



RCA VICTOR



3-RC-1 Series—The "Bulletin"

Model 3-RC-11—Black/Frost Aluminum
Model 3-RC-14—Espresso/Frost Aluminum

RCA SALES CORPORATION

A RADIO CORPORATION OF AMERICA SUBSIDIARY
600 NORTH SHERMAN DRIVE
INDIANAPOLIS 1, INDIANA

RADIO SERVICE DATA

—File: 1962 No. 14—

3-RC-1 Series

CHASSIS RC-1210C

CIRCUIT BOARD NO. 1432133-1

SPECIFICATIONS

TUBE COMPLEMENT

- (V1) RCA 17C9FM RF Amp. and Converter
- (V2) RCA 12BE6AM Converter
- (V3) RCA 19HR6AM and 1st FM IF Amp.
- (V4) RCA 12AU6AM Detector and 2nd FM IF Amp.
- (V5) RCA 14GT8AF Amp. and FM Demodulator
- (V6) RCA 50C5Audio Output
A Silicon Rectifier is Used

TUNING RANGES

- AM535-1620 kc
- FM87.5-108.5 mc

LOUDSPEAKER4" PM

INTERMEDIATE FREQUENCIES

- AM455 kc
- FM10.7 mc

POWER OUTPUT2.25 watts max.

POWER SUPPLY RATING

105-125 volts, 50-60 cycle or DC36 watts

TUNING DRIVE RATIO8:1 (4 turns of Knob)

DIMENSIONS

Height6 $\frac{1}{16}$ " Width11 $\frac{1}{8}$ " Depth5 $\frac{1}{16}$ "

WEIGHTApprox. 4 lbs.

DESCRIPTION

The 3-RC-1 Series are 6 tube (plus rectifier) table style radios designed for reception of the standard AM and FM broadcast bands (550-1600 kc, 88-108 mc) when operated on a 105-125 volt, 50-60 cycle or DC power source.

The "Security Sealed Circuit" chassis and loudspeaker are mounted in a one piece molded plastic cabinet with a "snap-in" hardboard back cover to which is attached the FM antenna terminals, the AM antenna, and the power cord interlock plug. When the cabinet back is removed to expose the chassis, the power cord interlock removes power from the chassis; this in conjunction with the isolated control shafts, dial pointer and chassis mounting screens, removes the shock hazard.

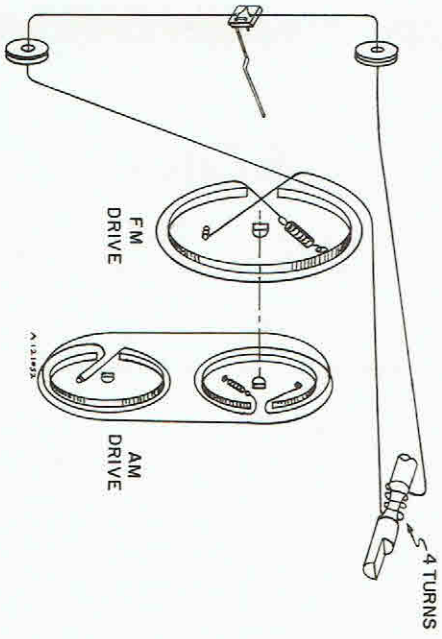
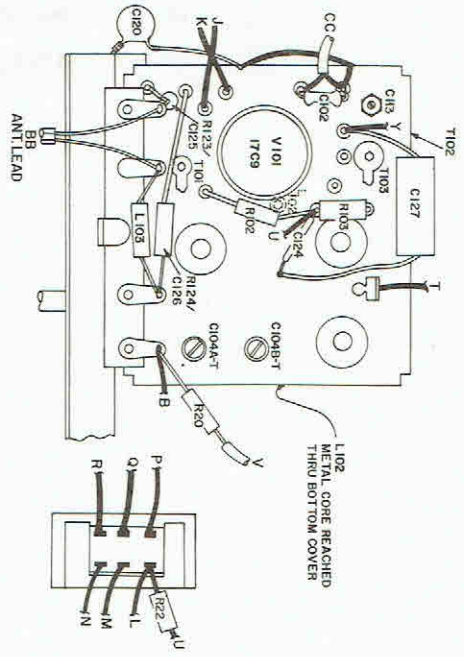
Chassis RC-1210C utilizes superhetrodyne circuitry in both the AM and FM channels. The AM circuitry consists of a converter stage, an IF amplifier stage, a detector stage, an AF amplifier stage and a power amplifier stage. The FM circuitry consists of an RF amplifier stage, a converter stage, two IF amplifier stages, a demodulator stage, an AF ampli-

