

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 price 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	920010	Trimmers, part of variable condenser	.20
C5, C6, C7, C8	920240	0.002 mfd., 600 V. paper condenser	.20
C9, C10	920250	0.02 mfd., 400 V. paper condenser	.20
C11, C12	910000	0.1 mfd., 200 V. paper condenser	.20
C13	920030	0.05 mfd., 400 V. paper condenser	.20
C14	920050	Dual electrolytic condenser, 150 V., C20—30 mfd., C21—50 mfd.	1.25
C15	920060	Loop antenna assembly, or	1.05
C16	700000	15 meg., ½ watt carbon resistor	1.10
C17	321330	1.5 meg., ½ watt carbon resistor	.12
C18	321340	470,000 ohms, ½ watt carbon resistor	.12
L1	340230	150 ohms, ½ watt carbon resistor	.14
L2	370490	1000 ohms, ½ watt carbon resistor	.16
L3	310810	22,000 ohms, ½ watt carbon resistor	.12
L4	340010	6.8 ohms, ½ watt carbon resistor	.12
L5	387040	15 ohms, 1 watt wire-wound resistor	.16
L6	321050	220,000 ohms, ½ watt carbon resistor	.14
L7	180000	Speaker, 5" permanent magnet (less output transformer)	5.00
L8	720000	Dual switch, 455 kc. first i-f transformer	1.65
L9	734400	Output transformer	1.85
L10	716010	Oscillator coil	1.00
L11	140007	Cabinet (Model 507, ivory)	4.35
L12	140015	Cabinet (Model 507, mottled brown)	2.55
L13	140010	Cabinet (Model 509, black)	2.55
L14	140016	Cabinet (Model 509, mottled brown)	2.55
L15	140034	Cabinet (Model 511)	2.55
L16	460140	Knob for 140015 and 140034 cabinets	.10
L17	460470	Knob for 140010 and 140016 cabinets	.10
L18	450070	Molded back for 140007 cabinet	1.35
L19	450060	Molded back for 140015 cabinet	1.35
L20	450070	Molded back for 140016 cabinet	1.35
L21	450080	Masonite back for 140007 cabinet	.50
L22	460110	Masonite back for 140010 cabinet	.50
L23	460140	Masonite back for 140015 cabinet	.50
L24	460220	Masonite back for 140016 cabinet	.50
L25	583010	Masonite back for 140034 cabinet	.50
L26	587000	Line cord	.20
L27	507000	Pilot light, 6.3 V., 0.15 amp., Mazda No. 47	.09
L28	520000	Dial backplate	.20
L29	520080	Dial pointer	.10
L30	520190	Dial crystal (Models 507 and 509), or	.50
L31	520350	Dial crystal (Models 507 and 509)	.45
L32	520440	Drive cord	.15
L33	587000	Drive shaft	.05
L34	280003	Drive shaft	.15

MODEL: 511

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

Schematic Symbol	Part No.	DESCRIPTION	PRICE
C1, C2	900280	Two-gang variable condenser	\$4.50
C3, C4	920000	200 mfd., 600 V. paper condenser	1.10
C5, C6, C7, C8	390050	Volume control with line switch, D.A.E. 12-2-2-2-2-2-2-2-2-2	2.00
C9, C10	716010	Oscillator coil	1.00
C11, C12	140017	Cabinet, walnut	2.95
C13	450110	Knob	.10
C14	450110	Bottom cover assembly	.20
C15	583010	Line cord	.20
L1	507120	Pilot light socket	.20
L2	807000	Pilot light, 6.3 V., 0.15 amp., Mazda No. 47	.09
L3	523140	Dial pointer assembly	.50
L4	587000	Drive cord	.15
L5	587000	Drive shaft	.05
L6	280003	Drive shaft	.15

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

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 i-f section of the circuit, the receiver should be carefully re-aligned.

