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Document ID# 704822  
2001 Chevrolet/Geo Blazer - 4WD

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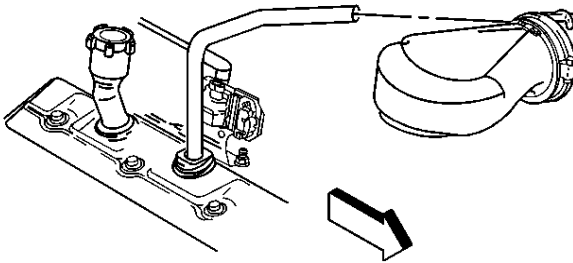
# Intake Manifold Replacement - Lower

## Removal Procedure

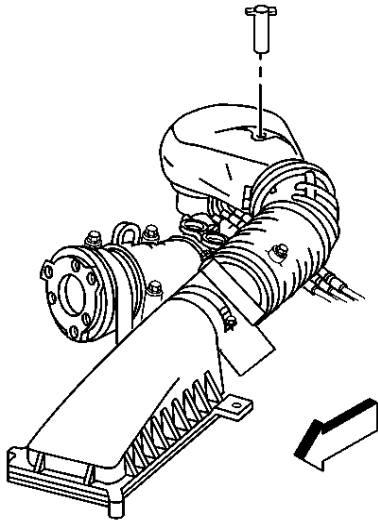
### Important

You do not have to remove the upper intake manifold in order to remove the lower intake manifold.

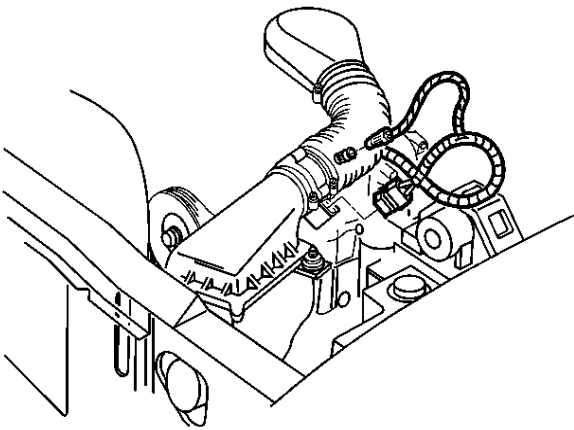
1. Disconnect the negative battery cable. Refer to [Battery Negative Cable Disconnect/Connect Procedure](#) in Engine Electrical.



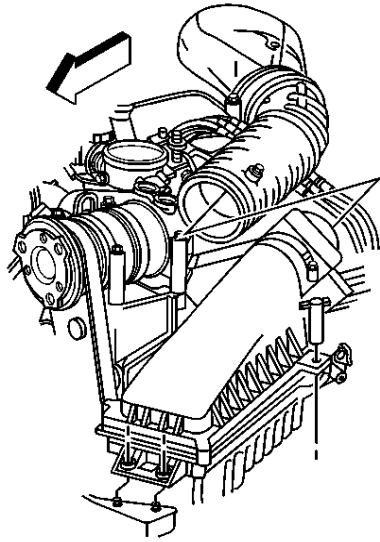
2. Disconnect the breather tube at the air cleaner outlet duct.



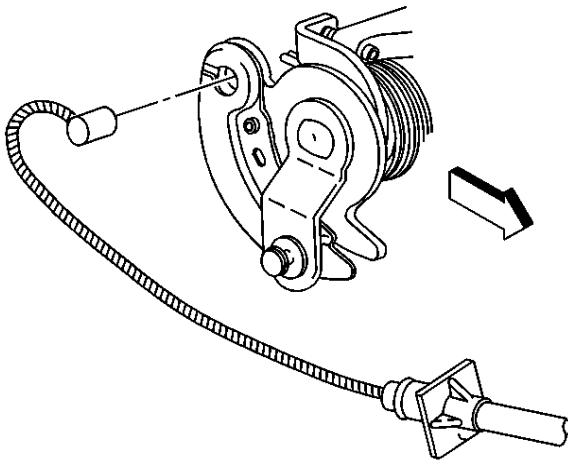
3. Remove the air cleaner outlet duct retaining wingnut.



