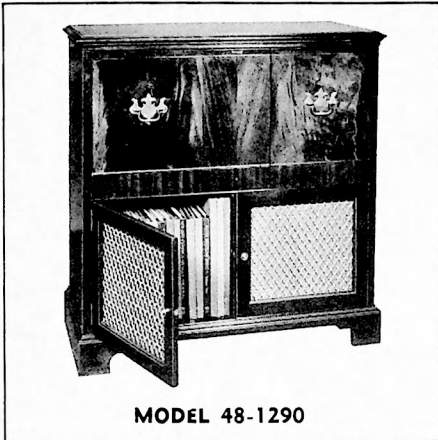


PHILCO RADIO-PHONOGRAPH MODEL 48-1290



MODEL 48-1290

SPECIFICATIONS

CABINET Wood, mahogany finish
 CIRCUIT 13-tube superheterodyne

FREQUENCY RANGES

Broadcast 540—1720 kc.
 Short wave 9.3—15.5 mc.
 FM 88—108 mc.

AUDIO OUTPUT 10 watts

PUSH BUTTONS Ten: One for OFF, five for broadcast-station selection, three for band selection, and one for phonograph operation

OPERATING VOLTAGE 105—120 volts, 60 cycles, a.c.

POWER CONSUMPTION. Radio: 110 watts
 Phonograph: 140 watts

AERIALS Built-in loop and a-c line (FM) aerial; external aerial also may be used

INTERMEDIATE FREQUENCIES

AM 455 kc.
 FM 9.1 mc.

PHILCO TUBES (13) .. 6AU6, 7F8, 6BA6(2), 7A7, FM1000, 7AF7, 6SQ7GT, 6V6GT(2), 7F7, 7E7, 5U4G

PHONOGRAPH Philco Automatic Record Changer, Model D-10A (for service information, refer to service manual PR-1522)

TP-4530

SETTING PUSH BUTTONS

1. Connect the output meter between the No. 3 terminal of the aerial terminal panel and the chassis.
2. Turn the volume control to maximum, and bass and treble controls fully counterclockwise.
3. Couple the signal generator loosely to the loop aerial (see Note under "AM ALIGNMENT CHART").
4. Turn on the power, and allow the radio to warm up for 15 minutes before starting the adjustments.
5. Starting with the lowest frequency desired, set the signal generator to the desired frequency (modulation on), push the station-selector push button, and adjust the associated oscillator tuning core and aerial trimmer condenser (marked on rear of chassis) for maximum indication on the output meter.
6. Reset the signal-generator frequency, and repeat the procedure for each remaining station-selector push button.
7. Turn off the signal generator, and make a final adjustment of all tuning cores and trimmer condensers while listening to the stations for which the adjustments are being made.

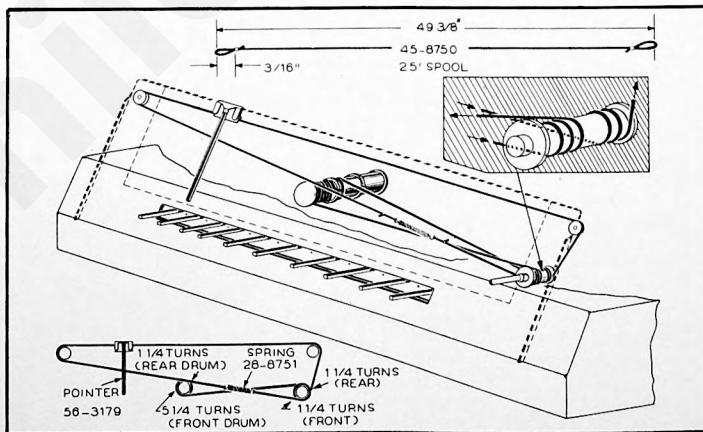


Figure 1. Drive-Cord Installation Details

TP-1645

CABLBRATING DIAL BACKPLATE

When the radio chassis has been removed from the cabinet, dial calibration and alignment points may be marked, with a pencil, on the dial backplate at the end of the pointer.

The method of measuring for these points is illustrated in figure 2. Hold a rule against the dial backplate, with the start of the rule against the inside of the upturned edge of the backplate.

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

SYMBOLIZATION

The components in the radio circuit are symbolized according to the types of parts and the sections of the radio in which the parts are located. The prefix letter of the symbol designates the type of part, as follows:

- | | |
|-----------------|-----------------------|
| C—condenser | R—resistor |
| I—pilot lamp | S—switch |
| J—socket | T—transformer |
| L—choke or coil | TB—terminal board |
| LA—loop aerial | W—line cord |
| LS—loud-speaker | WS—wafer switch |
| PB—push button | Z—electrical assembly |

The number of the symbol, except when the number is less than 100, designates the section in which the part is located, as follows:

- 100-series components are in Section 1—the power supply
- 200-series components are in Section 2—the audio circuits
- 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 r-f and converter circuits

A suffix letter identifies the part as a component of the assembly which bears an identical number without a suffix letter, and with perhaps a different prefix letter.

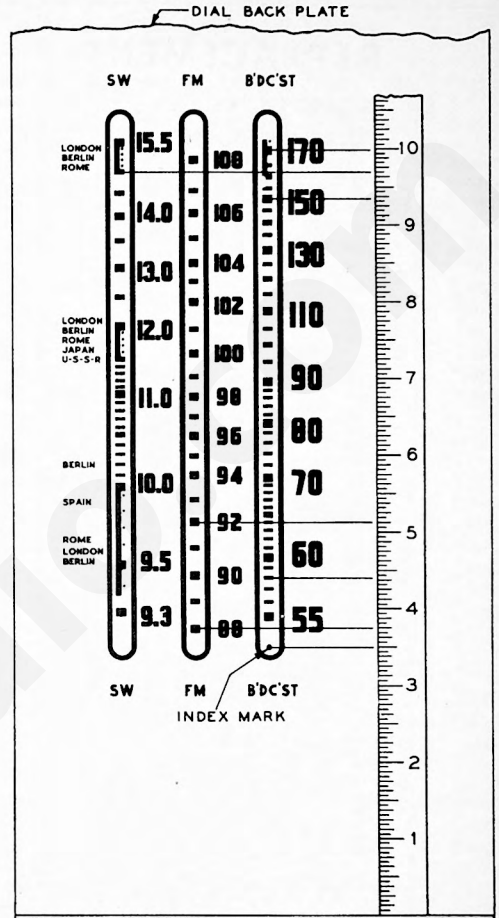


Figure 2. Calibration Measurements for Dial Backplate

TP-1085

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 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 POWER SUPPLY