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 (120029 chassis)	4.50
C3, C4	900290	Two-gang variable condenser (120029 chassis)	4.50
C5, C6, C7, C8	900160	Two-gang variable condenser (120029 chassis)	4.50
C9, C10	920010	Trimmers, part of variable condenser	.20
C11, C12	920170	0.001 mfd., 600 volt condenser	.20
C13	910000	0.01 mfd., 400 volt condenser	.20
C14	910000	0.00022 mfd.	.20
C15	920040	0.1 mfd., 200 volt condenser	.20
C16	920030	0.05 mfd., 400 volt condenser	.20
C17	920050	30-50 mfd., 150 V. dual dry-electrolytic condenser; C17—30 mfd., C18—50 mfd.	1.25
C18	920060	Loop antenna assembly, or	1.05
L1	700000	15 meg., ½ watt resistor	1.10
L2	321330	1.5 meg., ½ watt resistor	.12
L3	321340	470,000 ohms, ½ watt resistor	.12
L4	340230	150 ohms, ½ watt resistor	.14
L5	370490	1000 ohms, ½ watt resistor	.16
L6	310810	22,000 ohms, ½ watt resistor	.12
L7	340010	6.8 ohms, ½ watt resistor	.12
L8	387040	15 ohms, 1 watt wire-wound resistor	.16
L9	321050	220,000 ohms, ½ watt resistor	.14
L10	180000	Speaker, 5" permanent magnet (less output transformer)	5.00
L11	720000	Dual switch, part of volume control	1.65
L12	734400	Output transformer	1.85
L13	716010	Oscillator coil	1.00
L14	140005	Cabinet, walnut (Models 501, 502)	4.35
L15	140006	Cabinet, mahogany (Model 504)	2.55
L16	140005	Cabinet, walnut (Model 504)	2.55
L17	140006	Cabinet, mahogany (Model 504)	2.55
L18	460140	Knob for 140005 and 140006 cabinets	.10
L19	460370	Rear cover (Models 501, 502)	1.35
L20	460380	Rear cover (Model 504), or	1.35
L21	450040	Rear cover (Model 504)	1.35
L22	460470	Knob	.10
L23	807000	Pilot light socket	.09
L24	520190	Dial backplate (120000 chassis)	.20
L25	520300	Dial backplate (120029 chassis)	1.00
L26	523010	Dial pointer assembly	.10
L27	280103	Drive shaft	.20
L28	587000	Shaft extension (for use with 900160 variable condenser)	.15
L29	587000	Pully spring	.05

DIAL PARTS

Part No.	DESCRIPTION	PRICE
140001	Cabinet, walnut	9.00
140002	Cabinet, mahogany	1.35
620000	Rear cover, walnut	1.35
630000	Rear cover, mahogany	1.35
640000	Knob	.35
650000	Dial crystal	.20
660000	Dial crystal escutcheon	.65
670000	Dial crystal	.45

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

Part No.	DESCRIPTION	PRICE
140001	Cabinet, walnut	9.00
140002	Cabinet, mahogany	1.35
620000	Rear cover, walnut	1.35
630000	Rear cover, mahogany	1.35
640000	Knob	.35
650000	Dial crystal	.20
660000	Dial crystal escutcheon	.65
670000	Dial crystal	.45

MODELS 503, 510, 510A, 520, 539
 MODELS 507, 509, 518, 522, 535
 MODELS 525, 552
 MODELS 543, 544

EMERSON RADIO & PHONO. CORP.

ALL MODELS

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.

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

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—.

Location of Coils and Trimmer Adjustments

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

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

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

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

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			*—1.6
12SK7				*—1.6		89		89
12SQ7		*—0.7		*—1.6	—0.5	37.5		
50L6GT			110	89				6.2
35Z5GT				116		116		117
12BE6	*—8.0				92	92	*—1.3	
12BA6					92	92	1.7	
12AT6	*—0.6					*—0.45	*44	
50B5		5.65			110	92		
35W4	115							115

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) through a 0.1 mfd. 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 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.

* Not supplied separately.

