

## SECTION 9F

# AUDIO SYSTEMS

**CAUTION:** Disconnect the negative battery cable before removing or installing any electrical unit or when a tool or equipment could easily come in contact with exposed electrical terminals. Disconnecting this cable will help prevent personal injury and damage to the vehicle. The ignition must also be in LOCK unless otherwise noted.

## TABLE OF CONTENTS

<b>Specifications</b> .....	<b>9F-1</b>	Rear Speakers .....	9F-9
Fastener Tightening Specifications .....	9F-1	Power Antenna Mast .....	9F-10
<b>Schematic and Routing Diagrams</b> .....	<b>9F-2</b>	Power Antenna Motor/Manual Antenna .....	9F-11
Audio System Circuit .....	9F-2	<b>General Description and System</b>	
<b>Diagnosis</b> .....	<b>9F-3</b>	<b>Operation</b> .....	<b>9F-13</b>
Stereo Cassette AM/FM Radio .....	9F-3	Stereo Cassette AM/FM Radio .....	9F-13
Speakers .....	9F-5	Audio Security System .....	9F-13
Antenna .....	9F-6	Front and Rear Speakers .....	9F-13
<b>Maintenance and Repair</b> .....	<b>9F-7</b>	Tweeter Speakers .....	9F-13
On-Vehicle Service .....	9F-7	Manual Antenna .....	9F-13
Stereo Cassette AM/FM Radio .....	9F-7	Power Antenna .....	9F-13
CD Changer .....	9F-7	Tape Player and Cassette Care .....	9F-13
Front Door Speakers .....	9F-8	Compact Disc Care .....	9F-13
Tweeter Speakers .....	9F-9		

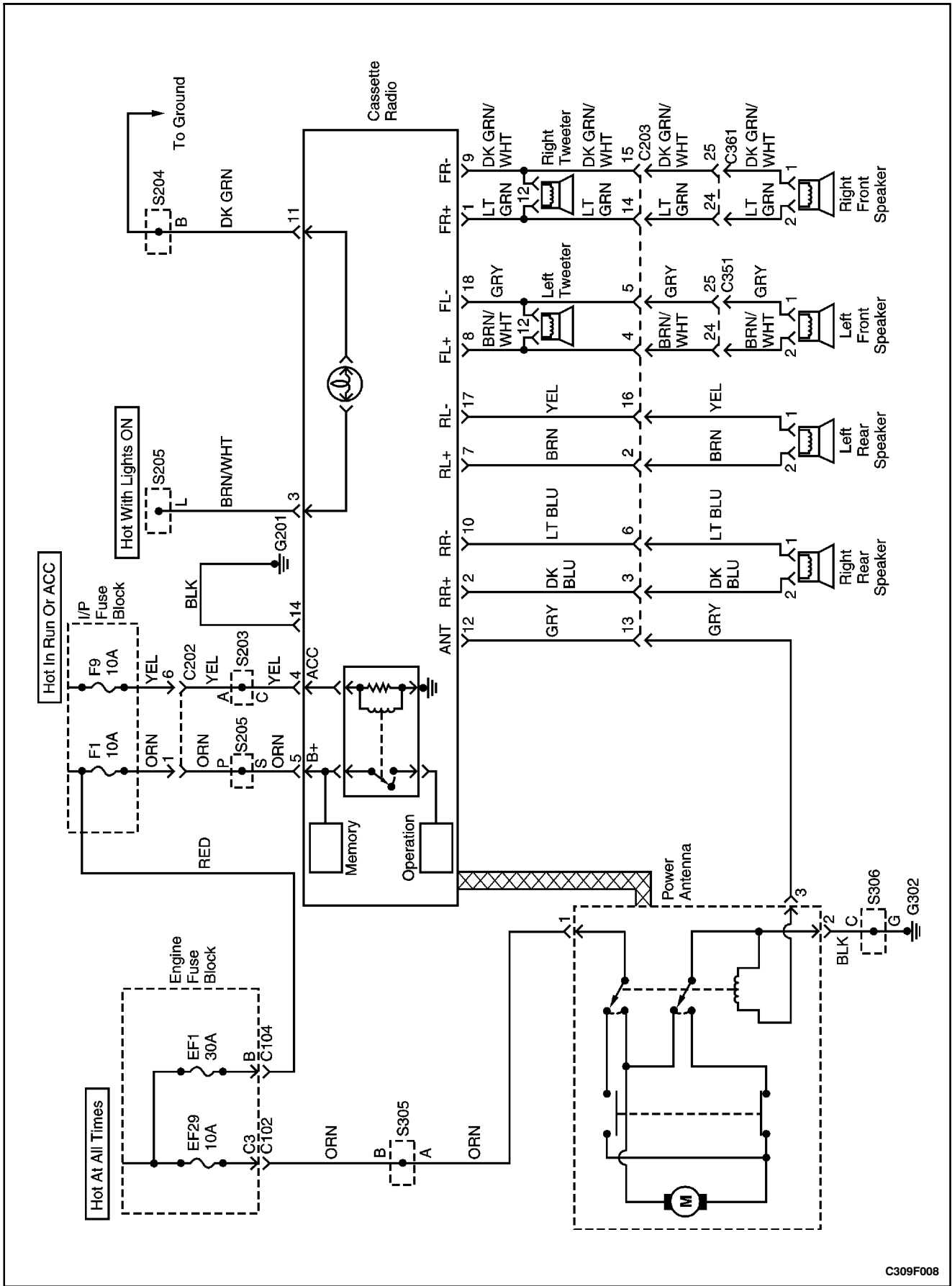
## SPECIFICATIONS

### FASTENER TIGHTENING SPECIFICATIONS

Application	N•m	Lb-Ft	Lb-In
Antenna Cap Nut	2.5	–	22
Antenna Motor Nuts	4	–	35
Audio System Screws	4	–	35
Front Door Speaker Screws	4	–	35
Rear Speaker Screws	2	–	18

