

# SECTION 9R

## BODY FRONT END

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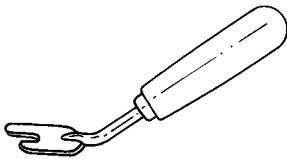
## SPECIFICATIONS

### FASTENER TIGHTENING SPECIFICATIONS

Application	N•m	Lb-Ft	Lb-In
A-Pillar Fender Bolt	10	–	89
Cowl Vent Grille Screws	3	–	27
Front Fascia-to-Fender Bolts	2.5	–	22
Front of Fender Bolts	10	–	89
Front Wheel Well Splash Shield Screws	2	–	18
Hinge Bolts	20	15	–
Hood-to-Hinge Bolts	20	15	–
Hood Latch Bolts	10	–	89
Hood Release Handle Screw	2.5	–	22
Lower Fender Bolts	10	–	89
Radiator Grille Bolts	10	–	88
Radiator Grille Nuts	4	–	35
Radiator Grille Screws	2	–	18
Resonator Bolt	9	–	80
Towing Eye Bolts	25	18	–
Upper Fender Bolts	10	–	88
Washer Reservoir Bolt	9	–	80

# SPECIAL TOOLS

## SPECIAL TOOLS TABLE

 <p>A109G029</p>	<p><b>KM-475-B</b> <b>Trim Remover</b></p>
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## MAINTENANCE AND REPAIR

### ON-VEHICLE SERVICE

#### LUBRICATION

The hood hinges and the locking mechanisms require periodic lubrication for proper operation. Refer to *Section 1, General Information* for the specific types and intervals of lubrication.

#### FASTENERS

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

Many aluminum components are used on current models. Aluminum in contact with steel may corrode rapidly if it is not protected by special finishes or isolators.

The fasteners used have a special finish which provides adequate protection from corrosion. These special fasteners differ in color in order to easily identify them from the standard metric fasteners, which are medium blue in color.

When replacing fasteners, avoid substituting otherwise similar fasteners in the same location.

#### ANTICORROSION MATERIALS

In order to provide rust resistance, anticorrosion materials have been applied to the interior surfaces of most of the metal panels. When you service these panels, properly re-coat them with a service-type anticorrosion material if any of the original material has been disturbed.

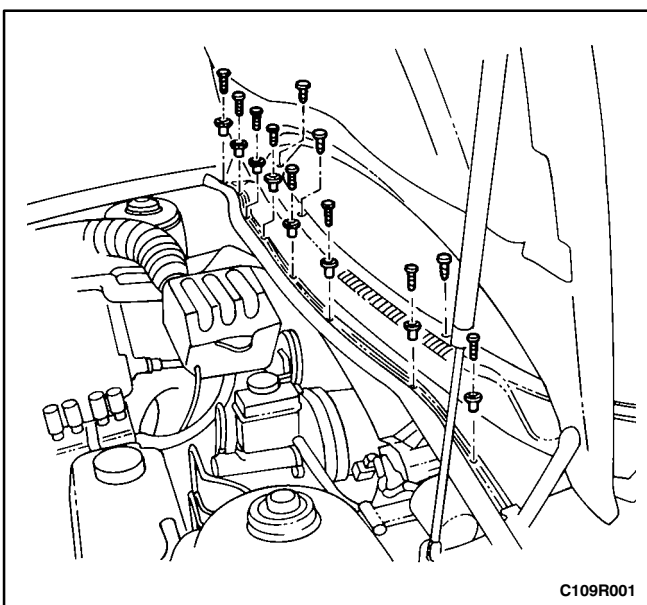
#### FRONT END SEALING

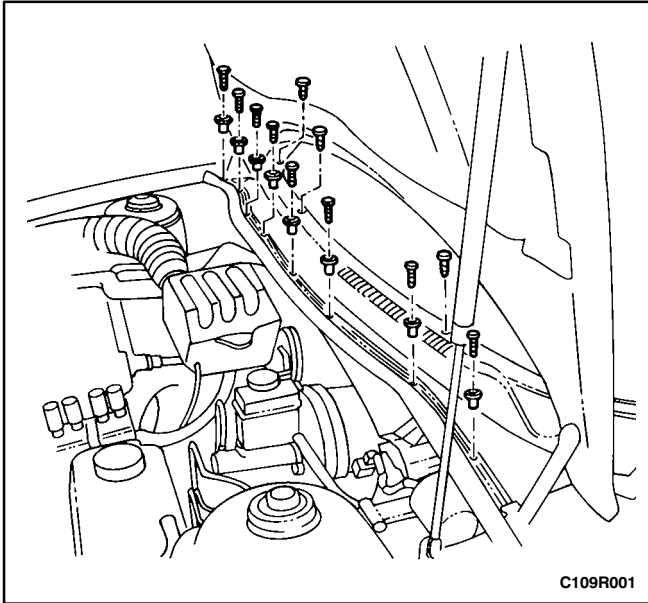
All locations where water leaks may occur are sealed during production with high quality, durable sealers. If it becomes necessary to reseal specific areas, use a high quality sealer of medium-bodied consistency which will retain its flexible characteristics after curing and can be painted if necessary.

#### COWL VENT GRILLE

##### Removal Procedure

1. Raise the hood.
2. Remove the wiper arms. Refer to *Section 9D, Wipers/Washer Systems*.
3. Remove the cowl vent grille screws and the two-piece grille.





### Installation Procedure

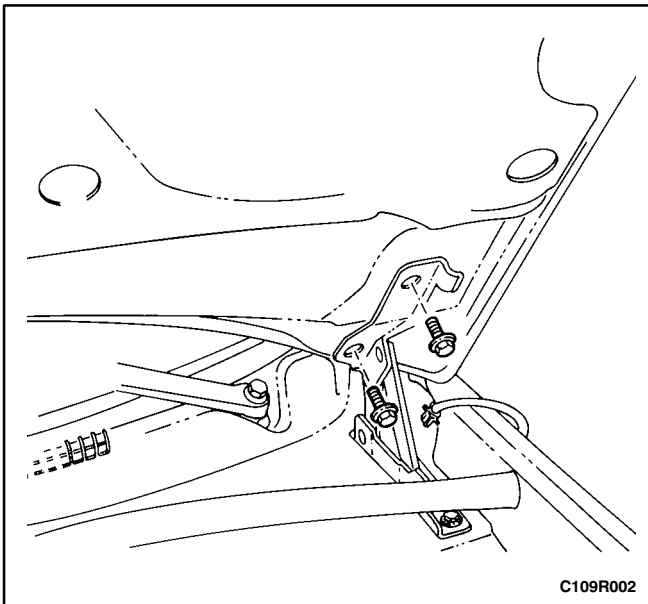
**Notice:** Dissimilar metals in direct contact with each other may corrode rapidly. Make sure to use the correct fasteners to prevent premature corrosion.

