



Chassis No. RC-523

Six-Tube, Two-Band, A-C, Radio Phonograph Combination

TECHNICAL INFORMATION AND SERVICE DATA

— 1940 No. 33 —

SERVICE DIVISION • RCA MANUFACTURING COMPANY, INC. • CAMDEN, N. J., U. S. A.

A Service of the Radio Corporation of America

Electrical and Mechanical Specifications

FREQUENCY RANGES

Broadcast "A".....	540-1,600 kc
Short Wave "C".....	6-18.0 mc

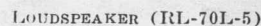
INTERMEDIATE FREQUENCY..... 455 kc

TUBE COMPLEMENT

- (1) RCA-6SA7..... 1st Detector-Oscillator
- (2) RCA-6SK7..... I-F Amplifier
- (3) RCA-6H6..... 2nd Detector, A.V.C.
- (4) RCA-6SF5..... A-F Amplifier
- (5) RCA-6K6GT..... Power Output
- (6) RCA-5Y3-G..... Rectifier

POWER OUTPUT RATING

Undistorted.....	2.5 watts
Maximum.....	4.5 watts



Type..... 12-inch Electrodynamic
V.C. Impedance..... 2.2 ohms at 400 cycles

PHONOGRAPH

Type..... Automatic
Record Capacity... Eight 10-inch or Seven 12-inch
Turntable Speed.... 78 r.p.m.
Type Pickup..... Crystal
Pickup Impedance.. 100,000 ohms at 1,000 cycles
Average Output..... 1½ volts at 1,000 cycles
 across ½ meg.

POWER SUPPLY RATINGS

105-125 volts, 60 cycles, 110 watts
105-125 volts, 25 cycles, 110 watts

[illegible]

Cabinet Dimensions (inches).....	33-3/16 ..	29 7/8 ..	17 1/2
Weight.....		72 lbs. (net)	
Tuning Drive Ratio.....			12-1

Push Button Adjustments

The push buttons connect to separate magnetite-core oscillator coils and separate loop circuit trimmers which must be adjusted for the desired stations. Use an insulated screwdriver or alignment tool such as RCA Stock No. 31031. Allow about five minutes warm-up period before making adjustments.

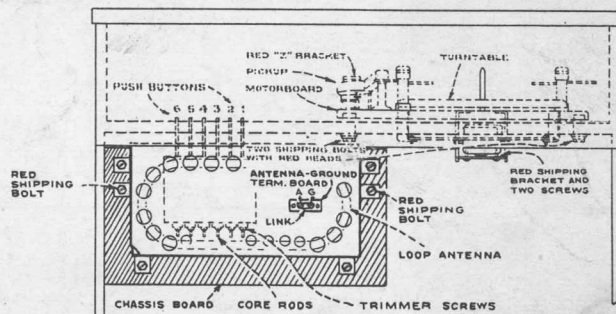
The procedure is as follows:

1. Make a list of the desired stations, arranged in order from low to high frequencies.
2. Turn the range switch to the broadcast position and manually tune in the first station on the list.
3. Turn range switch to push-button position and press in the left-hand button.
4. Adjust L10 to receive the first station. To secure the best adjustment, rotate the set for least pickup, and adjust L10 for peak output.
5. Adjust C45 for peak output on the first station.

6. Proceed in the same manner to adjust for the remaining stations.

On the 880 to 1,560 kc push-button, the higher frequency stations may be received with L5 either in or out (oscillator frequency either 455 kc below or 455 kc above the station frequency). The adjustment with this core in its out position (oscillator frequency 455 kc above the station frequency) is the correct one.

NOTE: Clockwise adjustment of cores and trimmers tunes the circuits to lower frequencies.



Trademarks "VoltOhmyst," "Chanalyst," "Victrola," "RCA Victor" and "Victor" Reg. U. S. Pat. Off. by RCA Mfg. Co., Inc.

