Fastener Tightening Specifications

Application	Specification	
	Metric	English
Catalytic Converter-to-Exhaust Manifold Nuts	50 N·m	37 lb ft
Connecting Pipe-to-Catalytic Converter Nuts	40 N·m	30 lb ft
Exhaust Manifold Cover Bolts	15 N·m	11 lb ft
Front Exhaust Pipe Mounting Bracket Bolt	40 N·m	30 lb ft
Front Muffler-to-Connecting Pipe Nuts	30 N·m	22 lb ft
Front Muffler-to-Rear Muffler Nuts	30 N·m	22 lb ft
Post-Converter Heated Oxygen Sensor	41 N·m	30 lb ft

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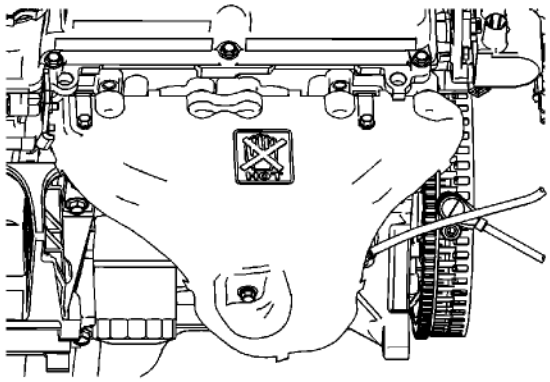
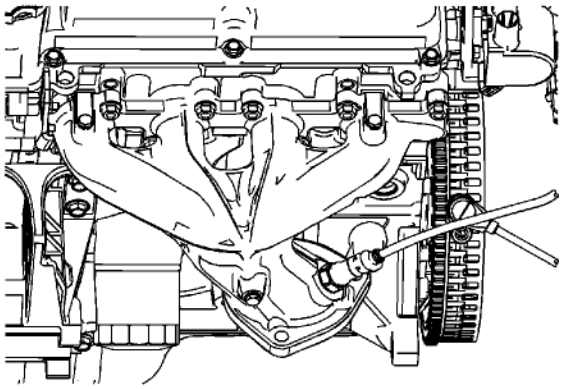
Exhaust Manifold Replacement (1.2L)

Removal Procedure



Warning: In order to avoid being burned, do not service the exhaust system while it is still hot. Service the system when it is cool.

1. Remove the fuel pump fuse.
2. Start the engine. After it stalls, crank the engine after it stalls for 10 seconds to rid the fuel system of fuel pressure.
3. Disconnect the oxygen sensor connector.



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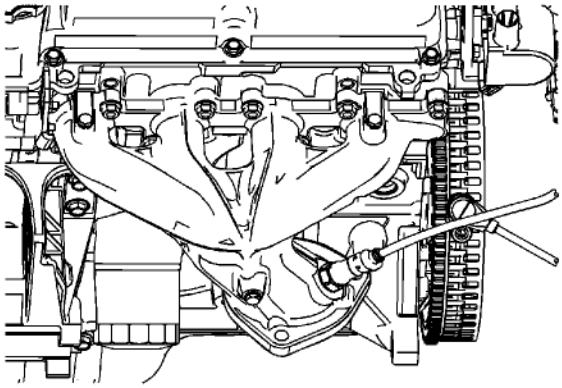
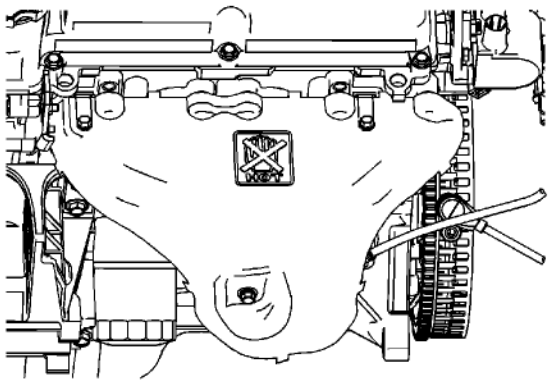
4. Remove the catalytic converter. Refer to Catalytic Converter Replacement
5. Remove the exhaust manifold.

Installation Procedure

Caution: Refer to Fastener Caution in the Preface section.



1. Install the exhaust manifold retaining bolts/nuts and tighten.
   - The exhaust manifold retaining bolts to **25 N·m (18.4 lb ft)**.
   - The exhaust manifold retaining nuts to **20 N·m (14.7 lb ft)**.
2. Install the catalytic converter. Refer to Catalytic Converter Replacement



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3. Connect the heater outlet hose from the coolant pipe.
4. Install the exhaust manifold heat shield and tighten to **15 N·m (11 lb ft)**.
5. Connect the battery negative cable. Refer to Battery Negative Cable Disconnection and Connection.