1. Install the two-piece grille and the cowl vent grille screws.

#### Tighten

Tighten the cowl vent grille screws to 3 N•m (26 lb-in).

2. Install the wiper arms. Refer to *Section 9D, Wipers/Washer System*.
3. Lower the hood.

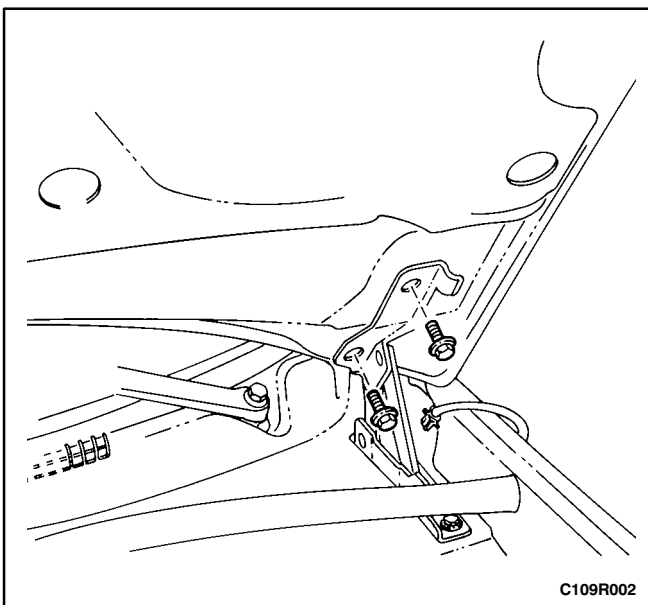


## HOOD

### Removal Procedure

**Important:** Install protective coverings over the fenders and the windshield in order to prevent damage to the paint, the glass and the moldings when you are removing and installing the hood.

1. Raise and support the hood.
2. Mark the position of the hinge to the hood in order to aid in alignment during installation.
3. Remove the washer hoses from the hood.
4. Remove the hood struts. Refer to "Hood Strut" in this section.
5. Remove the bolts retaining the hood to both hinges.
6. With the aid of another technician, remove the hood from the hinges.



### Installation Procedure

1. With the aid of another technician, position the hood in the location marked during removal.

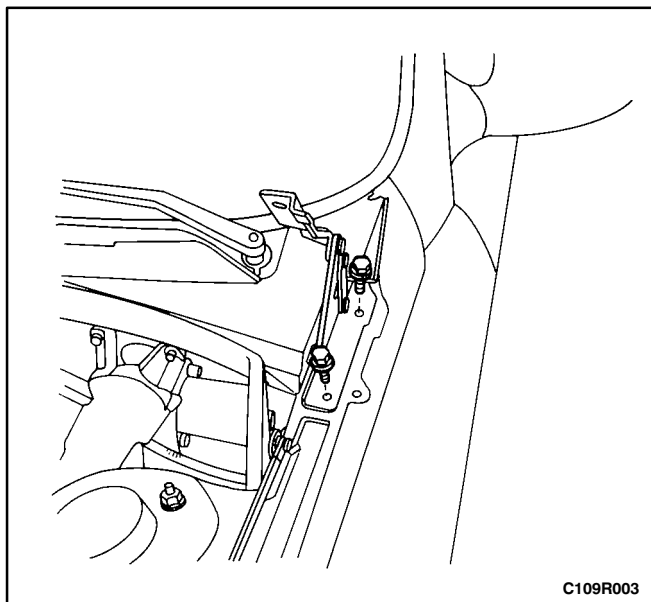
**Notice:** Dissimilar metals in direct contact with each other may corrode rapidly. Make sure to use the correct fasteners to prevent premature corrosion.

2. Install the two bolts securing the hood to each hinge.

#### Tighten

Tighten the hood-to-hinge bolts to 20 N•m (15 lb-ft).

3. Install the hood struts. Refer to "Hood Strut" in this section.
4. Inspect the hood for proper alignment.
5. Install the washer hoses to the hood.

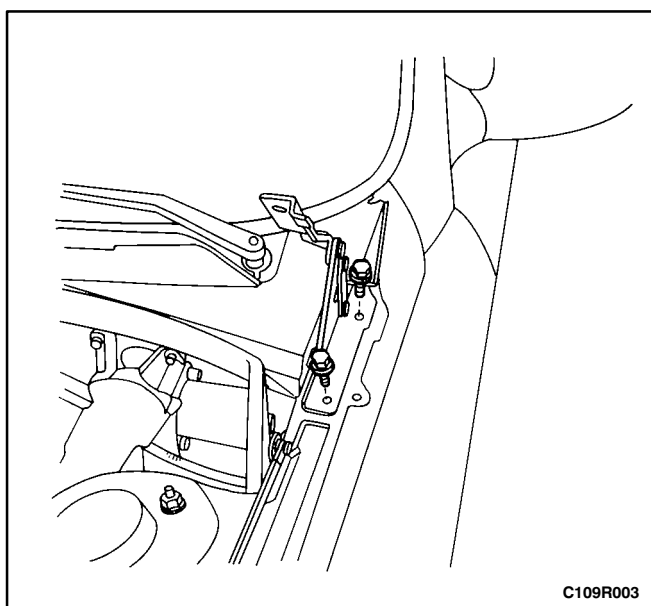


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## HOOD HINGES

### Removal Procedure

1. Remove the hood. Refer to "Hood" in this section.
2. Reposition the cowl vent grille weather strip.
3. Remove the bolts and the hinge.