# SCHEMATIC AND ROUTING DIAGRAMS

## AUDIO SYSTEM CIRCUIT



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# DIAGNOSIS

## STEREO CASSETTE AM/FM RADIO

### AM/FM Cassette Radio Inoperative

Step	Action	Value	Yes	No
1	Check fuses EF1, F1, and F9. Are fuses EF1, F1, and F9 blown?	-	Go to Step 2	Go to Step 3
2	1. Check for a short circuit and repair if necessary. 2. Replace the blown fuses. Is the repair complete?	-	System OK	-
3	1. Use a voltmeter to test for battery voltage at fuses EF1 and F9. 2. Turn the ignition ON and test for battery voltage at fuse F1. Does the voltage match the specified value at fuses EF1, F1, and F9?	11-14 V	Go to Step 5	Go to Step 4
4	Repair the power supply circuit to the fuses. Is the repair complete?	-	System OK	-
5	1. Remove the cassette radio. 2. Turn the ignition ON. 3. Use a voltmeter to test for battery voltage at the audio system connector terminals 4 and 5. Does the battery voltage match the specified value at both terminals?	11-14 V	Go to Step 7	Go to Step 6
6	Repair the open circuit between the audio system connector and the fuse. Is the repair complete?	-	System OK	-
7	Use an ohmmeter to test the ground circuit at the audio system connector terminal 14. Does the resistance match the specified value?	$\approx 0 \Omega$	Go to Step 9	Go to Step 8
8	Repair the open ground circuit between the audio system connector and ground. Is the repair complete?	-	System OK	-
9	Replace the audio system. Is the repair complete?	-	System OK	-

### Cassette Player Inoperative, AM/FM Functions OK

Step	Action	Value	Yes	No
1	Verify the customer's complaint. Does the cassette player destroy tapes?	-	Go to Step 5	Go to Step 2
2	Using a good-quality tape, determine whether the cassette player performs poorly or is inoperative. Does the cassette player perform poorly?	-	Go to Step 5	Go to Step 3
3	Check the cassette player for obstructions behind the tape door. Is an obstruction found?	-	Go to Step 4	Go to Step 8
4	Check to see if the obstruction can be removed using gentle force. Is the obstruction removed?	-	Go to Step 5	Go to Step 6

**Cassette Player Inoperative, AM/FM Functions OK (Cont'd)**

Step	Action	Value	Yes	No
5	Clean the cassette player head, the capstan, and the drive system. Does the tape play properly?	-	Go to <i>Step 7</i>	Go to <i>Step 6</i>
6	Replace the audio system. Is the repair complete?	-	System OK	-
7	Check the cassette player for normal operation. Is the repair complete?	-	System OK	-
8	Advise the owner of a defective or worn tape. Is the repair complete?	-	System OK	-

**FM Does Not Work, AM and Cassette OK**

Step	Action	Value	Yes	No
1	Check the audio system for normal operation. Is FM inoperative and the rest of the system operating properly?	-	Go to <i>Step 2</i>	System OK
2	Replace the radio. Is the repair complete?	-	System OK	-

**AM Radio Does Not Work, FM and Cassette OK**

Step	Action	Value	Yes	No
1	1. Unplug the antenna cable from the antenna. 2. Connect the test antenna to the antenna cable. 3. Check the AM radio reception. Is the AM radio operating properly?	-	Go to <i>Step 2</i>	Go to <i>Step 3</i>
2	Replace the antenna. Is the repair complete?	-	System OK	-
3	1. Remove the audio system from the instrument panel. 2. Unplug the antenna cable from the audio system. 3. Plug the test antenna into the audio system. 4. Check the AM radio reception. Is the AM radio operating properly?	-	Go to <i>Step 4</i>	Go to <i>Step 5</i>
4	Replace the antenna cable between the audio system and the antenna. Is the repair complete?	-	System OK	-
5	Replace the audio system. Is the repair complete?	-	System OK	-

**SPEAKERS****Front Speakers Distorted or Inoperative, Rest of Audio System OK**

Step	Action	Value	Yes	No
1	1. Turn the ignition and the radio ON. 2. Check for distorted or inoperative front speakers using the fader and the balance controls with all of the sources (AM, FM, tape, CD). Are the front speakers distorted?	-	Go to Step 2	Go to Step 4
2	Check the speaker and the door area for damage, rattles, or vibration. Is the distortion caused by anything loose or in the way of the speaker?	-	Go to Step 3	Go to Step 4
3	Make the necessary repairs to secure the component causing the distortion. Is the repair complete?	-	System OK	-
4	1. Remove the front speakers and disconnect the speaker connector. 2. Using an ohmmeter, test the speaker wires for a short to ground. Does the ohmmeter show the specified value?	$\infty$	Go to Step 6	Go to Step 5
5	Repair the short circuit between the front speaker connector and the radio connector. Is the repair complete?	-	System OK	-
6	Substitute a known good speaker for the speaker causing the distortion. Is the distortion eliminated?	-	Go to Step 7	Go to Step 8
7	Replace the speaker. Is the repair complete?	-	System OK	-
8	Replace the audio system. Is the repair complete?	-	System OK	-