Reference Symbol	Description	Service Part No.
C100	Condenser, line filter, .01 mf.	30-1228-1
C101	Condenser, electrolytic, 2-section	
C101A	Condenser, filter, 10 mf., 450 w. v.Part of C101	
C101B	Condenser, filter, 10 mf., 450 w. v.Part of C101	
C102	Condenser, r-f by-pass, .003 mf.	61-0117*
C103	Condenser, filter, 40 mf., 450 w. v.	30-2568-5

SECTION 1 (Continued) POWER SUPPLY

Reference Symbol	Description	Service Part No.
C104	Condenser, bias filter, .5 mf.	61-0133*
C105	Condenser, line filter, .01 mf.	30-1226-1
I100	Lamp, bin	34-2040
I101	Lamp, dial	34-2040
I102	Lamp, dial	34-2040
I103	Lamp, telltale	34-2040

REPLACEMENT PARTS LIST (Continued)

SECTION 1 (Continued)

POWER SUPPLY

Reference Symbol	Description	Service Part No.
J100	Socket, phono power	27-6200
L100	Field, speaker	Part of LS200
R100	Resistor, B+ filter, 5600 ohms	66-2564340
R101	Resistor, voltage divider, 1 megohm	66-5103340*
R102	Resistor, voltage divider, 220,000 ohms	66-4223340*
R103	Resistor, telltale-lamp dropping, 10 ohms	66-0103340
S100	Switch, master power, on-off	42-1717
S101	Switch, phono power, on-off	42-1714
T100	Transformer, power	32-8282
W100	Line cord	41-3755-18

SECTION 2

AUDIO CIRCUITS

C200	Condenser, bass control, .006 mf.	45-3500-7*
C201	Condenser, tone compensation, 100 mmf.	30-1224-1*
C202	Condenser, tone compensation, .02 mf.	61-0108*
C203	Condenser, treble control, .01 mf.	61-0120*
C204	Condenser, r-f by-pass, 220 mmf.	60-10205307*
C205	Condenser, d-c blocking, .006 mf.	45-3500-7*
C206	Condenser, d-c blocking, .006 mf.	45-3500-7*
C207	Condenser, tone compensating, .001 mf.	45-3500-5*
C208	Condenser, d-c blocking, .02 mf.	61-0108*
C209	Condenser, high-pass, 150 mmf.	60-10155407*
C210	Condenser, d-c blocking, .001 mf.	45-3500-5*
C211	Condenser, reactance feedback, 330 mmf.	60-10335407*
C212	Condenser, bias filter, .01 mf.	61-0120*
C213	Condenser, bias filter, .01 mf.	61-0120*
C214	Condenser, bias filter, .01 mf.	61-0120*
C215	Condenser, d-c blocking, 330 mmf.	60-10335407*
C216	Condenser, bias filter, .03 mf.	45-3500-1*
C217	Condenser, d-c blocking, .002 mf.	61-0062*
C218	Condenser, bias filter, .02 mf.	61-0108*
C219	Condenser, d-c blocking, .006 mf.	45-3500-7*
C220	Condenser, plate by-pass, .1 mf.	61-0113*
C221	Condenser, tone compensating, .003 mf.	61-0117*
C222	Condenser, r-f by-pass, 22 mmf.	60-00205307*
J200	Socket, FM test	27-6180
LS200	Speaker	
PB-9	Push button, PHONO	Part of 42-1777†
PL200	Phono plug and cable	41-3735
PL201	Phono plug	Part of T201
R200	Volume control, 2 megohms (tapped at 1 megohm)	33-5535-5
R201	Tone control, bass, 1 megohm	33-5539-7
R202	Resistor, tone compensating, 33,000 ohms	66-3333340*
R203	Resistor, inverse feedback, 4.7 ohms	66-9473340*
R204	Resistor, inverse feedback, 68 ohms	66-0683340
R205	Resistor, grid return, 1 megohm	66-5103340*
R206	Resistor, bias divider, 1 megohm	66-5103340*
R207	Resistor, bias divider, 10 megohms	66-6103340*
R208	Tone control (with scratch-eliminator switch), treble, 500,000 ohms	33-5538-22*
R209	Resistor, plate load, 220,000 ohms	66-4223340*
R210	Resistor, grid return, 1 megohm	66-5103340*
R211	Resistor, cathode load, 47,000 ohms	66-3473340*

SECTION 2 (Continued)

AUDIO CIRCUITS

Reference Symbol	Description	Service Part No.
R212	Resistor, cathode bias, 4700 ohms	66-2473340*
R213	Resistor, cathode bias, 6800 ohms	66-2683340*
R214	Resistor, grid return, 4.7 megohms	66-5473340*
R215	Resistor, tone compensating, 220,000 ohms	66-4223340*
R216	Resistor, voltage divider, 100,000 ohms	66-4103340*
R217	Resistor, voltage divider, 100,000 ohms	66-4103340*
R218	Resistor, voltage divider, 33,000 ohms	66-3334340*
R219	Resistor, tone compensating, 680,000 ohms	66-4683340*
R220	Resistor, grid return, 330,000 ohms	66-4333340*
R221	Resistor, cathode bias, 2200 ohms	66-2224340*
R222	Resistor, grid return, 1 megohm	66-5103340*
R223	Resistor, voltage divider, 33,000 ohms	66-3333340*
R224	Resistor, plate load, 18,000 ohms	66-3183340*
R225	Resistor, bias filter, 220,000 ohms	66-4223340*
R226	Resistor, bias filter, 220,000 ohms	66-4223340*
R227	Resistor, grid return, 560,000 ohms	66-4563340*
R228	Resistor, plate load, 220,000 ohms	66-4223340*
R229	Resistor, bias filter, 3.3 megohms	66-5333340*
R230	Resistor, bias filter, 1.5 megohms	66-5153340*
R231	Resistor, plate load, 100,000 ohms	66-4103340*
R232	Resistor, bias filter, 220,000 ohms	66-4223340*
R233	Resistor, voltage divider, 220,000 ohms	66-4223340*
R234	Resistor, voltage divider, 560,000 ohms	66-4563340*
R235	Resistor, plate load, 56,000 ohms	66-3563340*
R236	Resistor, plate dropping, 470,000 ohms	66-4473340*
R237	Resistor, plate load, 150,000 ohms	66-4153340*
R238	Resistor, grid return, 330,000 ohms	66-4333340*
R239	Resistor, grid return, 330,000 ohms	66-4333340*
S200	Switch, scratch eliminator	Part of R208
T200	Transformer, output	32-8274
T201	Transformer, phono input	32-8256

