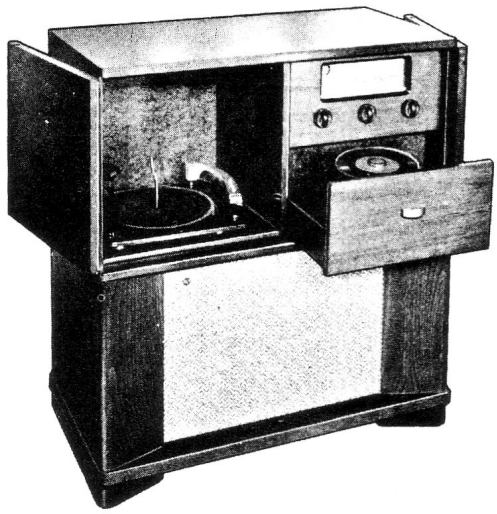


RCA VICTOR

Radio-Phonograph Combination

MODEL 4QV8C

SERVICE DATA

—1952 No. 8A—

HOME INSTRUMENT SERVICE DIVISION
RCA VICTOR COMPANY, LTD.
MONTREAL, QUE.

Specifications

Tuning Range

Standard Broadcast ("A" Band) .....535–1680 kc.
Medium Wave ("B" Band) .....2.3–7 mc.
Short Wave ("C" Band) .....7–22 mc.
Spread-Band tuning ("Microtune") may be used on all portions of the "C" Band tuning range.

Intermediate Frequency .....455 kc.

Tube Complement

(1) RCA-6SA7 .....Converter
(2) RCA-6SF7 .....I.F. Amp.–Det.–A.V.C.
(3) RCA-6SC7 .....1st A.F.–Ph. Inv.
(4) RCA-6V6GT ..... Output
(5) RCA-6V6GT ..... Output
(6) RCA-6SC7 .....Phono. Pre.-Amp.
(7) RCA-6U5/6G5 .....Tuning Eye
(8) RCA-6X5GT ..... Rectifier

Lamps

Dial Lamps (2) .....Type 44F, 6.3v., .25 amp.
Compartment Lamp .....Type 55, 6.3v., .4 amp.
Jewel Lamp .....Type 51, 6.3v., .2 amp.

Power Supply Rating

Voltage	Frequency	Watts
See below	*50 or 60 cycles	70

95 position— 85 to 105v.
117 position—105 to 130v.
150 position—135 to 165v.
190 position—170 to 210v.
234 position—210 to 260v.

Note: Shipped in 234v. position. To change, remove round cover on top of transformer case and move link to desired position.

CAUTION: Remove power cord from line receptacle before changing link position.

* Instruments are shipped for operation on 60 cycle power supply. For 50 cycle operation, conversion spring sleeves must be added to record changer motor shafts.

FOR 45 r.p.m. RECORD CHANGER SERVICE INFORMATION—REFER TO RP-168 SERIES SERVICE DATA.

FOR 78/33 r.p.m. RECORD CHANGER SERVICE INFORMATION—REFER TO 960282 SERIES SERVICE DATA.

Loudspeaker (92582-4)

Size and type .....12 in. (30.5 cm.) PM dynamic
Voice coil impedance .....3.2 ohms at 400 cycles

Tuning Drive Ratio

Main tuning .....11½:1 (5¾ turns of knob)
Microtune .....3.6 turns of knob

Power Output

Maximum .....7 watts
Undistorted .....6 watts

Record Changers

45 r.p.m. (RP-168)
Records used .....RCA 7-in. fine groove
Record capacity .....up to 10 records
Pickup (Stock No. S-5578) .....Ceramic (medium output)

78/33 1/3 r.p.m. (960282-2)
Records used .....10 or 12 in.—33 1/3 or 78 r.p.m.
Record capacity ..... ten 12 in. or twelve 10 in. records
(Record sizes and types are not to be intermixed)
Pickup (Stock No. S-5652) .....Ceramic (medium output)

Cabinet Dimensions

Height	Width	Depth
34 in.	32 in.	16¼ in.

