



RCA VICTOR

MODEL 51



Five-Tube, Three-Band, A-C, Superheterodyne Receiver

TECHNICAL INFORMATION AND SERVICE DATA

1948 No. 18

GENERAL SERVICE DIVISION

RCA VICTOR COMPANY LTD.



Electrical and Mechanical Specifications

FREQUENCY RANGE

Standard Broadcast S.B.540—1600 k.c.
 Short Wave 49—31 M..... 5.7—13.0 m.c.
 25—19 M.....11.6—16.0 m.c.
 Intermediate Frequency455 k.c.
 Tuning drive ratio11 to 1

RADIOTRON COMPLEMENT

(1) Type 6BE6Converter
 (2) Type 6BA6I.F. Amplifier
 (3) Type 6AT6Det A.V.C. & 1st A.F.
 (4) Type 6K6GT/GPower Output
 (5) Type 5Y3GT/GRectifier

POWER OUTPUT

Undistorted2 Watts
 Maximum3 Watts

LOUDSPEAKER

Type8 inch round P.M.
 Voice coil impedance2.2 ohms at 400 cycles

POWER SUPPLY RATINGS

Rating A.....105—125 volts, 50-60 cycle, 50 watts
 Rating B.....105—125 volts, 25-60 cycle, 55 watts

CABINET DIMENSIONS (Inches)

Height30-5/16"
 Width24-7/8"
 Depth13-1/16"

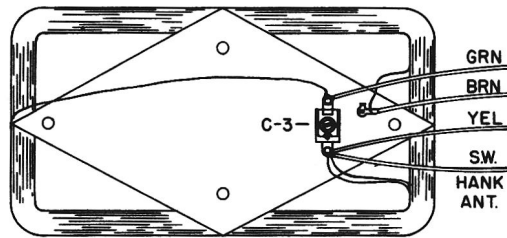
General Description

The Model 51 is a five tube, three band, console type 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; Powdered iron core I.F. transformers, R.F. and

oscillator coils; Automatic volume control; Full range tone control; Edge lighted straight line dial; Phono input socket with PHONO position on range switch; 8 inch dustproof round P.M. loudspeaker.



Fig. 1—Schematic Diagram



*Fig. 2—
Loop Antenna*

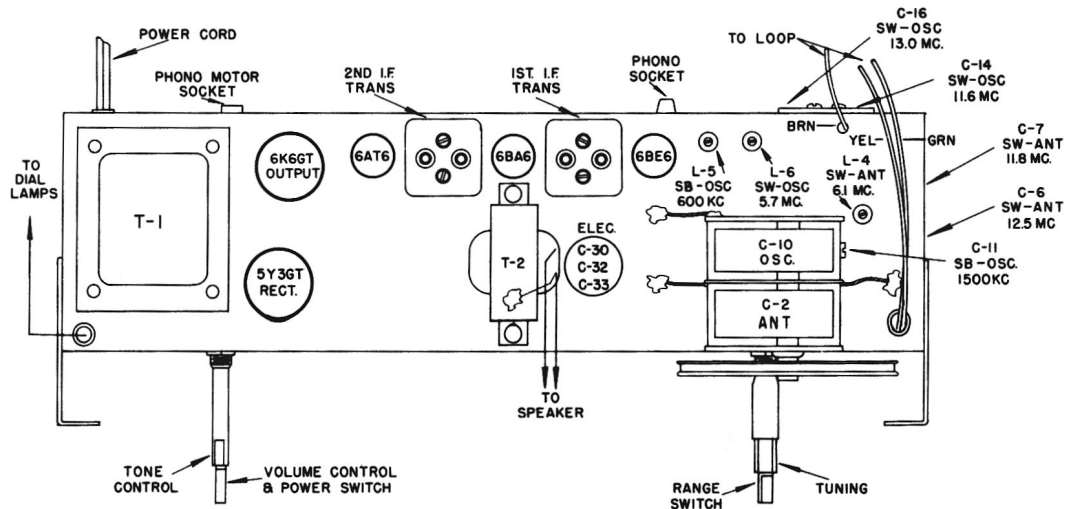


Fig. 3—Chassis Layout and Alignment Adjustment

ALIGNMENT PROCEDURE

Before aligning set, completely mesh the gang and set the dial pointer on the calibration point at the extreme left hand end of the dial.

