

# MAINTENANCE AND REPAIR

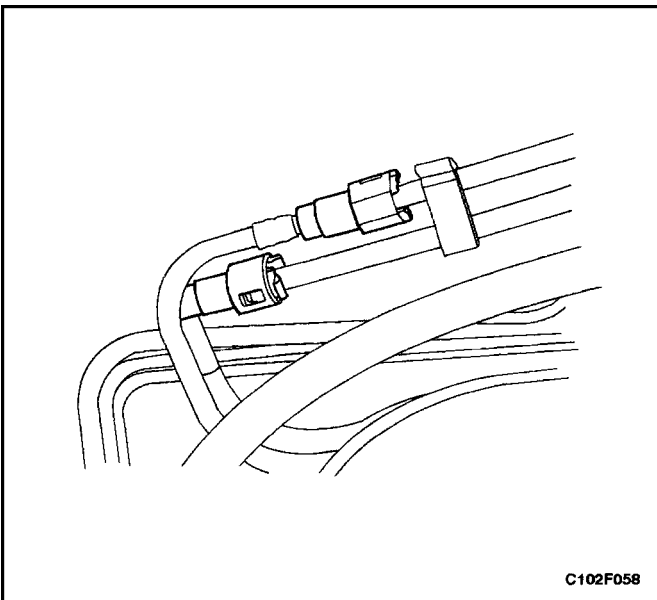
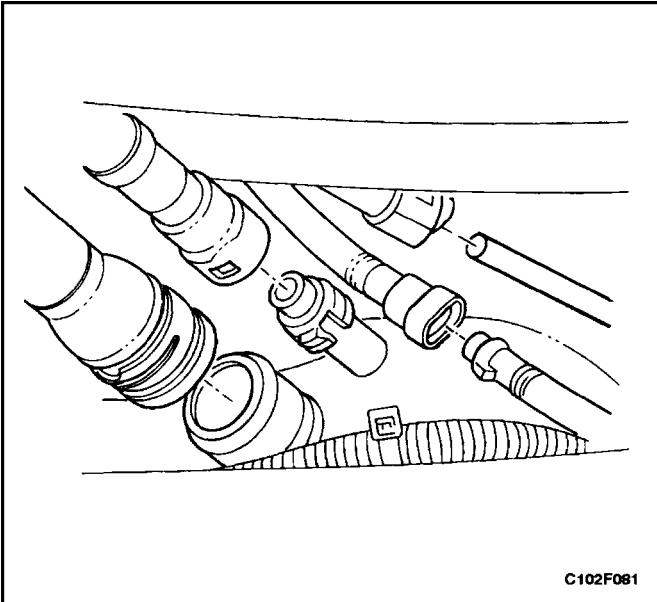
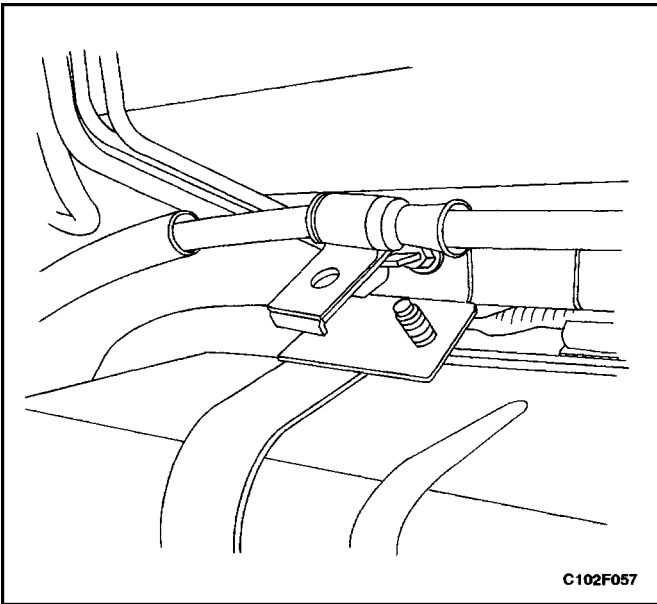
## ON-VEHICLE SERVICE

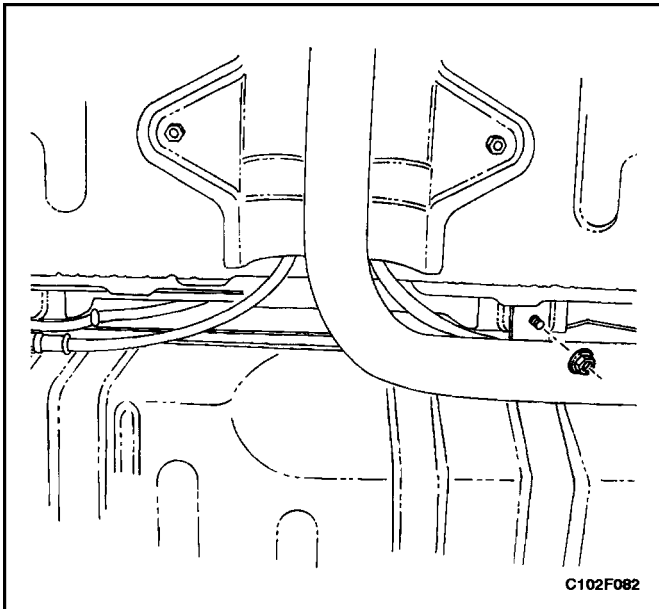
### FUEL TANK

#### Removal Procedure

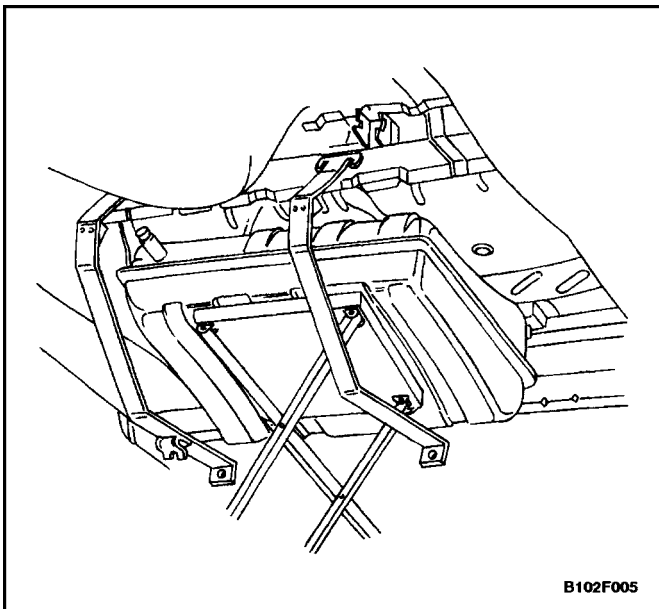
**CAUTION :** *The fuel system is under pressure. To avoid fuel spillage and the risk of personal injury or fire, it is necessary to relieve the fuel system pressure before disconnecting the fuel lines.*

1. Relieve the fuel pressure. Refer to "Fuel Pump" in this section.
2. Disconnect the negative battery cable.
3. Drain the fuel tank.
4. Disconnect the right rear parking brake cable from the retaining bracket attached to the right side fuel tank strap.
5. Remove the fuel tank filler tube clamp at the fuel tank.
6. Disconnect the fuel tank filler tube.
7. Disconnect the fuel tank vent tube at the fuel tank.
8. Disconnect the fuel vapor line near the fuel tank filler tube.
9. Disconnect the fuel pump harness connector near the left rear corner of the fuel tank.
10. Disconnect the fuel inlet line and the fuel return line near the right front of the fuel tank.
11. Disconnect the wiring harness clips and the fuel line clips as needed.





12. Support the fuel tank.
13. Remove the fuel tank strap retaining nuts.
14. Remove the fuel tank straps.
15. Carefully lower the fuel tank.
16. Remove the fuel tank.
17. Transfer any parts as needed.



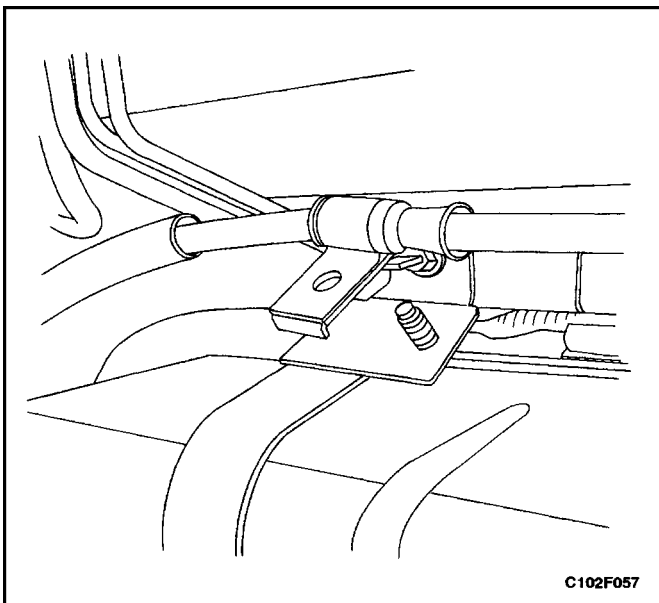
### Installation Procedure

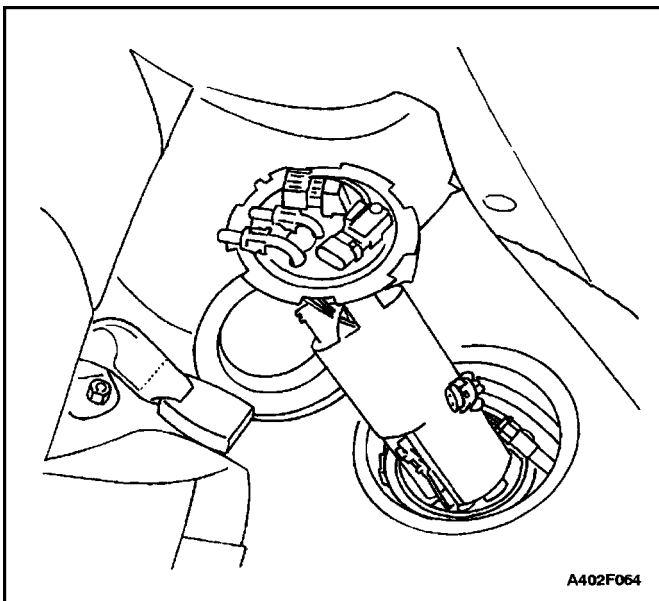
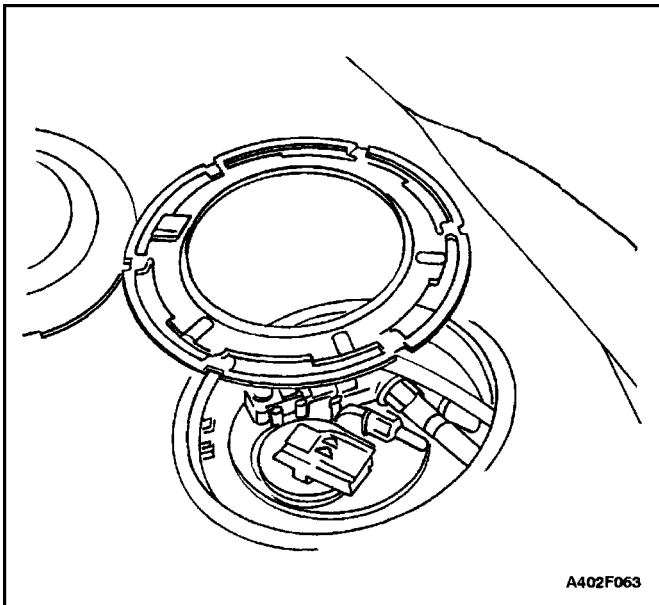
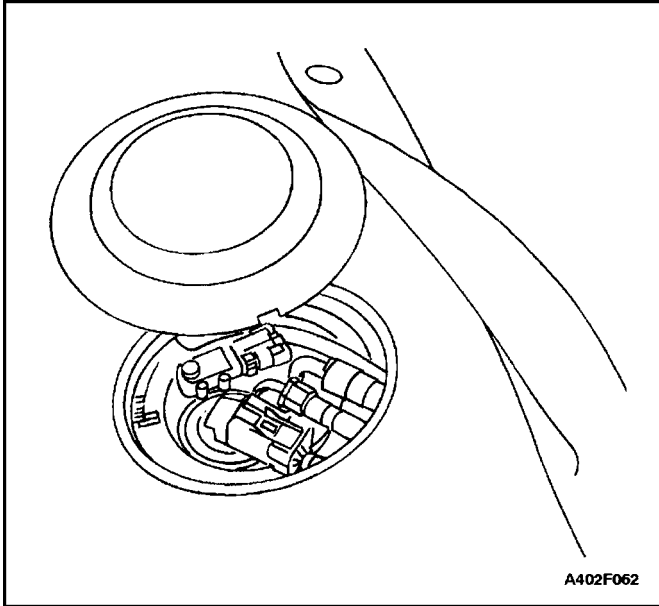
1. Raise the fuel tank into position.
2. Install the fuel tank straps.
3. Install the fuel tank strap retaining nuts.

#### Tighten

Tighten the fuel tank strap retaining nuts to 13 N•m (115 lb-in).

4. Connect the fuel outlet line and the fuel return line.
5. Connect the wiring harness clips and the fuel line clips as needed.
6. Connect the fuel pump harness connector.
7. Connect the fuel vapor line.
8. Connect the fuel tank filler tube.
9. Connect the fuel tank vent tube.
10. Install the fuel tank filler tube clamp at the fuel tank.
11. Connect the right rear parking brake cable to the retaining bracket attached to the right side fuel tank strap.
12. Connect the negative battery cable.
13. Fill the fuel tank.
14. Perform a leak check of the fuel tank and the fuel line connections.





## FUEL PUMP

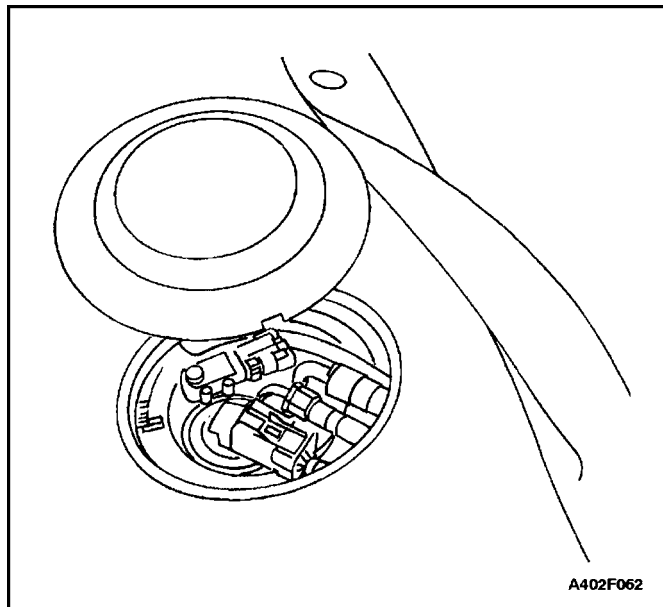
### Removal Procedure

**CAUTION :** *The fuel system is under pressure. To avoid fuel spillage and the risk of personal injury or fire, it is necessary to relieve the fuel system pressure before disconnecting the fuel lines.*

1. Relieve the fuel system pressure.
  - 1) Remove the fuel cap.
  - 2) Remove fuel pump fuse EF19 from the engine fuse block.
  - 3) Start the engine and allow the engine to stall.
  - 4) Crank the engine for an additional 10 seconds.
2. Disconnect the negative battery cable.
3. Remove the rear seat. Refer to *Section 9H, Seats*.
4. Remove the fuel pump access cover.
5. Disconnect the electrical connector at the fuel pump assembly.
6. Disconnect the fuel outlet line.
7. Disconnect the fuel tank return line.
8. Turn the lock ring counterclockwise to clear the tank tabs.
9. Remove the fuel pump assembly from the tank.
10. Remove and discard the gasket.

