

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

The color coding of the i-f transformer leads is as follows:
 Grid—green Plate—blue
 Grid return—black B+—red

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.

Models using 120000 chassis use a dial plate on which the frequency is calibrated through 320°. The dial plate on 120029 chassis is calibrated through 180°.

If replacements are made or the wiring disturbed in the r-f section of the circuit, the receiver should be carefully realigned.

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)	4.50
C3, C4, C5	900290	Two-gang variable condenser (120029 chassis), or	
C1, C2, C3	900160	Two-gang variable condenser (120029 chassis), and 120030 Chassis	4.50
C6, C7, C8		Trimmer, part of variable condenser	
C9, C10		Trimmer, part of variable condenser	
C11, C12		Trimmer, part of second i-f transformer	
C13	920010	0.002 mfd., 600 volt condenser	.20
C14	920020	0.02 mfd., 400 volt condenser	.20
C15	910000	0.00022 mfd. mica condenser	.20
C16	920040	0.1 mfd., 200 volt condenser	.20
C17, C18	920030	0.05 mfd., 400 volt condenser	.20
C19	920050	0.2 mfd., 200 volt condenser	.25
L1	700000	Loop antenna, or	1.05
L1	700200	Loop antenna	1.25
R1, R9	397000	15 meg., 1/4 watt resistor	.12
R2	321330	3.3 meg., 1/4 watt resistor	.12
R3	390010	0.5 meg. volume control	1.10
R4, R5	321130	470,000 ohms, 1/2 watt resistor	.14
R6	340290	150 ohms, 1/2 watt resistor	.14
R7	370490	1000 ohms, 1 watt resistor	.16
R8	310810	22,000 ohms, 1/4 watt resistor	.12
R10	340010	10 ohms, 1/2 watt resistor	.14
R11	397040	.15 ohms, 1 watt wire-wound resistor	.16
R12	321050	220,000 ohms, 1/4 watt resistor	.12
SP1	180000	P.M. speaker	5.00
SW1		Line switch, part of volume control	
T1	720000	First i-f transformer	1.65
T2	720100	Second i-f transformer	1.65
T3	734000	Output transformer	1.85
T4	716010	Oscillator coil	1.00
	140000	Cabinet, catalin (Models 501, 502)	9.75
	140005	Cabinet, walnut (Model 504)	9.00
	140006	Cabinet, mahogany (Model 504)	9.00
	460000	Lacite front, square holes	5.00
	460010	Lacite front, round holes	5.00
	460370	Rear cover (Models 501, 502)	1.35
	460380	Rear cover (Model 504), or	1.35
	430040	Rear cover (Model 504)	1.35
	460470	Knob	.10

DIAL PARTS

MODEL 503		MODEL 519	
140001	Cabinet, walnut 9.00	140031	Cabinet, walnut 9.00
140014	Cabinet, mahogany 9.00	450040	Rear cover, or 1.35
620000	Rear cover, walnut 1.35	460380	Rear cover 1.35
620001	Rear cover, mahogany 1.35	460140	Knob .10
460140	Knob .10	412600	Dial backplate .35
520080	Dial crystal .20	525120	Dial pointer assembly .20
520200	Dial crystal escutcheon .45	520470	Dial crystal .65
		520200	Dial crystal escutcheon .45

MODEL 510		MODEL 520	
140005	Cabinet, walnut 9.00	140000	Cabinet, onyx catalin 9.75
140006	Cabinet, mahogany 9.00	450230	Ivory plastic front, square holes 2.00
450330	Black plastic front, square holes 1.25	490250	Ivory plastic front, round hole 2.00
450040	Rear cover, or 1.35	460370	Rear cover 1.35
460380	Rear cover 1.35	460150	Knob .10
460470	Knob .10	520080	Dial crystal .20
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(Specify part numbers when ordering. List price each effective as of January 1, 1946. (Subject to change without notice.)

