RCA Victor Models 46X21, 46X23, and 46X24

Chassis Nos. RC-461A, RC-461B, and RC-461

TECHNICAL INFORMATION AND SERVICE DATA

—1940 No. 6—

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..... 550-1,550 kc and 6-18 mc

PUSH BUTTON RANGES (Model 46X24 only)

(1) Approximately 540- 945 kc
(2) Approximately 580-1,020 kc
(3) Approximately 650-1,320 kc
(4) Approximately 760-1,440 kc
(5) Approximately 990-1,560 kc

Intermediate Frequency..... 455 kc

TUBE COMPLEMENT

(1) RCA-12SA7..... 1st Detector—Oscillator
(2) RCA-12SK7..... I-F Amplifier
(3) RCA-12SQ7..... 2nd Detector, AVC, A-F Amplifier
(4) RCA-50L6GT..... Power Output
(5) RCA-35Z5GT..... Rectifier
Dial Lamp (1)..... Mazda No. 47, 6.3 volts, 0.15 amps.

POWER OUTPUT RATING

Undistorted..... 1.1 watts
Maximum..... 1.4 watts

LOUDSPEAKER (RL81A1)

Type..... 5-inch permanent magnet dynamic
Voice Coil Impedance at 400 Cycles..... 4.5 ohms

POWER SUPPLY RATINGS

A-C Rating..... 105-125 volts, 50-60 cycles, 50 watts
D-C Rating..... 105-125 volts, direct current, 50 watts

Model	Cabinet Dimensions	Shipping Wt.
46X21	8 x12x7 (inches)	10⅜ lbs.
46X23	9¼x14x7½ (inches)	12½ lbs.
46X24	10¼x16x7⅜ (inches)	14½ lbs.

Replacement Parts

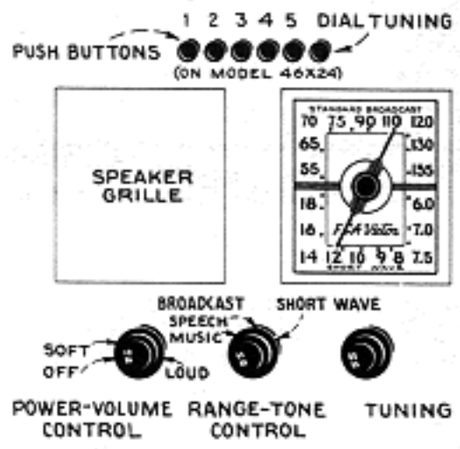
Insist on genuine factory-tested parts, which are readily identified and may be purchased from authorized dealers.