fier stage and a power amplifier stage. The circuit design features a minimum amount of switching, none of which is in the high frequency circuits. All components except the loudspeaker are mounted on one side of a "Security Sealed" wiring board with their leads extending through the board and dip soldered to the printed wiring which is bonded to the opposite side. Signal pickup for the AM band is accomplished with an air loop antenna; for the FM band the antenna terminals on the back permit the connection of the capacity type power line antenna or of an external antenna.

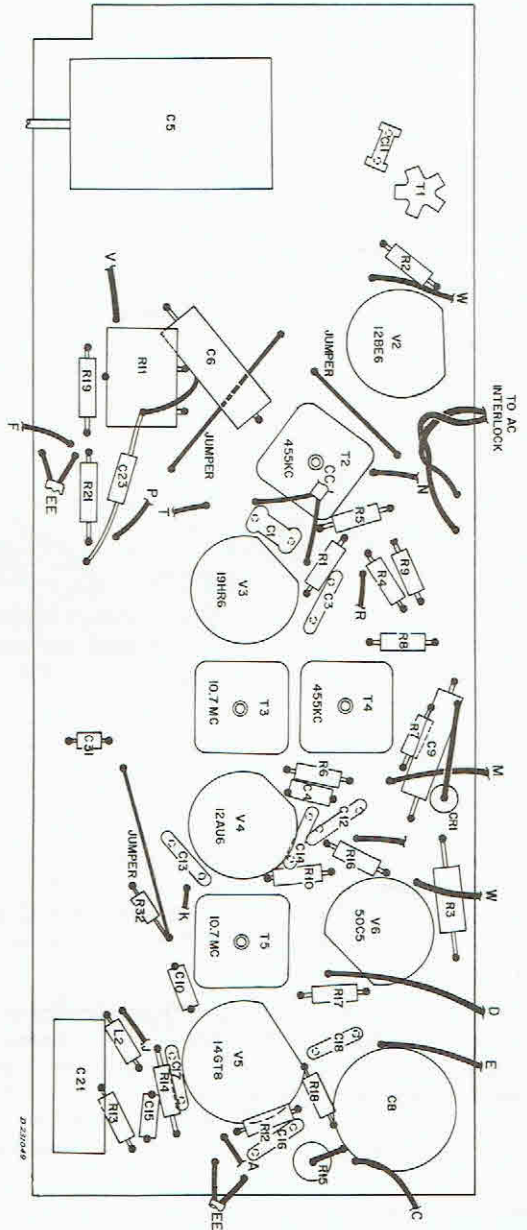
A 4" PM loudspeaker is used to convert the electrical impulses into sound waves.