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### Installation Procedure

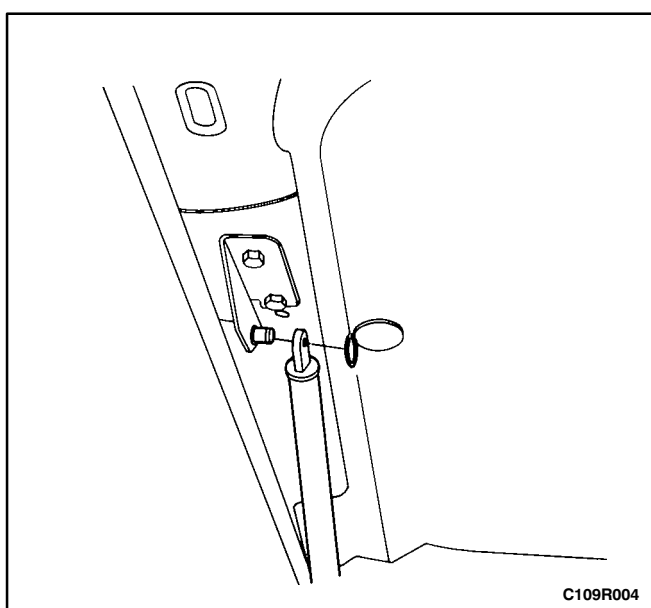
**Notice:** Dissimilar metals in direct contact with each other may corrode rapidly. Make sure to use the correct fasteners to prevent premature corrosion.

1. Install the hinge with the bolts.

#### Tighten

Tighten the hinge bolts to 20 N•m (15 lb-ft).

2. Reposition the cowl vent grille weatherstrip to its original position.
3. Install the hood. Refer to "Hood" in this section.

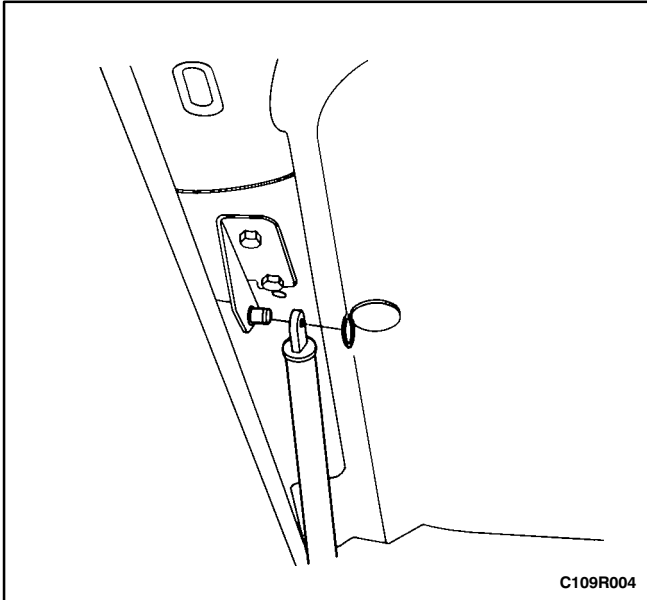


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## HOOD STRUT

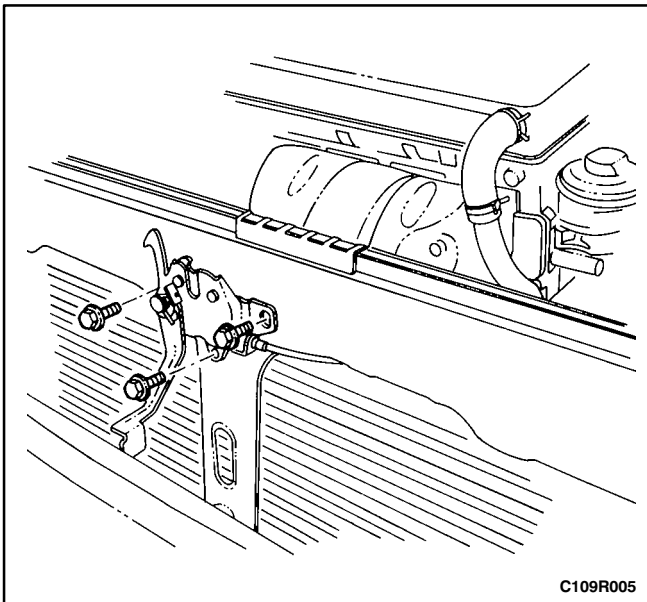
### Removal Procedure

1. Raise and support the hood.
2. Remove the retaining clips and the hood strut.



### Installation Procedure

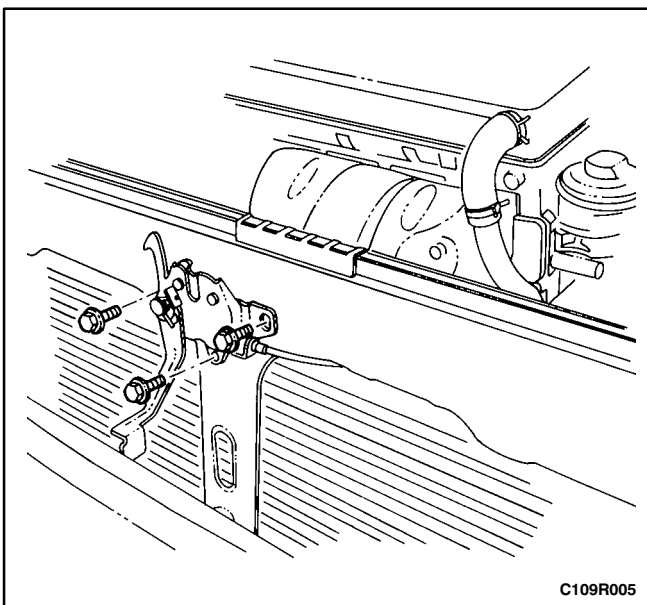
1. Install the retaining clips and the hood strut.
2. Close the hood.



## HOOD SECONDARY LATCH

### Removal Procedure

1. Open the hood.
2. Mark the position of the hood latch on the radiator support in order to aid in alignment during installation.
3. Remove the bolts and the hood latch.
4. Disconnect the hood release cable.



