

# SECTION : 1G

## ENGINE EXHAUST

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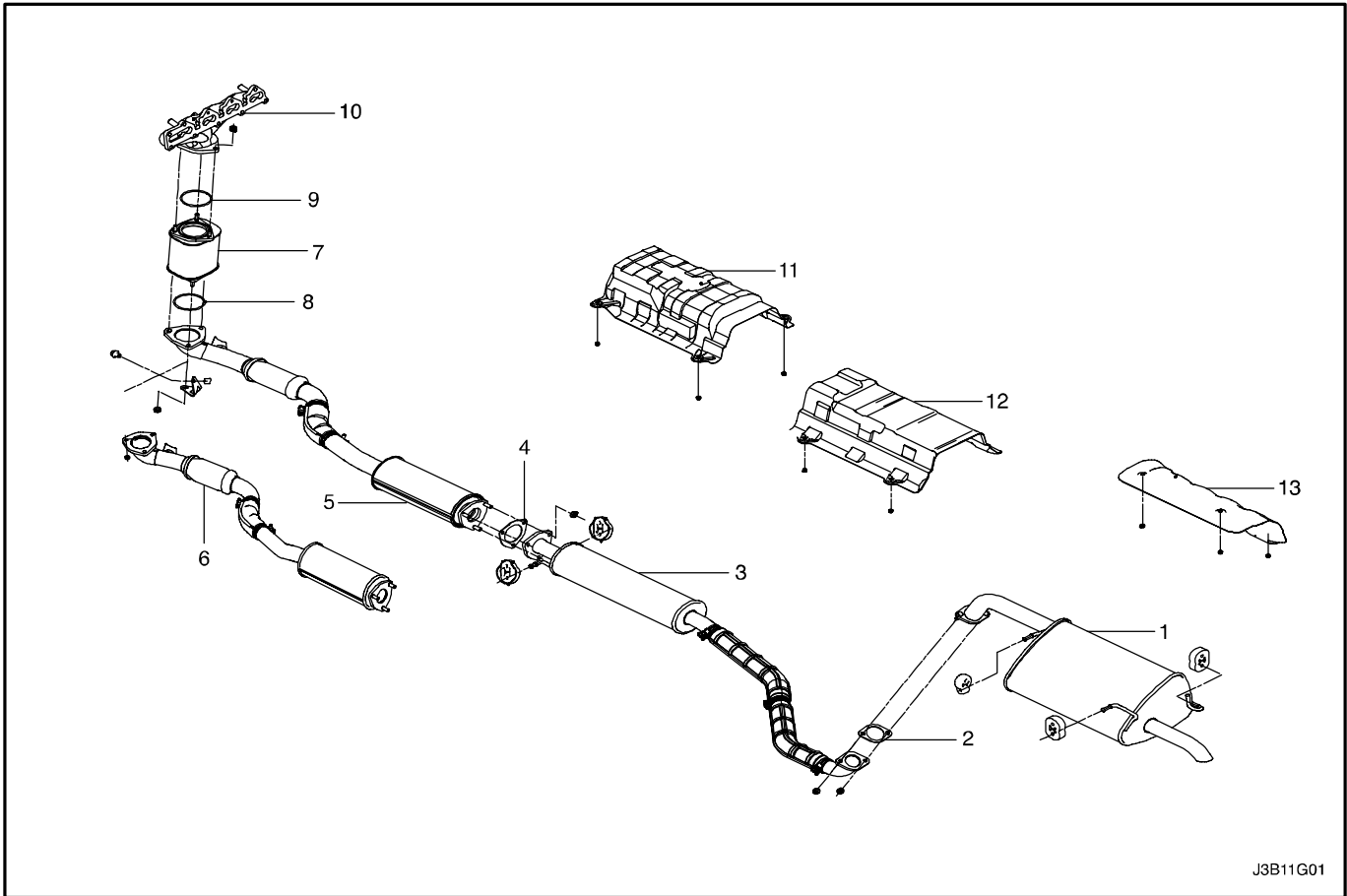
### SPECIFICATIONS

