

# SECTION : 1G

## ENGINE EXHAUST

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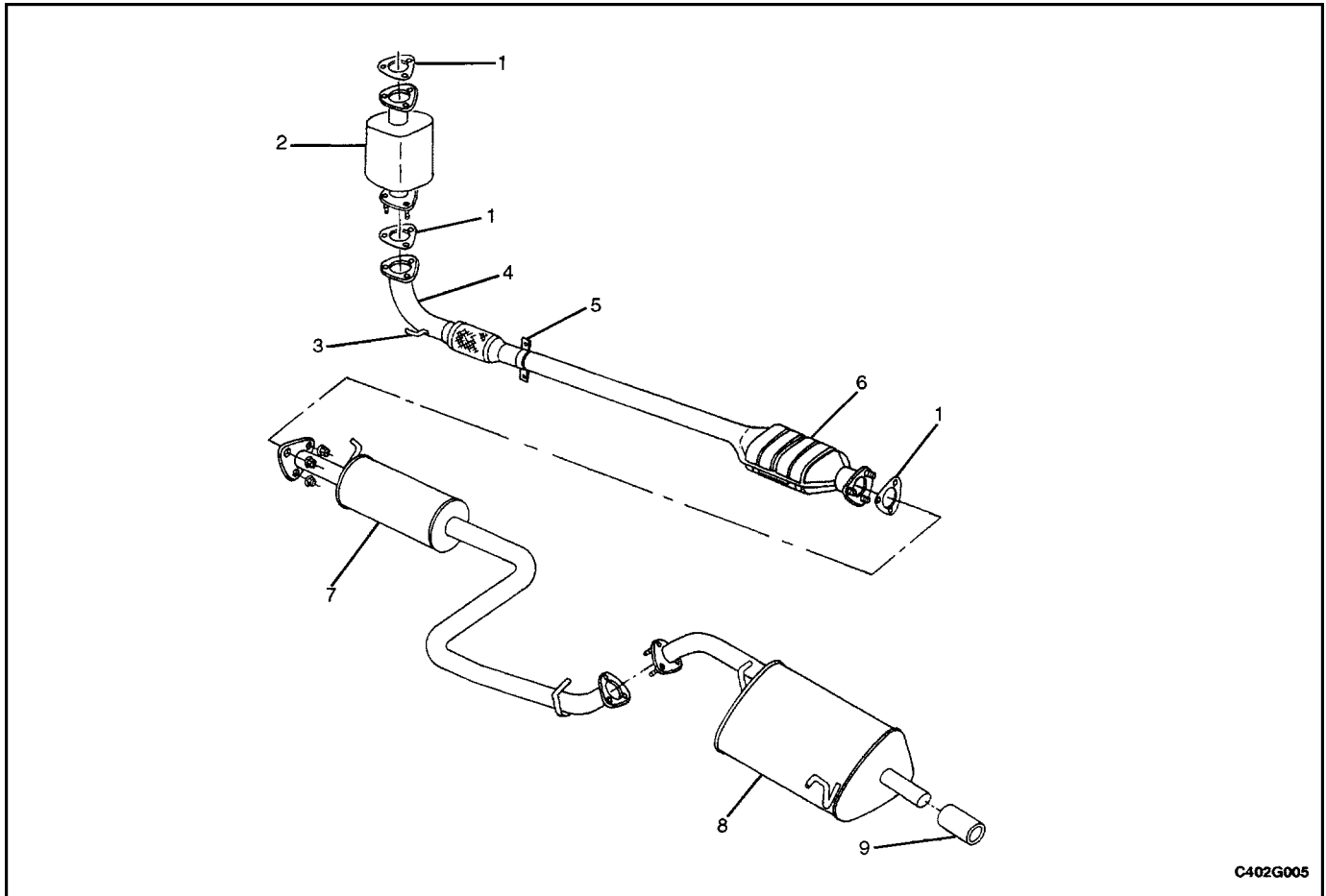
### SPECIFICATIONS

#### FASTENER TIGHTENING SPECIFICATIONS

Application	N•m	Lb–Ft	Lb–In
Auxiliary Catalytic Converter–to–Connecting Pipe Nuts	40	30	–
Auxiliary Catalytic Converter–to–Exhaust Manifold Nuts	40	30	–
Connecting Pipe Mounting Bracket Nuts	30	22	–
Exhaust Manifold Heat Shield Bolts	8	–	71
Front Muffler Pipe–to–Main Catalytic Converter Nuts	30	22	–
Front Muffler Pipe–to–Rear Muffler Pipe Nuts	30	22	–
Post–Converter Heated Oxygen Sensor	41	30	–
Rear Muffler Pipe–to–Exhaust Trim Ring Bolt	15	11	–

## COMPONENT LOCATOR

### EXHAUST SYSTEM



C402G005

- |  |                             |
|--|-----------------------------|
| 1. Metal Gasket                        | 6. Main Catalytic Converter |
| 2. Auxiliary Catalytic Converter       | 7. Front Muffler            |
| 3. Post-Converter Heated Oxygen Sensor | 8. Rear Muffler             |
| 4. Connecting Pipe                     | 9. Trim Ring                |
| 5. Mounting Bracket                    |                             |

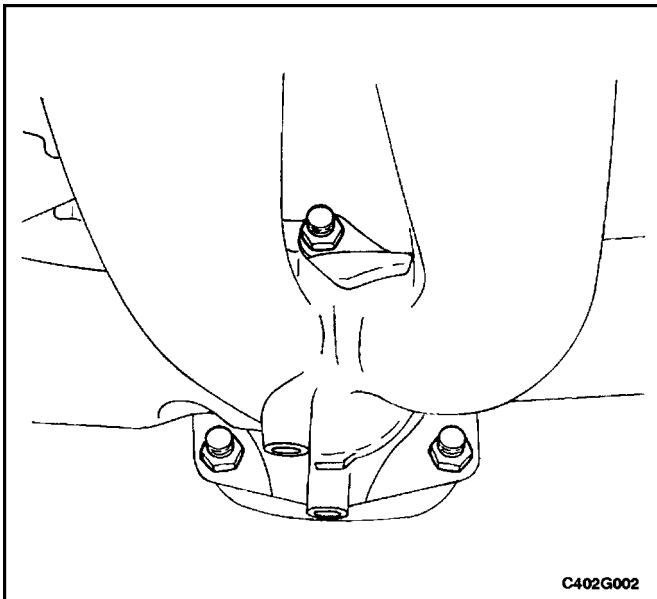
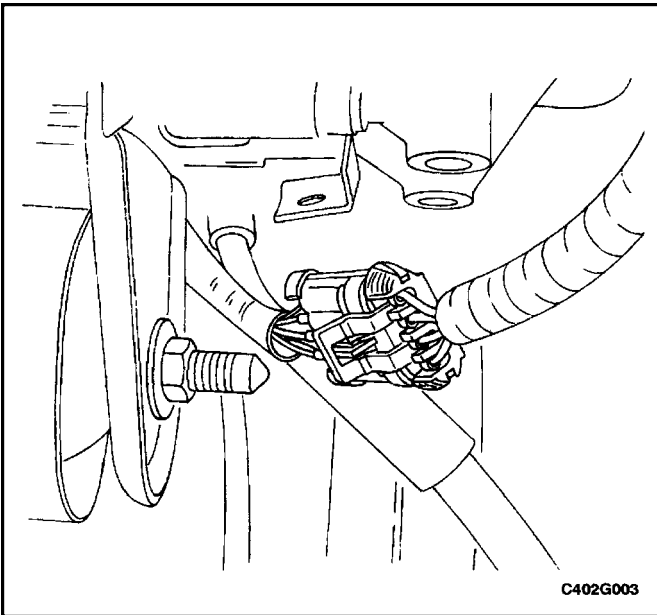
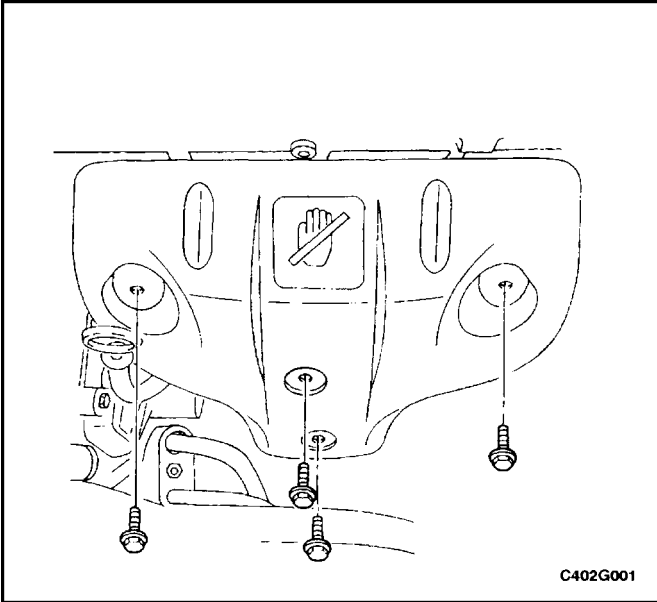
## MAINTENANCE AND REPAIR

