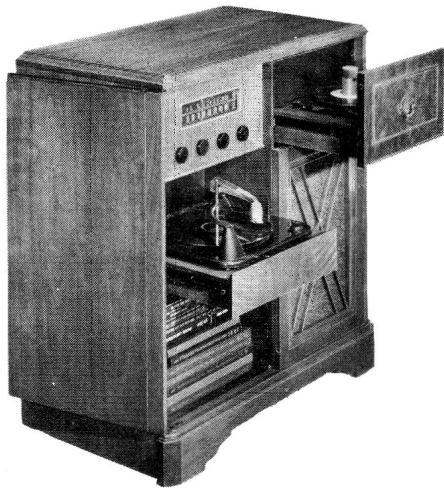




RCA VICTOR



RADIO-PHONOGRAPH COMBINATION

MODEL V-309 SERVICE DATA

—1950 NO. 18—

GENERAL SERVICE DIVISION
RCA VICTOR COMPANY LIMITED
MONTREAL, QUE.

V-309

Electrical and Mechanical Specifications

TUNING RANGE

Standard Broadcast540-1600 KC
Short Wave5.8-18.2 MC
Intermediate Frequency455 KC

TUBE COMPLEMENT

(1) Type 6BA6 R.F. Amplifier
(2) Type 6BE6 Converter
(3) Type 6BA6 I.F. Amplifier
(4) Type 6AV6 Audio
(5) Type 6AV6 Det. A.V.C. Phase Inverter
(6) Type 6C4 Driver
(7) Type 6V6GT Output
(8) Type 6V6GT Output
(9) Type 5Y3GT Rectifier

Dial Lamps (2) Mazda 51

Pilot Lamp Mazda 51

POWER SUPPLY RATING

Rating A—105-125 Volts, 60 cycles, .75 amps.....86 watts
Rating B—105-125 Volts, 25 cycles, .75 amps.....86 watts

Tuning Drive Ratio19:1 (9½ turns of knob)

LOUDSPEAKER

Size and type12 in. P.M.
Voice coil impedance2.2 ohms at 400 cycles

POWER OUTPUT

Undistorted 7 watts
Maximum 10 watts

RECORD CHANGER (RP-168-1)

Turntable speed45 r.p.m.
Record capacityEight, 7 in.—long playing
Pickup Crystal (Medium output)

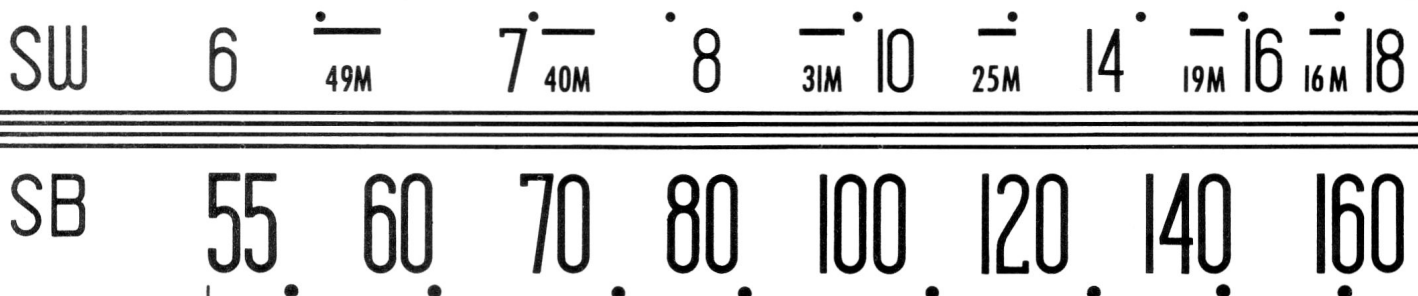
RECORD CHANGER (RP201)

Turntable Speed33-1/3 & 78 R.P.M.
Record Capacity10-12" or 12-10"
Pickup—Dual Stylus—Rotatable Crystal (Medium Output)

CABINET DIMENSIONS

Height34 in.
Width32½ in.
Depth18¼ in.