When making a complete alignment follow in proper sequence the tabulated form below.

If only a portion of the circuit is to be aligned select the portion required, followed by the remaining steps in the chart.

For "S.B.", 49-31M and 25-19M band alignment use output meter across voice coil keeping Test Oscillator output as low as possible to prevent AVC action.

Cathode-ray oscilloscope and sweep signal generator alignment of the 455 kc. A.M. I.F. transformers is the preferable method. Connect oscilloscope across the volume control. If the required equipment is not available use the method outlined below.

ALIGNMENT CHART

Order of Alignment		TEST OSCILLATOR				Range Selector	Receiver Dial Setting	Circuit To Adjust	Adjustment Symbols	Notes
		Connect "H" Side To	Connect "L" Side To	Dummy Antenna	Frequency Setting					
A.M. I.F. ALIGNMENT	1	6BA6 1st I.F. Grid	Ground	.01 mfd.	455 K.C. 30% mod. 400 Cy. A.M.	S.B.	High freq. end of dial	2nd I.F. Trans.	C22, C23	Adjust for max. A.C. voltage across voice coil.
	2	6BE6 Converter Grid	Same	Same	Same	Same	Same	1st I.F. Trans.	C20, C21	Same
S.B. ALIGNMENT	3	"A" on Ant. Ter Board	Ground	200 m.m.f.	1500 K.C. 30% mod. 400 Cy. A.M.	S.B.	1500 K.C. on dial	Oscillator	C11	Adjust for max. A.C. voltage across voice coil
	4	Same	Same	Same	Same	Same	Same	Ant.	C3	Same
	5	Same	Same	Same	600 K.C. 30% mod. 400 Cy. A.M.	Same	600 K.C. on dial	Oscillator	L5	*Same
	* NOTE:- Rock Oscillator in to loop at 600 K.C.									
	6	Repeat steps 3 to 5 for maximum output								
49-31M ALIGNMENT	7	"A" on Ant. Ter. Board	Ground	300 ohms	5.7 Mc. 30% mod. 400 Cy. A.M.	49-31M	Low freq. end of dial	Oscillator	L6	Adjust for max. A.C. voltage across voice coil.
	8	Same	Same	Same	13.0 Mc. 30% mod. 400 Cy. A.M.	Same	High freq. end of dial	Oscillator	C16	Same
	Repeat steps 7 and 8 for maximum output.									
	9	Same	Same	Same	6.1 Mc. 30% mod. 400 Cy. A.M.	Same	Tune in test osc. signal	Ant.	L4	**Same
	**NOTE:- Rock antenna circuit in to oscillator. Do not readjust osc. circuit.									
	10	Same	Same	Same	11.8 Mc. 30% mod. 400 Cy. A.M.	Same	Tune in test osc. signal	Ant.	C7	**Same
Repeat steps 9 and 10 for maximum output.										
25-19M ALIGNMENT	12	"A" on Ant. Ter. Board	Ground	300 ohms	11.6 Mc. 30% mod. 400 Cy. A.M.	25-19M	Low freq. end of dial	Oscillator	C14	Adjust for max. A.C. voltage across voice coil.
	13	Same	Same	Same	12.5 Mc. 30% mod. 400 Cy. A.M.	Same	Tune in test osc. signal	Antenna	C6	***Same
	***NOTE:- Rock antenna circuit in to oscillator. Do not readjust osc. circuit.									
	14	Check at high freq. end of dial. Receiver should tune to 16 Mc. approx.								

