



RCA VICTOR



MODEL VRA73

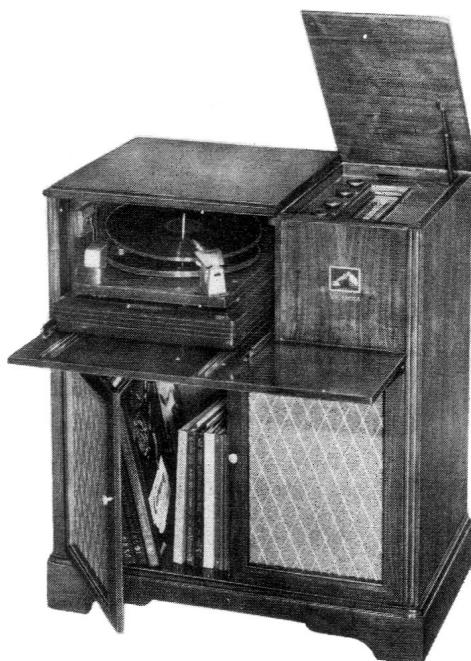
Seven-Tube, Three-Band, A-C, Superheterodyne Radio-Phonograph Combination

TECHNICAL INFORMATION AND SERVICE DATA

1948 No. 17

GENERAL SERVICE DIVISION

RCA VICTOR COMPANY LTD.



Electrical and Mechanical Specifications

FREQUENCY RANGE

Standard Broadcast S.B.	540-1600 kc.
Short Wave 49-31M	5.7-13.0 mc.
25-19M	11.6-16.0 mc.
Intermediate Frequency	455 kc.
Tuning Drive Ratio	12 to 1

RADIOTRON COMPLEMENT

(1) Type 6BA6	R.F. Amplifier
(2) Type 6BE6	Converter
(3) Type 6BA6	I.F. Amplifier
(4) Type 6AT6	Det., A.V.C., & 1st A.F.
(5) Type 6AD7G	Phase Inverter & Power Output
(6) Type 6F6G	Power Output
(7) Type 5Y3GT/G	Rectifier

POWER OUTPUT

Undistorted	4 watts
Maximum	6 watts

LOUDSPEAKER

Type	12 inch round P.M.
Voice Coil Impedance	2.2 ohms at 400 cycles

POWER SUPPLY RATINGS

Rating A	105-125 volts, 50-60 cycle, 95 watts
Rating B	105-125 volts, 25 cycle, 95 watts

CABINET DIMENSIONS

Height	33 inches
Width	30 $\frac{1}{4}$ inches
Depth	17-11/16 inches

PHONOGRAPH

Type RP-178	Automatic
Record Capacity	Twelve 10-inch or Ten 12-inch
Turntable Speed	78 r.p.m.

PICKUP

Type	Crystal
Impedance	100,000 ohms at 1,000 cycles
Average Output	1.4 volts at 400 cycles across 500,000 ohm load

GENERAL DESCRIPTION

The Model VRA73 radio-phonograph console combination, incorporates a seven tube, three band, superheterodyne receiver, designed to cover the broadcast band and two short wave bands. Features of the design include: Built-in loop antenna for broadcast band reception; Short-wave "hank" antenna; Powdered iron core I.F.

transformers, antenna, R.F., and oscillator coils; Automatic volume control; Full range variable tone control; Edge-lighted slide-rule dial, 12 inch dustproof round P.M. loudspeaker. The RP178 automatic record changer mechanism used incorporates a high-fidelity, low noise crystal cartridge. Refer to the RP178 service note for adjustment details and list of replacement parts for this mechanism.