#### FASTENER TIGHTENING SPECIFICATIONS

Application	N•m	Lb-Ft	Lb-In
Catalytic Converter-to-Exhaust Manifold Nuts	40	37	–
Exhaust Front Pipe-to-Catalytic Converter Nuts	40	30	–
Exhaust Manifold Cover Bolts	15	11	–
Exhaust Front Pip-to-Front Muffler	30	22	–
Front Muffler-to-Rear Muffler Nuts	30	22	–
Front Bracket-to-Cylinder Block Bolt	50	37	–
Catalytic Converter-to-Underbody Shield	2.5	–	22
Front Muffler-to-Underbody Shield	2.5	–	22
Rear Muffler-to-Underbody Shield	2.5	–	22

# COMPONENT LOCATOR

## EXHAUST SYSTEM

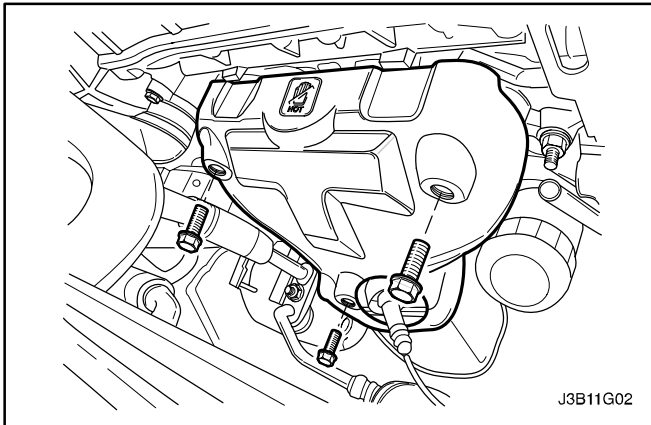


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- |                              |   |
|------------------------------|---|
| 1. Exhaust Rear Muffler      | 8. Exhaust Pipe Front Gasket              |
| 2. Muffler Gasket            | 9. Exhaust Front Pipe Gasket              |
| 3. Exhaust Front Muffler     | 10. Exhaust Manifold                      |
| 4. Muffler Gasket            | 11. Catalytic Converter Protective Shield |
| 5. Exhaust Front Pipe (1.8D) | 12. Front Muffler Protective Shield       |
| 6. Exhaust Front Pipe (1.6D) | 13. Rear Muffler Protective Shield        |
| 7. Catalytic Converter       |   |

