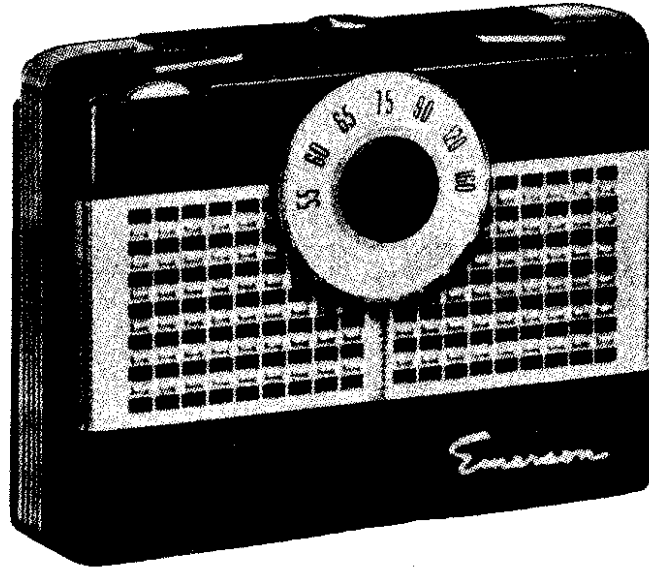


MODEL 704,
Ch. 120154-B

DESCRIPTION

MODEL 704

TYPE: Portable (battery operated) superheterodyne.

FREQUENCY RANGE: 540-1600 kc.

TYPE OF TUBES:

- 1-1R5, converter
- 1-1U4, i-f amplifier
- 1-1U5, detector, a.v.c., a-f amplifier
- 1-3V4, power output

POWER SUPPLY: "A" and "B" batteries.

VOLTAGE RATING:

- "A" Battery—1.5 volts
- "B" Battery—67.5 volts

CURRENT DRAIN:

- "A" Battery—0.20 amp.
- "B" Battery—0.0075 amp.

GENERAL NOTES

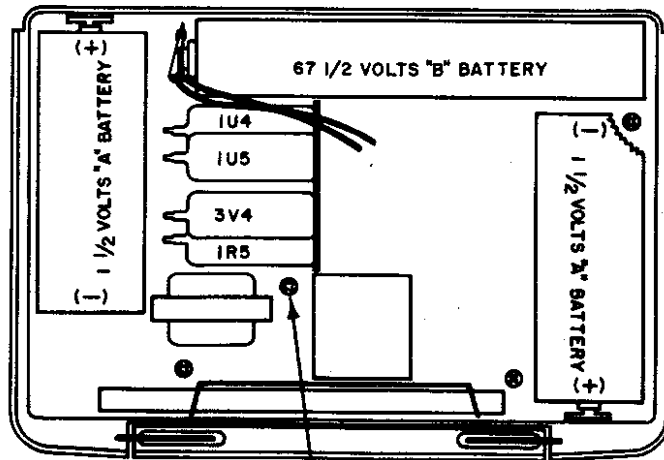
1. If replacements are made in the r-f section of the circuit, the receiver should be carefully realigned.
2. The receiver has a self-contained antenna and does not require additional antenna or ground connection.
3. The self-contained bar type antenna has directional properties. It is important, therefore, once the station is tuned in, to rotate the cabinet back and forth through a quarter of a circle (90 degrees), leaving it at the position where the station is received with maximum volume.
4. Remove batteries as soon as they are exhausted.
5. This receiver uses one Emerson 67.5 volt "B" battery No. EM 216 dimensions $5\frac{1}{4}$ " x 1" x $1\frac{7}{8}$ " and two Emerson 1.5 volt "A" batteries No. EM 236 dimensions are $1\frac{3}{8}$ " dia. and 4" length.

ALIGNMENT INSTRUCTIONS

Volume control should be at maximum; output of signal generator should be no higher than necessary to obtain an output reading.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 mfd.	High side to pin 6 (grid) of 1R5. Low side to chassis.	455 KC.	Tuning condenser fully open.	Across voice coil.	T2 and T1	Adjust for maximum output.
2		Loop Ant connected to signal gen. and placed near bar loop ant.	600 KC.	Tuning condenser fully closed.	Across voice coil.	Osc. slug in L-2	Adjust for maximum output.
3		Loop	1620 KC.	Tuning condenser fully open.	Across voice coil.	C4 (osc. trimmer)	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
4		Loop	1400 KC.	Tune for maximum output.	Across voice coil.	C3 (Ant. trimmer)	Adjust for maximum output.