Weight .....95 lbs.

Description

This instrument is an eight tube (including tuning eye and rectifier) three-band plus spread-band ("Microtune") radio-phonograph of conventional design with the exception of the spread-band tuning.

Spread-band tuning is accomplished by moving a small iron core in the field of the "C" band oscillator coil. This is linked with an indicator which travels along the bottom of the dial and has its own arbitrary calibration (0-40). The desired band is selected by adjusting the main tuning until its indicator is directly over the band (41, 31, etc.) marker. Then the "Microtune" knob is used for spread-band tuning. The "Microtune" indicator should be at 20 when the main tuning is being used.

Two record changers are used; RP-168 for 45 r.p.m. and 960282-2 for 78 or 33 1/3 r.p.m. Power to the motors of the record changers is controlled thru the function switch. A 6SC7 tube (twin-triode) is used as phono-preamplifier (one half for each record changer).

Alignment Procedure

Output Meter Alignment—If this method is used, connect the meter across the voice coil, and turn the receiver volume control to maximum.

Test-Oscillator—For all alignment operations, connect the low side of the test-oscillator to the receiver chassis, and keep the oscillator output low to avoid a-v-c action.

Calibration Scale

The dial scale may be readily removed from the cabinet and used as a reference during alignment or the marks on the dial back plate which correspond to the frequencies indicated on the illustration "Dial Indicator and Drive Mechanism" may be used for reference.

Dial Pointer—With the gang condenser in full mesh the dial pointer should be set to the left hand reference mark on the dial backing plate.

Step	Connect high side of test osc. to—	Tune test osc. to—	Range switch	Turn radio dial to—	Adjust for max. output
1	6SF7 grid (pin #2) in series with .05 mf.	455 kc.	A	Quiet point near 600 kc.	T2 cores top and bottom
2	6SA7 grid (pin #8) in series with .05 mf.				T1 cores† top and bottom
3	Antenna lead in series with 300 ohm resistor	Set Microtune indicator to O			
4		9.5 mc.	C	9.5 mc. signal	L5 for MAX. INDUCTANCE††
5	Antenna lead in series with 220 mmf.	Set Microtune indicator to 20			
6		1400 kc.	A	1400 kc.	C10 (osc.) C1-2 trimmer (ant.)
7		600 kc.		600 kc.	L7 (osc.) Rock gang
8			Repeat Steps 6 and 7		
9	Antenna lead in series with 300 ohm resistor	6.1 mc.	B	6.1 mc.	C9 (osc.) C5 (ant.)
10		18.2 mc.	C	18.2 mc.	C8 (osc.)‡ C4 (ant.)‡ Rock gang

† Do not re-adjust T2.

†† Set the main tuning slightly higher in frequency than the 9.5 mc. signal and adjust L5 for max. output. Repeat this procedure until no further increase in frequency can be obtained.

‡ Oscillator frequency is above signal. Use minimum capacity peak on C8 and max. capacity peak on C4.

Microtune (Spread-Band) Alignment

The conventional alignment will affect the Microtune alignment and should be done before positioning the spread-band markers.

For spread-band alignment an extremely high degree of accuracy is required of the test-oscillator, as a slight error will produce considerable inaccuracy in spread-band tuning.

Determine the exact dial settings of the test-oscillator (for frequencies at or close to the specified alignment frequencies) by one of the following methods:

1. Zero-beat the test-oscillator against short-wave stations of known frequency.
2. Check test-oscillator signals with a crystal controlled oscillator.

Connect the high side of the test-oscillator to the ANT. terminal in series with a 300 ohm resistor and the low side to chassis.

The position of the markers may be pre-set to the approximate position as shown in the illustration. "Spread-Band Marker Position."