STOCK No.	DESCRIPTION	Unit List Price
	CHASSIS ASSEMBLIES	
35000	Ballast—Ballast tube resistor.....	.80
35097	Can—Shield can for I.F. transformers.....	.30
13200	Capacitor—10 mmfd. (C41 for Model 46X24)..	.35
12896	Capacitor—15 mmfd. (C44).....	.35
14021	Capacitor—22 mmfd. (C41 for Model 46X21, 46X23)	.35
13057	Capacitor—68 mmfd. (C12).....	.35
35663	Capacitor—Mica trimmer comprising 2 sections of 115-440 mmfd., 2 sections of 90-365 mmfd., 2 sections of 42-280 mmfd., 2 sections of 25-190 mmfd. and 2 sections of 10-80 mmfd. for 46X24	2.75
12725	Capacitor—150 mmfd. (C18, C21, C42).....	.35
35665	Capacitor—Mica trimmer comprising 1 section of 300-600 mmfd. and 2 sections of 2-20 mmfd.	.75
13895	Capacitor—5,600 mmfd. (C10).....	.70
33640	Capacitor—.005 mfd. (C23).....	.25
4937	Capacitor—.01 mfd. (C1, C2, C11, C16).....	.25
14393	Capacitor—.01 mfd.	.30
35338	Capacitor—.015 mfd. (C24 for Model 46X24).	.20
30938	Capacitor—.025 mfd. (C22, C24—46X21, 23).	.20
32787	Capacitor—.05 mfd. (C27, C43, C45).....	.20
4886	Capacitor—.05 mfd. (C7)	.20
4839	Capacitor—0.1 mfd. (C28).....	.30
34505	Capacitor—0.2 mfd. (C4).....	.30
35673	Capacitor—Electrolytic comprising 1 section of 50 mfd. and 1 section of .30 mfd. (C25, C26)	1.00
35713	Coil—Antenna coil—"C" band—46X21, 23....	.75
35661	Coil—Antenna coil—"C" band for Model 46X24	.75
35096	Coil—Loop loading coil.....	.50
35714	Coil—Oscillator coil—"A" and "C" bands for Models 46X21 and 46X23.....	.75
35667	Coil—Oscillator coil—"A" and "C" bands for Model 46X24	.95
35658	Condenser—Tuning condenser—46X21.....	3.00
35657	Condenser—Tuning condenser—46X23.....	3.00
35656	Condenser—Tuning condenser—46X24.....	3.00
35086	Control—Volume control and power switch....	2.00
32634	Cord—Drive cord	.10
35670	Dial—Dial scale for Model 46X21.....	.65
35669	Dial—Dial scale for Model 46X23 and 46X24.	.65
35659	Drum—Tuning condenser drive drum.....	.25
35668	Indicator—Station selector indicator.....	.25
31480	Lamp—Dial lamp	.20
35664	Loop—Antenna loop complete	2.30
35672	Plate—Dial plate less dial scale—46X21.....	.50
35671	Plate—Dial plate less scale—46X23, 24.....	.50
35000	Resistor—Ballast tube resistor.....	.80
14439	Resistor—100 ohms, ½ watt (R15)	.20
30936	Resistor—120 ohms, 1 watt (R9).....	.22
13428	Resistor—150 ohms, ½ watt (R4).....	.20
3153	Resistor—1,500 ohm, 1 watt (R14).....	.22
13998	Resistor—22,000 ohm, ½ watt (R3, R6).....	.20
12454	Resistor—33,000 ohms, ½ watt (R2).....	.20
12264	Resistor—220,000 ohm, ½ watt (R1, R8).....	.20
12285	Resistor—470,000 ohm, ½ watt (R10).....	.20
12679	Resistor—2.2 megohm, ½ watt (R5).....	.20
13601	Resistor—10 megohm, ½ watt (R7).....	.20
35085	Shaft—Tuning condenser drive shaft.....	.15
31418	Spring—Drive cord spring.....	.05
35098	Spring—Spring to hold I.F. transformer in cans	.08
31319	Socket—Tube socket	.25
35094	Socket—Dial lamp socket.....	.35
35660	Switch—Range switch	1.10
35662	Switch—Push button switch for 46X24.....	2.25
35666	Transformer—Audio transformer.....	1.30
35088	Transformer—First I.F. trans. less shield can...	1.35
35089	Transformer—Second I.F. trans. less shield can.	1.35
35000	Tube—Ballast tube resistor.....	.80
34373	Washer—Spring washer for tuning shaft.....	.03
	SPEAKER ASSEMBLIES (RL81A1)	
32907	Cap—Dust cap	.02
35569	Cone—Cone complete with voice coil.....	1.20
	MISCELLANEOUS ASSEMBLIES	
35676	Back—Back cover for Model 46X21.....	.25
35675	Back—Back cover for Model 46X23.....	.25
35674	Back—Back cover for Model 46X24.....	.25
32279	Button—Push button for Model 46X24.....	.06
35104	Crystal—Escutcheon and crystal—46X21.....	1.00
35677	Crystal—Escutcheon and crystal—46X23, 24..	.75
35680	Escutcheon—Push button escutcheon—46X24..	.75
35678	Fastener—Push on fastener to hold crystal for Model 46X21	.02
33006	Foot—Rubber foot for Model 46X23.....	.03
35679	Knob—Volume control, tuning or range switch.	.15
34317	Marker—Push button markers for Model 46X24	.35
35681	Rotor—Cabinet rotating disc for Model 46X21	.35
35682	Rotor—Cabinet rotating disc for Model 46X23.	.40
34293	Spring—Retaining spring for button Stock No. 32279 for Model 46X24	.02
30900	Spring—Retaining spring for knob Stock No. 35679	.05

ALL PRICES ARE SUBJECT TO CHANGE OR WITHDRAWAL WITHOUT NOTICE.