SUPPLEMENTARY INFORMATION LISTINGS

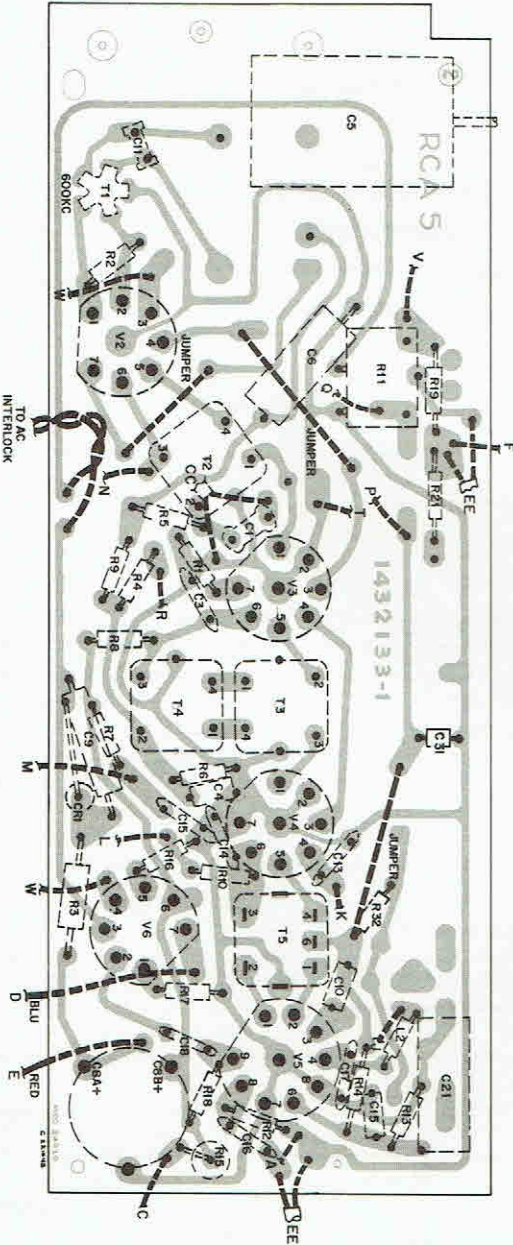
Issue	Vol.	Subject



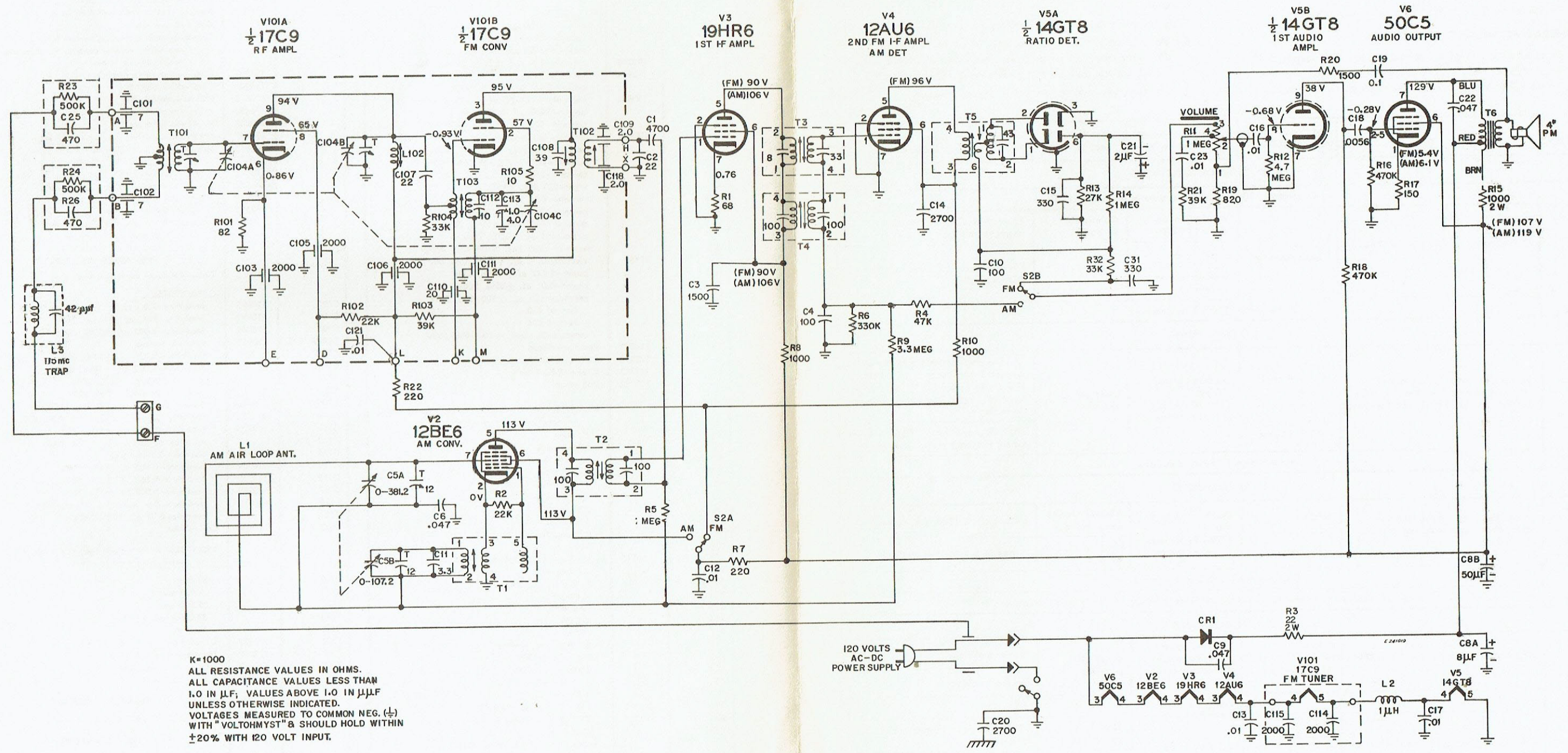
Dial Cord Stringing



Chassis Layout—View From Component Side



Chassis Wiring and Components—View from Wiring Side



K=1000
 ALL RESISTANCE VALUES IN OHMS.
 ALL CAPACITANCE VALUES LESS THAN
 1.0 IN μ F; VALUES ABOVE 1.0 IN μ F
 UNLESS OTHERWISE INDICATED.
 VOLTAGES MEASURED TO COMMON NEG. (\pm)
 WITH "VOLTOHMYST" & SHOULD HOLD WITHIN
 $\pm 20\%$ WITH 120 VOLT INPUT.

Schematic Diagrams

ALIGNMENT PROCEDURE

3-RC-1 Series

INSTRUMENTS REQUIRED

Signal Source

1. RF signal generator (RCA WR-49B or equivalent).
2. FM sweep generator (RCA WR-69A or equivalent).

Output Indicator

3. Vacuum tube voltmeter (RCA "Voltohyst" or equivalent).
4. 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, reading should not exceed 1 volt.)
3. Markers should be accurate (crystal calibrated if possible). The 10.7mc 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.
7. Set function switch to band being aligned.

Step	Connect Signal Source To —	Set Signal To — Insert Markers —	Connect Alignment Indicator To —	Set Radio Dial To —	Adjust — As Indicated
RATIO DETECTOR ALIGNMENT					
Connect two 100K matched resistors in series across R13					
1			V.T.V.M. to V5, pin 6 (14GT8)	Quiet point on band	T5—Bottom Core—for maximum negative voltage
2	RF Generator To—V4, pin 1 (12AU6)	10.7 mc (unmodulated)	V.T.V.M. to junction of 100k resistors and to T5 term. 6		T5—Top Core—for Zero voltage (Cross-over)
3					
4	Repeat steps 2 and 3 as necessary				
IF ALIGNMENT					