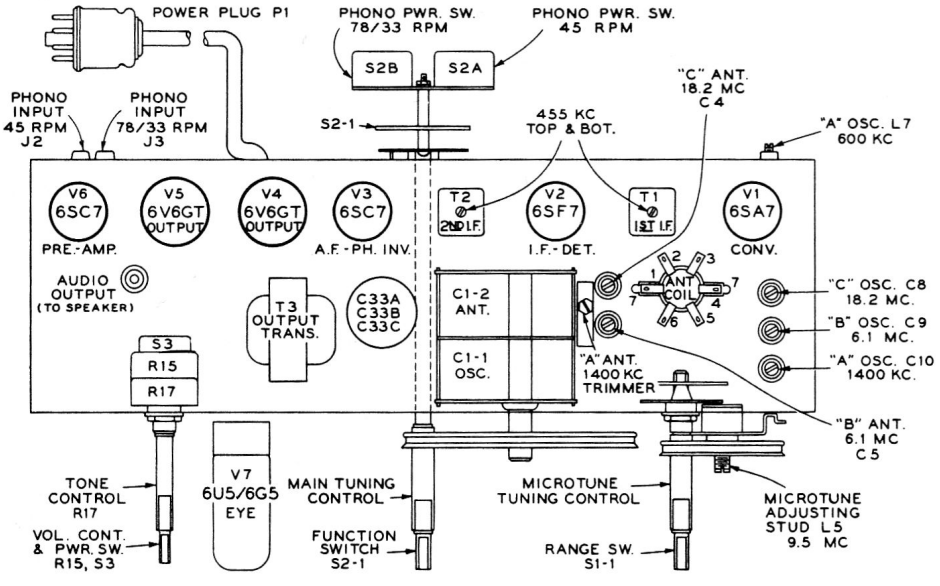
With the range switch in "C" band position, set the Microtune pointer to the position specified below and carefully tune in the signal with the main tuning control. Position the spread-band marker so that its indication is directly under the main tuning pointer.

Band	Microtune Pointer	Test. Osc. Output
41 M	20	7.2 mc.
31 M	18.4	9.6 mc.
25 M	17.2	11.8 mc.
19 M	21.6	15.3 mc.
16 M	20	17.8 mc.
13 M	20	21.6 mc.

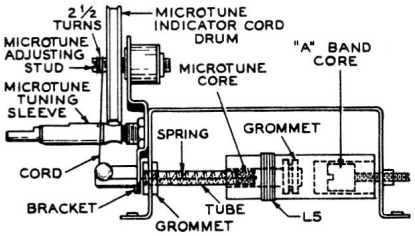
To tune in stations with Microtuning, the range switch knob is turned to "C" band and the main tuning control knob is turned so that the main tuning pointer is directly over the indication on the marker of the desired spread band. Spread-band tuning is then done with the Microtune control knob.