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The Dial Scale drawing shown is a full size reproduction. It can be used as a reference in alignment procedure.

Fig. 1—Dial Scale

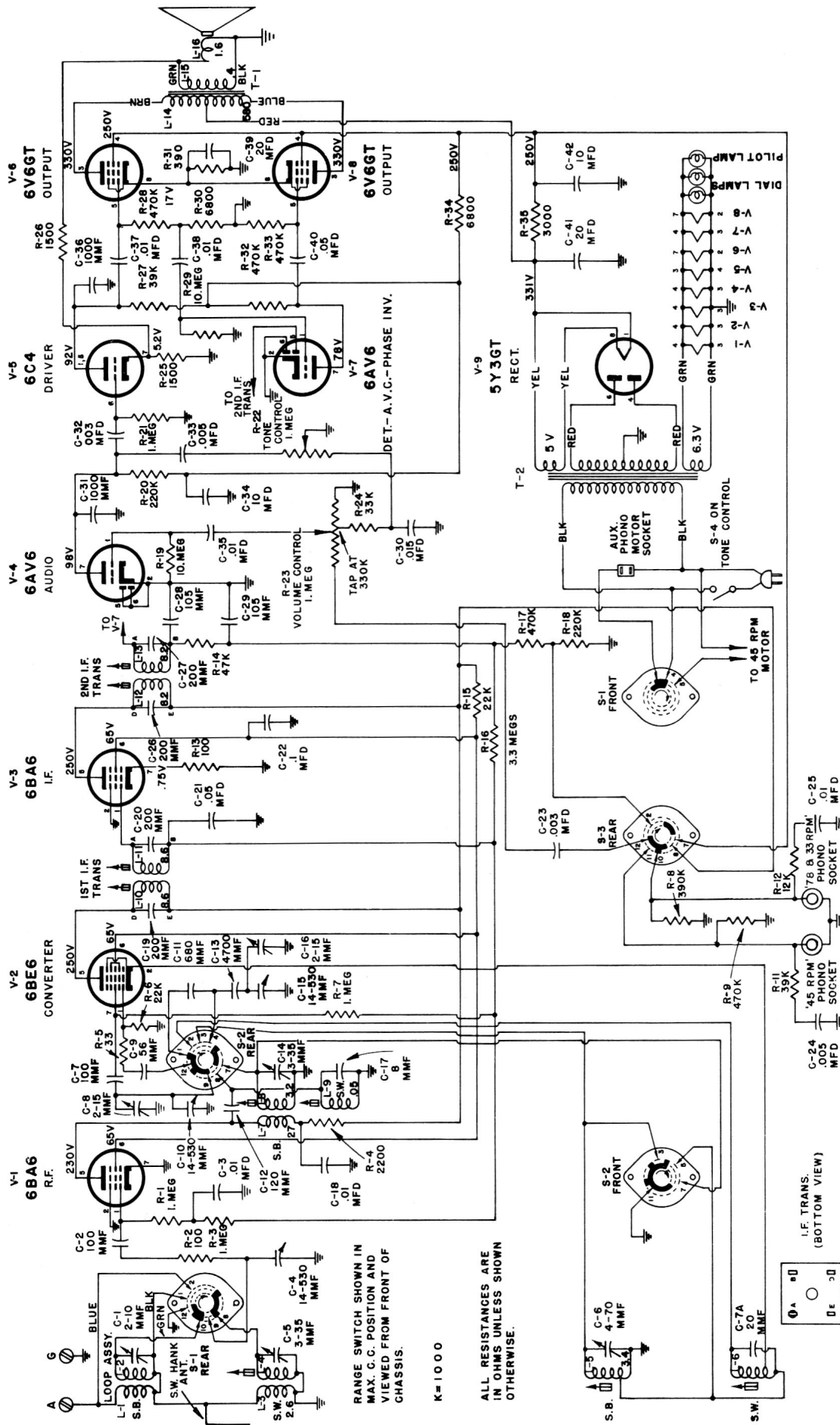


Fig. 2—Schematic Diagram

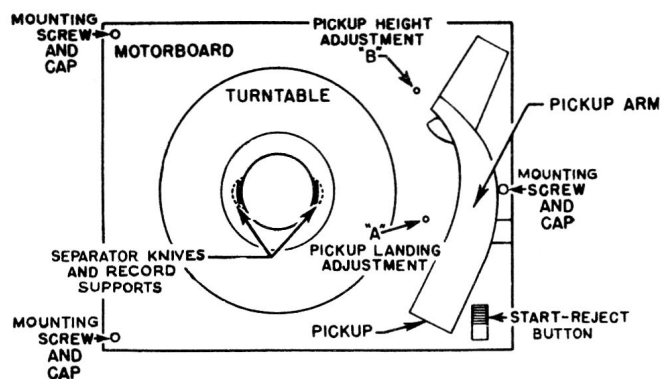


Fig. 3—Top View RP 168 Record Changer

Pickup Landing Adjustment "A"

The pickup point should land half-way between the outer edge of the record and the first music groove.

If the pickup lands inside the starting grooves—turn screw "A" slightly clockwise. If pickup lands outside the starting grooves—turn screw "A" slightly counterclockwise.

Pickup Height Adjustment "B"

During cycle the pickup arm must rise high enough to clear a stack of eight records on the turntable, but not high enough to cause the top of the arm to touch records resting on the record supports.

If pickup does not clear a stack of eight records—turn screw "B" slightly clockwise. If pickup arm touches records on record supports—turn screw "B" slightly counterclockwise.

Record Separators

In the out of cycle position the record separator knives or discs are normally concealed inside the center post. During service, the position of the star wheel on the underside of the record changer may be accidentally shifted; this may cause the separator knives to be extended when they should be concealed.

