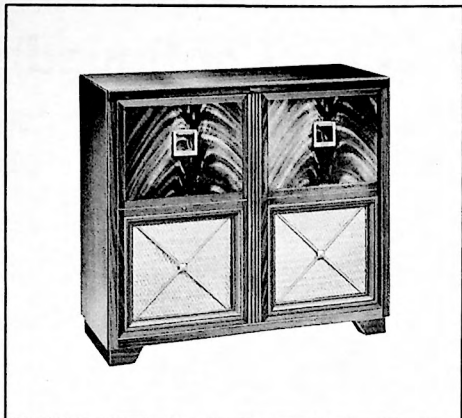


PHILCO TROPIC RADIO-PHONOGRAPH MODEL 3551



SPECIFICATIONS

CABINET Wood console
 CIRCUIT Seven - tube super-heterodyne

FREQUENCY RANGES

Broadcast 540—1620 kc.
 Short Wave 5.8—15.7 mc.

AUDIO OUTPUT 6 watts

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

POWER CONSUMPTION

Radio 75 watts
 Phonograph 20 watts

AERIAL Built - in, low-impedance loop; terminal provided for external aerial

INTERMEDIATE FREQUENCY 455 kc.

PHILCO TUBES (7) 7AF7, 7A7, 7R7, 7F7, 6K6GT(2), 7Z4

PHONOGRAPH Philco Automatic Record Changer and Record Player Combination Model M-9C (for service information see Page 511) 1599)

TP-7696

CALIBRATING DIAL BACKPLATE

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

The method of measuring for these points is illustrated 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 2

inches from the reference point indicated in figure 1.

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

After installation of the chassis in the cabinet, the dial pointer should be moved to coincide with the index mark on the dial. Coincidence of the pointer and index mark should occur with the tuning condenser fully meshed.

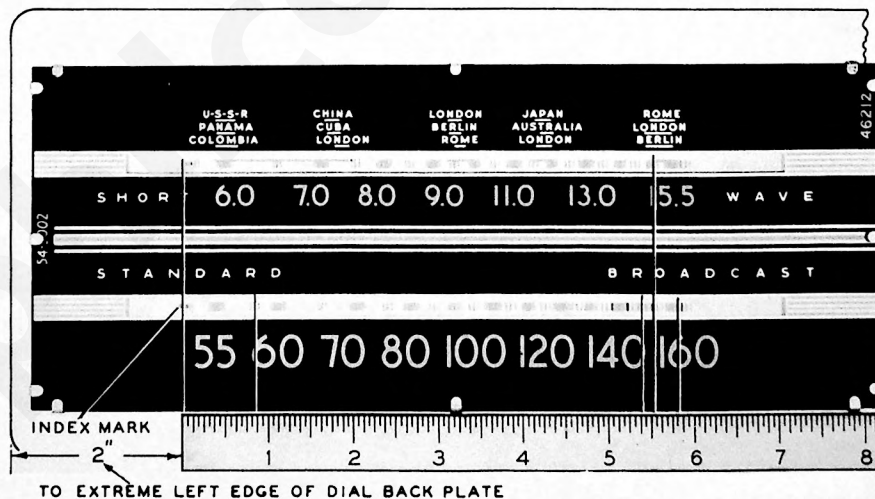


FIGURE 1. CALIBRATION MEASUREMENTS FOR DIAL BACKPLATE

TP-5774

ALIGNMENT PROCEDURE

DIAL—Calibration and pointer-index measurements are shown in figure 1. With tuning condenser fully meshed, set pointer to index mark.

OUTPUT METER—Connect one lead to chassis, and other lead to terminal 3 of TB400.

SIGNAL GENERATOR—Connect generator ground lead to chassis; connect output lead as indicated in chart. Use modulated output.

RADIO CONTROLS—Set volume control to maximum and turn tone control fully counterclockwise.

OUTPUT LEVEL—During alignment, adjust signal-generator output to maintain output-meter indication below 1.5 volts.