Critical Lead Dress

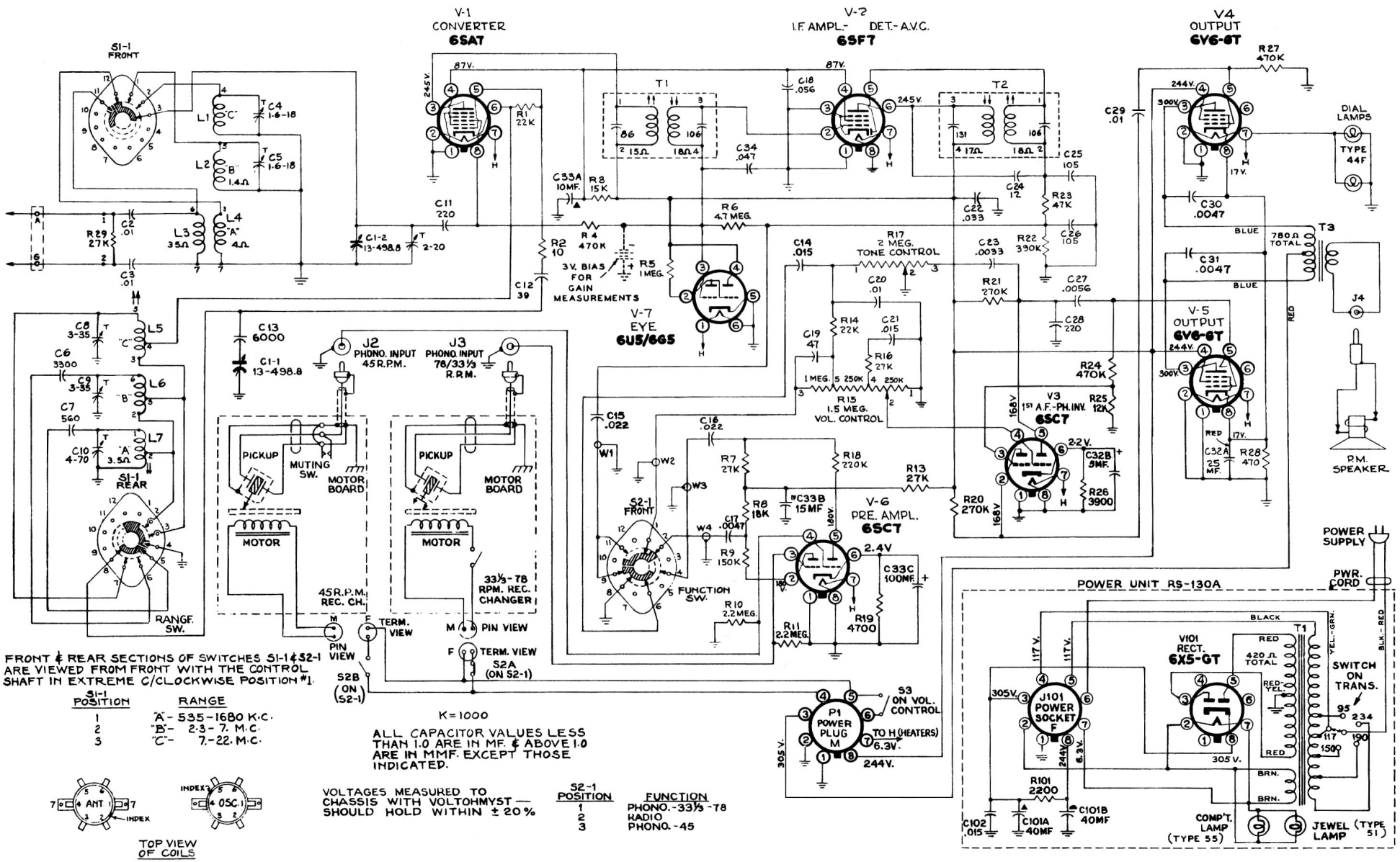
1. R4 (47OK) load resistor on the 6SA7 tube should be dressed away from the plate lead and terminal of that tube.
2. The oscillator capacitor R2 C12 (39 mmf., 10 ohm) must be dressed with short leads and away from the base.
3. All resistor and capacitor leads should be held to a minimum length.
4. The leads connected to the AC switches on back of the function switch must be dressed away from the contacts of the function switch.



Tube and Trimmer Locations



Microtuning Assembly



FRONT & REAR SECTIONS OF SWITCHES S1-1 & S2-1 ARE VIEWED FROM FRONT WITH THE CONTROL SHAFT IN EXTREME C/CLOCKWISE POSITION #1.

S1-1 POSITION	RANGE
1	"A"- 535-1680 K.C.
2	"B"- 2.3- 7. M.C.
3	"C"- 7.-22. M.C.

K=1000

ALL CAPACITOR VALUES LESS THAN 1.0 ARE IN MF. & ABOVE 1.0 ARE IN MMF. EXCEPT THOSE INDICATED.