SECTION 3

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

C300A	Condenser, trimmer	Part of Z300
C300B	Condenser, trimmer	Part of Z300
C300C	Condenser, trimmer	Part of Z300
C301A	Condenser, trimmer	Part of Z301
C301B	Condenser, trimmer	Part of Z301
C301C	Condenser, trimmer	Part of Z301
C302A	Condenser, trimmer	Part of Z302
C302B	Condenser, trimmer	Part of Z302
C302C	Condenser, trimmer	Part of Z302
C303A	Condenser, trimmer	Part of Z303
C303B	Condenser, trimmer	Part of Z303
C303C	Condenser, trimmer	Part of Z303
C304A	Condenser, trimmer	Part of Z304
C305	Condenser, r-f by-pass, .01 mf.	61-0120*
C306	Condenser, i-f by-pass, .01 mf.	61-0120*
C307	Condenser, filament by-pass, .006 mf.	45-3500-7*
C308	Condenser, by-pass, 220 mmf.	60-10205307*
C309	Condenser, screen by-pass, .01 mf.	61-0120*
C310	Condenser, plate by-pass, .01 mf.	61-0120*
C311	Condenser, a-v-c by-pass, .01 mf.	61-0120*
C312	Condenser, cathode by-pass, .01 mf.	61-0120*
C313	Condenser, filament by-pass,	

† 42-1777 Push-button switch assembly.

REPLACEMENT PARTS LIST (Continued)

SECTION 3 (Continued)

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

Reference Symbol	Description	Service Part No.
C314	Condenser, screen by-pass, .01 mf.	61-0120*
C315	Condenser, plate by-pass, .01 mf.	61-0120*
C316	Condenser, filament by-pass, .006 mf.	45-3500-7*
C317	Condenser, r-f by-pass, .01 mf.	61-0120*
C318	Condenser, a-v-c filter, .05 mf.	61-0122*
C319	Condenser, r-f by-pass, .01 mf.	61-0120*
C320	Condenser, cathode by-pass, .01 mf.	61-0120*
C321	Condenser, d-c blocking, .006 mf.	45-3500-7*
C322	Condenser, screen by-pass, .01 mf.	61-0120*
C323	Condenser, d-c blocking, 100 mmf.	60-10105407*
C324	Condenser, plate by-pass, .01 mf.	61-0120*
C325	Condenser, r-f by-pass, 220 mmf.	60-10205307*
C326	Condenser, r-f by-pass,	
C327	Condenser, r-f by-pass, .01 mf.	61-0120*
C328	Condenser, filament by-pass, .006 mf.	45-3500-7*
C329	Condenser, screen by-pass, .01 mf.	61-0120*
C330	Condenser, grid, 33 mmf.	60-00305307*
C331	Condenser, d-c blocking, .03 mf.	45-3500-1
C332	Condenser, r-f by-pass, .01 mf.	61-0120*
C333	Condenser, r-f by-pass, 1500 mmf.	60-20155404*
C334	Condenser, electrolytic, audio by-pass, 10 mf., 450 w. v.	30-2417-6
C335	Condenser, r-f by-pass, 220 mmf.	60-10205307*
C336	Condenser, r-f by-pass, 220 mmf.	60-10205307*
C337	Condenser, fixed trimmer, 3000 mmf., part of Z300	60-20305304
C338	Condenser, coupling, 9 mmf., part of Z300	
C339	Condenser, fixed trimmer, 330 mmf., part of Z302	60-10335407
C340	Condenser, coupling, 3.3 mmf., part of Z302	30-1221
C341	Condenser, voltage divider, 68 mmf., part of Z304	
C342	Condenser, voltage divider, 33 mmf., part of Z304	
C343	Condenser, fixed trimmer, 15 mmf., part of Z304	
C344	Condenser, fixed trimmer, 270 mmf., part of Z303	
L300A	Primary winding	Part of Z300
L300B	Primary winding	Part of Z300
L300C	Secondary winding	Part of Z300
L300D	Secondary winding	Part of Z300
L301A	Primary winding	Part of Z301
L301B	Secondary winding	Part of Z301
L301C	Secondary winding	Part of Z301
L302A	Primary winding	Part of Z302
L302B	Primary winding	Part of Z302
L302C	Secondary winding	Part of Z302
L302D	Secondary winding	Part of Z302
L303A	Primary winding	Part of Z303
L303B	Primary winding	Part of Z303
L303C	Secondary winding	Part of Z303
L303D	Secondary winding	Part of Z303
L304A	Primary winding	Part of Z304
L304B	Secondary winding	Part of Z304
L305	Coil, FM detector	32-4007-1
PB-1	Push button, FM	Part of 42-1777†
R300	Resistor, plate decoupling, 47,000 ohms	.66-3473340

† 42-1777 Push-button switch assembly.

SECTION 3 (Continued)

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

Reference Symbol	Description	Service Part No.
R301	Resistor, a-v-c decoupling, 1 megohm	.66-5103340*
R302	Resistor, cathode bias, 68 ohms	.66-0683340*
R303	Resistor, screen dropping, 47,000 ohms	.66-3473340*
R304	Resistor, shunt, 6800 ohms, part of Z304	.66-2683340*
R305	Resistor, a-v-c decoupling, 1 megohm	.66-5103340*
R306	Resistor, cathode bias, 180 ohms	.66-1183340*
R307	Resistor, cathode bias, 1500 ohms	.66-2153340
R308	Resistor, screen dropping, 100,000 ohms	.66-4103340*
R309	Resistor, plate decoupling, 3300 ohms	.66-2333340*
R310	Resistor, a-v-c filter, 330,000 ohms	.66-4333340*
R311	Resistor, cathode bias, 180 ohms	.66-1183340*
R312	Resistor, diode load, 1 megohm	.66-5103340*
R313	Resistor, screen dropping, 47,000 ohms	.66-3473340*
R314	Resistor, inverse feedback, 100 ohms	.66-1103340*
R315	Resistor, plate decoupling, 3300 ohms	.66-2333340*
R316	Resistor, audio decoupling, 100,000 ohms	.66-4103340*
R317	Resistor, diode load, 270,000 ohms	.66-4273340*
R318	Resistor, r-f filter, 47,000 ohms	.66-3473340*
R319	Resistor, oscillator stabilizing, 27 ohms	.66-0273340*
R320	Resistor, grid leak, 15,000 ohms	.66-3153340*
R321	Resistor, screen dropping, 56,000 ohms	.66-3563340*
R322	Resistor, audio decoupling, 100,000 ohms	.66-4103340*
R323	Resistor, plate dropping, 15,000 ohms	.66-3153340
R324	Resistor, audio plate load, 47,000 ohms	.66-3473340*
R325	Resistor, plate dropping, 3300 ohms	.66-2333340*
R326	Resistor, voltage divider, 100,000 ohms	.66-4103340*
TC300A	Tuning core	Part of Z300
TC302A	Tuning core	Part of Z302
TC304A	Tuning core	Part of Z304
WS-3(R)	Switch/water section	Part of 76-2211‡
Z300	Transformer, 1st i-f, including C300A, C300B, C300C, C337, C338, and TC300A	32-4020-1
Z301	Transformer, 2nd i-f, including C301A, C301B, and C301C	32-4001
Z302	Transformer, 3rd i-f, including C302A, C302B, C302C, C339, C340, and TC302A	32-4002
Z303	Transformer, 4th i-f, including C303A, C303B, C303C, and C344	32-4003-2
Z304	Transformer, FM detector, including C304A, C341, C342, C343, R304, and TC304A	32-4004