STEP	SIGNAL GENERATOR		RADIO		ADJUST
	CONNECTION TO RADIO	DIAL SETTING	BAND SWITCH	DIAL SETTING	
1	Through .1-mf. condenser to terminal 1 of TB400.	455 kc.	BC	540 kc.	Adjust tuning cores, in order given, for maximum output. TC302B—3rd i-f sec. TC302A—3rd i-f pri. TC301B—2nd i-f sec. TC301A—2nd i-f pri. TC300B—1st i-f sec. TC300A—1st i-f pri.
2	Radiating loop (see note below).	580 kc.	BC	580 kc.	Adjust trimmer for maximum output. C401C—BC osc. (series)
3	Same as step 2.	1600 kc.	BC	1600 kc.	Adjust trimmer for maximum output. C402B—BC osc. (shunt)
4	Same as step 2.	1500 kc.	BC	1500 kc.	Adjust trimmer for maximum output. C402A—BC aerial
5	Same as step 2.	580 kc.	BC	580 kc.	Adjust trimmer for maximum output while rocking tuning condenser. C401C—BC osc. (series)
6	Repeat steps 3, 4, 5, 3, and 4 until no further improvement is noted.				
7	Same as step 2.	15 mc.	SW	15 mc.	Adjust trimmer for maximum output on first peak from loose position. Check for image at 14.1 mc. C401B—SW osc.
8	Same as step 2.	15 mc.	SW	15 mc.	Adjust trimmer for maximum output while rocking tuning condenser. C401A—SW aerial

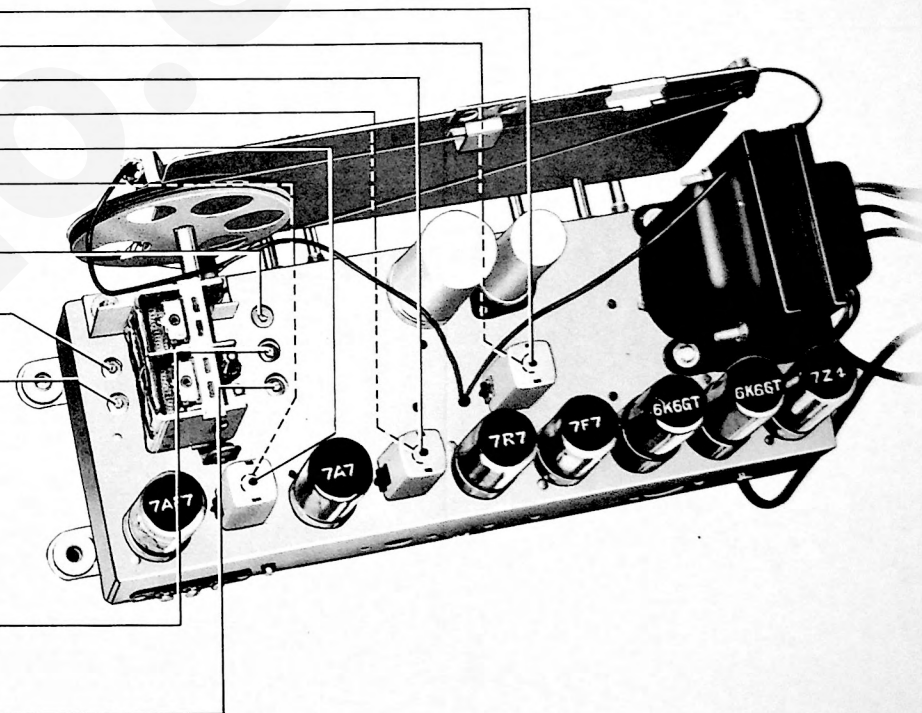


FIGURE 2. TOP VIEW, SHOWING TRIMMER LOCATIONS

TP-5281

RADIATING LOOP: Make up a 6—8 turn, 6-inch-diameter loop from insulated wire; connect to signal-generator leads and place near radio loop aerial. Make certain that radio loop aerial is connected to radio.

REPLACEMENT PARTS LIST

NOTE: Part numbers identified by an asterisk (*) indicate 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."

