

R.C.A. Victor Co., Inc.

Model: X551

Chassis:

Year: Pre 1952

Power:

Circuit:

IF:

Tubes:

Bands:

Resources

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National HRO-7

To eliminate oscillator drift occurring during stand-by periods, the following changes have been made. These changes allow the h-f oscillator, bfo oscillator and output tubes to remain on all the time whether the B+ switch is turned on or off.

1. Move the B+ end of R24 from the B+ tie-point to pin 6 of V9, 6J7.
2. Connect pin 6 of V9 to pin 5 of S1 using 8 $\frac{3}{4}$ inches of red wire.
3. Move red lead supplying pin 4 of S1 from the cold terminal of bsw to the hot terminal.
4. Move red lead running to tie-point located on chassis between C31 and C37 from pin 4 of S1 to the cold terminal of bsw.
5. Change the value of R21 to 3500 ohms, 5 watts.

National 686S, 686SB, SPU686S, 1286S

The 686SB power unit is the same as the 686S except that it is equipped with mounting brackets. The SPU686S is the same as the 686S except that it is designed for rack mounting. The 1286S is similar to the 686S except that it is designed to operate from 12 volts d.c. The voltages available at the output socket are 12 volts d.c. and 165 volts at 45 milliamperes d.c.

The following capacitors have been added to the 686S and 1286S power units:

1. C203, 0.01 μ f, 300 vdcw, added from the junction of fuse F101 and switch S101 to ground.
2. C204, 0.0043 μ f, 500 vdcw, from the B+ terminal to ground.
3. C205, 0.0001 μ f, 500 vdcw, across output socket, from L201 to A+.

RCA A-82, Ch. RC-1094; A-91, Ch. RC-1095; A-108, Ch. RC-1096; 45-W-9; Ch. RC-1095A

The original carriage in all of the above models used a pull-out handle on the top front, the carriage now in use has a handle under the lower front edge. The same plastic frame may be used for all models. A plug button (supplied with each plastic frame) is used to cover a center hole which is unused on all models except A-108.

Frame—Stock No. 76161 is used as a replacement for frame Stock No. 75549 or 75571 (maroon).

Frame—Stock No. 76162 is used as a replacement for frame Stock No. 75683 or 75684 (light brown).

The new type of pull-out handle (lower front) is available as Stock No. 76125. If the original pull-out handle (top front) is desired it will be necessary to drill two holes in the frame. The holes are .203" diameter and are located .625" each side of the center line and .13/64" down from the top.

In Models A-91 and A-108 the color of wire used in the connecting cable has been changed. A black-white wire has been used as a substitute for the black wire (pin 1 to speaker) and a brown-white wire has been used as a substitute for the brown wire (pin 8 to speaker). A brown wire goes from pin 2 to the jewel lamp and a black wire goes from pin 3 to the jewel lamp.

In Model A-82 a substitute speaker (stamped 92569-9B) has been used in some instruments. It requires a different speaker cone than the one listed in the A-82 Parts List. Speaker 92569-9B uses Stock No. 75875 cone. Speaker 92569-9W uses Stock No. 74901 cone.

RCA Q10-3, Q10 Series, Ch. RC-549C

Model Q10-3 is identical to other sets of the Q10 series with the exception of the cabinet which is black and uses ivory color knobs.

The output transformer mounting has been revised to minimize the possibility of breakdown, especially in tropical areas. The transformer in later production sets is mounted on insulation board which is, in turn, mounted on the dial back plate support.

RCA BX55, Ch. RC-1088; BX57, Ch. RC-1088A

Capacitor C11, 0.047 μ f, must be dressed away from the metal chassis and in such position that inserting the chassis into the case will not change its position. The side of C11 which may short to chassis is the side which connects directly to the selenium rectifier. If this side contacts the chassis it will place the chassis at power line potential.

The 2600-ohm, 6-watt resistor R13 now being used in Model BX57 is of improved design. The original resistor was a ceramic type and the type now being used is a flat armored type. When the new type is used to replace the original type, it is necessary to drill a .120" diameter hole in the front apron of the chassis to accommodate a self-tapping screw for mounting purposes.

RCA Ch. RC-1065C, RC-1065D

The value of capacitor C3 in these chassis is 9.1-113.8 μ f. C3 is located across oscillator coil L2.

RCA Record Changers RP-176A, RP-176B

The record changers are the same as the RP-176 except for the following differences. The pickup and arm assembly for the RP-176A is: Stock No. 72716, Arm, Pickup arm complete, less pivot arm, crystal and cable. The motorboard sub-assemblies, complete with all welded and riveted parts, less detachable operating parts, are designated as stock numbers 72717 and 70844, for RP-178A and RP-178B, respectively.

