

EQUIPMENT REQUIRED

Signal Generator: Capable of supplying modulated frequencies from 450 to 1700 kc.

Output Meter: A high resistance AC voltmeter, or a low range output meter.

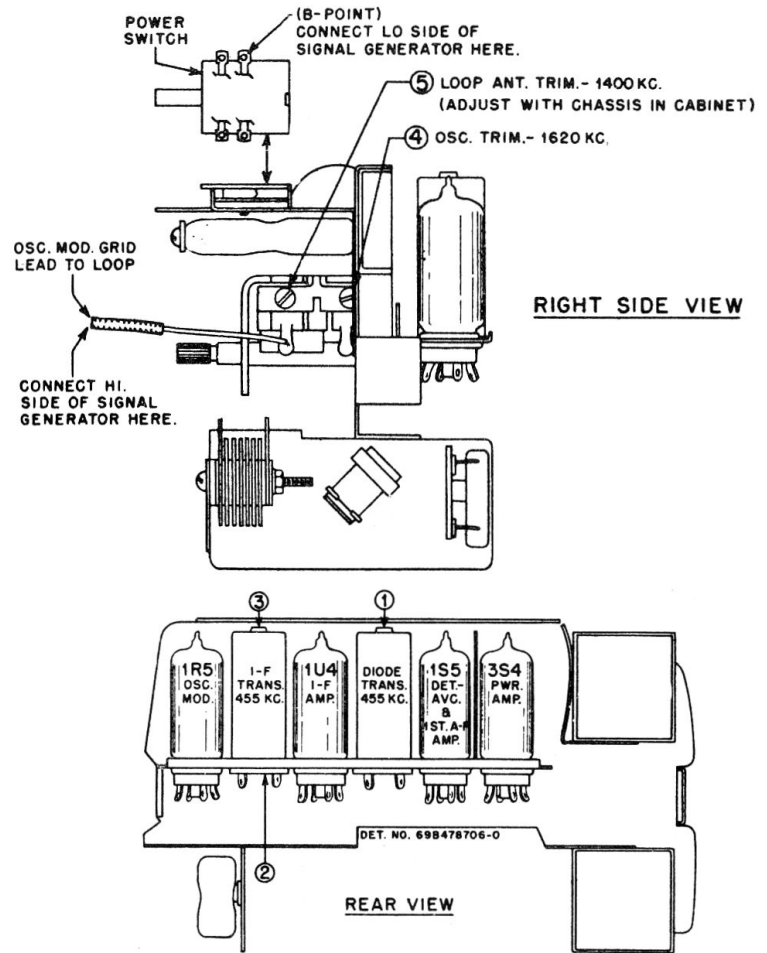
Isolating Transformer: A 115 volt 25/60 cycle, 1 to 1 ratio transformer.

ALIGNMENT OF RECEIVER

Signal Generator: Always be sure to use the specified capacitor in series with the signal generator output lead connections, as listed in the alignment procedure chart. Connect the return lead of the generator to the B- of the receiver through a .05 uF capacitor. The rear left hand lug of the power switch serves as a convenient B- point. Do not connect a grounded lead to this receiver when aligning on 115 volts AC, unless a line isolating transformer is used.

Output Indicator: If a power output meter is used, adjust it for 4 ohms impedance and connect across the secondary of the output transformer in place of the speaker voice coil. Do not exceed .05 watt during alignment. If an AC voltmeter is used connect it across the voice coil (speaker connected) and do not exceed an 0.4 volt output. As the reading on the test meter increases with alignment, regulate the signal generator attenuator to keep the output within the limits specified above.

Receiver: Turn the volume control to the maximum (full clockwise) position. The I. F. and diode transformer tuning cores are slotted for a small size fibre screwdriver. Do not press hard on the fibre screwdriver during alignment as damage to the coil forms or tuning cores may result.



Operation Steps	SIGNAL GENERATOR		RECEIVER		
	Connections to Receiver	Frequency	Tuning Capacitor	See Notes	Adjust in Stated Order for Maximum Output
1	To stator of C2B through a .05 uF Capacitor	455 kc	Fully Open	A	① Inductance of T2 ②③ Inductance of T1
2	To stator of C2B through a .05 uF Capacitor	1620 kc	Fully Open	B	④ Osc. Trimmer C2D
3	-	-	-	C	-
4	None	1400 kc	1400 kc	D	⑤ Ant. Trimmer C2A

ALIGNMENT NOTES

Note A: After adjusting T1, it may be necessary to readjust T2.

Note B: This adjustment sets oscillator to dial scale.

Note C: Install chassis in cabinet, leaving output meter connected to speaker.

Note D: Connect output of signal generator to a 5" diameter, 3 turn loop and bring loop close enough to receiver loop to obtain output of 50 milliwatts (0.40 volts) on output meter. Vary distance between loops to maintain this output during alignment. Minimum distance between loops should never be less than 12 inches.

