

## Emerson Radio & Phonograph Corp.

Model: 511

Chassis:

Year: Pre 1948

Power:

Circuit:

IF:

Tubes:

Bands:

### Resources

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MODELS 501, 502, 503, 504,  
510, 520, Ch. 120000 and EMERSON RADIO & PHONO. CORP.  
120029; 519, Ch. 120030

MODELS 507, 509,  
511, 518  
Ch. 120005, 120010

Specify part numbers when ordering. List prices each effective as of January 1, 1946. (Subject to change without notice.)

Schematic Symbol	Part No.	DESCRIPTION	PRICE
C1, C2	900160	Two-gang variable condenser	\$4.50
C3, C4	929010	Trimmer, part of variable condenser	.20
C5, C6, C7, C8	929240	500 mfd., 600 V. paper condenser	.30
C9, C10	929040	500 mfd., 600 V. paper condenser	.30
C11, C12	929040	220 mfd., 600 V. mica condenser	.30
C13	929040	0.1 mfd., 200 V. paper condenser	.20
C14	929040	0.05 mfd., 400 V. paper condenser	.20
C15, C16	929090	Dual electrolytic condenser, 150 V.; C20—30 mfd., C21—50 mfd.	.30
C17, C18	929000	Loop antenna assembly, on chassis	.125
C19	700200	Loop antenna assembly, on chassis	.105
L1	700200	15 meg., 1/2 watt carbon resistor	.12
L2	379700	3.3 meg., 1/2 watt carbon resistor	.12
L3	321330	470,000 ohms, 1/2 watt carbon resistor	.12
L4	321130	470,000 ohms, 1/2 watt carbon resistor	.12
L5	379490	150 ohms, 1/2 watt carbon resistor	.14
L6	379490	1000 ohms, 1/2 watt carbon resistor	.16
L7	379740	150 ohms, 1/2 watt carbon resistor	.12
L8	379740	150 ohms, 1/2 watt wire-wound resistor	.16
L9	321050	220,000 ohms, 1/2 watt carbon resistor	.12
L10	180000	Speaker, 3" permanent magnet (less output transformer)	.50
L11	720000	Line switch, part of R3, 1/2 watt transformer	1.65
L12	724000	Dual inductor 455 kc. second 1/2 transformer	1.85
L13	716010	Output transformer	1.00
L14	140007	Oscillator coil	.25
L15	140015	Cabinet (Model 507, ivory)	2.35
L16	140015	Cabinet (Model 509, black)	2.35
L17	140016	Cabinet (Model 509, mottled brown)	2.55
L18	140034	Cabinet (Model 518)	2.55
L19	460130	Knob for 140007 cabinet	.18
L20	460130	Knob for 140010 and 140014 cabinet	.18
L21	460130	Knob for 140015 cabinet	.18
L22	450060	Molded back for 140007 cabinet	1.20
L23	450060	Molded back for 140015 cabinet	1.20
L24	450070	Molded back for 140010 cabinet	.45
L25	560110	Masonite back for 140007 cabinet	.30
L26	560130	Masonite back for 140015 cabinet	.30
L27	560140	Masonite back for 140010 cabinet	.30
L28	380100	Masonite back for 140034 cabinet	.25
L29	380110	Line cord	.60

DIAL PARTS

507080	Pilot light socket	.20
607000	Pilot light, 6.3 V., 0.15 amp., Mazda No. 47	.90
524080	Dial backplate	.10
524090	Dial pointer	.10
520330	Dial crystal (Models 507 and 509)	.75
520440	Dial crystal (Model 518)	.75
260003	Drive cord spring	.45
260003	Drive shaft	.15

MODEL: 511\*

\*Not supplied separately.

\*PARTS LIST OF MODEL 511 SAME AS THAT OF MODEL 507 WITH THE FOLLOWING EXCEPTIONS:

929280	Two-gang variable condenser	\$4.50
929000	200 mfd., 600 V. paper condenser	.20
930000	Volume control with line switch, O.S. megaphone	1.10
716010	Oscillator coil	1.00
140017	Cabinet, walnut	2.95
460110	Knob	.18
479000	Bottom cover assembly	.40
383010	Line cord	.60

DIAL PARTS

507120	Pilot light socket	.20
607000	Pilot light, 6.3 V., 0.15 amp., Mazda No. 47	.90
523140	Dial pointer assembly	.35
520240	Dial crystal	.75
520260	Drive cord spring	.45
260203	Drive shaft	.15

Models using 120000 chassis use a dial plate on which the frequency is calibrated through 120. The dial plate on 120029 chassis is calibrated through 180.

