

# 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

<p><b>SPECIFICATIONS</b> ..... 9F-1</p> <p style="padding-left: 20px;">FASTENER TIGHTENING SPECIFICATIONS . 9F-1</p> <p><b>SCHEMATIC AND ROUTING DIAGRAMS</b> ..... 9F-2</p> <p style="padding-left: 20px;">AUDIO SYSTEM CIRCUIT ..... 9F-2</p> <p><b>DIAGNOSIS</b> ..... 9F-3</p> <p style="padding-left: 20px;">STEREO CASSETTE AM/FM RADIO ..... 9F-3</p> <p style="padding-left: 20px;">SPEAKERS ..... 9F-5</p> <p style="padding-left: 20px;">ANTENNA ..... 9F-6</p> <p><b>MAINTENANCE AND REPAIR</b> ..... 9F-8</p> <p><b>ON-VEHICLE SERVICE</b> ..... 9F-8</p> <p style="padding-left: 20px;">STEREO CASSETTE AM/FM RADIO ..... 9F-8</p> <p style="padding-left: 20px;">FRONT DOOR SPEAKERS ..... 9F-9</p> <p style="padding-left: 20px;">TWEETER SPEAKERS ..... 9F-10</p> <p style="padding-left: 20px;">REAR SPEAKERS (NOTCHBACK) ..... 9F-10</p> <p style="padding-left: 20px;">REAR SPEAKERS (HATCHBACK) ..... 9F-11</p>	<p style="padding-left: 20px;">MAST ANTENNA ..... 9F-12</p> <p style="padding-left: 20px;">ROOF ANTENNA ..... 9F-13</p> <p style="padding-left: 20px;">POWER ANTENNA MAST(NOTCHBACK) ... 9F-13</p> <p style="padding-left: 20px;">POWER ANTENNA MOTOR (NOTCHBACK) 9F-14</p> <p style="padding-left: 20px;">COMPACT DISC CHANGER ..... 9F-15</p> <p><b>GENERAL DESCRIPTION AND SYSTEM OPERATION</b> ..... 9F-17</p> <p style="padding-left: 20px;">AUDIO SYSTEMS ..... 9F-17</p> <p style="padding-left: 20px;">AUDIO SECURITY SYSTEM ..... 9F-17</p> <p style="padding-left: 20px;">FRONT AND REAR SPEAKERS ..... 9F-17</p> <p style="padding-left: 20px;">TWEETER SPEAKERS ..... 9F-17</p> <p style="padding-left: 20px;">MAST ANTENNA ..... 9F-17</p> <p style="padding-left: 20px;">POWER ANTENNA ..... 9F-17</p> <p style="padding-left: 20px;">ROOF ANTENNA ..... 9F-17</p> <p style="padding-left: 20px;">TAPE PLAYER AND CASSETTE CARE ..... 9F-17</p> <p style="padding-left: 20px;">COMPACT DISC CARE ..... 9F-17</p>
---	--

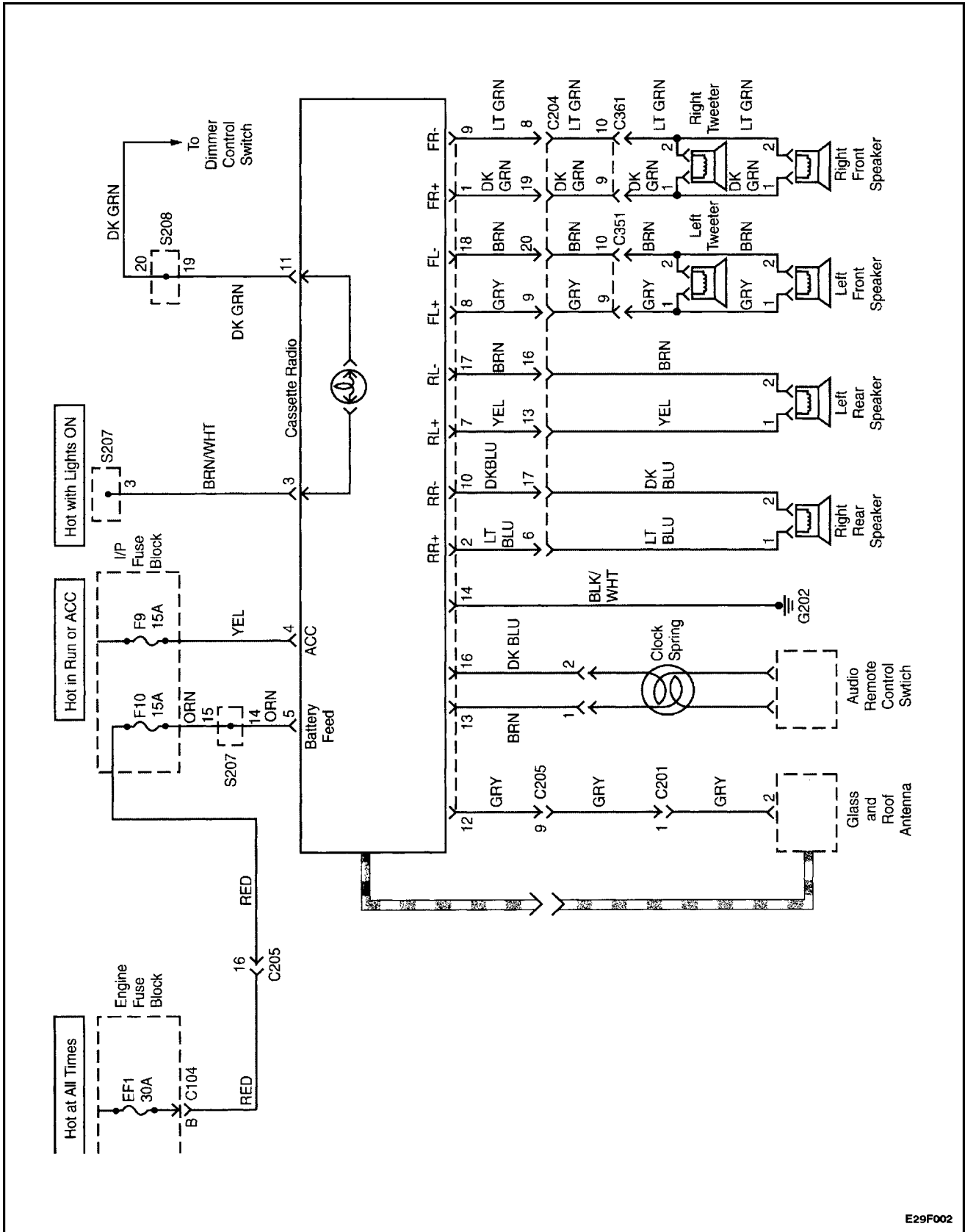
## SPECIFICATIONS

### FASTENER TIGHTENING SPECIFICATIONS

Application	N•m	Lb-Ft	Lb-In
Antenna Cap Nut	7	–	62
Antenna Motor Nuts	7	–	62
Audio System Bolts	4	–	35
CD Changer Nuts	7	–	62
Mast Antenna Base Nut	4	–	35
Front Door Speaker Screws	4	–	35
Rear Speaker Screws	4	–	35
Roof Antenna Nut	10	–	89