CIRCUIT ARRANGEMENT

The circuit uses a tuned R.F. stage in which the loop antenna operates as the first tuned circuit on the standard broadcast band. For short wave reception a "hank" antenna is connected to the short wave antenna coil primary. This antenna coil operates as the first tuned circuit on the short wave bands. Both short wave bands use the same antenna, R.F. and Oscillator coils. On the 49-31M band, the coils are tuned in the usual manner,

while on the 25-19M band they are tuned by padders in series with each section of the tuning condenser. The R.F. amplifier stage is followed by a converter stage which supplies 455 kc. signals to the permeability tuned I.F. amplifier. A double-diode-triode acts as a second detector A.V.C. and first audio amplifier. Phase-inversion is provided by the triode section of a 6AD7G tube. A push-pull pentode output stage (6F6G and 6AD7G) drives the 12 inch P.M. loudspeaker.

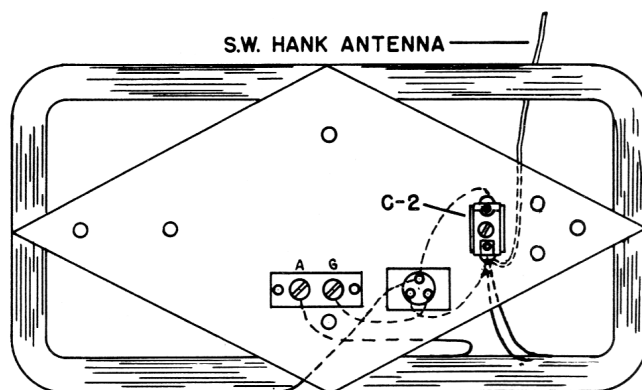


Figure 1—Loop Antenna Connections.

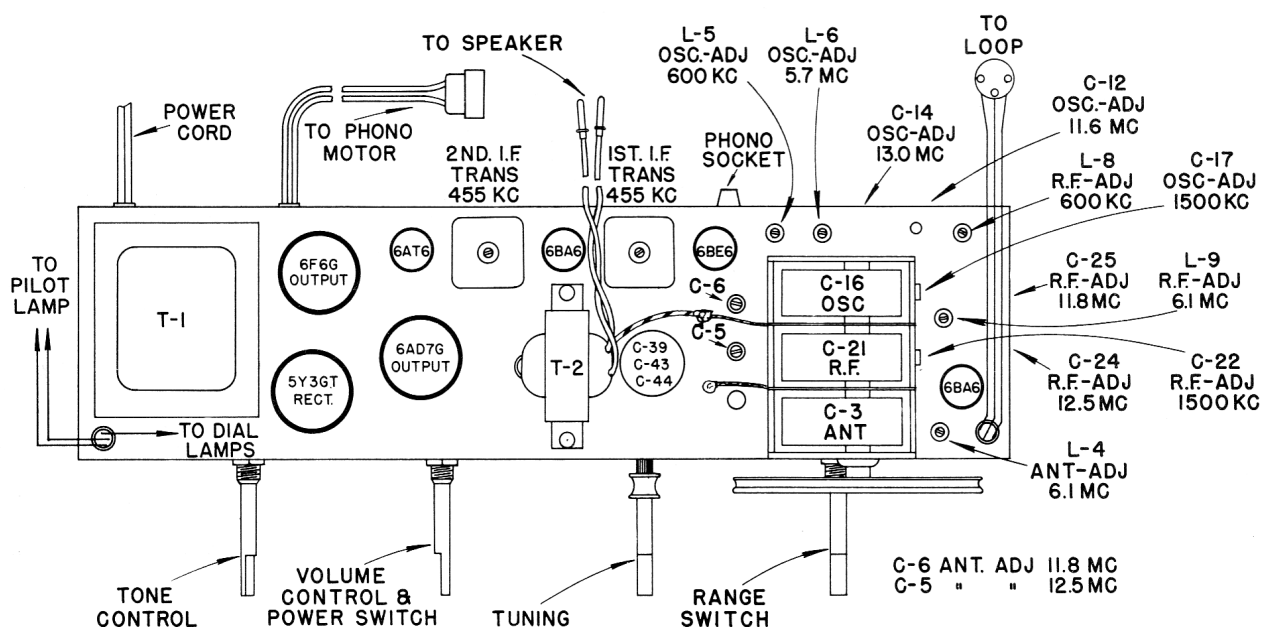


Figure 2—Chassis Layout and Alignment Adjustments.

