

Model BP-500



RCA VICTOR



AC-DC—BATTERY PORTABLE RECEIVER

MODEL BP-500 SERVICE DATA

1949 No. 14

GENERAL SERVICE DIVISION
RCA VICTOR COMPANY LIMITED
MONTREAL, QUE.

Electrical and Mechanical Specifications

Tuning Range 540-1600 kc.
Intermediate Frequency 455 kc.

Tube Complement

(1) RCA 1R5 Converter
(2) RCA 1U4 I.F. Amplifier
(3) RCA 1U5 Det.—A.V.C.—A.F. Amp.
(4) RCA 3V4 Output
(A selenium rectifier is used)

Power Supply Rating

Power Line Operation
115 volts d.c. or 25 to 60 cycles a.c. 17 watts
or

Battery Operation

1 Eveready 717 "A" Battery 7.5 v., 60 ma.
1 Eveready 467 "B" Battery 67.5 v., 10 ma.
(Battery life—approx. 40 hrs. intermittent service)

Power Output

A.C. operation .. 150 mw. undistorted, 250 mw. max.
Batt. operation .. 70 mw. undistorted, 180 mw. max.

Loudspeaker

Size and type 4 in. PM dynamic
Voice coil impedance 3.2 ohms @ 400 cycles

Dial Drive Ratio 6:1 (3 turns of knob)

Cabinet Dimensions

Height 8 $\frac{3}{8}$ in. Width 10 $\frac{1}{2}$ in. Depth 5 in.

Weight

5 $\frac{1}{2}$ lbs. (less batteries) 6 $\frac{1}{4}$ lbs. (with batteries)

To Open Cabinet:

The back is secured to the cabinet with two clip catches at the top and two hinges at the bottom. To open—while facing the front of the receiver, with the handle in the upright position grip the sides of the cabinet with both hands and push the top of the back to the rear with both thumbs.

To Remove Back:

Open the cabinet as explained above. With the back fully open, grip the cabinet as illustrated. Insert a screwdriver under one hinge retainer and pry the center of the retainer out of the opening in the cabinet while maintaining pressure on the back with the fingers and on the cabinet with the thumb. Repeat this procedure with the other hinge retainer. Pull straight to the rear.

To Remove Cabinet Foot:

Open the cabinet. Grip the end of the spring clip with long nose pliers as illustrated and pull toward the center of the cabinet. Repeat this procedure with the other clip.

To Remove Chassis:

1. Remove knobs (pull off)
2. Open cabinet.
3. Unsolder loop leads.
4. Disconnect batteries and speaker.
5. Remove the two screws which hold the dial back plate to the cabinet.
6. Remove the TWO SCREWS AT THE BOTTOM EDGE OF THE REAR CHASSIS APRON.
7. Pull chassis to rear.