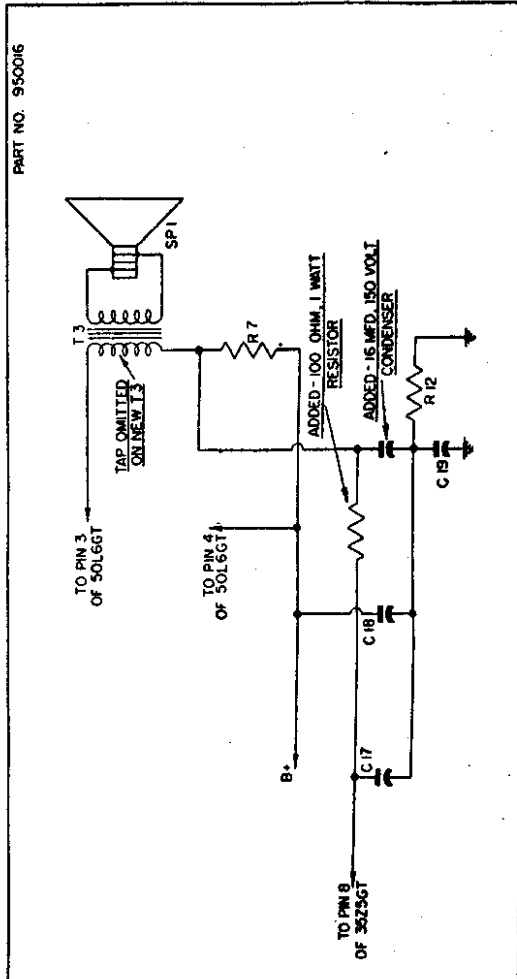
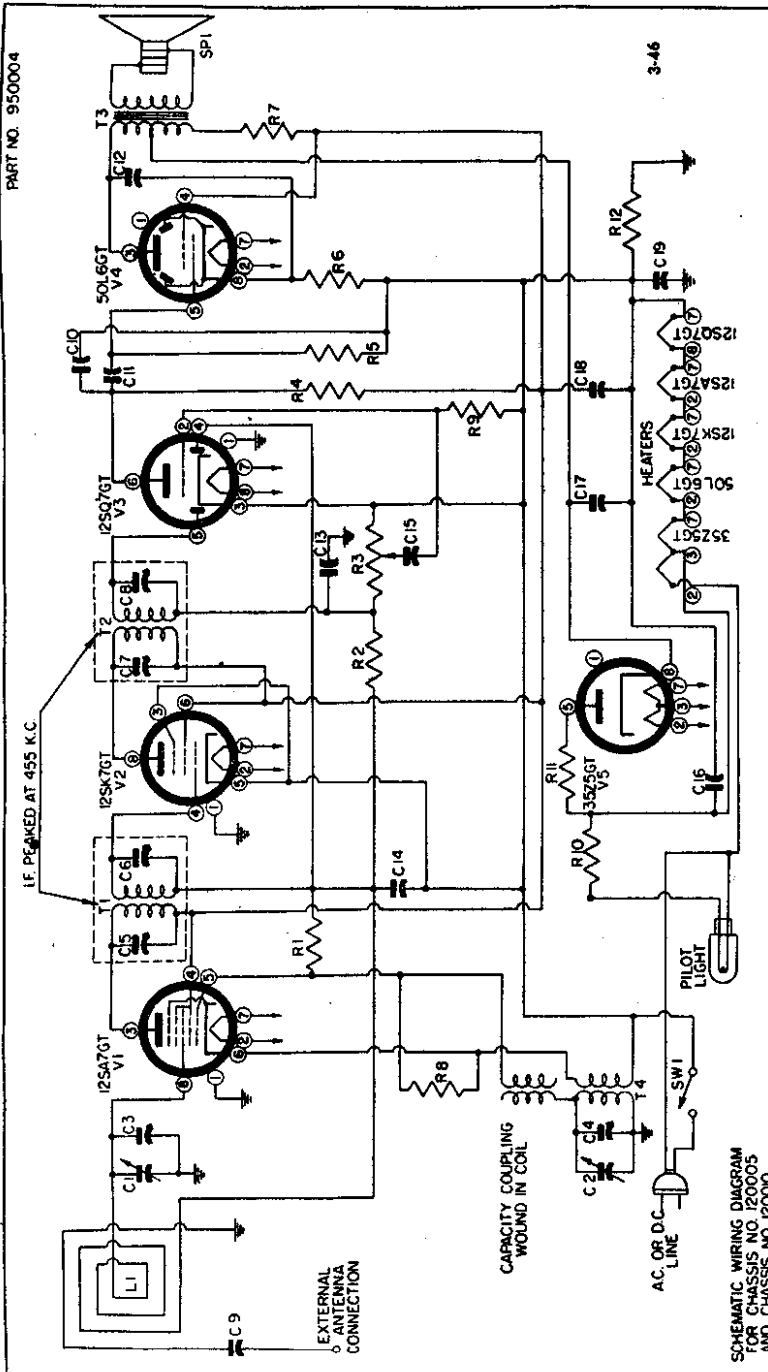
† Specify part number when ordering.