The following table shows the Manufacturer's Part Numbers of batteries that may be used with this receiver.

Type	Burgess	Eveready	General	Ray-o-Vac
A	2	950	D	2
B	XX45	467	W4BA	P4367

MODEL R109: Is a three power (AC/DC-Battery portable radio receiver of the personal type. Four miniature type tubes and a selenium rectifier are used in a superheterodyne circuit.

ROGERS MAJESTIC TUBES

1S5 - Pentagrid Converter
1U5 - I-F Amplifier
1S5 - Detector, AVC & 1st AF Amplifier
3S4 - Power Amplifier

FREQUENCY RANGE: 540 kc to 1600 kc.

INTERMEDIATE FREQUENCY: 455 kc.

POWER SUPPLY: Operates from 115 volts AC/DC or from the following batteries:

Two 1.5 volt flashlight cells. (Eveready #950 or equivalent).
One 67.5 "B" Battery. (Eveready #467 or equivalent).

SERVICE DATA

Placement of the four tubes (1R5, 1U4, 1S5 and 3S4) is such that they may be easily removed for servicing. Upon opening the battery cover, the tubes are held in place by a spring-mounted bracket. To remove the tubes, simply pull the bracket out of the chassis. A thin piece of braid serves to bond the two chassis. This braid as well as all leads connecting the small chassis wiring to the large chassis, should be carefully dressed and free in movement to insure a good floating action of the small chassis.

Insulation between the cabinet (front, back and wrap-around) and chassis is provided for by the battery bushing mountings on the sides and by a braid of amble riveted to the inside of the cabinet.

The chassis itself is isolated from the line and power circuit by a resonant capacitor which eliminates shock hazard. To further guarantee any annoyance from a minor shock the chassis is insulated from the cabinet.

To remove the chassis from the cabinet, remove the two 4-40 screws (one on each side of the cabinet), pull off the tuning knobs, remove the front panel, disconnect the two loop leads from the pin receptacles, and slide the chassis out of the cabinet.

To remove the chassis cover plate, remove the two slotted screws holding the plate to the edge of the large chassis and with the set lying with the speaker cone down, lift the plate up from the chassis.

To remove the gang condenser, the screws holding the small chassis to the large chassis should be re-

It is recommended that the "A" battery be replaced when the operating voltage drops below 2 volts. The "B" battery should be replaced when the operating voltage drops below 47 volts.

CURRENT DRAIN: On 115 volts AC/DC - 0.15 amperes.

On battery operation - 3.2 volt "A" battery 150 milliamperes
67.5 volt "B" battery - 8.5 milliamperes.

AUDIO POWER OUTPUT: 0.1 watt undistorted, 0.15 watt maximum.

SPEAKER: 3.5" permanent magnet dynamic type. Impedance of voice coil 3.2 ohms.

ANTENNA: A loop antenna is built into the front cover of the cabinet. The loop is connected to the receiver via the cover hinges.

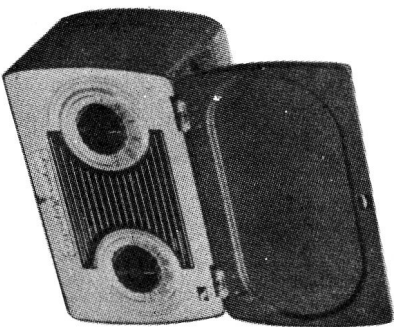
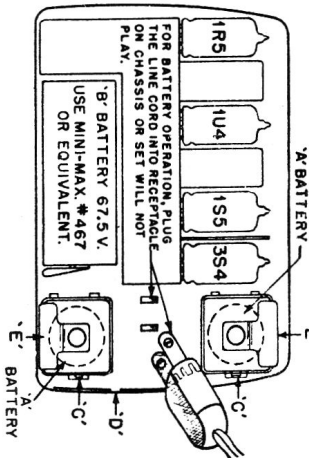
moved. This makes it possible to pull the small chassis strip out of the way so that access can be had to the screws holding the gang.

For access to some of the wiring, the "A" battery boxes may have to be removed. To do this, remove the two hex-headed screws over the changeover switch, leaving the center screw in. The two boxes and the connecting bracket may now be separated from the chassis. The bottom plates of the battery boxes are wired to the set, but the plates may be removed by bending the ears on the boxes outward.

The speaker is held in place by one screw located behind the 1S5 tube and a locking ear. Remove the 8-32 hex-headed screw, unsolder the voice coil lead from the speaker and pull the speaker out from the front of the set.

Tuning the set on or off is accomplished by opening or closing the front cover which actuates a push rod connected to a switch. Overthrow has been provided in the switch so that the switch is open circuitized before the cover is completely closed. This prevents tolerance between the cover and front panel from causing the switch to close when the battery boxes operate a switch which changes the circuit wiring to battery operation.