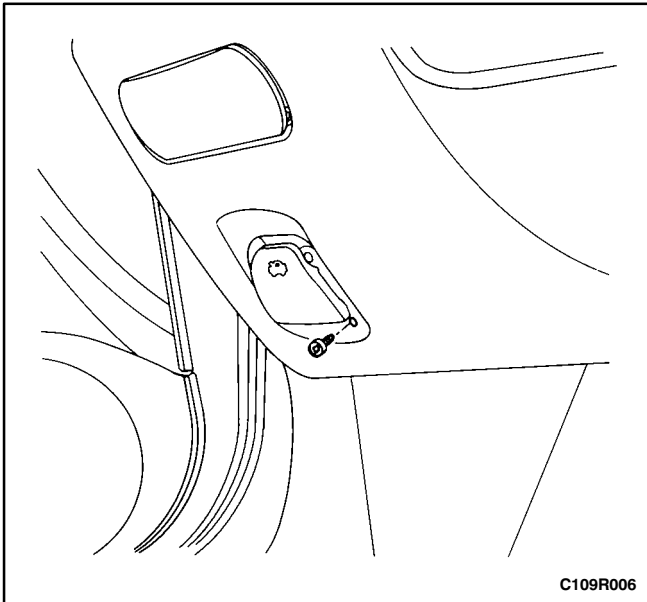
### Installation Procedure

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

1. Connect the hood release cable to the latch.
2. Position the hood latch in the location marked during removal.
3. Install the hood latch with the bolts.

### Tighten

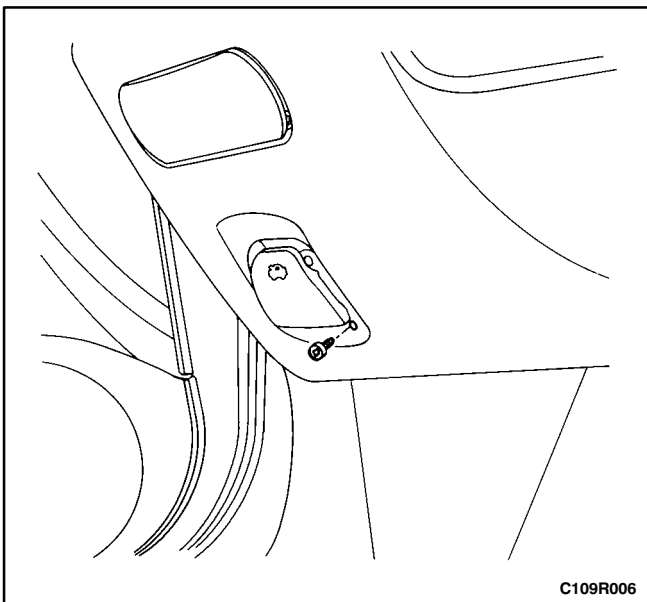
- Tighten the hood latch bolts to 10 N•m (89 lb-in).
4. Close the hood.



## HOOD LATCH RELEASE CABLE (Left-Hand Drive Shown, Right-Hand Drive Similar)

### Removal Procedure

1. Remove the hood release handle.
2. Remove the knee bolster and the hood release handle.
3. Remove the cable from the hood release handle.
4. Remove the hood secondary latch. Refer to "Hood Secondary Latch" in this section.
5. Remove the cable from the engine compartment.



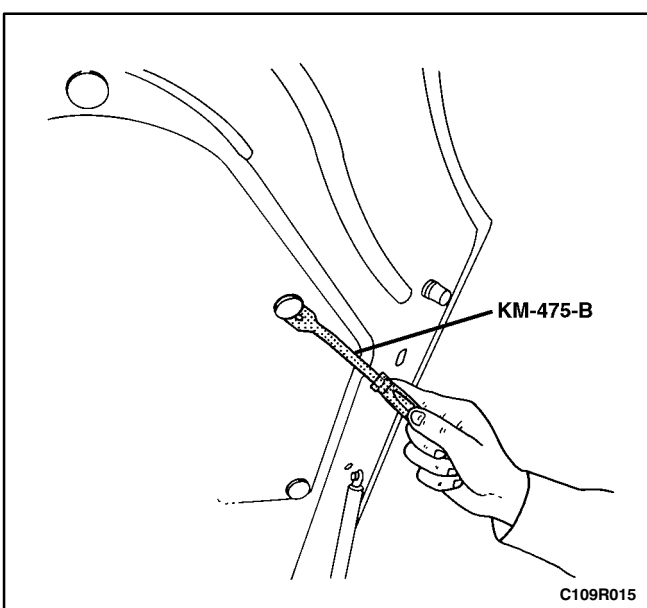
### Installation Procedure

**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 cable through the engine compartment.
2. Install the hood secondary latch. Refer to "Hood Secondary Latch" in this section.
3. Install the cable to the hood release handle.
4. Install the hood release handle and the knee bolster with the screw.

### Tighten

Tighten the hood release handle screw to 2.5 N•m (22 lb-in).



