

# Instructions for RCA Victor R-27 115 Volt AC/DC Universal Receiver

## INTRODUCTION

This four-tube radio receiver is an extremely compact and readily portable instrument which is operable from any 100 to 125 volt power mains, either A. C. (alternating current—any frequency from 25 to 133 cycles per second) or D. C. (direct current). Equivalent performance will be obtained with either type of power supply.

An additional feature of this instrument is found in the use of a tuning range extended beyond the limits of the standardized broadcast band. The actual range is from 540 to 1710 kilocycles, permitting the reception of unusual and oftentimes interesting forms of intelligence (such as police calls) in addition to conventional broadcast entertainment.

## INSTALLATION

**Preliminary**—After unpacking the instrument, remove the antenna lead and the power cord from their respective rear compartments formed at the top of the cabinet. Then remove the interior packing material (used to protect the Radiotrons during shipment.) Refer to the tube location diagram on the license label (located on inside of rear cover), and make certain that all tubes are in position and that the three grid clips are firmly connected to the dome terminals of the proper Radiotrons.

**Location**—The receiver should be located so that its power cord is within reach of an electrical outlet or lamp socket of the proper rating. Because of its light weight and small size, the instrument may be mounted upon a convenient shelf or upon an article of furniture (such as a piano or end-table) if desired.

In any installation, care should be taken to avoid restriction of natural ventilation through the cabinet as would occur with the set resting upon a soft cloth pad or with the back of the set fitted into a small compartment or placed too close to a wall or other plane surface. To prevent damage to the cabinet finish and possible more serious internal injury, the instrument should not be placed upon or close to a radiator or

other heating device. It must be mounted only in an upright position as intended to insure proper ventilation and maximum tube life.

**External Connections**—The most satisfactory length of antenna for use with the receiver should be determined by trial in each installation. In general, it is advisable always to use the shortest length which provides the desired signal pickup. The attached antenna lead is approximately 20 feet in length and in itself will provide sufficient local pickup (when fully uncoiled) in the majority of installations. In many cases, improved selectivity will be obtained by recoiling a portion of the lead but the coil must be allowed to remain outside of the cabinet.

Improved pickup for distant reception may be obtained by connecting the end of the antenna lead to a piping system (water, gas or heating), to a large-area conducting surface or to an external antenna system of from 25 to 75 feet in length. If the receiver is to be installed in a building of metallic construction, the antenna lead ordinarily will have to be dropped out of the nearest window since such structures form an effective shield which greatly impedes the passage of radio waves.

## OPERATION

Two operating controls only are used, both appearing upon the cabinet front panel. The left-hand knob is a combined volume control and power switch and the knob at the right is the station selector. The instrument should be operated as follows:

1. Apply power to the receiver by inserting the plug connector at the end of the power cord in the intended electrical outlet and by then turning the left-hand knob clockwise from the "off" position of the switch. A definite "snap" should be heard at first, further rotation of the knob serving to increase the volume as required.

2. Allow approximately 30 seconds for the Radiotron filaments to heat. Then, with the volume control fully advanced, proceed to rotate the station selector slowly until a signal is heard.

**Important:** When operating from a D. C. power supply, reception will be possible only with the connector plug inserted in that position which provides the correct polarity to the set. If no sound is heard from the loud-speaker (signal or static interference), reverse the position of the connector plug in the outlet and repeat the above procedure.

3. Upon receiving a signal, reduce the volume level if necessary and then adjust the station selector (for best repro-

duction) to a position mid-way between the points where the signal disappears.

**Note 1**—When tuned to a strong local station with the volume control fully advanced, a condition may be observed where a certain amount of counter-clockwise rotation of the control will improve the quality of reproduction and actually increase the volume. This condition is caused by "overloading" and may be corrected simply by setting the volume control below the readily-apparent critical point.

**Note 2**—If the antenna lead is bunched or coiled too near the set, oscillation (indicated by "whistling" on stations) may occur. This condition also may be corrected by reducing the volume control setting. When operated at or near the point of oscillation, however, the sensitivity of the set will be greatly increased—ordinarily to a point in excess of that required for normal reception.

