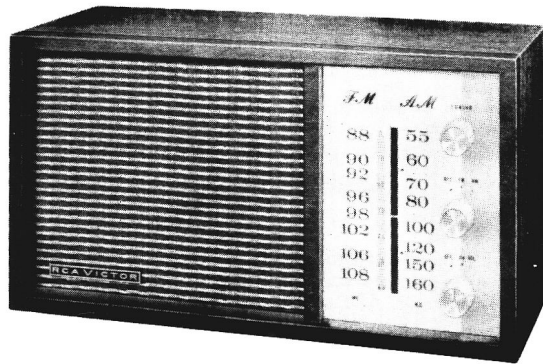




RCA VICTOR



MODEL RF-3

AM-FM TABLE RADIO RECEIVER

SERVICE DATA

MODEL RF-3

GENERAL INFORMATION ELECTRICAL SPECIFICATIONS

SPECIFICATIONS

FREQUENCIES

	Tuning	IF
AM	535-1640 kc	455 kc
FM	88-108 mc	10.7 mc

POWER SUPPLY RATING

105-125 volts 50/60 cycles or DC 23 watts

TUBE COMPLEMENT

Symbol	Type	Function
V-1	12DT8	FM RF Amp. & Converter
V-2	12BE6	AM Converter
V-3	12BA6	AM & 1st FM IF Amp.
V-4	12BA6	2nd FM IF Amp.
V-5	12AV6	AF Amp. & AM Detector
V-6	50C5	Output
D-1, D-2	IN60	FM Demodulator
SR-1	SD-IL	Silicon Rectifier

POWER OUTPUT 2 watts. max.

LOUDSPEAKER 4 $\frac{3}{4}$ " PM 8 ohms

TUNING Vernier Slide Rule

Drive Ratio 13.1 (6 $\frac{1}{2}$ turns of knob)

DIMENSIONS

Height 6 $\frac{3}{4}$ " Width 13" Depth 5 $\frac{1}{2}$ "

DESCRIPTION

The Model RF-3 is a 6 tube (plus rectifier) table style radio designed for the reception of the standard AM and FM broadcast bands (535-1640 KC, 88-108 MC).

The chassis and loudspeaker are mounted in a one-piece vinyl covered cabinet with a hard board "SNAP-IN" back cover on which is mounted the FM antenna terminals and the power cord interlock. When the cabinet back is removed to expose the chassis for servicing, the power cord interlock removes power from the chassis. The FM terminals on the back cover provide for the connection of an external antenna.

This chassis features automatic frequency control (AFC) in the FM circuitry to provide drift-free listening. The AFC circuitry is controlled by a position on the function selector switch so that it may be disabled when desired. The circuit design of this chassis makes use of a minimum amount of switching, none of which is in the high frequency circuits.

SUPPLEMENTARY INFORMATION LISTINGS

Issue	Subject

ISSUED BY

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ALIGNMENT PROCEDURE

CAUTION

THE CHASSIS IS CONNECTED DIRECTLY TO THE POWER LINE. TO AVOID SHOCK HAZARD AN ISOLATION TRANSFORMER SHOULD BE USED DURING SERVICE WORK ON THE CHASSIS.

INSTRUMENTS REQUIRED

Signal Source

1. RF signal generator (RCA WR-49B or equivalent).
2. FM sweep generator (RCA WR-69A or equivalent).
3. Crystal Calibrated Marker generator (RCA WR-99A or equiv.).

Output Indicator

4. Vacuum tube voltmeter (RCA "Voltohmyst" or equivalent).
5. Oscilloscope (RCA WO-91A or equivalent).

GENERAL ALIGNMENT CONDITIONS

1. Connect low side of the signal source and output indicator to chassis ground unless otherwise indicated. Ground connection should be kept close to high side connection.
2. Signal input should be kept as low as possible to avoid AVC action. (Set output indicator to highest sensitivity.)
3. Markers should be accurate (crystal calibrated if possible). The 10.7 mc marker used when aligning the demodulator and IF stages should be the same (dial should not be changed).
4. Marker insertion and amplitude should not distort scope trace.
5. Standard modulation is 400 cycles at 30% amplitude.
6. Volume or loudness control should be turned to maximum and tone controls to mid-position when they are between signal source and output indicator. AFC switch OFF.