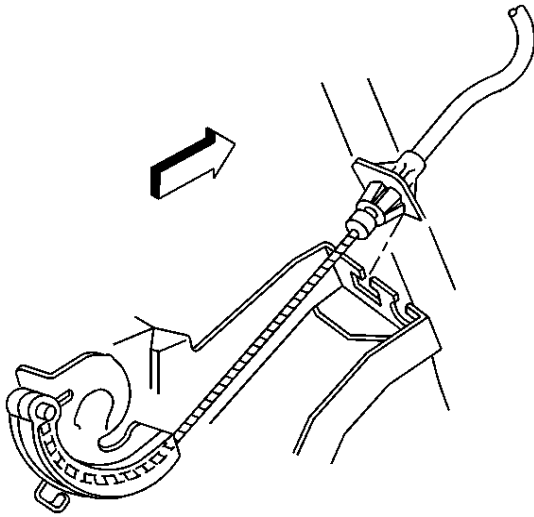
4. Disconnect the IAT sensor harness connector.



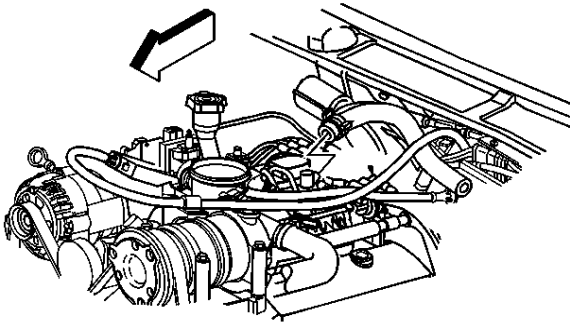
5. Remove the air cleaner outlet duct from the throttle body.



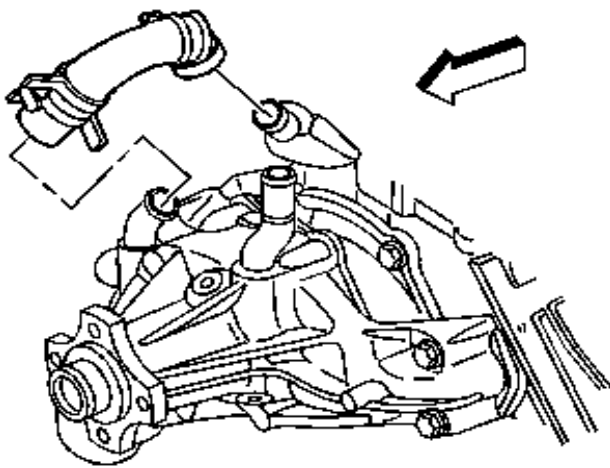
6. Disconnect the accelerator cable from the throttle body.



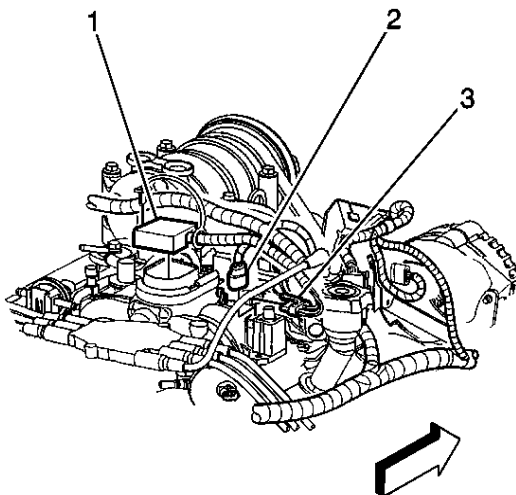
7. Remove the accelerator cable from the accelerator control cable bracket.
8. Disconnect the cruise control cable, if equipped, from the throttle shaft and the accelerator cable bracket. Refer to [Cruise Control Cable Replacement](#) in Cruise Control.