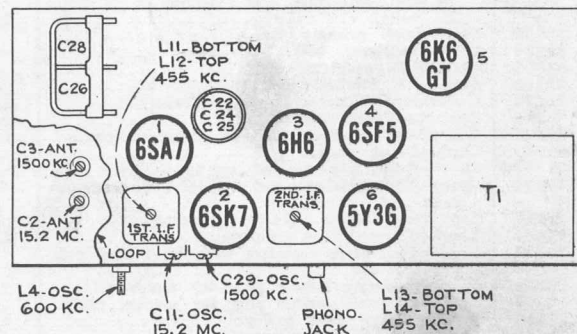
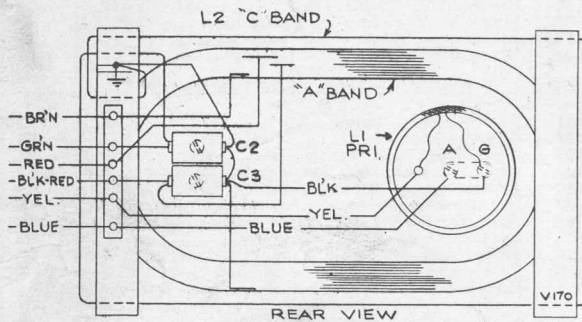
First Edition

Printed in U. S. A.

Alignment Procedure



Refer to RP-152
Service Data
for information
on Record-
Changer
Mechanism.



Cathode-Ray Alignment is the preferable method. Connections for the oscillograph are shown in the schematic diagram.

Output Meter Alignment.—If this method is used, connect the meter across the voice coil, and turn the receiver volume control to maximum.

Test-Oscillator.—For all alignment operations, connect the low side of the test-oscillator to the receiver chassis, and keep the output as low as possible to avoid a-v-c action.

Electronic Voltmeter.—The electronic voltmeter in the Chanalyst or VoltOhmyst provides an unexcelled output indicator. It should be connected to the AVC bus, and the test-oscillator output adjusted to produce several volts of AVC.

Calibration Scale.—The glass tuning dial may be easily removed from the cabinet and temporarily attached to the chassis for quick reference during alignment. In the event that only the chassis is returned for service, and the cabinet with its tuning dial is left in the customer's home, the calibration scale printed in this service note can be used in conjunction with an ordinary 12-inch ruler as an accurate and convenient substitute for the regular dial.

Each method is described below.

Using Tuning Dial.—

- Slide out the flat spring clamp at each end of the dial, and remove the glass dial from the cabinet.
- With gang in full mesh, move the dial pointer to the reference mark at the left-hand end of the dial backing plate.
- Place the glass dial under the pointer so that the extreme left scale graduations coincide with the pointer. Use scotch tape to hold the glass dial in this position.

Using Calibration Scale.—

- With gang in full mesh, move the dial pointer to the reference mark at the left-hand end of the dial backing plate.
- Place a flat 12-inch ruler on the dial backing plate so the left-end of ruler is at the reference mark at left-end of backing plate. Temporarily fasten the ruler with scotch tape to the backing plate.

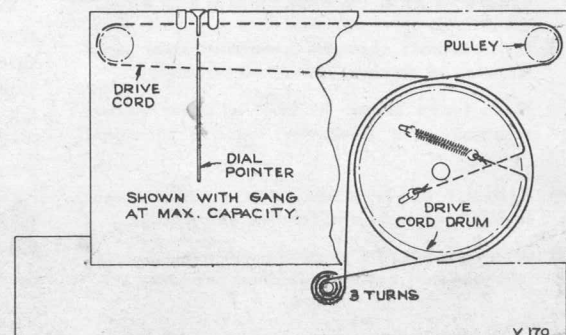
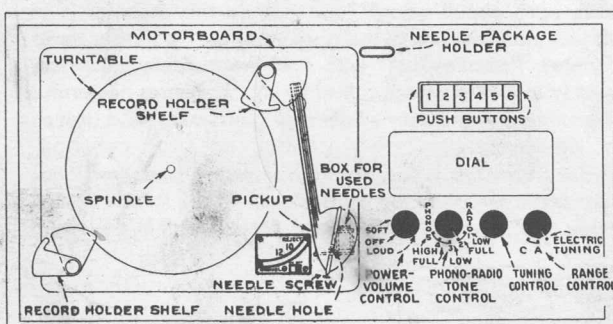
3. Refer to calibration scale printed in this service note. This is a reduced reproduction of the dial with an inch-scale drawn at top and bottom. To find the correct pointer position in inches for any desired frequency, draw a vertical line through this frequency on the calibration scale.