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, filter, 35 mf., 450v	30-2570-25
C103	Condenser, electrolytic, 2-section	30-2570-24
C103A	Condenser, filter, 10 mf., 450v	Part of C103
C103B	Condenser, filter, 40 mf., 450v	Part of C103

REPLACEMENT PARTS LIST (Continued)

SECTION 1—POWER SUPPLY (Continued)			SECTION 1—POWER SUPPLY (Continued)		
Reference Symbol	Description	Service Part No.	Reference Symbol	Description	Service Part No.
I100	Pilot lamp	34-2040	R101	Resistor, bias, 68,000 ohms	66-3683340*
I101	Pilot lamp	34-2040	R102	Resistor, bias filter, 100,000 ohms	66-4103340*
I102	Pilot lamp	34-2040	S100	Switch, on-off	Part of R201
J100	Socket, record-changer power	27-6200	T100	Transformer, power	32-8350
L100	Speaker field	Part of LS200	W100	Line-cord-and-plug assembly	L-2183
PL100	Plug, a-c power	Part of W100	WS-1(F)	Switch-wafer section	Part of 42-1875†
R100	Resistor, filter, 15,000 ohms	66-3155340*			

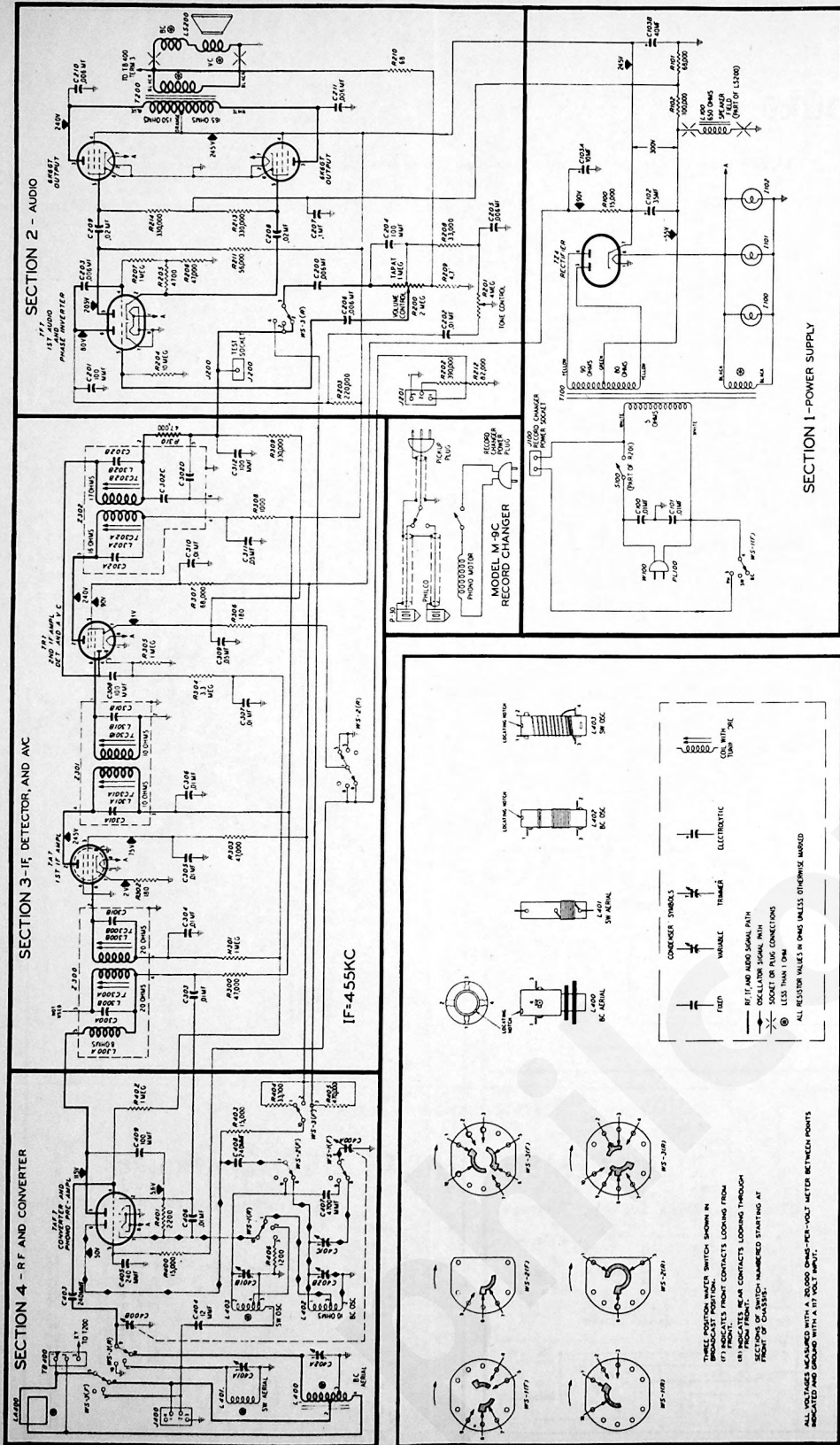


FIGURE 3. PHILCO TROPIC RADIO-PHONOGRAPH MODEL 3551, SECTIONALIZED SCHEMATIC DIAGRAM.

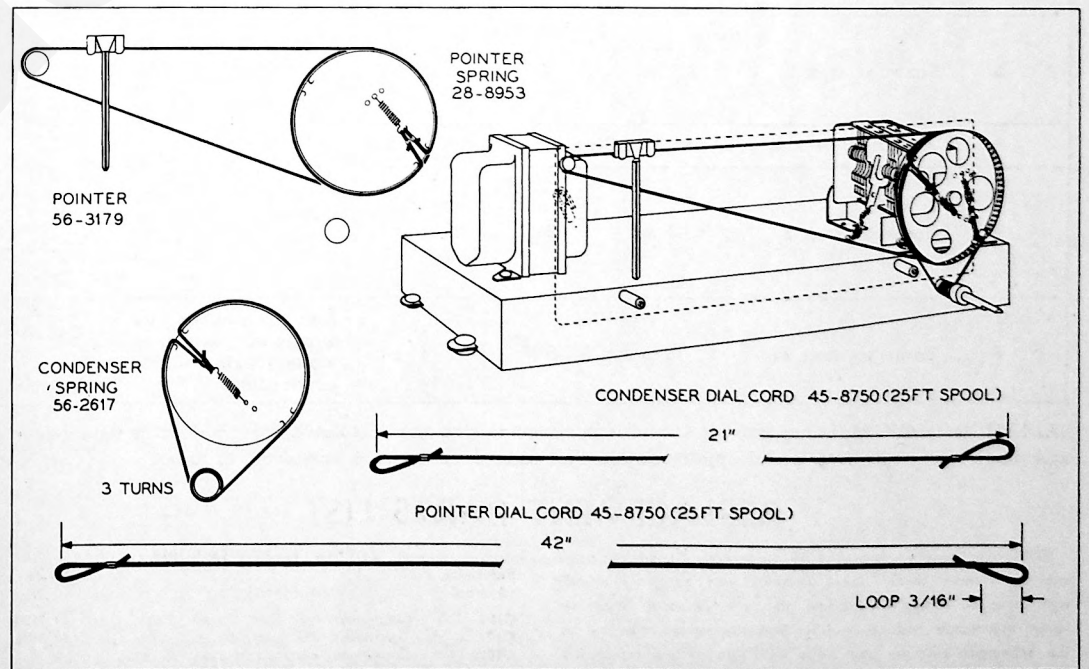


FIGURE 4. DRIVE-CORD INSTALLATION DETAILS

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
- I—pilot lamp
- L—choke or coil
- LA—loop aerial
- LS—loud-speaker
- R—resistor
- S—switch
- T—transformer
- W—line cord
- WS—wafer switch
- Z—electrical assembly

The number of the symbol 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, detector, and a-v-c circuits.
- 400-series components are in Section 4—the r-f and converter circuits.

REPLACEMENT PARTS LIST (Continued)