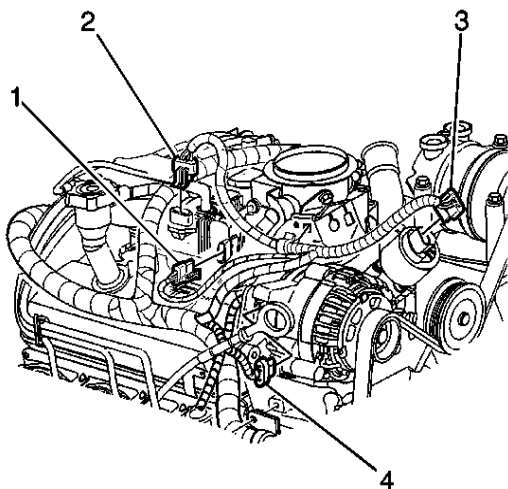
9. Disconnect the vacuum hose from the intake manifold, if equipped with A/C.
10. Disconnect the power brake booster vacuum hose



11. Drain the cooling system. Refer to [Draining and Filling Cooling System](#) in Engine Cooling.
12. Remove the radiator inlet hose at the water outlet. Refer to [Radiator Hose Replacement - Inlet](#) in Engine Cooling.
13. Remove the heater hose from the intake manifold. Refer to [Heater Hose Replacement - Inlet](#) and [Heater Hose Replacement - Outlet](#) in Heating, Ventilation and Air Conditioning.
14. Remove the water pump inlet hose from the intake manifold.

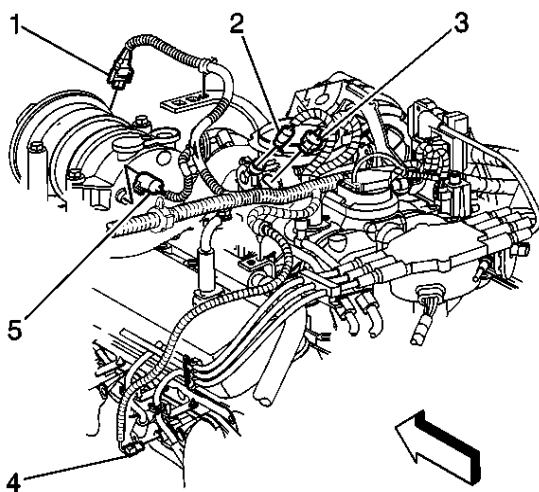


15. Disconnect the following electrical connectors:
  - The fuel meter body assembly (1)
  - The EVAP canister purge solenoid valve (2)
  - The manifold air pressure (MAP) sensor (3)



16. Disconnect the following electrical connectors:

- The exhaust gas recirculation (EGR) valve (3)
- The ignition coil (2)
- The ignition control module (ICM) (1)
- The generator (4)

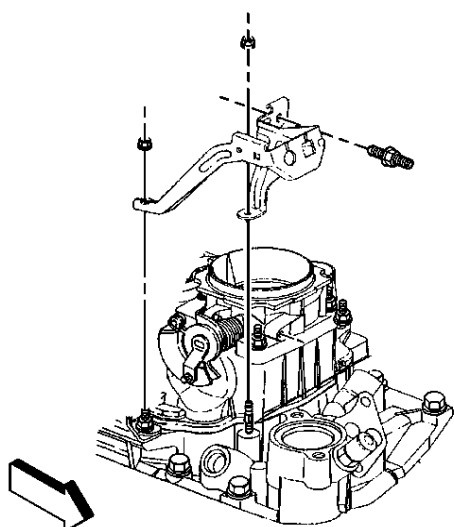


17. Disconnect the following electrical connectors:

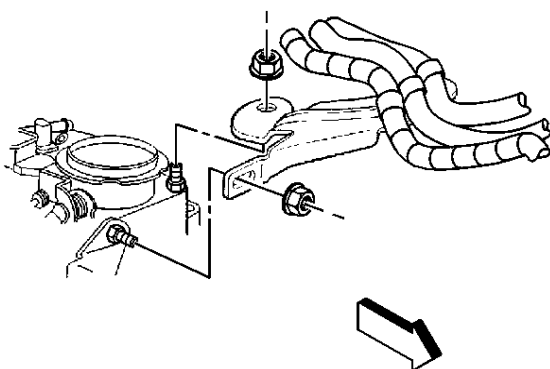
- The idle air control (IAC) motor (3)
- The throttle position (TP) sensor (2)
- The A/C compressor cutoff switch, if equipped (5)
- The A/C clutch switch, if equipped (1)
- The engine coolant temperature (ECT) sensor (4)