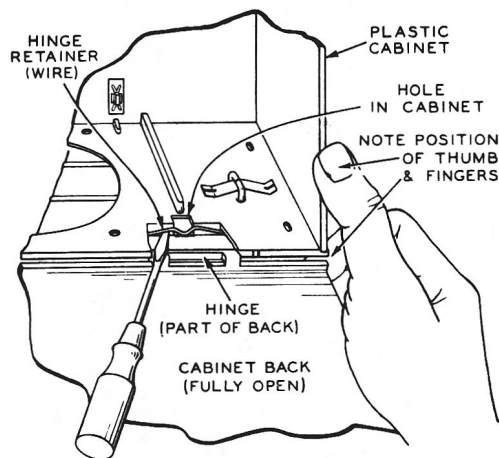


Fig. 1—Removal of Cabinet Back

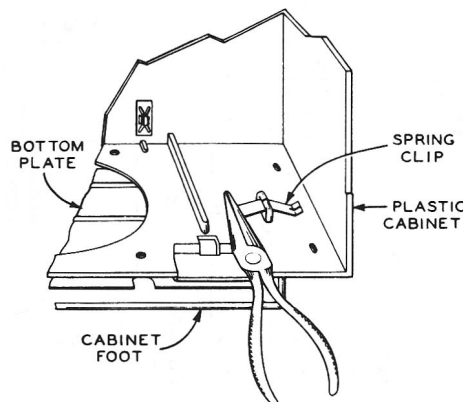


Fig. 2—Removal of Cabinet Foot

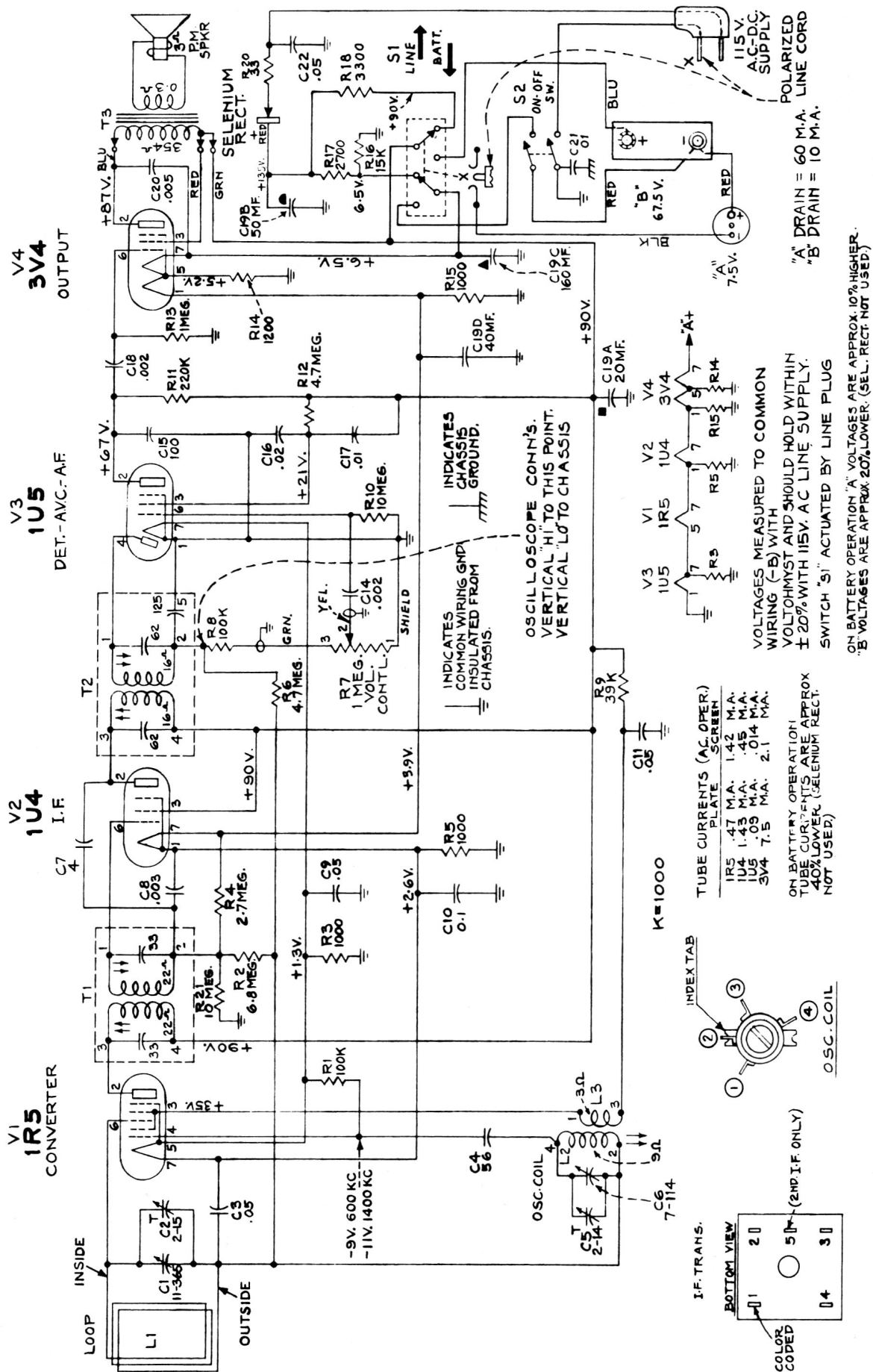


Fig. 3—Schematic Diagram

Power Line Operation:

A power cord is stored inside the cabinet. Open the cabinet and remove the plug of the power cord from its socket on the chassis and insert the plug into a convenient electrical outlet. A slot in the right-hand end of the cabinet allows the back to be closed with the cord passing through.

NOTE: If reception is not obtained on DC, reverse plug in outlet receptacle. On AC operation this may reduce hum.

When returning to battery operation replace the plug in the socket provided on the chassis, with the cord extending toward the back.

NOTE: Make certain that the plug is fully inserted (base of plug touching chassis) to assure proper operation of the Batt-Line switch.

CAUTION.—

Do not remove any tubes from the chassis with the set operating and the plug connected to the power line. Damage to tubes may result.

CRITICAL LEAD DRESS

1. Dress 1U4 grid lead down against chassis.
2. Dress all filament and ground leads against chassis.
3. Dress the 4 mmf. neutralizing capacitor C7 against the 1U4 tube socket with short lead at the plate end.
4. Dress .002 mf. capacitor C14 down against chassis and away from other wiring.