**Rear Speakers Distorted or Inoperative, Rest of Audio System OK**

Step	Action	Value	Yes	No
1	1. Turn the ignition and the radio ON. 2. Check for distorted or inoperative rear speakers using the fader and the balance controls with all the of the sources (AM, FM, tape, CD). Are the rear speakers distorted?	-	Go to Step 2	Go to Step 4
2	Check the speakers, the rear deck, and the trunk area for damage, rattles, or vibration. Is the distortion caused by anything loose or in the way of the speaker?	-	Go to Step 3	Go to Step 4
3	Make the necessary repairs to secure the component causing the distortion. Is the repair complete?	-	System OK	-
4	1. Disconnect the rear speakers. 2. Using an ohmmeter, test the speaker wires for a short to ground. Does the ohmmeter show the specified value?	$\infty$	Go to Step 6	Go to Step 5
5	Repair the short circuit between the rear speaker connector and the radio connector. Is the repair complete?	-	System OK	-

**Rear Speakers Distorted or Inoperative, Rest of Audio System OK (Cont'd)**

Step	Action	Value	Yes	No
6	Substitute a known good speaker for the speaker causing the distortion. Is the distortion eliminated?	-	Go to <i>Step 7</i>	Go to <i>Step 8</i>
7	Replace the speaker. Is the repair complete?	-	System OK	-
8	Replace the audio system. Is the repair complete?	-	System OK	-

**ANTENNA****Power Antenna Does Not Work**

Step	Action	Value	Yes	No
1	Check fuse EF29. Is fuse EF29 blown?	-	Go to <i>Step 2</i>	Go to <i>Step 3</i>
2	1. Check for a short circuit and repair if necessary. 2. Replace the blown fuse. Is the repair complete?	-	System OK	-
3	Use a voltmeter to test for battery voltage at fuse EF29. Does the battery voltage match the specified value?	11-14 V	Go to <i>Step 5</i>	Go to <i>Step 4</i>
4	Repair the open power supply circuit to fuse EF29. Is the repair complete?	-	System OK	-
5	Use a voltmeter to test for battery voltage at power antenna connector terminal 1. Does the battery voltage match the specified value?	11-14 V	Go to <i>Step 7</i>	Go to <i>Step 6</i>
6	Repair the open circuit between the power antenna connector terminal 1 and fuse EF29. Is the repair complete?	-	System OK	-
7	Use an ohmmeter to test the ground circuit at the power antenna connector terminal 2. Does the resistance match the specified value?	$\approx 0 \Omega$	Go to <i>Step 9</i>	Go to <i>Step 8</i>
8	Repair the open ground circuit between the power antenna connector terminal 2 and ground. Is the repair complete?	-	System OK	-
9	1. Turn the ignition ON. 2. Turn the radio ON. 3. Use a voltmeter to test for battery voltage at the power antenna connector terminal 2. Does the voltage match the specified value?	11-14 V	Go to <i>Step 10</i>	Go to <i>Step 11</i>
10	Replace the power antenna. Is the repair complete?	-	System OK	-
11	1. Turn the ignition ON. 2. Turn the radio ON. 3. Use a voltmeter to test for battery voltage at radio terminal 12. Does the battery voltage match the specified value?	11-14 V	Go to <i>Step 12</i>	Go to <i>Step 13</i>
12	Repair the open circuit between the radio connector and the power antenna connector terminal 3. Is the repair complete?	-	System OK	-
13	Replace the audio system. Is the repair complete?	-	System OK	-

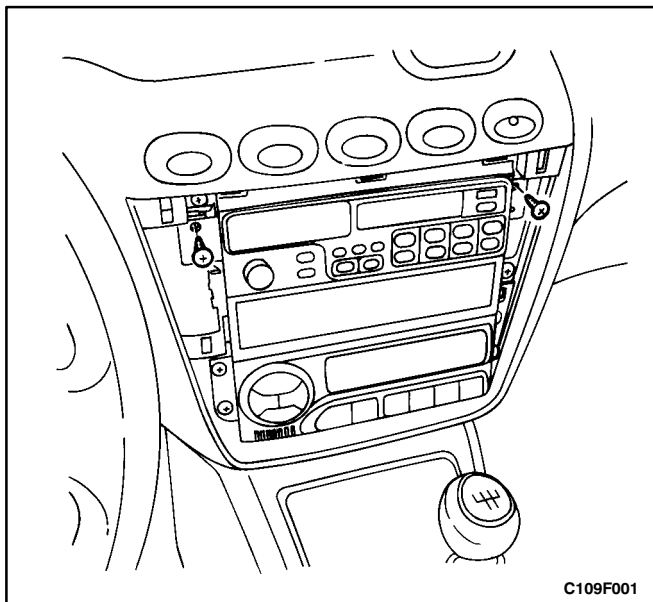
## MAINTENANCE AND REPAIR

### ON-VEHICLE SERVICE

#### STEREO CASSETTE AM/FM RADIO

##### Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the audio system trim plate.
3. Remove the screws and the audio system.
4. Disconnect the audio system electrical connectors.