4. When through operating turn off the power by rotating the volume control counter-clockwise until the "snap" of the power switch is heard.

**CAUTION: DISCONNECT INSTRUMENT FROM POWER SUPPLY BEFORE TOUCHING CHASSIS, TUBES OR METAL PARTS INSIDE CABINET.**

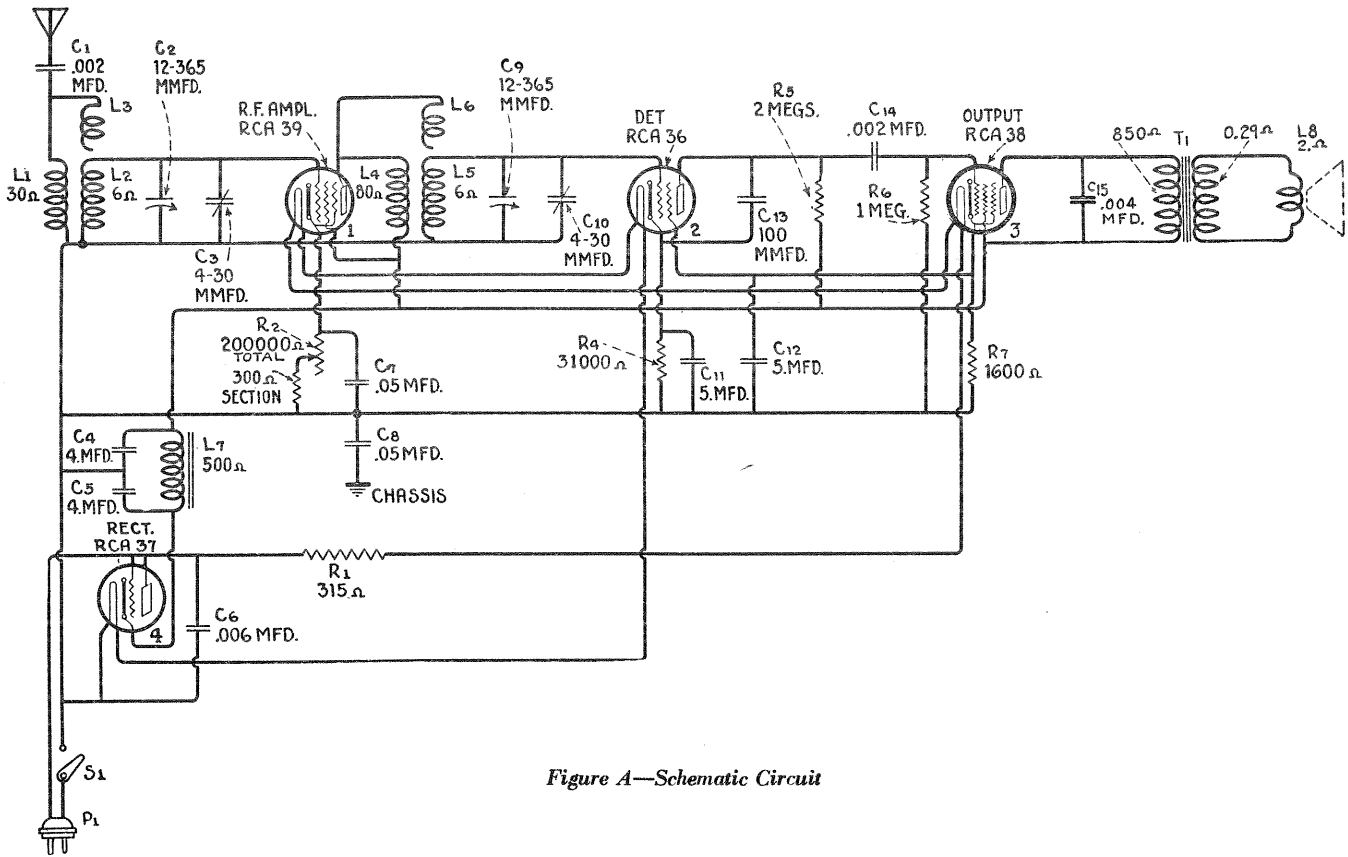


Figure A—Schematic Circuit

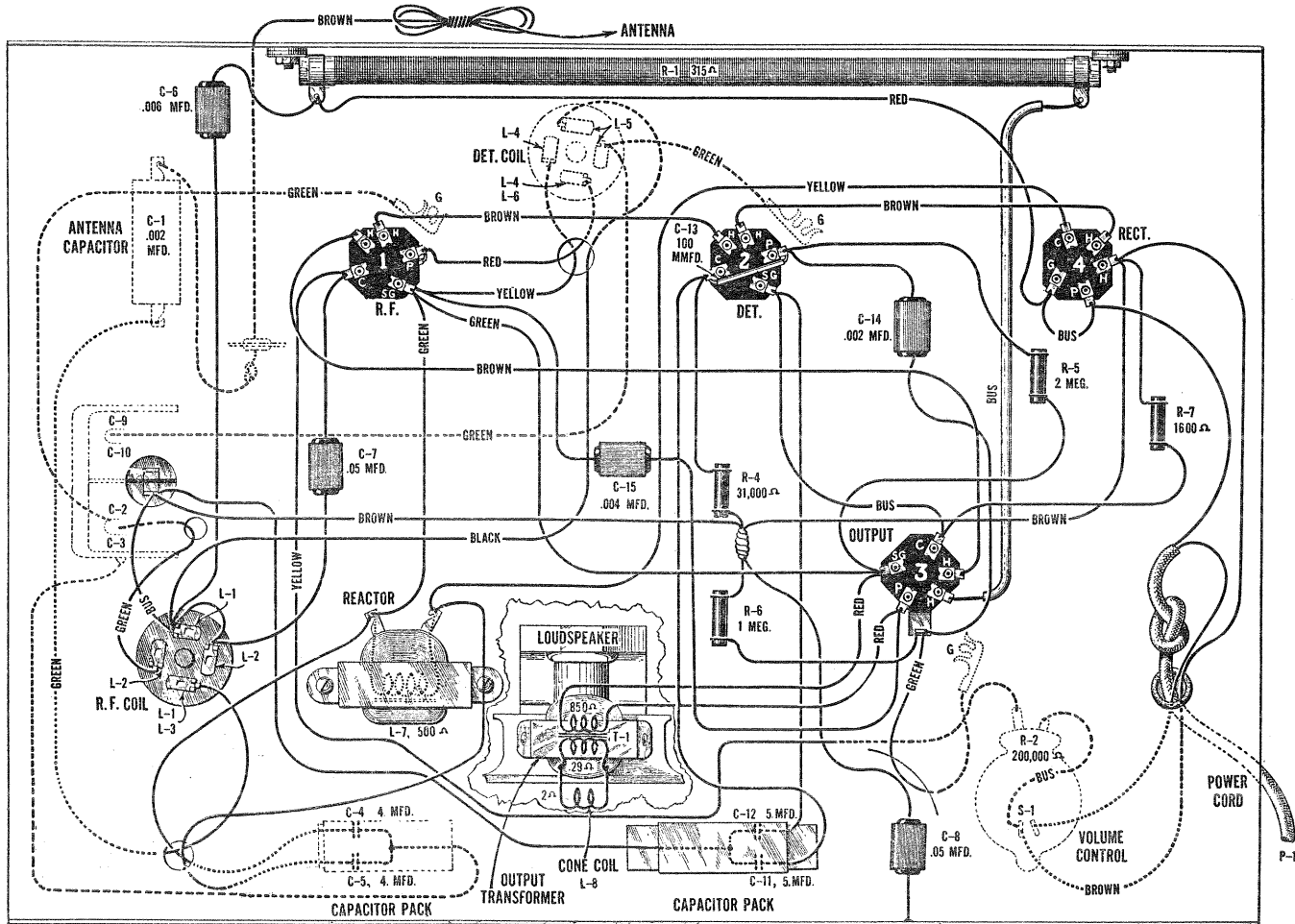


Figure B—Wiring Diagram

## SERVICE DATA

### Electrical Specifications

Voltage Rating . . .100-125 Volts, 25-133 Cycles A. C. or D. C.  
 Power Consumption . . . . .40 Watts  
 Frequency Range . . . . .540 K. C.-1710 K. C.  
 Type and Number of Radiotrons—  
 1 RCA-36, 1 RCA-37, 1 RCA-38, 1 RCA-39—Total 4

This receiver is an A. C.-D. C. table model tuned R. F. broadcast receiver. Features such as universal operation on both A. C. and D. C., wide tuning range, excellent performance and compact construction characterize this instrument. Figures A and B show the schematic and wiring diagrams respectively. The voltage readings and replacement parts are given below.

## RADIOTRON SOCKET VOLTAGES

Measured at Maximum Volume—115 Volt A. C. Line  