Step	Connect signal Source To—	Set Signal To— Insert Markers—	Connect Alignment Indicator To—	Set Radio Dial To—	Adjust As Indicated
FM-RATIO DETECTOR					
1	RF Generator To-V4 pin #1 (12BA6) through a 0.01 μ F Capacitor.	10.7 MC (unmodulated)	V.T.V.M. To-across R5	Quiet Point	T-2 Top Core-for maximum negative voltage
2			V.T.V.M. To-across Volume	on Band.	T-2 Bottom Core-for Zero Voltage (Crossing at 10.7 MC)
3	Repeat steps 1 and 2 as necessary to obtain an "S" curve linearity of ± 75 KC maximum				
FM-IF STAGES					
1	FM Sweep Generator To-Junction R103 and T103	± 0.25 MC. Sweep centered at 10.7MC.	Oscilloscope to-V4 pin 1 (12BA6) through a 1 meg. resistor	Quiet Point on Band.	T-1 Top & Bottom Cores-for max. symmetrical response-centered at 10.7MC with 10.6 & 10.8MC markers at equal heights and between 25% and 60% down slope.
2		10.6 10.7 & 10.8 MC Markers			Pri. & sec. (1st IF FM in FM tuner) for same response as in Step 1.
3	Repeat steps 1 and 2 as necessary				
FM-RF STAGES					
1	Marker Generator-across antenna terminals through a matching network if necessary.	108.5 MC (unmodulated)	V.T.V.M. To-V4 pin 1 (12BA6) through a 180K resistor	108.5 MC	(OSC. trimmer)—for maximum
2		86 MC (unmodulated)		86 MC	(OSC. coil)—for max.
3		105 MC (unmodulated)		105 MC	(RF trimmer)—for max.
4		90 MC (unmodulated)		90 MC	(RF coil)—for max.
5					
6					
7	Repeat steps 1, 2, 3, 4, 5 and 6 as necessary				
Check overall response curve and repeat above steps as necessary until maximum sensitivity is obtained.					
AM-IF STAGES					
1	RF Generator To-V2, pin #7 (12BE6) through a 0.01 μ F capacitor.	455KC	V.T.V.M.-across speaker voice coil	fully open	T-4 Top & Bottom Cores-for max.
2		(modulated)			T-3 Top & Bottom Cores-for max.
3	Repeat steps 1 and 2 as necessary				
AM-RF STAGES					
1	RF Generator — a short piece of wire or loop, of wire placed near AM antenna	1650KC (modulated)	V.T.V.M.-across speaker voice coil	1650KC (fully open)	(OSC trimmer)—for maximum
2		1400KC (modulated)		1400KC	(Ant. trimmer)—for max.
3		600KC (modulated)		600KC	L-1 (Ant. coil)—for max.
4		530KC (modulated)		530KC (rock gang)	L-2 (OSC coil)—for max.
5	Repeat steps 1, 2, 3 and 4 as necessary				
Repeat above steps as necessary until maximum sensitivity is obtained.					

Figure 1 — Schematic Diagram

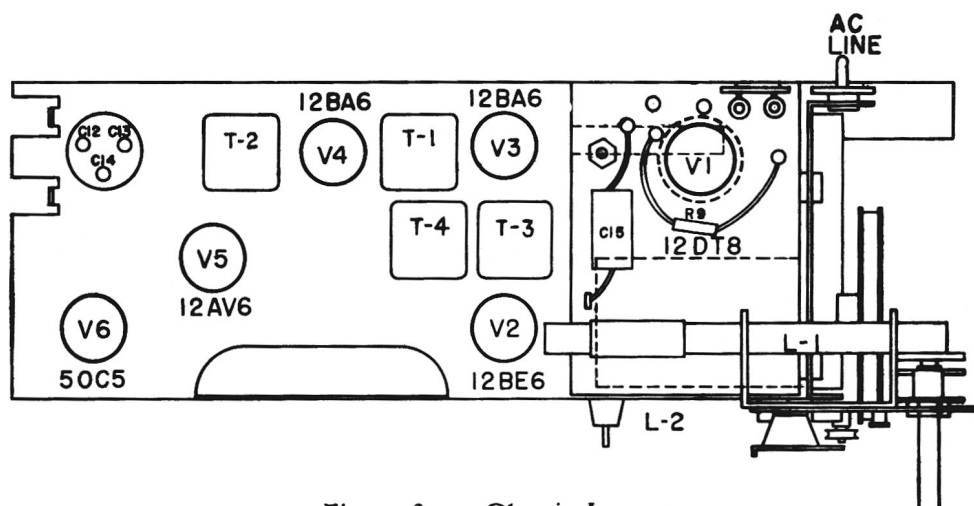


Figure 2 — Chassis Layout

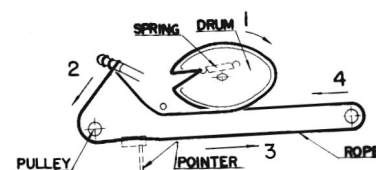


Figure 3 — Dial Cord Stringing

REPLACEMENT PARTS LIST

Insist on Genuine Factory Tested Parts, which are readily identified and may be purchased from Authorized Dealers