First Edition

Printed in U. S. A.



Dial and Controls

Model	Cabinet Description
46X21	Moulded Walnut Plastic
46X23	Walnut
46X24	Walnut (shown above)

Adjustments for Electric Tuning:

The push buttons and corresponding frequency ranges are given in the schematic diagram. Allow the set to warm up for about 15 minutes and proceed as follows:

(1) List five desired stations in order of the push button ranges.

(2) Push in the dial tuning (right hand) button and manually tune in the first station on the list.

(3) Press button No. 1. Turn R-F screw half way in; next turn the oscillator screw entirely in and then gradually back out until the station is heard.

(4) Adjust the R-F trimmer for maximum output.
(Clockwise adjustment of oscillator and R-F trimmers tunes the circuits to lower frequencies.)

(5) By turning the set to a position in which reception is weak a final more accurate adjustment may be made.

(6) Adjust for each of the remaining stations in a similar manner and place corresponding station tabs in recesses above buttons. A "Dial Tuning" tab should be above button No. 6.

Precautionary Lead Dress:

(1) Dress all leads away from oscillator and antenna coils.

(2) Dress cathode resistor (R4) and B+ lead across 12SK7 socket between plate and grid terminals.

(3) (46X24 only) Dress leads to push button switch straight up and parallel so that they do not touch each other.

(4) Dress black lead from 1st I-F transformer over green lead.

(5) Keep plate-cathode bypass (C43) of rectifier tube away from volume control.

Alignment Procedure

Output Meter Alignment.—Connect the meter across the voice coil, and turn the receiver volume control to maximum.

Test-Oscillator.—Connect the low side of the test-oscillator to the receiver chassis through a .01 mfd. capacitor, and keep the output as low as possible.

Pre-Setting Pointer.—With gang condenser in full mesh, the pointer should be adjusted to a horizontal position.