If the separator knives are thus extended—turn the power on so that the turntable is revolving, gently press fingers against the extended knives until they disappear inside the center post—DO THIS ONLY WHILE MECHANISM IS OUT OF CYCLE.

Care of Sapphire

The record changer sapphire is protected by a permanent metal guard. LINT MAY COLLECT TO CLOG THE OPENING IN THE GUARD AT THE SAPPHIRE POINT AND CAUSE POOR RECORD REPRODUCTION. This may require occasional cleaning of the guard opening—clean by carefully brushing with a small soft brush.

CRITICAL LEAD DRESS

- 1—Dress green loop lead away from chassis.
- 2—Dress black and blue loop leads away from green lead.
- 3—Keep C-13 leads as short as possible, and dress away

from chassis.

- 4—Dress blue lead, from R.F. section of the gang (C-10) to S-2 pin #9, to chassis.

ALIGNMENT PROCEDURE

Before aligning the receiver, set the gang condenser for maximum capacity and then set the dial cursor on the calibration point at the extreme left hand end of the dial.

When only a portion of the circuit is to be aligned select the required portion and perform all the remaining

steps.

In order to obtain best results, it is advisable to align the 455 KC I.F.'s with the help of a cathode ray oscilloscope. The scope should be connected across the volume control. If this equipment is not available, use the method outlined below in the alignment chart.