SECTION 4

R-F AND CONVERTER CIRCUITS

C400	Condenser, tuning	31-2694
C400A	Condenser, trimmer, FM aerial	Part of C400
C400B	Condenser, trimmer, FM r.f.	Part of C400
C400C	Condenser, trimmer, FM osc.	Part of C400
C400D	Condenser section, tuning, AM aerial	Part of C400
C400E	Condenser section, tuning, AM osc.	Part of C400
C400F	Condenser section, tuning, FM aerial	Part of C400
C400G	Condenser section, tuning, FM r.f.	Part of C400
C400H	Condenser section, tuning, FM osc.	Part of C400
C401	Condenser, trimmer, s-w aerial	31-6473-2
C402	Condenser, d-c blocking, 10 mmf.	60-00105407*
C403	Condenser, filament by-pass, 220 mmf.	60-10205307*
C404	Condenser, screen by-pass, 1500 mmf.	60-20155404*

REPLACEMENT PARTS LIST (Continued)

SECTION 4 (Continued)

R-F AND CONVERTER CIRCUITS

Reference Symbol	Description	Service Part No.
C405	Condenser, plate by-pass, 1500 mmf.	60-20155404*
C406	Condenser, d.c blocking, 33 mmf.	
C407	Condenser, neutralizing (s.w.), 10 mmf.	60-00105407*
C408	Condenser, oscillator series, 255 mmf.	30-1220-24
C409	Condenser, trimmer assembly, 3-section	31-6477
C409A	Condenser, trimmer, oscillator shunt (s.w.)	Part of C409
C409B	Condenser, trimmer, oscillator shunt (bc.)	Part of C409
C409C	Condenser, trimmer, aerial shunt (bc.)	Part of C409
C410	Condenser, aerial series (s.w.), 300 mmf.	60-10305307*
C411	Condenser, d.c blocking, 22 mmf.	60-00205307*
C412	Condenser, trimmer, bc. series	31-6473-3
C413	Condenser, r-f voltage divider, 285 mmf.	30-1224-14
C414	Condenser, r-f voltage divider, 485 mmf.	30-1224-15
C415	Condenser, r-f by-pass, 470 mmf.	
C416	Condenser, d.c blocking, 470 mmf.	
C417	Condenser, r-f by-pass, 220 mmf.	60-10205307*
C418	Condenser, d.c blocking, 220 mmf.	60-10205307*
C419	Condenser, r-f by-pass, 220 mmf.	60-10205307*
C420	Condenser, oscillator grid, 100 mmf.	60-10105407*
C421	Condenser, oscillator-to-mixer coupling, 750 mmf.	60-10755301*
C422	Condenser, trimmer assembly, 5-section, aerial tuning (push button)	31-6479
C422A	Condenser, trimmer	Part of C422
C422B	Condenser, trimmer	Part of C422
C422C	Condenser, trimmer	Part of C422
C422D	Condenser, trimmer	Part of C422
C422E	Condenser, trimmer	Part of C422
C423	Condenser, cathode by-pass, 100 mmf.	60-10105407*
J400	Socket, s-w and FM aerial	27-6214-1
L400	Coil, bc. aerial	32-4049-3
L401	Coil, s-w aerial	32-4050
L402	Coil, FM isolation	32-4111
L403	Coil, s-w osc.	32-3996
L404	Coil, bc. osc.	32-4019-4
L405	Choke, osc. isolation	32-4089
L406	Coil, FM aerial	32-3993
L407	Coil, FM r.f.	32-3992
L408	Coil, FM osc.	32-3994
L409A	Coil, push-button osc.	32-4059
L409B	Coil, push-button osc.	32-4059
L409C	Coil, push-button osc.	32-4059-1
L409D	Coil, push-button osc.	32-4059-1
L409E	Coil, push-button osc.	32-4059-1
L410	Choke, FM plate load	32-4061
LA400	Loop, bc.	76-3530
PB-1 to PB-10	Push-button-switch assembly	42-1777
PL400	Plug assembly, FM a-c-line aerial	41-3791
R400	Resistor, grid return, 1 megohm	66-5103340*
R401	Resistor, screen dropping, 56,000 ohms	66-3563340*
R402	Resistor, cathode bias, 82 ohms	66-0823340*
R403	Resistor, voltage divider, 4.7 megohms	66-5473340*
R404	Resistor, parasitic suppressor, 100 ohms	66-1103340*
R405	Resistor, plate feed, AM, 22,000 ohms	66-3223340*
R406	Resistor, plate feed, FM, 22,000 ohms	66-3223340*
R407	Resistor, grid return, 22,000 ohms	66-3223340*
R408	Resistor, cathode bias, 22,000 ohms	66-2223340*
R409	Resistor, cathode bias, 10,000 ohms	66-3103340*
R410	Resistor, parasitic suppressor, 10 ohms	66-0103340*
R411	Resistor, grid return, 4.7 megohms	66-5473340*
WS-1	Switch wafers	Part of 76-2211†
WS-2	Switch wafers	Part of 76-2211†