# MAINTENANCE AND REPAIR

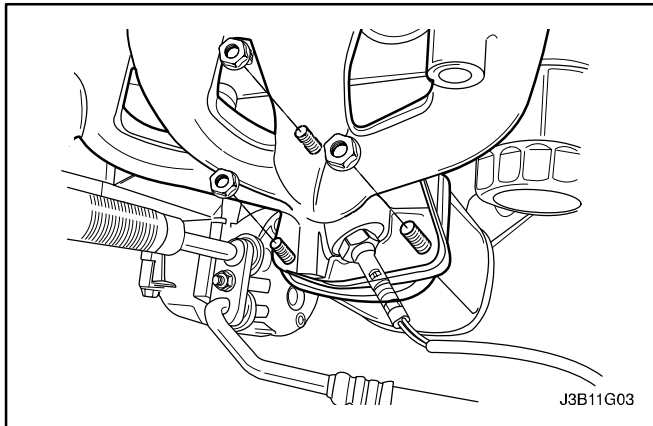
## ON-VEHICLE SERVICE



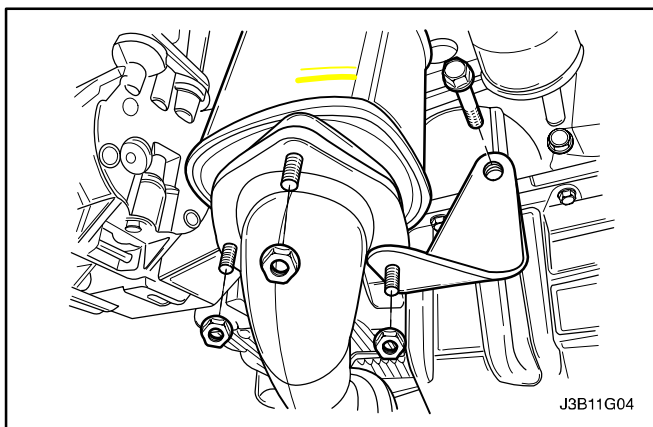
### CATALYTIC CONVERTER

#### Removal Procedure

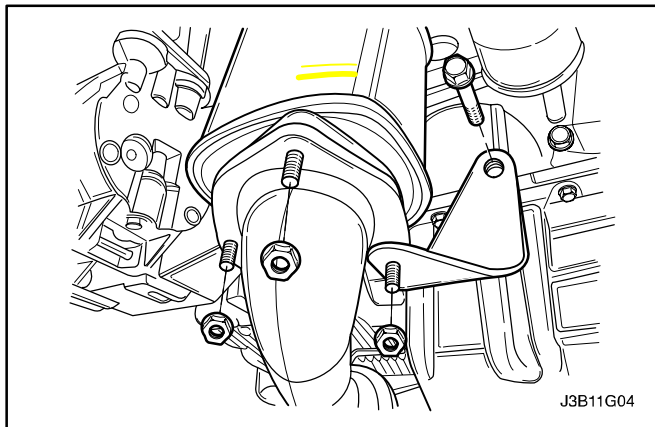
1. Disconnect the negative battery cable.
2. Disconnect the oxygen sensor electrical connector.
3. Remove the exhaust manifold cover with the bolts.



4. Remove the catalytic converter upper flange nuts.  
**Important :** The nuts and the stud may unscrew as a unit because of the high temperature associated with the exhaust manifold, but they can be re-used as such



5. Remove the exhaust front pipe mounting bracket bolt.
6. Remove the nuts from the exhaust front pipe-to-catalytic converter flange.
7. Remove the catalytic converter and the gasket.
8. Clean the sealing surfaces on the exhaust front pipe flange and the exhaust manifold.
9. Check the exhaust front pipe and the exhaust manifold for holes, damage, open seams or other deterioration which could permit exhaust fumes to seep into the passenger compartment.



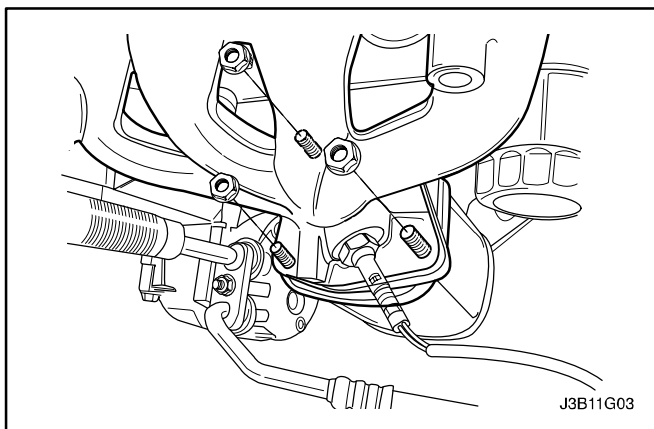
## Installation Procedure

1. Install the catalytic converter and the gasket to the exhaust front pipe flange.

### Tighten

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

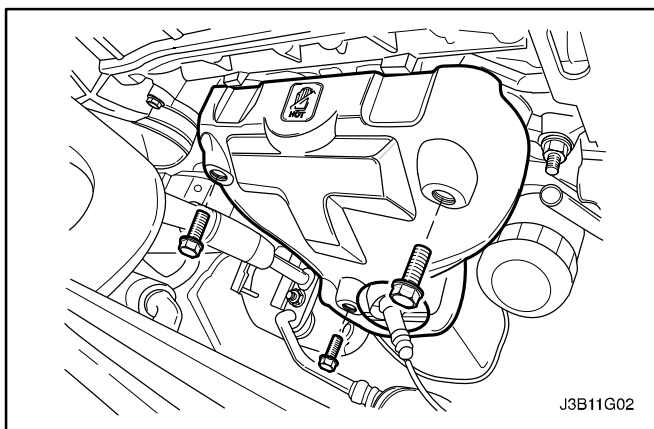
Tighten the exhaust front pipe-to-cylinder block bolt to 50 N•m (37 lb–ft).