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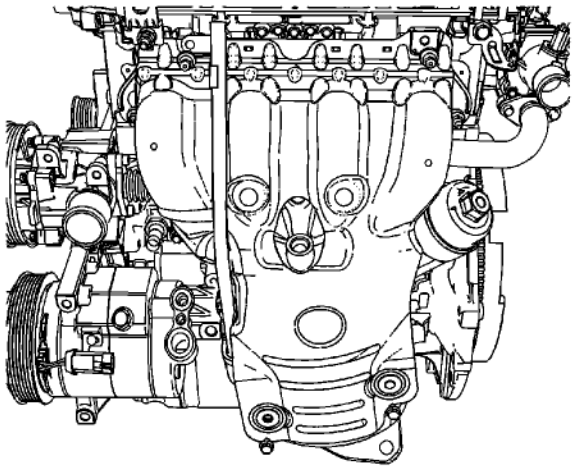
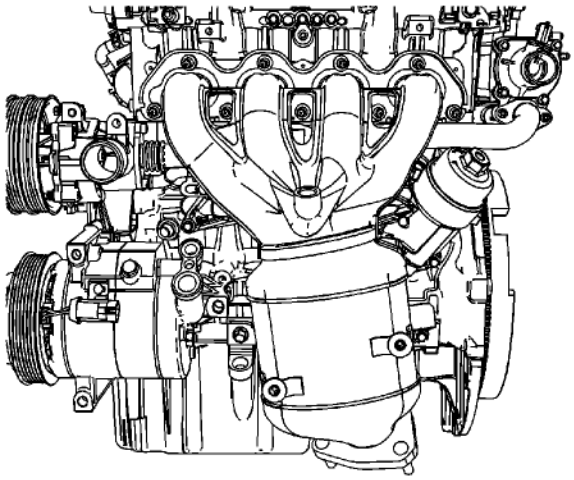
Exhaust Manifold Replacement (1.4L)

Removal Procedure

Warning: Refer to Battery Disconnect Warning in the Preface section.



1. Disconnect the battery negative cable. Refer to Battery Negative Cable Disconnection and Connection
2. Disconnect the upper oxygen sensor connector.
3. Remove the exhaust manifold heat shield with engine oil indicator tube.
4. Remove the exhaust front pipe. Refer to Front Pipe Replacement.



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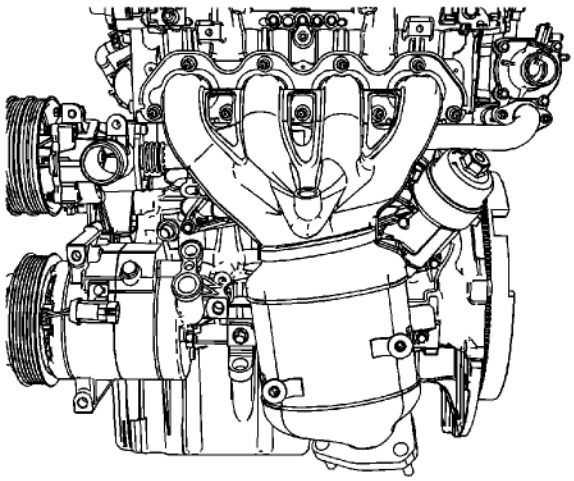
Note: The exhaust manifold and the catalytic converter are one piece.

5. Remove the exhaust manifold with the gasket.

Installation Procedure

Caution: Refer to Fastener Caution in the Preface section.



Note: Check the exhaust gasket surface whether cracks or damages or not.

1. Install the exhaust manifold with the gasket and tighten.
   - The exhaust manifold nuts to 20 N·m (14.7 lb ft).
   - The exhaust manifold lower bracket bolts to 20 N·m (14.7 lb ft).

