

## Emerson Radio & Phonograph Corp.

**Model: 514**

**Chassis:**

**Year: Pre 1949**

**Power:**

**Circuit:**

**IF:**

**Tubes:**

**Bands:**

### Resources

[Riders Volume 17 - EMERSON 17-6](#)

[Riders Volume 17 - EMERSON 17-7](#)

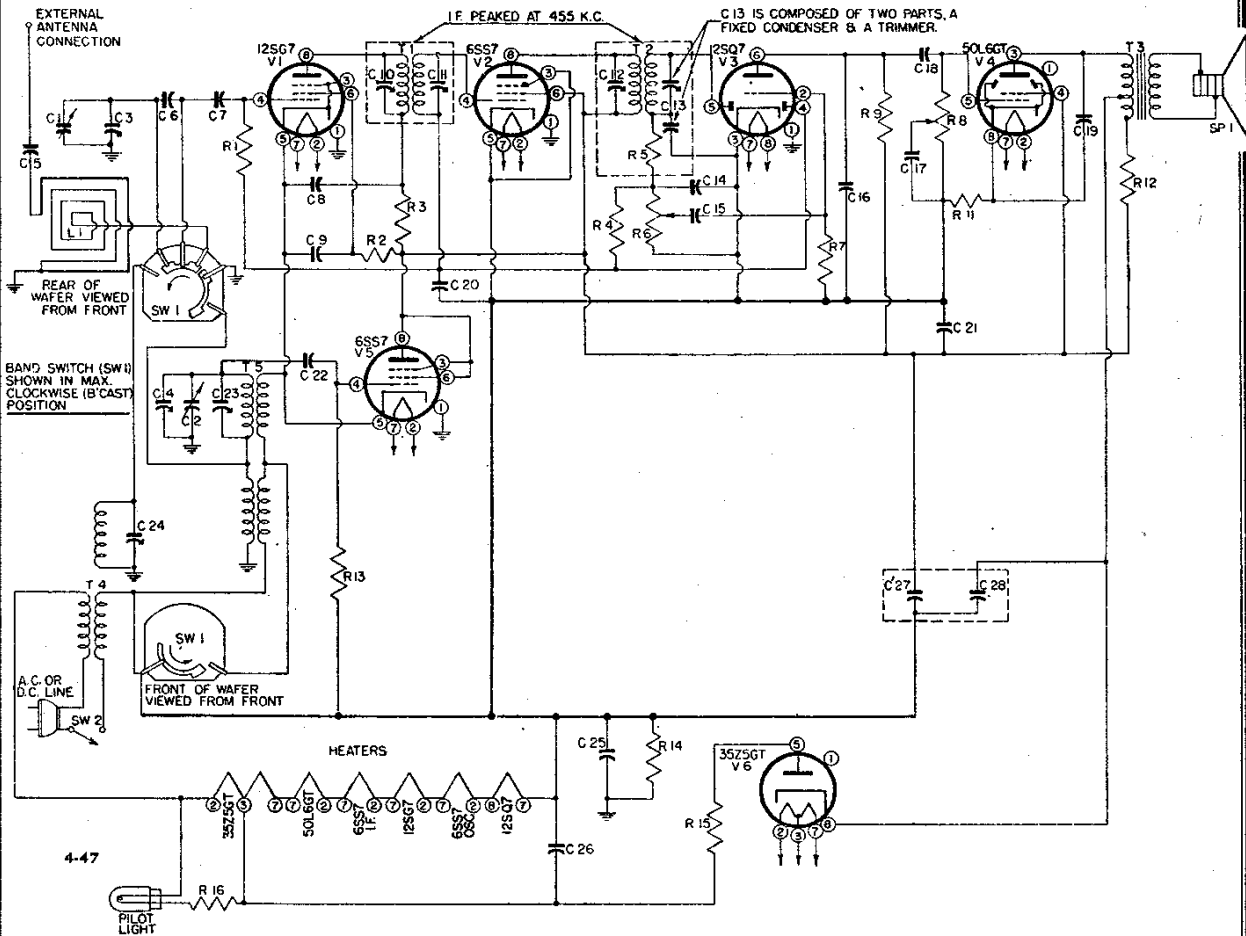
[Riders Volume 17 - EMERSON 17-8](#)

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EMERSON RADIO AND PHONO. CORP.