All models have self-contained antennas and do not require external antennas. If replacement antenna leads are used, the frequency of the circuit, the receiver should be carefully re-aligned.  
If replacements are made on the wiring directed in the P.I. section, 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.  
In operating the receiver on d.c., it may be necessary to reverse the line plug for correct polarity.

PARTS LIST FOR MODELS 501, 502, 503, 504, 510, 519, 520 WITH EXCEPTIONS AS NOTED BELOW

Schematic Symbol	Part No.	DESCRIPTION	PRICE
C1, C2	900170	Two-gang variable condenser (120000 chassis), or	4.50
C3, C4	929010	Trimmer, part of variable condenser	.20
C5, C6, C7, C8	929240	500 mfd., 600 V. paper condenser	.30
C9, C10	929040	500 mfd., 600 V. paper condenser	.30
C11, C12	929040	220 mfd., 600 V. mica condenser	.30
C13	929040	0.1 mfd., 200 volt condenser	.20
C14	929040	0.00022 mfd. mica condenser	.20
C15, C16	929090	30-50 mfd., 150 V. dual dry-electrolytic condenser	.25
C17, C18	929000	Loop antenna, or	1.25
C19	700000	Loop antenna, or	1.05
L1	700200	15 meg., 1/2 watt resistor	.12
L2	321330	3.3 meg., 1/2 watt resistor	.12
L3	390010	0.5 meg. volume control	1.10
L4, L5	321130	470,000 ohms, 1/2 watt resistor	.12
L6	379690	150 ohms, 1/2 watt resistor	.14
L7	379690	1000 ohms, 1/2 watt resistor	.16
L8	310810	22,000 ohms, 1/2 watt resistor	.12
L9	340010	10 ohms, 1/2 watt resistor	.14
L10	379740	15 ohms, 1 watt wire-wound resistor	.16
L11	379740	150 ohms, 1/2 watt resistor	.12
L12	321050	220,000 ohms, 1/2 watt resistor	.12
L13	180000	Speaker, 3" permanent magnet	1.00
L14	720000	Line switch, part of volume control	1.65
L15	720100	First 1/2 transformer	1.85
L16	734000	Second 1/2 transformer	1.00
L17	716010	Output transformer	1.00
L18	140000	Oscillator coil	.25
L19	140005	Cabinet, esatin (Models 501, 502)	9.75
L20	140005	Cabinet, mahogany (Model 504)	9.00
L21	140006	Cabinet, mahogany (Model 504)	9.00
L22	460000	Knob, square holes	2.00
L23	460270	Knob, square holes	2.00
L24	460370	Rear cover (Models 501, 502)	1.35
L25	460380	Rear cover (Model 504), or	1.35
L26	430040	Rear cover (Model 504)	1.35
L27	460370	Knob	.10

DIAL PARTS

807000	Pilot light	.09
507100	Pilot light socket	.20
520330	Dial backplate (120000 chassis)	1.00
525010	Dial pointer assembly	.10
280103	Drive shaft	.20
280130	Drive extension (for use with 900160 variable condenser)	.15
280160	Drive spring	.05

MODEL 503

140031	Cabinet, walnut	9.00
450040	Rear cover, or	1.35
460140	Knob	.10
460140	Knob	.10
412690	Dial backplate	.35
525120	Dial pointer assembly	.20
520470	Dial crystal	.65
520200	Dial crystal escutcheon	.45

MODEL 510

140005	Cabinet, walnut	9.00
140006	Cabinet, mahogany	9.00
450330	Black plastic front, square holes	1.25
490230	Ivory plastic front, round hole	2.00
460370	Knob	.15
460370	Knob	.15
520080	Dial crystal	.20