Figure 3—Schematic Diagram—Range Switch in Phono Position.

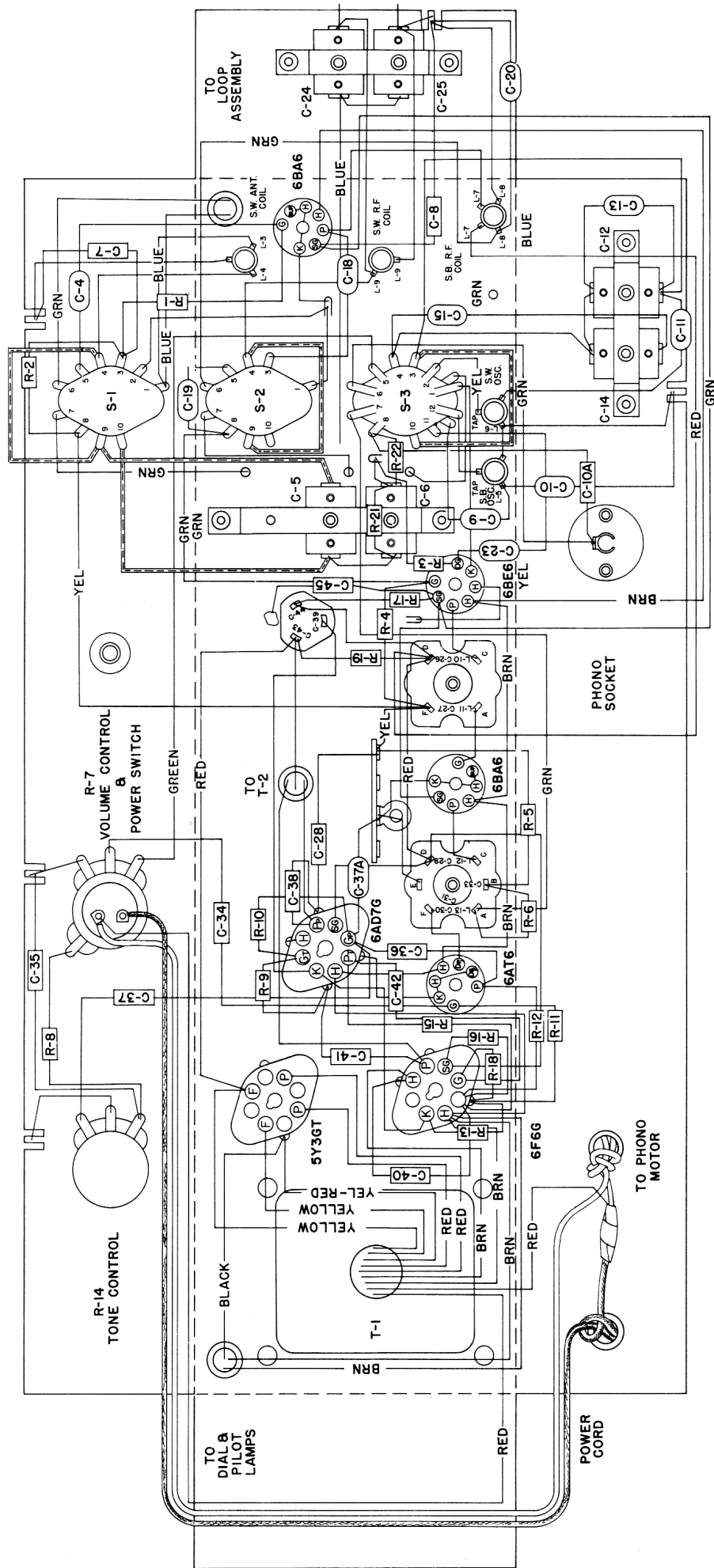


Figure 4—Wiring Diagram.