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Schematic Symbol	Part No.	DESCRIPTION	PRICE
MODELS: 507, 509, 518			
C1, C2	900160	Two-gang variable condenser	4.50
C3, C4, C5		Trimmers, part of variable condenser	
C6, C7, C8		Trimmers, part of i-f transformers	
C9, C10	920010	0.002 mfd., 600 V. paper condenser	.20
C11	920020	300 mmfd., 600 V. paper condenser	.20
C12	910000	0.02 mfd., 400 V. paper condenser	.20
C13	920040	220 mmfd., 600 V. mica condenser	.20
C14	920040	0.1 mfd., 200 V. paper condenser	.20
C15	920030	0.05 mfd., 400 V. paper condenser	.20
C16	920030	0.05 mfd., 400 V. paper condenser	.20
C17, C18	925000	Dual electrolytic condenser, 150 V.; C20—30 mfd., C21—50 mfd.	1.25
C19	920050	0.2 mfd., 200 V. paper condenser	.25
L1	700000	Loop antenna assembly, or	1.05
L1	700200	Loop antenna assembly	1.25
R1, R9	397000	15 meg., 1/4 watt carbon resistor	.12
R2	321330	3.3 meg., 1/4 watt carbon resistor	.12
R3	390010	0.5 meg. volume control	1.10
R4, R5	321130	470,000 ohms, 1/2 watt carbon resistor	.14
R6	340290	150 ohms, 1/2 watt carbon resistor	.14
R7	370490	1000 ohms, 1 watt carbon resistor	.16
R8	310810	22,000 ohms, 1/4 watt carbon resistor	.12
R10	340010	10 ohms, 1/2 watt carbon resistor	.14
R11	397040	.15 ohms, 1 watt wire-wound resistor	.16
R12	321050	220,000 ohms, 1/4 watt carbon resistor	.12
SP1	180000	Speaker, 5" permanent magnet (less output transformer)	5.00
SW1		Line switch, part of R3	
T1	720000	Double-tuned 455 kc. first i-f transformer	1.65
T2	720100	Double-tuned 455 kc. second i-f transformer	1.65
T3	734000	Output transformer	1.85
T4	716010	Oscillator coil	1.00
	140007	Cabinet (Model 507, ivory)	4.35
	140015	Cabinet (Model 507, mottled brown)	4.35
	140016	Cabinet (Model 509, black)	2.55
	140016	Cabinet (Model 509, mottled brown)	2.55
	140034	Cabinet (Model 518)	2.55
	460150	Knob for 140007 cabinet	.10
	460150	Knob for 140015 and 140034 cabinets	.10
	460470	Knob for 140016 and 140016 cabinet	.10
	450050	Molded back for 140007 cabinet	1.00
	450060	Molded back for 140015 cabinet	.85
	450070	Molded back for 140016 cabinet	.85
	450080	Molded back for 140016 and 140034 cabinets	.85
	560120	Masonite back for 140007 cabinet	.50
	560110	Masonite back for 140015 cabinet	.50
	560130	Masonite back for 140016 cabinet	.50
	560140	Masonite back for 140016 cabinet	.50
	560220	Masonite back for 140034 cabinet	.25
	383010	Line cord	.60

DIAL PARTS

MODEL: 511*		
507090	Pilot light socket	.20
807000	Pilot light, 6.3 V., 0.15 amp., Mazda No. 47	.09
520009	Dial backplate	.20
524080	Dial pointer	.10
520190	Dial crystal (Models 507 and 509), or	.50
520350	Dial crystal (Models 507 and 509)	.75
520440	Dial crystal (Model 518)	.43
387000	Drive cord spring	.05
280003	Drive shaft	.15