SECTION 2—AUDIO CIRCUITS

Reference Symbol	Description	Service Part No.
C200	Condenser, d-c blocking, .006 mf.	45-3500-7*
C201	Condenser, r-f by-pass, 100 mmf.	60-10105407*
C202	Condenser, tone control, .01 mf.	61-0120*
C203	Condenser, d-c blocking, .006 mf.	45-3500-7*
C204	Condenser, tone compensation, 100 mmf.	60-10105407*
C205	Condenser, tone compensation, .006 mf.	45-3500-7*
C206	Condenser, d-c blocking, .006 mf.	45-3500-7*
C207	Condenser, bias filter, .1 mf.	61-0113*
C208	Condenser, d-c blocking, .02 mf.	61-0108*
C209	Condenser, d-c blocking, .02 mf.	61-0108*
C210	Condenser, parasitic suppressor, .006 mf.	61-0153*
C211	Condenser, parasitic suppressor, .006 mf.	61-0153*
J200	Test socket	27-6180
J201	Cable and plug, phono input	41-3735-16
LS200	Loud-speaker	36-1611-3
R200	Volume control, 2 megohms (tap at 1 megohm)	33-5535-16
R201	Tone control (with on-off switch), 4 megohms	33-5538-23
R202	Resistor, crystal load, 330,000 ohms	66-4393340*
R203	Resistor, plate load, 220,000 ohms	66-4223340*
R204	Resistor, grid return, 10 megohms	66-6103340*
R205	Resistor, cathode bias, 4700 ohms	66-2473340*
R206	Resistor, cathode load, 47,000 ohms	66-3473340*
R207	Resistor, grid return, 1 megohm	66-5103340*
R208	Resistor, tone compensation, 33,000 ohms	66-3333340*
R209	Resistor, voltage divider (negative feed-back), 4.7 ohms	66-9474360*
R210	Resistor, voltage divider (negative feed-back), 68 ohms	66-0683340*
R211	Resistor, plate load, 56,000 ohms	66-3563340*
R212	Resistor, crystal voltage divider, 82,000 ohms	66-3823340*
R213	Resistor, grid return, 330,000 ohms	66-4333340*
R214	Resistor, grid return, 330,000 ohms	66-4333340*
T200	Transformer, output	32-8274
WS-3(R)	Switch-wafer section	Part of 42-1875†

SECTION 3—I-F, DETECTOR, AND A-V-C CIRCUITS

C300A	Condenser, shunt	Part of Z300
C300B	Condenser, shunt	Part of Z300
C301A	Condenser, shunt	Part of Z301
C301B	Condenser, shunt	Part of Z301
C302A	Condenser, shunt	Part of Z302
C302B	Condenser, shunt	Part of Z302
C302C	Condenser, r-f by-pass	Part of Z302
C302D	Condenser, r-f by-pass	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, screen by-pass, .01 mf.	61-0120*
C306	Condenser, r-f by-pass, .01 mf.	61-0120*
C307	Condenser, a-v-c by-pass, .01 mf.	61-0120*
C308	Condenser, d-c blocking, 100 mmf.	62-110009001*
C309	Condenser, cathode by-pass, .05 mf.	61-0122*
C310	Condenser, screen by-pass, .01 mf.	61-0120*
C311	Condenser, plate by-pass, .05 mf.	61-0122*
C312	Condenser, r-f by-pass, 100 mmf.	62-110009001*
L300A	Coil, primary, 1st i-f	Part of Z300
L300B	Coil, tertiary, 1st i-f	Part of Z300
L300C	Coil, secondary, 1st i-f	Part of Z300
L301A	Coil, primary, 2nd i-f	Part of Z301
L301B	Coil, secondary, 2nd i-f	Part of Z301
R300	Resistor, plate decoupling, 47,000 ohms	66-3473340*
R301	Resistor, a-v-c decoupling, 1 megohm	66-5103340*
R302	Resistor, cathode bias, 180 ohms	66-1183340*
R303	Resistor, screen dropping, 47,000 ohms	66-3473340*
R304	Resistor, a-v-c filter, 3.3 megohms	66-5333340*
R305	Resistor, a-v-c diode load, 1 megohm	66-5103340*
R306	Resistor, cathode bias, 180 ohms	66-1183340*
R307	Resistor, screen dropping, 68,000 ohms	66-3683340*
R308	Resistor, plate decoupling, 1000 ohms	66-2103340*
R309	Resistor, diode load, 330,000 ohms	66-4333340*
R310	Resistor, r-f filter, 47,000 ohms	66-3473340*
TC300A	Tuning core, primary, 1st i-f	Part of Z300
TC300B	Tuning core, secondary, 1st i-f	Part of Z300
TC301A	Tuning core, primary, 2nd i-f	Part of Z301
TC301B	Tuning core, secondary, 2nd i-f	Part of Z301

SECTION 3—I-F, DETECTOR, AND A-V-C CIRCUITS (Cont.)