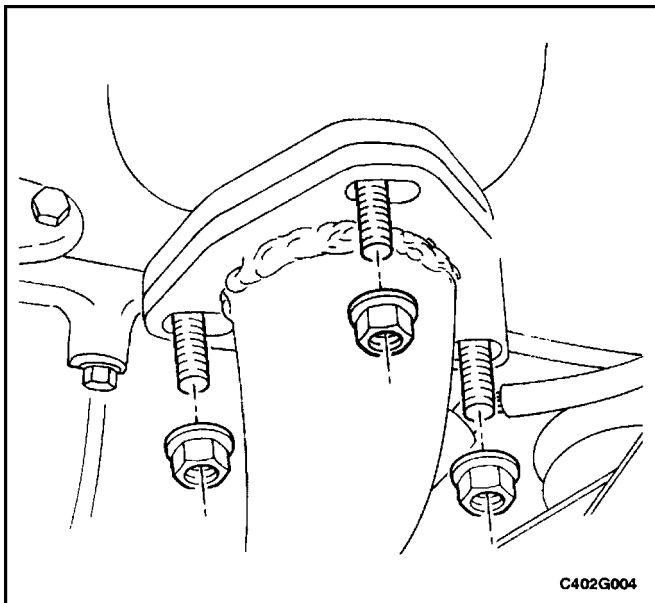
### ON-VEHICLE SERVICE

### AUXILIARY CATALYTIC CONVERTER

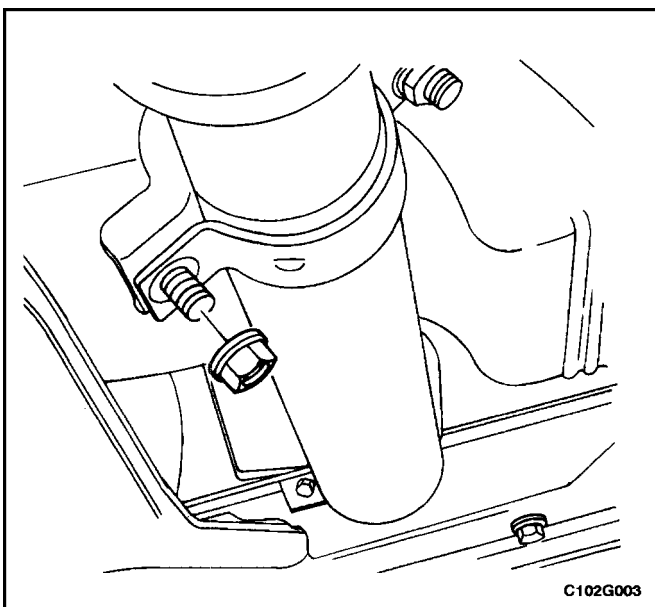
#### Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the exhaust manifold heat shield bolts and the heat shield.
3. Disconnect the post-converter heated oxygen sensor electrical connector.
4. Remove the auxiliary catalytic converter upper flange bolts.

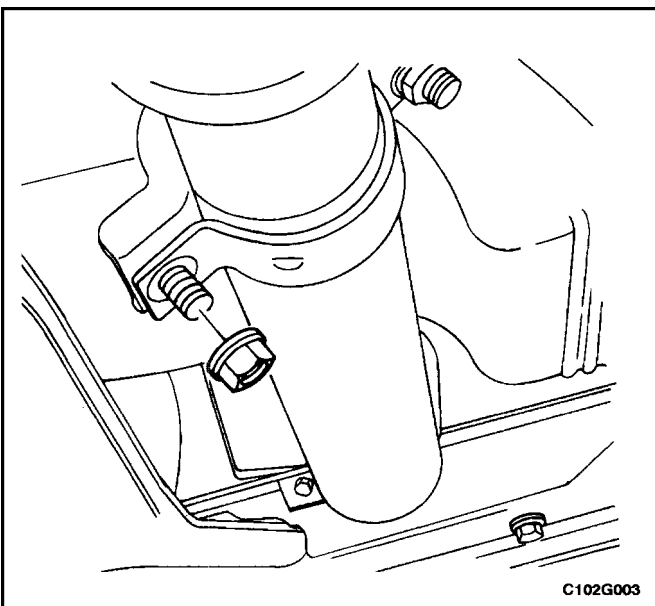




5. Raise and suitably support the vehicle.
6. Remove the splash guard. Refer to *Section 9N, Frame and Underbody*.
7. Remove the auxiliary catalytic converter lower flange bolts.



8. Remove the connecting pipe mounting bracket bolts and bracket.
9. Remove the auxiliary catalytic converter.

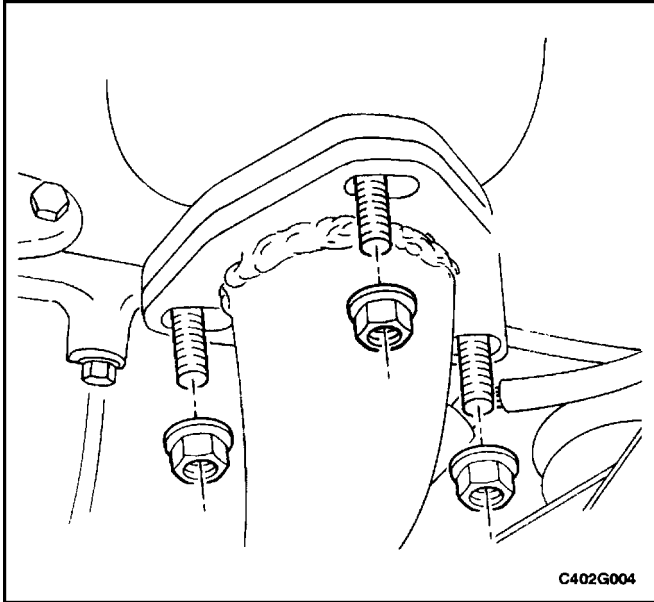


### Installation Procedure

1. Fit the auxiliary catalytic converter onto the connecting pipe, raise the connecting pipe, and install the connecting pipe mounting bracket nuts and bracket.