1	Sweep Generator To—a piece of insulated wire inserted between tube and tube shield of V101 (on FM tuner)	240 kc sweep centered at 10.7 mc	Oscilloscope to—V4, pin 1 (12AU6) through a 1 meg. resistor	Quiet point on band	T3—Top and Bottom Cores—for max. symmetrical response centered at 10.7 mc with 10.6 & 10.8 mc markers at equal heights and not more 50% down slope.
2		markers at 10.6, 10.7 & 10.8 mc			T102—Top and Bottom Cores—in FM tuner) for same response as above
3	Repeat steps 1 and 2 as necessary				
RF ALIGNMENT					
1	Sweep Generator across antenna terminals through matching network if necessary	87.5 mc	Oscilloscope to—V4, pin 1 (12AU4) through a 1 meg. resistor	87.5 mc (tuning gang closed)	L102, T101 & T103—for maximum
2		108.5 mc		108.5 mc (tuning gang open)	C104A/B & C113 for maximum
3	Repeat steps 1 and 2 as necessary				
4	Check overall response curve and repeat above steps as necessary to obtain maximum sensitivity				
AM ALIGNMENT					
1	RF Generator To—pin 7 of V2 (12BE6)	455 kc (modulated)	V.T.V.M. as an audio voltmeter—across speaker voice coil	Quiet point on band	T4—for maximum
2					T2—for maximum
3	Repeat steps 1 and 2 as necessary				
4	Connect RF Generator to a short piece of wire or to a loop of wire placed near AM antenna	1620 kc (modulated)	V.T.V.M. as an audio voltmeter—across speaker voice coil	1620 kc (gang open)	C5B-T (Oscillator trimmer)—for maximum
5		1400 kc (modulated)		1400 kc	C5A-T (Antenna trimmer)—for maximum
6		600 kc (modulated)		600 kc (rock gang)	T1 (Oscillator Coil)—for maximum
7	Repeat steps 4, 5 and 6 as necessary to obtain maximum sensitivity				