MODEL 519

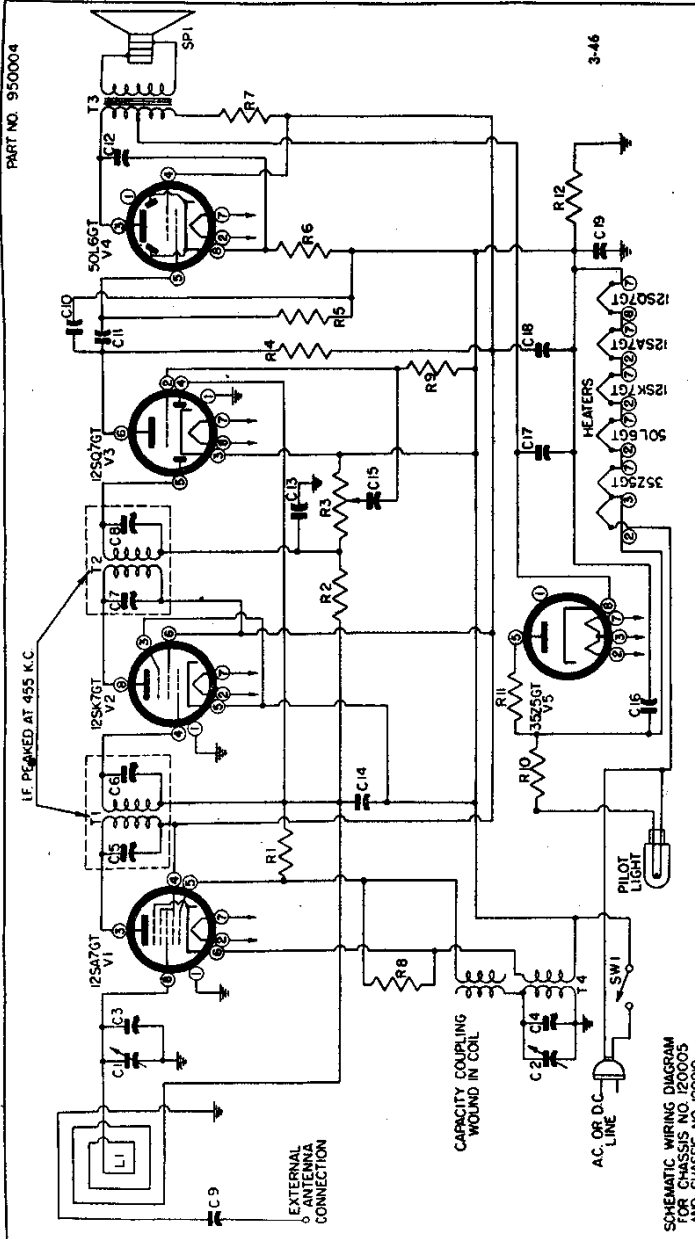
140031	Cabinet, walnut	9.00
450040	Rear cover, or	1.35
460140	Knob	.10
460140	Knob	.10
412690	Dial backplate	.35
525120	Dial pointer assembly	.20
520470	Dial crystal	.65
520200	Dial crystal escutcheon	.45

MODEL 520

140005	Cabinet, walnut	9.00
140006	Cabinet, mahogany	9.00
450330	Black plastic front, square holes	1.25
490230	Ivory plastic front, round hole	2.00
460370	Knob	.15
460370	Knob	.15
520080	Dial crystal	.20

(Specify part numbers when ordering. List prices each effective as of January 1, 1946. (Subject to change without notice.)

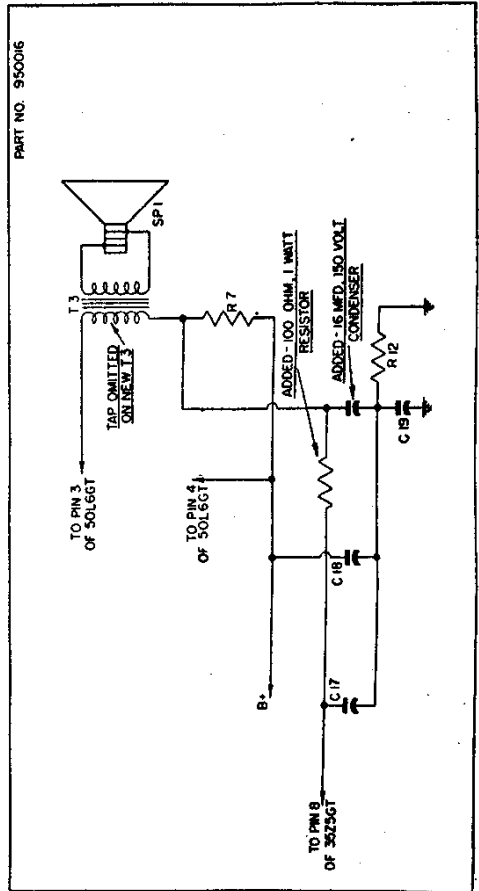
EMERSON RADIO & PHONO. CORP. MODELS 507, 509, 511, 518, Ch. 120005, 120010