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##### Installation Procedure

1. Connect the audio system electrical connectors.

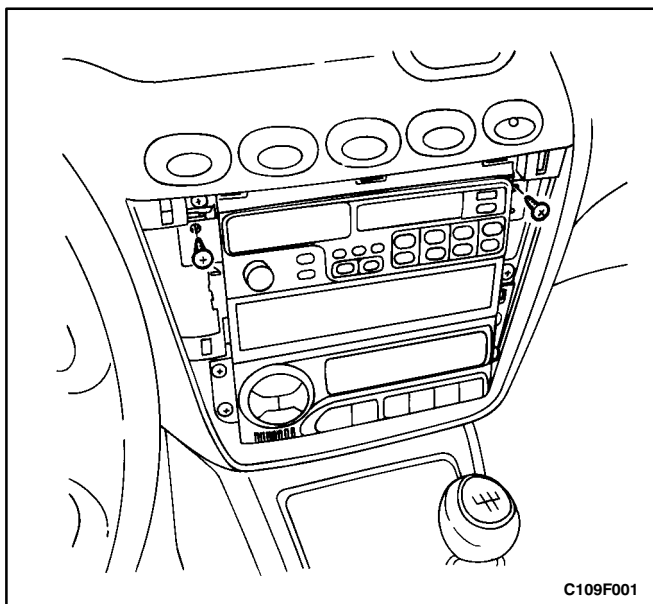
**Notice:** Dissimilar metals in direct contact with each other may corrode rapidly. Make sure to use the correct fasteners to prevent premature corrosion.

2. Install the audio system with the screws.

##### Tighten

Tighten the audio system screws to 4 N•m (35 lb-in).

3. Install the audio system trim plate.
4. Connect the negative battery cable.

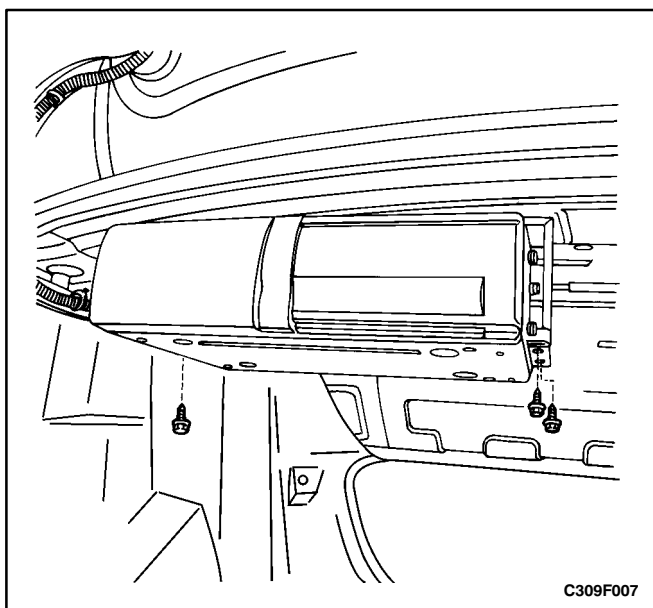


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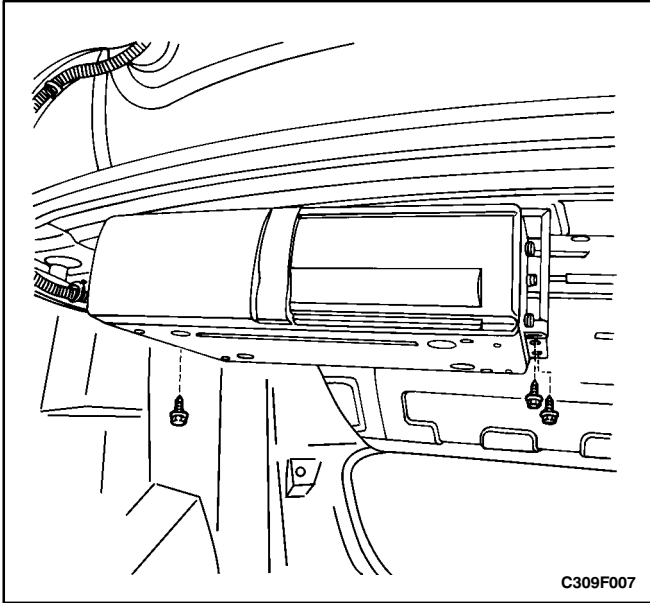
#### CD CHANGER

##### Removal Procedure

1. Disconnect the negative battery cable.
2. Disconnect the CD changer electrical connector.
3. Remove the bolts and the CD changer from the CD changer bracket.



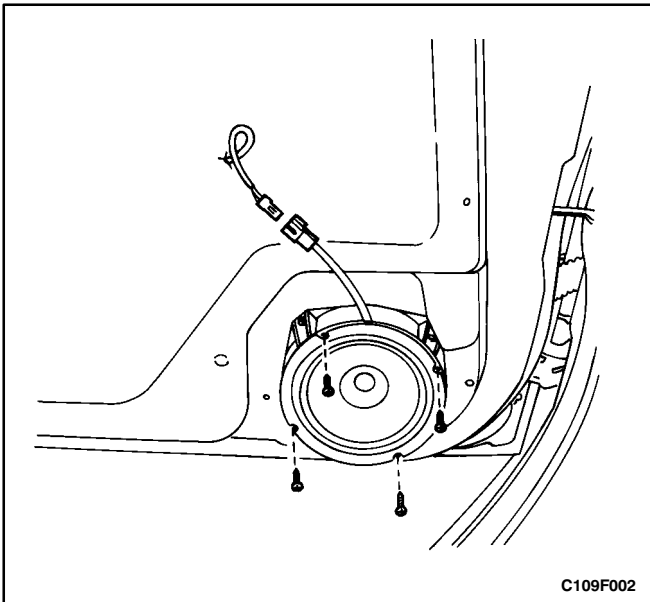
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### Installation Procedure

1. Install the CD changer with the bolts.
2. Connect the CD changer electrical connector.
3. Connect the negative battery cable.