3-RC-1 Series

REPLACEMENT PARTS

SYMBOL NO.	STOCK NO.	DESCRIPTION	SYMBOL NO.	STOCK NO.	DESCRIPTION	
		RADIO CHASSIS ASSEMBLY RC-1210C				
		CAPACITORS:				
C1		ceramic—4700 μ mf, \pm 20%, 500v		110855	Bushing—drive shaft (5 per pkg.)	
C2		ceramic—22 μ mf, \pm 10%, 500v		110856	Bushing—nylon, tuner mounting (5 per pkg.)	
C3		ceramic—1500 μ mf, \pm 20%, 500v		110875	Bushing—nylon—for drive cord (5 per pkg.)	
C4	105300	ceramic—100 μ mf, \pm 20%, 500v, NPO		106992	Cable—power cord	
C5A/B	110844	variable, tuning		110841	Circuit—chassis sub-assembly less tuning capacitor, volume control, transformers, oscillator coil, tubes	
C6		paper—0.047 μ f, \pm 20%, 200v		106993	Clip—power cable retaining	
C8A/B	110846	electrolytic—80/50 μ f, +100—0%, 150/150v		72953	Cord—drive (250 ft.)	
C9		paper—0.047 μ f, \pm 20%, 400v		110870	Pointer—control dial	
C10		ceramic—100 μ mf, \pm 20%, 500v, NPO		110853	Pulley—small drive	
C11	110710	ceramic—3.3 μ mf, \pm 0.25 μ mf, 500v, N3300		110854	Pulley—large drive	
C12		ceramic—0.01 μ f, +100—0%, 500v		110857	Shaft—tuning drive	
C13		ceramic—0.01 μ f, +100—0%, 500v		105313	Socket—tube, 7 pin—for V6	
C14		ceramic—2700 μ mf, \pm 20%, 500v		110061	Socket—tube, 7 pin—for V3, V4	
C15		mica—330 μ mf, \pm 10%, 500v		110872	Socket—9 pin with shield assembly—for V5	
C16		ceramic—0.01 μ f, \pm 20%, 500v		74305	Spring—dial cord tension (15 per pkg.)	
C17		ceramic—0.01 μ f, +100—0%, 500v		110874	Spring—pulley (5 per pkg.)	
C18		ceramic—5600 μ mf, \pm 20%, 500v		112325	Terminal—FM antenna	
C19		paper—0.1 μ f, \pm 20%, 200v		76220	Washer—"C" retaining—for drive shaft (10 per pkg.)	
C20		ceramic—2200 μ mf, \pm 100—0%, 1000v			FM TUNER ASSEMBLY	
C21	79181	electrolytic—2 μ f, +100—10%, 50v		110983	Tuner—FM tuner complete, less tubes	
C22		paper—0.047 μ f, \pm 20%, 200v			CAPACITORS:	
C23		paper—0.01 μ f, \pm 20%, 200v		C101	feed-thru—7.0 μ mf, \pm 1 μ mf, 500v	
C24		ceramic—0.01 μ f, +100—0%, 500v		C102	feed-thru—7.0 μ mf, \pm 1 μ mf, 500v	
C25		Part of R23		C103	feed-thru—0.002 μ f, \pm 50%, 500v	
C26		Part of R24		C104A/B/C	variable tuning	
C31		ceramic—330 μ mf, +100—0%, 500v		C105	feed-thru—0.002 μ f, \pm 10%, 500v	
CR1	110873	Rectifier—silicon		C106	feed-thru—0.002 μ f, \pm 10%, 500v	