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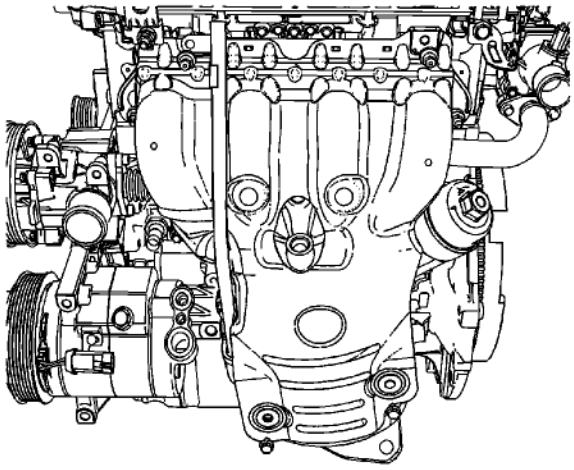

2. Install the exhaust front pipe. Refer to Front Pipe Replacement.
3. Install the exhaust manifold heat shield with the engine oil indicator tube and tighten to **8 N·m (70.8 lb in)**.
4. Connect the upper oxygen sensor connector.
5. Connect the battery negative cable. Refer to Battery Negative Cable Disconnection and Connection.

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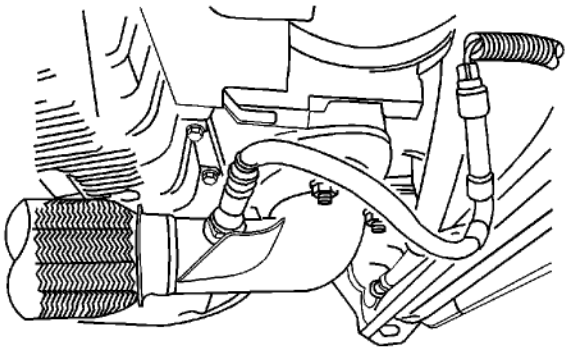
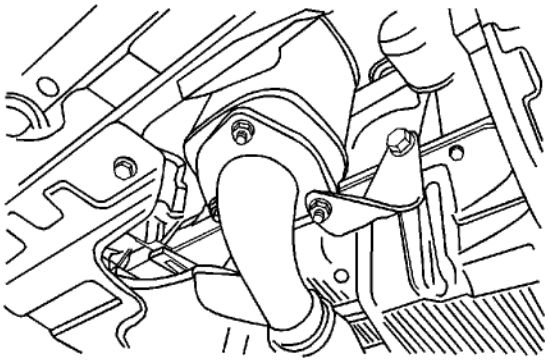
Front Pipe Replacement

Removal Procedure

Warning: Refer to Exhaust Service Warning in the Preface section.



1. Remove the rear heated oxygen sensor.



2. Remove the connecting pipe mounting bracket bolt.
3. Remove the connecting pipe nuts and the gasket from the catalytic converter.

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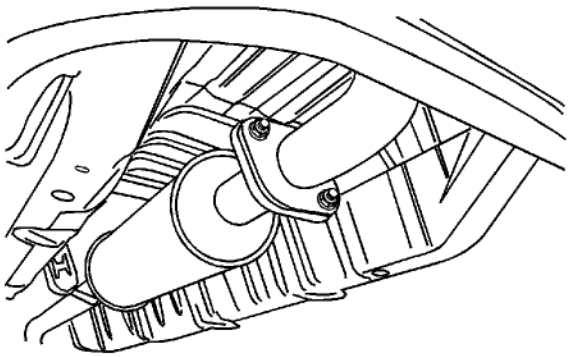
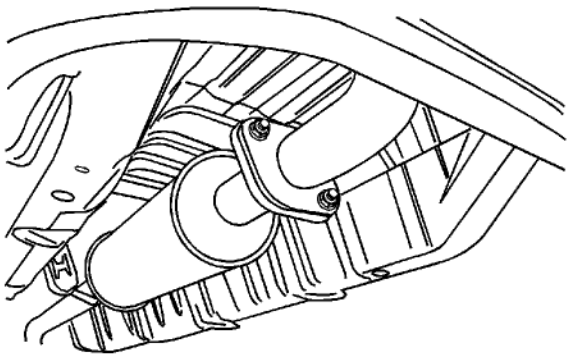


4. Remove the nuts from the front muffler pipe to the connecting pipe.
5. Clean the sealing surfaces on the front muffler pipe flange and the connecting pipe.
6. Check the connecting pipe for holes, damage, open seams, or other deterioration which could permit exhaust fumes to seep into the passenger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

Installation Procedure

Caution: Refer to Fastener Caution in the Preface section.



1. Install the catalytic converter and the connecting pipe and the gasket to the front muffler pipe flange. Use the nuts to secure the converter and the connecting pipe and tighten to **30 N·m (22 lb ft)**.