MODELS 513, 514, 534

Chassis 120007



DESCRIPTION

TYPE: Two-band superheterodyne.

FREQUENCY RANGE:

540-1620 kc. (555-185 meters)  
8.8-12.2 mc. (16.3-24.5 meters)

TYPE OF TUBES:

- 1—12SG7, mixer
- 1—6SS7, oscillator
- 1—6SS7 or 7B7, i-f amplifier
- 1—12SQ7, diode detector, a-f amplifier, a.v.c.
- 1—50L6GT, beam power output
- 1—35Z5GT, half-wave rectifier

POWER SUPPLY: A.C. or D.C.

VOLTAGE RATING: 105-125 volts.

POWER CONSUMPTION: 30 watts.

GENERAL NOTES

1. If replacements are made or the wiring disturbed in the r-f section of the circuit, the receiver should be carefully realigned.
2. In operating the receiver on d.c., it may be necessary to reverse the line plug for correct polarity.
3. The color coding of the i-f transformer leads is as follows:  
Grid—green                      Plate—blue  
Grid return—black              B+—red
4. All models have self-contained antennas and do not require additional antenna connections. For permanent home installations, however, if it is desired to improve reception of weak stations, an additional outdoor antenna may be used. For this purpose a lead has been brought out of the rear near the line cord.
5. The self-contained loop antenna operates at maximum efficiency when its position is at right angles to the broadcasting source. 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.
6. Where 7B7 loctal tube is used in place of 6SS7 i-f amplifier, tube types are not interchangeable. Use same voltage data for both types.



EMERSON RADIO AND PHONO. CORP.

MODELS 513, 514, 534

Chassis 120007

ADJUSTMENTS

An oscillator with frequencies of 455, 600, 1600 and 12,000 kc is required.  
An output meter should be used across the voice coil or output transformer for observing maximum response.

Always use as weak a test signal as possible when aligning the receiver.

If Alignment

Slide the variable condenser to the minimum capacity position. Feed 455 kc to the grid of the 12SK7 tube through a 0.1 mfd. condenser and adjust the four 1/4 trimmers for maximum response.

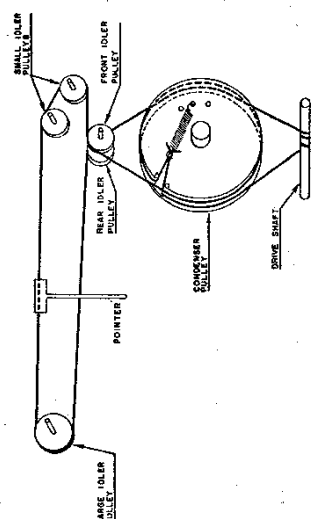
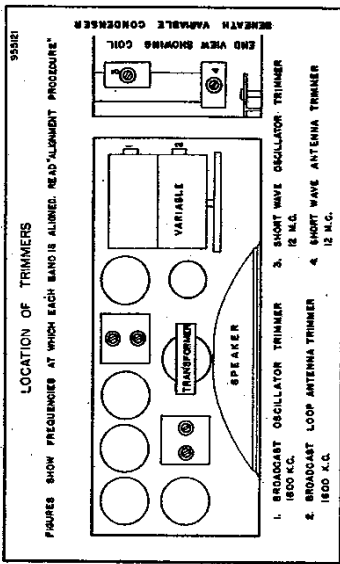
Note: The grid of the 12SG7 tube is the No. 4 pin.

R-f Alignment

Rotate the wave-band switch counter-clockwise to the short-wave position. Set the dial pointer at 12 megacycles and using a 400 ohm carbon resistor as a dummy antenna align at 1500.

Rotate the wave-band switch clockwise to the broadcast position. Set the dial pointer at 150 and feed 1000 kc from the signal generator into a loop of wire about 12 inches in diameter. Hold this radiating loop about 12 inches from the loop antenna and advance the signal generator until a deflection is obtained on the output meter. Adjust first the oscillator trimmer (rear section of the variable condenser) and then the antenna trimmer (front section of the variable condenser) for maximum response.