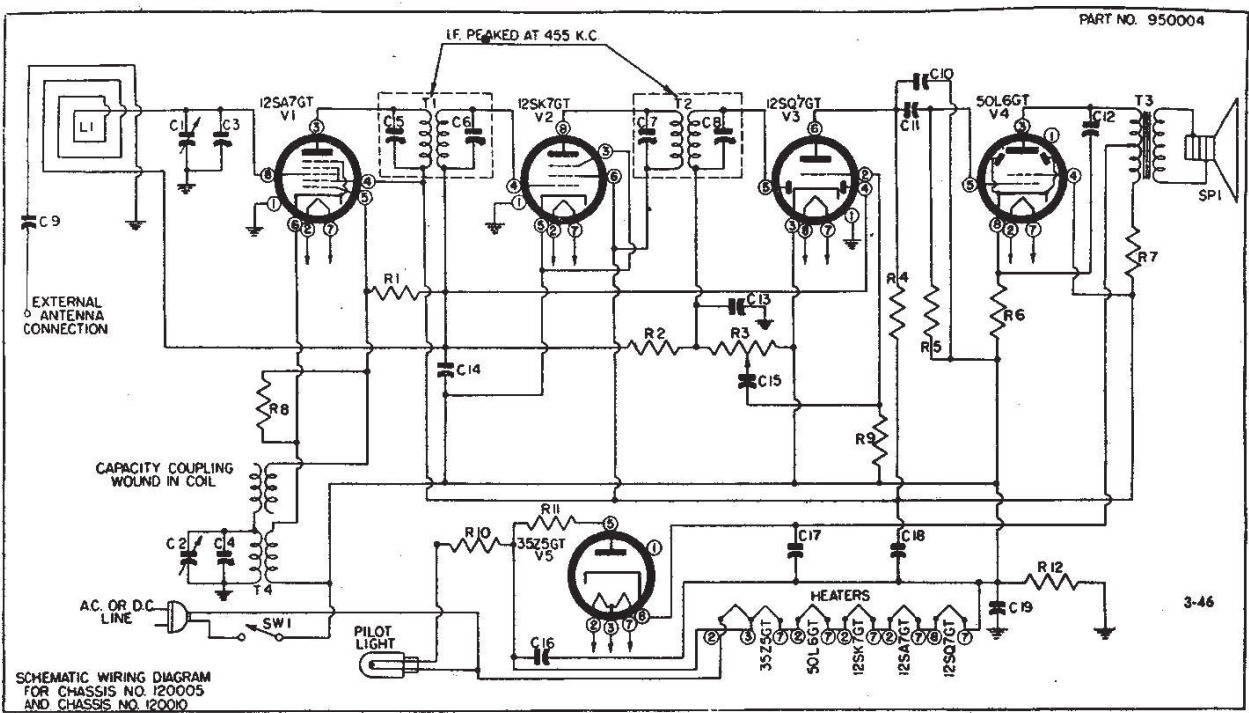
MODEL: 511*			
*PARTS LIST OF MODEL 511 SAME AS THAT OF MODEL 507 WITH THE FOLLOWING EXCEPTIONS:			
C1, C2	900280	Two-gang variable condenser	4.50
C10	920000	200 mmfd., 600 V. paper condenser	.20
R3	390000	Volume control with line switch 0.5 megohm	1.10
T4	716010	Oscillator coil	1.00
	140017	Cabinet, walnut	2.95
	450110	Knob	.10
	470020	Bottom cover assembly	.80
	583010	Line cord	.60

DIAL PARTS		
507120	Pilot light socket	.20
807000	Pilot light, 6.3 V., 0.15 amp., Mazda No. 47	.09
525140	Dial pointer assembly	.35
520240	Dial crystal	.50
587000	Drive cord spring	.05
280203	Drive shaft	.15

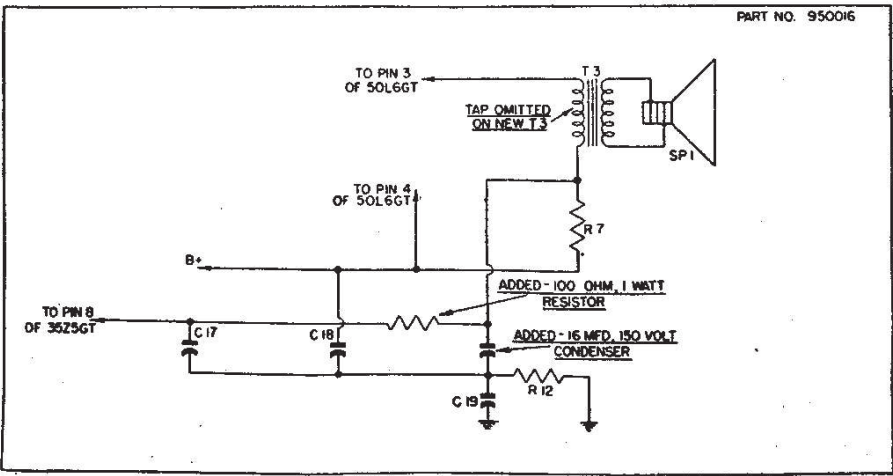
*Not supplied separately.

MODEL: 511*

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



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.

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MODELS 507, 509, 511,
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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 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.