2. Install the catalytic converter to exhaust manifold nuts and the gasket.

### Tighten

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

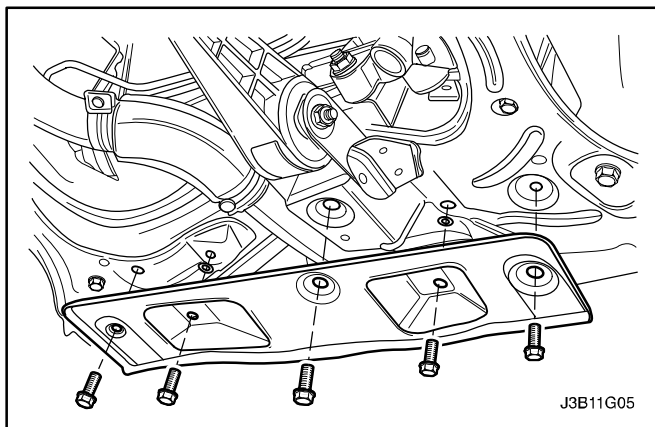


3. Install the exhaust manifold cover bolts.

### Tighten

Tighten the exhaust manifold cover bolts to 15 N•m (11 lb–ft).

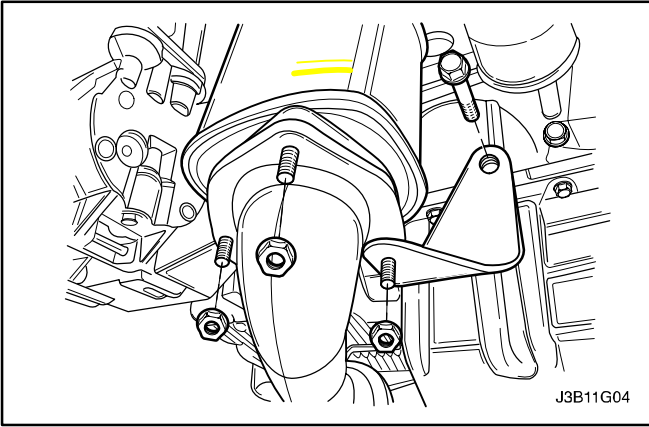
4. Connect the oxygen sensor electrical connector.
5. Connect the negative battery cable.



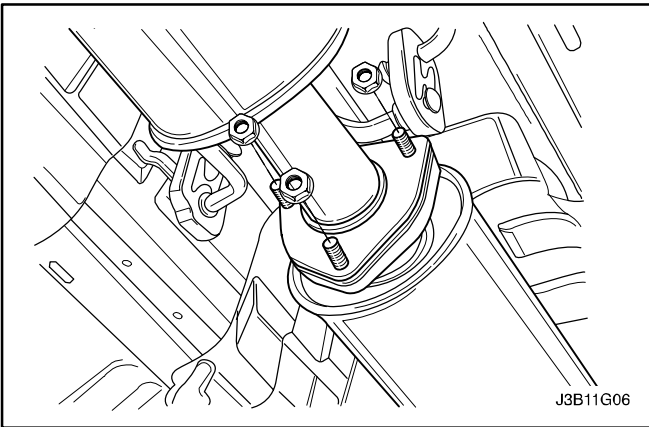
## EXHAUST FRONT PIPE

### Removal Procedure

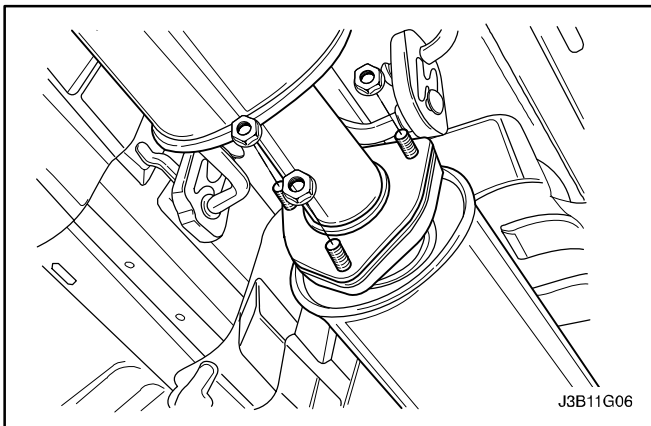
1. Remove the crossmember lower bracket with the bolts.



2. Disconnect the oxygen sensor connector.
3. Remove the exhaust front pipe mounting bracket bolt.
4. Remove the nuts from the exhaust front pipe-to-catalytic converter flange.



5. Remove the nuts from the exhaust front pipe-to-exhaust front muffler.
6. Remove the exhaust front pipe and the gasket.
7. Clean the sealing surfaces on the exhaust front muffler pipe flange and the exhaust front pipe.
8. Check the exhaust front pipe for holes, damage, open seams or other deterioration which could permit exhaust fumes to seep into the passenger compartment.