#### **Tighten**

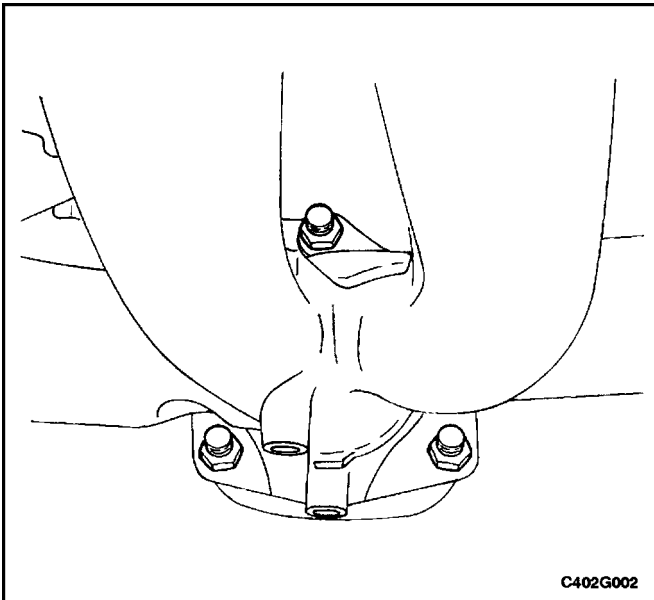
Tighten the connecting pipe mounting bracket nuts to 30 N•m (22 lb–ft).



2. Install the auxiliary catalytic converter lower flange bolts.

**Tighten**

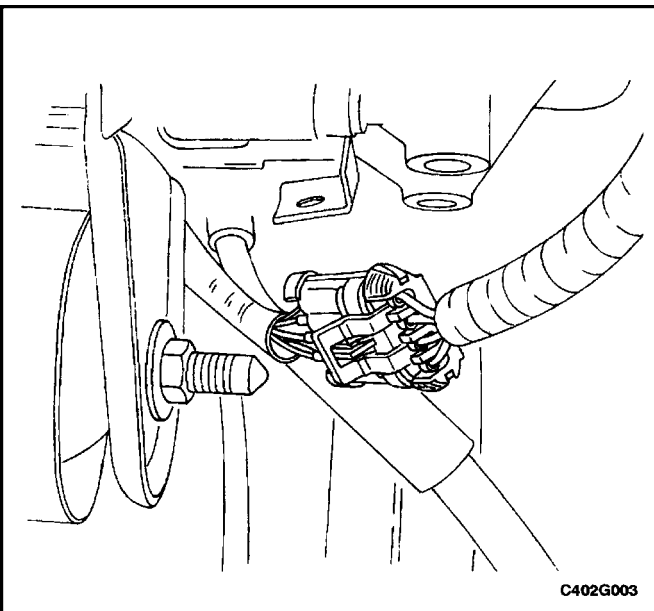
Tighten the auxiliary catalytic converter-to-connecting pipe nuts to 40 N•m (30 lb–ft).



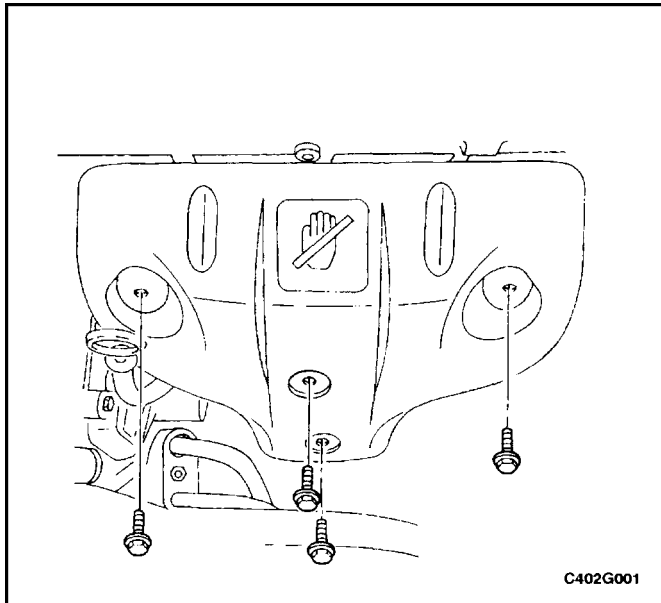
3. Install the splash guard. Refer to *Section 9N, Frame and Underbody*.
4. Lower the vehicle.
5. Install the auxiliary catalytic converter upper flange bolts.

**Tighten**

Tighten the auxiliary catalytic converter-to-exhaust manifold nuts to 40 N•m (30 lb–ft).



6. Connect the post-converter heated oxygen sensor electrical connector.

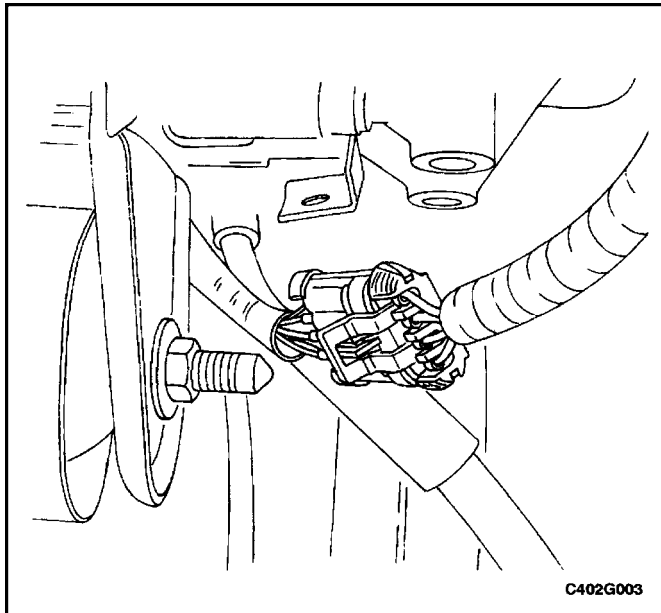


7. Install the exhaust manifold heat shield and heat shield bolts.

### **Tighten**

Tighten the exhaust manifold heat shield bolts to 8 N•m (71 lb-in).