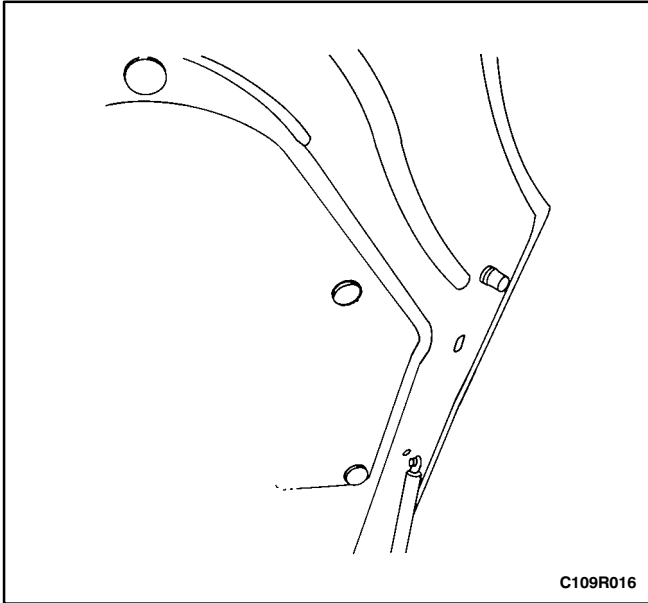
## HOOD INSULATION

### Tools Required

KM-475-B Trim Remover

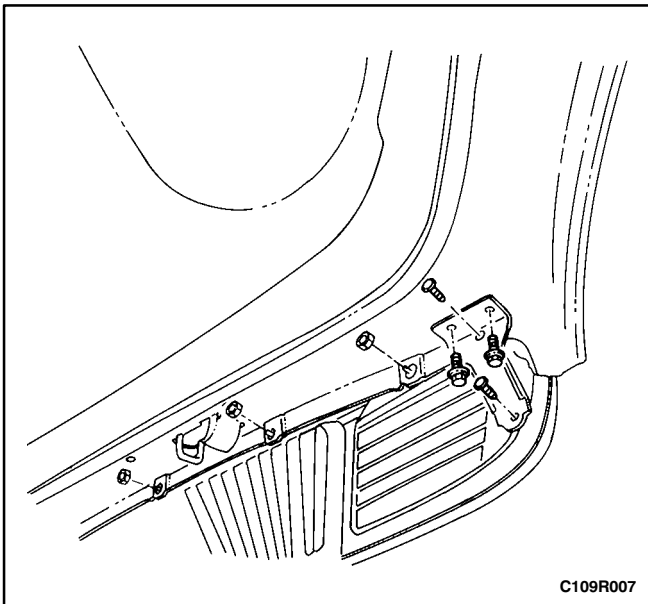
### Removal Procedure

1. Open the hood.
2. Remove the washer hose from the hood.
3. Remove the retaining clips using the trim remover KM-475-B.
4. Remove the hood insulation.



### Installation Procedure

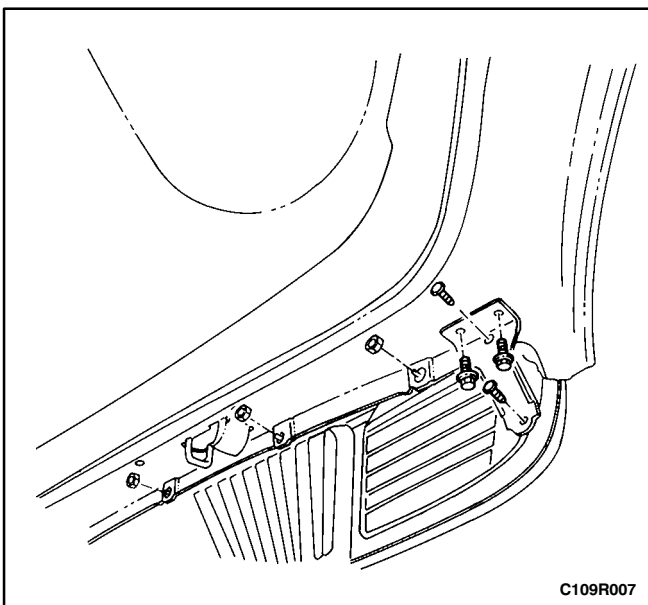
1. Install the hood insulation with the retaining clips.
2. Install the washer hose to the hood.
3. Close the hood.



### RADIATOR GRILLE

#### Removal Procedure

1. Open the hood.
2. Remove the screws, the bolts, and the radiator grille bracket.
3. Remove the nuts and the radiator grille.



#### 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 radiator grille with the nuts.

#### Tighten

Tighten the radiator grille nuts to 4 N•m (35 lb-in).

2. Install the radiator grille bracket with the screws and the bolts.

#### Tighten

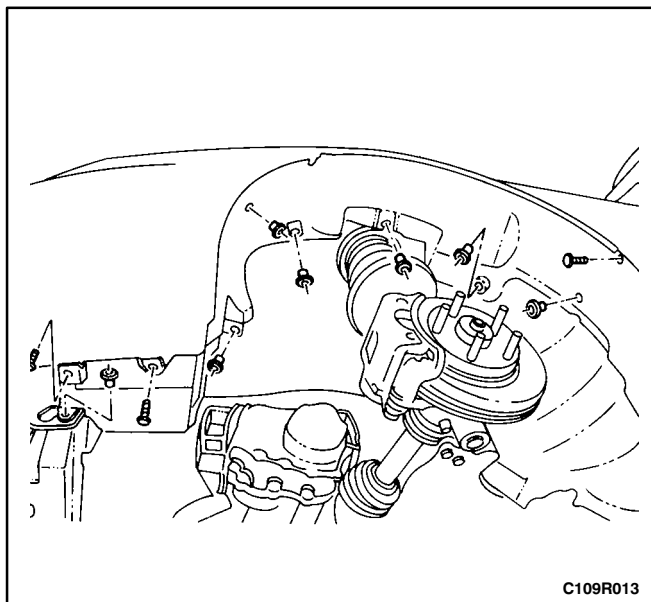
Tighten the radiator grille screws to 2 N•m (18 lb-in).

#### Tighten

Tighten the radiator grille bolts to 10 N•m (88 lb-in).

3. Close the hood.



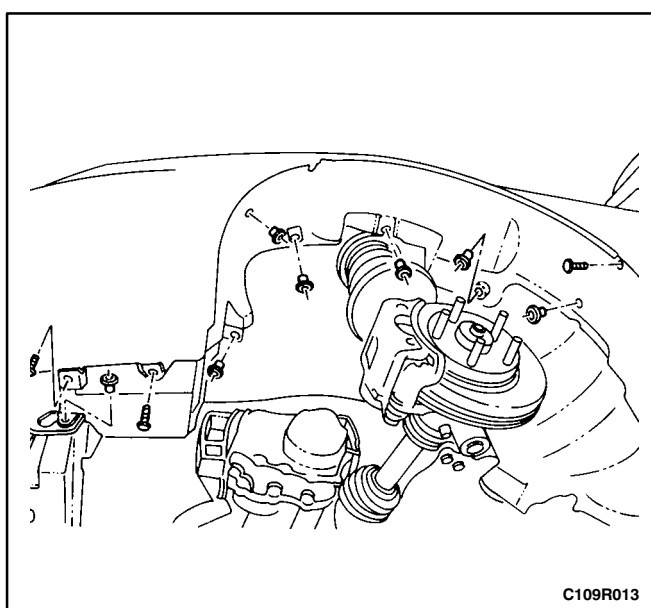


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## FRONT WHEEL WELL SPLASH SHIELD

### Removal Procedure

1. Raise and suitably support the vehicle.
2. Remove the front wheel. Refer to *Section 2E, Tires and Wheels*.
3. Remove the front mud guard. Refer to *Section 9M, Exterior Trim*.
4. Remove the screws and the front wheel well splash shield.