### Installation Procedure

1. Clean the gasket mating surface on the fuel tank.
2. Position the new gasket in place.
3. Install the fuel pump into the fuel tank in the same location as removed for ease of line and connector installation.
4. Position the lock ring in place and turn it clockwise until it contacts the tank stop.
5. Connect the fuel pump assembly connector.
6. Install the fuel pump outlet line.
7. Install the fuel tank return line.
8. Install the fuel pump access cover.
9. Connect the negative battery cable.
10. Perform an operational check of the fuel pump.
11. Install the rear seat. Refer to *Section 9H, Seats*.

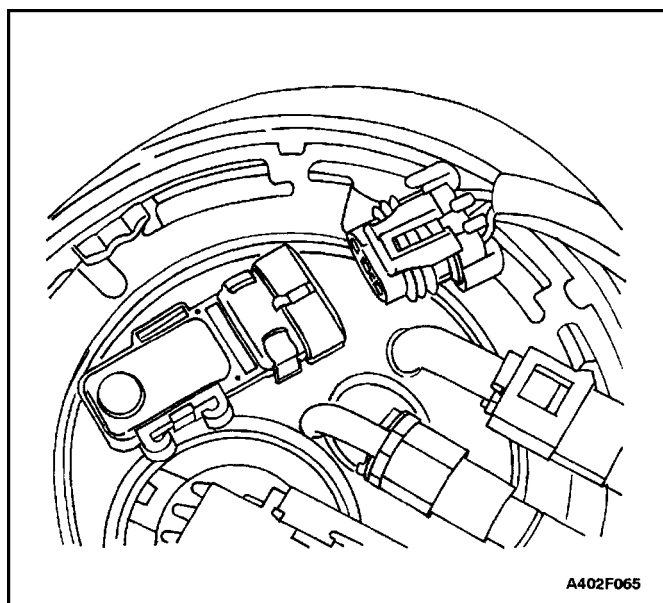


## FUEL TANK PRESSURE SENSOR

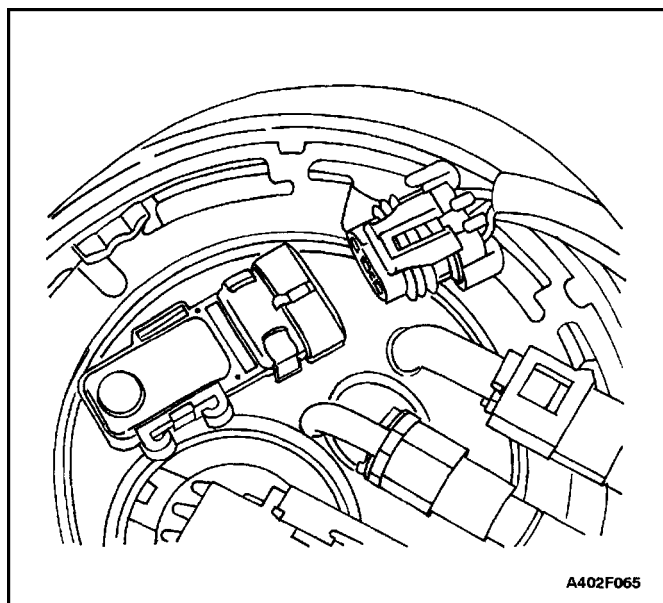
### Removal Procedure

**CAUTION :** *The fuel system is under pressure. To avoid fuel spillage and risk of personal injury or fire, it is necessary to relieve the fuel system pressure before disconnecting the fuel lines.*

1. Relieve the fuel pressure. Refer to "Fuel Pump" in this section.
2. Disconnect the negative battery cable.
3. Remove the rear seat. Refer to *Section 9H, Seats*.
4. Remove the fuel pump access cover.

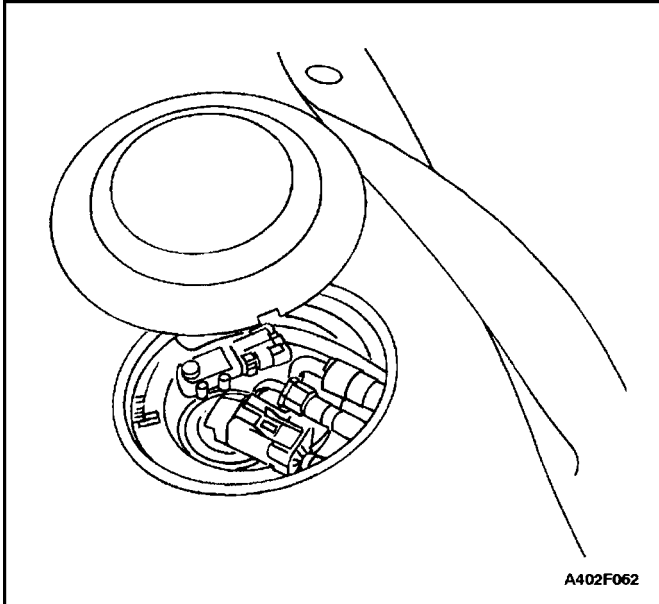


5. Disconnect the fuel tank pressure sensor electrical connector.
6. Bend the retaining tabs and remove the fuel tank pressure sensor.

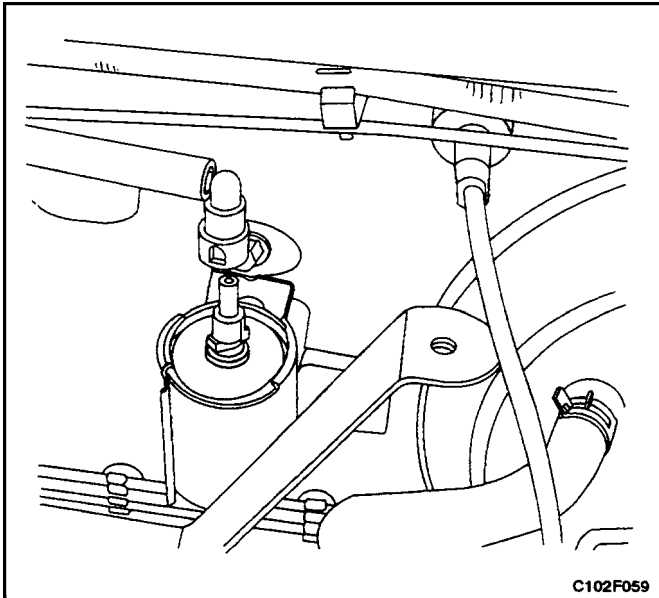


### Installation Procedure

1. Install the fuel tank pressure sensor and bend the retaining tabs into place.
2. Connect the fuel tank pressure sensor electrical connector.



3. Install the fuel pump access cover.
4. Install the rear seat. Refer to *Section 9H, Seats*.
5. Install the fuel pump fuse and the gas cap.
6. Connect the negative battery cable.

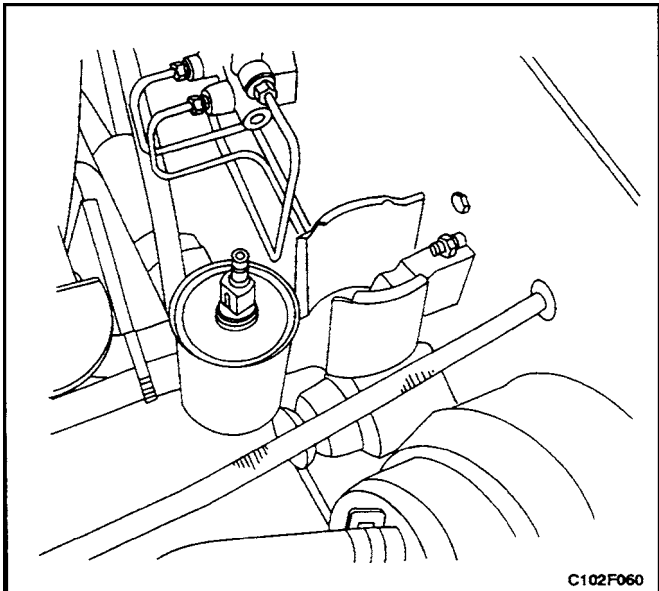


## FUEL FILTER

### Removal Procedure

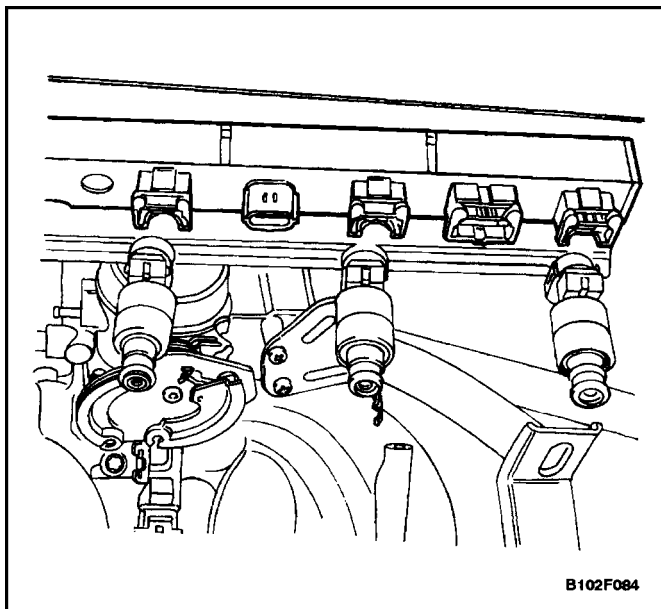
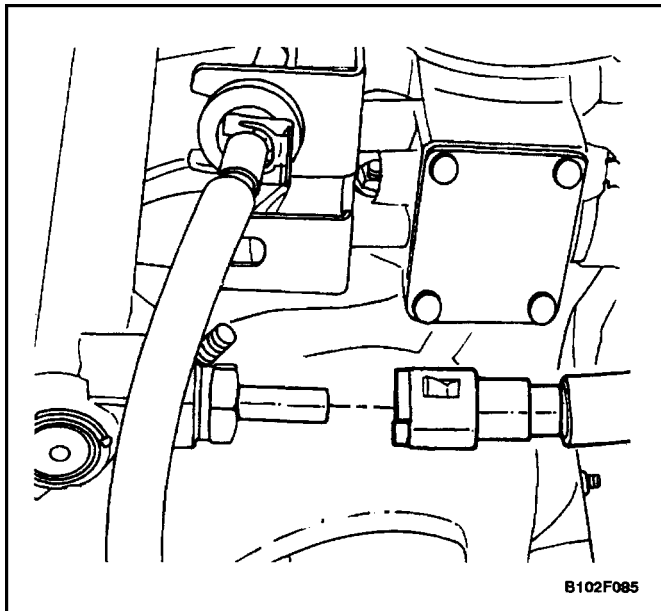
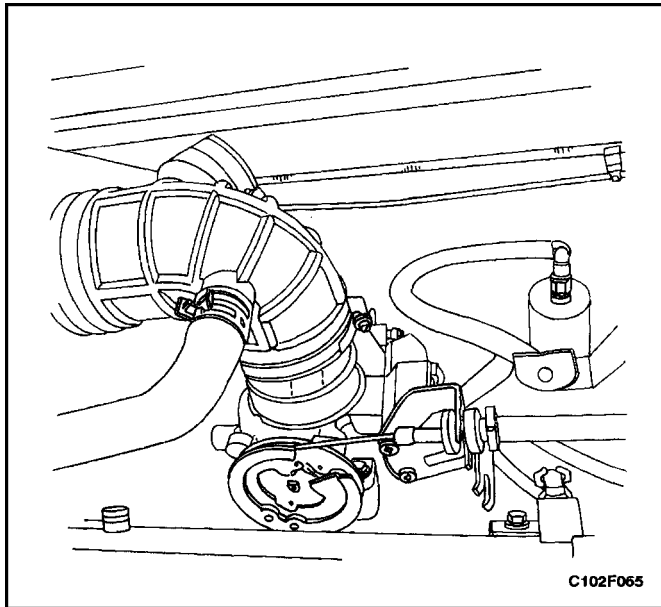
**CAUTION :** *The fuel system is under pressure. To avoid fuel spillage and the risk of personal injury or fire, it is necessary to relieve the fuel system pressure before disconnecting the fuel lines.*

1. Relieve the fuel system pressure. Refer to "Fuel Pump" in this section.
2. Disconnect the inlet/outlet fuel lines by moving the line connector lock forward and pulling the hose off of the fuel filter tube.
3. Remove the fuel filter.



### Installation Procedure

1. Install the new fuel filter into the retaining clamp. Note the flow direction.
2. Install the fuel filter.
3. Connect the inlet/outlet lines. Secure the lines with the connector lock.
4. Connect the negative battery cable.
5. Perform a leak test of the fuel filter.



## FUEL RAIL AND INJECTORS

### Removal Procedure

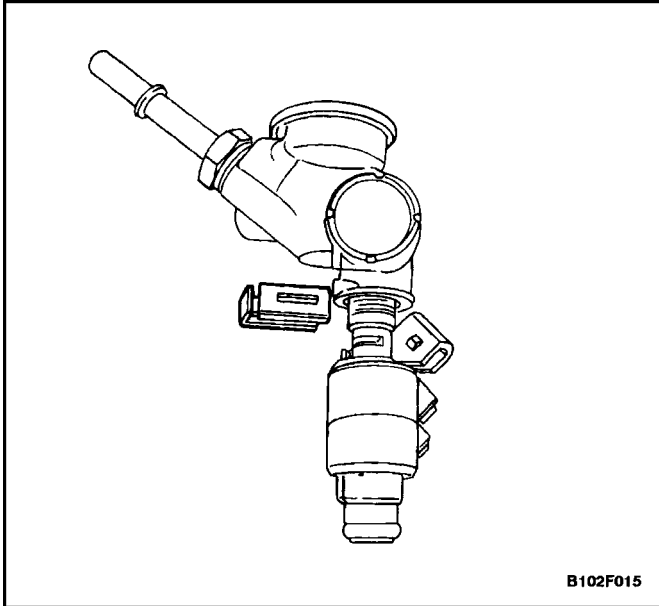
**CAUTION :** The fuel system is under pressure. To avoid fuel spillage and the risk of personal injury or fire, it is necessary to relieve the fuel system pressure before disconnecting the fuel lines.

1. Relieve the fuel system pressure. Refer to " Fuel System Pressure Relief " in this section.
2. Disconnect the negative battery cable.
3. Disconnect the intake air temperature (IAT) sensor connector.
4. Disconnect the breather hose from the valve cover.
5. Remove the air intake tube and resonator.
6. Disconnect the positive crankcase ventilation (PCV) hose from the valve cover.
7. Disconnect the throttle cables from the throttle body and the bracket.
8. Remove the fuel pressure regulator. Refer to " Fuel Pressure Regulator " in this section.
9. Disconnect the fuel return line at the fuel rail.
10. Disconnect the fuel inlet line at the fuel rail.
11. Remove the fuel rail retaining bolts.
12. Remove the throttle cable bracket bolts and the brackets.