MODEL 704,
Ch. 120154-B



CHASSIS MOUNTING SCREWS (4)
BATTERY & TUBE LOCATIONS 905375

CONDITIONS FOR VOLTAGE AND RESISTANCE READINGS

1. Voltages indicated are positive d.c., resistances in ohms, unless otherwise noted.
2. Measurements made with voltohmyst or equivalent.
3. All measurements taken between points and chassis, unless otherwise indicated.
4. Volume control at maximum, no signal applied, for voltage measurements.
5. Nominal tolerance in component values makes possible a variation of $\pm 15\%$ in readings.
6. K is Kilohms, MEG in mehojms. Resistance marked * are measured to B + (Pin #3, V-4).

RESISTANCE READINGS FOR CHASSIS 120154-B

SYMBOL	TUBE	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7
V-1	1R5	0	17*	15K*	110K	0	4M	3.3
V-2	1U4	0	17*	0*	0*	0	5M	3.3
V-3	1U5	0	1M*	4.7M*	1M	1M	10M	3.3
V-4	3V4	3.3	350*	0*	470	0	3M	3.3

VOLTAGE READINGS FOR CHASSIS 120154-B

SYMBOL	TUBE	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7
V-1	1R5	0	58	38	- 9	0	- .4	1.3
V-2	1U4	0	58	58	58	0	0	1.3
V-3	1U5	0	19	16	- .7	- .8	- .1	1.3
V-4	3V4	1.3	56	58	- 3.8	0	- 3.8	1.3

All measurements taken between points and chassis unless otherwise indicated.

* Measured to B + (Pin #3, V-4).

• For best results replacements should be made with genuine Emerson parts and genuine Emerson tubes.