RCA X551, Ch. RC-1089B; X552, Ch. RC-1089C

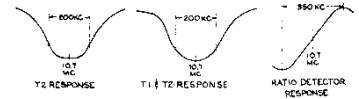
R4, the 3.3-megohm avc filter resistor previously connected to the junction of R12, 47,000 ohms, and the phono jack J1, is now connected to the junction of R12 and terminal 2 of the 2nd i-f transformer T2.

RCA 8V90, Ch. RC-618, RC-618A; 8V91, Ch. RC-616A, RC-616H

Under Alignment Procedure, Critical Lead Dress, the following additions should be made:

17. The f-m oscillator coil should be cemented to its support. Amphenol No. 912 cement is recommended for this purpose. If it is necessary to loosen the coil, use Amphenol No. 916 solvent.

18. Capacitor C41 should be waxed or cemented to the chassis apron. The f-m response curves are shown in the accompanying diagram.



f-m response curves for Models 8V90 and 8V91.

In Chassis RC-618 the value of R35 is 560 ohms; and R31, the 1-megohm resistor across C4, is used only on early chassis.

Chassis RC-618A is the same as Chassis RC-618 except for the following changes which have been made. A filament choke coil L6 has been added from pin 2 of V8 to pin 2 of the 6AV6 a-f amplifier V5. A 0.005- μ f ceramic capacitor has been added from pin 3 of the 6AU6 driver V3 to ground. A 0.005- μ f ceramic capacitor has been added from pin 5 of V7 to ground. A 100-ohm, 1/2-watt, fixed composition resistor R36 has been added from pin 4 of V8 to pin 4 of V6. Capacitor C11, 5 μ f, has been added in parallel with C12, and C13 across taps D and B of the oscillator coil L4.

RCA 8R71, 8R74, 8R75, Ch. RC-1060; 8R72, 8R76, Ch. RC-1060A

A 15,000-ohm 1/2-watt resistor, R1, is sometimes used between pin 7 of S1 Rear and the phono outlet. R33, 1000 ohms, 1/2 watt, has been added from F to G of the a-m oscillator coil. A 0.005- μ f capacitor, C10, has been added from pin 3 of the 6AU6 driver, V3, to ground. Filament choke coil L6 has been added from pin 3 of V5 to pin 2 of V6. A 5- μ f capacitor, C11, has been added in parallel across C12 and C13. A 0.005- μ f capacitor, C44, has been added from pin 5 of tube V5 to ground.

RCA 8X541, Ch. RC-1065L; 8X542, 8X547, Ch. RC-1065M

These instruments are almost identical to the previous production of these instruments which used Chassis RC-1065J and RC-1065K.

RCA 9EY3, Ch. RS13 $\frac{1}{2}$

To aid in hum reduction in Record Changer 9EY3, resistor R8 and capacitor C4 have been changed in value. R8 has been changed from 470,000 ohms to 270,000 ohms. C4 has been changed from 0.002 μ f to 0.0047 μ f, 600 volts, tubular.

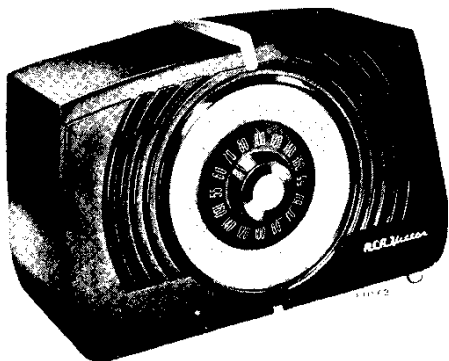
Regal 7151

Model 7151 is electrically the same as Model 205.

Sparton 130, 132, 135, 139, Ch. 5A10

Inability to procure type 12AV6 tubes in production quantities for the above models using radio chassis type 5A10 made it necessary to make the following production substitution. In the future, these models will use a 12AT6 tube in the 2nd detector and avc circuit in place of the original 12AV6 as shown in the schematic diagram. As these tubes are interchangeable, a change in other components of the circuit is not necessary.

MODELS X551, Ch. RC-1089B;
X552, Ch. RC-1089C



X551
Maroon

X552
Ivory

Specifications

Tuning Range	540-1600 kc	Dial Lamps (2)	type 47, 6-8 volts, .15 amp.
Intermediate Frequency	455 kc	Power Output	
Tube Complement		Undistorted	1.25 watts
(1) RCA 12BE6	Converter	Maximum	1.5 watts
(2) RCA 12BA6	I-F Amplifier	Loudspeaker (92577-1 or 92577-7)	
(3) RCA 12AV6	Det.—A.V.C.—A-F Amp.	Size and type	4 in. PM
(4) RCA 50L6GT	Output	Voice coil impedance	3.2 ohms at 400 cycles
(5) RCA 35W4	Rectifier	Cabinet Dimensions	
Power Supply Rating		Height	8 ⁵ / ₈ "
115 volts a.c., 50 to 60 cycles or d.c.	30 watts	Width	12 ¹ / ₄ "
		Depth	6"
		Weight	6 lbs.