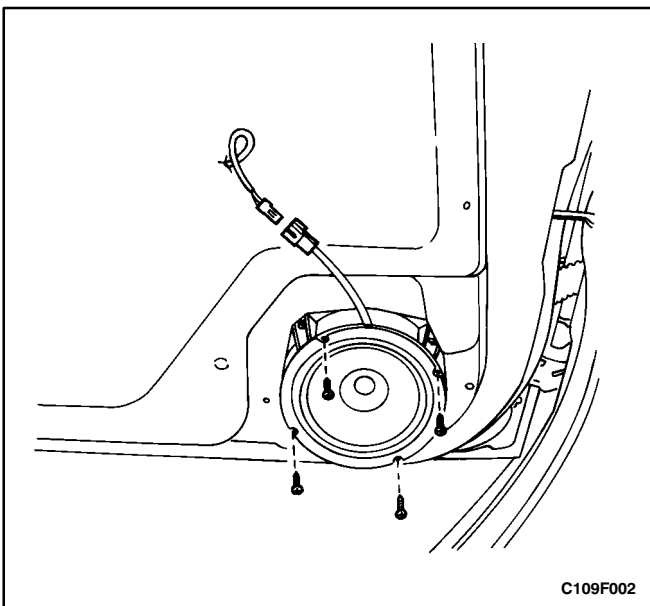


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## FRONT DOOR SPEAKERS

### Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the front door trim panel. Refer to *Section 9G, Interior Trim*.
3. Disconnect the electrical connector.
4. Remove the screws and the front door speaker.



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### Installation Procedure

**Notice:** Dissimilar metals in direct contact with each other may corrode rapidly. Make sure to use the correct fasteners to prevent premature corrosion.

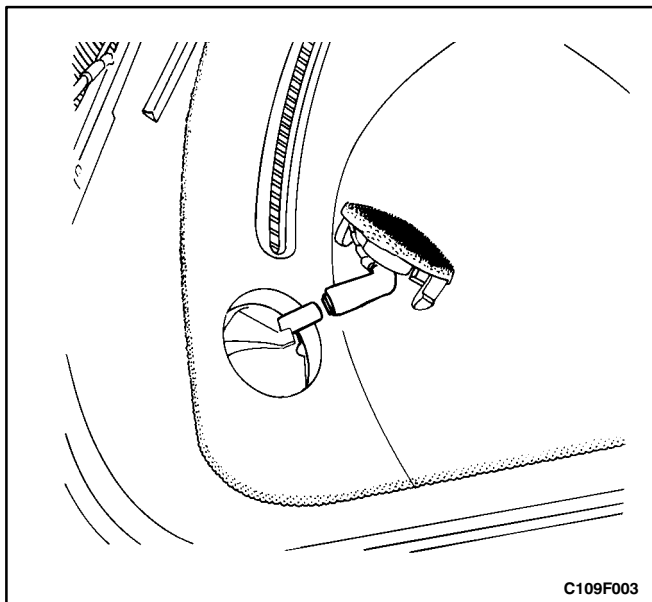
1. Install the front door speaker with the screws.

#### Tighten

Tighten the front door speaker screws to 4 N•m (35 lb-in).

2. Connect the electrical connector.
3. Install the front door trim panel. Refer to *Section 9G, Interior Trim*.
4. Connect the negative battery cable.



