



RCA Victor

MODEL VR54

Five-Tube, Single-Band, A.C. Superheterodyne Radio Phonograph Combination

TECHNICAL INFORMATION AND SERVICE DATA

1946—No. 13

SERVICE DIVISION • RCA VICTOR COMPANY LIMITED • MONTREAL



Electrical and Mechanical Specifications

FREQUENCY RANGE ----- 540 k.c. to 1630 k.c.
Intermediate Frequency ----- 455 k.c.

TUBE COMPLEMENT

(1) TYPE-6SA7 ----- First Detector—Oscillator
(2) TYPE-6SK7 ----- Intermediate Amplifier
(3) TYPE-6SQ7 ----- Second-Detector, A.V.C., and A-F Amplifier
(4) TYPE-6K6GT ----- Power Output
(5) TYPE-5Y3GT ----- Full-Wave Rectifier
Pilot Lamp (2) ----- Mazda 51, 6.3 volts, 0.2 amp.

PICKUP

Type ----- Crystal
Impedance ----- 100,000 ohms at 1,000 cycles

POWER OUTPUT RATING

Undistorted ----- 2 watts
Maximum ----- 3.13 watts

POWER SUPPLY RATINGS

Rating A ----- 105-125 volts, 50-60 cycles, 65 watts
Rating B ----- 105-125 volts, 25-60 cycles, 65 watts

CABINET DIMENSIONS

Height ----- 11 ½ inches
Depth ----- 15 ½ inches
Width ----- 16 ½ inches

MOTOR

Type ----- Self-starting Rim drive
Turntable Speed ----- 78 r.p.m.
Turntable Diameter ----- 9 inches