CABINET AND DIAL PARTS

MODEL--507, 509, 518, 522, 535

140015	Cabinet (Model 507)	531009	Drive pulley
140016	Cabinet (Model 509)	280003	Drive shaft
140034	Cabinet (Model 518)	520499	Dial backplate (Models 507, 509, 518, 522)
140007	Cabinet (Model 522)	520024	Dial backplate (Model 535)
140070	Cabinet (Model 535)	520350	Dial crystal, stamped (Models 507, 509, 522), or
450060	Back, molded (Model 507)	520190	Dial crystal, stamped (Models 507, 509, 522)
450080	Back, molded (Models 509, 518)	520440	Dial crystal (Model 518)
450050	Back, molded (Model 522)	520025	Dial crystal (Model 535)
560110	Back masonite (Model 507)	525080	Dial pointer (Models 507, 509, 518, 522)
560220	Back, masonite (Models 509, 518)	525130	Dial pointer (Model 535)
560120	Back, masonite (Model 522)	411040	Pointer hub (Model 535)
575047	Back, wood (Model 535)		
450000	Handle		
460140	Knob (Models 507, 518, 535)		
460470	Knob (Model 509)		
460150	Knob (Model 522)		

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

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

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

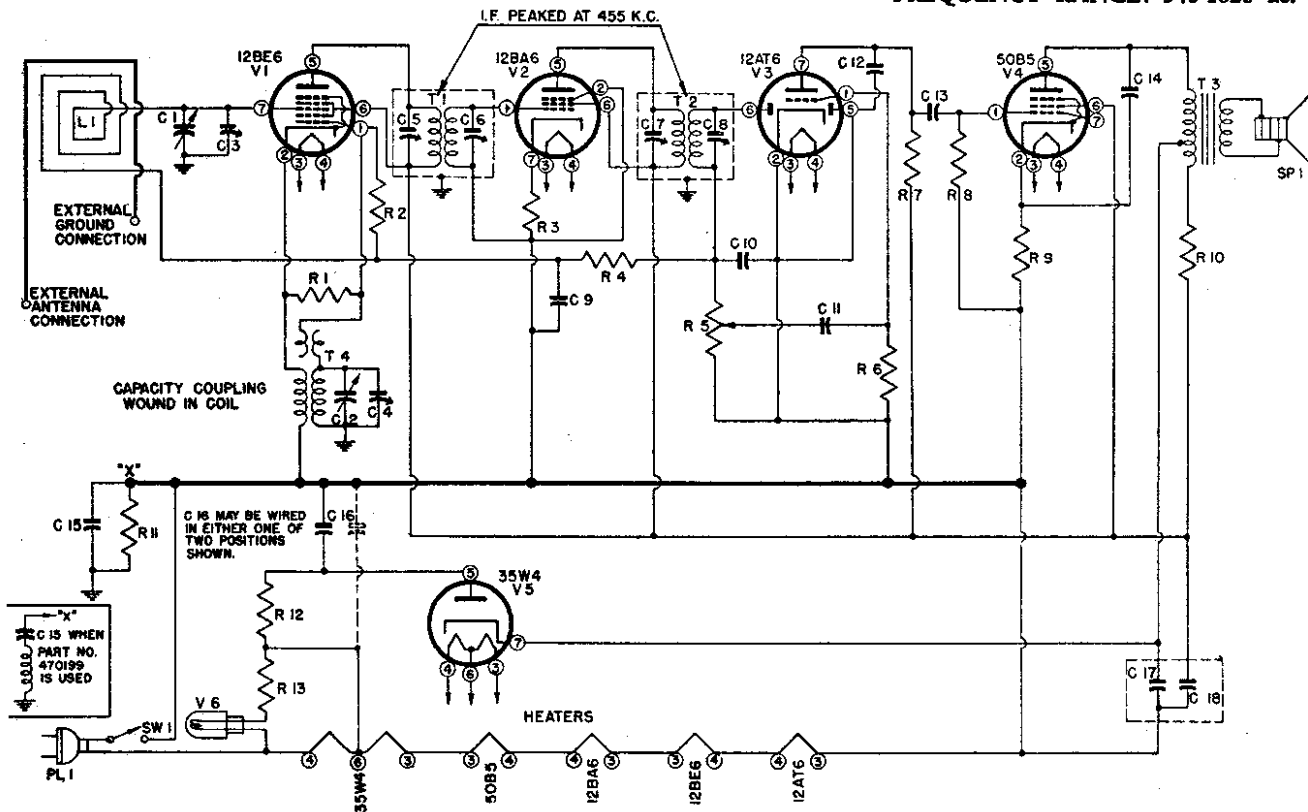
MODELS 507, 509, 518, 522, 535
Chassis 120004, 120045