VOLTAGES MEASURED TO CHASSIS WITH VOLTOHMYST — SHOULD HOLD WITHIN ± 20%

S2-1 POSITION	FUNCTION
1	PHONO.-33⅓-78
2	RADIO
3	PHONO.-45

Complete Schematic Diagram

4QV8C

REPLACEMENT PARTS

STOCK No.	DESCRIPTION
	CHASSIS ASSEMBLY
S-5833	Bracket—Microtune pulley mounting bracket
S-4725	Cable—Tuning eye cable and socket assembly complete with one megohm resistor (R5)
S-5906	Cable—Power cable and plug assembly
S-5907	Cable—Motor power cable and socket assembly—chassis to 78/33 r.p.m. record changer
S-5908	Cable—Motor power cable and socket assembly—chassis to 45 r.p.m. record changer
S-5834	Capacitor—Ceramic, 12 mmf. (C24)
S-5835	Capacitor—Ceramic, 47 mmf. (C19)
S-4439	Capacitor—Mica, 220 mmf. (C11, C28)
S-4440	Capacitor—Mica, 560 mmf. (C7)
S-4441	Capacitor—Mica, 3300 mmf. (C6)
S-4442	Capacitor—Mica, 6000 mmf. (C13)
S-4541	Capacitor—Tubular, .0033 mf., 600v. (C23)
S-4542	Capacitor—Tubular, .0047 mf., 600v, (C17)
S-4542	Capacitor—Tubular, .0047 mf., 1000v. (C30, C31)
S-4608	Capacitor—Tubular, .0056 mf., 400v. (C27)
S-4820	Capacitor—Ceramic, .01 mf. (C2, C3)
S-4610	Capacitor—Tubular, .01 mf., 400v. (C20, C29)
S-4544	Capacitor—Tubular, .015 mf., 400v. (C14, C21)
S-4732	Capacitor—Tubular, .022 mf., 400v. (C15, C16)
S-4447	Capacitor—Tubular, .033 mf., 400v. (C22)
S-4448	Capacitor—Tubular, .047 mf., 200v. (C34)
S-4449	Capacitor—Tubular, .056 mf., 400v. (C18)
S-4450	Capacitor—Trimmer capacitor, dual, 1.6-18 mmf. (C4, C5)
S-4451	Capacitor—Trimmer capacitor, triple, two sections of 3-35 mmf. and one section of 4-70 mmf. (C8, C9, C10)
S-5836	Capacitor—Electrolytic, one section of 25 mf. and one section of 5 mf. at 25 volts (C32A, C32B)
S-5473	Capacitor—Electrolytic, comprising one section of 10 mf. at 450v., one section of 15 mf. at 450v. and one section of 100 mf. at 6v. (C33A, C33B) C33C)
S-4461	Capacitor—Variable tuning capacitor (C1-1, C1-2)
S-4453	Capacitor and Resistor—Assembly comprising 39 mmf. capacitor and 10 ohm resistor (C12, R2)
S-4614	Capacitor and Resistor—Assembly comprising two 105 mmf. capacitors and one 47,000 ohm resistor (C25, C26, R23)
S-4454	Clip—I-F transformer mounting clip (2 required)
S-5837	Clip—Tuning eye mounting clip (2 required)
S-5861	Connector—8 prong male connector for power cable (P1)
S-5711	Connector—2 contact female connector for motor power cable (2 required)
S-5838	Control—Volume control, tone control and power switch (R15, R17, S3)
S-5839	Coil—"A," "B," "C" bands antenna coil (L1, L2, L3, L4)