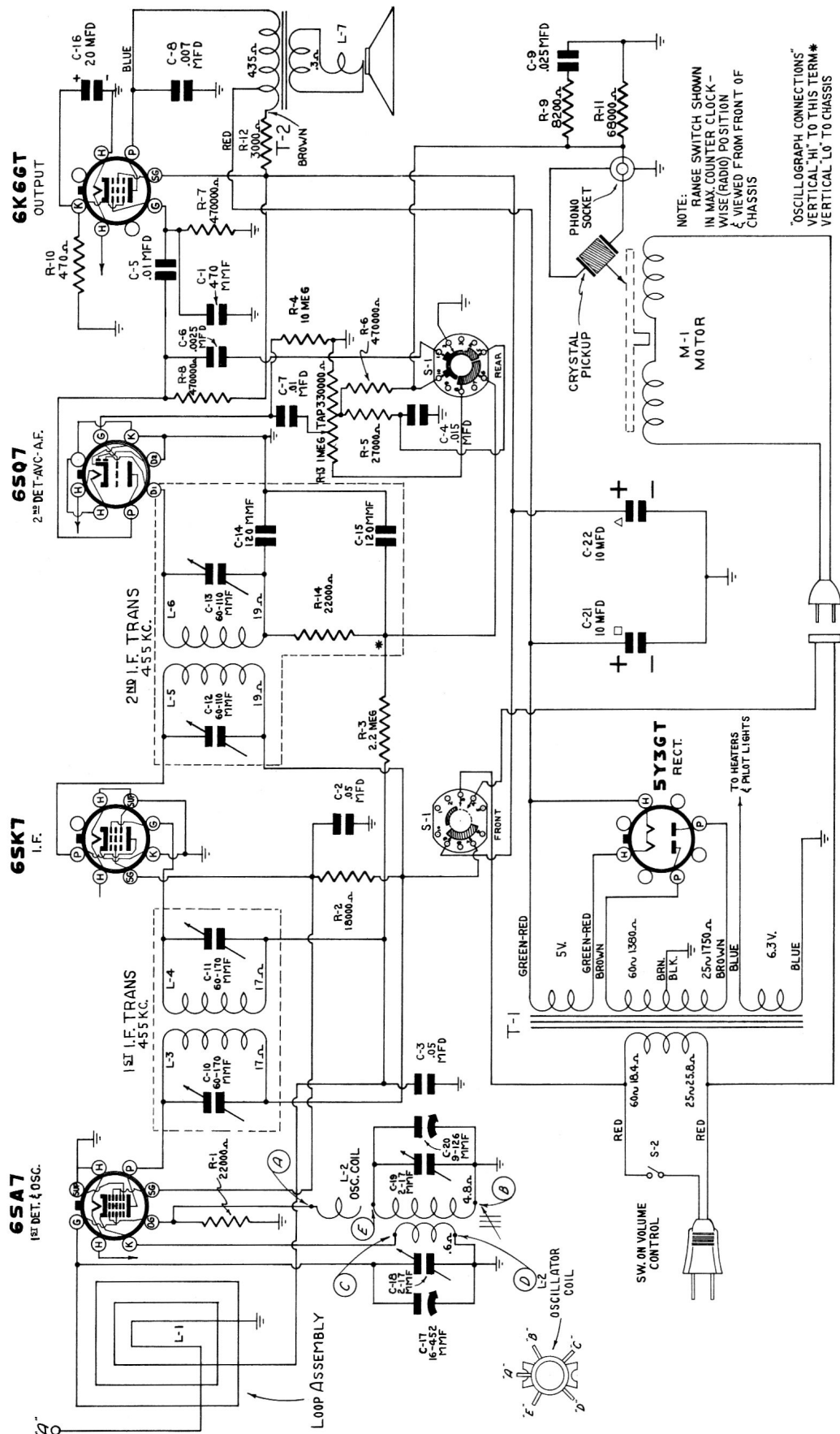
LOUDSPEAKER

Type ----- 4" x 6" Elliptical P.M.
Voice-Coil Impedance ----- at 400 cycles-----3.4 ohms

General Description

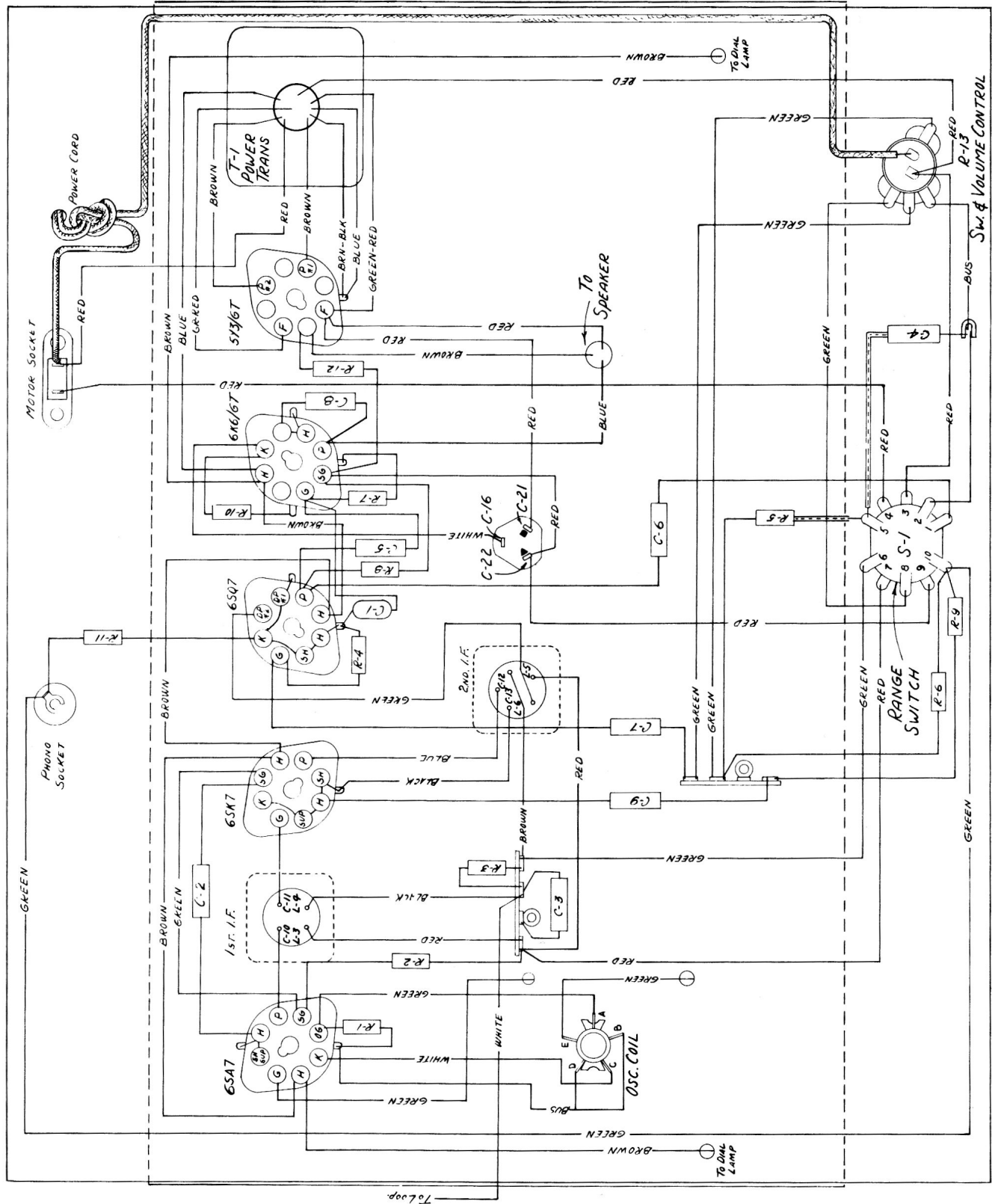
The model VR-54 is a five tube table model superheterodyne Radio and Phonograph Combination: Features include: loop antenna, I.F. transformers of efficient design, a well filtered power supply utilizing a new filtering principle, a six by four inch elliptical