18. Remove the engine wiring harness clips from the brackets.

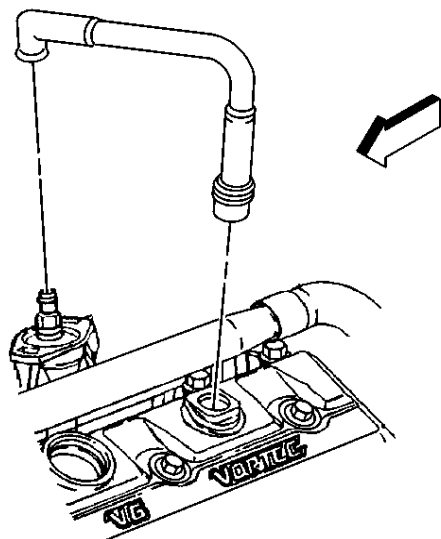
19. Move the engine wiring harness aside.



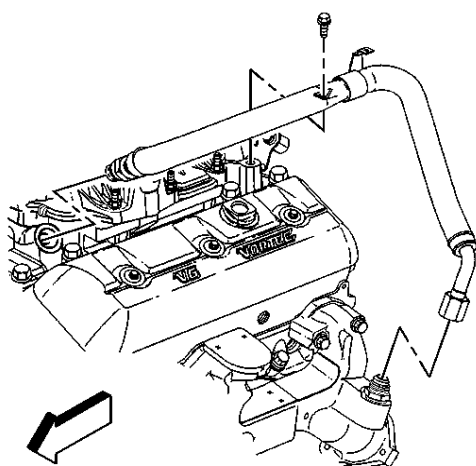
20. Remove the accelerator cable bracket from the throttle body and the intake manifold.



21. Remove the accelerator and the cruise control cable bracket from the throttle bracket.  
Leave the accelerator and cruise control cables on the bracket.

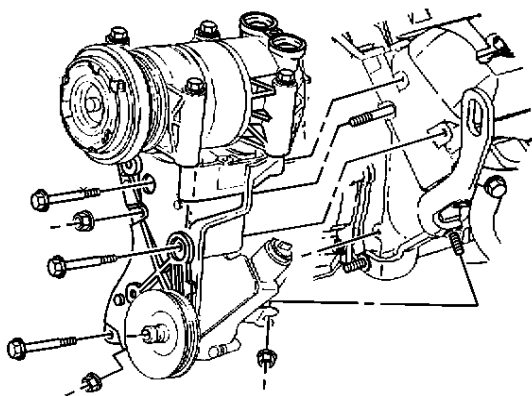


22. Disconnect the PCV hose assembly from the intake manifold and the valve rocker arm cover.
23. Remove the EVAP canister purge solenoid valve. Refer to [Evaporative Emission \(EVAP\) Canister Purge Valve Replacement](#) in Engine Controls.



24. Remove the spark plug wire harness retainer from the exhaust gas recirculation (EGR) valve inlet pipe.
25. Remove the clamp bolt for the EGR valve inlet pipe.
26. Remove the EGR valve inlet pipe from the intake and the exhaust manifolds.
27. Remove the distributor. Refer to [Distributor Replacement](#) in Engine Controls - 4.3L.
28. Disconnect the fuel supply and return pipes at the rear of the intake manifold. Refer to [Fuel Hose/Pipes Replacement - Engine Compartment](#) in Engine Controls - 4.3L.

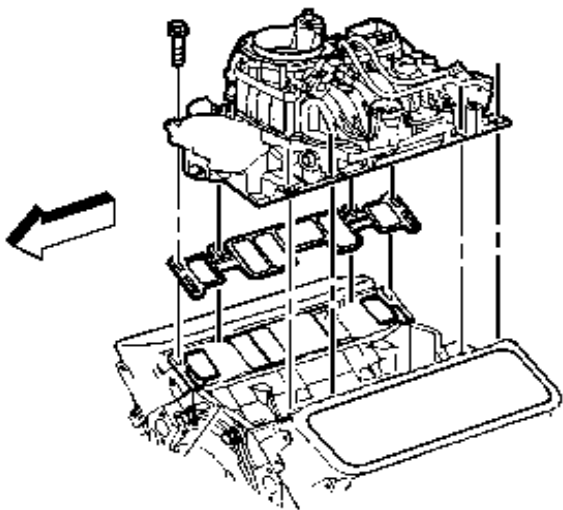




### Important

Do not discharge the refrigerant.