MISCELLANEOUS

Description	Service Part No.
Bin-lamp-socket assembly	26-6233-3
Cabinet (less scale)	
Cabinet Parts and Hardware	
Back, cabinet	54-7516
Baffle and cloth, l.h.	40-6785
Baffle and cloth, r.h.	40-6968-1
Baffle, wood	
Bin mechanism, l.h.	
Bin mechanism, r.h.	
Bolt, speaker (4 req.)	W-1587
Bracket, lamp	56-3545-5
Catch, bullet (2 req.)	45-6002
Cradle assembly	76-3222
Dial-scale-and-backplate assembly	76-3187-4
Dome (4 req.)	45-6042
Door, record album	
Doors (matched pair furnished)	
Grille, wire (2 req.)	56-3250
Hinge, continuous	56-3627
Hinge, knife	56-4882
Hinge, stop	56-5278-1
Pull, brass	56-3249
Spring, bin mechanism	56-4978
Strike, bullet catch (2 req.)	45-6003
Telltale jewel	54-4304
Top, cabinet	45-6415
Cable and plug, speaker	41-3734-3
Cord, drive (25-ft. spool)	45-8750
Dial-lamp-socket assembly, 14" lead	76-2109
Dial-lamp-socket assembly, 8" lead	76-2109-2
Dial-Scale Hardware	
Backplate	76-2106
Pointer	56-3179
Scale strap (2 req.)	56-4916
Spring, drive	28-8953
Grommet, r-f-unit mtg. (3 req.)	54-4295
Knob, control (4 req.)	54-4227
Knob, push button (10 req.)	54-4292
Push-Button-Assembly Hardware	
Cap (10 req.)	54-4294
Cap, centering (5 req.)	28-6936
Cover assembly	76-1343
Screw, tuning core (5 req.)	56-2249
Switch assembly, push-button	42-1777
Tab, BC	54-4317-2
Tab, FM	54-4317-4
Tab kit (station call letters)	40-6943
Tab, OFF	54-4317-1
Tab, PHONO	54-4317-5
Tab, SW	54-4317-3
Telltale-lamp-socket assembly	41-3737
Terminal strip, coils (5 req.)	56-2250FA3
Tuning core (5 req.)	56-6100
Shaft, drive (tuning)	76-2107
Socket, aerial (s-w and FM)	27-6214-1
Socket-adaptor plate (3 req.)	56-4033-1FA3
Socket, Loktal (3 req.)	27-6138*
Socket, miniature (2 req.)	27-6226
Socket, octal (4 req.)	27-6174
Socket, Loktal, r-f unit (1 req.)	27-6213
Socket, miniature (1 req.)	27-6203-1
Socket, Loktal, scratch eliminator (2 req.)	27-6138*
Wafer-Switch Hardware	
Fulcrum assembly	76-2206
Link, connecting	54-7189

† 42-1777 Push-button switch assembly.

† 76-2211 Rotary wafer switch, 3 section.

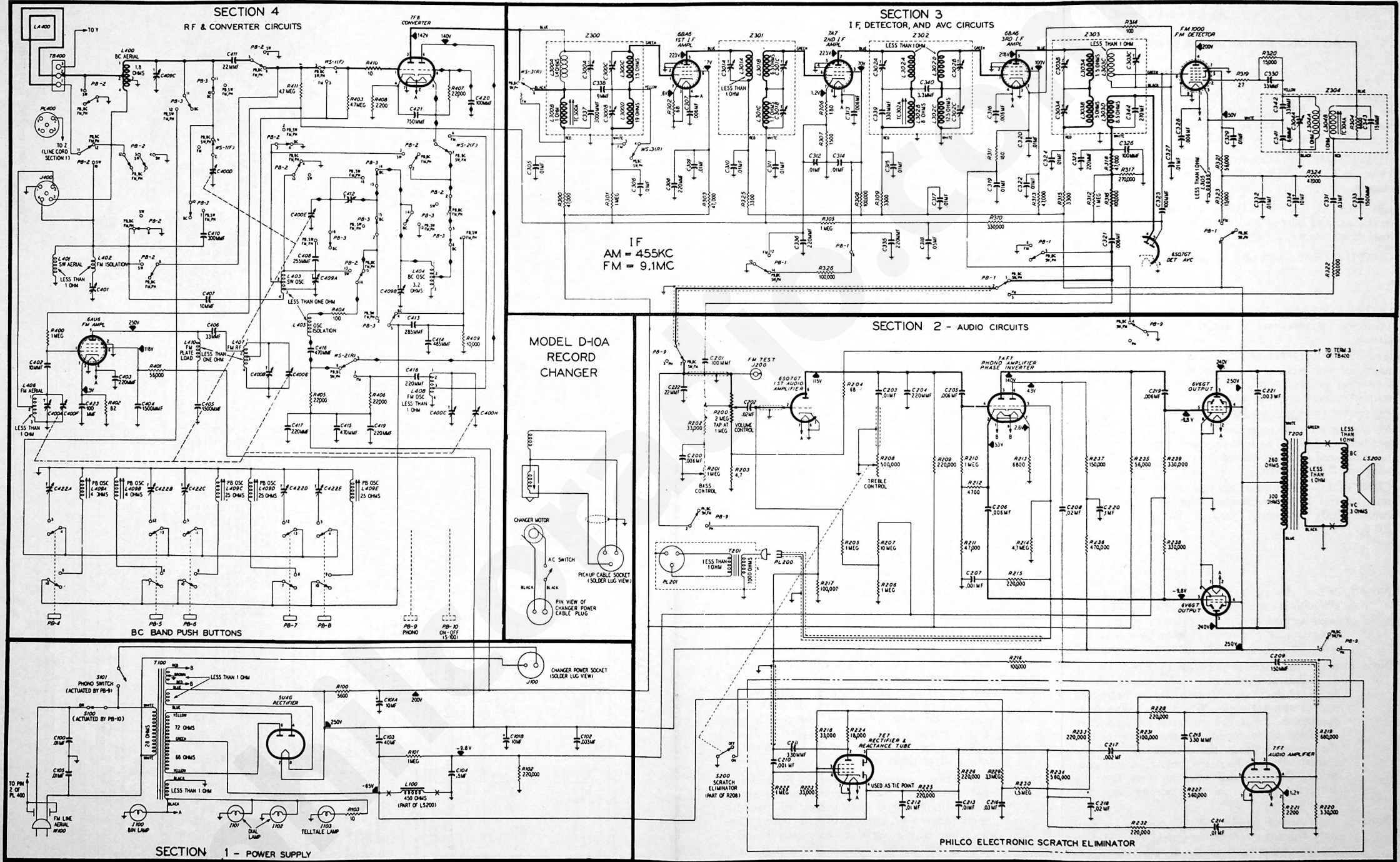


Figure 3. Philco Radio-Phonograph Model 48-1290, Sectionalized Schematic Diagram.

ALIGNMENT PROCEDURE

CAUTION: Do no turn on power with speaker disconnected, or the radio may be damaged.

ALIGNMENT OF AM CIRCUITS

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

OUTPUT METER—Connect between No. 3 terminal (voice-coil connection) of aerial terminal panel and chassis.

AM SIGNAL GENERATOR—Connect ground lead to chassis, and output lead as indicated in chart. Use modulated output.

OUTPUT LEVEL—During alignment, signal-genera-

tor output must be attenuated to maintain radio output below 1.5 volts, as read on output meter.

CONTROLS—Set volume control to maximum, bass tone control fully counterclockwise, treble tone control fully clockwise (do not turn on scratch eliminator), and signal-generator dial, radio dial, and radio push buttons as indicated in chart.

DIAL POINTER—With tuning condensers fully meshed, dial pointer must coincide with index mark at low-frequency end of dial. See "CALIBRATING DIAL BACKPLATE" for method of measuring backplate for index and calibration marks.

ALIGNMENT OF FM CIRCUITS

OUTPUT METER—Connect between No. 3 terminal (voice-coil connection) of aerial terminal panel and chassis.