The oscillator coil and tuning capacitor leads should be dressed close to the chassis. This will minimize shifting of oscillator frequency when chassis is installed in its cabinet.



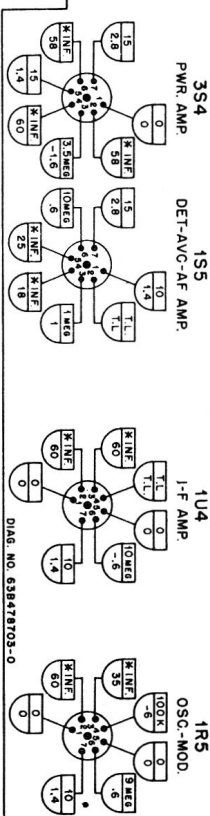
BOTTOM VIEW OF CHASSIS

○ = VOLTAGE MEASUREMENTS.
□ = RESISTANCE MEASUREMENTS.
T.L. = TIE LUG.

* = MEASUREMENTS MAY VARY DEPENDING ON CONDITION OF ELECTROLYTIC CAPACITORS.

CONDITIONS OF MEASUREMENTS.

A VTVM WAS USED TO MAKE ALL VOLTAGE MEASUREMENTS. LOOP IS DISCONNECTED AND NO STATION IS TUNED IN. MEASUREMENTS ARE MADE FROM TUBE BASE PIN TO B-(-) SET IS OPERATED FROM FRESH BATTERIES DURING VOLTAGE MEASUREMENTS. SET IS IN BATTERY POSITION AND BATTERIES ARE REMOVED DURING RESISTANCE MEASUREMENTS. VOLTAGE TOLERANCE ±10%. RESISTANCE TOLERANCE ±20%.



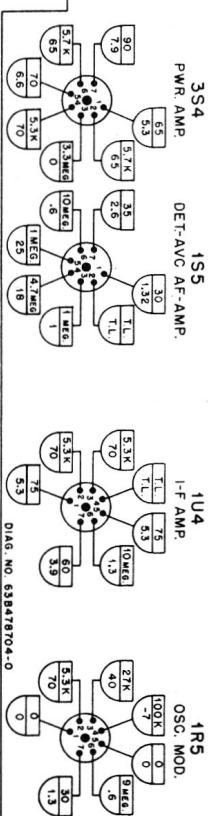
VOLTAGE AND RESISTANCE VALUES FOR BATTERY OPERATION

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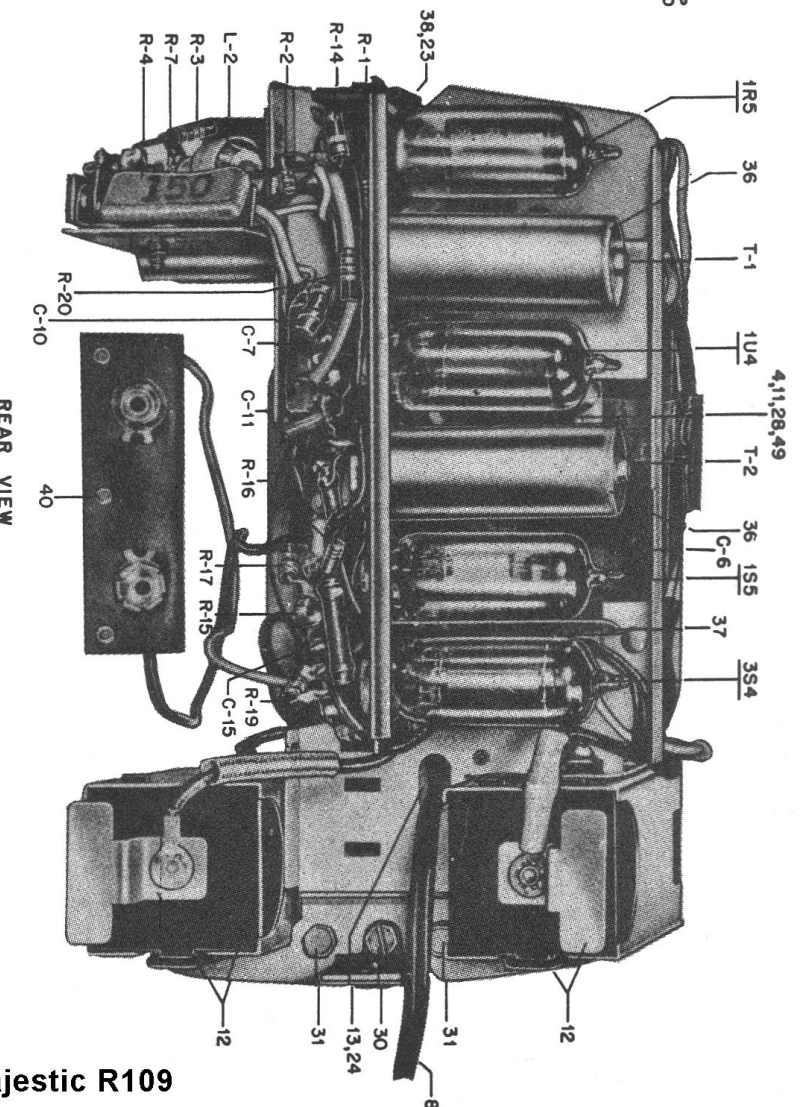
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VOLTAGE AND RESISTANCE VALUES FOR 115 V. AC-DC OPERATION