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	1	2	3	4	5	6	7	8
12SA7			89	89	*.10			*1.6
12SK7				*1.6		89		89
12SQ7		*0.7		*1.6	*0.5	37.5		
50L6			110	89				6.2
35Z5				116		116		117

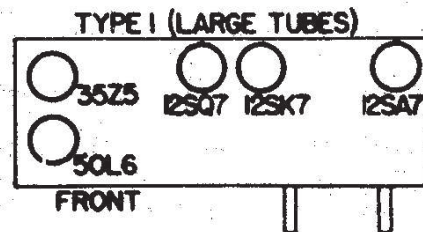
PIN NUMBER

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

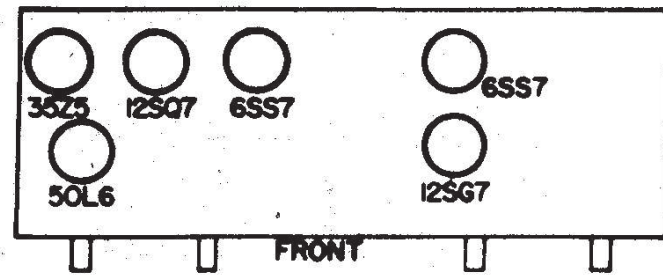
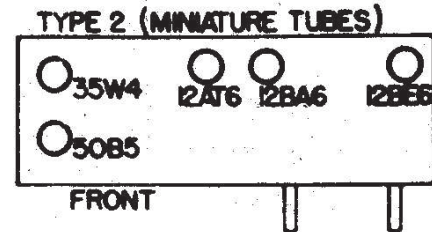
R-F Alignment

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
B+—red
Grid return—black
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.

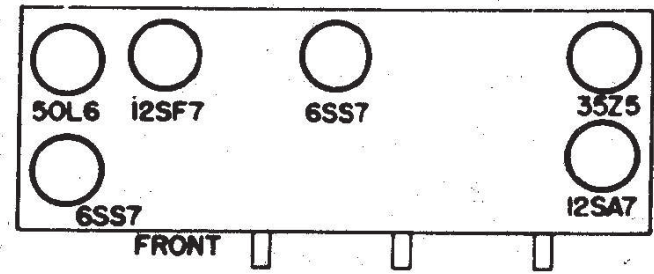
5. Some models have the loop antenna molded into the rear cover and others have a separate loop antenna assembly. Both antennas have directional properties. It is important, therefore, once the station is tuned in, to rotate the cabinet back and forth through a quarter of a circle (90 degrees), leaving it at the position where the station is received with maximum volume.



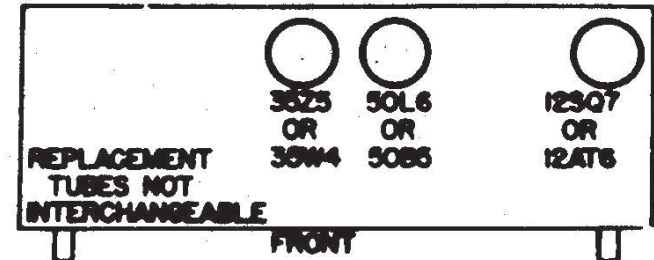
MODELS: 501, 502, 503, 504, 507, 509, 510, 511, 517, 518, 519, 520, 525, 539, 541



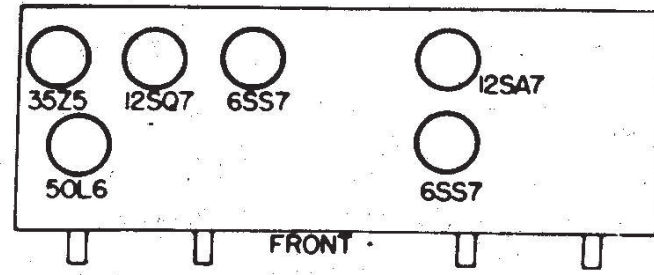
MODELS: 513, 514



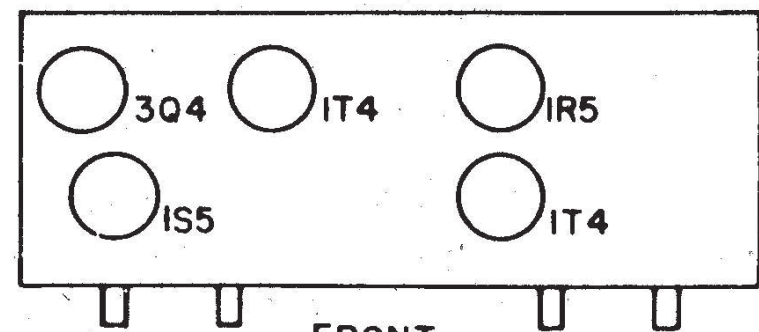
MODEL 506



MODELS: 521, 542



MODELS: 512, 515, 516



MODELS: 531, 532, 533