If the loop has been replaced it may be necessary to adjust the loop inductance as follows: Align at 1600. Set the pointer at 60 and feed 600 kc into the radiating loop. A position of the outside turn of the loop may then be swung to either side of the center to give maximum response. Re-align at 1500.



CUT-AWAY VIEW SHOWING METHOD OF STRINGING PULLEYS.

Schematic Symbol	DESCRIPTION	Schematic Symbol	1 Part No.	DESCRIPTION
C1, C2	Two-gang variable condenser	R2	310890	47,000 ohms, 1/2 watt resistor
*C3, C4	Trimmer, part of variable condenser	R3	310650	4700 ohms, 1/2 watt resistor
C5, C15, C17	0.002 mfd., 600 volt condenser	R4	321330	3.3 meg., 1/2 watt resistor
C6	0.00046 mfd. mica condenser	*R5	47,000 ohms, 1/2 watt resistor, part of second i-f transformer	
C7, C16	0.00022 mfd. mica condenser	R6	390190	500,000 ohms volume control
C8	0.05 mfd., 200 volt condenser	R7	397000	15 meg., 1/2 watt resistor
C9	0.02 mfd., 400 volt condenser	R8	390280	400,000 ohms tone control
*C10, C11, C12	Trimmer, part of i-f transformer	R11	340280	150 ohms, 1/2 watt resistor
*C13	Trimmer and fixed condenser, part of second i-f transformer	R12	370490	1,000 ohms, 1 watt resistor
C14	0.00011 mfd. mica condenser	R13	310810	25,000 ohms, 1/2 watt resistor
C20	0.1 mfd., 200 volt condenser	R14	321050	250,000 ohms, 1/2 watt resistor
C21	0.03 mfd., 400 volt condenser	R15	340050	15 ohms, 1/2 watt resistor
*C22	0.00036 mfd. mica condenser	R16	340010	10 ohms, 1/2 watt resistor
*C23	Trimmer, part of oscillator coil antenna coil	IP1	180008	P.M. speaker
*C24	Trimmer, part of short wave antenna coil	*SW1	510330	Band switch
C25	0.2 mfd., 200 volt condenser	*SW2	720400	Line switch on volume control
C26	0.05 mfd., 400 volt condenser	T1	720390	First i-f transformer
C27, C28	36-50 mfd., 150 volt dual electrolytic condenser	T2	734100	Second i-f transformer
L1	Loop antenna	T3	710010	Output transformer
R1, R9, R10	470,000 ohms, 1/2 watt resistor	T4	716100	Short wave antenna coil
		T5	585160	Oscillator coil
			807000	Line cord
			807000	Pilot light, Mazda No. 47
			507215	Pilot light socket



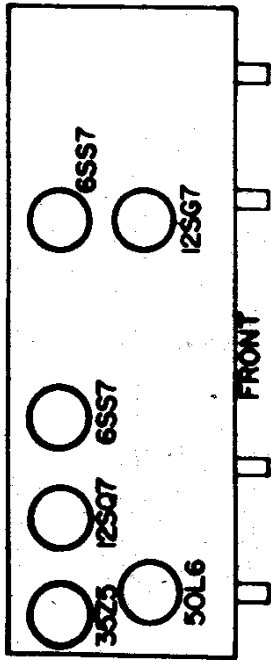
\* Not supplied separately.  
† Specify part number when ordering.

VOLTAGE ANALYSIS

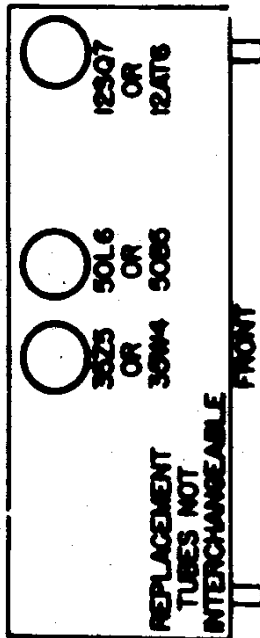
The following voltage readings are d-c measurements taken from B- (line switch) to the indicated tube-socket pin. A 1000 ohm-per-volt meter should be used for all readings except those indicated by an asterisk (\*), which should be taken with a d-c vacuum-tube voltmeter. Line voltage for these readings was 117 volts, 60 cycles, a.c. Measurements made with 117 volts will show about 10% lower than the given values. \* This table shows the voltage control set at maximum and a variable condenser open and band switch in B-C position. When the band switch is in the S-W position, voltage indicated (+) apply.