S-5954	Coil—"A," "B," "C" bands oscillator coil (L5, L6, L7)
S-5840	Core—Adjustable core and stud for "A" band oscillator coil
S-5841	Core—Microtune tuning core complete with cord and compression spring
S-4313	Cord—Dial drive cord (approximately 55 inches required) or microtune drive cord (approximately 35 inches required)
S-4464	Grommet—Rubber grommet for mounting tuning capacitor (4 required)
S-4463	Grommet—Rubber grommet for mounting converter tube socket (2 required)
S-4533	Grommet—Rubber grommet for spacing of microtune insulating tube in oscillator coil (2 required)
S-5842	Insulation—Insulation tube for microtune tuning core.
S-5843	Insulation—Insulating washer for mounting audio output (speaker) socket
S-5844	Insulation—Insulation for mounting output transformer
S-5845	Indicator—Main dial indicating pointer
S-5846	Indicator—Microtune dial indicating pointer
S-5847	Marker—Microtune band indicator markers (1 set of 6)
S-5848	Plate—Dial back plate assembly complete with brackets, pulleys and studs
S-5849	Pulley—Microtune drive cord pulley
S-5850	Resistor—Fixed, composition, 470 ohms, 1 watt (R28)
S-4620	Resistor—Fixed, composition, 3900 ohms, ½ watt (R26)
S-5485	Resistor—Fixed, composition, 4700 ohms, ½ watt (R19)
S-5434	Resistor—Fixed, composition, 12,000 ohms, ½ watt (R25)
S-5851	Resistor—Fixed, composition, 15,000 ohms, 2 watt (R3)
S-4622	Resistor—Fixed, composition, 18,000 ohms, ½ watt (R8)
S-4556	Resistor—Fixed, composition, 22,000 ohms, ½ watt (R1, R14)
S-5470	Resistor—Fixed, composition, 27,000 ohms, ½ watt (R7, R13, R16, R29)
S-4639	Resistor—Fixed, composition, 150,000 ohms, ½ watt (R9)
S-5491	Resistor—Fixed, composition, 220,000 ohms, ½ watt (R18)
S-4559	Resistor—Fixed, composition, 270,000 ohms, ½ watt (R20, R21)
S-4624	Resistor—Fixed, composition, 390,000 ohms, ½ watt (R22)
S-4476	Resistor—Fixed, composition, 470,000 ohms, ½ watt (R4, R24, R27)
S-5852	Resistor—Fixed, composition, 2.2 megohm, ½ watt (R10, R11)
S-4478	Resistor—Fixed, composition, 4.7 megohm (R6)
S-5853	Sleeve—Main tuning control sleeve
S-5854	Sleeve—Microtune tuning control sleeve
S-4485	Spring—Main tuning or microtune indicator drive cord tension spring
S-5710	Spacer—Metal spacer for mounting tuning capacitor (4 required)
S-5855	Stud—Microtune pulley adjusting stud
S-5480	Socket—Phono input socket (dual)
S-4480	Socket—Audio output socket
S-4481	Socket—Tube socket and mounting plate (for converter tube)