Replacement Parts

Stock No.	DESCRIPTION	Stock No.	DESCRIPTION	
	CHASSIS ASSEMBLIES			
	RC 1089B—Model X551	73584	Shield—Tube shield	
	RC 1089C—Model X552	73117	Socket—Tube socket, 7 pin, miniature	
75481	Back—Back cover and loop assembly (maroon) (Model X551)	70827	Socket—Tube socket, octal	
75604	Back—Back cover and loop assembly (ivory) (Model X552)	74697	Socket—Pilot lamp socket	
75658	Bracket—Lamp bracket	75486	Transformer—First I-F transformer complete with adjustable cores. T1	
75484	Capacitor—Variable tuning capacitor	75487	Transformer—Second I-F transformer complete with adjustable cores. T2	
39624	Capacitor—Mica, 68 mmf.	75488	Transformer—Output transformer. T3	
39632	Capacitor—Mica, 150 mmf.		SPEAKER ASSEMBLIES	
39642	Capacitor—Mica, 390 mmf.		92577-1 or 92577-7	
73500	Capacitor—Electrolytic comprising 1 section of 50 mfd., 150 volts and 1 section of 30 mfd., 150 volts. C9A, C9B	74165	Speaker—4" P.M. speaker complete with cone and voice coil	
73920	Capacitor—Tubular, paper, .005 mfd., 400 volts. C4, C7		MISCELLANEOUS	
73562	Capacitor—Tubular, paper, .02 mfd., 400 volts. C5	Y2231	Cabinet—Plastic cabinet—maroon—complete with grille screen, dial markings, top and bottom decorative strips, feet and "Phono" decal (Model X551)	
70613	Capacitor—Tubular, paper, .03 mfd., 400 volts. C8	Y2261	Cabinet—Plastic cabinet—ivory—complete with grille screen, dial markings, top and bottom decorative strips, feet and "Phono" decal (Model X552)	
73553	Capacitor—Tubular, paper, .05 mfd., 400 volts. C3, C11		75659	Cap—Pilot lamp cap
73551	Capacitor—Tubular, paper, 0.1 mfd., 400 volts. C10		75492	Decal—"Phono" decal
73935	Clip—Mounting clip for i-f transformer		74782	Emblem—"RCA Victor" emblem
75485	Coil—Oscillator coil complete with adjustable core. L1, L2		75495	Foot—Cabinet foot—(2 req'd)
75482	Connector—Phono input connector less mounting bracket. J1		75493	Knob—Tuning control knob—maroon—(Model X551)
75483	Control—Volume control and power switch. R5, S1		75494	Knob—Volume control and power switch knob—maroon (Model X551)
70392	Cord—Power cord and plug		75605	Knob—Volume control and power switch knob—ivory (Model X552)
72283	Grommet—Rubber grommet for variable tuning capacitor (3 req'd)		75606	Knob—Tuning control knob—ivory—(Model X552)
74838	Grommet—Power cord strain relief grommets (1 set)		75607	Knob—Pilot lamp—Mazda 47
	Resistor—Fixed, composition:—		31480	Lamp—Pilot lamp—Mazda 47
	47 ohms, ± 20%, ½ watt.		74336	Nut—Spring nut to attach top decorative strip to cabinet (2 req'd) or bottom decorative strip to cabinet (1 req'd)
	100 ohms, ± 20%, ½ watt.		74340	Nut—Speed nut to attach foot
	150 ohms, ± 20%, ½ watt.		75489	Screen—Grille screen
	1200 ohms, ± 10%, 1 watt.		74734	Spring—Retaining spring for knob
	22,000 ohms, ± 20%, ½ watt.		75490	Strip—Decorative strip (gold) for cabinet top
	47,000 ohms, ± 20%, ½ watt.		75491	Strip—Decorative strip (gold) for cabinet front bottom
	220,000 ohms, ± 20%, ½ watt.			
	470,000 ohms, ± 20%, ½ watt.			
	1 megohm, ± 20%, ½ watt.			
	3.3 megohm, ± 20%, ½ watt.			
	4.7 megohm, ± 20%, ½ watt.			

MODELS X551, Ch. RC-1089B;
X552, Ch. RC-1089C

Alignment Procedure

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 a-v-c action. On a.c. operation an isolation transformer (115 v./115 v.) may be necessary for the receiver if the test oscillator is also a.c. operated.