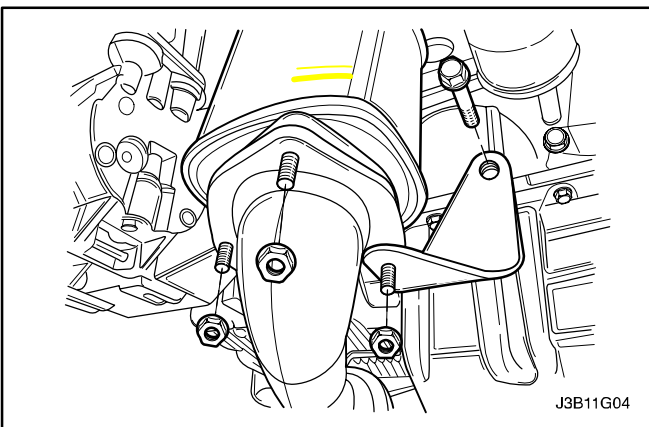


### Installation Procedure

1. Install the exhaust front pipe and the gasket.
2. Install the nuts from the exhaust front pipe-to-exhaust front muffler.

#### Tighten

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



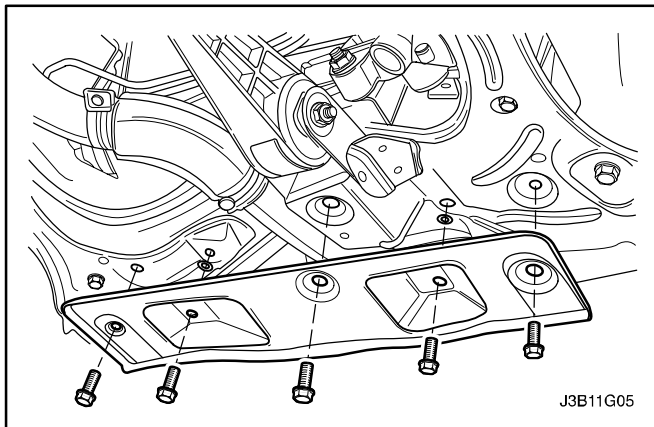
3. Install the nuts from the exhaust front pipe-to-catalytic converter flange.
4. Install the exhaust front pipe mounting bracket bolt.

#### Tighten

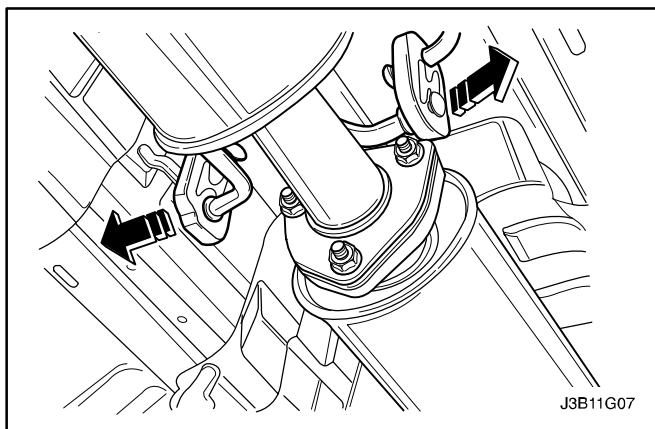
Tighten the exhaust front pipe-to-catalytic converter nuts to 40 N•m (30 lb–ft).

Tighten the exhaust front pipe-to-cylinder block bolt to 50 N•m (37 lb–ft).

5. Connect the oxygen sensor connector.



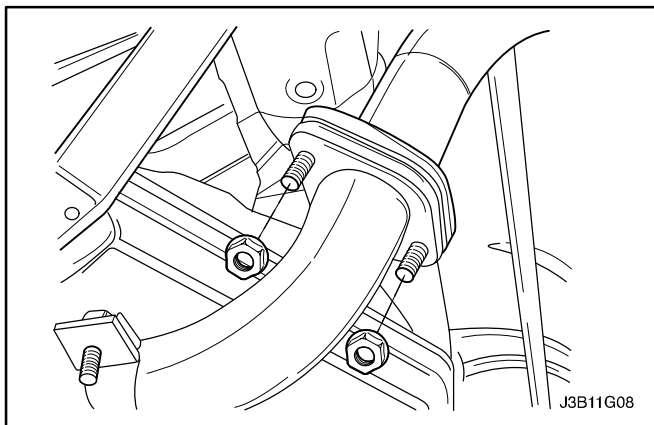
6. Install the crossmember lower bracket bolts to 35 N•m (26 lb–ft).



