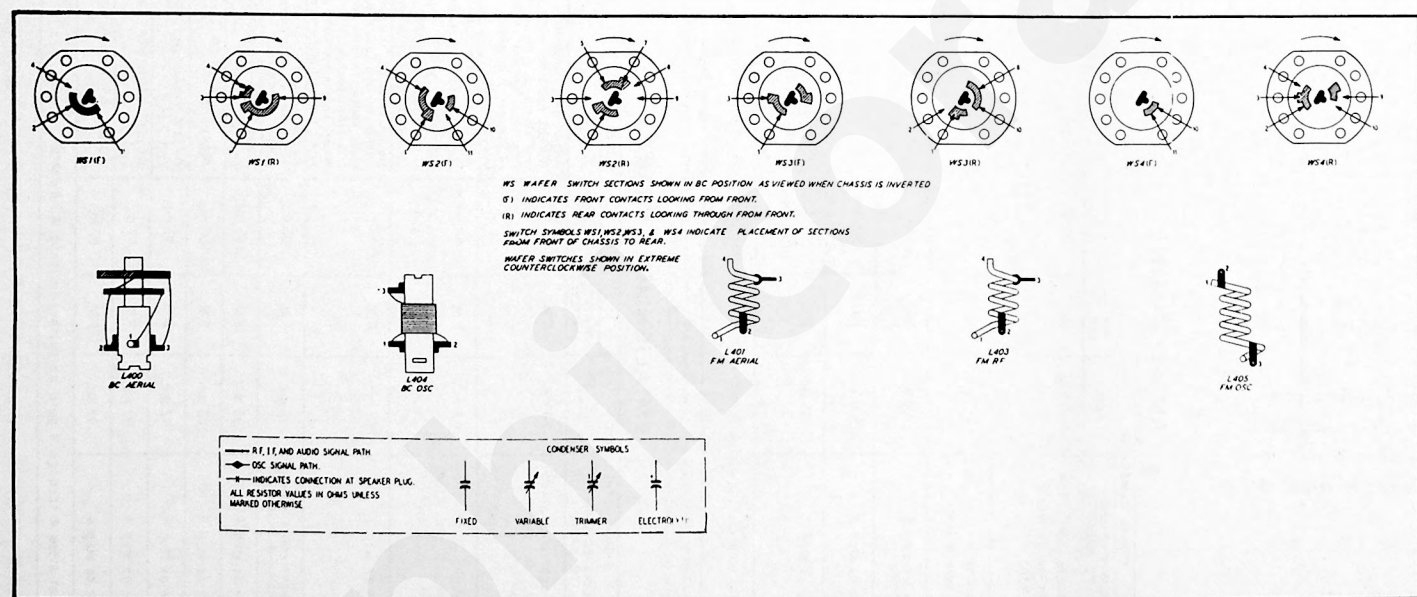
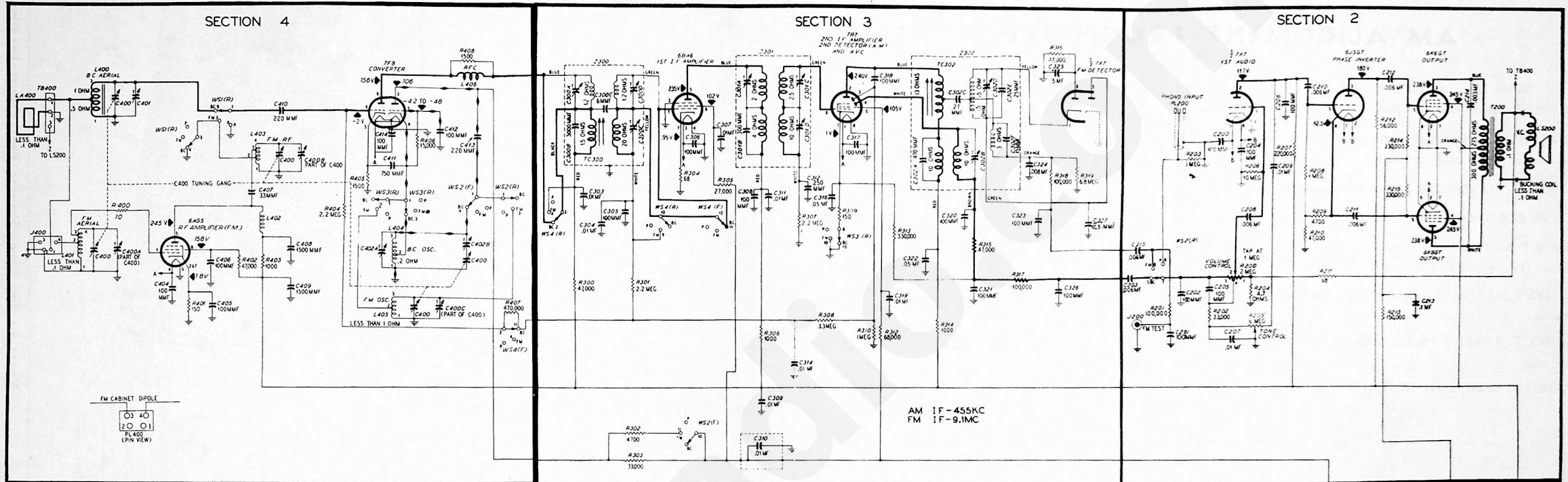


Figure 3 Philco Radio-Phonograph Model 48-1264, Sectionalized Schematic Diagram,

AM ALIGNMENT PROCEDURE

When the complete AM and FM alignments are to be made, the AM alignment should be made first; if FM alignment is not required, the AM alignment alone may be made.