STOCK No.	DESCRIPTION
No.	DESCRIPTION
S-4482	Socket—Tube socket—octal (5 required)
S-5856	Socket—Dial lamp socket and lead assembly
S-5857	Switch—Tuning range switch
S-5858	Switch—Radio—Phono switch
S-4487	Transformer—First I-F transformer (T1)
S-4662	Transformer—Second I-F transformer (T2)
S-5859	Transformer—Output transformer (T3)
S-4746	Washer—"C" washer to retain main tuning sleeve (2 required) or microtune tuning sleeve (1 required)
S-5860	Washer—"C" washer to retain microtune drive cord pulley
	POWER UNIT ASSEMBLY
S-5909	Capacitor—Tubular, .015 mf. 600v. (C102)
S-5907	Capacitor—Electrolytic, two sections of 40 mf. at 450v. (C101A, C101B)
S-5463	Cord—Power cord and plug
S-5466	Grommet—Power cord strain relief (1 set)
S-5908	Resistor—Wire wound, 2200 ohms, 5 watt (R101)
S-5910	Socket—Compartment lamp socket and lead assembly
S-5911	Socket—Jewel lamp socket and lead assembly
S-4742	Socket—Tube socket or power cable socket (J101)
S-5906	Transformer—Power transformer (T101)
	SPEAKER ASSEMBLY
S-5862	Cable—Speaker connecting cable with pin plug and pin tips
S-5863	Cone—Cone and voice coil assembly
S-5864	Speaker—Speaker complete with cone and voice coil—less connecting cable
	MISCELLANEOUS
S-4902	Board—ANT.-GND. terminal board
S-5865	Bracket—Compartment lamp mounting bracket
S-5866	Button—Plug button for 78/33⅓ r.p.m. record changer
S-5867	Catch—Door catch (2 required)
S-4646	Clamp—Dial mounting clamp
S-5868	Cloth—Grille cloth for blond cabinets
S-5869	Cloth—Grille cloth for walnut or mahogany cabinets
S-5732	Cover—Cover for RP 168 record changer mounting screw (3 required)
S-5915	Cover—Back cover for cabinet
S-5734	Decal—"Victrola" decal
S-5870	Dial—Glass dial scale
S-4499	Emblem—Single circular trademark emblem (RCA)
S-4500	Emblem—Dual circular trademark emblem (RCA Victor)
S-4502	Grommet—Rubber grommet for mounting chassis (4 required)
S-5656	Grommet—Rubber grommet for mounting 78/33⅓ r.p.m. record changer (4 required)
S-4533	Grommet—Rubber grommet for mounting speaker (4 required)
S-5872	Hinge—Door hinge for blond cabinets—top right or botton left
S-5873	Hinge—Door hinge for blond cabinets—top left or bottom right
S-5504	Hinge—Door hinge for walnut or mahogany cabinets—top right or bottom left
S-5505	Hinge—Door hinge for walnut or mahogany cabinets—top left or bottom right
S-5874	Jewel—Indicator lamp jewel
S-5875	Knob—Range switch or radio-phono switch knob for blond cabinets
S-5876	Knob—Range switch or radio-phono switch knob for walnut or mahogany cabinets
S-5877	Knob—Volume control knob for blond cabinets.
S-5878	Knob—Volume control knob for walnut or mahogany cabinets
S-5879	Knob—Tuning or microtune knob for blond cabinets
S-5880	Knob—Tuning or microtune knob for walnut or mahogany cabinets
S-5881	Knob—Tone control knob for blond cabinets
S-5882	Knob—Tone control knob for walnut or mahogany cabinets
S-5883	Lamp—Dial lamp—Type 44 frosted
S-5884	Lamp—Jewel lamp—Type 51
S-5885	Lamp—Compartment lamp—Type 55
S-5737	Nut—"T" nut for mounting 45 r.p.m. record changer
S-5886	Plate—"RCA Victor" name plate for cabinet
S-4579	Plug—Pin plug for record changer audio output cable
S-5887	Pull—Door pull (2 required)
S-5888	Pull—Record changer drawer pull
S-5889	Screw—"Trimit" head screw (#8-32 x 7/8") to mount door pulls on walnut or mahogany cabinets (4 required)
S-5890	Screw—"Trimit" head screw (#8-32 x 7/8") to mount door pulls on blond cabinets (4 required)
S-5891	Shade—Compartment lamp shade
S-5892	Slide—Record changer drawer slide
S-5893	Spacer—Metal spacer for mounting chassis (4 required)
S-4511	Spacer—Metal spacer for mounting speaker (4 required)
S-5740	Spring—Conical mounting spring for 45 r.p.m. record changer—bottom (3 required)
S-5741	Spring—Conical mounting spring for 45 r.p.m. record changer—upper left (2 required)
S-5742	Spring—Conical mounting spring for 45 r.p.m. record changer—upper right (1 required)
S-5894	Spring—Mounting spring for 78/33⅓ r.p.m. record changer (4 required)
S-5895	Stop—Door stop
S-5896	Strike—Door strike for walnut or mahogany cabinet (2 required)
S 5897	Strike—Door strike for blond cabinets (2 required)