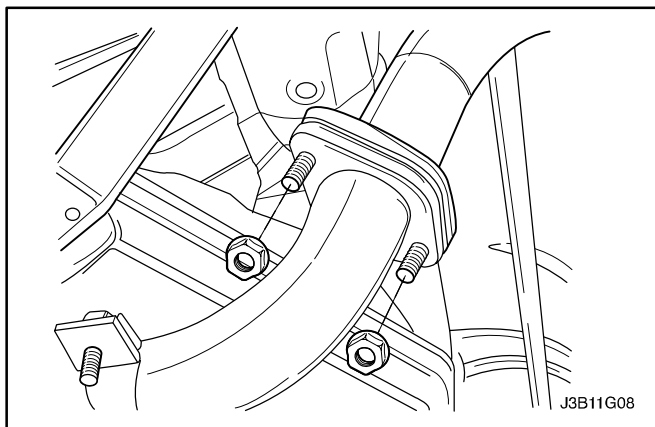
## MUFFLER – FRONT

### Removal Procedure

1. Remove the nuts and the gasket from the front muffler pipe to the exhaust front pipe flange.
2. Disconnect the front muffler from the rubber hanger.



3. Remove the nuts and the gasket from the rear muffler pipe flange.
4. Remove the front muffler.
5. Check the exhaust pipe and the front muffler for holes, damage, open seams, or other deterioration which could permit exhaust fumes to seep into the passenger compartment or the trunk.

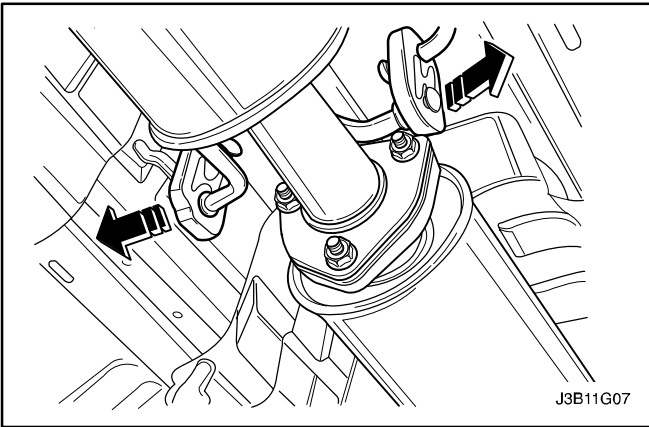


### Installation Procedure

1. Connect the front muffler to the rubber hanger.
2. Attach the front muffler and the gasket to the rear muffler using the nuts. Secure the front muffler to the rubber hanger.

#### Tighten

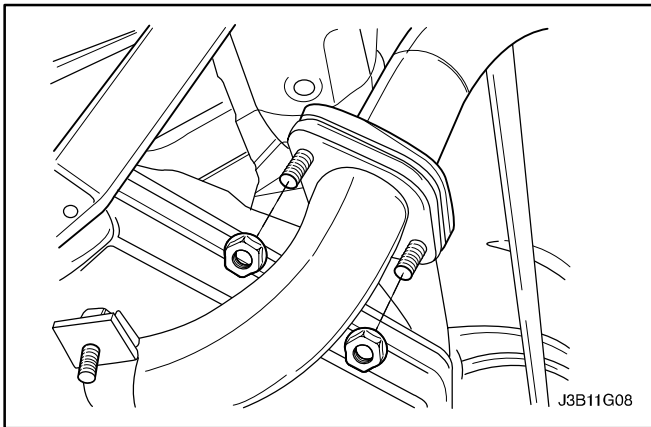
Tighten the front muffler-to-rear muffler nuts to 30 N•m (22 lb–ft).



3. Loosely secure the front muffler assembly to the connecting pipe flange.
4. Secure the front muffler assembly to the connecting pipe flange with the nuts.