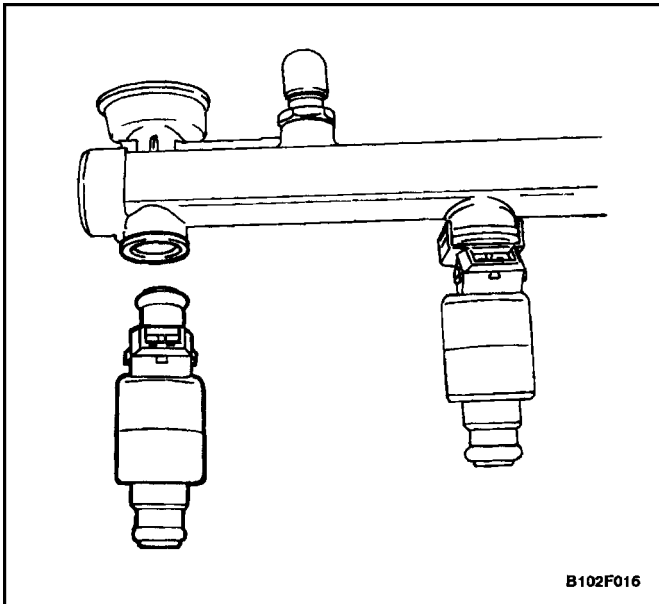
**Notice :** Before removal, the fuel rail assembly may be cleaned with a spray-type cleaner, following package instructions. Do not immerse the fuel rails in liquid cleaning solvent. Use care in removing the fuel rail assembly to prevent damage to the electrical connectors and the injector spray tips. Prevent dirt and other contaminants from entering open lines and passages. Fittings should be capped and holes plugged during service.

**Important :** If an injector becomes separated from the rail and remains in the cylinder head, replace the injector O-ring seals and the retaining clip.

13. Remove the fuel rail with the fuel injector channel cover and the injectors attached.
14. Disconnect the fuel injector channel cover connectors.



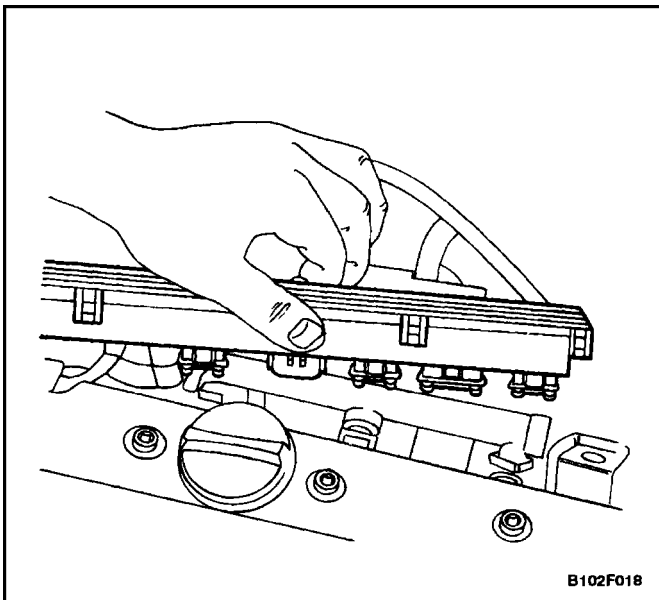
15. Remove the fuel injector retainer clips.
16. Remove the fuel injectors by pulling them down and out.
17. Discard the fuel injector O-rings.



### Installation Procedure

**Important :** Different injectors are calibrated for different flow rates. When ordering new fuel injectors, be certain to order the identical part number that is inscribed on the old injector.

1. Lubricate the new fuel injector O-rings with engine oil. Install the new O-rings on the fuel injectors.
2. Install the fuel injectors into the fuel rail sockets with the fuel injector terminals facing outward.
3. Install the fuel injector retaining clips onto the fuel injector and the fuel rail ledge.
4. Make sure that the clips are parallel to the fuel injector harness connector.

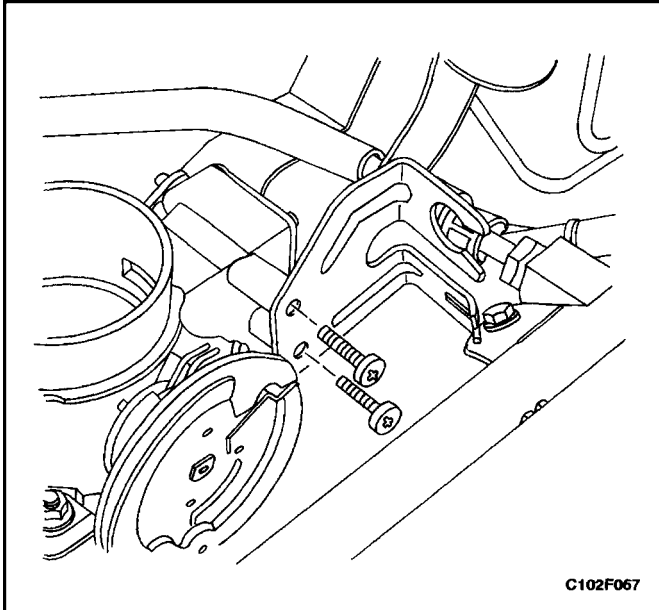


5. Install the fuel rail assembly into the cylinder head.
6. Install the fuel rail retaining bolts.

### Tighten

Tighten the fuel rail retaining bolts to 25 N•m (18 lbft).

7. Connect the fuel inlet line to the fuel rail.
8. Connect the fuel return line to the fuel rail
9. Install the fuel pressure regulator. Refer to " Fuel Pressure Regulator " in this section.
10. Connect the fuel injector channel cover and connectors. Rotate each fuel injector as required.

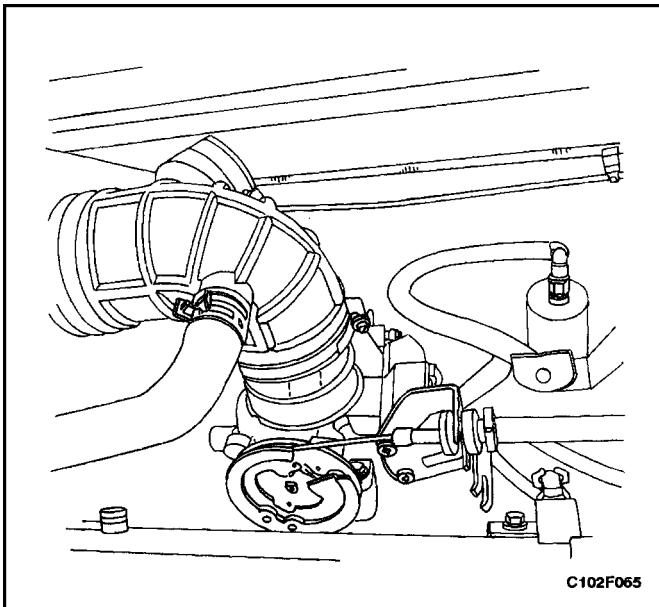


11. Install the throttle cable bracket and the bolts.

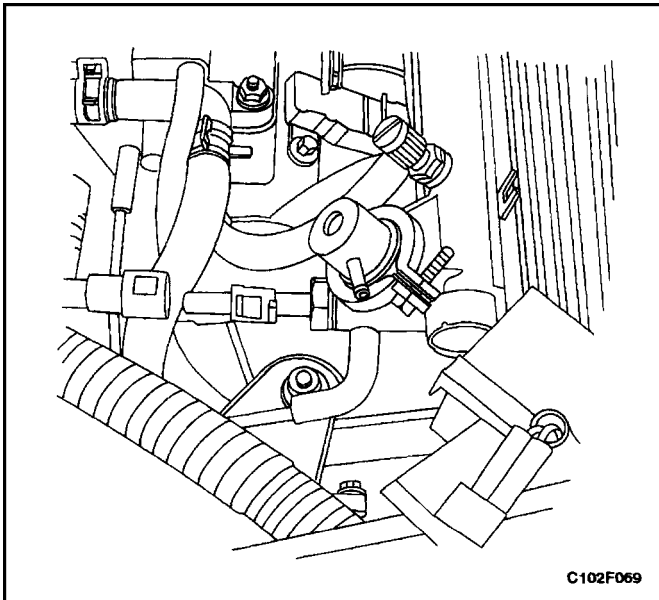
### **Tighten**

Tighten the throttle cable bracket bolts to 10 N•m (89 lb-in).

12. Connect the PCV hose to the valve cover.
13. Connect the throttle cables to the throttle body and bracket.



14. Install the air intake tube and resonator.
15. Connect the breather hose to the valve cover.
16. Connect the IAT sensor connector.
17. Connect the negative battery cable.
18. Perform a leak check of the fuel rail and fuel injectors.



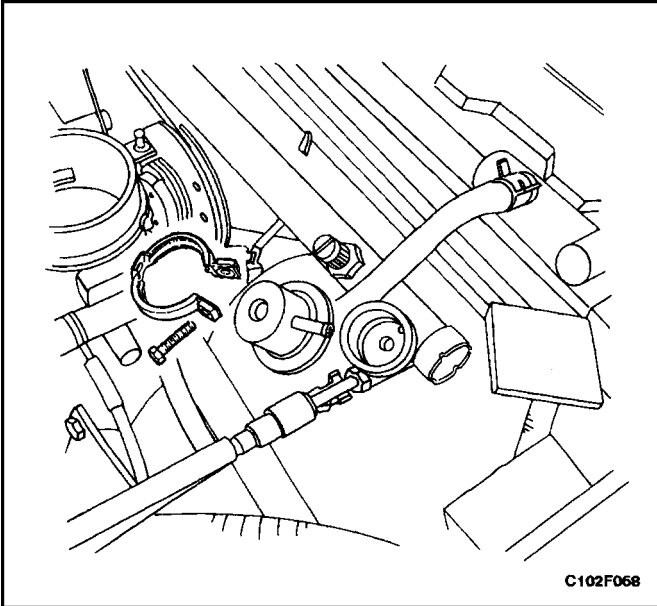
## **FUEL PRESSURE REGULATOR**

### **Removal Procedure**

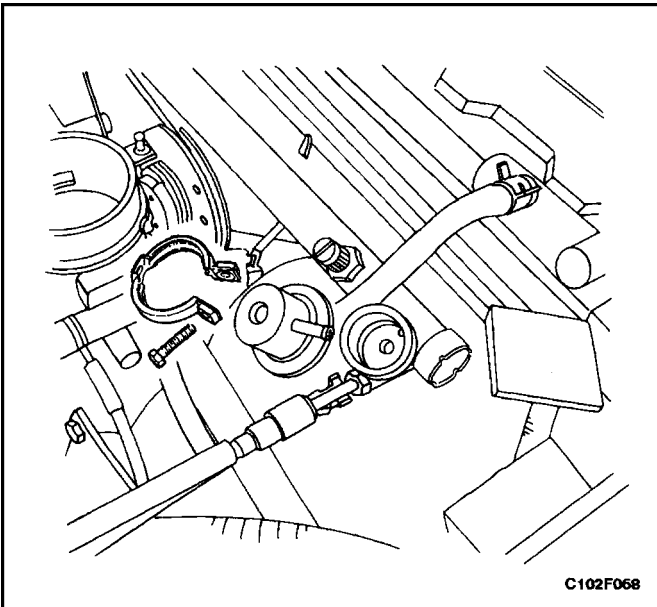
**CAUTION :** *The fuel system is under pressure. To avoid fuel spillage and the risk of personal injury or fire, it is necessary to relieve the fuel system pressure before disconnecting the fuel lines.*

1. Relieve the fuel pressure. Refer to "Fuel System Pressure Relief" in this section.
2. Disconnect the negative battery cable.
3. Disconnect the intake air temperature (IAT) sensor connector.
4. Disconnect the breather hose from the valve cover.
5. Remove the air intake tube.
6. Disconnect the vacuum hose from the fuel pressure regulator.





7. Remove the fuel pressure regulator retaining clamp.
8. Remove the fuel pressure regulator by turning it back and forth and then pulling it out.
9. Discard the O-ring.

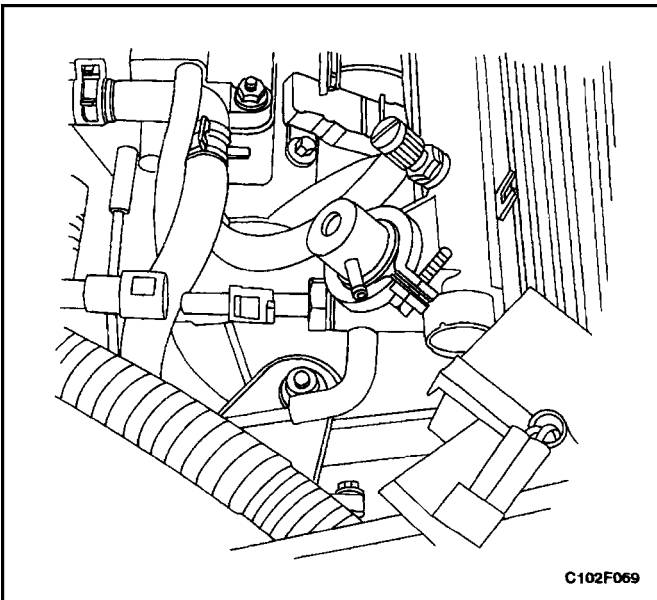


### Installation Procedure

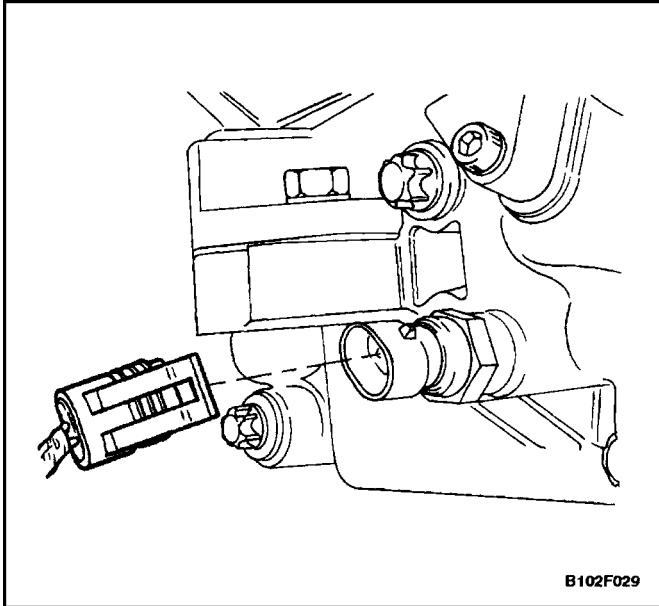
1. Lubricate a new O-ring. Install the new O-ring onto the fuel pressure regulator body.
2. Insert the fuel pressure regulator into the fuel rail body.
3. Install the fuel pressure regulator retaining clamp.

#### **Tighten**

Tighten the fuel pressure regulator retaining clamp to 12 N•m (106 lb-in).



4. Connect the vacuum hose to the fuel pressure regulator.
5. Install the air intake tube.
6. Connect the breather hose to the valve cover.
7. Connect the IAT sensor connector.
8. Connect the negative battery cable.
9. Perform a leak test of the fuel pressure regulator with the engine off and the ignition ON.