Lead Dress

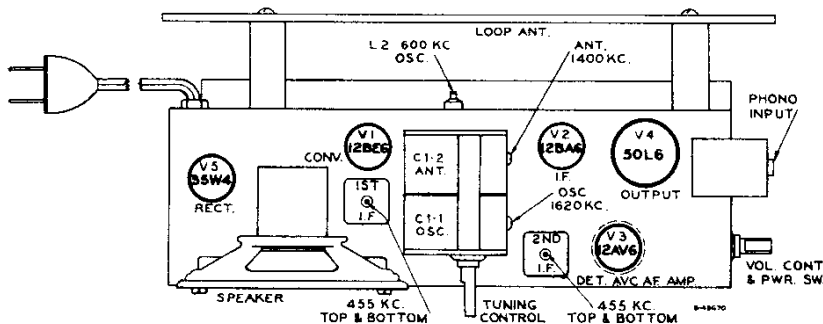
1. Dress all capacitors down against chassis.
2. Connect outside foil of all capacitors as indicated in schematic diagram.
3. Locate C9 in its mounting clip so that it butts against chassis.
4. Dress power cord leads away from R11.

Attachment of Record Player

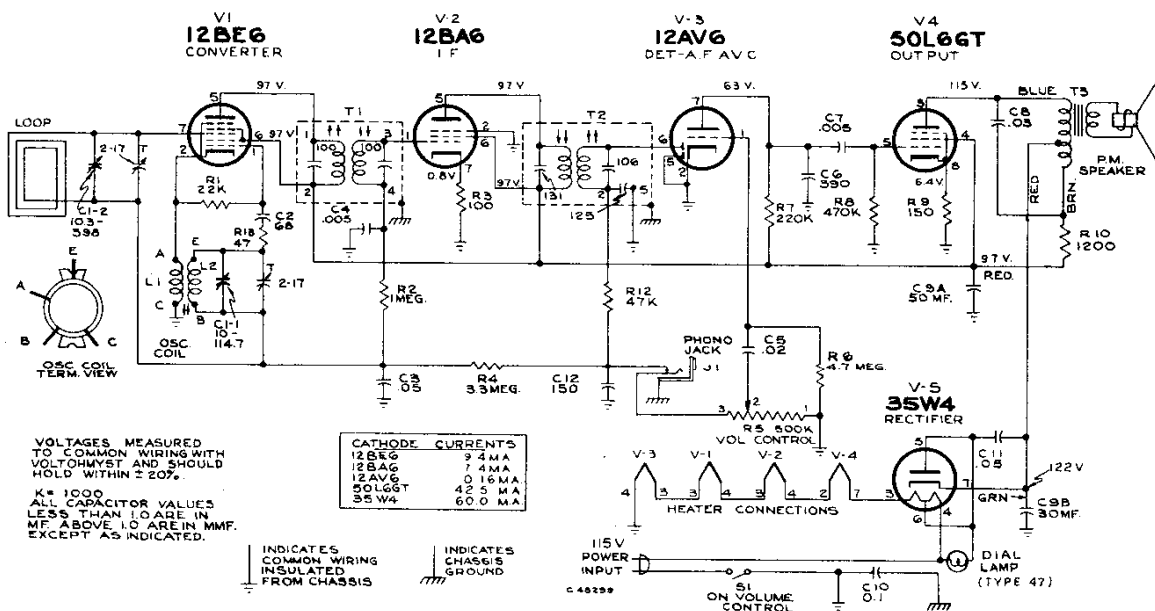
The audio output cable of the record player should be terminated with a pin plug. Plug the cable into the receptacle which is accessible through the side of the cabinet. Insertion of the cable plug into the receptacle removes radio signal from the volume control. The record player cable must be removed from the receptacle to permit radio operation.

Steps	Connect the high side of test-oscillator to—	Tune test-osc. to—	Turn radio dial to—	Adjust the following for max. output
1	12BA6 I-F grid through .01 mfd. capacitor	455 kc	Quiet-point 1600 kc end of dial	T2 (top and bottom) 2nd I-F trans.
2	Stator of C1-2 through .01 mfd.			T1 (top and bottom) 1st I-F trans.
3		1620 kc	Min. cap.	osc. trimmer
4	Short wire placed near loop to radiate signal	1400 kc	1400 kc signal	ant. trimmer
5		600 kc	600 kc signal	L2 (osc.) Rock gang
6		Repeat steps 3, 4 and 5.		

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 function, reverse the plug. On a.c., reversal of the plug may reduce hum.



Tube and Trimmer Locations



Schematic Circuit Diagram