PART NO. 950213

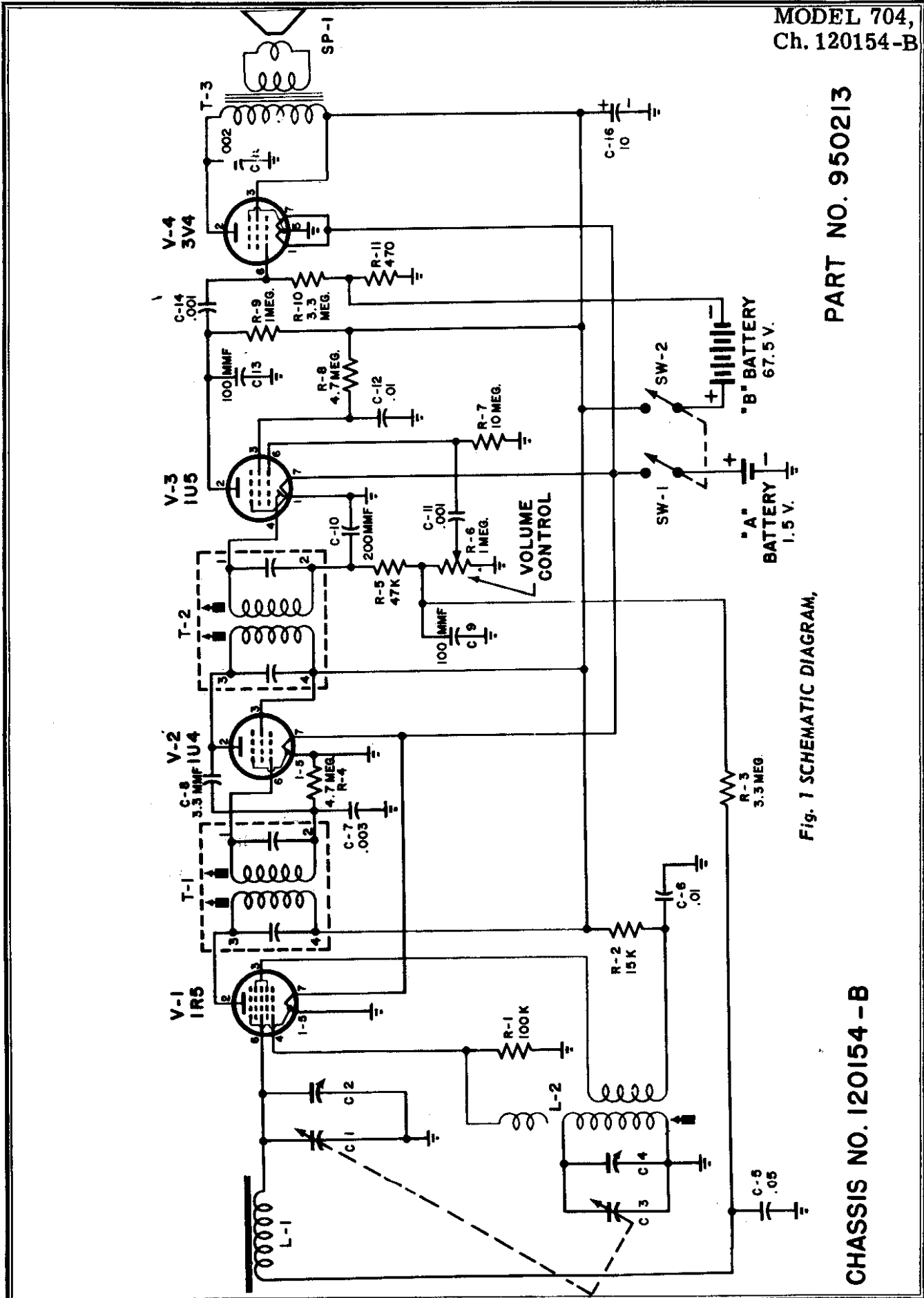


Fig. 1 SCHEMATIC DIAGRAM,

CHASSIS NO. 120154 - B

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MODEL 704,
Ch. 120154-B

CHASSIS PARTS LIST (Chassis 120154-B)

Sym ^{bol}	Part No.	Description	List Price	Sym ^{bol}	Part No.	Description	List Price
C-1	90085	Variable Capacitor - R.F. Section	3.05	R-4	351372	4.7 megohm Carbon	.14
C-2	Pt. of C-1	Trimmer - R. F. Section		R-5	340892	47,000 ohm Carbon	.17
C-3	Pt. of C-1	Variable Capacitor - Oscillator Section		R-6	390194	1 megohm Volume Control	1.65
C-4	Pt. of C-1	Trimmer - Oscillator Section		R-7	351452	10 megohm Carbon	.14
C-5	920507	.05 mf Paper	.30	R-8	351372	4.7 megohm Carbon	.14
C-6	920509	.01 mf Paper	.25	R-9	341212	1 megohm Carbon	.14
C-7	920140	.003 mf Paper	.25	R-10	351332	3.3 megohm Carbon	.14
C-8	915032	3.3 mmf Ceramic	.10	R-11	340412	470 ohm Carbon	.14
C-9	928013	100 mmf Ceramic	.25	SP-1	180085	Speaker - PM - 3 1/2"	4.90
C-10		200 mmf		SW-1	Part of	On - Off Switch	
C-11	Part of	.001 mf		SW-2	Pt. No.	On - Off Switch	
C-12	Part No.	.01 mf	.95	T-1	720152	1st I.F. Transformer	.95
C-13	928034	100 mf		T-2	720152	2nd I.F. Transformer	2.05
C-14		.001 mf		T-3	734076	Output Transformer	1.75
C-15	920550	.002 mf Paper	.20	V-1	810110	Vacuum Tube - 1R5	
C-16	925217	10 mf Electrolytic	1.20	V-2	800017	Vacuum Tube - 1U4	
L-1	700069	Bar Antenna	2.15	V-3	800019	Vacuum Tube - 1U5	
L-2	716072	Oscillator Coil	1.15	V-4	800018	Vacuum Tube - 3Y4	
R-1	350972	100,000 ohm Carbon	.17				
R-2	340772	15,000 ohm Carbon	.14				
R-3	351332	3.3 megohm Carbon	.14				

Prices subject to change without notice.

CABINET PARTS LIST (Model 704)

PART NO.	DESCRIPTION	LIST PRICE	PART NO.	DESCRIPTION	LIST PRICE
Model 704	Cabinet	5.80	460291	Dial Knob	.70
140461	Cabinet Front - with Handle	3.50	450139	Knob - Volume	.20
140462	Cabinet Back	1.50	411241	Metal Ring - Knob	.03
460286	Handle Plastic	.80	542280	Compression Spring - Knob	.02
411239	Handle Ring	.05	460286	Emerson Script	.50

Prices subject to change without notice.