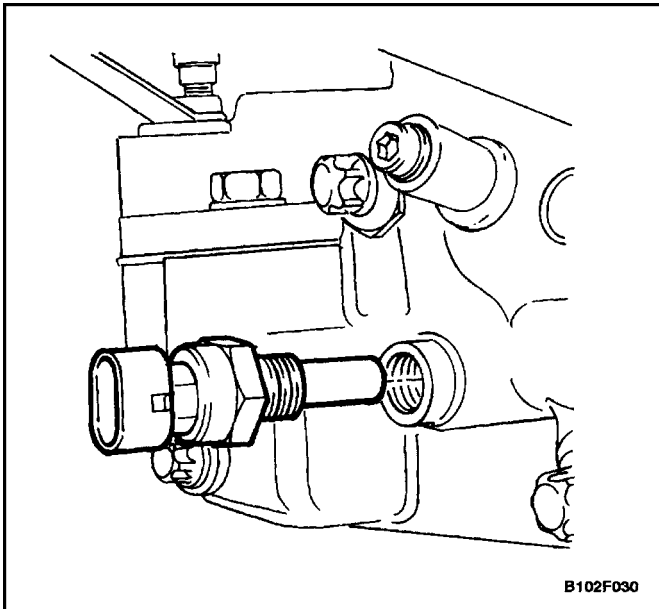
## ENGINE COOLANT TEMPERATURE SENSOR

### Removal Procedure

1. Relieve the coolant system pressure.
2. Disconnect the negative battery cable.
3. Disconnect the engine coolant temperature (ECT) sensor connector.

**Notice :** Take care when handling the engine coolant temperature sensor. Damage to the sensor will affect the proper operation of the fuel injection system.

4. Remove the ECT sensor from the electronic ignition (EI) system ignition coil adapter.



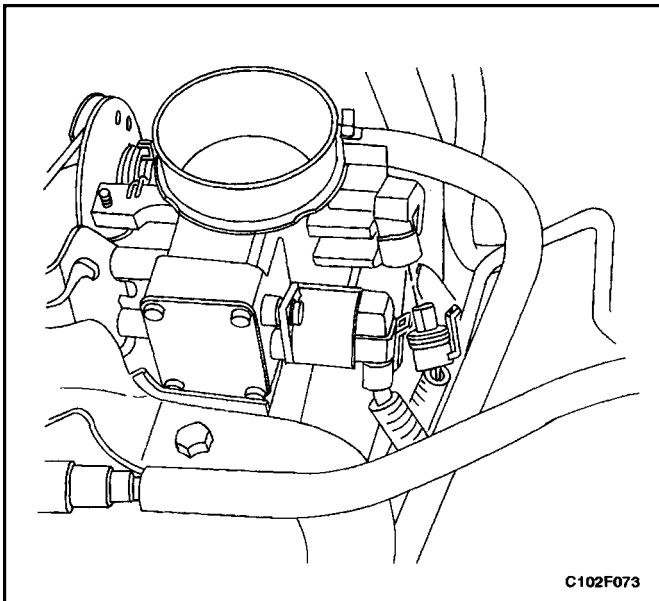
### Installation Procedure

1. Coat the threads of the ECT sensor with sealer.
2. Install the ECT sensor into the EI system ignition coil adapter.

#### Tighten

Tighten the engine coolant temperature sensor to 25 N•m (18 lb-ft).

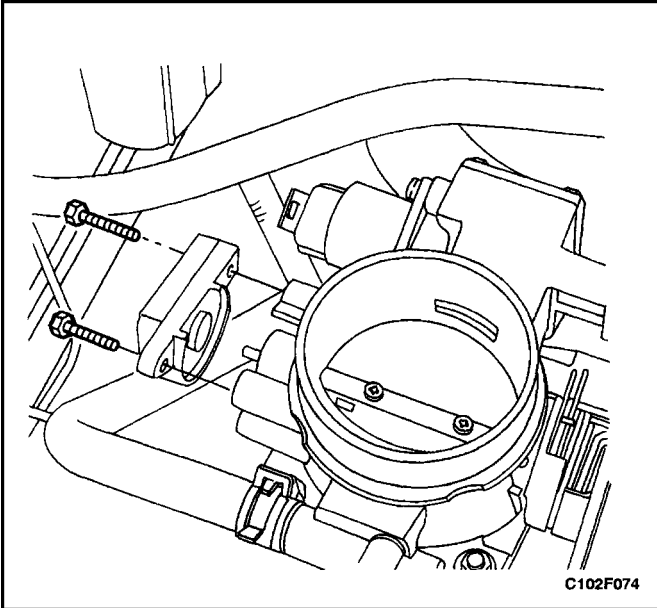
3. Connect the ECT sensor connector.
4. Fill the coolant system.
5. Connect the negative battery cable.



## THROTTLE POSITION SENSOR

### Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the air intake tube and resonator.
3. Disconnect the throttle position (TP) sensor connector.
4. Remove the TP sensor retaining bolts and the TP sensor.



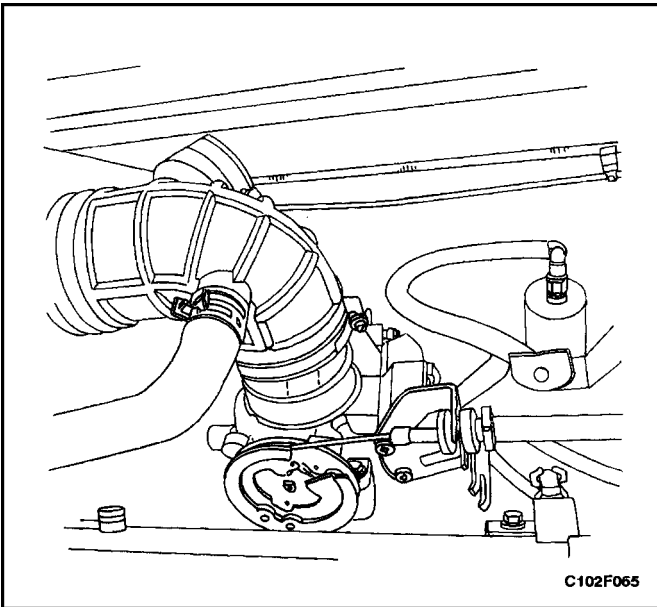
### Installation Procedure

1. With the throttle valve closed, position the TP sensor on the throttle shaft. Align the TP sensor with the bolt holes.
2. Install the TP sensor retaining bolts.

#### Tighten

Tighten the throttle position sensor retaining bolts to 2 N•m (18 lb-in).

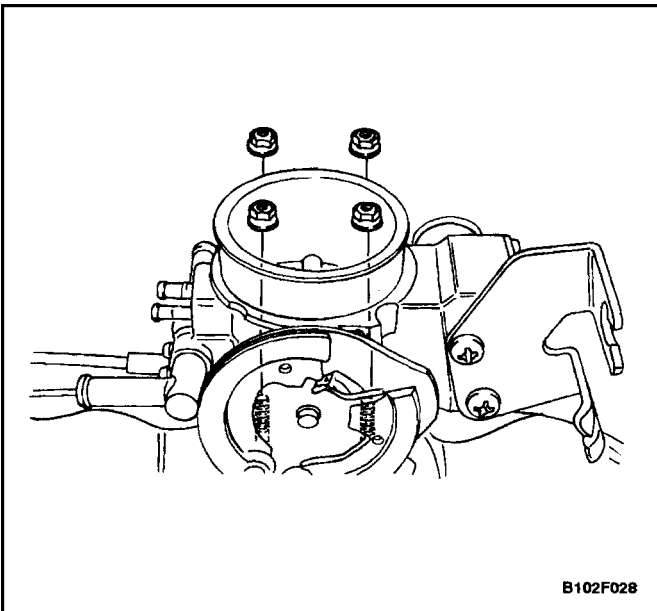
3. Connect the TP sensor connector.
4. Install the air intake tube and resonator.
5. Connect the negative battery cable.

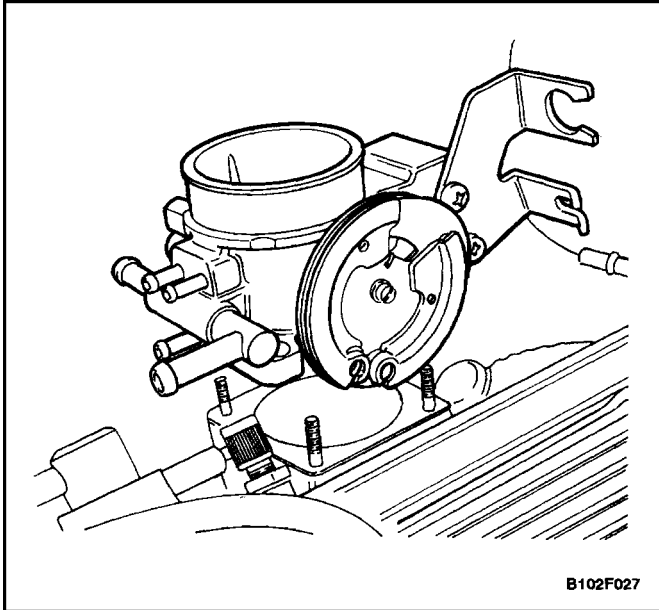


## THROTTLE BODY

### Removal Procedure

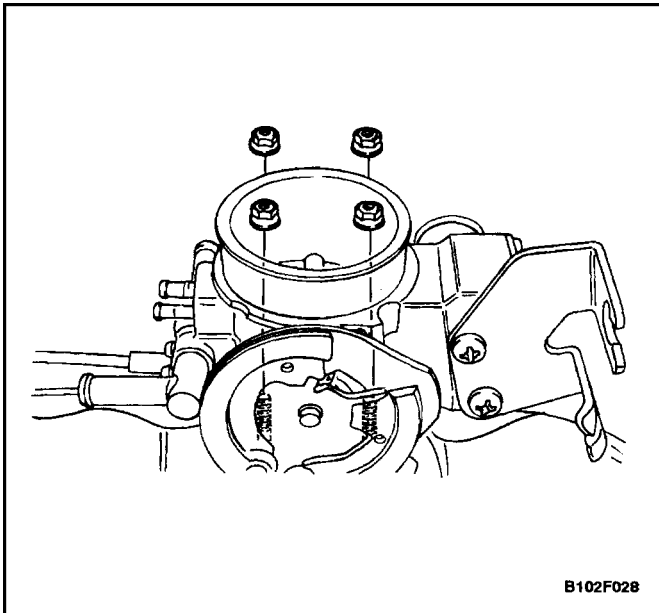
1. Disconnect the negative battery cable.
2. Disconnect the intake air temperature (IAT) sensor connector.
3. Disconnect the breather hose from the valve cover.
4. Remove the air intake tube.
5. Disconnect the throttle cables by opening the throttle and moving the cable through the release slot.
6. Disconnect the vacuum hoses from the throttle body.
7. Disconnect the throttle position (TP) sensor and the idle air control valve connectors.
8. Disconnect the coolant hoses from the throttle body.
9. Remove the throttle body retaining nuts.





**Notice :** Cover the opening of the intake manifold after removing the throttle body assembly. This will prevent any objects or debris from entering the engine which may cause damage.

10. Remove the throttle body and discard the gasket.
11. Remove the TP sensor. Refer to " Throttle Position Sensor " in this section.
12. Remove the idle air control (IAC) valve. Refer to " Idle Air Control Valve " in this section.



## Installation Procedure

**Notice :** Use care in cleaning old gasket material from machined aluminum surfaces. Sharp tools may damage sealing surfaces.

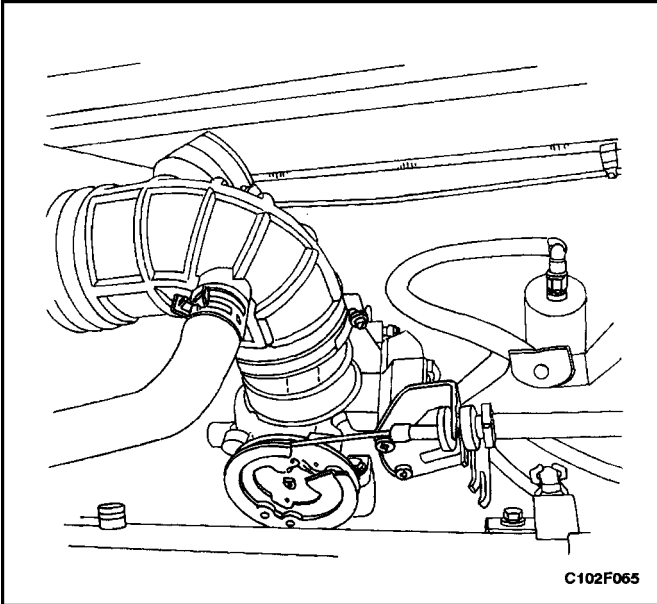
1. Clean the gasket mating surface on the intake manifold.

**Notice :** The throttle body may be cleaned in a cold immersion– type cleaner following disassembly. The TP sensor and the idle air control valve should not come in contact with any solvent or cleaner, as they may be damaged.

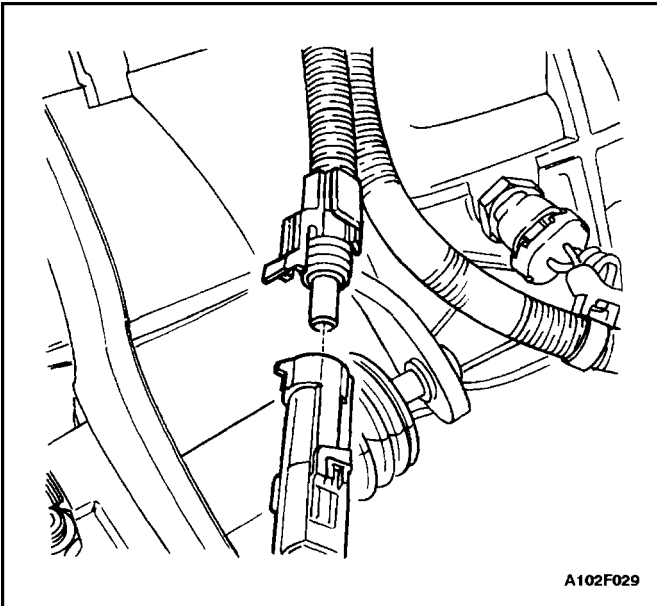
2. Clean the throttle body.
3. Install the TP sensor. Refer to " Throttle Position Sensor " in this section.
4. Install the IAC valve. Refer to " Idle Air Control Valve " in this section.
5. Install the throttle body assembly with a new gasket to the intake manifold.
6. Install the throttle body retaining nuts.

## Tighten

Tighten the throttle body retaining nuts to 9 N•m (80 lb–in).



7. Connect the TP sensor connector and the IAC valve connector.
  8. Connect the coolant hoses to the throttle body.
  9. Connect the vacuum hoses to the throttle body.
- Important :** Make sure the throttle/cruise control cables do not hold the throttle open. With the engine off, check to see that the accelerator pedal is free.
10. Connect the throttle/cruise cables.
  11. Install the air intake tube.
  12. Connect the breather hose to the valve cover.
  13. Connect the IAT sensor connector.
  14. Connect the negative battery cable.
  15. Fill the cooling system.



## OXYGEN SENSOR (O2S 1)

### Removal Procedure

1. Disconnect the negative battery cable.

**Notice :** The oxygen sensor (O2S 1) uses a permanently attached pigtail and connector. This pigtail should not be removed from the O2S 1. Damage or removal of the pigtail or the connector could affect proper operation of the O2S 1. Take care when handling the O2S 1. Do not drop the O2S 1.

2. Disconnect the O2S 1 connector.

**Notice :** Notice: The oxygen sensor may be difficult to remove when engine temperature is below 48°C (118°F). Excessive force may damage threads in the exhaust manifold.