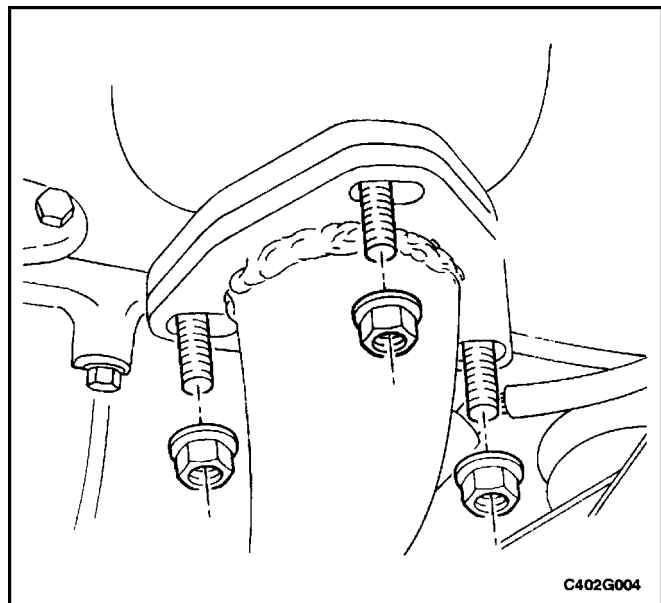
8. Connect the negative battery cable.



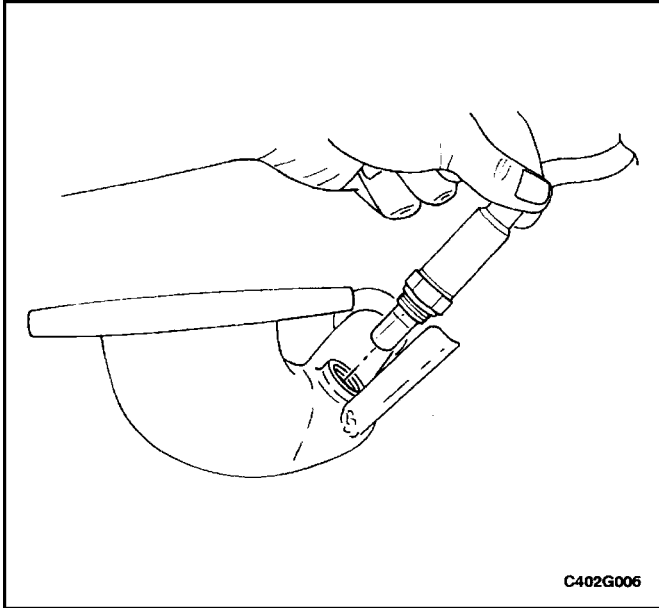
## **MAIN CATALYTIC CONVERTER**

### **Removal Procedure**

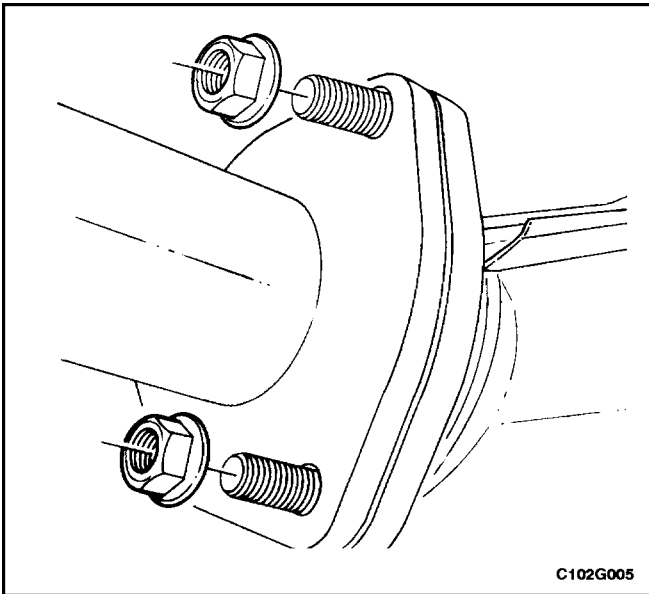
1. Disconnect the negative battery cable.
2. Disconnect the post-converter heated oxygen sensor electrical connection.



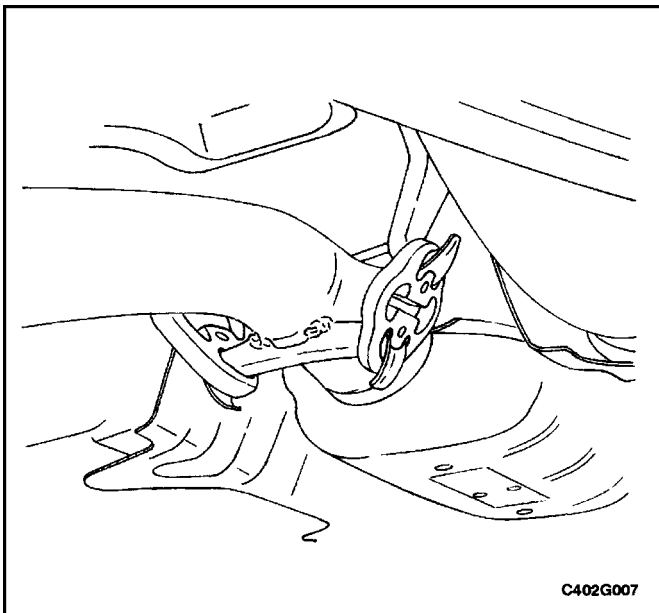
3. Raise and suitably support the vehicle.
4. Remove the front wheel well splash shield. Refer to *Section 9N, Frame and Underbody*.
5. Remove the auxiliary catalytic converter lower flange nuts.



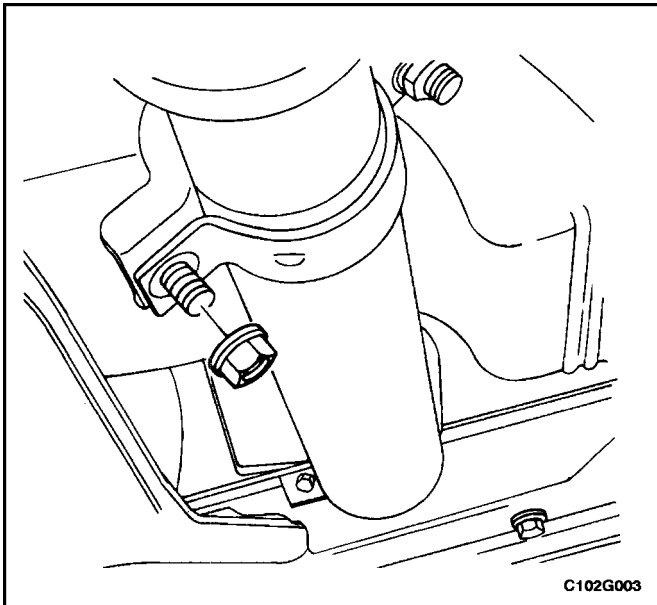
6. Remove the post-converter heated oxygen sensor.