# SCHEMATIC AND ROUTING DIAGRAMS

## AUDIO SYSTEM CIRCUIT



# DIAGNOSIS

## STEREO CASSETTE AM/FM RADIO

### Cassette AM/FM Radio Inoperative

Step	Action	Value(s)	Yes	No
1	Check fuses EF1, F9, and F10. Are fuses EF1, F9, and F10 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 fuses. Is the repair complete?		System OK	
3	1. Use a voltmeter to test for battery voltage at fuses EF1 and F10. 2. Turn the ignition ON and test for battery voltage at fuse F9. Does the battery voltage match the specified value at fuses EF1, F9, and F10?	11–14 v	Go to <i>Step 5</i>	Go to <i>Step 4</i>
4	Repair the power supply circuit to the fuses. Is the repair complete?		System OK	
5	1. Disconnect the radio electrical connector. 2. Turn the ignition ON. 3. Use a voltmeter to test for battery voltage at the radio connector terminals 4 and 5. Does the battery voltage match the specified value at both terminals?	11–14 v	Go to <i>Step 7</i>	Go to <i>Step 6</i>
6	Repair the open circuit between the radio connector and the fuse. Is the repair complete?		System OK	
7	Use an ohmmeter to test the ground circuit at the radio connector terminal 14. Does the resistance match the specified value?	0–0.5 $\Omega$	Go to <i>Step 9</i>	Go to <i>Step 8</i>
8	Repair the open ground circuit between the radio connector and ground G105. Is the repair complete?		System OK	
9	Replace the radio. Is the repair complete?		System OK	

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

Step	Action	Value(s)	Yes	No
1	Verify the customer complaint. Does the cassette player destroy tapes?		Go to <i>Step 5</i>	Go to <i>Step 2</i>
2	Using a good-quality tape, determine whether the cassette player performs poorly or is inoperative. Does the cassette player perform poorly?		Go to <i>Step 5</i>	Go to <i>Step 3</i>
3	Check the cassette player for obstructions behind the tape door. Is an obstruction found?		Go to <i>Step 4</i>	Go to <i>Step 8</i>

## 9F – 4 AUDIO SYSTEMS

Step	Action	Value(s)	Yes	No
4	Check to see if the obstruction can be removed using gentle force. Is the obstruction removed?		Go to <i>Step 5</i>	Go to <i>Step 6</i>
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 radio. 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	

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

Step	Action	Value(s)	Yes	No
1	Replace the radio. Is the repair complete?			

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

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

## SPEAKERS

### Front Speakers Distorted or Inoperative, Rest of Audio System OK

Step	Action	Value(s)	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 <i>Step 2</i>	Go to <i>Step 4</i>
2	Check the speaker and the door area for damage, rattles, or vibration. Is there anything loose or in the way of the speaker causing the distortion?		Go to <i>Step 3</i>	Go to <i>Step 4</i>
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?	∞	Go to <i>Step 6</i>	Go to <i>Step 5</i>
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 <i>Step 7</i>	Go to <i>Step 8</i>
7	Replace the speaker. Is the repair complete?		System OK	
8	Replace the radio. Is the repair complete?		System OK	

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

Step	Action	Value(s)	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 <i>Step 2</i>	Go to <i>Step 4</i>
2	Check the speakers, the rear deck, and the trunk area for damage, rattles, or vibration. Is there anything loose or in the way of the speaker causing the distortion?		Go to <i>Step 3</i>	Go to <i>Step 4</i>
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?	∞	Go to <i>Step 6</i>	Go to <i>Step 5</i>

Step	Action	Value(s)	Yes	No
5	Repair the short circuit between the rear 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 <i>Step 7</i>	Go to <i>Step 8</i>
7	Replace the speaker. Is the repair complete?		System OK	
8	Replace the radio. Is the repair complete?		System OK	

## ANTENNA

### Power Antenna Does Not Work

Step	Action	Value(s)	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 power antenna connector terminal 1 and fuse EF29. Is the repair complete?		System OK	
7	Use an ohmmeter to test the ground circuit at power antenna connector terminal 2. Does the resistance match the specified value?	0 – 0.5 $\Omega$	Go to <i>Step 9</i>	Go to <i>Step 8</i>
8	Repair the open ground circuit between power antenna connector terminal 2 and ground G303. 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 power antenna connector terminal 3. Does the battery 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. Is the repair complete?	11–14 v	Go to <i>Step 12</i>	Go to <i>Step 13</i>

<b>Step</b>	<b>Action</b>	<b>Value(s)</b>	<b>Yes</b>	<b>No</b>
12	Repair the open circuit between radio terminal 12 and power antenna connector terminal 3. Is the repair complete?		System OK	
13	Replace the audio system. Is the repair complete?		System OK	