speaker, an edge light dial of plastic material calibrated in easy to read figures; Features of Record Player include: a light weight crystal pickup and a rim drive motor: all housed in a wooden cabinet of modern design.

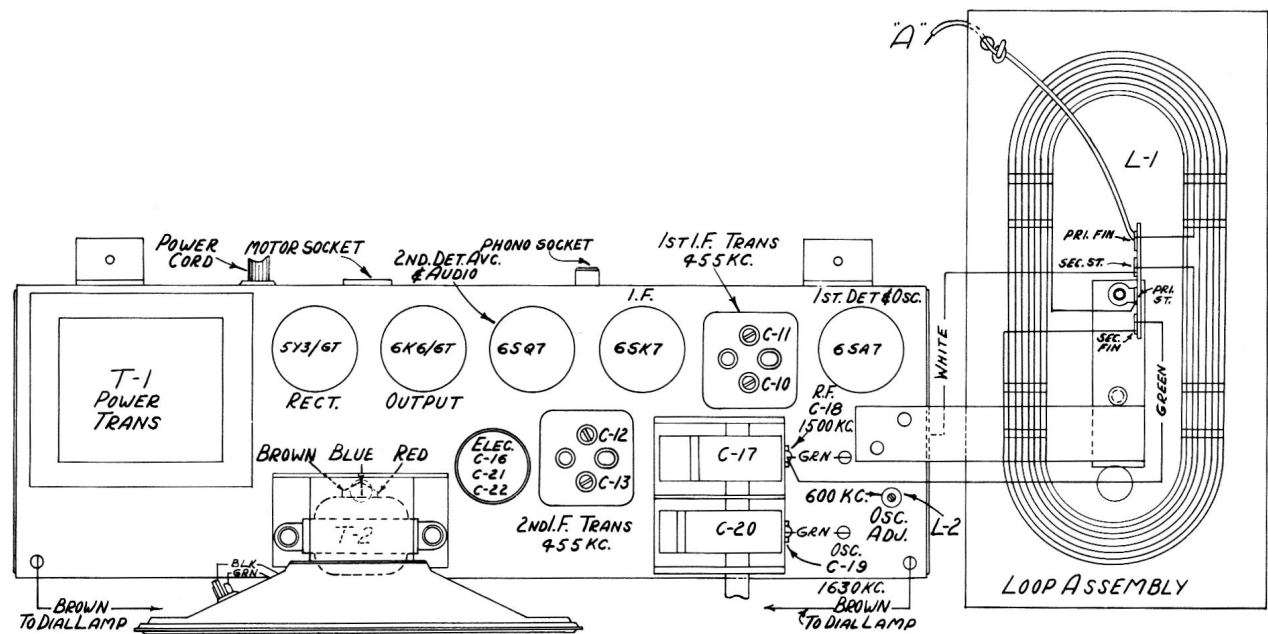


Schematic Circuit Diagram

Schematic Diagram



Chassis Wiring Diagram



Chassis Layout and Alignment Adjustments

Alignment Procedure

OUTPUT METER ALIGNMENT—Connect the meter across the voice coil, and turn the receiver volume to maximum.

CATHODE RAY ALIGNMENT is the preferable method. Connections for the oscillograph are shown on the schematic diagram.

TEST OSCILLATOR—For all alignment operations, connect the low side of the test oscillator to the receiver chassis, through a .01 capacitor, and keep the output as low as possible to avoid AVC action.

PRE SETTING DIAL—With the gang condenser in full mesh, the pointer should be adjusted so that it lines up with the first mark on the left of the dial scale.

Each step of the alignment procedure should be repeated in the order indicated for greater accuracy.