Reference Symbol	Description	Service Part No.
WS-2(R)	Switch-wafer section	Part of 42-1875†
Z300	Transformer, 1st i-f	32-4258
Z301	Transformer, 2nd i-f	32-4160-3
Z302	Transformer, 3rd i-f	32-4240-2

SECTION 4—R-F AND CONVERTER CIRCUITS

C400	Condenser, tuning gang	31-2728
C400A	Condenser, tuning (osc. section)	Part of C400
C400B	Condenser, tuning (aerial section)	Part of C400
C401	Condenser, trimmer assembly, 3-section	31-6477-10
C401A	Condenser, trimmer, SW aerial	Part of C401
C401B	Condenser, trimmer, SW osc.	Part of C401
C401C	Condenser, trimmer, BC osc. (series)	Part of C401
C402	Condenser, trimmer assembly, 2-section	31-6476-15
C402A	Condenser, trimmer, BC aerial	Part of C402
C402B	Condenser, trimmer, BC osc. (shunt)	Part of C402
C403	Condenser, d-c blocking, 240 mmf.	60-10245307*
C404	Condenser, stabilizing, 12 mmf.	30-1224-33
C405	Condenser, grid return, 240 mmf.	60-10245307*
C406	Condenser, cathode by-pass, .01 mf.	61-0120*
C407	Condenser, fixed padder (SW osc.), 4700 mmf.	60-20515304*
C408	Condenser, d-c blocking, 240 mmf.	60-10245307*
C409	Condenser, r-f by-pass, 100 mmf.	62-110009001*
J400	Socket, external aerial	27-6214-1
L400	Coil, BC aerial	32-4049-3
L401	Coil, SW aerial	32-4050-10
L402	Coil, BC osc.	32-4221-2
L403	Coil, SW osc.	32-4280
LA400	Loop aerial	76-3583-1
R400	Resistor, grid return, 15,000 ohms	66-3153340*
R401	Resistor, cathode bias, 2200 ohms	66-2223340*
R402	Resistor, grid return, 1 megohm	66-5103340*
R403	Resistor, plate load, 15,000 ohms	66-3153340*
R404	Resistor, plate load, 33,000 ohms	66-3333340*
R405	Resistor, plate dropping, 470,000 ohms	66-4473340
R406	Resistor, cathode, 1200 ohms	66-2123340
TB400	Terminal panel, aerial	38-9942
WS-1(F)	Switch-wafer section	Part of 42-1875†
WS-1(R)	Switch-wafer section	Part of 42-1875†
WS-2(F)	Switch-wafer section	Part of 42-1875†
WS-3(F)	Switch-wafer section	Part of 42-1875†
WS-3(R)	Switch-wafer section	Part of 42-1875†

*42-1875 band switch, 3-section wafer switch.

MISCELLANEOUS

Description	Service Part No.
Cabinet	10721D or 10721E
Back	54-7716
Baffle and-cloth assembly, speaker	40-7538-2
Baffle and-cloth assembly, dummy	40-7592-3
Bin mechanism (r.h.)	76-3223-6
Bin mechanism (l.h.)	76-3223-5
Bullet catch	45-6002
Dome (4)	45-6190
Door pull (2)	56-5886
Frame assembly, phono mounting	76-4104
Knife hinge, bottom of radio door	56-5713-22
Knife hinge, phono door (2)	56-5713-3
Knife hinge, stop, top of radio door	56-5713-8
Lamp bracket, bin lamp	56-3545-5
Metal grille (2)	56-6727
Spring, bin mechanism (2)	56-4978
Strike plate (2)	45-6003
Dial cord (25-foot spool)	45-8750*
Knob, band change	54-4527-16
Knob, off-on-tone	54-4527-17
Knob, tuning	54-4527-14
Knob, volume	54-4527-20
Pointer	56-3179
Scale, dial	76-3187-5
Socket, Loktal (5)	27-6138
Socket, Oktal (2)	27-6174
Socket, phono input	27-6126
Socket, pilot lamp (2)	27-6233-16
Spring, gang drive	56-2617
Spring, pointer drive	28-8953
Tuning shaft	31-2738