REPLACEMENT PARTS FOR MODEL VRA73

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-3717	Capacitor - trimmer 3-30 MMF - 3-30 MMF (C14-C12)	30649	" -2.2 Megohms $\frac{1}{4}$ w. (R5)
S-3718	" - trimmer 120-300 MMF - 40-200 MMF (C24-C25)	30992	" -10 " $\frac{1}{4}$ w. (R11)
S-4356	" - trimmer 120-300 MMF - 40-200 MMF (C5-C6)	S-3709	Switch - Range switch (S1-S2-S3)
31709	" - 10 MMF ceramic (C20)	S-4787	Shaft - drive shaft
39616	" - 33 " mica (C10)	14278	Socket - phono input
39622	" - 56 " " (C4-C18-C19-C23)	36500	Socket - tube socket (less centre shield)
39624	" - 68 " " (C15)	31319	" - " " (octal)
12725	" -150 " " (C13)	36069	" - " " (Miniature with centre shield)
39634	" -180 " " (C37A)	S-4357	Scale - dial "scale
14498	" -680 " " (C9)	S-3667	Transformer - 1st I.F. (L10-L11-C26-C27)
39668	" 4700 " " 5% (C11)	S-3668	" - 2nd I.F. (L12-L13-C29-C30-C31-C33)
S-3647	" .007 Mfd. (C37)	S-4023	" - Power 60 cycle (T1)
S-3646	" .005 " (C8-C38-C41)	S-4024	" - " 25 " (T1)
S-3644	" .0025 " (C7-C34-C42)	S-3708	Volume Control - 500,000 (R7-S4)
S-3649	" .015 " (C35)	S-4359	Tone " - 1.Meg. (R14)
S-3648	" .01 " (C36-C40)	SPEAKER ASSEMBLY 12" P.M.	
S-3653	" .05 " (C28)	13867	Dust Cap (Pkg. 5)
S-3655	" .1 " (C45)	S-3568	Cone - cone & voice coil assy (L16)
S-3720	" Electrolytic (C39-C43-C44)	S-4288	Speaker
S-3706	Condenser - Variable (C3-C16-C21)	S-4788	Output transformer (L14-L15)
S-3712	Coil - Antenna coil S.W. (L3-L4)	MISCELLANEOUS ASSEMBLY	
S-3713	" - R.F. coil S.B. (L7-L8)	S-4789	Clamp - Dial Scale clamp (Pkg. 10)
S-3714	" - R.F. " S.W. (L9)	S-4313	Cord - Dial cord (universal)
S-3715	" - Osc. " S.W. (L6)	S-4790	Cord - power cord
S-3716	" - " " S.B. (L5)	13103	Cap - jewel lamp cap
S-4786	Indicator - dial pointer	S-4167	Clamp - back cover clamp (Pkg. 10)
S-4358	Loop - antenna loop (L1-L2)	S-4792	Cloth - Grille cloth
30735	Resistor - 560 ohms 1 watt (R13)	S-4793	Decal
S-3682	" -1800 " W.W. (R19)	S-4213	Knob
43765	" -12,000 " 2 watt (R17)	S-4214	"
30492	" -22,000 " $\frac{1}{4}$ " (R3-R21-R22)	11891	Lamp - pilot lamp (Mazda #44)
30409	" -27,000 " $\frac{1}{4}$ " (R8)	31418	Spring - Dial cord tension (Pkg. 2)
30685	" -33,000 " $\frac{1}{4}$ " (R6)	S-4794	Support - lid support telescopic
14983	" -47,000 " $\frac{1}{4}$ " (R20)	S-4791	Tire & wheel assy for record player
3252	" -100,000" $\frac{1}{4}$ " (R16)		
30180	" -120,000" $\frac{1}{4}$ " (R9)		
14020	" -150,000" $\frac{1}{4}$ " (R15)		
14983	" -330,000" $\frac{1}{4}$ " (R10)		
30648	" -470,000" $\frac{1}{4}$ " (R1-R2-R4-R12-R18)		

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

AUTOMATIC RECORD CHANGER MECHANISM

Refer to RP178 service note for replacement parts and service data.