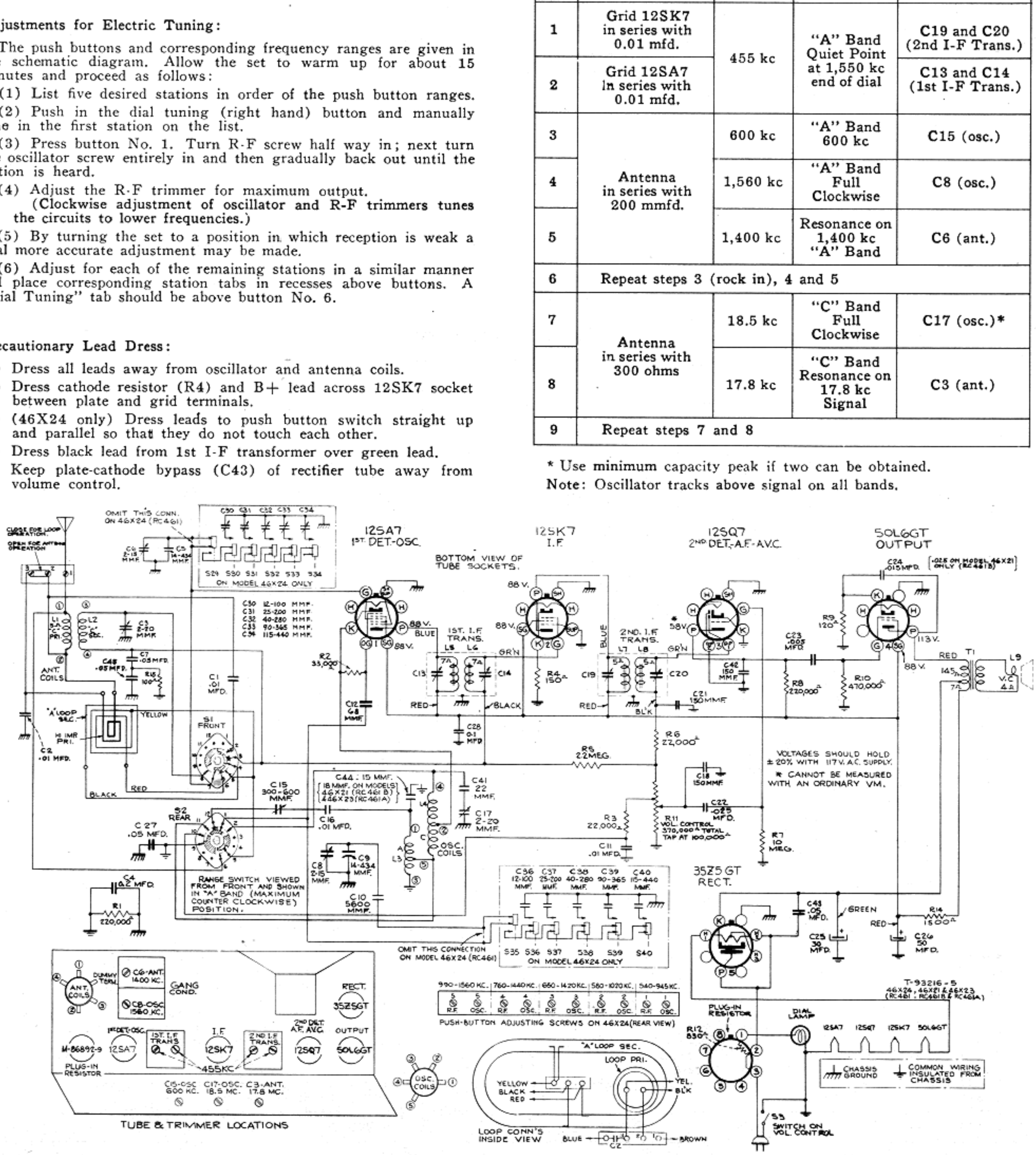
Antenna.—The set is equipped with a built-in loop antenna. If the loop antenna is used, the antenna terminal board link should be closed. This link should be open when an external antenna is used. Connect the external antenna to terminal 1. If an antenna longer than 100 feet (including lead-in) is used, connect a 100 to 200 mmf. capacitor in series with the lead-in.

Power-Supply Polarity.—For operation on d-c, the power plug must be inserted in the outlet for correct polarity. If the set does not operate, reverse the plug. On a-c, reversal of the plug may reduce hum.

Step	Connect high side of test oscillator to—	Tune test oscillator to—	Turn radio dial to—	Adjust following for max. output—
1	Grid 12SK7 in series with 0.01 mfd.	455 kc	"A" Band Quiet Point at 1,550 kc end of dial	C19 and C20 (2nd I-F Trans.)
2	Grid 12SA7 In series with 0.01 mfd.			C13 and C14 (1st I-F Trans.)
3	Antenna in series with 200 mmfd.	600 kc	"A" Band 600 kc	C15 (osc.)
4		1,560 kc	"A" Band Full Clockwise	C8 (osc.)
5		1,400 kc	Resonance on 1,400 kc "A" Band	C6 (ant.)
6	Repeat steps 3 (rock in), 4 and 5			
7	Antenna in series with 300 ohms	18.5 kc	"C" Band Full Clockwise	C17 (osc.)*
8		17.8 kc	"C" Band Resonance on 17.8 kc Signal	C3 (ant.)
9	Repeat steps 7 and 8			

* Use minimum capacity peak if two can be obtained.

Note: Oscillator tracks above signal on all bands.



Schematic Circuit Diagram