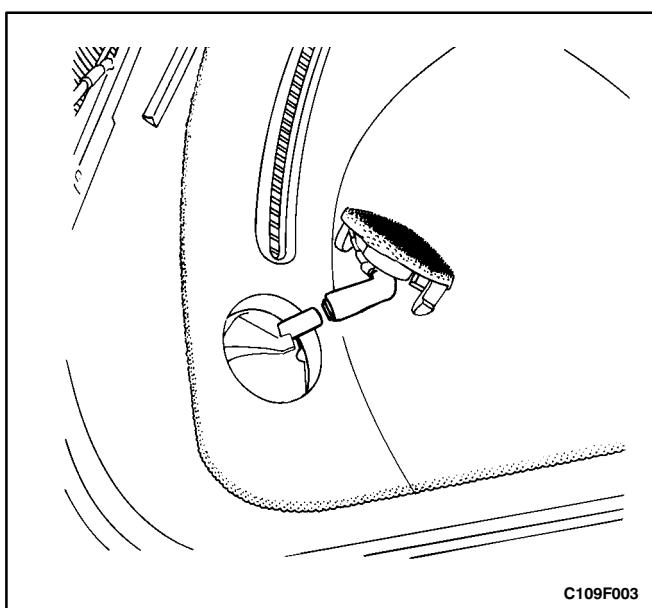


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## TWEETER SPEAKERS

### Removal Procedure

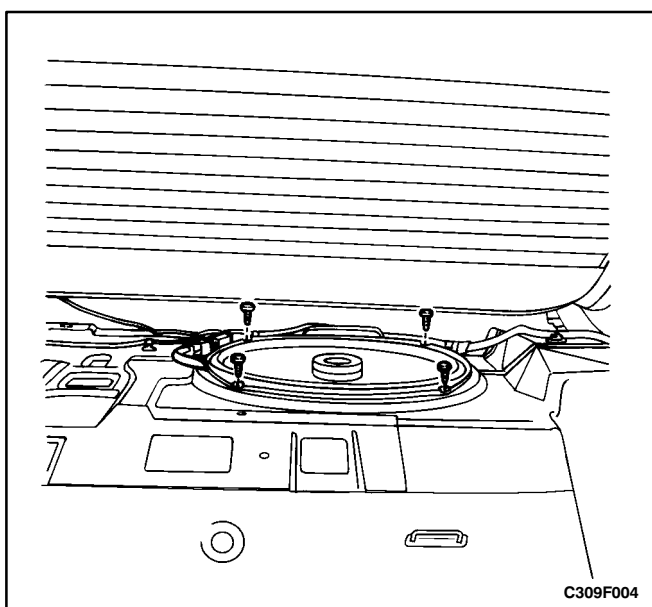
1. Disconnect the negative battery cable.
2. Remove the tweeter speaker by prying the tweeter speaker out of the instrument panel.
3. Disconnect the electrical connector.



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### Installation Procedure

1. Connect the electrical connector.
2. Install the tweeter speaker into the instrument panel.
3. Connect the negative battery cable.

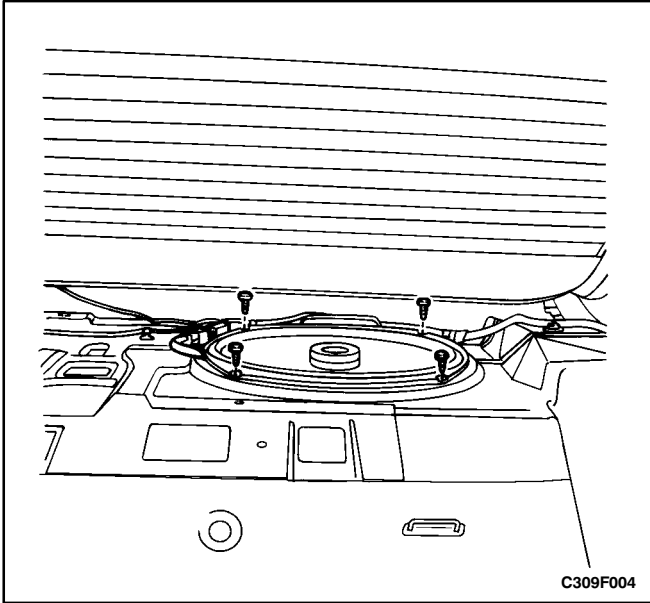


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## REAR SPEAKERS

### Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the deck lid sill plate cover. Refer to *Section 9G, Interior Trim*.
3. Disconnect the electrical connector.
4. Remove the screws and the rear speakers.



### Installation Procedure

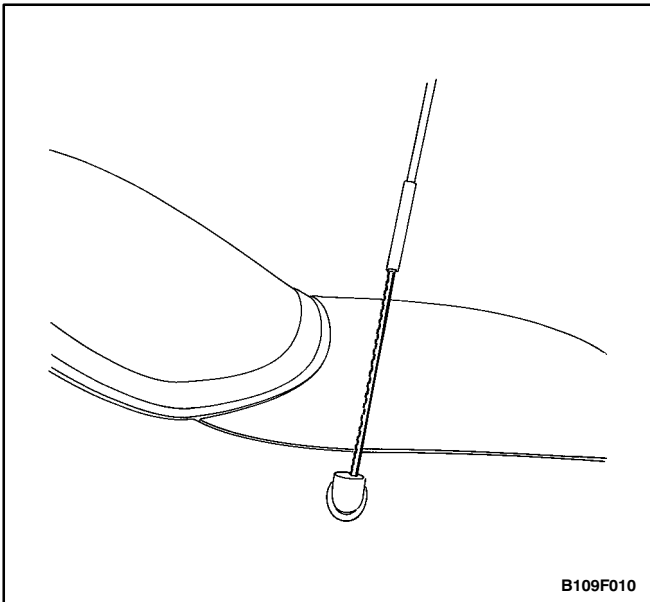
**Notice:** Dissimilar metals in direct contact with each other may corrode rapidly. Make sure to use the correct fasteners to prevent premature corrosion.

1. Install the rear speakers with the screws.

#### Tighten

Tighten the rear speaker screws to 2 N•m (18 lb-in).

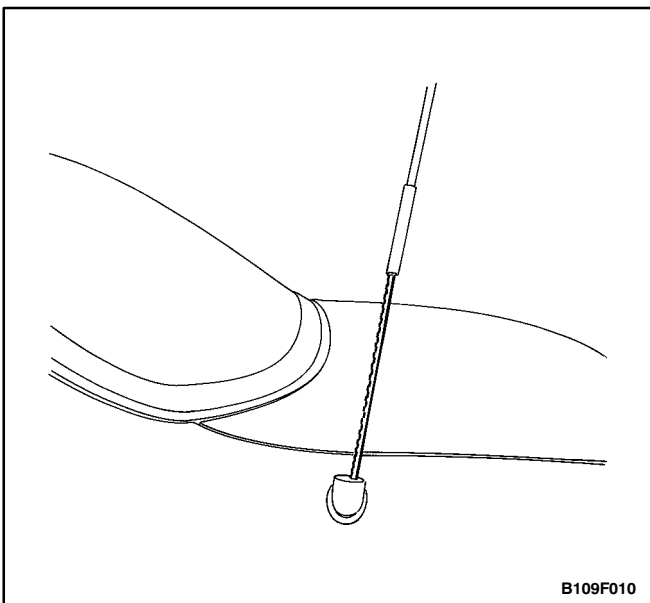
2. Connect the electrical connector.
3. Install the deck lid sill plate cover. Refer to *Section 9G, Interior Trim*.
4. Connect the negative battery cable.