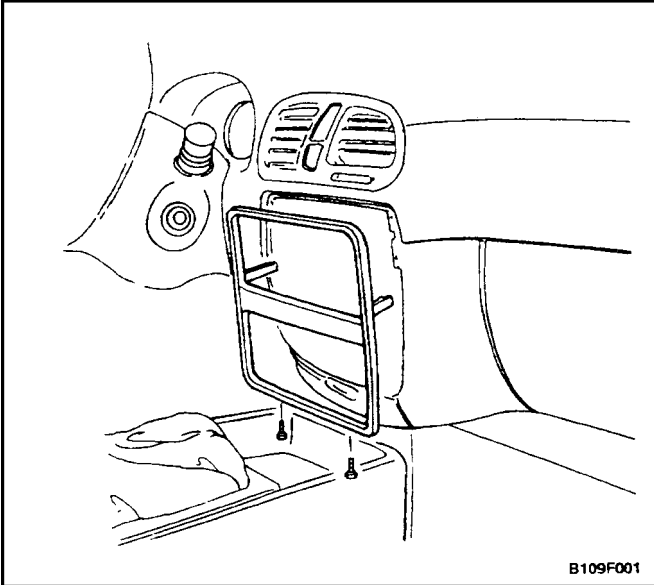
## MAINTENANCE AND REPAIR

### ON-VEHICLE SERVICE

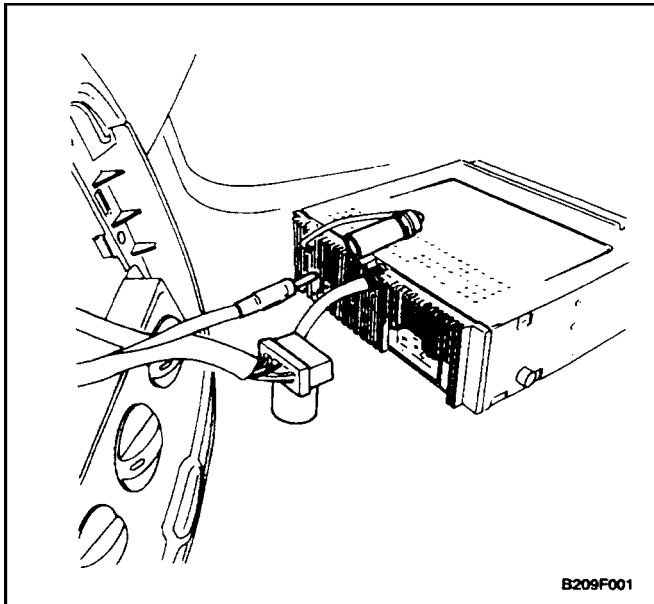
### STEREO CASSETTE AM/FM RADIO

#### Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the audio system trim plate screws and the audio system trim plate.

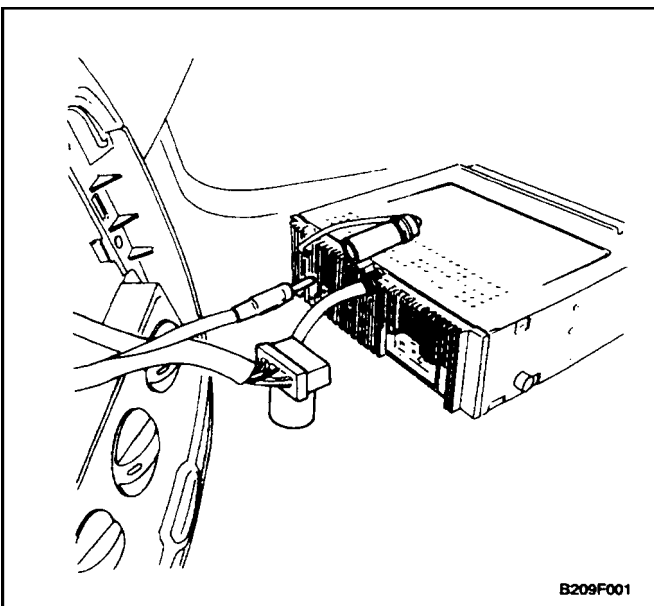


3. Remove the audio system bolts and the audio system.
4. Disconnect the audio system electrical connector and the antenna cable.

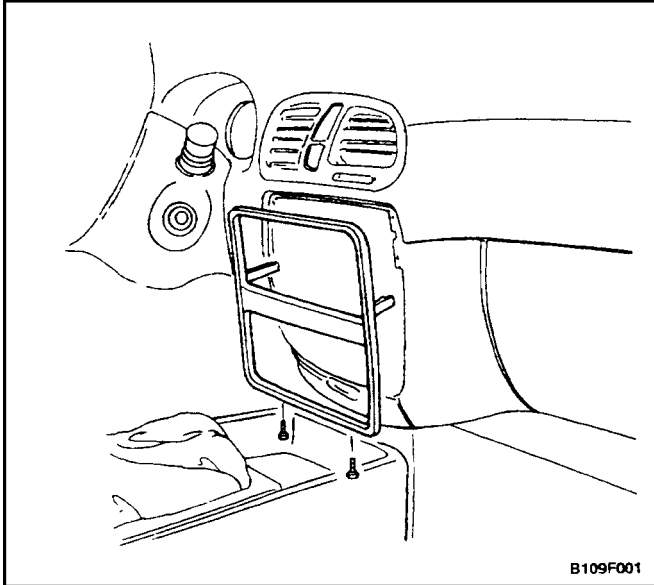


#### Installation Procedure

1. Connect the audio system electrical connector and the antenna cable.





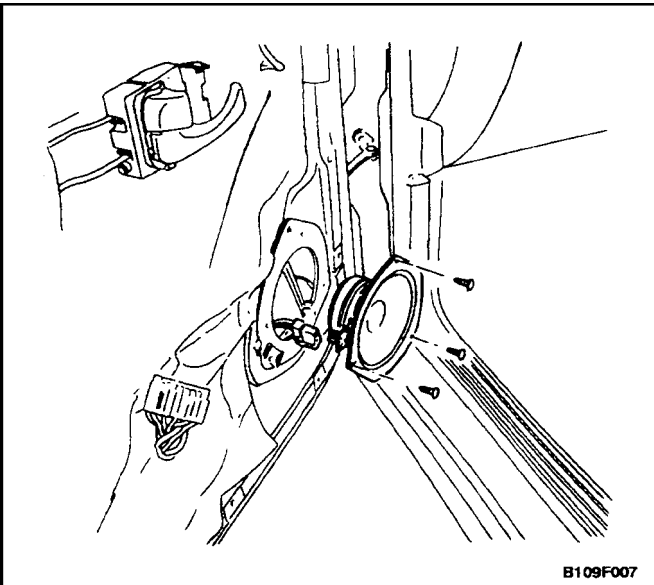


2. Install the audio system with the bolts.

### Tighten

Tighten the audio system bolts to 4 N•m (35 lb–in).

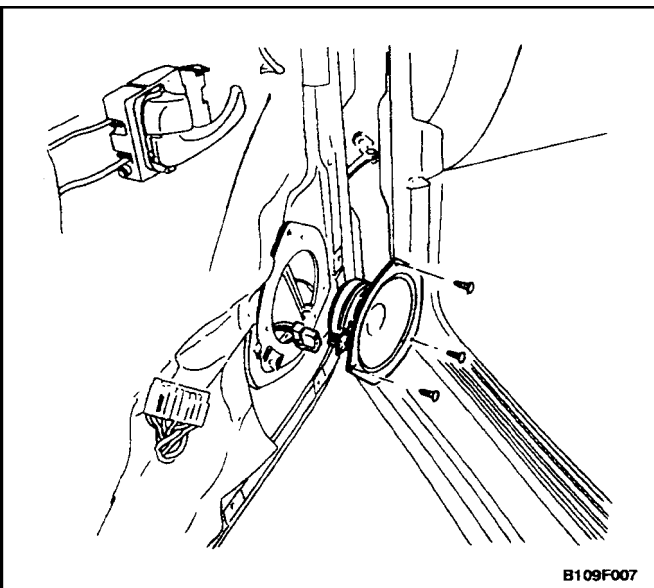
3. Install the audio system trim plate with the screws.
4. Connect the negative battery cable.
5. Enter the security code. Refer to "Audio Security Sys-tem" in this section.