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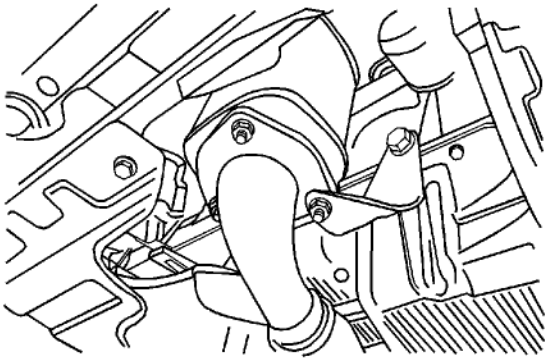
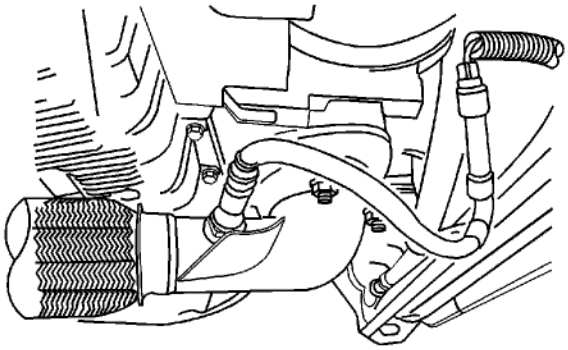


2. Using the nuts and the gasket secure the connecting pipe to the catalytic converter and tighten to **40 N·m (30 lb ft)**.
3. Install the front exhaust pipe mounting bracket bolt and tighten to **40 N·m (30 lb ft)**.



4. Install the rear heated oxygen sensor and tighten to **41 N·m (30 lb ft)**.

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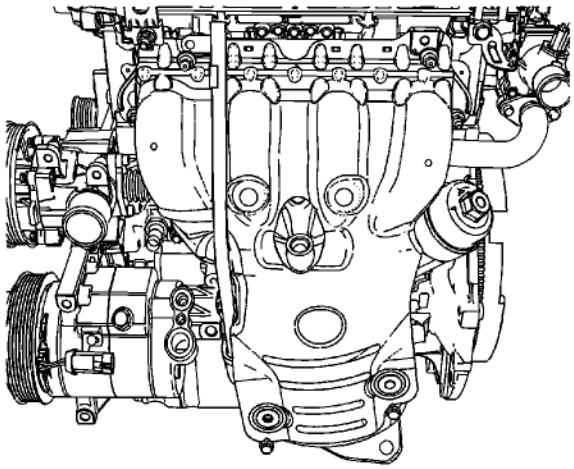
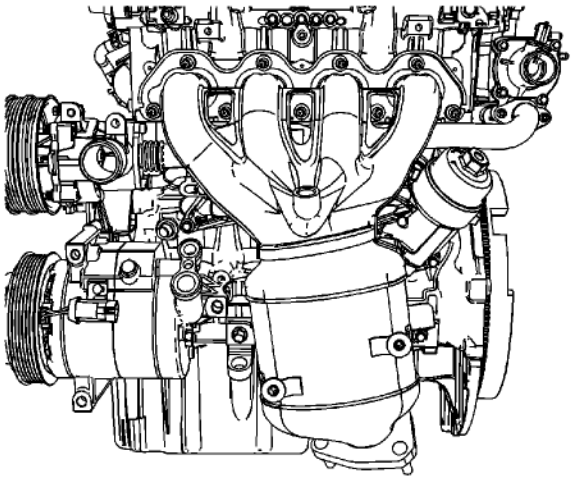
Catalytic Converter Replacement (1.4L LDT/1.6L LXV)

Removal Procedure

Warning: Refer to Battery Disconnect Warning in the Preface section.



1. Disconnect the battery negative cable. Refer to Battery Negative Cable Disconnection and Connection.
2. Disconnect the front heated oxygen sensor connector.
3. Remove the oil level gage tube.
4. Remove the exhaust manifold heat shield.