DIAL POINTER: With tuning-condenser plates fully meshed, adjust pointer to coincide with index mark at low-frequency end of scale. See "CALIBRATING DIAL BACKPLATE."

VOLUME CONTROL: Set to maximum.

TONE CONTROL: Set to maximum counterclockwise, near the "off" position.

AM R-F SIGNAL GENERATOR: Connect ground lead to radio chassis, and output lead as indicated in chart. Use modulated output.

OUTPUT METER: Connect between terminal 3 (voice-coil connection) of aerial terminal panel (TB400) and chassis.

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

RADIO WAFER SWITCH, RADIO DIAL, and SIGNAL-GENERATOR DIAL: Set as indicated in chart.

FM ALIGNMENT PROCEDURE

MAKE AM ALIGNMENT FIRST

OUTPUT METER: Connect as for AM alignment (this meter is used only in step 3).

D-C METER: Connect a 20,000-ohms-per-volt meter across the 5-mf. condenser, C325, in the FM detector circuit—the negative lead to pin 6 of the 7X7 tube and the positive lead to the chassis. Use the 10-volt meter range.

AM R-F SIGNAL GENERATOR: Use modulated output for the entire alignment. The generator must have sufficient output to give a reading of approximately 9 volts on the d-c meter, and the signal should be attenuated during the alignment to keep the meter at this value. Connect the generator ground lead to the chassis, and the output lead as indicated in the chart.

RADIO WAFER SWITCH, RADIO DIAL, and SIGNAL-GENERATOR DIAL: Set as indicated in chart. Allow the radio and generator to warm up for 15 minutes before starting the alignment.

NOTE 1: The resonance of the circuits using coils L401, L403, and L405 may be checked with a powdered-iron tuning core, such as Part No. 56-6100. If the signal strength (meter reading) increases when the iron end is inserted in the coil, compress the turns slightly. If the signal increases when the threaded brass end is inserted, spread the turns. Do not compress or spread the turns excessively; only a small change is required at these frequencies.

NOTE 2: Oscillator coil L405—Adjust coil for maximum meter reading.

NOTE 3: R-F coil L403—Adjust coil for maximum meter reading while rocking tuning control.

NOTE 4: Aerial coil L401—Adjust coil for maximum meter reading.

AM ALIGNMENT CHART

STEP	SIGNAL GENERATOR CONNECTIONS TO RADIO	DIAL	WAFER SWITCH	DIAL	SPECIAL INSTRUCTIONS	ADJUST
1	Through .1-mf. condenser to terminal 1 of TB400.	455 kc.	BC	540 kc.	Adjust for maximum, once only, in order.	C302B C301D C300E TC300A
2	Radiating loop (see note below).	580 kc.	BC	580 kc.	Adjust for maximum.	C402B
3	Same as step 2.	1700 kc.	BC	1700 kc.	Adjust for maximum.	C402A
4	Same as step 2.	1500 kc.	BC	1500 kc.	Adjust for maximum.	C401
5	Same as step 2.	580 kc.	BC	580 kc. (approx.)	Rock tuning condenser while adjusting for maximum.	C402B
6	Repeat steps 3, 4, 5, and 4, in order, until no further improvement is obtained.					

RADIATING LOOP: Make up a coil of insulated wire, consisting of 6 to 8 turns, about 6 in. diameter. Connect coil end to signal-generator leads, and suspend coil near radio broadcast loop.