SYMBOL	STOCK NO.	DESCRIPTION	SYMBOL	STOCK NO.	DESCRIPTION
CHASSIS ASSEMBLY					
C-1		Capacitor-.002 mfd. $\pm 10\%$ 500 V	SR-1	*63-29383	Rectifier-Silicon Rectifier
C-2		Capacitor-.005 mfd. $\pm 10\%$ 500 V	SP-1	*63-29360	Speaker-4", PM, 8 ohms
C-3	*63-29392	Capacitor-Elect. 3 mfd. $+50\%$ -10% 120 V	T-1	*63-29384	Transformer-FM IFT
C-4,C-5,C-19		Capacitor-100 mmfd. $\pm 10\%$ 500 V	T-2	*63-29385	Transformer-FM Det
C-6	*63-29393	Capacitor-400 mmfd. $\pm 5\%$ 500 V	T-3	*63-29386	Transformer-AM IFT
C-7,C-9		Capacitor-.05 mfd. $\pm 20\%$ 400 V	T-4	*63-29387	Transformer-AM IFT
C-8		Capacitor-.005 mfd. $+100\%$ -0% 500 V	T-5	*63-29359	Transformer-Output
C-10	*63-29394	Capacitor-Electrolytic-10 mfd. $+250\%$ -10% 25 V	MISCELLANEOUS ASSEMBLY		
C-11		Capacitor-.01 mfd. $\pm 20\%$ 400 V		*63-29396	Board-Terminal Board PRC-337
C-12,C-13,	*63-29395	Capacitor-Electrolytic 20/40/40 mfd. 150 V		*63-29352	Cabinet
C-14		Capacitor-.1 mfd. $\pm 20\%$ 400 V		*63-29353	Cover-Back
C-15		Capacitor-.05 mfd. $\pm 10\%$ 600 V		*63-29371	Connector-Interlock
C-16		Capacitor-.005 mfd. $\pm .005$ mfd.		*63-29361	Cord-A.C. Line Cord
C-17+C-18		Capacitor-10 mmfd. $\pm 10\%$ 500 V		*63-29381	Condenser-Trimmer
C-20					
D-1,D-2		Diode-Germanium IN60			
L-1	*63-29388	Coil-Antenna Coil		*63-29357	Dial-Tuning
L-2	*63-29389	Coil-Oscillator Coil, AM		*63-29369	Drum-Tuning
L-3	*63-29390	Coil-RF Choke			
PRC-330	*63-29372	Pack-Resistor-Capacitor Assembly		*63-29368	Holder-Antenna Coil
PRC-336	*63-29373	Pack-Resistor-Capacitor Assembly		*63-29397	Holder-Fuse
PRC-337	*63-29374	Pack-Resistor-Capacitor Assembly			
PRC-338	*63-29375	Pack-Resistor-Capacitor Assembly		*88-2532	Instructions-Customer's Instruction Book
PRC-339	*63-29376	Pack-Resistor-Capacitor Assembly			
PRC-341	*63-29377	Pack-Resistor-Capacitor Assembly		*63-29355	Knob-Band Switch
PRC-342	*63-29378	Pack-Resistor-Capacitor Assembly		*63-29356	Knob-Tuning
				*63-29354	Knob-Volume
R-1,R-10		Resistor-1 meg $\pm 20\%$, $\frac{1}{2}$ watt		*63-29364	Plate-Dial Back
R-2,R-12		Resistor-150 ohms $\pm 10\%$, $\frac{1}{2}$ watt		*63-29365	Plate-Control With Pulleys
R-3,R-4		Resistor-1,000 ohms $\pm 10\%$, $\frac{1}{2}$ watt		*63-29366	Plate-Tuner Mounting
R-5,R-6		Resistor-30,000 ohms $\pm 10\%$, $\frac{1}{2}$ watt		*63-29363	Pointer-Dial
R-7,R-9,R-16		Resistor-100 ohms $\pm 20\%$, $\frac{1}{2}$ watt			
R-8		Resistor-5,000 ohms $\pm 20\%$, $\frac{1}{2}$ watt		*63-29367	Shaft-Tuning
R-11		Resistor-500,000 ohms $\pm 20\%$, $\frac{1}{2}$ watt		*63-29370	Spacers-Nylon Insulating
R-13		Resistor-800 ohms $\pm 20\%$, 1 watt		*63-29379	Switch-Band Switch
R-14		Resistor-200 ohms $\pm 20\%$, 1 watt		*63-29382	Spacer-Nylon, Chassis Mounting
R-15	*63-29391	Resistor-50 ohms $\pm 10\%$, 6 watts			
R-17	*63-29380	Resistor-Volume Control		*63-29392	Tuner-FM

* Indicates New Stock Items.

Only items listed under stock numbers are available as Replacement Parts

All parts subject to change or withdrawal without notice.