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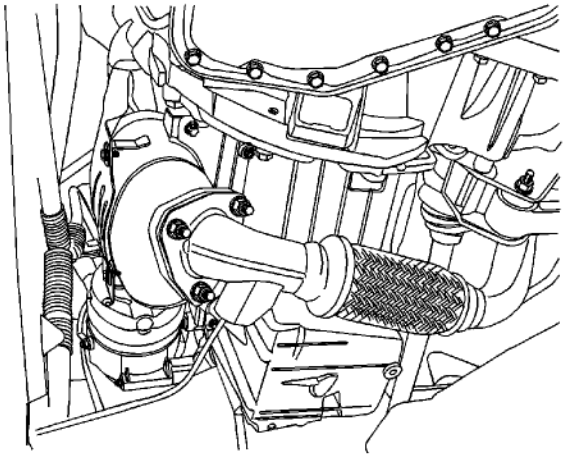
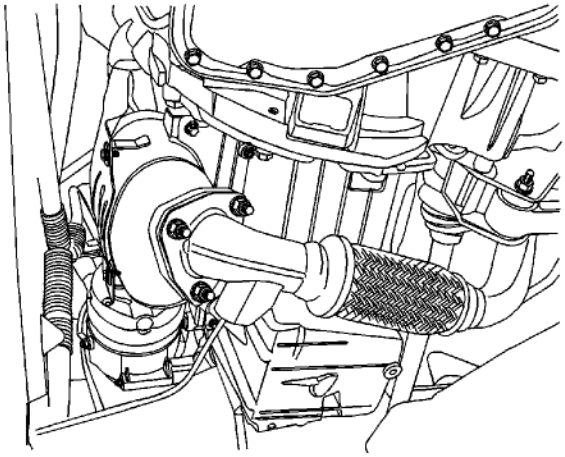
5. Remove the catalytic converter upper flange nuts.



6. Remove the exhaust front pipe mounting bracket bolt.
7. Remove the catalytic converter lower flange nuts.
8. Remove the catalytic converter and the gasket.

Installation Procedure



1. Install the catalytic converter and the gasket.

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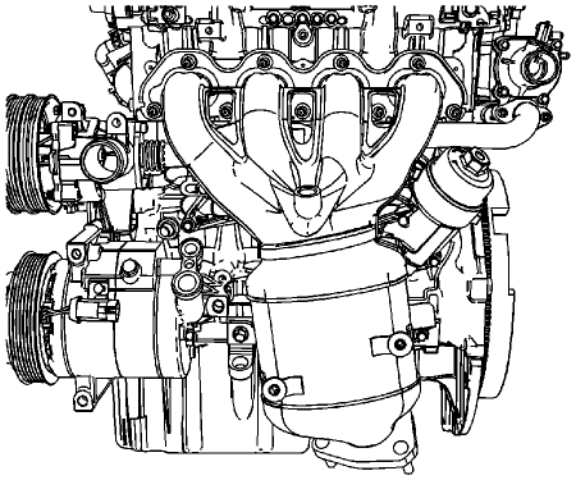
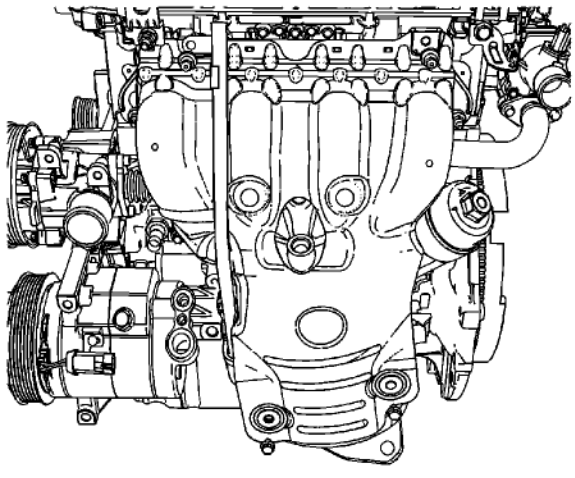
Caution: Refer to Fastener Caution in the Preface section.

Note: Position the catalytic converter onto the exhaust manifold flange with one upper flange nut.

2. Install the catalytic converter lower flange nuts and the exhaust front pipe mounting bracket and tighten.
   - The exhaust front pipe to catalytic converter nuts to 40 N·m (30 lb ft).
   - The exhaust front pipe mounting bracket bolt to 40 N·m (30 lb ft).



3. Install the catalytic converter upper flange nuts to exhaust manifold nuts to 40 N·m (30 lb ft).



4. Install the exhaust manifold heat shield and tighten to **8 N·m (5.9 lb ft)**.

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Note: Check the oil. If the oil dropped when removing the oil level gage tube, check and refill it.

5. Install the oil level gage tube.
6. Connect the front heated oxygen sensor connector.
7. Connect the battery negative cable. Refer to Battery Negative Cable Disconnection and Connection.