3. Carefully remove the O2S 1 from the exhaust manifold.

### Installation Procedure

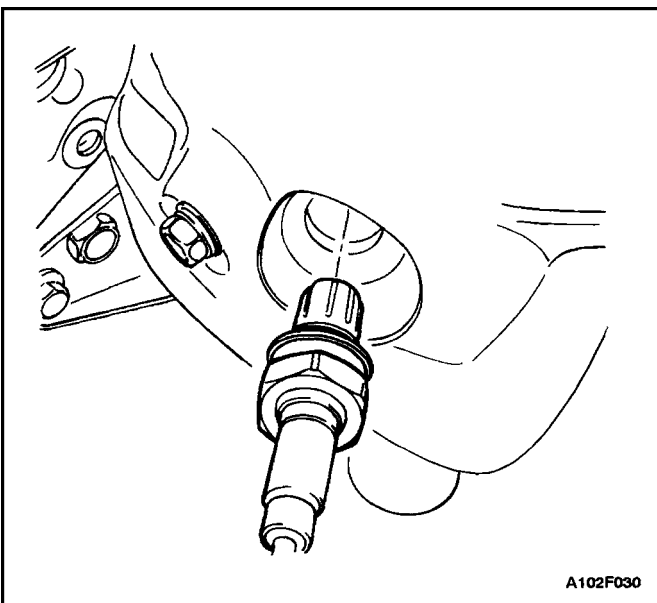
**Important :** A special anti-seize compound is used on the oxygen sensor threads. This compound consists of a liquid graphite and glass beads. The graphite will burn away, but the glass beads will remain, making the sensor easier to remove. New or serviced sensors will already have the compound applied to the threads. If a sensor is removed from any engine and is to be reinstalled, the threads must have an anti-seize compound applied before reinstallation.

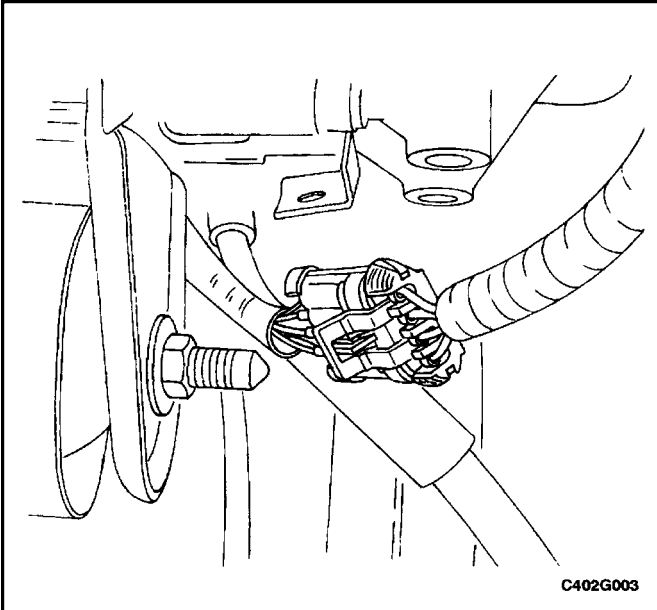
1. Coat the threads of the O2S 1 with an anti-seize compound, if needed.
2. Install the O2S 1 into the exhaust manifold.

### Tighten

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

3. Connect the O2S 1 connector.
4. Connect the negative battery cable.



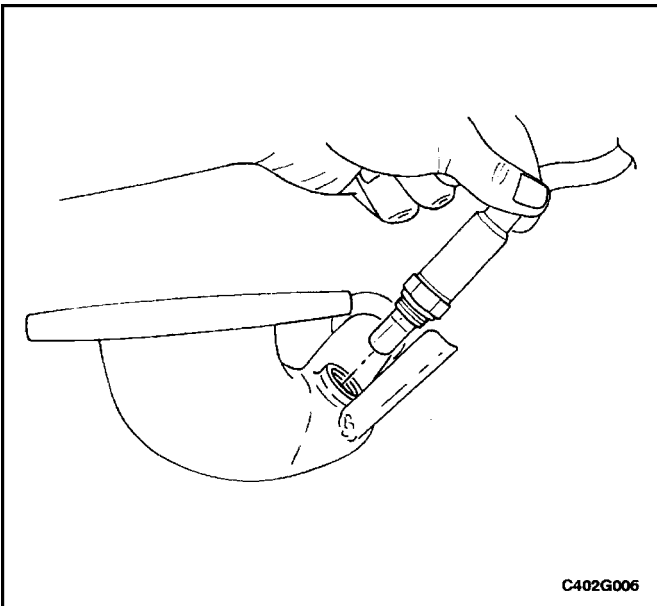
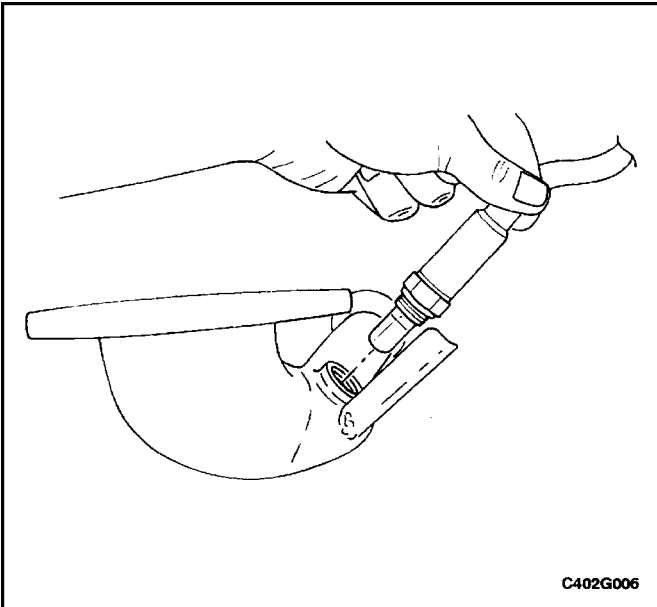


## HEATED OXYGEN SENSOR (HO2S2)

### Removal Procedure

1. Disconnect the negative battery cable.
2. Disconnect the electrical connector.

3. Remove the heated oxygen sensor.

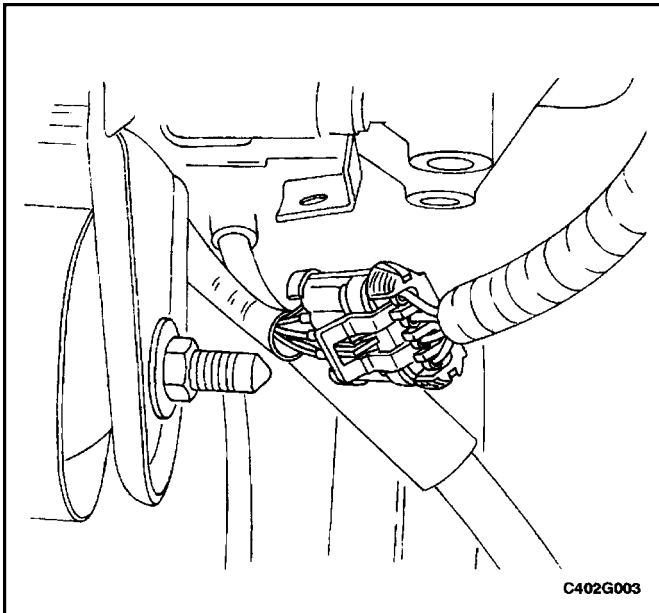


### Installation Procedure

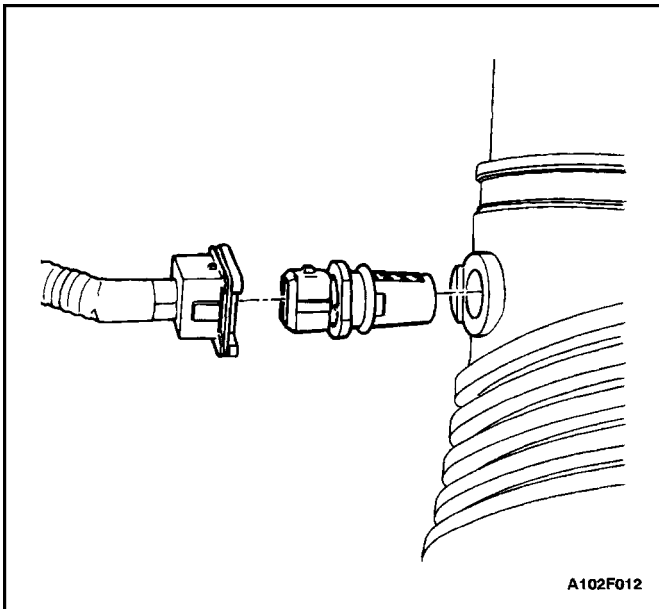
1. Install the heated oxygen sensor.

#### **Tighten**

Tighten the heated oxygen sensor to 41 N•m (30 lbft).



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



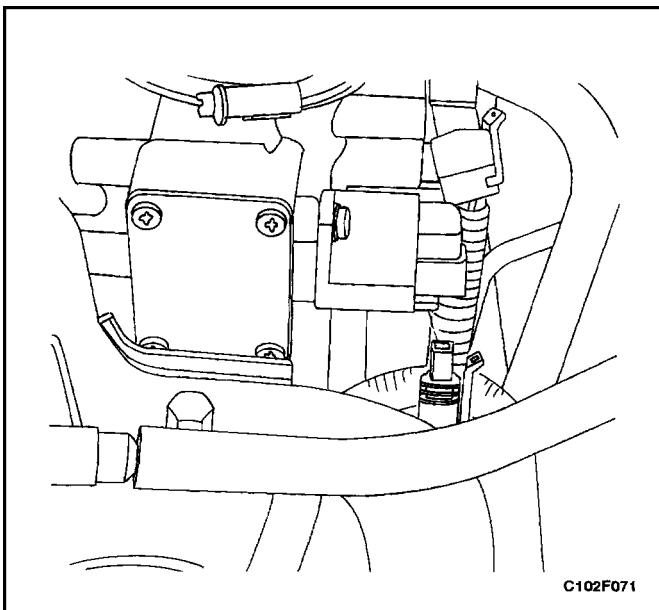
## INTAKE AIR TEMPERATURE SENSOR

### Removal Procedure

1. Disconnect the negative battery cable.
2. Disconnect the intake air temperature (IAT) sensor connector.
3. Remove the IAT sensor by pulling it out of the air intake tube.

### Installation Procedure

1. Install the IAT sensor into the air intake tube.
2. Connect the IAT connector.
3. Connect the negative battery cable.



## IDLE AIR CONTROL VALVE

### Removal Procedure

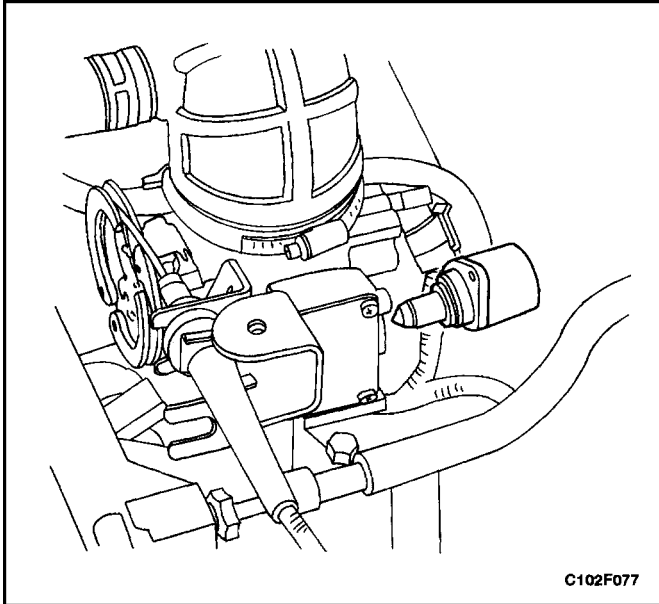
1. Disconnect the negative battery cable.
2. Remove the air intake resonator.
3. Disconnect the idle air control (IAC) valve connector.
4. Remove the IAC valve retaining bolts.

**Notice :** On IAC valves that have been in service, do not push on the valve pintle. The force required to move the pintle may damage the threads on the worm drive.

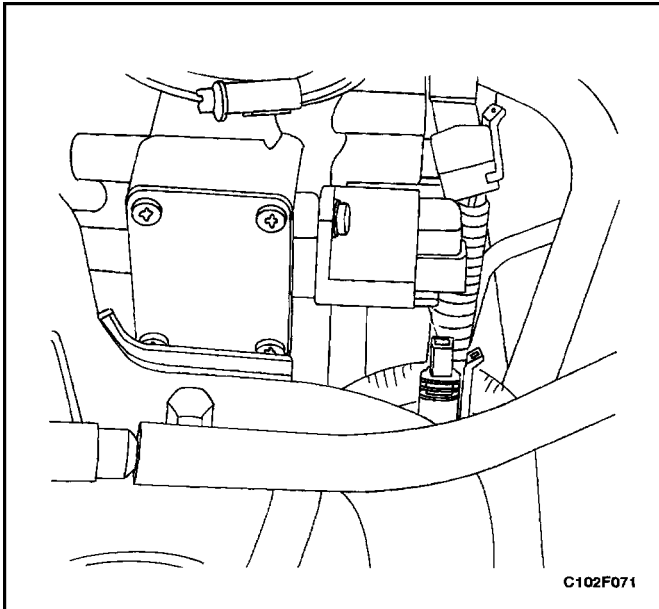
5. Remove the IAC valve.

**Notice :** Do not use methyl ethyl ketone because it can damage the parts.

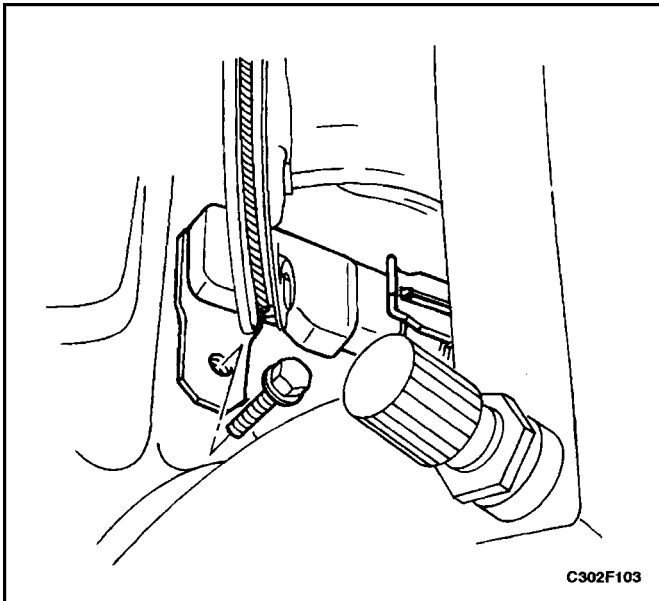
6. Clean the IAC valve O-ring seal area, the pintle valve seat, and the air passage with a suitable fuel system cleaner.



C102F077



C102F071



C302F103

## Installation Procedure

**Important :** If installing a new IAC valve, be sure to replace it with an identical part. The IAC valve pintle shape and diameter are designed for the specific application. Measure the distance between the tip of the IAC valve pintle and the mounting flange. If the distance is greater than 28 mm (1.1 inches), use finger pressure to slowly retract the pintle. The force required to retract the pintle will not damage the IAC valve. The purpose of the 28-mm (1.1-inch) setting is to prevent the IAC pintle from bottoming out on the pintle seat. This 28-mm (1.1-inch) setting is also an adequate setting for controlled idle on a restart.