EMERSON RADIO &
PHONO. CORP.

TYPE: Single-band superheterodyne.

FREQUENCY RANGE: 540-1620 kc.

I.F. PEAKED AT 455 K.C.



Schematic Circuit Diagram for Chassis 120004 and 120045

CHASSIS 120004 AND 120045

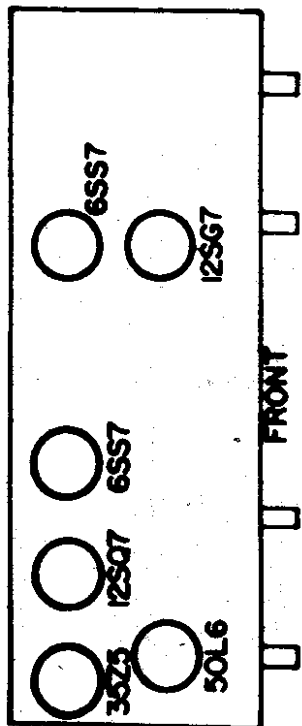
C1, C2	900160	Two-gang variable condenser	R1	310810	22,000 ohms, 1/4 watt resistor
*C3, C4		Trimmers, part of variable condenser	R2, R6	397000	15 meg., 1/2 watt resistor
*C5, C6, C7, C8		Trimmers, part of i-f transformers	R3	340310	180 ohms, 1/2 watt resistor
C9	920040	0.1 mfd., 200 volt condenser	R4	321290	2.2 meg., 1/4 watt resistor
C10	910000	0.00022 mfd. mica condenser	R5	390000	0.5 meg. volume control
C11	920010	0.002 mfd., 600 volt condenser	R7, R8	321130	470,000 ohms, 1/4 watt resistor
C12	920240	0.0005 mfd., 600 volt condenser	R9	340290	150 ohms, 1/2 watt resistor
C13, C14	920020	0.02 mfd., 400 volt condenser	R10	370490	1,000 ohms, 1 watt resistor
C15	920050	0.2 mfd., 200 volt condenser (Used when T1 and T2 are 720000 and 720100 respectively), or	R11	321050	220,000 ohms, 1/4 watt resistor
C15	479199	0.2 mfd., 200 volt condenser (Used when T1 and T2 are 720525 and 720529 respectively)	R12	340050	15 ohms, 1/2 watt resistor
C16	920030	0.05 mfd., 400 volt condenser	R13	340010	10 ohms, 1/2 watt resistor
C17, C18	925009	50-50 mfd., 150 volt dual electro- lytic condenser, or	SP1	180000	P.M. speaker
C17, C18	925000	30-50 mfd., 150 volt dual electro- lytic condenser	*SW1		Line switch on volume control
L1	700000	Loop antenna, or	T1	720000	First i-f transformer, or
L1	700200	Loop antenna	T1	720525	First i-f transformer, midget
*PL1		Power plug, part of line cord	T2	720100	Second i-f transformer, or
			T2	720529	Second i-f transformer, midget
			T3	734000	Output transformer
			T4	716010	Oscillator coil
				807000	Pilot light, Mazda No. 47
				507090	Pilot light socket
				583010	Line cord