ALIGNMENT CHART

Order of Alignment		TEST OSCILLATOR				RECEIVER				
		Connect "HI" Side To	Connect "LO" Side To	Dummy Antenna	Frequency Setting	Range Selector	Receiver Dial Setting	Circuit To Adjust	Adjustment Symbols	Notes
I.F. Alignment	1	V-3, 6BA6 Pin #1	GND	.1MFD	H55KC	S.B.	"LO" End	2nd I.F. Trans.	L-12, L-13	Max. Out.
	2	V-2, 6BE6 Pin #7	Same	Same	Same	Same	Same	1st I.F. Trans.	L-10, L-11	Same
	3	Repeat steps 1 and 2.								
S.W. Alignment	4	"Ant" Terminal	GND	300 OHMS	6.1 MC	S.W.	Same	S.W.Osc.	L-6	Same
	5	Same	Same	Same	Same	Same	6.1 MC	S.W.-R.F.	L-9	Same
	6	Same	Same	Same	Same	Same	Same	S.W.-Ant.	L-4	Same
	7	Same	Same	Same	17.75 MC	Same	17.75 MC	S.W.Osc.	C-16	Same
	8	Same	Same	Same	Same	Same	Same	S.W.-RF	C-9	Same
	9	Same	Same	Same	Same	Same	Same	S.W.-Ant.	C-S (Rock in)	Same
	10	Repeat steps 4 to 9.								
S.B. Alignment	11	"Ant" Terminal	GND	220 MMF	600 KC	S.B.	"LO" End	S.B.-Osc.	L-5	Same
	12	Same	Same	Same	Same	Same	600 KC	S.B.-R.F.	L-8	Same
	13	Same	Same	Same	1599 KC	Same	1500 KC	S.B.-Osc.	C-6	Same
	14	Same	Same	Same	Same	Same	Same	S.B.-R.F.	C-14	Same
	15	Same	Same	Same	Same	Same	Same	S.B.-Ant.	C-1 *	Same
	16	Repeat Steps 11 to 15								

* It is advisable to Align C-1 when the loop antenna & receiver are both in the cabinet.

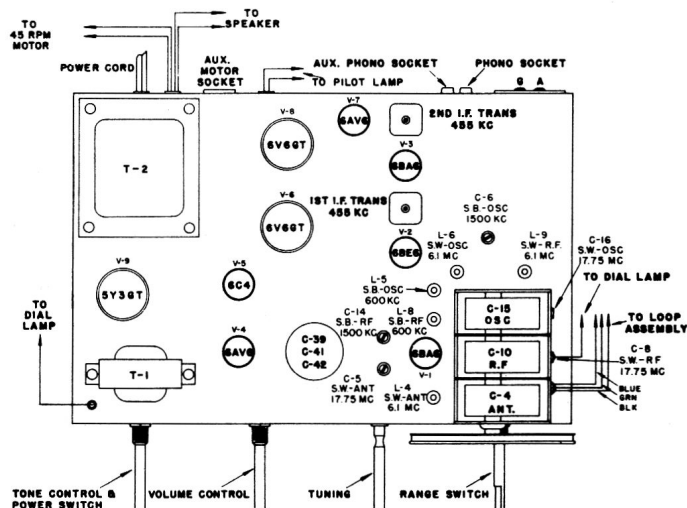


Fig. 4—Chassis Layout and Alignment Adjustments.

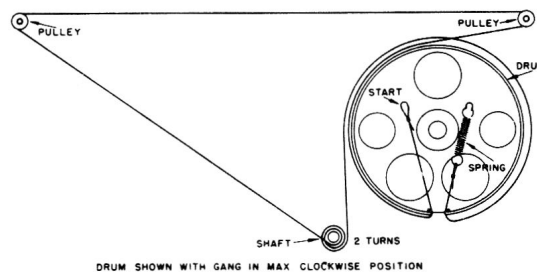


Fig. 5—Dial Cord Stringing.

REPLACEMENT PARTS FOR MODEL V-309

Insist on genuine factory tested parts, which are readily identified and may be purchased from authorized dealers.