 All Voltages on D. C. will be slightly lower

Radiotron No.	Cathode or Filament to Control Grid, Volts	Cathode or Filament to Screen Grid, Volts	Cathode or Filament to Plate, Volts	Plate Current, M. A.	Filament or Heater, Volts
1. RCA-39 R. F.	3.0	105.0	105	7.0	6.0
2. RCA-36 Detector	*0.75	11.0	*60	0.025	6.0
3. RCA-38 Output	11.0	100.0	95	5.0	6.0
4. RCA-37 Rectifier	—	—	115	15.0	6.0

\*Impossible to measure on ordinary voltmeter

## REPLACEMENT PARTS

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
<b>RECEIVER ASSEMBLIES</b>					
3076	Resistor—1 megohm—Carbon type—Package of 5 . . . . .	\$1.00	3635	Resistor—Filament resistor—315 ohms . . . . .	\$1.00
3536	Capacitor—Filter capacitor—Two 5.0 mfd. capacitors . . . . .	1.10	3713	Capacitor—0.05 mfd. . . . .	.32
3537	Reactor—Filter reactor . . . . .	1.10	3714	Coil—Detector coil . . . . .	.98
3538	Capacitor—Filter capacitor—Two 4.0 mfd. . . . .	1.18	3715	Coil—R. F. coil complete . . . . .	1.08
3542	Volume control—Complete with mounting nut . . . . .	1.18	6188	Resistor—2 megohm—Carbon type—½ watt—Package of 5 . . . . .	1.00