### POWER ANTENNA MAST

#### Removal Procedure

1. Remove the antenna cap nut and the rubber grommet.
2. Turn on the radio and remove the antenna mast and the cable.
3. Turn off the radio.

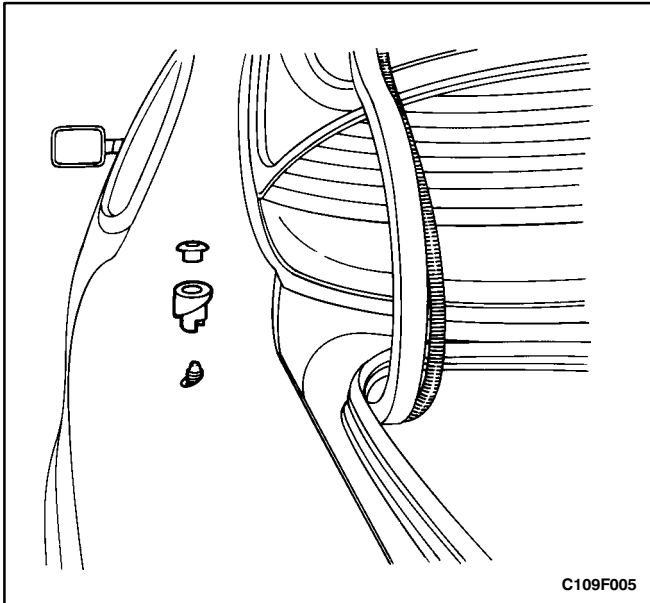


#### Installation Procedure

1. Install the antenna mast with the teeth of the cable facing the front of the vehicle.
2. Install the rubber grommet and the antenna cap nut.

#### Tighten

Tighten the antenna cap nut to 2.5 N•m (22 lb-in).

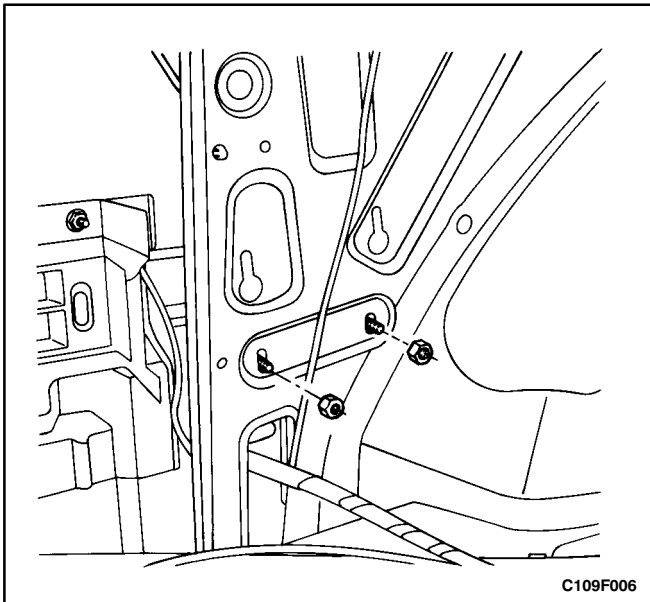


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## POWER ANTENNA MOTOR/MANUAL ANTENNA

### Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the luggage compartment wheelhouse trim panel. Refer to *Section 9G, Interior Trim*.
3. Remove the antenna cap nut and the rubber grommet.
4. Disconnect the electrical connector and the drain hose from the antenna motor.
5. Remove the nuts and the antenna motor (if equipped). (Power antenna shown, manual antenna similar.)



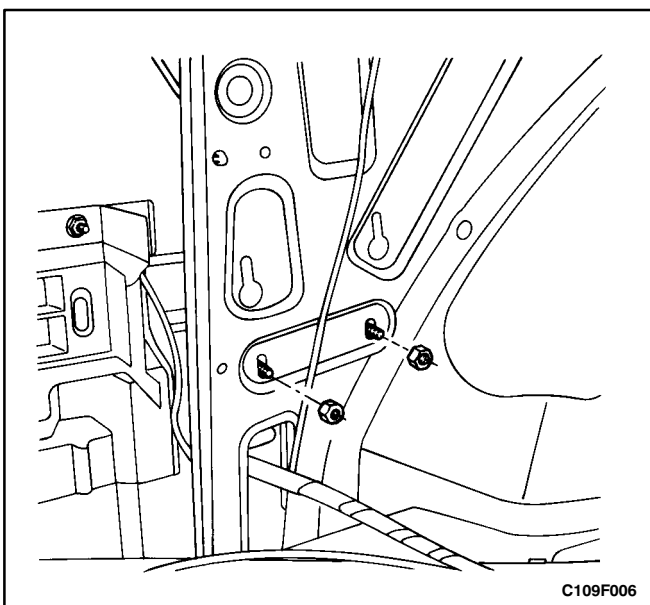
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### Installation Procedure