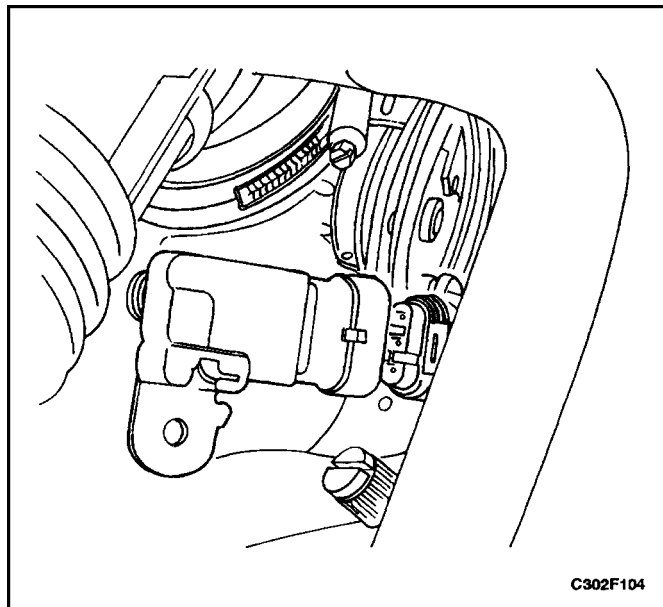
1. Lubricate a new O-ring with engine oil. Install the new O-ring onto the valve.
  2. Install the IAC valve into the throttle body.
  3. Install the IAC valve retaining bolts.
- Tighten**  
Tighten the idle air control valve retaining bolts to 3 N•m (27 lb-in).
4. Connect the IAC valve connector.
  5. Install the air intake resonator.
  6. Connect the negative battery cable.
  7. Start the engine and check for the proper idle speed.

## MANIFOLD ABSOLUTE PRESSURE SENSOR

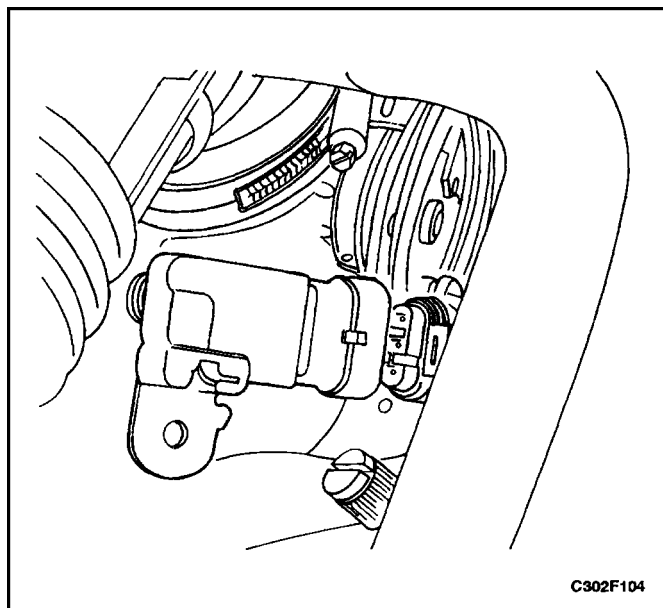
### Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the MAP sensor bolt.



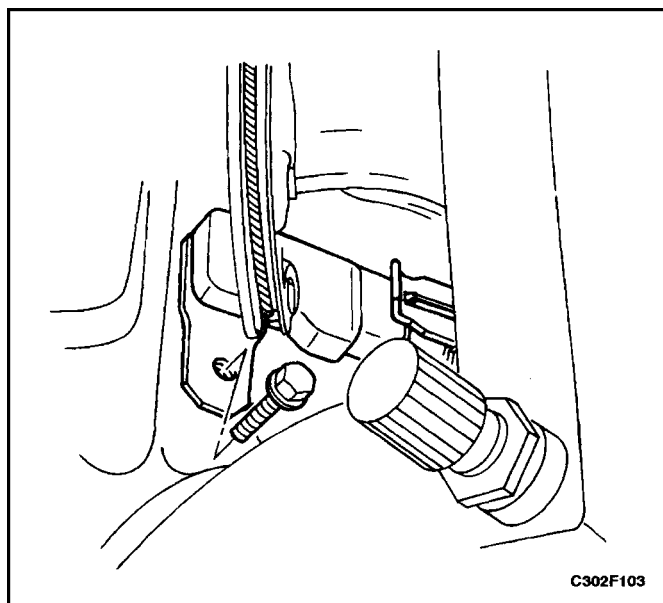


3. Remove the MAP sensor up and away from the intake manifold recess.
4. Disconnect the MAP sensor connector.



### Installation Procedure

1. Connect the MAP sensor connector to the MAP sensor.
2. Install the MAP sensor into the intake manifold.

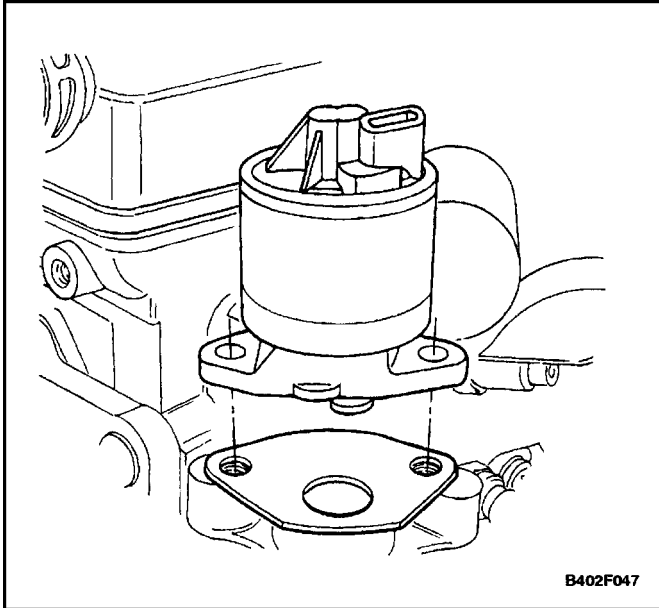


3. Install the MAP sensor retaining bolt.

#### **Tighten**

Tighten the manifold absolute pressure sensor retaining bolt to 10 N•m (89 lb-in).

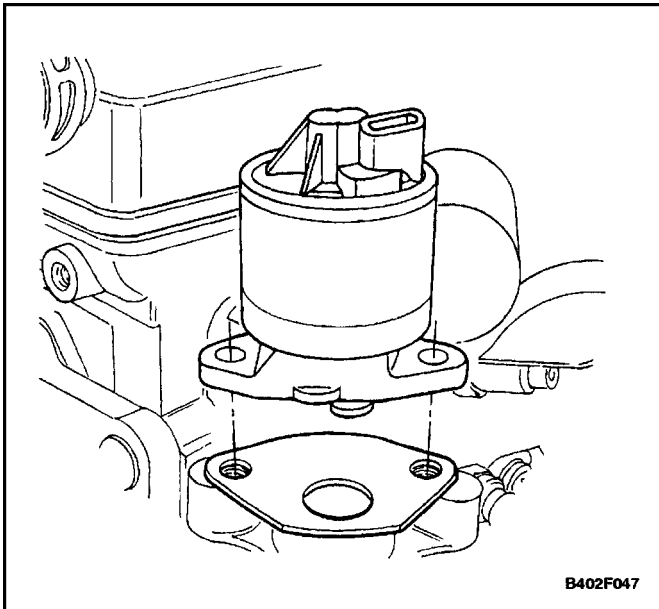
4. Connect the negative battery cable.



## EXHAUST GAS RECIRCULATION VALVE

### Removal Procedure

1. Disconnect the negative battery cable.
2. Disconnect the vacuum hose from the exhaust gas recirculation (EGR) valve.
3. Remove the EGR valve retaining bolts.
4. Remove the EGR valve from the electronic ignition (EI) system ignition coil adapter.



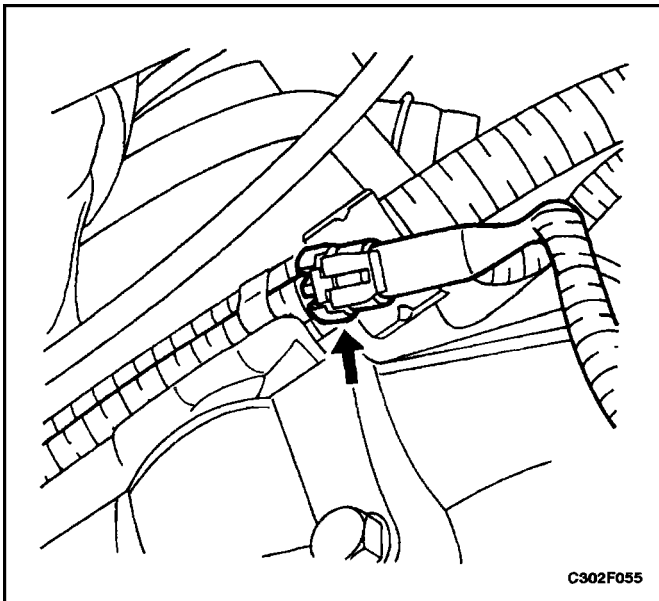
### Installation Procedure

1. Clean the EI system ignition coil adapter mating surface.
2. Install a new EGR valve gasket.
3. Install the EGR valve with the bolts.

#### Tighten

Tighten the exhaust gas recirculation valve retaining bolts to 20 N•m (15 lb–ft).

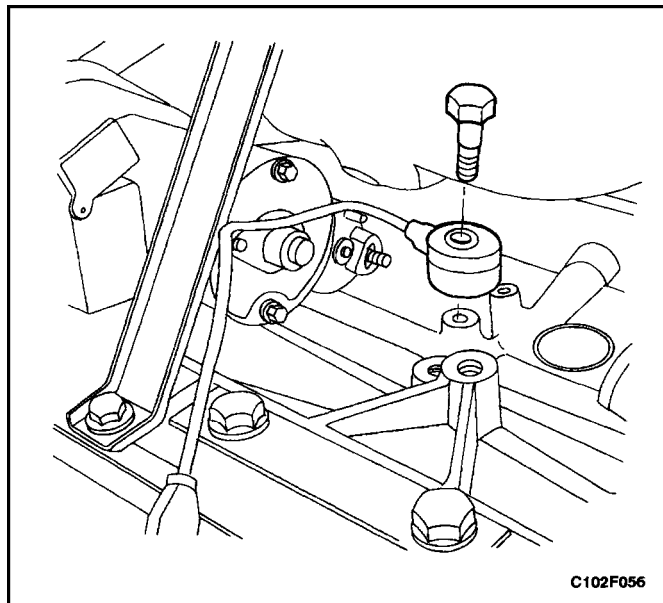
4. Connect the vacuum hose to the EGR valve.
5. Connect the negative battery cable.



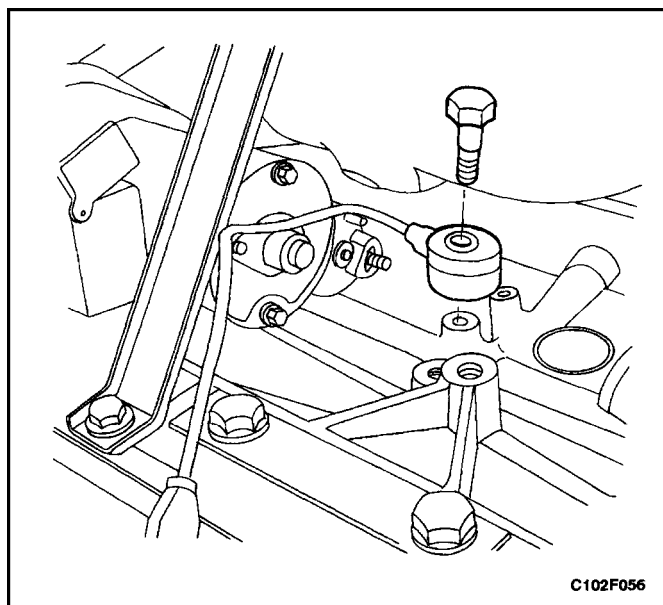
## KNOCK SENSOR

### Removal Procedure

1. Disconnect the negative battery cable.
2. Raise and suitably support the vehicle.
3. Disconnect electrical connector at the knock sensor.



4. Remove the bolt and the knock sensor.

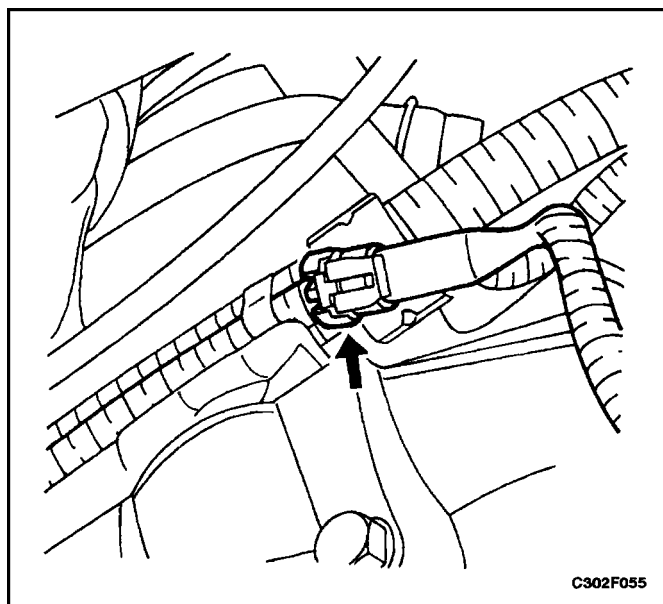


### Installation Procedure

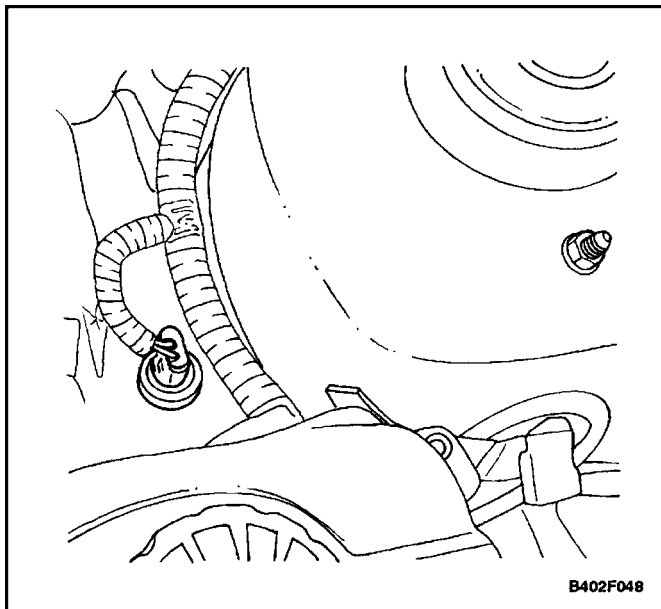
1. Install the knock sensor with the bolt.

#### **Tighten**

Tighten the knock sensor bolt to 20 N•m (15 lb–ft).



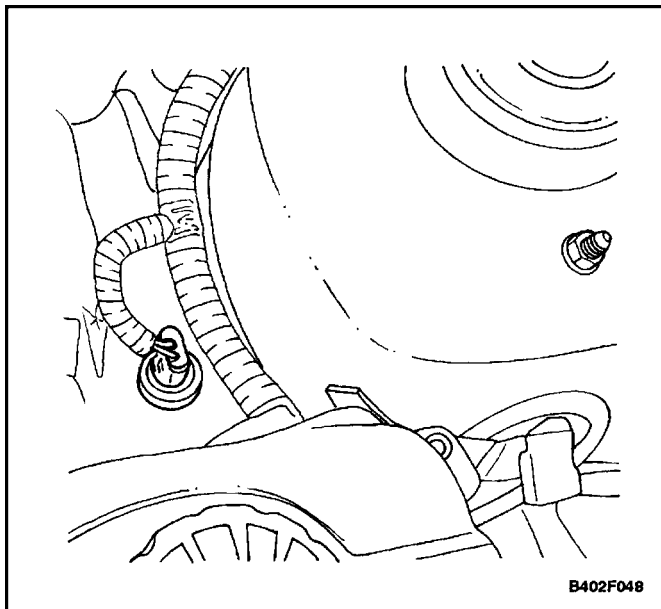
2. Connect the electrical connector at the knock sensor.
3. Lower the vehicle.
4. Connect the negative battery cable.