3557	Capacitor—0.002 mfd. . . . .	.30	6451	Condenser—Two-gang variable tuning condenser . . . . .	2.04
3559	Resistor—31,000 ohms—Carbon type—½ watt—Package of 5 . . . . .	1.00	7484	Socket—Radiotron socket—5-contact . . . . .	.35
3560	Resistor—1,600 ohms—Carbon type—½ watt—Package of 5 . . . . .	1.00	10405	Capacitor—Antenna series capacitor—0.002 mfd. . . . .	.40
3561	Capacitor—0.004 mfd. . . . .	.42	10820	Capacitor—100 mmfd. . . . .	.40
3562	Capacitor—0.006 mfd. . . . .	.42	<b>REPRODUCER ASSEMBLIES DYNAMIC TYPE</b>		
3567	Escutcheon—Station selector escutcheon—Package of 2 . . . . .	.42	3610	Magnet . . . . .	1.04
3568	Escutcheon—Volume control escutcheon—Package of 2 . . . . .	.42	6477	Transformer—Output transformer . . . . .	1.32
3569	Knob—Station selector or volume control knob—Package of 5 . . . . .	.65	7598	Cone—Reproducer cone complete—Package of 5 . . . . .	4.35
			7599	Housing—Cone housing and core assembly . . . . .	1.16
			9429	Reproducer—Complete . . . . .	4.85

**RCA Victor Company, Inc.**  
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