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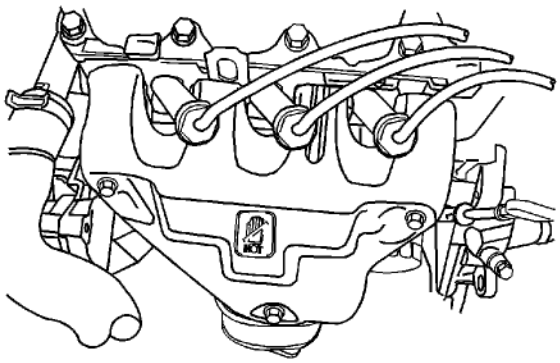
Catalytic Converter Replacement (1.2L)

Removal Procedure

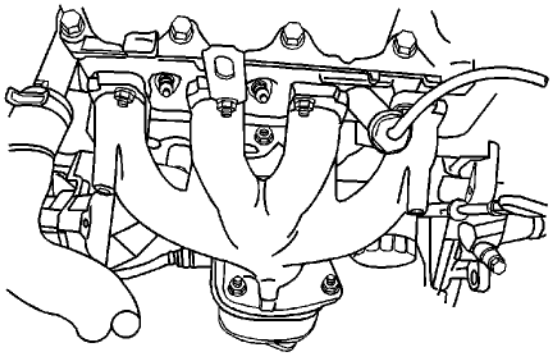
Warning: Refer to Exhaust Service Warning in the Preface section.

Caution: Refer to Flex Decoupler Caution in the Preface section.

Caution: Refer to Catalytic Converter Movement Caution in the Preface section.



1. Remove the exhaust manifold cover with the bolts.



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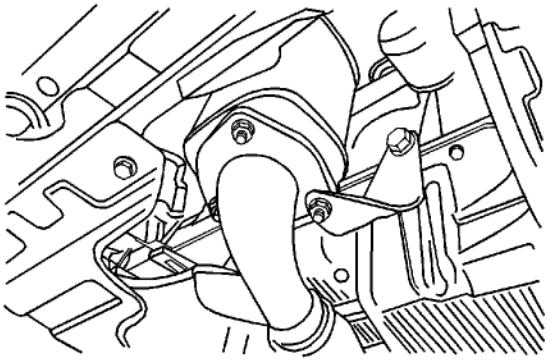
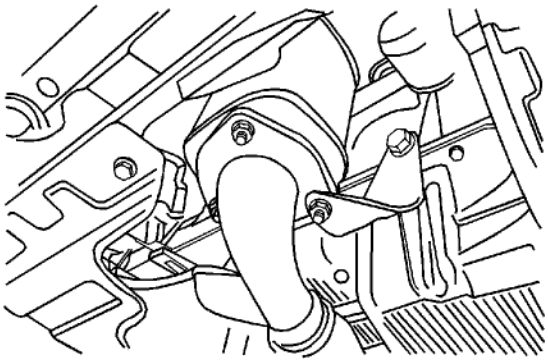
2. Remove the catalytic converter upper flange nut.



3. Remove the connecting pipe mounting bracket bolt.
4. Remove the catalytic converter lower flange nuts.
5. Remove the catalytic converter and the gasket.

Installation Procedure



1. Install the catalytic converter and the gasket.

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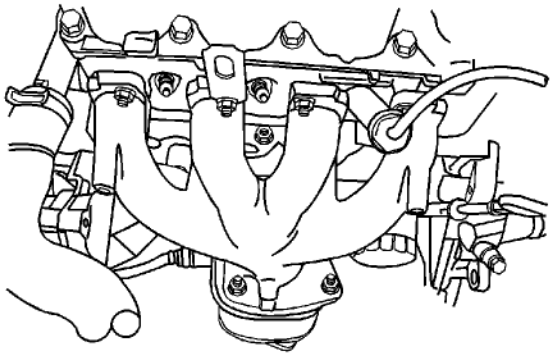
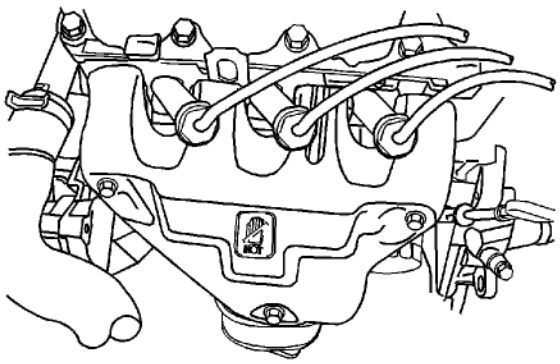
Caution: Refer to Fastener Caution in the Preface section.