Steps	Connect High Side of Test Oscillator to:—	Tune Test-Osc. to:	Turn Radio Dial to:	Adjust the following for max. output
1.	Grid of 6SK7 through .1 Mfd.	455 KC	Quiet Point at 600 KC end of dial	C12 (2nd)
2.	Grid of 6SA7 through .1 Mfd.			C13 (IF)
3.	Use 220 MMF Dummy Antenna	1630 KC	Out of Mesh	C10 (1st)
4.	Use 220 MMF Dummy Antenna	1500 KC	Resonance at 1500 KC	C11 (I.F.)
5.	Use 220 MMF Dummy Antenna	600 KC	600 KC	C19 (Osc.)
6.	REPEAT	3 - 4 - 5		C18 (RF)
				Rock Osc. slug (L2) for "Max" Output

Service Data

The crystal pick-up unit is thoroughly sealed in a metal casing, against extreme changes of climate. The offset pickup arm insures ideal tracking between needle and record grooves. If failure occurs due to a defective crystal, no attempt should be made to repair the unit, but a new replacement crystal unit should be installed. To replace crystal: Remove two fillister head screws. Lift crystal from arm. Remove plug-in cable. The crystal unit uses a removable type needle.

It is important that the motor drive spindle and rubber tire be kept clean and free from oil, grease, dirt or any foreign matter at all times.

Any quick-drying naphtha is satisfactory for cleaning these parts.

The turntable speed should be 78 R.P.M., and the speed may be checked by a stroboscopic disc. When unavailable place a piece of paper between a record and the turntable, with the paper protruding beyond the edge of the record, then count the number of revolutions of the turntable per minute.

The motor should be lubricated once or twice a year by placing a few drops of S.A.E. 20 (or equivalent) on the turntable spindle and saturating the oil retaining felt pads on the motor shaft with S.A.E. 10 oil.

Tube Socket Voltages

TYPE	PLATE	SCREEN GRID	CATHODE	HEATER
6SA7	235V	80V	—	6.6V
6SK7	235V	80V	—	6.6V
6SQ7	90V	—	—	6.6V
6K6GT	300V	245	15	6.6V
5Y3GT	D.C. OUTPUT ACROSS C22—300V			5.0V

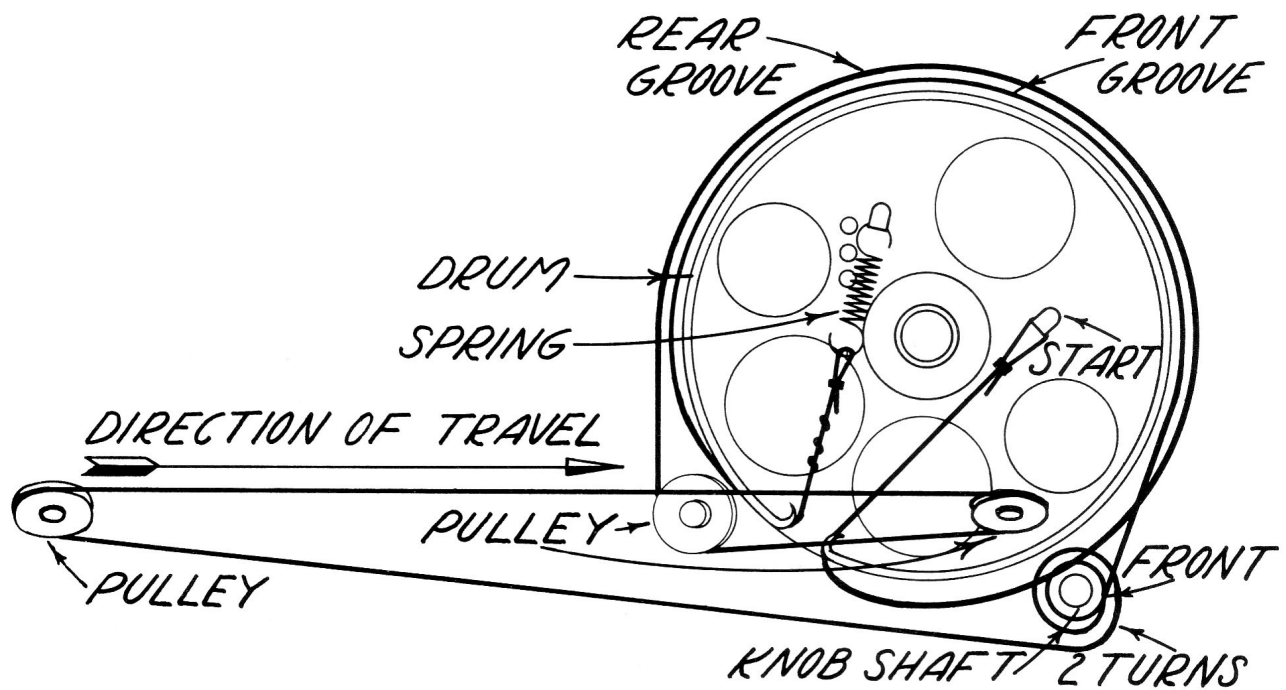
With a line voltage of 117 volts the above voltages hold within plus or minus 20% when measured to common wiring insulated from chassis.