AM SIGNAL GENERATOR—Connect ground lead to chassis; connect output lead through .1-mf. condenser to points specified in chart. Use modulated output unless otherwise specified.

OUTPUT LEVEL—During alignment, signal-generator output must be attenuated to maintain radio output below 1.5 volts, as read on output meter. All adjustments are made for maximum output, unless otherwise specified in chart.

CONTROLS—Set volume control to maximum, bass tone control fully counterclockwise, and treble tone control fully clockwise. Depress FM push button, PB-1.

Note 4. It is essential that the output of the generator be kept below the level at which the oscillator of the FM detector locks in; otherwise, an erroneous zero beat will be obtained. When a single very sharp zero-beat point is obtained, the adjustment is correct.

Note 5. The use of a signal generator for steps 10 through 16 is recommended only if the available generator is sufficiently accurate to insure correct frequency settings. Otherwise, an alternative procedure employing FM broadcast-station signals is recommended. For the adjustments at the high-frequency end of the band, use the station nearest 105 mc.; for the adjustments at the low-frequency end of the band, use the station nearest 88 mc. or 92 mc., as indicated. If the radio is greatly misaligned, it may be necessary to adjust the trimmers and coils for maximum noise at each end of the band before station signals can be heard. The FM detector must be made inoperative, as directed in step 10 of the "FM ALIGNMENT CHART."

Note 6. Check the tracking of oscillator and r-f circuits with a tuning wand. If placing the brass end in or near the coil increases the output-meter reading, spread the turns; if the powdered-iron end increases the output reading, compress the turns. If both ends cause a decrease in output, the coil is correctly tuned. Do not change the coils excessively, since only a small adjustment is required at these frequencies.

Note 7. Make two simple dipole aerials to feed signals from the signal-generator to the radio. Each dipole aerial may consist of two 30-inch lengths of rubber-covered wire. Connect one dipole aerial to terminals 1 and 2 on the FM aerial socket of the radio. Connect the other dipole aerial to the output leads of the signal generator. Place the two dipoles several feet apart.

Note 1. When the oscillator grid (pin 2) of the FM1000 is connected to the chassis, the oscillator section of the FM detector is made inoperative; the circuit is thereby converted from an FM to an AM detector.

Note 2. Make the loading network by connecting a 4700-ohm resistor and a .1-mf. condenser in series. Attach an alligator clip to each free end of the network. When this network is connected across the primary or secondary winding of an overcoupled i-f transformer, the network loads the circuit so that the transformer is effectively below critical coupling; the unloaded winding may then be correctly peaked at the intermediate frequency.

Note 3. The top of padder C303C can be reached only from the top of the shield can. Slide a length of flattened solder or wire down between the ceramic form and the edge of the trimmer plate. Attach the loading network between this connection and the chassis.

AM ALIGNMENT CHART

STEP	SIGNAL GENERATOR		PUSH BUTTON	RADIO		ADJUST
	CONNECTIONS TO RADIO	DIAL SETTING		SPECIAL INSTRUCTIONS	DIAL SETTING	
1	To terminal 2 of L407 Through .1-mf. condenser to rotor of aerial section of tuning gang.	455 kc.	Depress BC push button, PB-3.	1700 kc.	Adjust reach trimmer, in order, for maximum output. Do not repeat adjustments.	C303A—4th lf pit. C302C—2nd lf sec. TC302A—2nd lf pit. C301B—2nd lf sec. C300B—1st lf sec. TC300A—1st lf pit.
2	Loosely coupled with loop. See note below.	15 mc.	Depress SW push button, PB-2.	15 mc.	Adjust for maximum output. Increase should be heard with set tuned to 14.1 mc.	C408A—SW osc.
3	Same as step 2.	15 mc.	Depress SW push button, PB-2.	15 mc.	Adjust for maximum output.	C401—SW aerial
4	Same as step 2.	1700 kc.	Depress BC push button, PB-3.	1700 kc.	Adjust for maximum output.	C408B—BC osc. (shunt)
5	Same as step 2.	1500 kc.	Depress BC push button, PB-3.	1500 kc.	Adjust for maximum output.	C408C—BC aerial
6	Same as step 2.	580 kc.	Depress BC push button, PB-3.	580 kc.	Adjust for maximum output (rock tuning coil).	C412—BC osc. (series)
7	Repeat steps 4, 5, and 6, in order, until no further increase in output is obtained. Then repeat step 4.		Depress BC push button, PB-3.			

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

FM ALIGNMENT CHART

STEP	SIGNAL GENERATOR		PUSH BUTTON	RADIO		ADJUST
	CONNECTIONS TO RADIO	DIAL SETTING		SPECIAL INSTRUCTIONS	DIAL SETTING	
1	To terminal 2 of L407	9.1 mc.	Gain fully closed.	1700 kc.	Adjust reach trimmer, in order, for maximum output. Do not repeat adjustments.	C303B—4th lf pit. C302C—4th lf sec. C302A—3rd lf pit. C302B—3rd lf sec. C301A—2nd lf pit. C301C—2nd lf sec. C300A—1st lf pit.
2	Same as step 1.	9.1 mc.	Same as step 1.	9.1 mc.	Connect jumper between sec. grid, pin 2 of FM1000 and chassis (see Note 1). Connect loading net work (see Note 2) between top of padder C302C and chassis (see Note 3).	
3	Same as step 1.	9.1 mc.	Same as step 1.	9.1 mc.	Connect loading network between plate, pin 2 (blue lead), of third lf tube and chassis.	
4	Same as step 1.	9.1 mc.	Same as step 1.	9.1 mc.	Connect loading network between grid, pin 6 (green lead), of third lf tube and chassis.	
5	Same as step 1.	9.1 mc.	Same as step 1.	9.1 mc.	Connect loading network between plate, pin 2 (blue lead), of second lf tube and chassis.	
6	Same as step 1.	9.1 mc.	Same as step 1.	9.1 mc.	Connect loading network between grid, pin 6 (green lead), of second lf tube and chassis.	
7	Same as step 1.	9.1 mc.	Same as step 1.	9.1 mc.	Connect loading network between plate, pin 2 (blue lead), of first lf tube and chassis.	
8	To grid (pin 6) of third lf tube.	9.1 mc. (modulation off)	Same as step 1.	9.1 mc.	Remove jumper used in step 8. Adjust tuning core for zero beat (see Note 4).	
9	Same as step 8.	9.1 mc.	Same as step 1.	9.1 mc.	Remove jumper from pin 2 of FM1000 and chassis. Connect jumper between pin 2 of FM1000 and chassis. Adjust coil L407, then L408, for maximum output (see Note 6).	C304A—FM det. osc. TC303A—FM det. line only
10	To terminal 2 of J400 (see Note 5).	105 mc.	105 mc.	105 mc.	Connect jumper between pin 2 of FM1000 and chassis. Adjust for maximum output.	C408C—FM osc. FM osc. tracking
11	Same as step 10.	88 mc.	88 mc.	88 mc.	Adjust coil L408 for maximum output (see Note 6).	
12	Repeat steps 10 and 11 until no further improvement is noted.					
13	Same as step 10.	105 mc.	105 mc.	105 mc.	Adjust for maximum output (rock tuning control).	C408B—FM 1st.
14	See Note 7.	105 mc.	105 mc.	105 mc.	Adjust for maximum output.	C408A—FM aerial FM 1st and aerial tracking
15	Same as step 14.	92 mc.	92 mc.	92 mc.	Adjust coil L407, then L408, for maximum output (see Note 6).	
16	Repeat steps 13, 14, and 15 until no further improvement in sensitivity can be obtained.					