Dial-Pointer Adjustment.—After the chassis is replaced in cabinet, move the dial pointer (if necessary) so that it is at the left-hand graduation on the dial with the gang in full mesh.

Steps	Connect the high side of the test-osc. to—	Tune test osc. to—	Turn radio dial to—	Adjust the following for max. peak output—
1	I-F grid, in series with .01 mfd.	455 kc	"C" band, Quiet Point at H-F end of dial	L13 and L14 (2nd I.F. Trans.)
2	1st. det. grid, in series with .01 mfd.			L11 and L12 (1st I.F. Trans.)
3	Antenna terminal, in series with 300 ohms (link open)	15.2 mc	15.2 mc "C" band	C11 (osc.)* C2 (ant.) Rock in C2
4	Antenna terminal, in series with 200 mmfd. (link open)	1,500 kc	1,500 kc "A" band	C29 (osc.) C3 (ant.)
5		600 kc	600 kc "A" band	L4 (osc.) Rock in
6	Repeat steps 4 and 5.			

* Use minimum capacity peak if two peaks can be obtained. Check to determine that the correct peak has been used, by tuning receiver to 14.29 mc, where a weaker signal should be received.

Note: Oscillator tracks above signal on both bands.

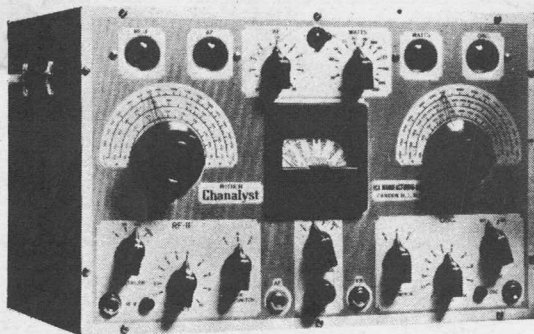


Replacement Parts

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

STOCK No.	DESCRIPTION	Unit List Price	STOCK No.	DESCRIPTION	Unit List Price
CHASSIS ASSEMBLIES (RC-523)					
34785	Board—"Antenna-Ground" board	.20	35709	Shield—Power transformer top shield	.30
36485	Capacitor—Mica trimmer—2 sections of 5-50 mmf.	.40	31364	Socket—Dial lamp socket	.20
35867	Capacitor—Mica trimmer—2 sections of 8-80 mmf. each	.40	35787	Socket—Phono input socket	.15
36424	Capacitor—Mica trimmer comprising 1 section of 10-160 mmf., 2 sections of 25-250 mmf., 2 sections of 50-400 mmf., and 1 section of 100-540 mmf.	1.10	31251	Socket—Tube socket	.25
34699	Capacitor—100 mmf., mica	.30	31418	Spring—Drive cord spring	.05
12720	Capacitor—100 mmf., moulded mica	.35	36489	Switch—Push button selector switch	3.35
34700	Capacitor—120 mmf.	.30	36488	Switch—Range switch	1.75
13003	Capacitor—180 mmf.	.35	35636	Transformer—First I.F. transformer	1.70
12952	Capacitor—330 mmf.	.35	35790	Transformer—Second I.F. transformer	1.60
35877	Capacitor—720 mmf.	.45	35588	Transformer—Power transformer, 110 volt, 25 cycle	6.30
13895	Capacitor—5,600 mmf.	.70	35959	Transformer—Power transformer, 110 volt, 50-60 cycle, less end shields	3.75
34459	Capacitor—.0025 mfd.	.20	33726	Washer—"C" washer for tuning shaft	.02
33584	Capacitor—.005 mfd.	.25	FOR RECORD CHANGER REPLACEMENT PARTS SEE SERVICE NOTES ON RP-152.		
5148	Capacitor—.007 mfd.	.20	SPEAKER ASSEMBLIES (RL-70-L5)		
11315	Capacitor—.015 mfd.	.20	13867	Cap—Dust cap.	.03
32787	Capacitor—.05 mfd.	.20	12079	Coil—Field coil, 1,060 ohms	2.70
4839	Capacitor—.1 mfd.	.30	11469	Coil—Neutralizing coil	.30
35858	Capacitor—Electrolytic comprising 2 sections of 10 mfd., 400 volts, and 1 section of 20 mfd., 25 volts	1.70	36145	Cone—Cone complete with voice coil	1.50
35785	Coil—Loop primary coil	.50	5039	Plug—4-prong male speaker plug	.30
35854	Coil—Oscillator coil	.85	36146	Suspension—Metal cone suspension	.35
35803	Coil—P.B. oscillator coil	.30	33444	Transformer—Output transformer	2.00
37133	Coil—P.B. oscillator coil, 540-1,030 kc.	.30	MISCELLANEOUS ASSEMBLIES		
35874	Condenser—Variable tuning condenser	2.85	36461	Button—Plug button	.10