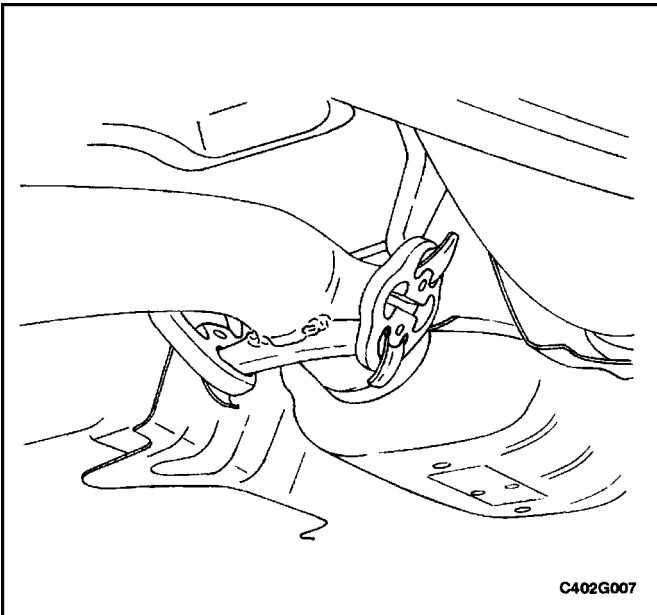
7. Remove the nuts that secure the front muffler pipe to the main catalytic converter.



8. Remove the rubber hangers that attach the connecting pipe to the vehicle.

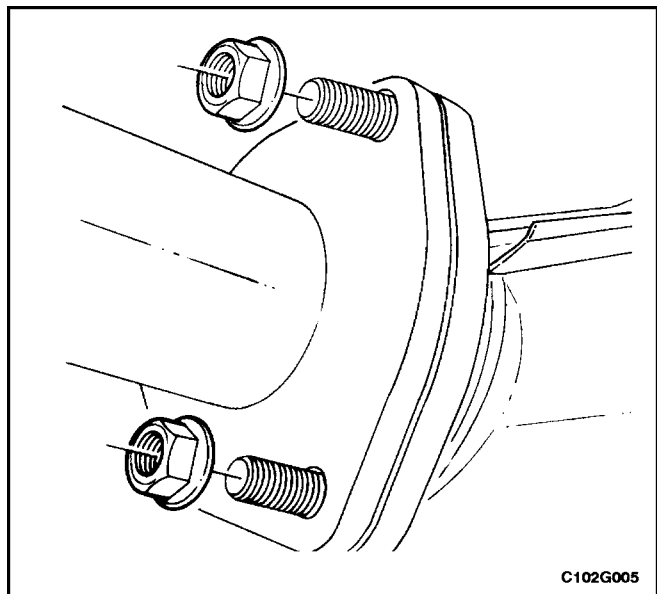


9. Remove the connecting pipe mounting bracket nuts and the bracket.
10. Remove the main catalytic converter and connecting pipe.



### Installation Procedure

1. Insert the main catalytic converter bolts into the front muffler flange and install the rubber hangers that attach the connecting pipe to the vehicle.

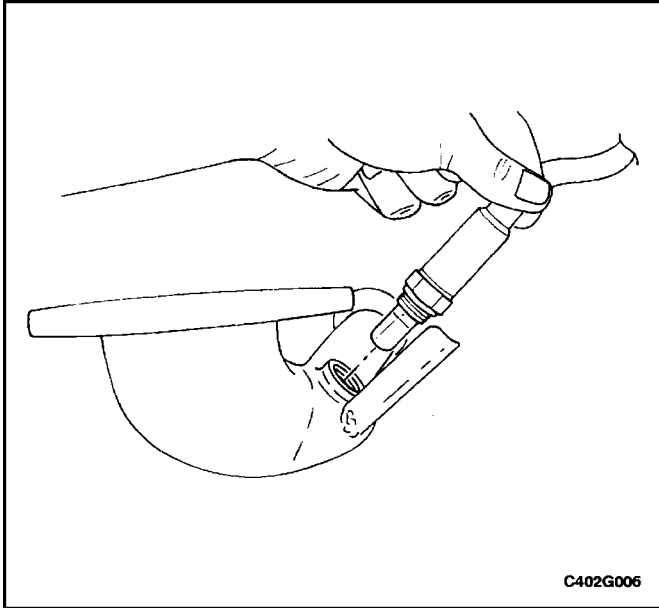


2. Install the nuts to secure the front muffler pipe to the main catalytic converter.

### Tighten

Tighten the front muffler pipe-to-main catalytic converter nuts to 30 N•m (22 lb–ft).

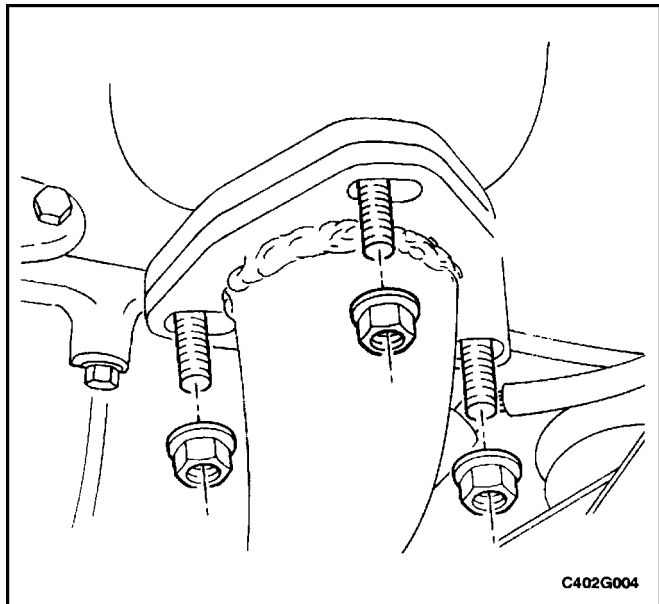




3. Install the post-converter heated oxygen sensor.

**Tighten**

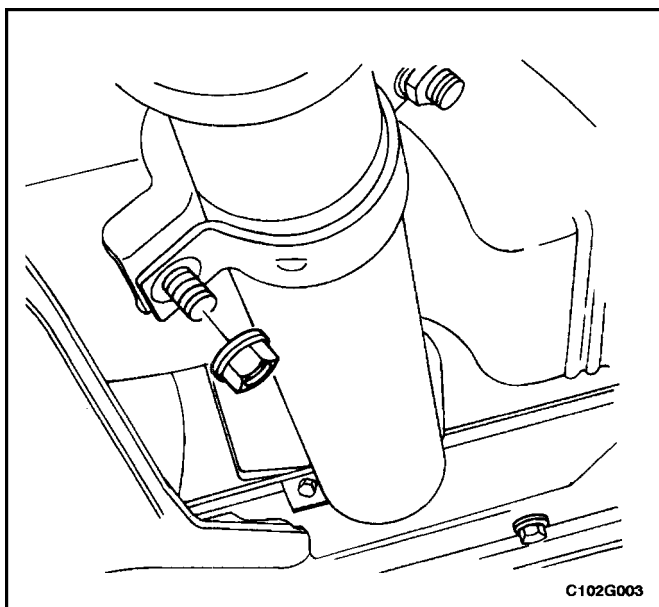
Tighten the post-converter heated oxygen sensor to 41 N•m (30 lb–ft).