SCHEMATIC WIRING DIAGRAM FOR CHASSIS NO. 120005 AND CHASSIS NO. 120010

NOTE

Some 120005 chassis have a modified filter circuit and untapped output transformer. The partial schematic circuit diagram at the left indicates the revision.



MODELS 507, 509, 511,  
518, Ch. 120005, 120010

EMERSON RADIO & PHONO. CORP.

An oscillator with frequencies of 455, 600, and 1425 kc. is required.

An output meter should be connected across the primary or secondary of the output transformer for observing maximum response.

Plug the receiver into the power supply outlet in such a way that the ground side of the power line is connected to the receiver B—.

Always use as weak a test signal as possible, turning down the output of the test oscillator as the alignment of the receiver progresses.

**Location of Coils and Trimmer Adjustments**

The first i-f transformer (T2) is mounted on top of the chassis deck to the right of the variable condenser. The trimmers (C6, C7) are accessible through holes in the top of the can.

The second i-f transformer (T3) is mounted on top of the chassis between the variable condenser and the speaker. The trimmers (C8, C9) are accessible through holes in the top of the can.

The trimmer for the antenna (C5) and the trimmer for the oscillator coil (C11) are located on the variable condenser. The trimmer on the front section is for the oscillator coil.

The oscillator coil (T4) is located underneath the chassis. The loop antenna acts as the antenna coil.

TYPE: Single-band superheterodyne.

FREQUENCY RANGE: 540-1620 kc.

NUMBER OF TUBES: Five.

**TYPE OF TUBES:**

- 1—12SA7, pentagrid oscillator-modulator
- 1—12SK7, first i-f amplifier
- 1—12SQ7, diode detector; a-f amplifier, a.v.c.
- 1—50L6, beam power output
- 1—35Z5, half-wave rectifier

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

VOLTAGE RATING: 105-125 volts.

POWER CONSUMPTION: 30 watts.

**I-F Alignment**

1. Rotate the variable condenser to the minimum capacity position.
2. Feed 455 kc. to the converter grid (stator of the r-f section of the variable condenser) and adjust the four i-f trimmers for maximum response.

**R-F Alignment**

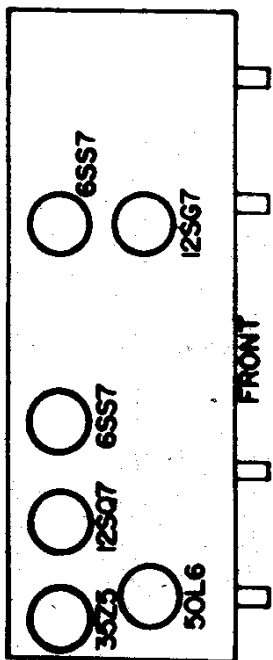
1. Connect the oscillator to a coil composed of three to four turns of wire wound in a circle approximately 12" in diameter. This coil should be held parallel to and in line with the loop antenna of the receiver at a distance of 15 to 20 inches.
  2. Radiate a signal at 1425 kc., set the dial indicator to 1425 kc., and adjust the trimmers on the variable condenser. (C5, C11) for maximum response.
  3. Radiate a 600 kc. signal and tune in the signal on the receiver. Adjust the loose outside turn of the loop antenna for maximum response. This loose turn may be moved to either side of the center. Fasten it in the position which gives maximum response.
  4. Repeat steps (2) and (3) until no further improvement is evident.
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 of the chassis near the line cord.
  5. Some models have the loop antenna molded into the rear cover and others have a separate loop antenna assembly. Both antennas have 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.