Note: Position the catalytic converter onto the exhaust manifold flange with one upper flange nut.

2. Install the catalytic converter lower flange nuts and the connecting pipe mounting bracket and tighten.
   - The connecting pipe to catalytic converter nuts to 40 N·m (30 lb ft).
   - The connecting pipe mounting bracket bolt to 40 N·m (30 lb ft).



3. Install the catalytic converter upper flange nuts and tighten to **50 N·m (37 lb ft)**.



4. Install the exhaust manifold cover bolts and tighten to **15 N·m (11 lb ft)**.

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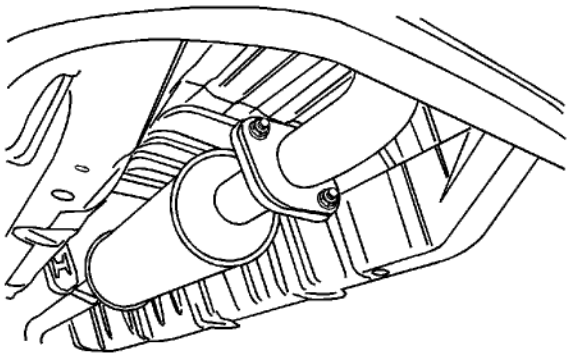
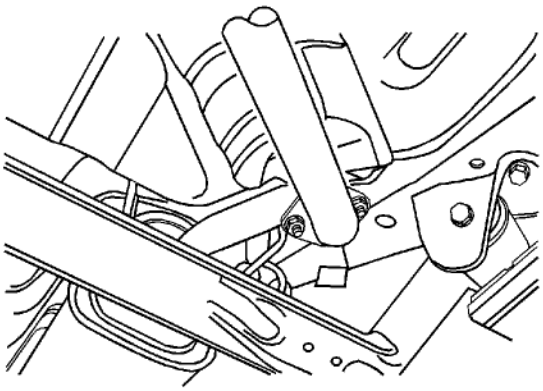
Exhaust Muffler Replacement (Front)

Removal Procedure

Warning: Refer to Exhaust Service Warning in the Preface section.



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



2. Remove the nuts and the gasket from the rear muffler pipe flange.

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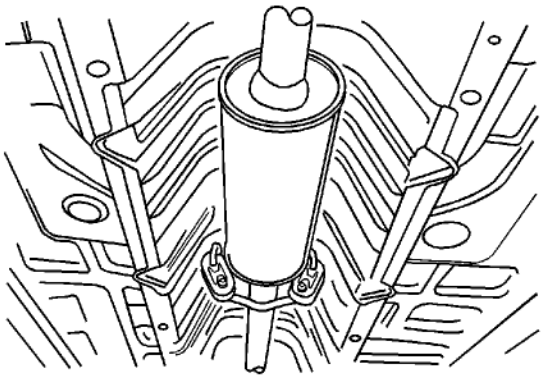
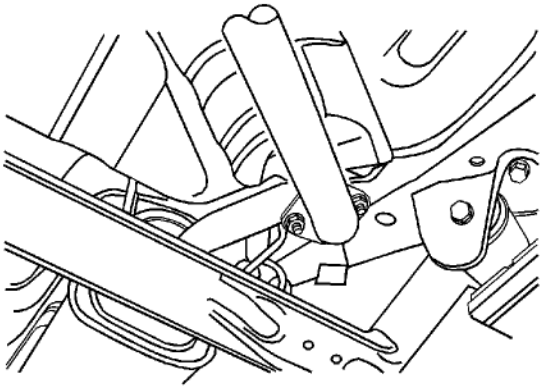


3. Disconnect the front muffler from the rubber hanger.
4. Remove the front muffler.
5. Check the exhaust pipe and the front muffler for holes, damage, open seams, or other deterioration which could permit exhaust fumes to seep into the passenger compartment or the trunk.

Installation Procedure



1. Connect the front muffler to the rubber hanger.

   Caution: Refer to Fastener Caution in the Preface section.