The color coding of the i-f transformer leads is as follows:

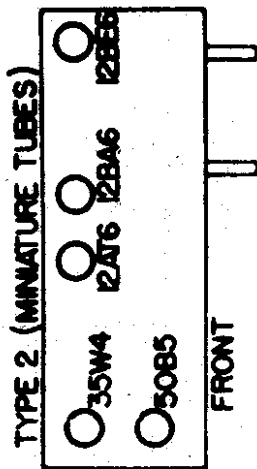
Grid—green
Grid return—black

Plate—blue
B+—red

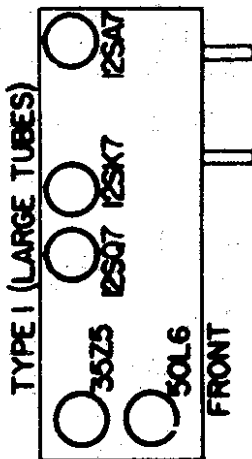
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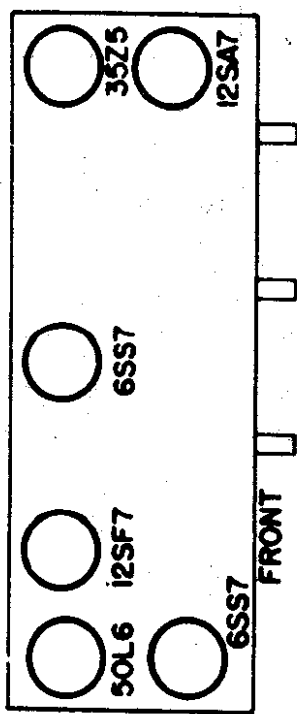
MODELS: 513, 514



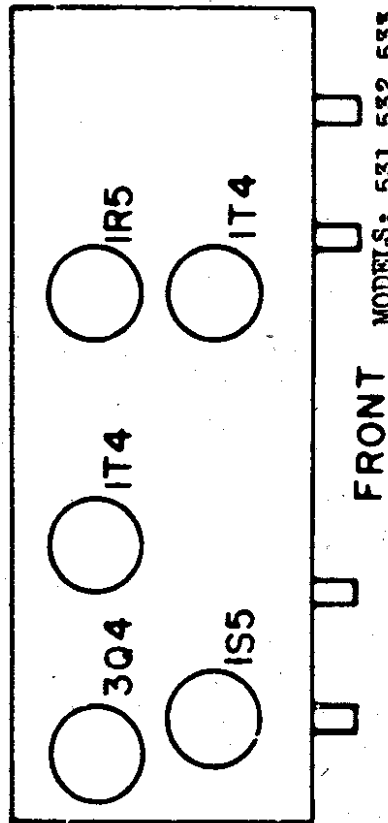
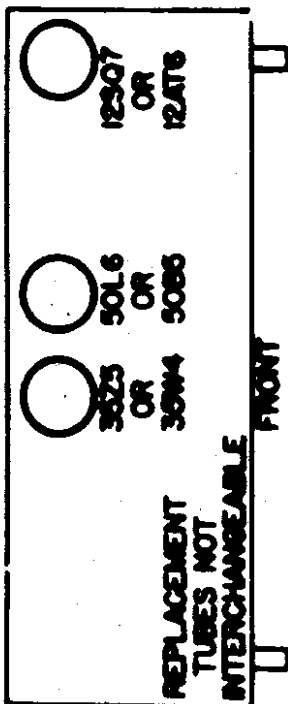
MODELS: 501, 502, 503, 504, 507, 509, 510, 511, 517, 518, 519, 520, 525, 539, 541



MODEL 506



MODELS: 521, 542



MODELS: 512, 515, 516

MODELS: 531, 532, 533