4. Install the auxiliary catalytic converter lower flange bolts.

**Tighten**

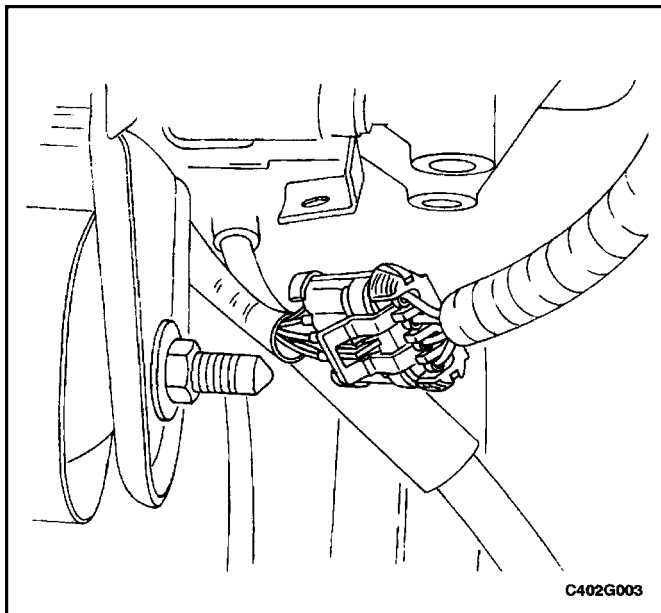
Tighten the auxiliary catalytic converter-to-connecting pipe nuts to 40 N•m (30 lb–ft).



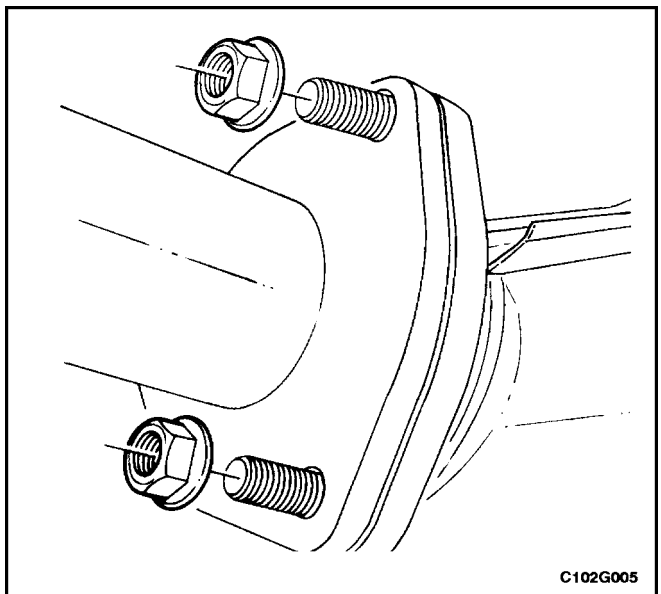
5. Install the connecting pipe mounting bracket and the nuts.

**Tighten**

Tighten the connecting pipe mounting bracket nuts to 30 N•m (22 lb–ft).



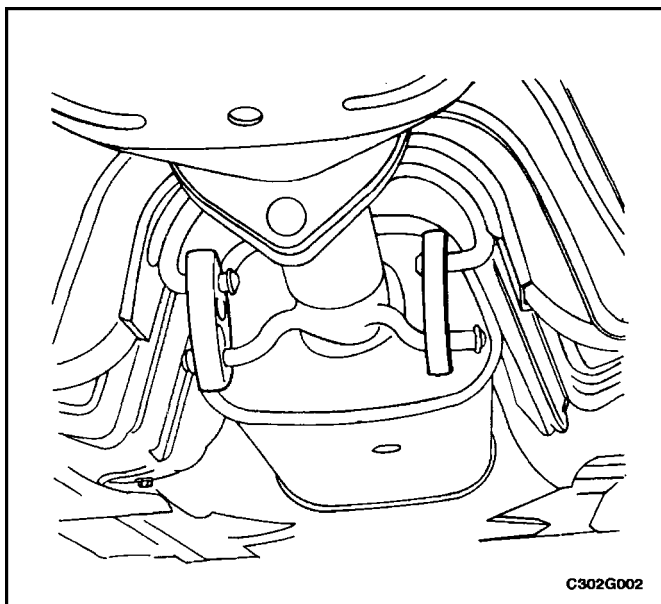
6. Install the front wheel well splash shield. Refer to *Section 9N, Frame and Underbody*.
7. Lower the vehicle.
8. Connect the post-converter heated oxygen sensor electrical connector.
9. Connect the negative battery cable.



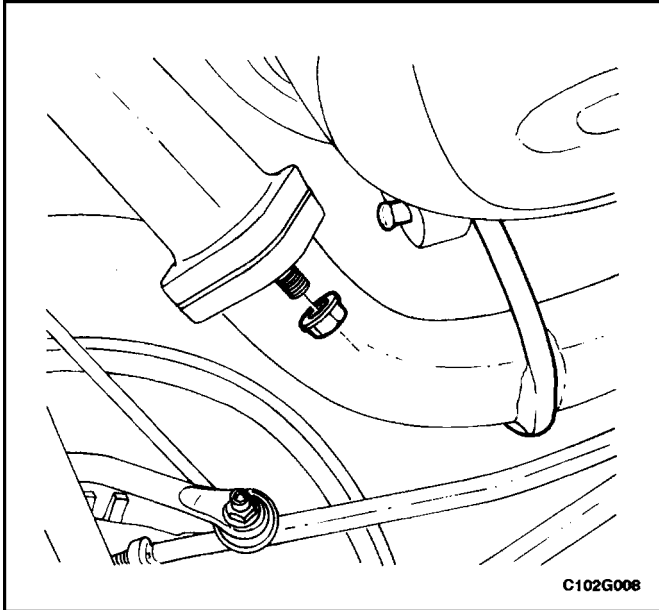
### MUFFLER – FRONT

#### Removal Procedure

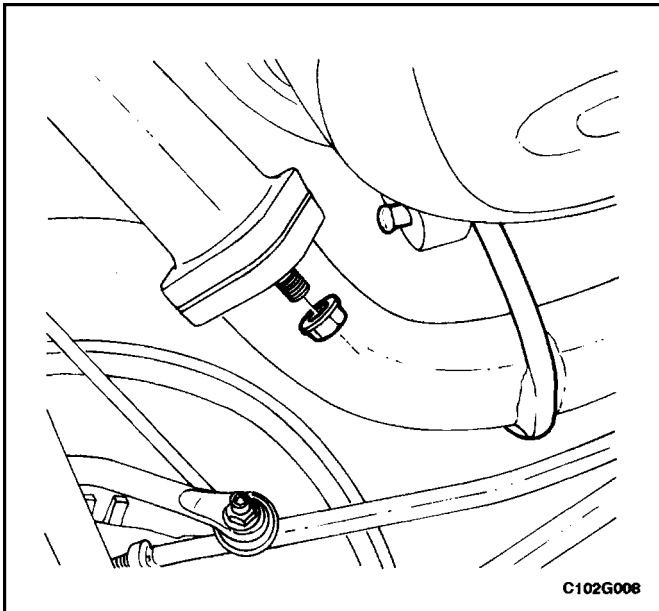
1. Remove the nuts that secure the front muffler pipe to the main catalytic converter flange.
2. Remove the gasket.



3. Remove the front muffler from the rubber hangers.



4. Remove the nuts that secure the front muffler pipe flange to the rear muffler pipe flange.
5. Remove the gasket from between the front muffler pipe flange and the rear muffler pipe flange.
6. Disconnect the front muffler pipe from the rubber hanger.
7. Remove the front muffler pipe.
8. Check the exhaust pipe and the front muffler pipe for holes, damage, open seams, or other deterioration which could permit exhaust fumes to seep into the passenger compartment or the trunk.