## 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. Remove the front door speaker screws and the front door speaker.
4. Disconnect the electrical connector.



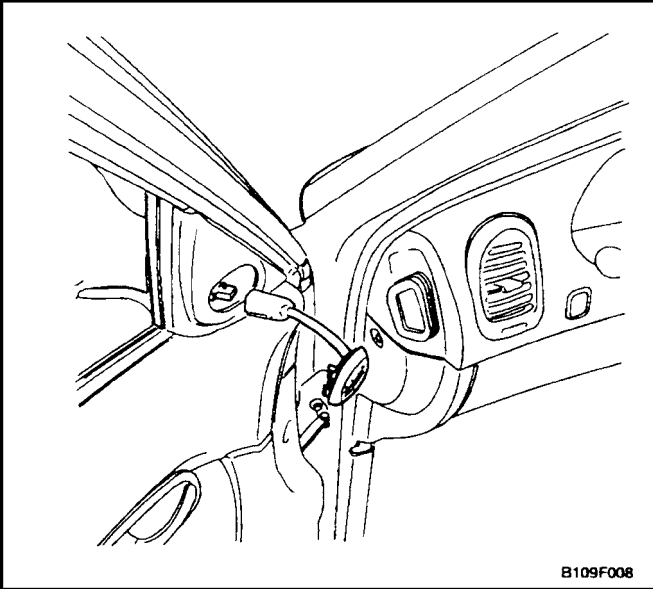
### Installation Procedure

1. Connect the electrical connector.
2. Install the front door speaker with the screws.

### Tighten

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

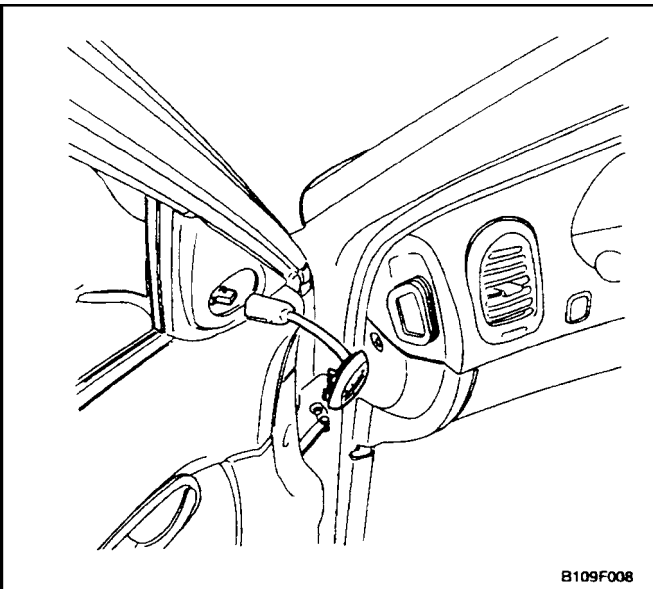
3. Install the front door trim panel. Refer to *section 9G, Interior Trim*.
4. Connect the negative battery cable.



## TWEETER SPEAKERS

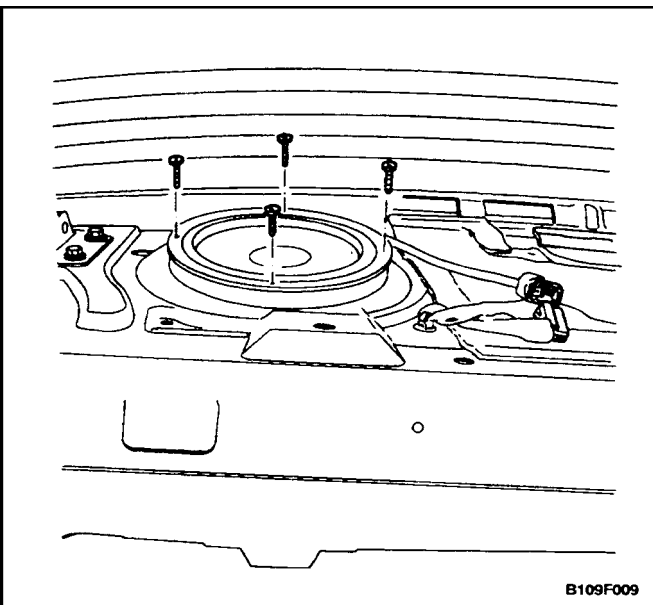
### Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the tweeter speaker by prying the tweeter speaker off of the front door eschutcheon.
3. Disconnect the electrical connector.



### Installation Procedure

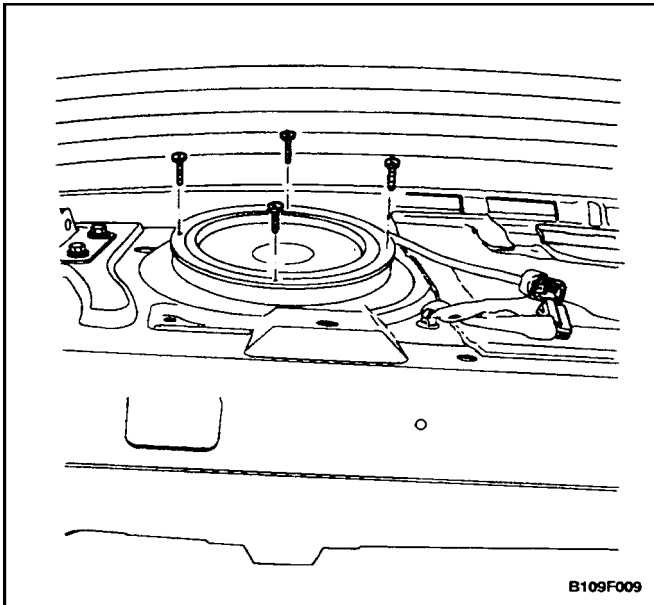
1. Connect the electrical connector.
2. Install the tweeter speaker by snapping the tweeter speaker onto the front door eschutcheon.
3. Connect the negative battery cable.