29. Perform the following in order to remove the left front bolt for the intake manifold:
- A. Remove the drive belt. Refer to [Drive Belt Replacement](#).
  - B. Loosen the nut for the power steering pump rear bracket at the side of the engine.
  - C. Remove the secondary air injection (AIR) reactor pipe bracket nut from the power steering pump rear bracket front stud, if equipped.
  - D. Remove the nut for the power steering pump rear bracket at the front of the engine.
  - E. Remove the bolts and the nut for the power steering pump mounting bracket.
  - F. Leave the A/C compressor, if equipped, and the power steering pump on the power steering pump mounting bracket.
  - G. Slide the power steering pump bracket forward to access the bolt at the front of the intake manifold.





30. Remove the engine coolant temperature (ECT) sensor wire connector (if equipped) from the engine wiring harness bracket.
31. Remove the lower intake manifold bolts.

### **Important**

The intake manifold may be removed as an assembly. Do not remove the specific intake manifold components unless component service is required.

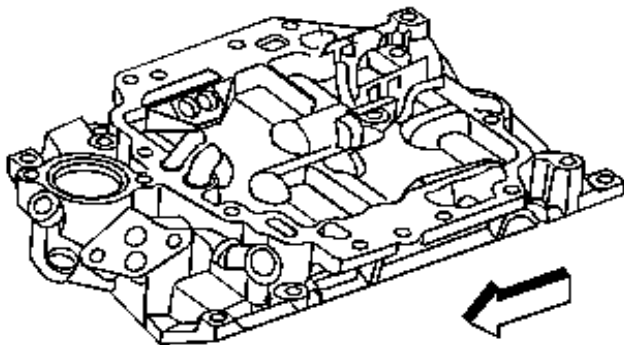
Do not allow dirt or debris to enter the fuel system. Ensure that the ends of the fuel system are properly sealed.

Do not disassemble the Central Sequential Fuel Injection (SFI) unit, unless service is required.

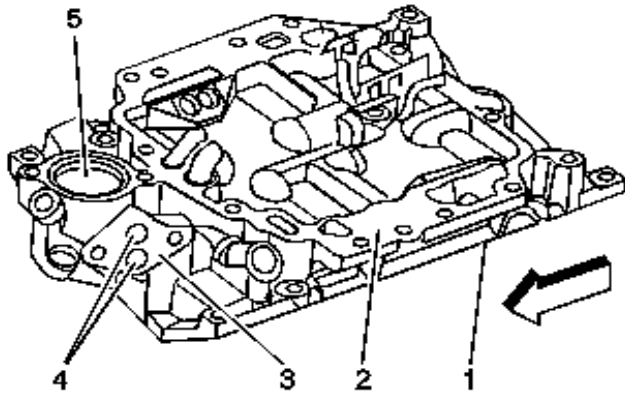
32. Remove the intake manifold assembly.
33. Remove and discard the lower intake manifold gaskets.

### **Important**

Do not immerse the assembled intake manifold in cleaning solvent.



34. Clean the lower intake manifold in cleaning solvent.
35. Dry the lower intake manifold with compressed air.

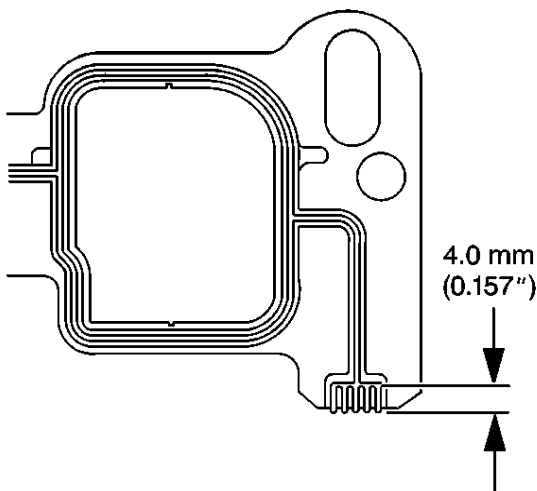


36. Inspect the lower intake manifold for the following:

- Damage to the gasket sealing surfaces (1), (2) and (3)
- Restricted exhaust gas recirculation (EGR) system passages (4)
- Restricted cooling system passages (5)
- Cracks or damage
- Damage to the threaded bolt holes

37. If the intake manifold requires replacement refer to [Intake Manifold Disassemble](#) and [Intake Manifold Assemble](#) in Engine Mechanical - 4.3L.