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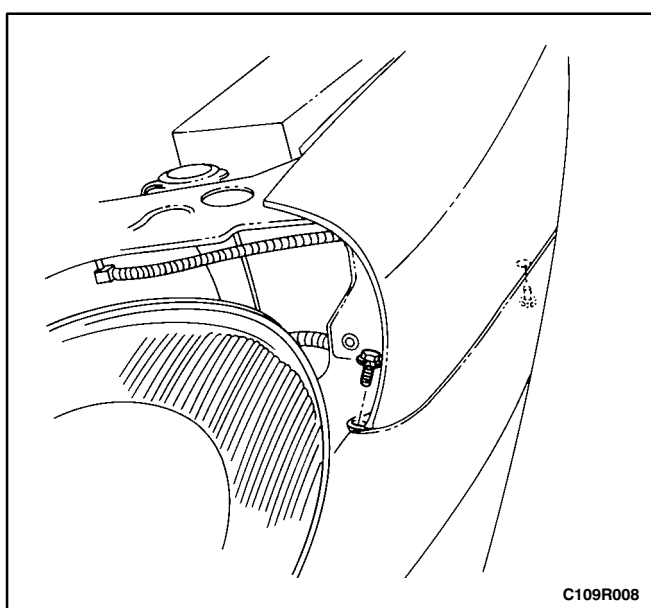
### Installation Procedure

1. Install the screws and the front wheel well splash shield.

#### Tighten

Tighten the front wheel well splash shield screws to 2 N•m (18 lb-in).

2. Install the front mud guard. Refer to *Section 9M, Exterior Trim*.
3. Install the front wheel. Refer to *Section 2E, Tires and Wheels*.
4. Lower the vehicle.

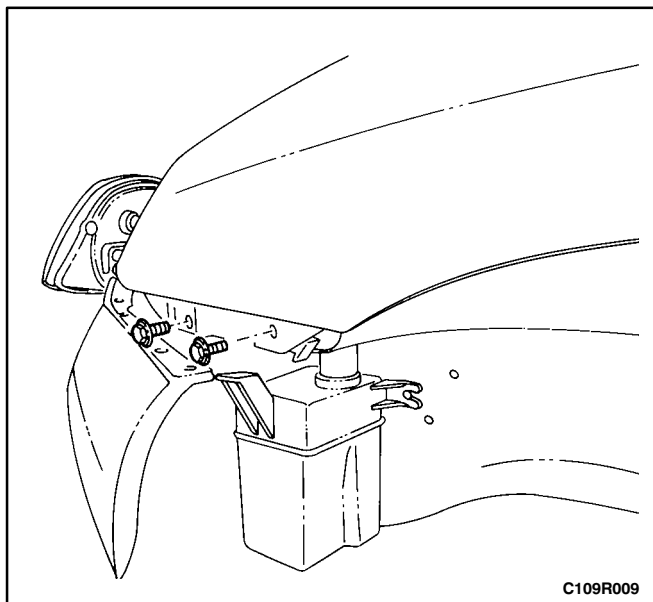


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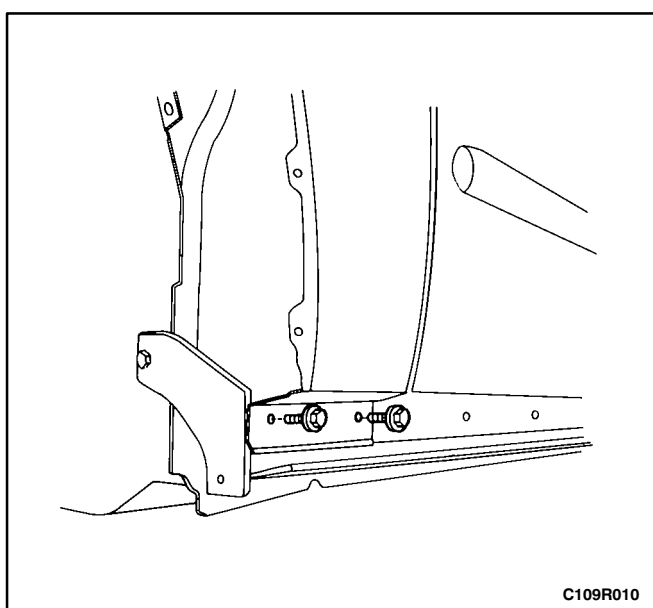
## FENDER

### Removal Procedure

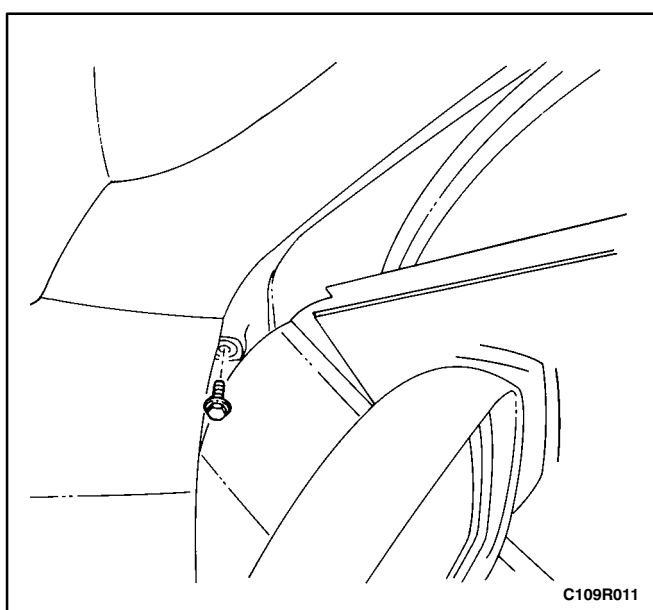
1. Remove the front wheel well splash shield. Refer to "Front Wheel Well Splash Shield" in this section.
2. Reposition the front headlamp.
3. Remove the bolts securing the front fascia to the fender.