## REAR SPEAKERS (NOTCHBACK)

### Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the rear seat cushion and the rear seat-back. Refer to *Section 9H, Seats*.
3. Remove the right side C-pillar trim panel and the deck lid sill plate trim cover. Refer to *section 9G, Interior Trim*.
4. Disconnect the electrical connector.
5. Remove the screws and the rear speakers.



### Installation Procedure

1. Install the rear speakers with the screws.

#### Tighten

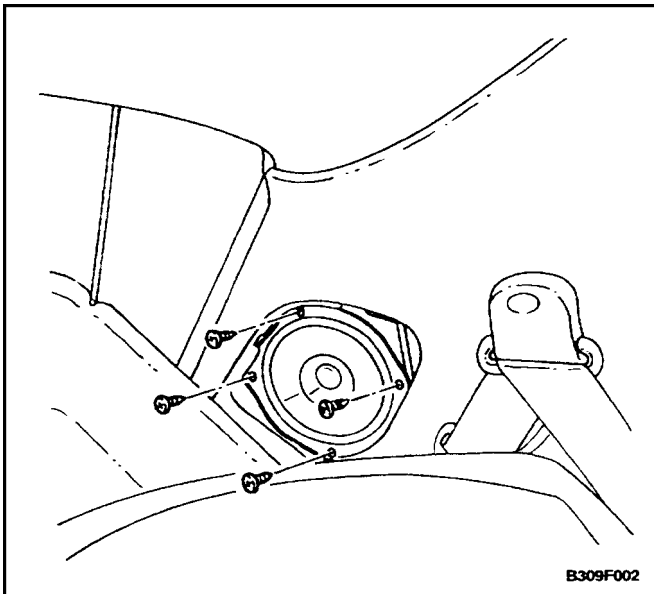
Tighten the rear speaker screws to 4 N•m (35 lb-in).

2. Connect the electrical connector.
3. Install the deck lid sill plate trim cover and the right side C-pillar trim panel. Refer to section 9G, *Interior Trim*.
4. Install the rear seatback and the rear seat cushion. Refer to Section 9H, *Seats*.
5. Connect the negative battery cable.

## REAR SPEAKERS (HATCHBACK)

### Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the rear speaker access cover.
3. Remove the screws and the rear speaker.
4. Disconnect the electrical connector.



### Installation Procedure

1. Connect the electrical connector.

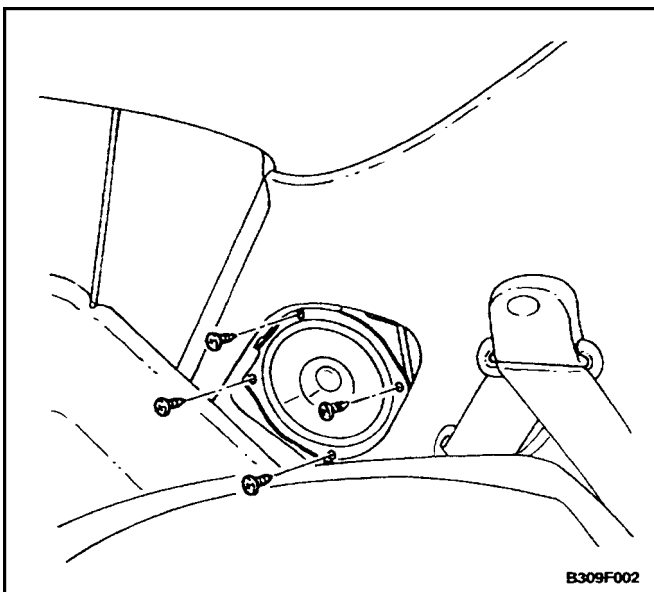
**Notice :** Dissimilar metals in direct contact with each other may corrode rapidly. Make sure to use the correct fasteners to prevent premature corrosion.

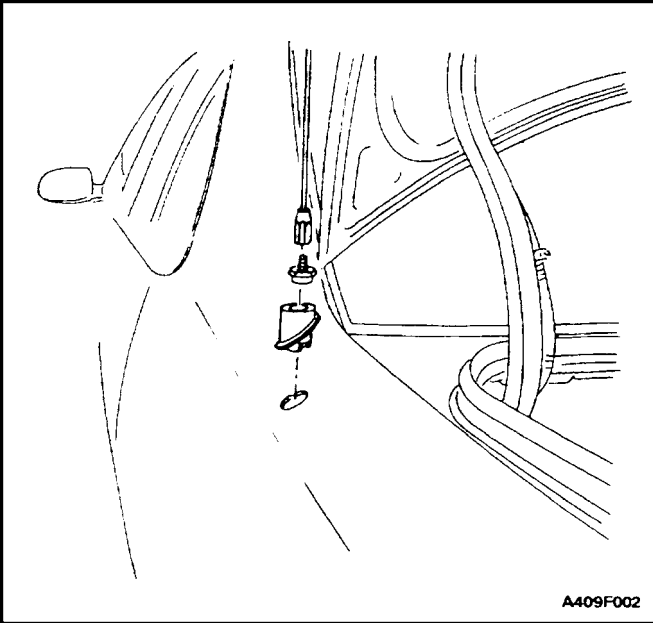
2. Install the rear speaker with the screws.

#### Tighten

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

3. Install the rear speaker access cover.
4. Connect the negative battery cable.

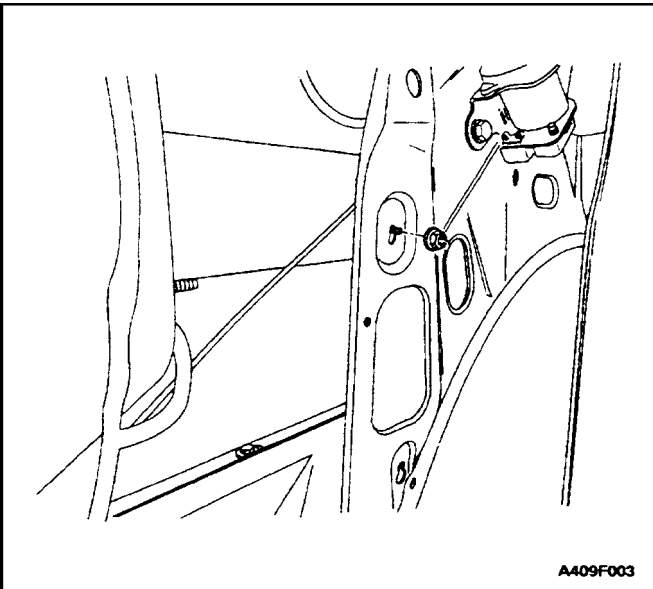




## MAST ANTENNA

### Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the luggage compartment rear quarter trim panel. Refer to *Section 9G, Interior Trim*.
3. Unscrew and remove the mast antenna.
4. Remove the antenna cap nut and the rubber grommet.