MODEL 48-1264

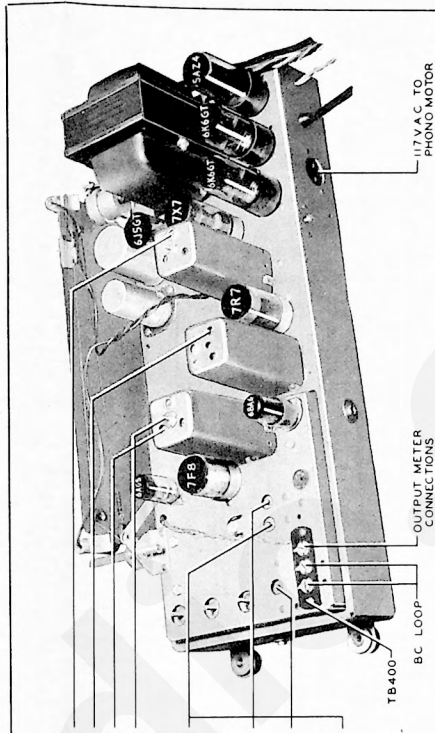


Figure 4. Top View, Showing AM Trimmer Locations

FM ALIGNMENT CHART

STEP	SIGNAL GENERATOR CONNECTIONS TO RADIO	DIAL	WAFER SWITCH	DIAL	SPECIAL INSTRUCTIONS	ADJUST
1	Through .1-mf. condenser to pin 1 of 6BA6	9.1 mc.	FM	88 mc.	Adjust for maximum. Repeat until further improvement is noticed. After this step, do not touch any of these trimmers, except C302D (step 3).	C302D TC302 C301C C301A
2	Through .1-mf. condenser to pin 8 of 7F8	9.1 mc.	FM	88 mc.	Adjust for maximum. Repeat until no further improvement is noticed. After this step, do not touch either of these trimmers.	C300D C300A
3	Same as step 2.	9.1 mc.	FM	88 mc.	Double-check the adjustment of C300D and C300A. Maximum audio output is obtained from the speaker. Use output meter. This is a critical adjustment; turn trimmer very slowly.	C400C
4	Connect signal generator to terminal 4 of J400.	105 mc.	FM	105 mc.	Maximum meter reading. This is the oscillator high-frequency padder adjustment.	C400B
5	Same as step 4.	105 mc.	FM	105 mc.	Maximum — Rock tuning control.	C400A
6	Same as step 4.	105 mc.	FM	105 mc.	Maximum.	
7	Same as step 4.	92 mc.	FM	92 mc.	Adjust L405. See notes 1 and 2.	
8	Same as step 4.	92 mc.	FM	92 mc.	Adjust L403. See notes 1 and 3.	
9	Same as step 4.	92 mc.	FM	92 mc.	Adjust L401. See notes 1 and 4.	
10	Repeat steps 4 through 9 until no further increase is obtained.					

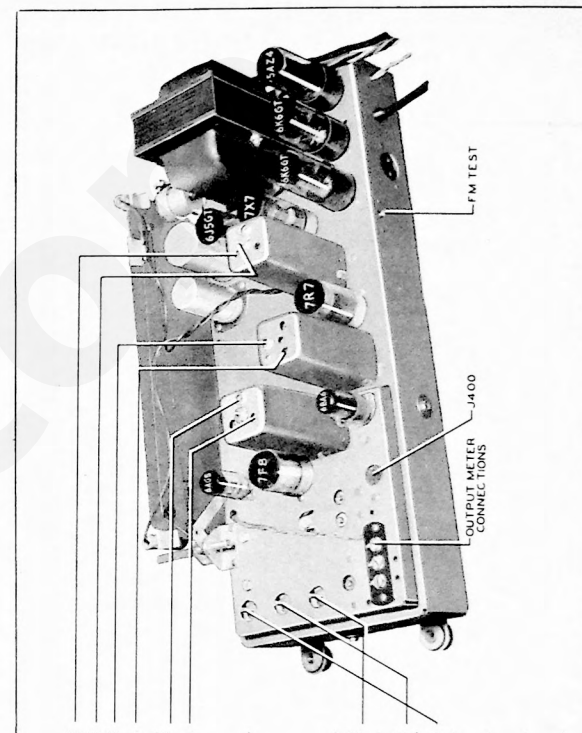


Figure 5. Top View, Showing FM Trimmer Locations

REVISIONS AND ADDITIONS TO 48-1264 SERVICE MANUAL

Reference Symbol	Description	Service Part No.
Parts List Additions		
	Door pull	56-4873
	Bin mechanism, l. h.	76-3223-5
	Bin mechanism, r. h.	76-3223-6
Parts List Corrections		
C327	Condenser, coupling, 7.5 mmf.	30-1224-8
R401	Resistor, cathode bias, 150 ohms	66-1153340*

PRODUCTION CHANGES

Code 121, Run 1

Some Run 1 sets were changed to incorporate the Philco low-noise crystal pickup and the accompanying resistor value, as given under Run 2, below. These sets are identified by the marking "Run #1 "

Code 121, Run 2

The crystal was changed to a Philco low-noise crystal pickup, Part No. 35-2671-1. The crystal load resistor, R203, was changed to 820,000 ohms, Part No. 66-4828340*.

Code 122, Run 1

The r-f amplifier tube was changed to a 6AU6. The pin connections are the same, with the exception that the cathode (pin 7) and the suppressor grid (pin 2) are separate. The suppressor is connected to ground through pin 3.

C202	Condenser, r-f by-pass, 100 mmf., was removed.	
C216	Condenser, coupling, .006 mf., was added	45-3500-7*
C325	Condenser, noise suppressor, 2 mf., 50v	30-2417-7
R401	Resistor, cathode bias, 82 ohms	66-0828340*
R402	Resistor, screen dropping, 33,000 ohms	66-3338340*