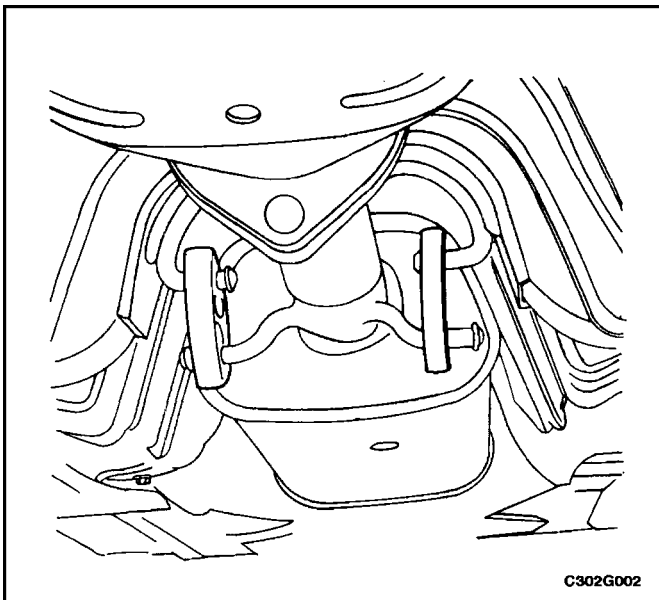


### Installation Procedure

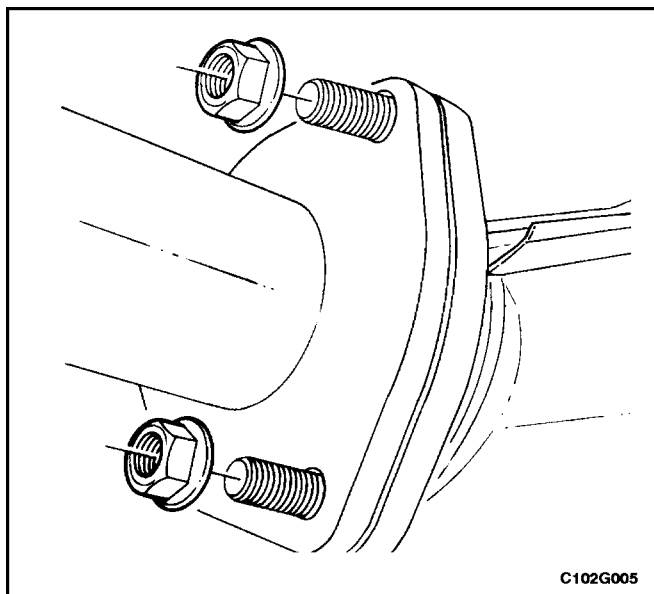
1. Install the front muffler pipe to the rubber hanger.
2. Install the gasket to the front muffler pipe.
3. Install the front muffler pipe to the rear muffler pipe with the nuts.

#### Tighten

Tighten the front muffler pipe-to-rear muffler pipe nuts to 30 N•m (22 lb-ft).



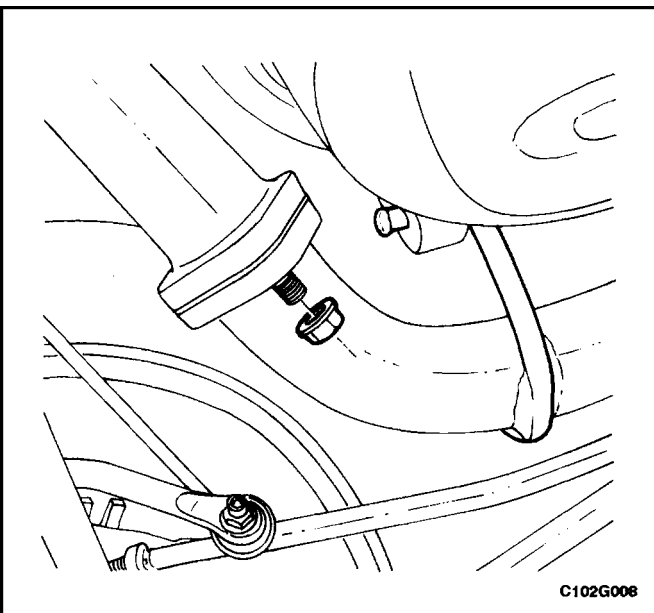
4. Install the front muffler assembly to the rubber hangers.
5. Install the front muffler pipe to the main catalytic converter flange.



6. Install the nuts to secure the front muffler pipe to the main catalytic converter.

### **Tighten**

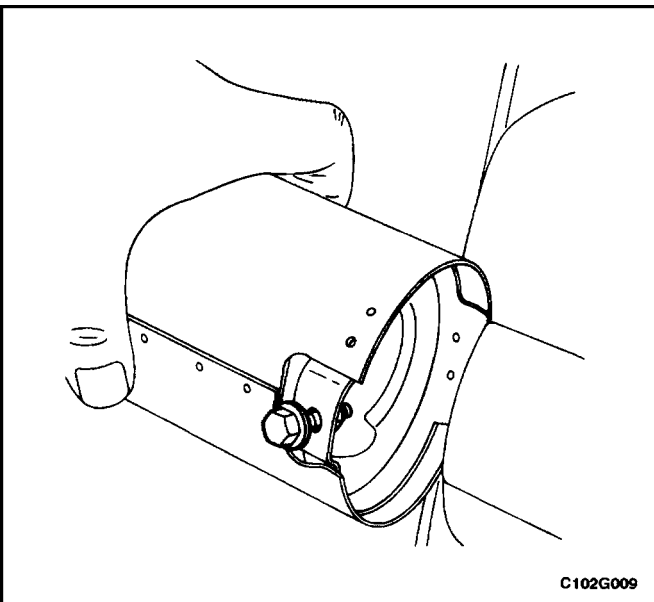
Tighten the front muffler pipe-to-main catalytic converter nuts to 30 N•m (22 lb-ft).