STOCK NO.	DESCRIPTION	STOCK NO.	DESCRIPTION
CHASSIS ASSEMBLY		CHASSIS ASSEMBLY (CONT'D.)	
S-5093	Capacitor-Trimmer (C5, C14)		Resistor-390000 ohms + -10% 1/2 watt (R8)
S-5094	" " (C6)		" -470000 " + -10% " (R28)(R33)
70597	" -Ceramic 8 MMF. + -10% 500V. (C17)		" -470000 " + -20% " (R9)
73867	Capristor-56 MMF. +10% 500V. and 33 ohms 1/2 watt (C9, R5)		" -1.0 Meg.ohm + -20% " (R1, R3, R7, R21)
	Capacitor-Ceramic 100 MMF. +20% 500V. (C2, C7)		" -3.3 Meg.ohm + -20% " (R16)
S-4614	Capristor-2(105)MMF., 500V. & 4700ohms 1/2 W. (C28, C29, R14)		" -10.0 Meg.ohm + -20% " (R19, R29)
	Capacitor-Ceramic 120 MMF. +10% 500V. (C12)	S-5087	Switch-Range switch (S1, S2, S3)
	Capacitor-Mica 680 MMF. + -5% 300V. (C11)	S-5089	Tone Control (S4-R22) 1 Meg.
S-5370	" -Ceramic 1,000 MMF. + -20% 350V. (C31, C-36)	S-5085	Transformer-1st IF (L10-L11)
	" -Mica 4700 MMF. + -5% 500V. (C13)	S-5086	" -2nd IF (L12-L13)
	" -Paper .003 Mfd. + -20% 200 V. (C23)	S-5090	" -Output Tr. (T1-L14-L15)
	" -Paper .003 Mfd. + -20% 400V. (C32)	S-4381	" -Power Tr. 25 Cy. (T2)
	" -Paper .005 Mfd. + -10% 200V. (C24)	S-4379	" - " " 60 " (T2)
	" -Paper .005 Mfd. + -20% 400V. (C33)	S-5088	Volume Control (R23) 1 Meg.
	" -Paper .01 Mfd. + -20% 200V. (C3, C35, C38)	SPEAKER ASSEMBLY	
	" -Paper .01 Mfd. + -10% 200 V. (C25)	S-4288	Speaker-12 Inches
	" -Paper .01 Mfd. + -20% 400 V. (C18, C37)	S-4298	Board-Speaker Terminal Board
	" -Paper .015 Mfd. + -20% 400V. (C30)	S-4299	Cone-Cone & voice coil assy. (L16)
	" -.05 Mfd. + -20% 200V. (C21)	MISCELLANEOUS ASSEMBLIES	
	" -.05 Mfd. + -20% 400V. (C40)	S-4313	Cord-Dial Cord (Standard)
	" -.1 Mfd. + -20% 400V. (C22)	S-5281	Dial-Dial Scale
S-5092	" -Electrolytic		Cabinet Back Cover
	10 Mfd., 400 V. (C34)	S-3870	Knob-Knob Assy. Walnut
	10 Mfd., 400 V. (C42)	S-5279	" " " Mahogany
	20 Mfd., 400 V. (C41)	S-5075	" " " Walnut
	20 Mfd., 25 V. (C39)	S-5532	" " " Mahogany
S-5081	Coil-SB, R.F. Coil (L7-L8)	S-5076	Loop-Ant. Loop Assy.
S-5083	" -SB, Osc. Coil (L5)		Cloth-Grille Cloth
S-5084	" -SW., Ant. Coil (L3-L4)	S-5347	Decalcommania
S-5080	" -SW., R.F. Coil (L9)		English Door Pull
S-5082	" -SW., Osc. Coil (L6)	S-5335	Pointer-Station Selector
S-5091	Condenser-Variable condenser (C4, C10, C15)	*S-5988	Hinge-"R.H."
	Resistor, 100 ohms + -20% 1/2 watt (R2, R13)	*S-5989	Hinge-"L.H."
	" 390 " + -10% " (R31)	31418	Spring for dial cord
	" 1500 " + -10% " (R25, R26)	S-5344	Phono Socket
	" 2200 " + -20% " (R4)		
	" 3000 " + -10%, 5 " (R35)		
	" 6800 " + -10% " (R30)		
	" 6800 " + -20% " (R34)		
	" 12000 " + -10% " (R12)		
	" 22000 " + -10% " (R6)		
	" 22000 " + -20% " (R15)		
	" 33000 " + -10% " (R24)		
	" 39000 " + -10% " (R11)		
	" 39000 " + -10% " (R27)		
	" 220000 " + -10% " (R18)		
	" 220000 " + -20% " (R20)		
			For Record Changer Parts see Service Note RP-201
			* Indicates New Stock Item.

Only Items listed under stock numbers are available as Replacement Parts.

All Parts subject to change or withdrawal without notice.