36487	Control—Tone control	1.00	36299	Button—Push button	.15
36486	Control—Volume control and power switch	2.00	13103	Cap—Pilot lamp cap.	.15
32634	Cord—Drive cord	.10	36328	Cover—Compartment lamp leads cover	.20
35788	Core—Adjustable core and stud for oscillator coils	.15	36711	Decalcomania—Control panel decal.	.10
35871	Core—Adjustable core and stud for P.B. oscillator coils	.55	35393	Decalcomania—Television decal.	.05
35870	Indicator—Station selector indicator	.20	36386	Decalcomania—Trade mark decal.	.25
36484	Loop—Antenna loop complete	3.50	35467	Decalcomania—Trade mark decal.	.05
36482	Plate—Dial plate complete with drive cord pulleys less dial	1.00	36710	Dial—Glass dial scale	1.00
30868	Plug—2-contact female plug for motor cable	.35	35937	Escutcheon—Dial scale escutcheon, less dial	1.25
5119	Plug—3-contact female plug for speaker cable	.25	36027	Escutcheon—Push button escutcheon, less buttons	.75
32289	Pulley—Drive cord pulley	.10	30698	Hinge—Cabinet lid hinge	.95
30881	Resistor—470 ohms, 1 watt	.22	36246	Holder—Needle book holder	.20
35595	Resistor—15,000 ohms, 3 watt	.35	36297	Knob—Range switch or tone control knob	.25
13998	Resistor—22,000 ohms, 1 watt	.20	36298	Knob—Volume control or tuning knob	.25
12412	Resistor—47,000 ohms, 1 watt	.20	11765	Lamp—Dial lamp	.15
12286	Resistor—68,000 ohms, 1 watt	.20	5117	Lamp—Compartment lamp	.25
13715	Resistor—68,000 ohms, 1 watt	.20	36149	Marker—Station selector marker	.35
12199	Resistor—270,000 ohms, 1 watt	.20	31470	Mounting—Complete set of mounting hardware for 1 motorboard	.10
12285	Resistor—470,000 ohms, 1 watt	.20	35740	Shade—Compartment lamp shade	.60
12879	Resistor—2.2 megohm, 1 watt	.20	35575	Spring—Lid support spring	.60
13601	Resistor—10 megohm, 1 watt	.20	30900	Spring—Retaining spring for knobs	.05
35862	Shaft—Tuning shaft	.20	34053	Spring—Retaining spring for push button	.02
35772	Shield—Power transformer bottom shield	.30	36693	Support—Cabinet lid support	1.50

ALL PRICES ARE SUBJECT TO CHANGE OR WITHDRAWAL WITHOUT NOTICE.



PLUS FEATURES IN THE CHANALYST

- Five separate channels permitting most rapid isolation of elusive intermittent troubles.
- Three tuned stages in RF-IF channel having sensitivity and selectivity required in signal tracing.
- Electronic eye level indicators giving inherent stability for rapid and relative gain checks.
- High-resistance DC electronic voltmeter channel with optional use in three other channels.

**IT'S THE EASY WAY
WITH THE RCA RIDER
CHANALYST**

The test instrument that permits you to trace signal conditions from the antenna terminal right down to the loudspeaker.

Save yourself time and trouble. Use a Chanalyst... the instrument that tests each circuit—each tube—while the receiver is in operation without interfering with the performance. No longer need you spend hours "monkeying" with an inoperative set. The Chanalyst quickly localizes where signal fails or becomes abnormal—detects intermittent troubles—eliminates guesswork and solves your service problems.

The RCA Rider Chanalyst offers you true dynamic and functional testing. Its very basis of operation is *the signal*—thus, it is designed for use with any type of receiver be it old, new, or still in development.