### Tighten

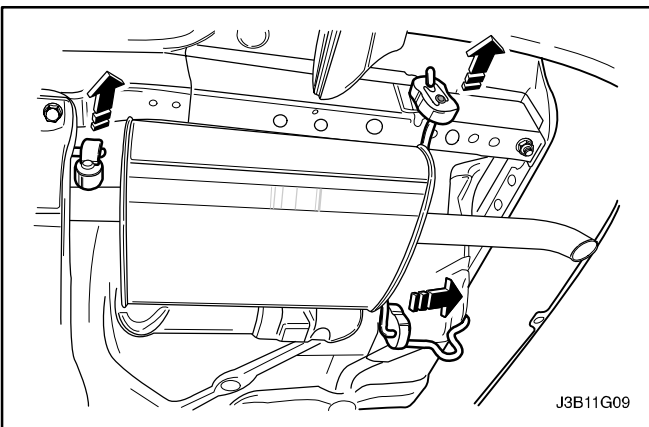
Tighten the front muffler-to-exhaust front pipe nuts to 30 N•m (22 lb–ft).



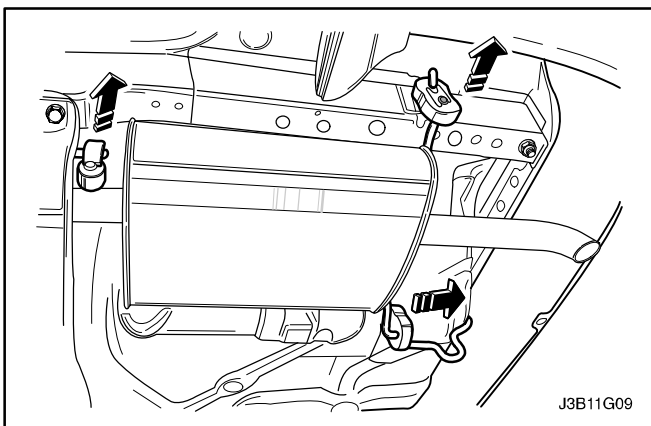
## MUFFLER – REAR

### Removal Procedure

1. Remove the nuts and the gasket from the rear muffler pipe flange-to-front muffler pipe flange.

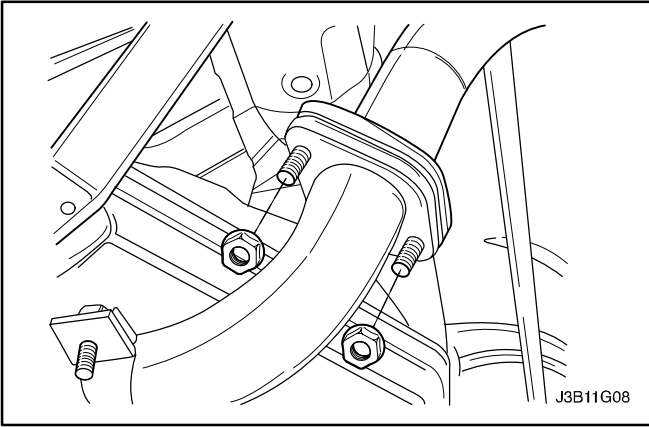


2. Detach the rear muffler assembly from the rubber hangers on the tail pipe end.
3. Remove the rear muffler assembly.
4. Check the rear muffler and the pipe for holes, damage, open seams, and other deterioration which could permit exhaust fumes to seep into the passenger compartment or the trunk.



### Installation Procedure

1. Secure the rear muffler assembly to the rubber hangers on the tail pipe end.



2. Secure the nuts and the gasket from the rear muffler pipe flange-to-front muffler pipe flange.

### **Tighten**

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

## GENERAL DESCRIPTION AND SYSTEM OPERATION

### EXHAUST SYSTEM

**Notice :** When you are inspecting or replacing the 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.

**CAUTION :** *Check the complete exhaust system and the nearby body areas and the trunk lid for broken, damaged, missing, or mispositioned parts, open seams, holes, loose connections, or other deterioration which could permit hazardous exhaust fumes to seep into the trunk or the 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

If holes, open seams or any deterioration is discovered upon inspection 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 in the front and the rear muffler assembly positions, as well as for the catalytic converter and the connecting pipe, protect the vehicle and the environment from high temperatures the exhaust system develops.

### CATALYTIC CONVERTERS

**Notice :** The catalytic converter requires the use of unleaded fuel only, or damage to the catalyst will result.

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

The three-way catalyst has coatings which contain palladium, platinum and rhodium, which simultaneously lower the levels of HC, CO and NOx.