5. Dress .05 mf. capacitor C9 down over top of C14.
6. Dress capacitors C10 and C22 away from oscillator coil so that pressure is not exerted on the side of the coil.
7. Dress all wiring away from the selenium rectifier.
8. Dress .003 mf. capacitor C8 as near chassis as possible.

ALIGNMENT PROCEDURE

Cathode Ray Alignment is the preferable method. Connections for the oscilloscope are shown on 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 oscillator output as low as possible to avoid AVC action.

Battery operation of the receiver is preferable

during alignment; on a.c. operation an isolation transformer (117v./117v.) may be necessary for the receiver if the test oscillator is also a.c. operated.

Dial Pointer Position.—There are two score marks on the dial back plate—with the tuning condenser fully meshed (closed) the pointer should be set to the LEFT HAND MARK.

The RIGHT HAND MARK is for 1600 kc.

The dial is not easily removed. A reproduction of the dial is illustrated on another page. It is suggested that a tracing be made of it for use in alignment.

ALIGNMENT CHART

Order Of Alignment		TEST OSCILLATOR				RECEIVER				
		Connect "HI" Side to	Connect "LO" Side to	Dummy Antenna	Frequency Setting	Range Selector	Dial Setting	Circuit to Adjust	Adjustment Symbols	Notes
I.F. Alignment	1	Disconnect loop - remove chassis - connect a 1000 OHM resistor from C1 stator terminal to tuning condenser frame.								
	2	C-1 Gang	GND	39MMF	455KC		1600KC	2nd I.F. Trans.	T-2 Top & bottom Out.	Max. Out.
	3	Remove the 1000 OHM resistor. Replace but do not fasten chassis in cabinet. Re-connect loop.								
R.F. Alignment	4	Radiate Signal			1630KC		Max. clock- wise	Osc.	†C-5	Max. Out.
	5	Same			1400KC		1400KC	Ant.	†C-2	"
	6	Same			600KC		600KC	Osc.	L-2 Rock Gang	"
	7	Repeat steps 4, 5 and 6								
	8	Fasten chassis to cabinet.								

†C5 and C2 are more readily accessible if the chassis is not fully inserted into the cabinet. However the chassis should be near its proper position because its position affects the inductance of the loop.