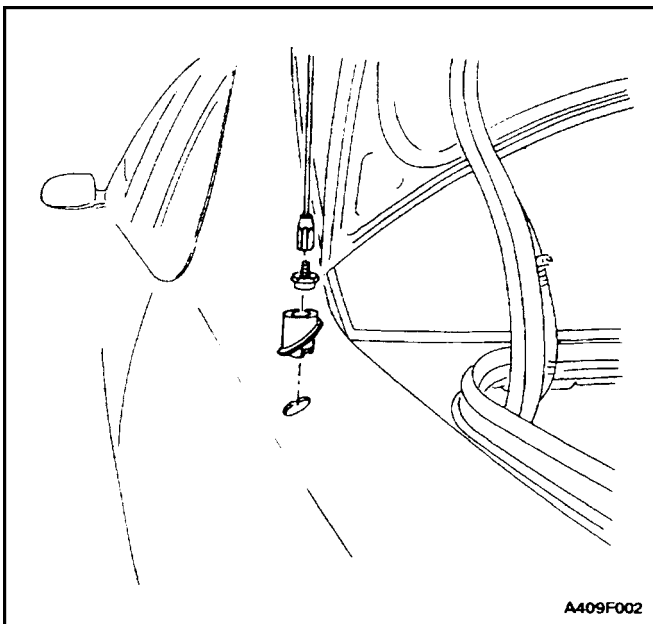
### Installation Procedure

**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 mast antenna base with the nut.

#### **Tighten**

Tighten the mast antenna base nut to 4 N•m (35 lbin).

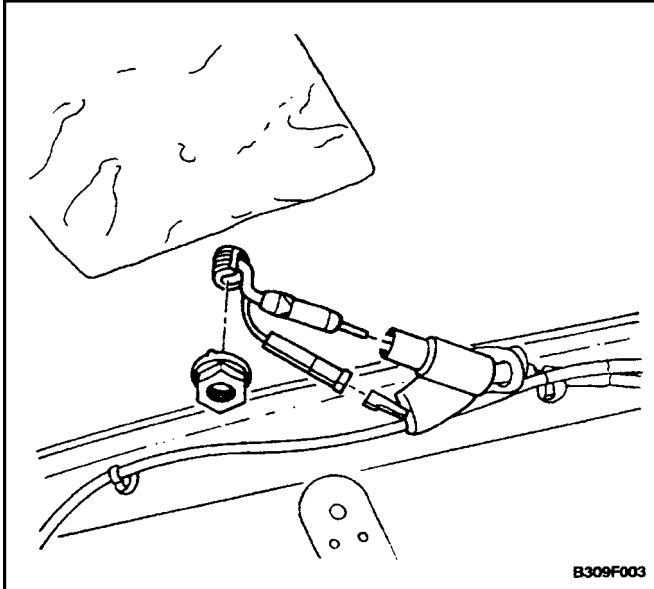


2. Connect the antenna cable.
3. Install the rubber grommet and the antenna cap nut.

#### **Tighten**

Tighten the antenna cap nut to 7 N•m (62 lb-in).

4. Install the mast antenna.
5. Install the luggage compartment rear quarter trim panel. Refer to *Section 9G, Interior Trim*.
6. Connect the negative battery cable.

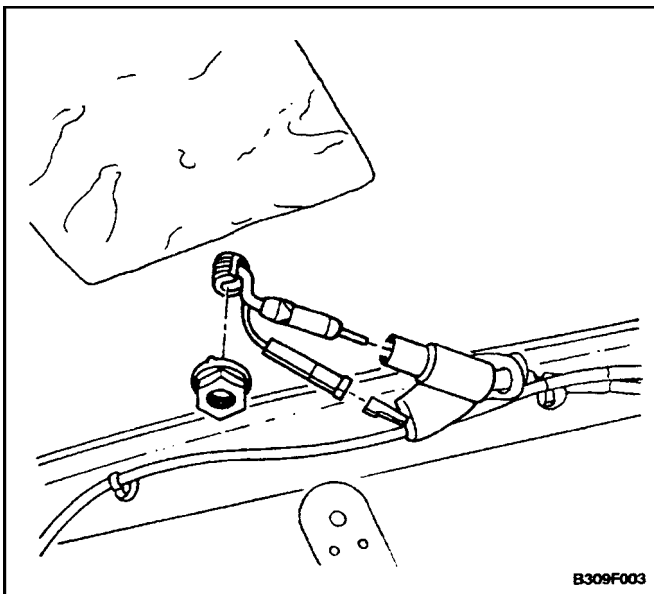


## ROOF ANTENNA

(Wagon Shown, Hatchback Similar)

### Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the formed headliner. Refer to *Section 9Q, Roof*.
3. Disconnect the antenna cable and the electrical connector.
4. Remove the nut and the antenna.



### Installation Procedure

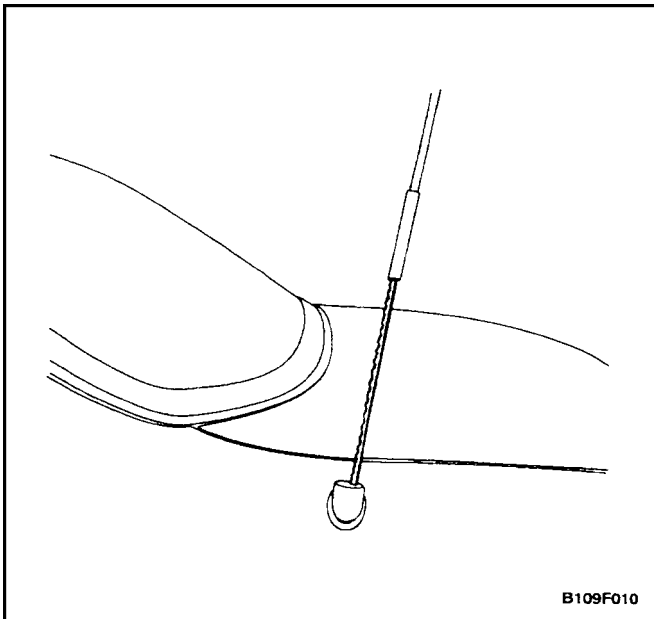
**Notice :** Dissimilar metals in direct contact with each other may corrode rapidly. Make sure to use the correct fasteners to prevent premature corrosion.