## G SENSOR

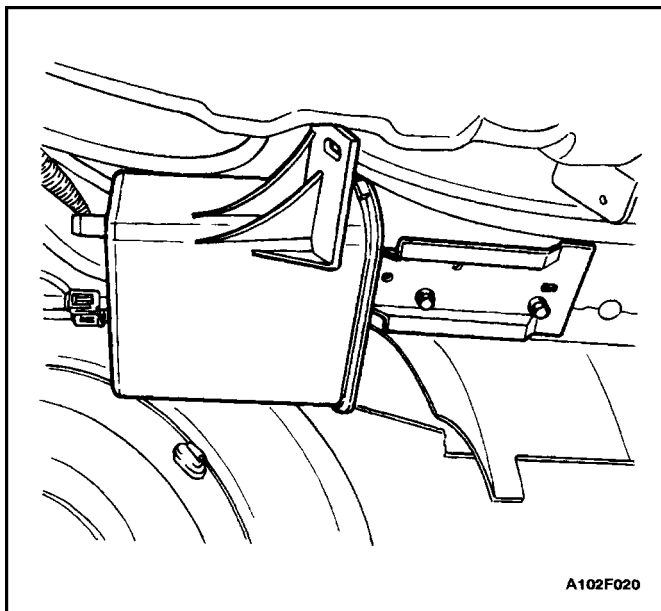
### Removal Procedure

1. Disconnect the negative battery cable.
2. Disconnect the G sensor electrical connector and remove the G sensor.



### Installation Procedure

1. Install the G sensor and connect the electrical connector.
2. Connect the negative battery cable.

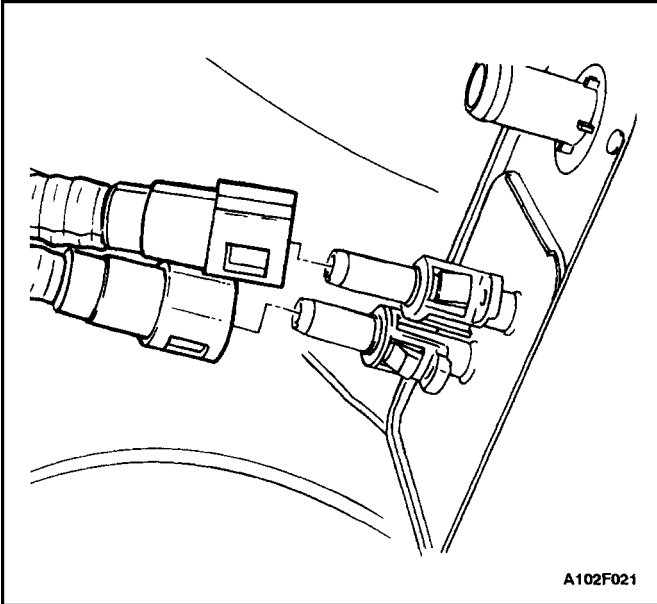


## EVAPORATIVE EMISSION CANISTER

### Removal Procedure

**CAUTION :** *Canister and vacuum hoses contain fuel vapors. Do not smoke in the area or permit an open flame.*

1. Remove the canister protective cover.
2. Disconnect the canister fuel vapor hoses.
3. Remove the bolt that secures the canister flange to the vehicle.
4. Slide the canister out of the track holder.
5. Remove the canister.



### Installation Procedure

1. Insert the canister into the track and slide it into position.
2. Install the canister flange bolt.

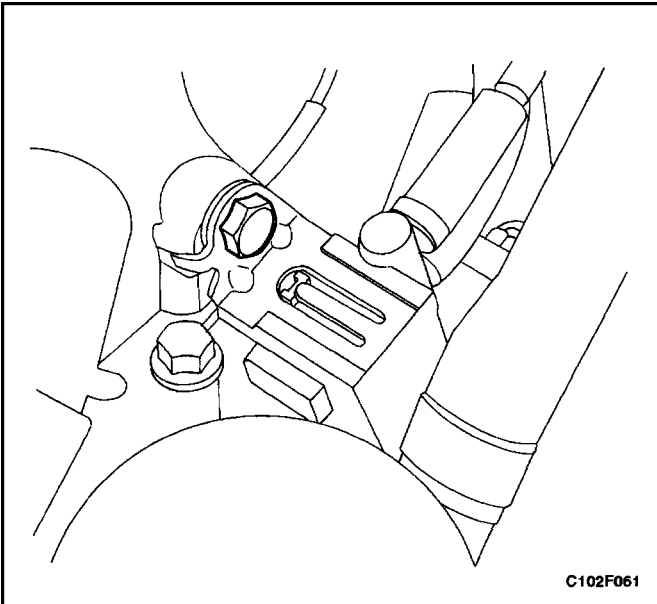
#### Tighten

Tighten the evaporative emission canister flange bolt to 20 N•m (15 lb–ft).

3. Connect the canister fuel vapor hoses.
4. Install the canister protective cover.

#### Tighten

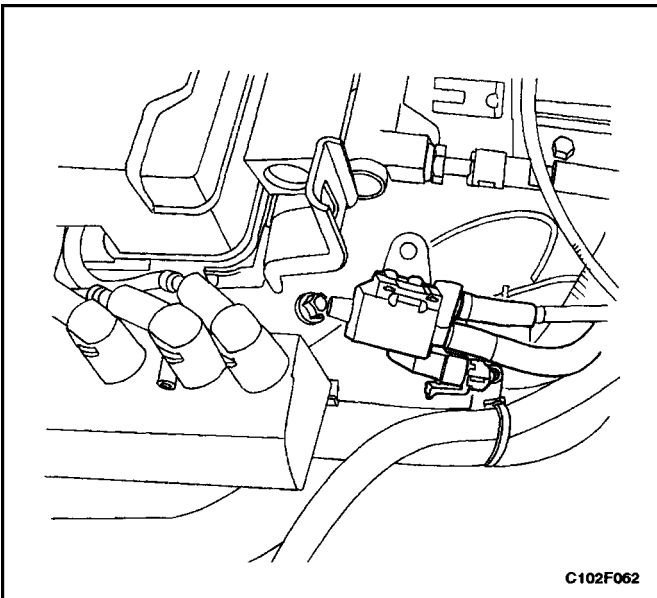
Tighten the evaporative emission canister protective cover to 8 N•m (71 lb–in).



## EVAPORATIVE EMISSION CANISTER PURGE SOLENOID

### Removal Procedure

1. Disconnect the negative battery cable.
2. Disconnect the evaporative (EVAP) emission canister purge solenoid connector.
3. Disconnect the vacuum hoses from the EVAP canister purge solenoid.
4. Remove the EVAP canister purge solenoid bracket bolt from the intake manifold.
5. Unclip the EVAP canister purge solenoid from the mounting bracket.



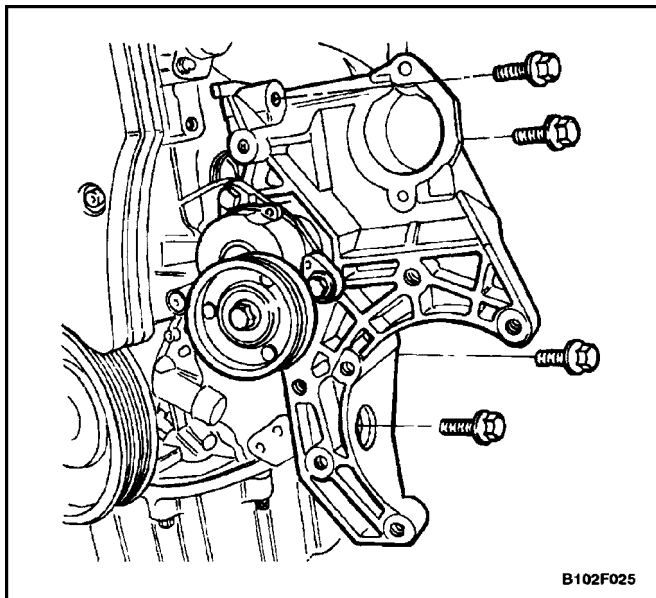
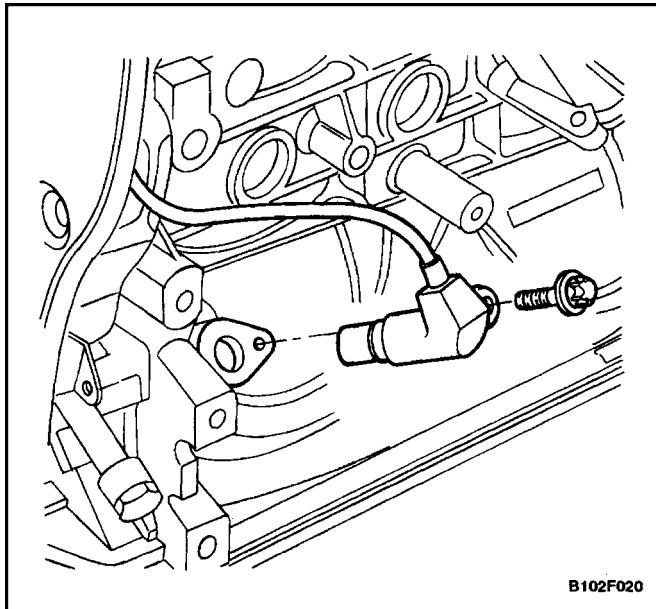
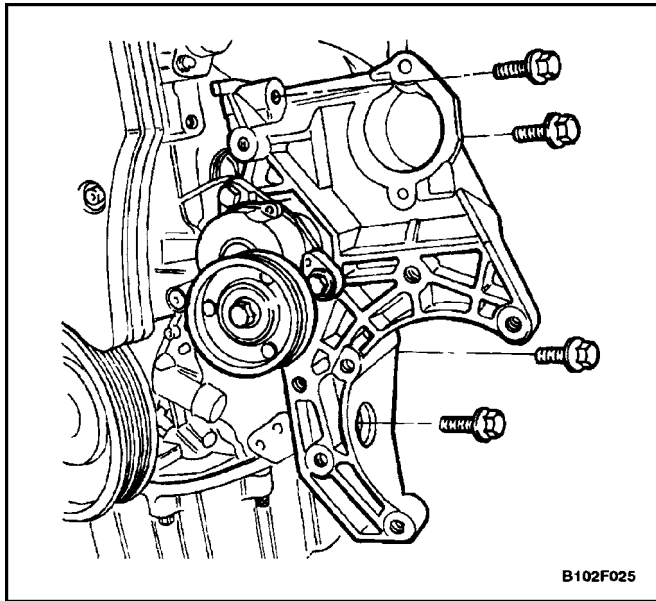
### Installation Procedure

1. Attach the EVAP canister purge solenoid to the mounting bracket.
2. Install the EVAP canister purge solenoid and the mounting bracket to the intake manifold with the bracket bolt.

#### Tighten

Tighten the evaporative emission canister purge solenoid bracket bolt to 5 N•m (44 lb–in).

3. Connect the vacuum hoses to the EVAP canister purge solenoid.
4. Connect the EVAP canister purge solenoid connector.
5. Connect the negative battery cable.



## CRANKSHAFT POSITION SENSOR

### Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the power steering pump, if equipped. Refer to *Section 6B, Power Steering Pump*.
3. Remove the A/C compressor. Refer to *Section 7D, Automatic Temperature Control Heating, Ventilation, and Air Conditioning System*.
4. Remove the rear A/C compressor mounting bracket bolts and the rear A/C compressor mounting bracket.
5. Remove the accessory mounting bracket by removing the bolts.
6. Disconnect the crankshaft position (CKP) sensor connector.
7. Remove the CKP sensor retaining bolt.
8. Gently rotate and remove the CKP sensor from the engine block.

### Installation Procedure

1. Insert the CKP sensor into the engine block.
2. Install the CKP sensor retaining bolt.

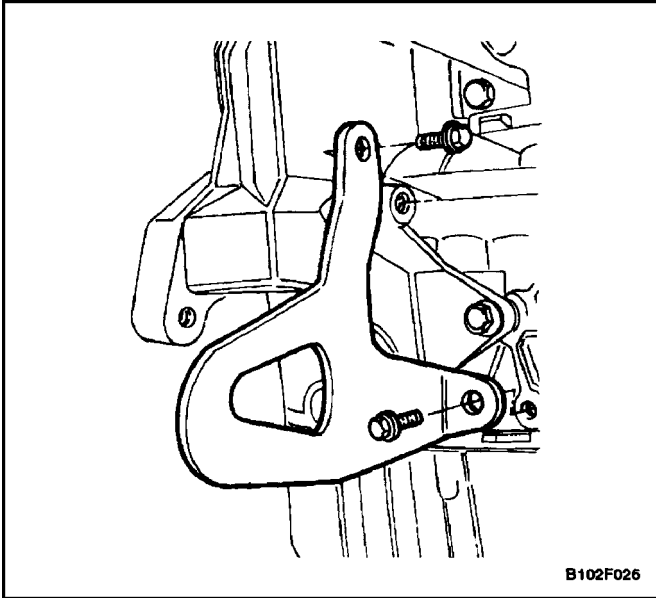
#### **Tighten**

Tighten the crankshaft position sensor retaining bolt to 10 N•m (89 lb-in).

3. Connect the CKP sensor connector.
4. Install the accessory mounting bracket with the bolts.

#### **Tighten**

Tighten the accessory mounting bracket bolts to 35 N•m (26 lb-ft).

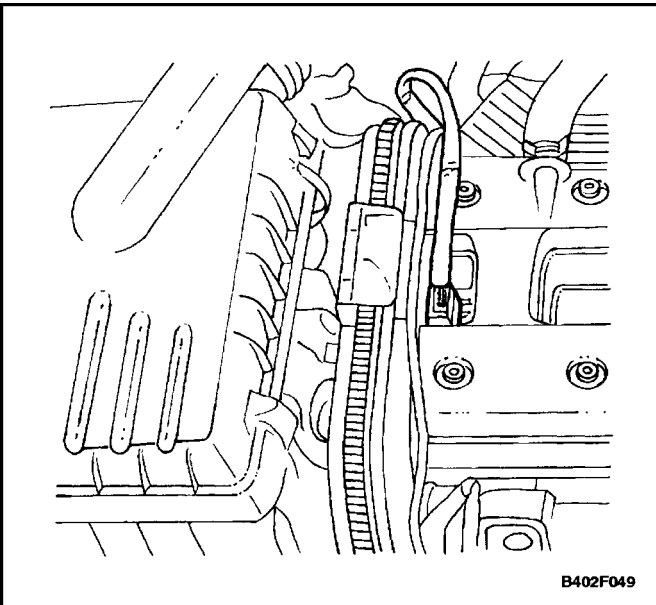


5. Install the rear A/C mounting bracket.

### **Tighten**

Tighten the rear A/C mounting bracket bolts to 35 N•m (26 lb–ft).