### Installation Procedure



### **Notice**

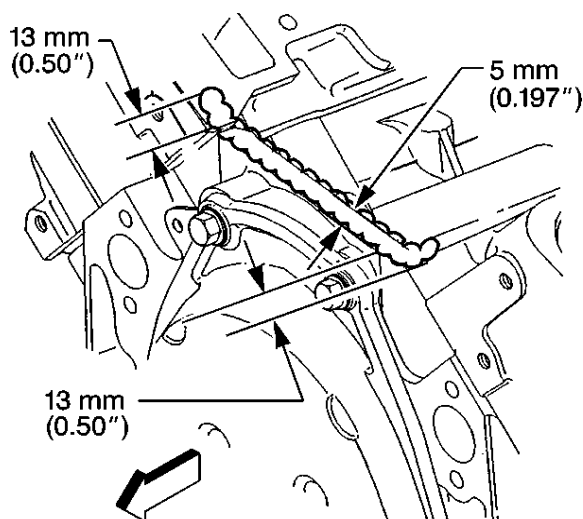
Apply the proper amount of the sealant when assembling this component. Excessive use of the sealant can prohibit the component from sealing properly. A component that is not sealed properly can leak leading to extensive engine damage.

1. Apply a 4.0 mm (0.157 in) patch of adhesive GM P/N 12346141 or equivalent to the cylinder head side of the lower intake manifold gasket at each end.

### Important

The lower intake manifold gasket must be installed while the adhesive is still wet to the touch.

2. Install the lower intake manifold gasket onto the cylinder head.  
Use the gasket locator pins in order to properly seat the lower intake manifold gasket on the cylinder head.



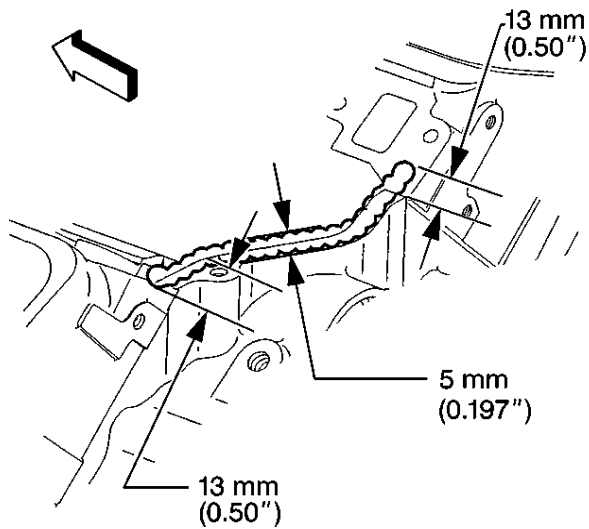
### Notice

Apply the proper amount of the sealant when assembling this component. Excessive use of the sealant can prohibit the component from sealing properly. A component that is not sealed properly can leak leading to extensive engine damage.

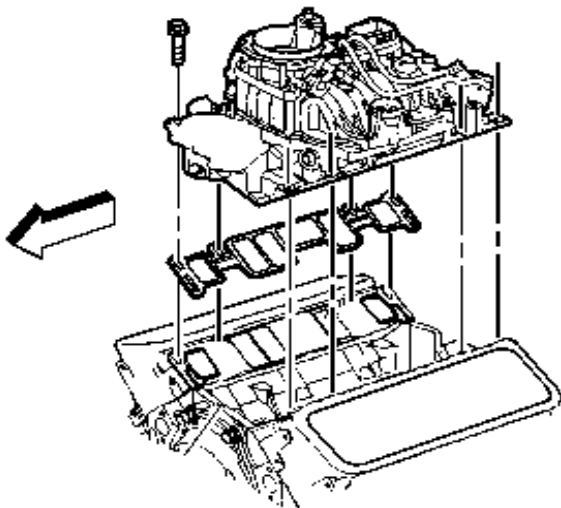
### Important

The lower intake manifold must be installed and the fasteners tightened while the adhesive is still wet to the touch.