1. Install the roof antenna with the nut.

#### Tighten

Tighten the roof antenna nut to 10 N•m (89 lb-in).

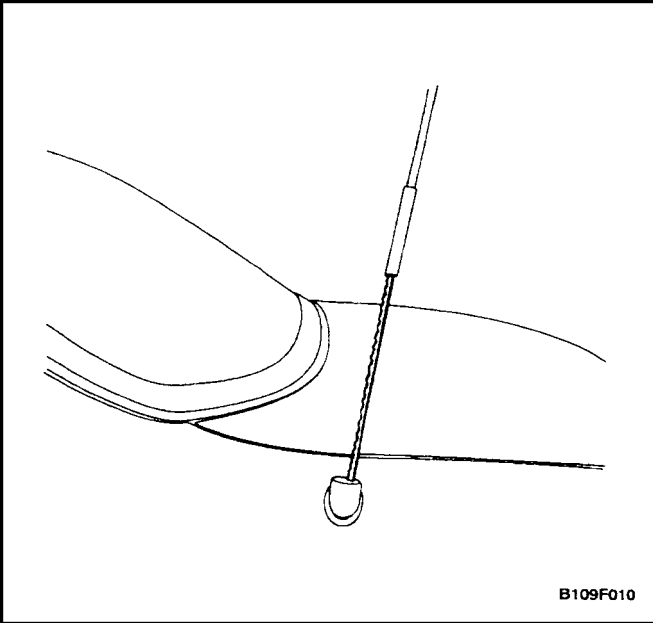
2. Connect the antenna cable and the electrical connector.
3. Install the formed headliner. Refer to *Section 9Q, Roof*.
4. Connect the negative battery cable.



## POWER ANTENNA MAST(NOTCHBACK)

### Removal Procedure

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



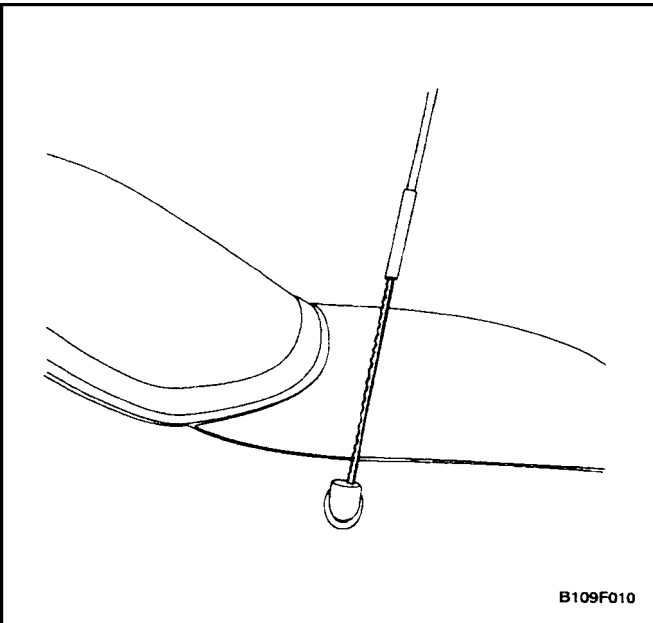
B109F010

### 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 7 N•m (62 lb-in).

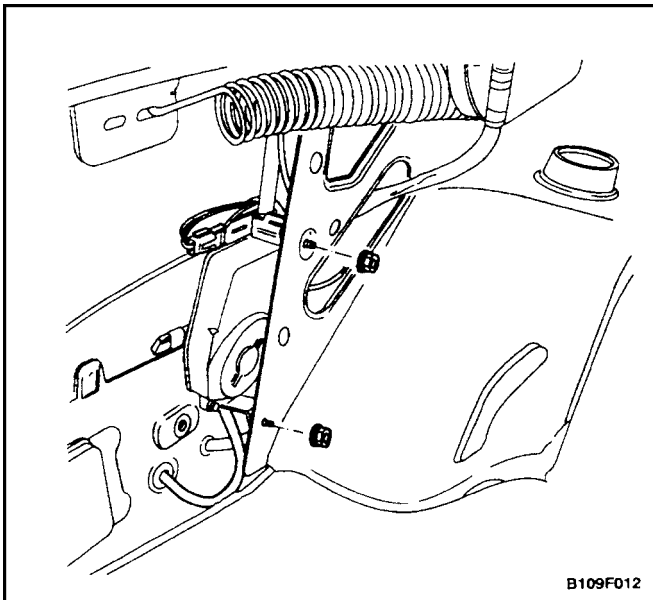


B109F010

## POWER ANTENNA MOTOR (NOTCHBACK)

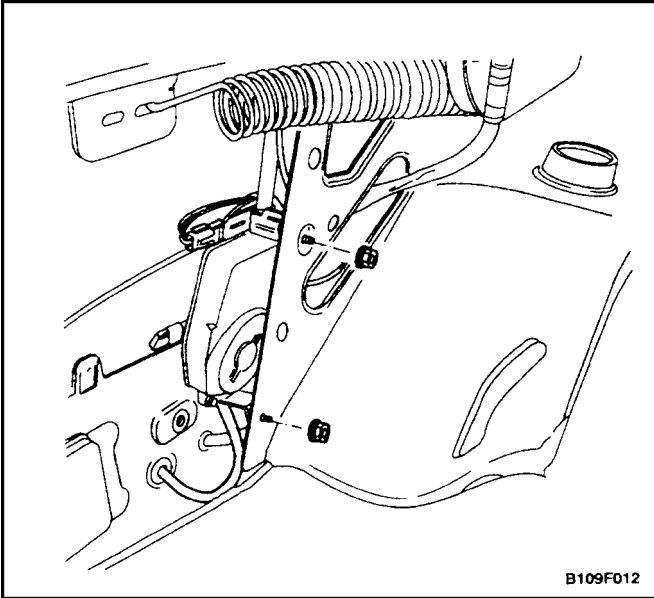
### Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the luggage compartment rear quarter trim panel. Refer to *Section 9G, Interior Trim*.
3. Remove the antenna cap nut and the rubber grommet.



B109F012

4. Loosen the nuts securing the antenna motor to the vehicle.
5. Remove the antenna motor.
6. Disconnect the electrical connector and the drain hose from the antenna motor.