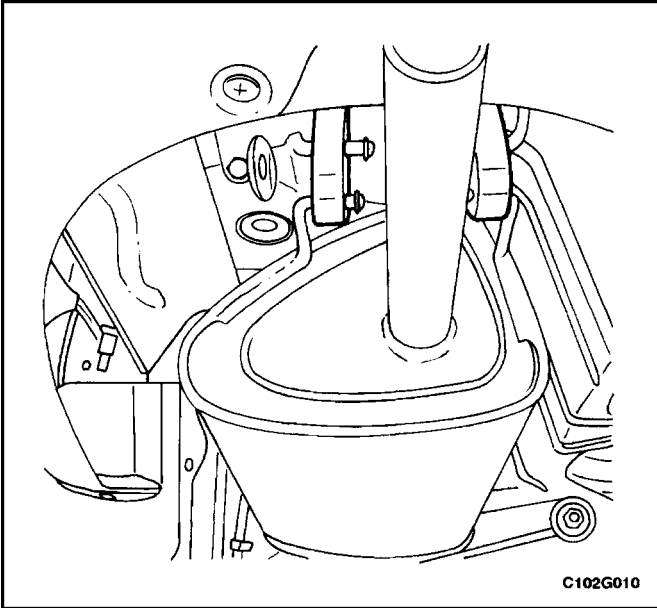
## **MUFFLER – REAR**

### **Removal Procedure**

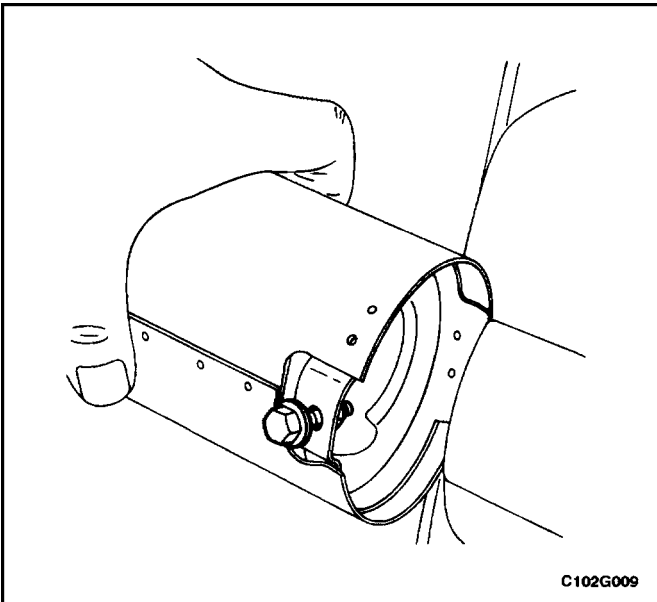
1. Remove the nuts that attach the rear muffler pipe flange to the front muffler pipe flange.
2. Remove the gasket from between the rear muffler pipe flange and the front muffler pipe flange.



3. Loosen the bolt that secures the trim ring to the rear muffler pipe.
4. Remove the trim ring.



5. Detach the rear muffler from the rubber hangers on the tail pipe end of the rear muffler assembly.
6. Remove the rear muffler assembly.
7. Check the rear muffler and the pipes for holes, damage, open seams, and other deterioration which could permit exhaust fumes to seep into the passenger compartment or the trunk.

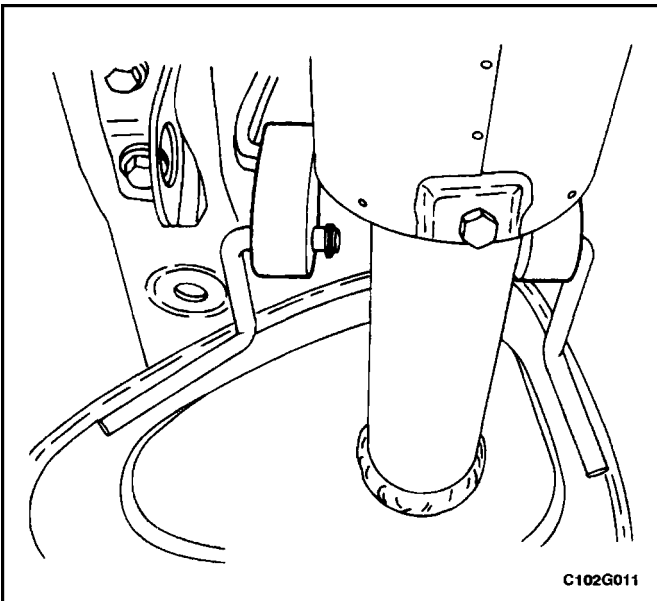


### Installation Procedure

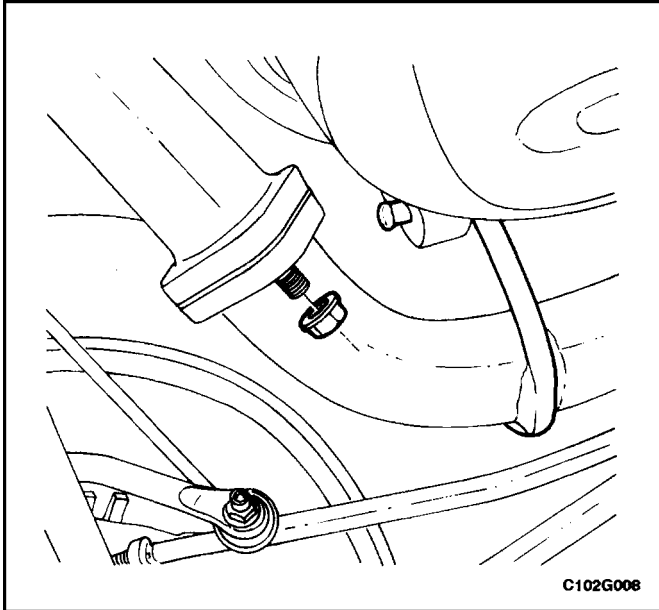
1. Place the exhaust tail pipe trim ring on the rear muffler pipe.
2. Secure the exhaust pipe trim ring on the rear muffler pipe with the bolt.

#### **Tighten**

Tighten the rear muffler pipe-to-exhaust trim ring bolt to 15 N•m (11 lb-ft).



3. Install the rear muffler assembly on the rubber hangers.



4. Install the gasket between the rear muffler pipe flange and the front muffler pipe flange.
5. Install the front muffler pipe to the rear muffler pipe with the nuts.

### **Tighten**

Tighten the front muffler pipe-to-rear muffler pipe nuts to 30 N•m (22 lb–ft).

# GENERAL DESCRIPTION AND SYSTEM OPERATION

## EXHAUST SYSTEM

**Notice :** When you are inspecting or replacing exhaust system components, make sure there is adequate clearance from all points on the underbody to avoid possible overheating of the floor pan and possible damage to the passenger compartment insulation and trim materials.

Check the complete exhaust system and the nearby body areas and trunk lid for broken, damaged, missing or mispositioned parts, open seams, holes, loose connections, or other deterioration which could permit exhaust fumes to seep into the trunk or passenger compartment. Dust or water in the trunk may be an indication of a problem in one of these areas. Any defects should be corrected immediately.

## MUFFLER

Aside from the exhaust manifold connection, the exhaust system uses a flange and seal joint design rather than a slip joint coupling design with clamp and U-bolts. If holes, open seams, or any deterioration is discovered upon in-

spection of the front muffler and pipe assembly, the complete assembly should be replaced. The same procedure is applicable to the rear muffler assembly.

Heat shields for the front and rear muffler assembly and the main catalytic converter protect the vehicle and the environment from the high temperatures that the exhaust system develops.

## CATALYTIC CONVERTERS

**Notice :** When jacking or lifting the vehicle from the body side rails, be certain that the lift pads do not contact the main catalytic converter, as this could damage the main catalytic converter.

**Notice :** Use of anything other than unleaded fuel will damage the catalyst in the catalytic converter.

The catalytic converters are emission-control devices added to the exhaust system to reduce pollutants from the exhaust pipes.

The oxidation catalyst is coated with a catalytic material containing platinum and palladium, which reduces levels of hydrocarbon (HC) and carbon monoxide (CO) from the exhaust gas. The three-way catalyst has coatings which contain platinum and rhodium, which additionally lower the levels of oxides of nitrogen (NOx).