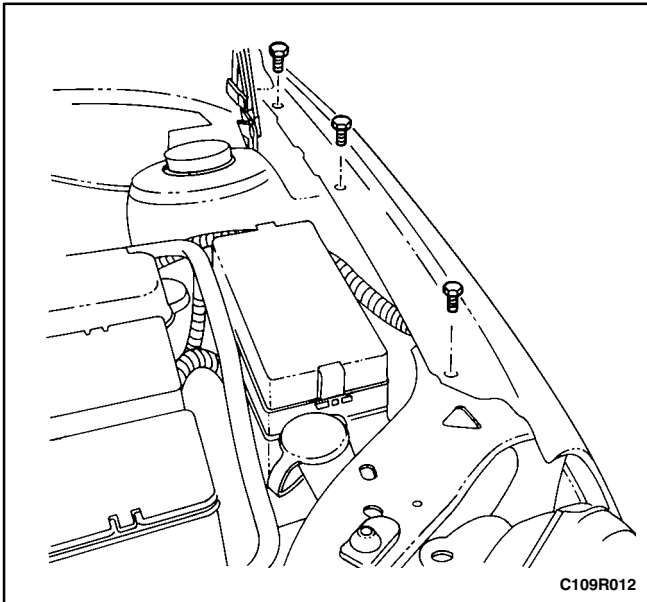
4. Reposition the front fascia.
5. Remove the fender bolts behind the front fascia.



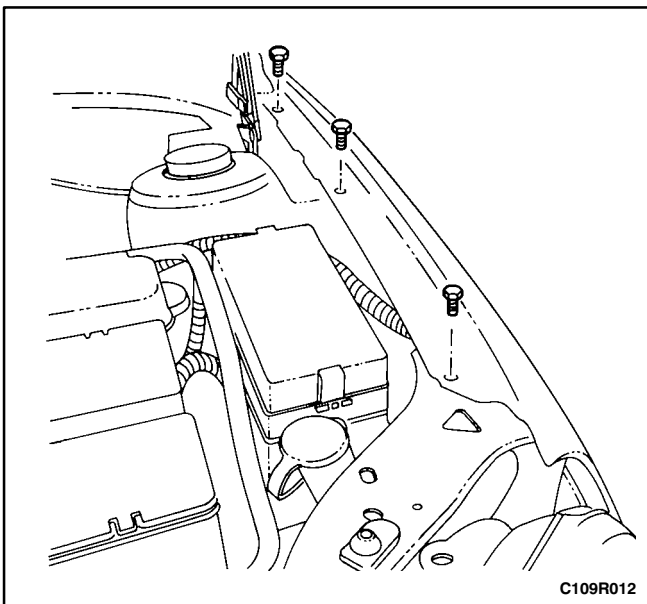
6. Remove the rocker panel molding. Refer to *Section 9M, Exterior Trim*.
7. Remove the bolts at the base of the fender.



8. Remove the side turn signal lamp. Refer to *Section 9B, Lighting Systems*.
9. Open the front door and remove the bolt at the base of the A-pillar.



10. Reposition the cowl vent grille weatherstrip.
11. Remove the upper fender bolts and the fender.



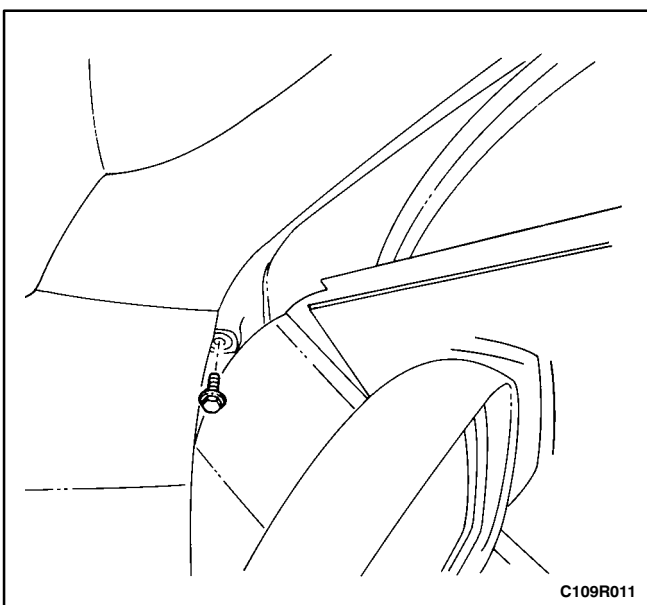
### Installation Procedure

**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 fender with the upper fender bolts.

#### Tighten

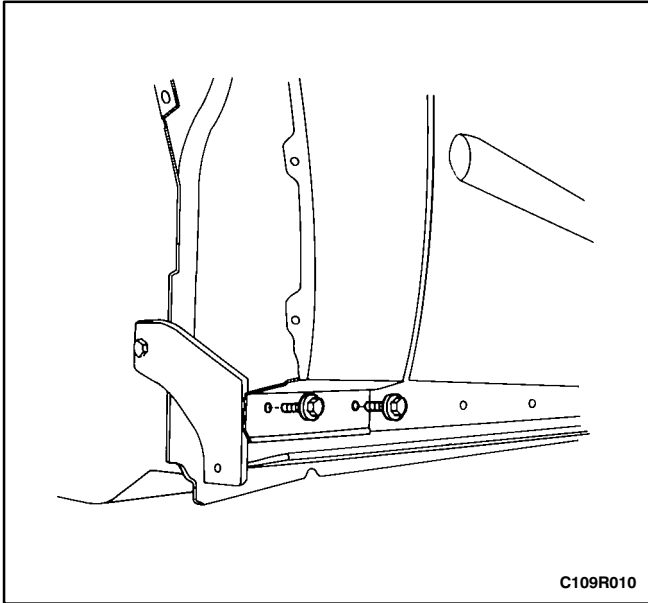
Tighten the upper fender bolts to 10 N•m (89 lb-in).



2. Reposition the cowl vent grille weatherstrip to its original position.
3. Install the bolt at the base of the A-pillar.

#### Tighten

Tighten the A-pillar fender bolt to 10 N•m (89 lb-in).