L1	110310	Coil—oscillator		C107	ceramic—22 μ mf, \pm 10%, 500v	
L2	105513	Choke—R.F., 1 μ h		C108	ceramic—39 μ mf, \pm 10%, 500v	
L3	112332	Coil—trap		C109	feed-thru—2.0 μ mf, +0.75 μ mf, 500v	
		RESISTORS: fixed, composition, \pm20%, 1/2 watt, unless otherwise specified		C110	feed-thru 20 μ mf, \pm 5%, N220 \pm 30, 500v	
R1		68 ohm		C111	feed-thru—0.002 μ f, \pm 5%, 500v	
R2		22,000 ohm		C112	ceramic—10 μ mf, \pm 5%, N220, 500v	
R3		22 ohm, 2w		C113	trimmer—1.0—4.0 μ mf	
R4		47,000 ohm		C114	feed-thru—0.002 μ f, \pm 5%, 500v	
R5		1 megohm		C115	feed-thru—0.002 μ f, \pm 5%, 500v	
R6		330,000 ohm		C117	feed-thru—0.002 μ f, \pm 5%, 500v	
R7		220 ohm		C118	feed-thru—2.0 μ mf, \pm 0.75 μ mf, 500v	
R8		1000 ohm		C121	ceramic—0.01 μ f, \pm 2%, 500v	
R9		3.3 megohm		L102	Coil—choke	
R10		1000 ohm			RESISTORS: fixed composition, \pm5%, 1/2 watt, unless otherwise specified	
R11	110845	control—"on-off-volume" with S1		R101	82 ohm	
R12		4.7 megohm		R102	22,000 ohm	
R13		27,000 ohm, \pm 5%		R103	39,000 ohm	
R14		1 megohm		R104	33,000 ohm, \pm 10%	
R15		1000 ohm, 2W		R105	10 ohm	
R16		470,000 ohm		T101	110975 Transformer—antenna	
R17		150 ohm, \pm 10%		T102	110982 Transformer—1st IF	
R18		470,000 ohm, \pm 10%		T103	110977 Transformer—oscillator	
R19		820 ohm, \pm 10%			110980 Cover—tuner cover	
R20		1500 ohm, \pm 10%			SPEAKER ASSEMBLY	
R21		39,000 ohm, \pm 10%			110865	Speaker—4" PM, 3.2 ohm v.c.
R22		220 ohm			MISCELLANEOUS	
R23	110363	500,000 ohm, includes C25			110849	Back—Cover, with air loop antenna (L1)
R24	110363	500,000 ohm, includes C26				Book—Instruction (1B-1403729-1)
R32		33,000 ohm			Y7280	Cabinet—Espresso/Frost Aluminum—for 3-RC-14
S1		Switch—"On-Off" (part of R11)			Y7281	Cabinet—Black/Frost Aluminum—for 3-RC-11
S2	110867	Switch—DPDT, AM-FM selector			110866	Dial—control—for 3-RC-11, -14
T2	110879	Transformer—1st AM, I.F.			110863	Knob—tuning, dawn gray (set of 2)
T3	110850	Transformer—2nd FM, I.F.			110864	Spring—retainer—for speaker
T4	110851	Transformer—2nd AM, I.F.				
T5	110848	Transformer—ratio detector				
T6	110133	Transformer—audio output				
	110852	Backplate—control dial				

APPLY TO YOUR RCA DISTRIBUTOR FOR PRICES OF REPLACEMENT PARTS