**VOLTAGE ANALYSIS**

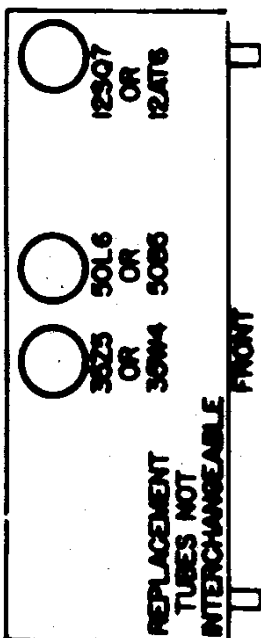
The following voltage readings are d-c measurements taken from B— (line switch) to the indicated tube-socket pin. A 1000 ohms-per-volt meter should be used for all readings except those indicated by an asterisk (\*), which should be taken with a d-c vacuum-tube voltmeter. Line voltage for these readings was 117 volts, 60 cycles, a.c. Measurements made with 117 volts d.c. will be lower than those given below. Take readings with the volume control set at minimum and the variable condenser closed.

TUBE	PIN NUMBER							
	1	2	3	4	5	6	7	8
12SA7			89	89	*.10			*.16
12SK7				*.16		89		89
12SQ7		*.07		*.16	*.05	37.5		
50L6			110	89				6.2
35Z5				116		116		117

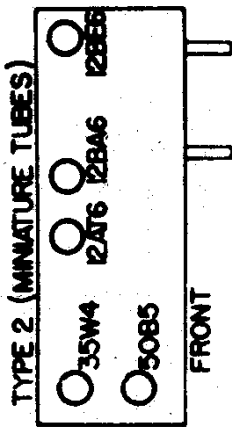
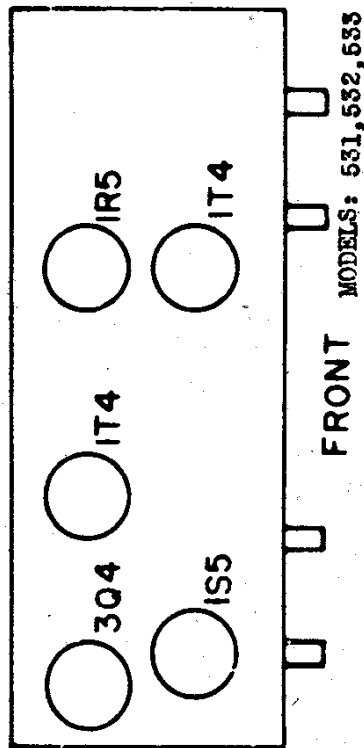
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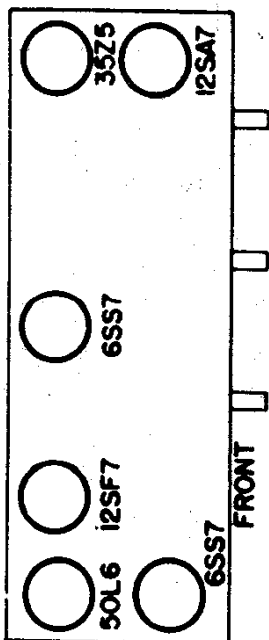
MODELS: 513, 514



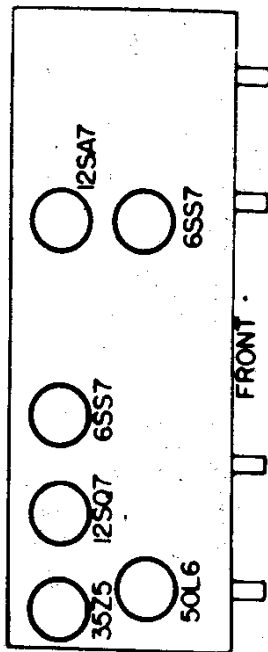
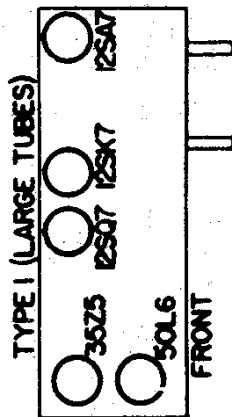
MODELS: 521, 542



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



MODEL 506



MODELS: 512, 515, 516