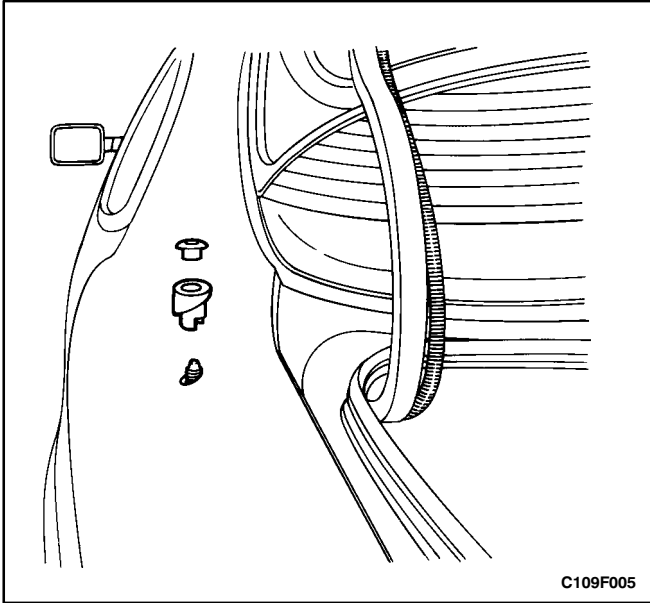
1. Connect the electrical connector and the drain hose to the antenna motor (if equipped).
- Notice:** Dissimilar metals in direct contact with each other may corrode rapidly. Make sure to use the correct fasteners to prevent premature corrosion.
2. Install the antenna motor with the nuts.

### Tighten

Tighten the antenna motor nuts to 4 N•m (35 lb-in). (Power antenna shown, manual antenna similar.)



C109F006



3. Install the rubber grommet and the antenna cap nut.

### **Tighten**

Tighten the antenna cap nut to 2.5 N•m (22 lb-in).

4. Install the luggage compartment wheelhouse trim panel. Refer to *Section 9G, Interior Trim*.
5. Connect the negative battery cable.

## GENERAL DESCRIPTION AND SYSTEM OPERATION

### STEREO CASSETTE AM/FM RADIO

There are two audio systems offered. The stereo digital logic cassette AM/FM radio with electronic tape ejection, and the stereo digital logic cassette AM/FM radio with a CD changer located in the trunk are optional equipment.

### AUDIO SECURITY SYSTEM

The audio system features a double security system. First, the audio security system features a detachable face to the cassette radio. When the face is removed from the cassette radio, the audio system is rendered inoperative. The audio system cannot be operated until the original face is reinstalled or a new face is installed and the proper four-digit security code is entered.

Second, the audio security system is activated whenever the audio system circuit is disconnected from the battery. A four-digit security code must be entered in order for the audio system to be functional once again. The security code is stamped on a card located in the vehicle (usually in the glove box).

#### Entering The Four Digit Security Code

1. With the ignition switch in the ACC or ON position, turn the radio on. At this time, CODE will appear on the radio display.
2. Press the 1 preset button until the correct first digit is shown on the display.
3. Repeat Step 2 using preset buttons 2, 3, and 4 until the four-digit security code is entered.
4. After entering the correct four-digit security code, press the AST button. CODE OK will briefly appear on the radio display. The system is now ready for operation.

#### Wrong Code

If the wrong code is entered, ERROR 1 will appear on the display. After the ERROR message, CODE will appear once again and the correct security code can be entered. With each new coding attempt, the length of time the ERROR message is displayed is doubled. A total of 10 coding attempts can be made.

### FRONT AND REAR SPEAKERS

All audio systems use four speakers: two speakers mounted in the front doors and two speakers mounted in

the rear deck lid sill plate. A coaxial two-way rear speaker is offered as an option.

### TWEETER SPEAKERS

The tweeter speakers are mounted on the top side of the instrument panel.

### MANUAL ANTENNA

The manual antenna is designed to withstand most car washes without damage. The antenna can be adjusted up or down by hand. If the mast becomes slightly bent, it can be straightened by hand. The manual antenna can be replaced if it is severely bent. Manual antennas must be kept clean for good performance.

### POWER ANTENNA

The power antenna is controlled by the radio. When the radio power is turned on, the antenna is extended. When the radio is turned off, either by turning the power off or by turning the ignition switch off, the antenna is retracted.

### TAPE PLAYER AND CASSETTE CARE

The head and the capstan are the two parts of the tape player that should be cleaned. This service should be performed every 100 hours of cassette operation.

In order to clean the head and the capstan, use a cotton swab dipped in rubbing alcohol.

A cassette cleaning kit may also be used to clean the head and the capstan. Follow the cleaning kit instructions to clean the tape player.

Do not touch the tape head with magnetized tools. If the head becomes magnetized, it will degrade cassettes played in the player. No service is performed on the cassettes. The cassette manufacturer handles warranties of the cassettes. Store cassettes away from extreme heat and direct sunlight.

### COMPACT DISC CARE

Handle discs carefully. Store the discs in protective cases away from the sun, heat, and dust. If the surface is soiled, dampen a clean, soft cloth in a solution of mild neutral detergent and wipe the disc clean. Minidiscs (about 3 inches in diameter), will not eject and should not be used.