Rogers Majestic "Take About" R109 AC/DC & Battery Operated Radio



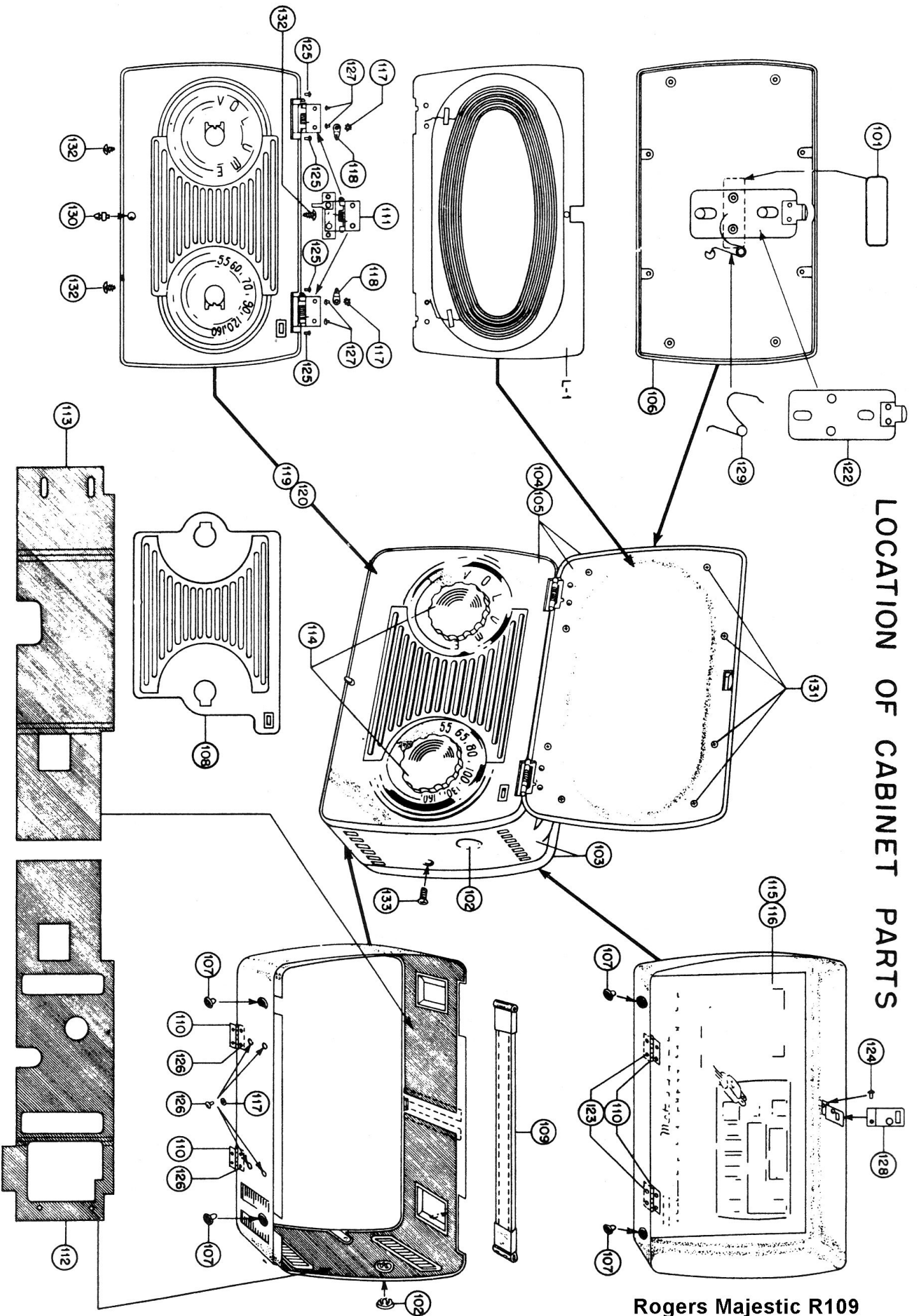
REAR VIEW



LEFT SIDE VIEW

Rogers Majestic R109

LOCATION OF CABINET PARTS



Rogers Majestic R109