TUBE	PIN NUMBER									
	1	2	3	4	5	6	7	8	9	10
6X57 (V1)			95+	-1.7*		65	95+	95		
6X57 (V2)			95+	-1.6*		65	95+	95		
6X57 (V3)				-3.0*		65	65+	65+		
12SK7				-3.3*		95	95	95		
		-0.6*		-2.6*		95	95+	95+		
12SG7		-0.6*		-3.3*		32*	32*	32*		
		-0.6*		-2.6*		52+	52+	52+		
50L6GT			112	95					5.5	
			112+	95+					5.25+	
35W4GT				119					119	
				119+					119+	

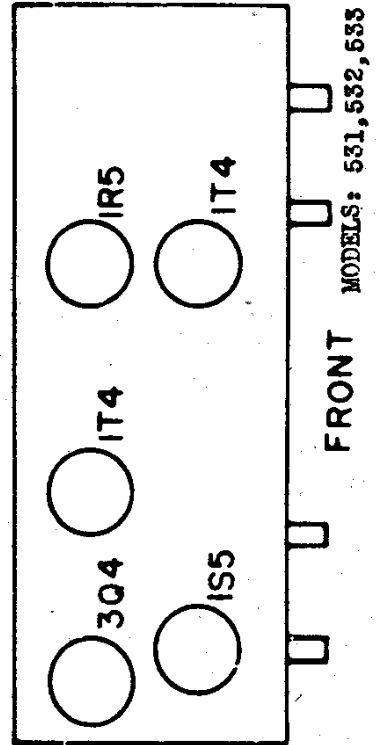
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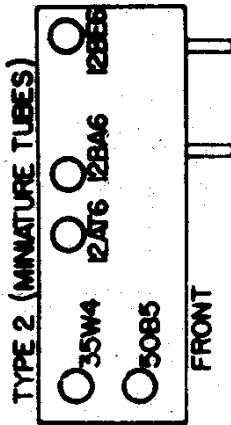
MODELS: 513, 514



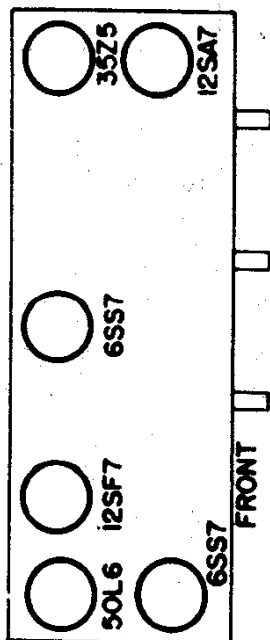
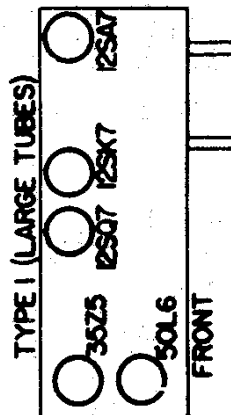
MODELS: 521, 542



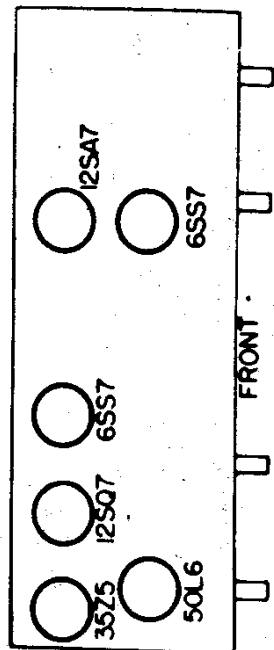
MODELS: 531, 532, 533



MODELS: 501, 502, 503, 504, 507, 509, 510, 511, 517, 518, 519, 520, 525, 539, 541



MODEL 506



MODELS: 512, 515, 516