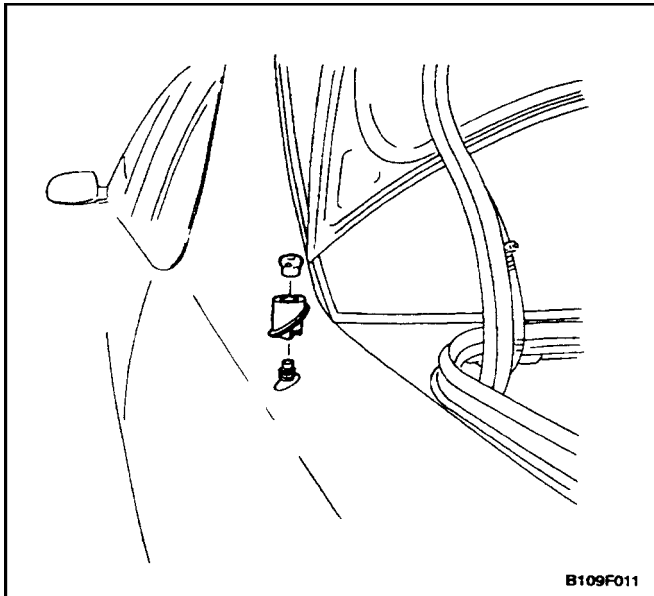


### Installation Procedure

1. Connect the electrical connector and the drain hose to the antenna motor.
2. Install the antenna motor with the nuts.

#### Tighten

Tighten the antenna motor nuts to 7 N•m (62 lb-in).

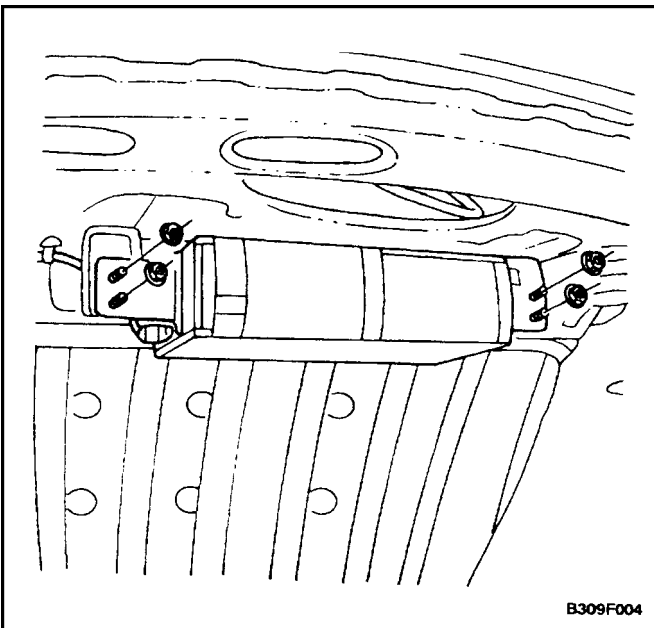


3. Install the antenna cap nut.
4. Install the luggage compartment rear quarter trim panel. Refer to Section 9G, Interior Trim.

#### Tighten

Tighten the antenna cap nut to 7 N•m (62 lb-in).

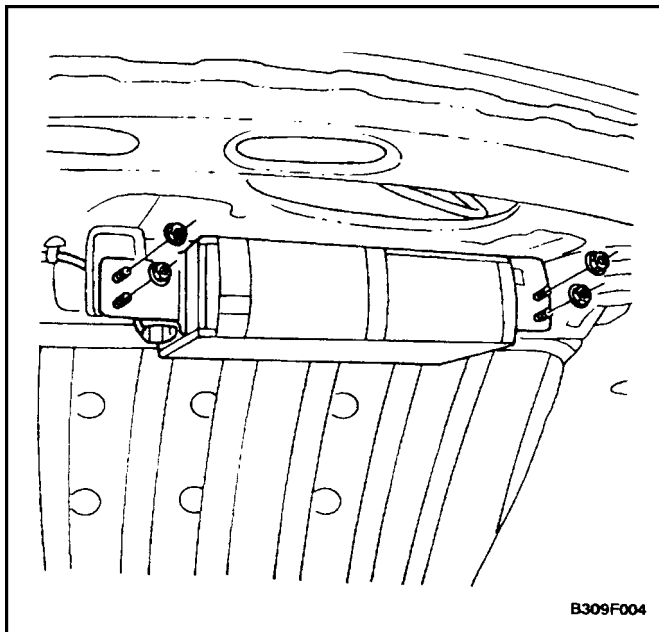
5. Connect the negative battery cable.



## COMPACT DISC CHANGER

### Removal Procedure

1. Disconnect the negative battery cable.
2. Disconnect the CD changer electrical connector.
3. Remove the nuts and the CD changer.



### Installation Procedure

1. Install the CD changer with the nuts.

#### Tighten

Tighten the CD changer nuts to 7 N•m (62 lb-in).

2. Connect the CD changer electrical connector.
3. Connect the negative battery cable.



## GENERAL DESCRIPTION AND SYSTEM OPERATION

### AUDIO SYSTEMS

There are three audio systems available:

- Stereo digital logic cassette AM/FM radio with electronic tape ejection.
- Stereo digital logic AM/FM radio with CD player.
- Trunk mounted CD changer which is available with the cassette AM/FM radio.

### AUDIO SECURITY SYSTEM

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 resume functioning. The security code is stamped on a card located in the vehicle (usually in the glove box). The following security code entering procedure must be used to deactivate the audio security system:

1. After connecting the audio security system to the battery, "COdE" will flash on the display.
2. Enter the proper security number into the unit, using the preset buttons No. 1 through 8. For example, if the security number is "1234":
  - 1) Press the preset button No. 1. "COdE": will disappear and "1—" will appear on the display.
  - 2) Press the preset button No. 2, and "12—" will appear.
  - 3) Press the preset button No. 3, and "123—" will appear.
  - 4) Press the preset button No. 4, and "1234" will appear.
1. The audio system will function and will transfer to the radio.

If you fail to enter the correct security number into the unit, "Err" will appear followed by "COdE" and there will be several audible beeps. If this happens, repeat the security entering procedure beginning with step 2.

### FRONT AND REAR SPEAKERS

All audio systems use four speakers: two speakers mounted in the front doors and two speakers mounted in the rear. A coaxial two-way rear speaker is offered as an option.

### TWEETER SPEAKERS

The tweeter speakers are mounted on the front door eschutcheon next to the dash panel.

### MAST ANTENNA

The manual antenna is designed to withstand most car washes without damage. 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 optional 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 off, the antenna is retracted.

### ROOF ANTENNA

The two-piece roof antenna is standard equipment on the hatchback and the wagon. The top half of the antenna can be unscrewed and removed if height clearance problems occur.

### TAPE PLAYER AND CASSETTE CARE

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

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.