REPLACEMENT PARTS FOR MODEL VR54

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

STOCK NO.	DESCRIPTION	STOCK NO.	DESCRIPTION
RECEIVER ASSEMBLIES		SPEAKER ASSEMBLIES	
30433	Capacitor-470 Mmf. (C1).....	35849	Dust Cap (Pkg.3).....
34459	Capacitor-.0025 Mfd.(C6).....	S-3867	Cone & Voice Coil Ass'y (L7)....
5148	Capacitor-.007 Mfd. (C8).....	S-3866	Speaker Complete.....
4937	Capacitor-.01 Mfd. (C5,C7).....	S-3507	Transformer-Output (T2).....
11315	Capacitor-.015 Mfd. (C4).....	MOTOR ASSEMBLIES	
4870	Capacitor-.025 Mfd. (C9).....	S-3077	Motor 110 V. 60 Cycle (M1).....
32240	Capacitor-Electrolytic 10-10-20 Mfd. (C16,C21,C22).....	S-3078	Motor 110 V. 25 Cycle (M1).....
S-3497	Condenser-Variable (C17,C18,C19,C20)	S-3079	Spindle-Turntable Spindle.....
S-3480	Coil-Oscillator (L2).....	S-3080	Spring-Drive wheel tension spring (Pkg.2).....
S-3499	Cord Indicator Drive Cord.....	S-3081	Turntable.....
S-3581	Indicator Station Selector Pointer.	S-3082	Wheel-Rubber tired drive wheel...
S-3508	Loop and Bracket Assembly (L1)....	PICK-UP ASSEMBLIES	
S-3178	Pulley-Dial Cord Pulley (Pkg.2)....	S-3459	Arm-Pick-up arm-shell only.....
30681	Resistor-470 ohms, 1 watt (R10)....	S-3633	Base-Pick-up arm-base & pivot shaft.....
S-3521	Resistor-3000 ohms,W.W.5 watt (R12)	S-3461	Crystal-Crystal cartridge.....
14250	Resistor-8200 ohms,1/4 watt (R9)...	31054	Grommet-Pick-up base rubber grommet.....
30151	Resistor-18000 ohms,1watt (R2).....	S-3462	Screw-Pick-up needle screw(Pkg.2)
30492	Resistor-22000 ohms,1/4 watt (R1, R14).....	S-3465	Screw-Pick-up crystal retaining screw (Pkg.10).....
30409	Resistor-27000 ohms,1/4 watt (R5)...	S-3466	Spring-Pick-up cable retaining spring (Pkg.2).....
14138	Resistor-68000 ohms,1/4 watt (R11).	MISCELLANEOUS ASSEMBLIES	
30648	Resistor-470000 ohms,1/4 watt (R6, R7,R8).....	S-3520	Dial Scale.....
12679	Resistor-2.2 Meg. 1/4 watt (R3)....	S-3582	Knob-Tone & Phono Switch.....
30992	Resistor-10 Meg. 1/4 watt (R4)....	S-3634	Knob-Volume & Tuning.....
S-3506	Shaft-Drive Shaft Assembly.....	S-3463	Rest-Pickup arm rest (Pkg.2).....
31418	Spring-Drive Cord tension spring (Pkg.2).....	11765	Pilot Lamp-Mazda 51.....
32537	Socket-Tube socket.....	14270	Spring-Knob retaining spring (Pkg.2).....
34909	Socket-Pilot lamp.....		
S-2824	Socket-AC for Phono motor.....		
14278	Socket-Phono Input.....		
S-3498	Switch-Tone & Phono Switch (S1)....		
S-3503	Transformer-1st I.F.(L3,L4,C10,C11)		
S-3504	Transformer-2nd I.F.(L5,L6,C12,C13, C14,C15,R4).....		
S-2317	Transformer-60 Cy.(T1) Power.....		
S-3501	Transformer-25 Cy.(T1) ".....		
S-3505	Volume Control-1 Meg.(S2,R13).....		

All parts and prices subject to change or withdrawal without notice.



DRUM SHOWN WITH
GANG AT MAX. CAPACITY

Dial Drive Cord