Figure 4. Top View, Showing AM Trimmer Locations

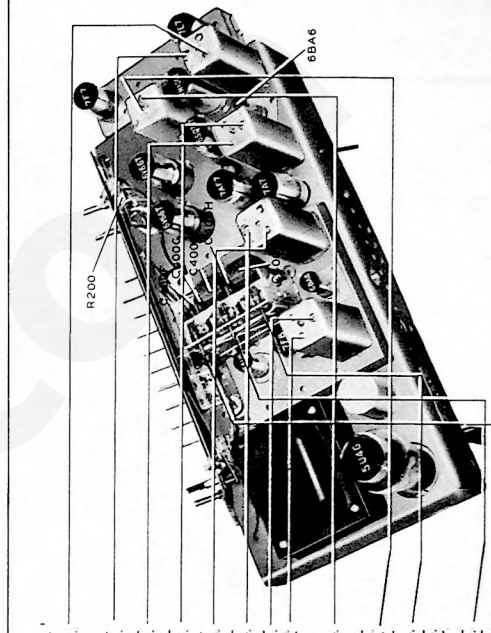
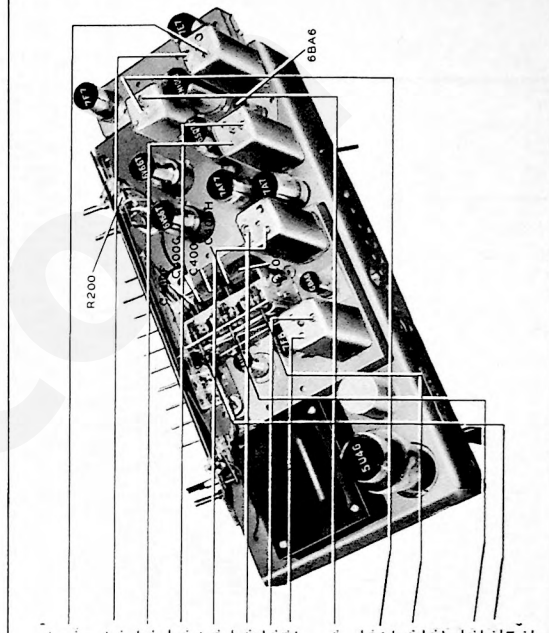
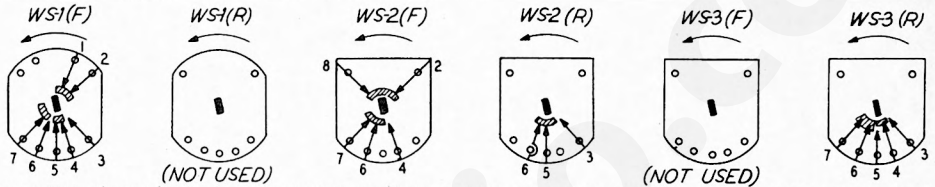
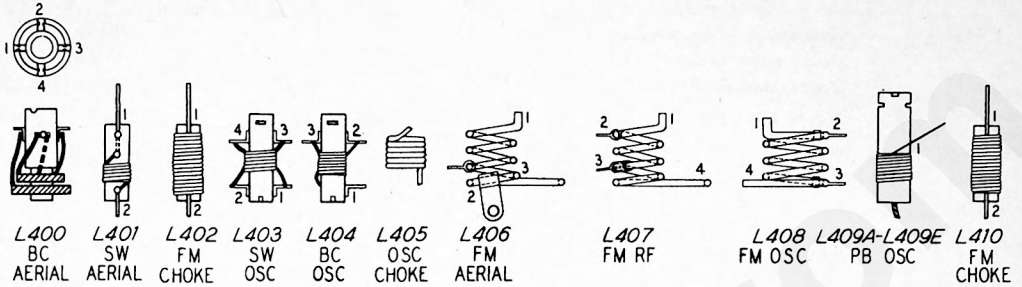
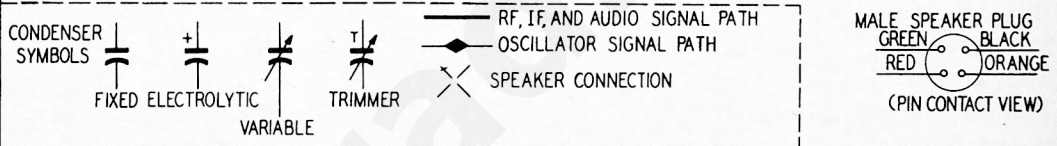


Figure 5. Top View, Showing FM Trimmer Locations



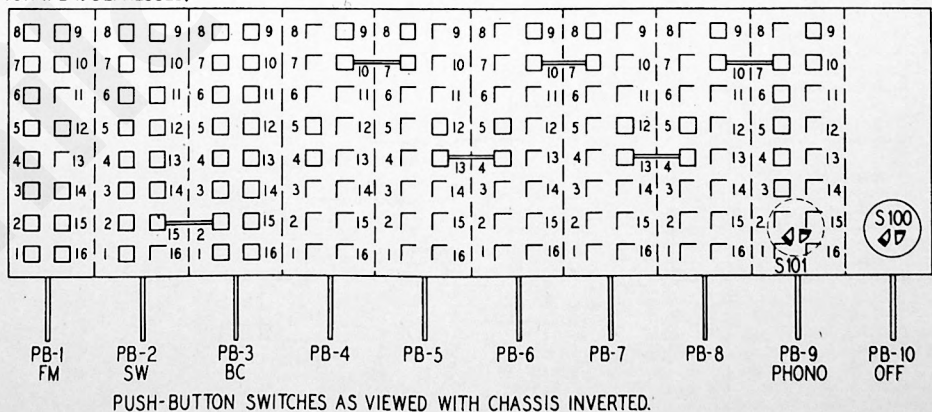


ROTARY WAFER SWITCH SECTIONS ARE SHOWN (AS VIEWED WITH CHASSIS INVERTED) IN THE POSITION FOR BROADCAST, SHORT-WAVE, PUSH-BUTTON, OR PHONO OPERATION. THESE SECTIONS ARE THROWN TO THE FM POSITION WHEN ACTUATED BY THE FM PUSH BUTTON. WAFER SECTIONS ARE SYMBOLIZED WS-1, WS-2, WS-3, FROM FRONT OF CHASSIS TOWARD REAR. (F) INDICATES FRONT CONTACTS, LOOKING FROM FRONT. (R) INDICATES REAR CONTACTS, LOOKING THROUGH FROM FRONT.