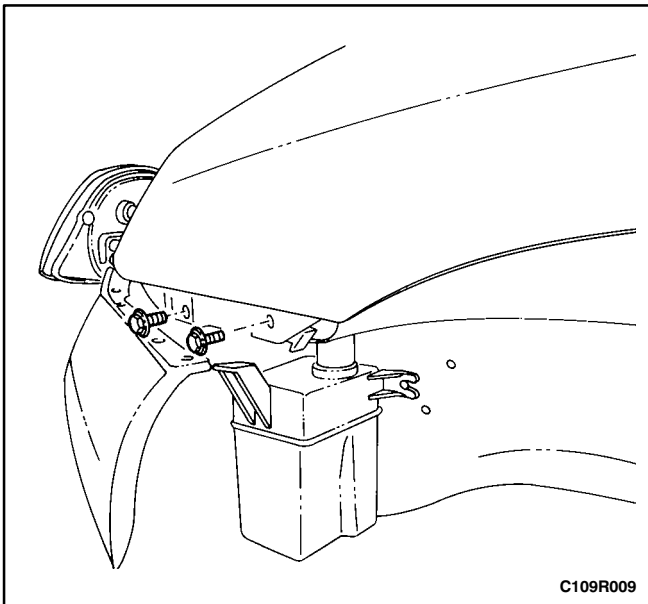


4. Install the side turn signal lamp. Refer to *Section 9B, Lighting Systems*.

5. Install the bolts at the base of the fender.

**Tighten**

Tighten the lower fender bolts to 10 N•m (89 lb-in).

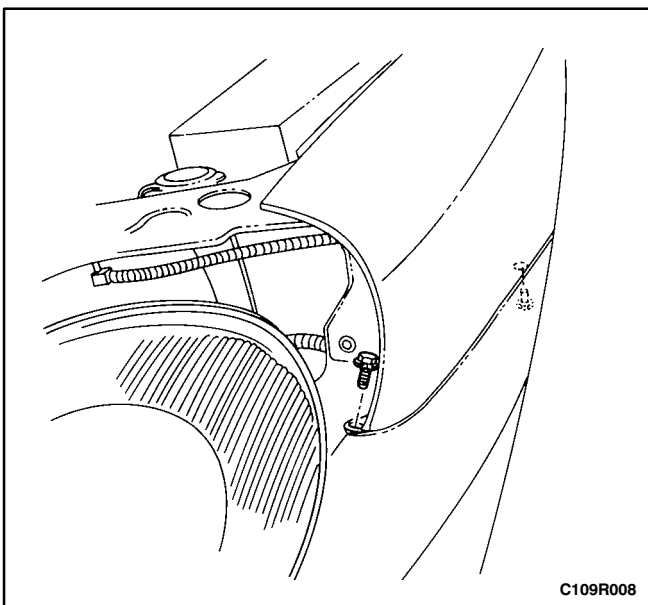


6. Install the rocker panel molding. Refer to *Section 9M, Exterior Trim*.

7. Install the front fender bolts behind the front fascia.

**Tighten**

Tighten the front fender bolts to 10 N•m (89 lb-in).



8. Install the front fascia to its original position.

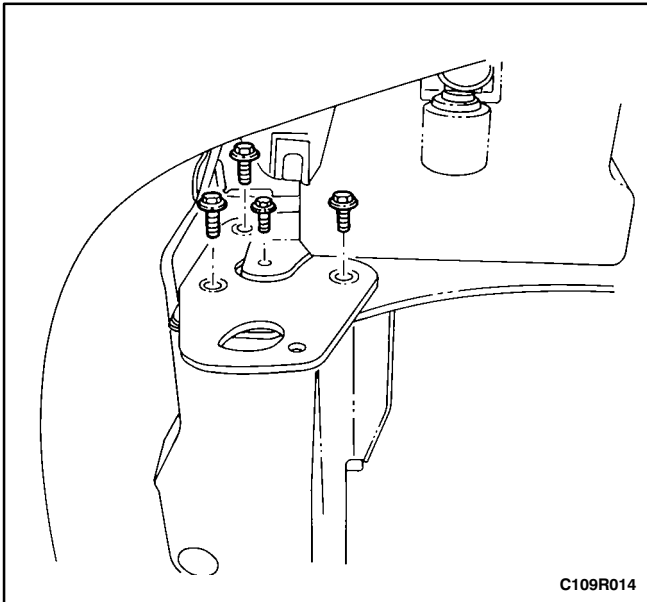
9. Install the bolts securing the front fascia to the fender.

**Tighten**

Tighten the front fascia-to-fender bolts to 2.5 N•m (22 lb-in).

10. Install the front headlamp to its original position.

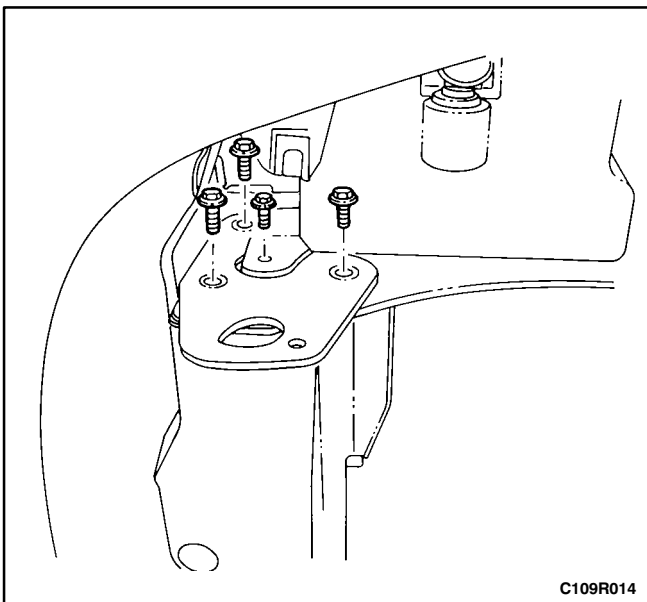
11. Install the front wheel well splash shield. Refer to "Front Wheel Well Splash Shield" in this section.



## TIE DOWN HOOKS

### Removal Procedure

1. Reposition the front portion of the front wheel well splash shield.
2. Remove the front washer reservoir bolt (driver side art), and the resonator bolt (passenger side).
3. Remove the bolts and the tie down hoods.



### 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 tie down hook with the bolts.

#### Tighten

Tighten the tie down hook bolts to 25 N•m (18 lb-ft).

2. Install the front washer reservoir bolt (driver side art).

#### Tighten

Tighten the washer reservoir bolt to 9 N•m (80 lb-in).

3. Install the resonator bolt (passenger side).

#### Tighten

Tighten the resonator bolt to 9 N•m (80 lb-in).

4. Install the front wheel well splash shield to its original position.

## **GENERAL DESCRIPTION AND SYSTEM OPERATION**

### **BODY FRONT END**

This vehicle has a unitized body with a frame assembly supporting the engine and the transaxle. The fender panels and the radiator support are also integral parts of the body.