SERVICE DATA

NOTE: When placing chassis in cabinet, care should be taken to replace shims between the chassis and cabinet shelf so that the range/tuning, volume/tone control shafts will centre through the dial glass, allowing a clearance between the knobs and dial glass.

REPLACEMENT PARTS FOR MODEL 51

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			
S-3717	Capacitor-trimmer (C14,C16).....	S-3732	Transformer-1st I.F.(L7,L8,C20, C21).....
S-3718	Capacitor-trimmer (C6,C7).....	S-3733	Transformer-2nd I.F.(L9,L10,C22, C23).....
39616	Capacitor-33 MMF mica (C8).....	S-3730	Transformer-Power 60 cycle (T1)..
39622	Capacitor-56 MMF mica (C4,C5,C17)....	S-2903	Transformer-Power 25 cycle (T1)..
12725	Capacitor-150 MMF mica (C15).....	S-4394	Volume & tone control-1/2 Meg. (R9,S3).....
39646	Capacitor-560 MMF mica (C27).....		1 Meg. (R9A).....
14498	Capacitor-680 MMF mica (C9).....	SPEAKER ASSEMBLY (8" PM)	
39668	Capacitor-4700 MMF mica (C13).....		
S-3646	Capacitor-.005 MFD (C26,C31).....	31825	Dust Cap (Pkg.5).....
S-3653	Capacitor-.05 MFD (C12).....	S-4349	Cone-Cone and voice coil assembly (L13).....
S-3649	Capacitor-.015 MFD (C26A).....	S-4391	Speaker.....
S-3648	Capacitor-.01 MFD (C28,C29).....	S-4396	Output Transformer (L11,L12).....
S-3656	Capacitor-.25 MFD (C18).....	MISCELLANEOUS ASSEMBLIES	
S-4397	Condenser-Variable (C2,C10,C11).....		
S-3720	Capacitor-Electrolytic (C30,C32,C33)...	S-4826	Clip-Dial scale clip (Pkg.2).....
S-3712	Coil-Antenna coil S.W. (L2,L4).....	S-4367	Cord-Power cord.....
S-3715	Coil-Oscillator coil S.W. (L6).....	S-4313	Cord-Dial cord.....
S-3716	Coil-Oscillator coil B.C. (L5).....	S-4387	Knob-Range switch.....
S-4393	Indicator-Station selector pointer..	S-4388	Knob-Volume control.....
S-4392	Loop-Antenna loop (L1,L2,C3).....	S-4389	Knob-Tone control.....
34765	Resistor-100 ohms 1/2 watt (R3,R15)...	S-4390	Knob-Tuning control.....
30499	Resistor-470 ohms 1/2 watt (R13)....	11765	Lamp-Pilot lamp (Mazda #51).....
S-3521	Resistor-3,000 ohms 5 watt W.W.(R14)	31418	Spring-Drive cord tension (Pkg.2)
34768	Resistor-18,000 ohms 2 watt (R7)....	S-2824	Socket-AC socket.....
30492	Resistor-22,000 ohms 1/2 watt (R4,R8)	31364	Socket-pilot lamp.....
30685	Resistor-33,000 ohms 1/2 watt (R10A)...	4982	Spring-Knob spring for tuning control (Pkg.5).....
30648	Resistor-470,000 ohms 1/2 watt (R5, R11,R12).....	14270	Spring-Knob spring for range and tone control (Pkg.2).....
30649	Resistor-2.2 Megohms 1/2 watt (R6)...	30330	Spring-Knob spring for vol. control (Pkg.3).....
30992	Resistor-10 Megohms 1/2 watt (R10)...		
S-4386	Scale-Dial Scale.....		
14278	Socket-Phono socket.....		
36500	Socket-Tube socket (less centre shield).....		
31319	Socket-Tube socket octal.....		
36069	Socket-Tube socket (miniature with centre shield).....		
S-4827	Shaft-Tuning drive shaft.....		
S-4395	Switch-Range switch (S1,S2).....		

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