NOTE:-

VOLTAGE READINGS GIVEN WERE TAKEN WITH A 20,000-OHMS-PER-VOLT METER, AT A LINE VOLTAGE OF 117 V A C.
VOLTAGE READINGS IN SCRATCH ELIMINATOR CIRCUITS OF SECTION 2 WERE TAKEN WITH PHONO PUSH BUTTON (PB-9) DEPRESSED, AND TREBLE CONTROL SET TO SCRATCH ELIMINATOR POSITION.
VOLTAGE READINGS ASSOCIATED WITH FM DETECTOR WERE TAKEN WITH FM PUSH BUTTON (PB-1) DEPRESSED.



REVISIONS AND ADDITIONS TO 48-1290 SERVICE MANUAL

**Reference
Symbol**

Description

**Service
Part No.**

Parts List Additions

C345	Condenser, i-f by-pass, 100 mmf.	30-1224-1*
	Doors (matched set) (L)	45-6444
	Doors, record album (L)	45-6445

Parts List Corrections

LS200	Speaker	36-1595
C313	Condenser, filament by-pass, 100 mmf.	30-1224-1*
C326	Condenser, r-f by-pass, 200 mmf.	62-122001001*
C338	Condenser, coupling, 9 mmf., part of Z300	60-00105407
C341	Condenser, voltage divider, 68 mmf., part of Z304	60-00685237
C342	Condenser, voltage divider, 33 mmf., part of Z304	30-1223-3
C344	Condenser, fixed trimmer, 270 mmf., part of Z303	60-10275407
C406	Condenser, d-c blocking, 33 mmf.	60-00305307
C415	Condenser, r-f by-pass, 470 mmf.	60-10515307
C416	Condenser, d-c blocking, 470 mmf.	60-10515307
	Baffle, wood	219101
	Bin mechanism, l.h.	76-3223-5
	Bin mechanism, r.h.	76-3223-6
	Cabinet (less scale) (M)	10697
	Door, record album (M)	45-6414
	Doors (matched pair furnished) (M)	45-1556

PRODUCTION CHANGES

Main Chassis, Run 2

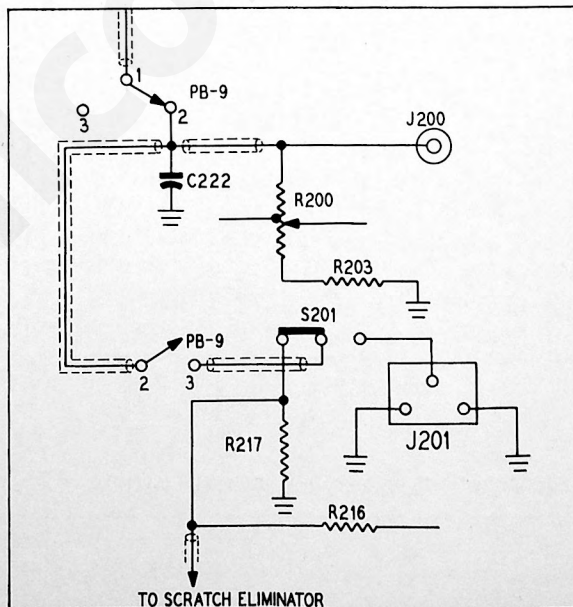
R311	Resistor, cathode bias, 180 ohms, was changed to 100 ohms	66-1108340*
R314	Resistor, inverse feedback, 100 ohms, was changed to 180 ohms	66-1188340*

Main Chassis, Run 3

J201	Socket, phono input, was added	27-6126
S201	Switch, standard play-long play, was added	42-1611

The above changes were made to accommodate the Philco Album-Length Record Player, Model M-15. See diagram below.

TP0-501



C313

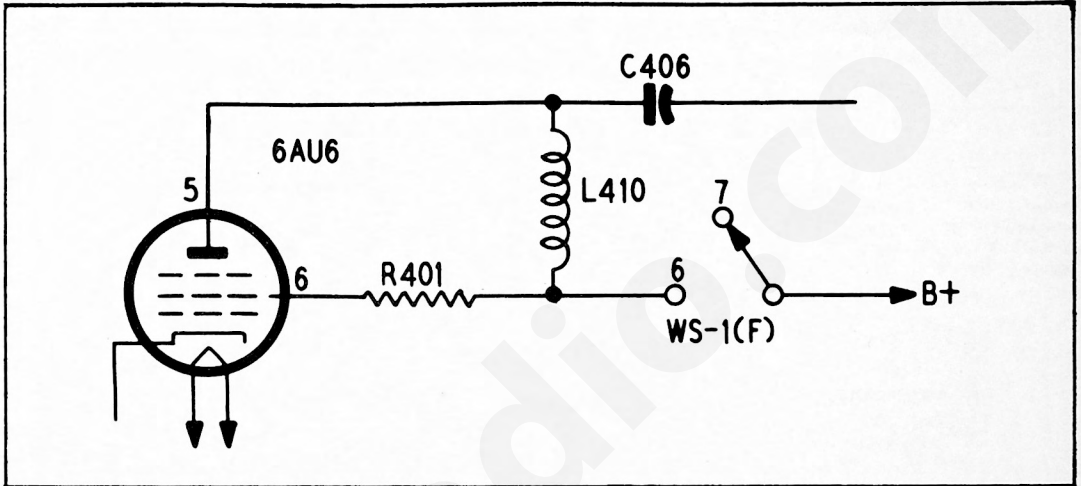
Main Chassis, Run 4

Condenser, filament by-pass, 100 mmf., was changed to .006 mf. 45-3500-7
This condenser was changed to prevent instability in i-f stage.

R-F Chassis, Run 2

The B+ lead to the 6AU6 r-f amplifier was changed to go through the wafer switch, as shown in the diagram below

TPO-502



CRITICAL LEAD DRESS

To eliminate points of oscillation on the FM band:

C306 should ground through lug 2 of the terminal board at the rear of the wafer switch.

C307 should ground through the lug to the right-hand rear of Z301, and should be dressed against the back of the chassis.