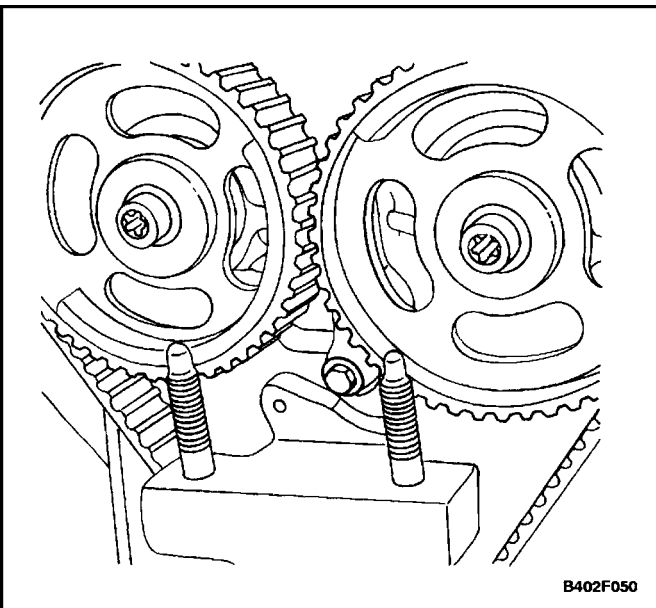
6. Install the A/C compressor. Refer to *Section 7D, Automatic Temperature Control Heating, Ventilation, and Air Conditioning System*.
7. Install the power steering pump. Refer to *Section 6B, Power Steering Pump*.
8. Connect the negative battery cable.



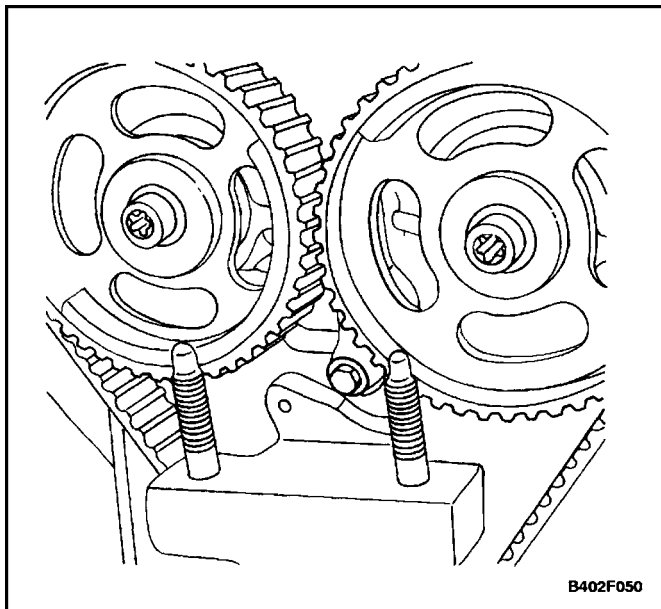
## **CAMSHAFT POSITION SENSOR**

### **Removal Procedure**

1. Disconnect the negative battery cable.
2. Remove the engine cover.
3. Disconnect the sensor electrical connector.



4. Remove the timing belt front cover. Refer to *Section 1C, DOHC Engine Mechanical*.
5. Remove the camshaft position sensor bolts.
6. Remove the camshaft position sensor from the top.

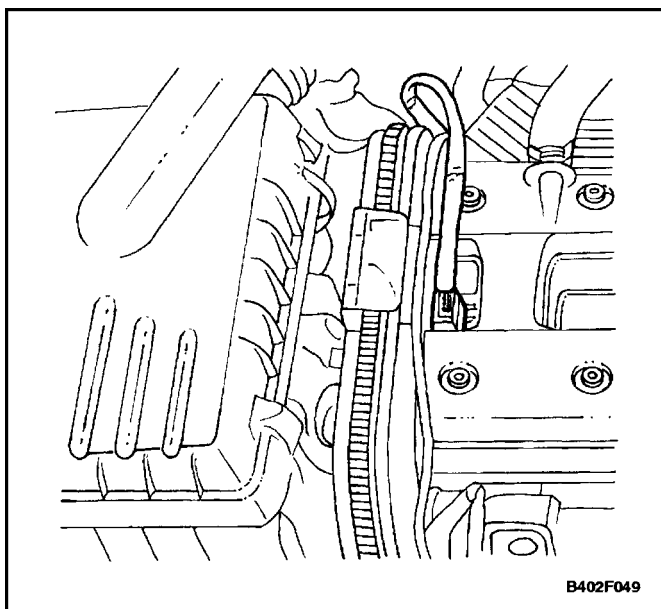


## Installation Procedure

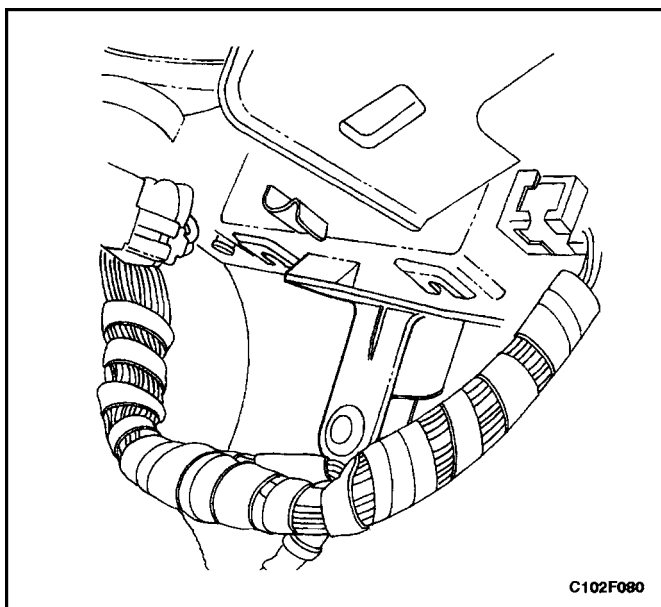
1. Install the camshaft position sensor and bolts.

### Tighten

Tighten the camshaft position bolts to 12 N•m (106 lbin).



2. Install the timing belt front cover, the crankshaft pulley, the accessory drive belt, and the air filter. Refer to *Section 1C, DOHC Engine Mechanical*.
3. Connect the sensor electrical connector.
4. Install the engine cover.
5. Connect the negative battery cable.

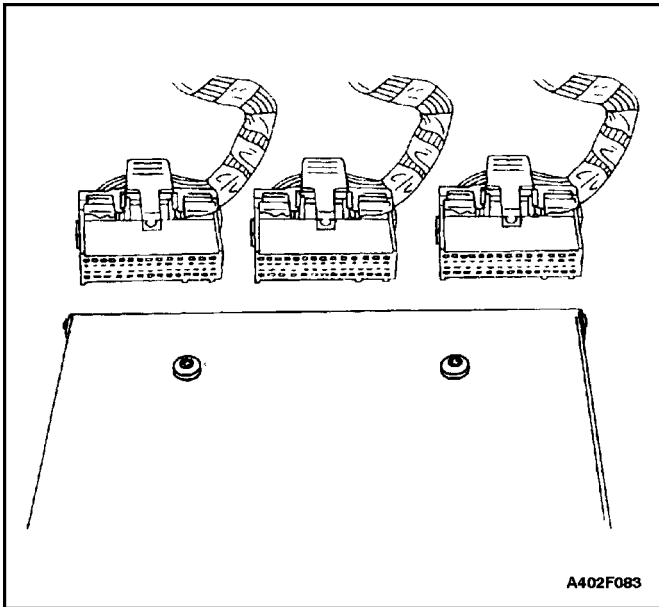


## ENGINE CONTROL MODULE (ECM)

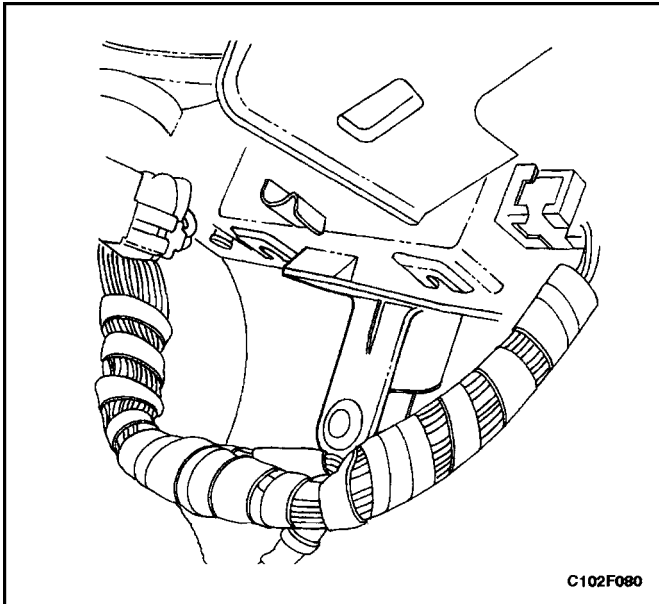
### Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the right side kick panel. Refer to *Section 9G, Interior Trim*.
3. Remove the engine control module (ECM) bracket trim locks.
4. Pull the ECM down from the ECM mounting base.



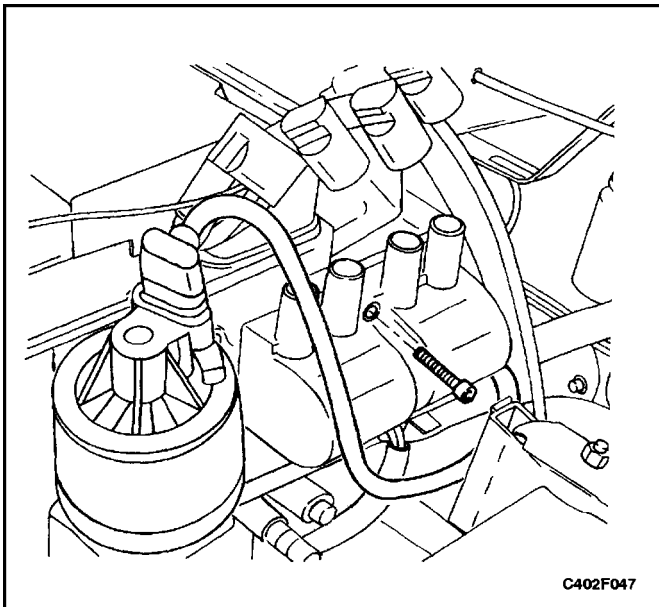


5. Disconnect the ECM connectors from the ECM.



### Installation Procedure

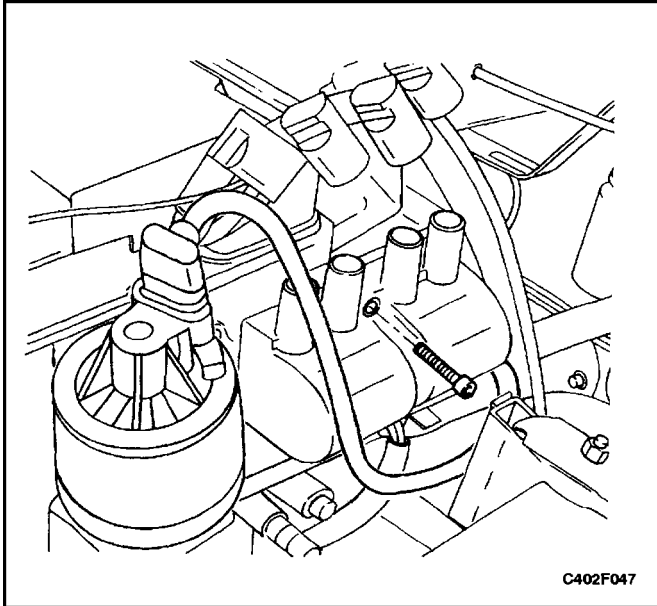
1. Connect the ECM connectors to the ECM.
2. Align the ECM into the mounting base.
3. Snap the ECM into its mounting base.
4. Install the ECM trim locks.
5. Install the passenger side kick panel. Refer to *Section 9G, Interior Trim*.
6. Connect the negative battery cable.
7. Perform a crankshaft position system variation learning procedure. Refer to "DTC P1336" in this section.



## ELECTRONIC IGNITION SYSTEM IGNITION COIL

### Removal Procedure

1. Disconnect the negative battery cable.
2. Disconnect the electronic ignition (EI) system ignition coil connector.
3. Note the ignition wire location and remove the ignition wires.
4. Remove the EI system ignition coil retaining bolts.
5. Remove the EI system ignition coil.



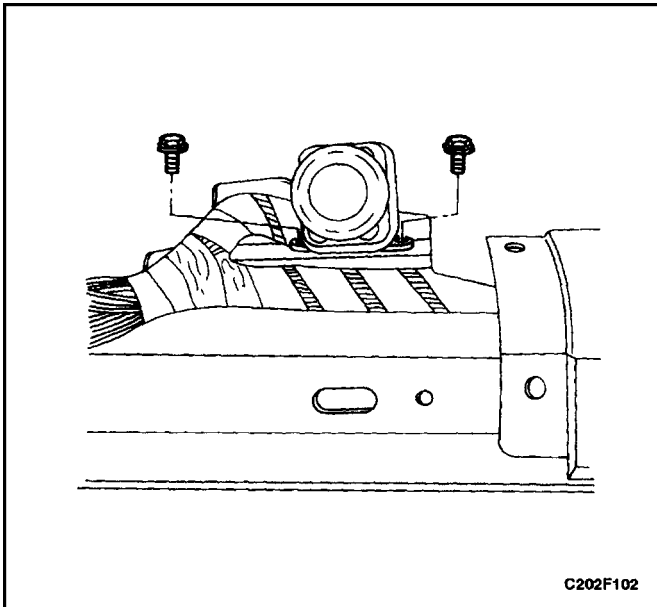
### Installation Procedure

1. Install the EI system ignition coil into the mounting location and install the retaining bolts.

#### Tighten

Tighten the electronic ignition system ignition coil retaining bolts to 10 N•m (89 lb-in).

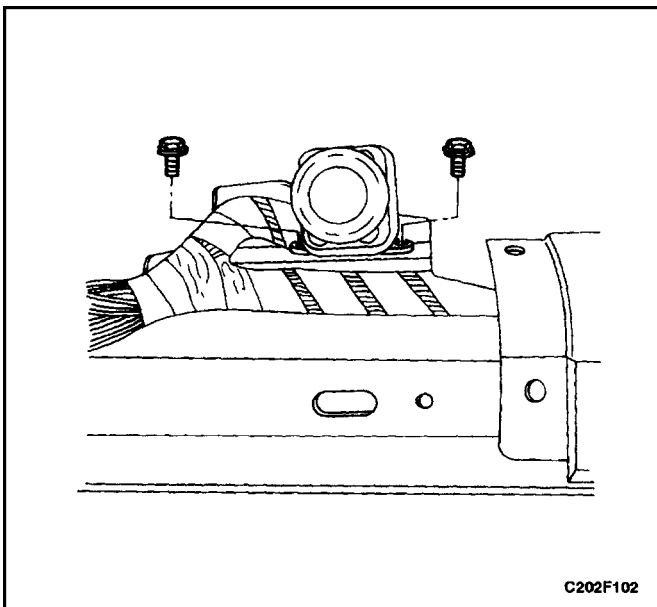
2. Connect the EI system ignition coil connector.
3. Install the ignition wires.
4. Connect the negative battery cable.



### FUEL CUTOFF SWITCH

#### Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the passenger front rocker trim panel. Refer to *Section 9G, Interior Trim*.
3. Remove the lower B-pillar trim panel. Refer to *Section 9G, Interior Trim*.
4. Reposition the carpet.
5. Remove the fuel cutoff switch mounting bolts.
6. Disconnect the electrical connector at the fuel cutoff switch.



### Installation Procedure

1. Connect the electrical connector at the fuel cutoff switch.
2. Install the fuel cutoff switch mounting bolts.

#### Tighten

Tighten the fuel cutoff switch mounting bolts to 3 N•m (27 lb-in).

**Important :** The fuel cutoff switch may have to be reset in order to start the vehicle.

3. Reposition the carpet.
4. Install the lower B-pillar trim panel. Refer to *Section 9G, Interior Trim*.
5. Install the passenger front rocker trim panel. Refer to *Section 9G, Interior Trim*.
6. Connect the negative battery cable.