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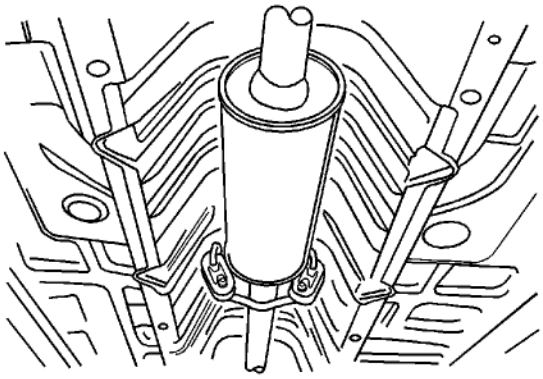
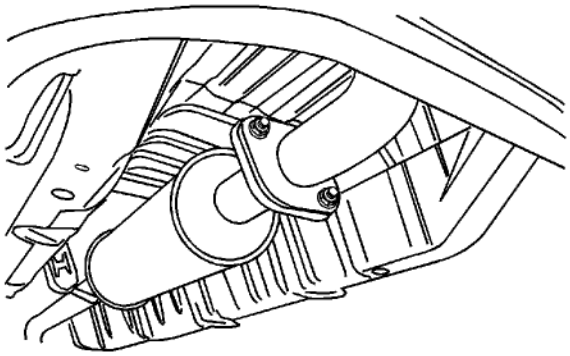
2. Attach the front muffler and the gasket to the rear muffler using the nuts. Secure the front muffler to the rubber hanger and tighten to **30 N·m (22 lb ft)**.



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 and tighten to **30 N·m (22 lb ft)**.

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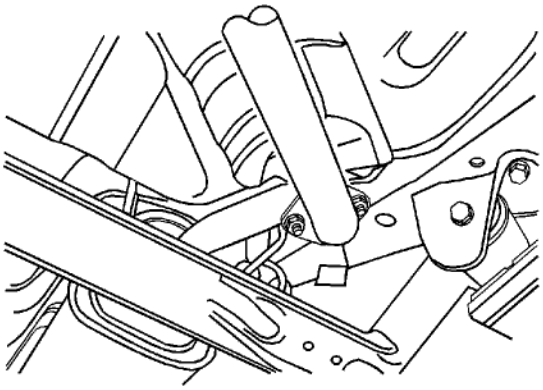
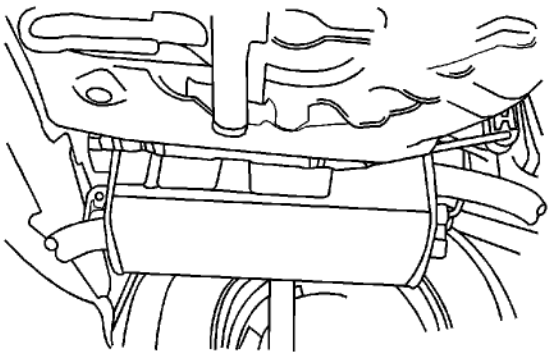
Exhaust Muffler Replacement (Rear)

Removal Procedure

Warning: Refer to Exhaust Service Warning in the Preface section.



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.

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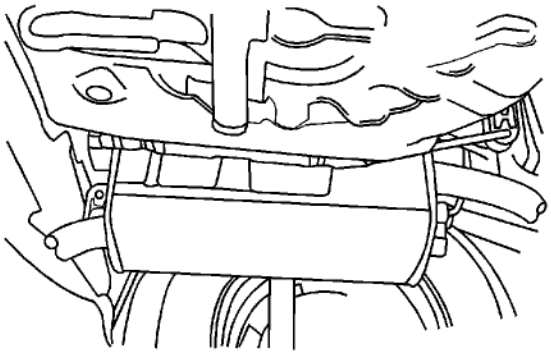
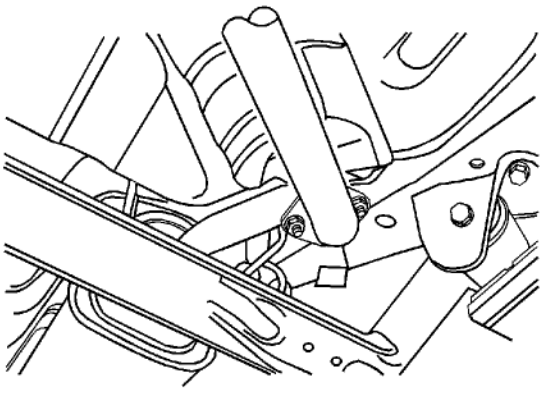
3. Remove the rear muffler assembly.
4. Check the rear muffler and the pipe for holes, damage, open seams, and other deterioration which could permit exhaust fumes to seep into the passenger compartment or the trunk.

Installation Procedure



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

   Caution: Refer to Fastener Caution in the Preface section.



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

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and tighten to **30 N·m (22 lb ft)**.

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