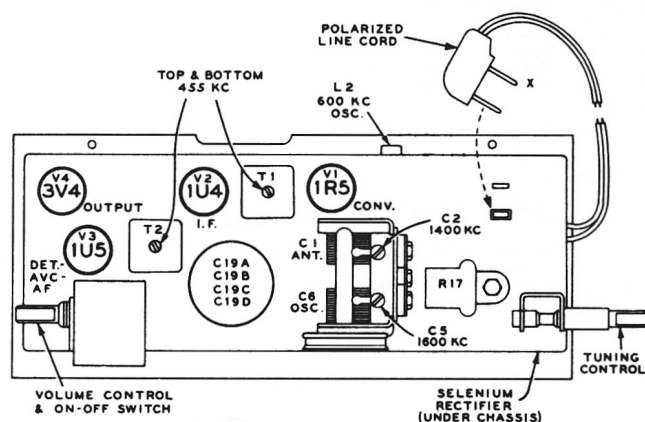


Fig. 4—Tube and Trimmer Locations

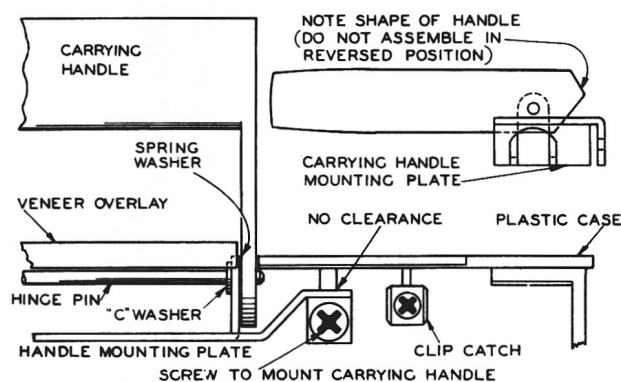


Fig. 5—Carrying Handle Assembly

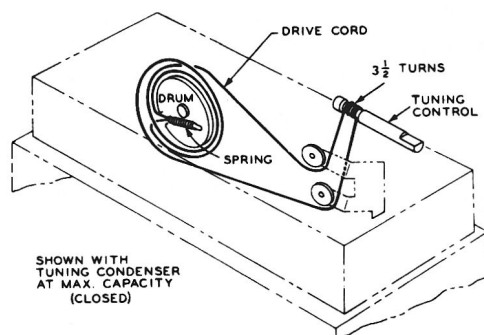


Fig. 6—Dial Drive Cord

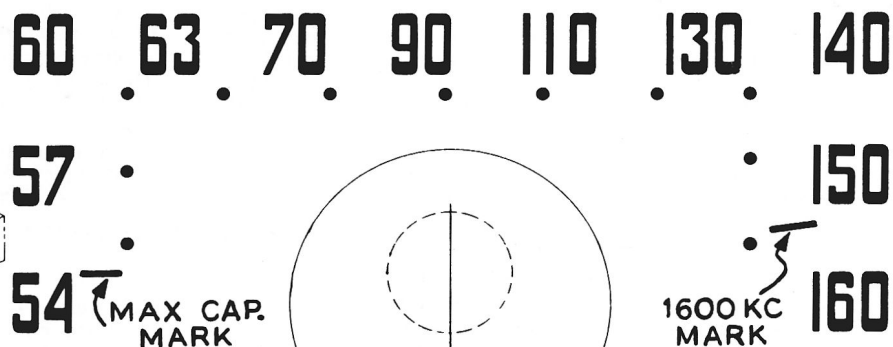


Fig. 7—Dial Scale

REPLACEMENT PARTS FOR MODEL BP-500

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

Stock No.	Description	List Price	Stock No.	Description	List Price
CHASSIS ASSEMBLY			CHASSIS ASSEMBLY (CONT'D)		
73153	Capacitor 4 MMf. Ceramic (C7)		74322	Rectifier - Selenium rectifier	
71924	" 56 " " (C4)		74320	Shaft - Drive shaft	
73152	" 100 " " (C15)		71039	Switch - "Line - Battery" switch	
	" .002 Mfd. 200 V. Paper (C14,C18)		73129	Transformer - 1st I.F. Transformer	
	" .003 Mfd. 200 V. Paper (C8)		73130	" - 2nd I.F. "	
	" .005 Mfd. 400 V. " (C20)		73125	Volume Control - 1 Megohm (R7-S2)	
	" .01 Mfd. 100 V. " (C17)		SPEAKER ASSEMBLY		
	" .02 Mfd. 100 V. " (C16)				
	" .05 Mfd. 100 V. " (C9)		S-5341	Cone - cone & voice coil assembly	
	" .05 Mfd. 400 V. " (C11)		S-5343	Transformer - Output Transformer	
	" .05 Mfd. 400 V. " (C3,C22)		MISCELLANEOUS ASSEMBLY		
	" .1 Mfd. 100 V. " (C10)				
	" .1 Mfd. 400 V. " (C21)		74326	Antenna - loop antenna (L1)	
73113	" Electrolytic		S-5064	Cabinet	
	50 Mfd. 150 V. (C19A)		74328	Cabinet - back assembly	
	20 Mfd. 150 V. (C19B)		74345	Catch assembly	
	160 Mfd. 25 V. (C19C)		S-4313	Cord - Dial cord	
	40 Mfd. 25 V. (C19D)		74334	Dial - dial scale	
S-4334	Coil - Osc. coil with core & stud (L2,L3)		74330	Door - dial door	
74323	Condenser - Variable tuning condenser (C1,C2,C5,C6)		74331	Foot	
S-5340	Resistor - 33 Ohms (R20)		S-5065	Handle	
	" - 1,000 " watt+ - 10% (Re, R5, R15)		73490	Knobs	
	" - 1,200 " watt+ - 10% (R14)		74321	Pointer - dial pointer	
	" - 3,300 " watt+ - 10% (R18)		74346	Push button	
	" - 15,000 " watt+ - 10% (R16)		14270	Spring - spring for knob (Pkg. 2)	
	" - 39,000 " watt+ - 10% (R9)		74347	Spring	
	" - 100,000 " watt+ - 20% (R8)		74348	Screw - self tapping screw (Pkg. 3)	
	" - 100,000 " watt+ - 10% (R1)		S-5066	Trim - R.H.	
	" - 220,000 " watt+ - 20% (R11)		S-5067	Trim - L.H.	
	" - 1 Megohm watt+ - 20% (R13)		S-5068	Veneer	
	" - 2.7 " watt+ - 10% (R4)		S-5069	Washer (Pkg. 3)	
	" - 4.7 " watt+ - 10% (R12)		74353	Washer - "C" washer for carrying handle hinge pin	
	" - 4.7 " watt+ - 20% (R6)		74562	Washer - Spring washer for carrying handle hinge pin (2 req.)	
	" - 6.8 " watt+ - 10% (R2)		74343	Washer - Spring washer for dial drop door (2 req.)	
	" - 10 " " " (R10)				
	" - 10 " " " (R21)				
74319	- Ballast resistor 2700 ohms (R17)				

Parts indicated by * and those not shown in the parts list are not supplied as replacement parts.

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