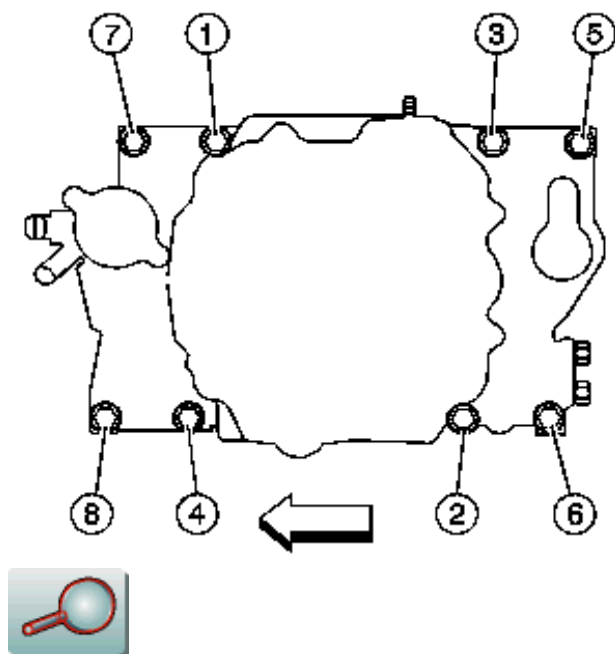
3. Apply a 5 mm (0.197 in) bead of adhesive GM P/N 12346141 or equivalent to the front top of the engine block.
4. Extend the adhesive bead 13 mm (0.50 in) onto each lower intake manifold gasket.



5. Apply a 5 mm (0.197 in) bead of adhesive GM P/N 12346141 or equivalent to the rear top of the engine block.
6. Extend the adhesive bead 13 mm (0.50 in) onto each lower intake manifold gasket.



7. Install the lower intake manifold onto the engine block.
8. If reusing the fasteners, apply threadlock GM P/N 12345382 or equivalent to the threads of the lower intake manifold bolts.
9. Install the lower intake manifold bolts.



### Notice

Proper lower intake manifold fastener tightening sequence and torque is critical. Always follow the tightening sequence, and torque the intake manifold bolts using the 3 step method. Failing to do so may distort the crankshaft bearing bore alignment and cause damage to the crankshaft bearings.

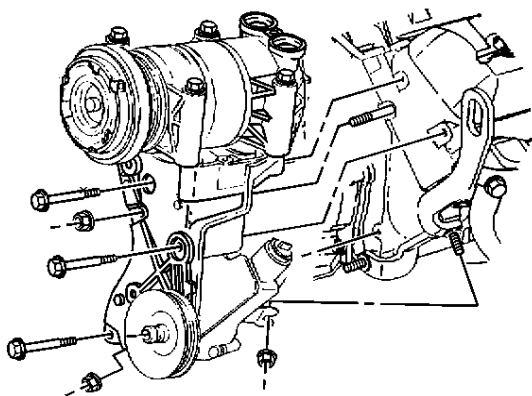
### Notice

Use the correct fastener in the correct location. Replacement fasteners must be the correct part number for that application. Fasteners requiring replacement or fasteners requiring the use of thread locking compound or sealant are identified in the service procedure. Do not use paints, lubricants, or corrosion inhibitors on fasteners or fastener joint surfaces unless specified. These coatings affect fastener torque and joint clamping force and may damage the fastener. Use the correct tightening sequence and specifications when installing fasteners in order to avoid damage to parts and systems.

#### 10. Tighten the lower intake manifold bolts.

##### **Tighten**

- Tighten the bolts on the first pass in sequence to 3 N·m (27 lb in).
- Tighten the bolts on the second pass in sequence to 12 N·m (106 lb in).
- Tighten the bolts on the final pass in sequence to 15 N·m (11 lb ft).



11. Position the power steering pump mounting bracket.
12. Loosely install the power steering pump mounting bracket bolts and nuts.
13. Install the nut for the power steering pump rear bracket at the front of the engine.

**Tighten**

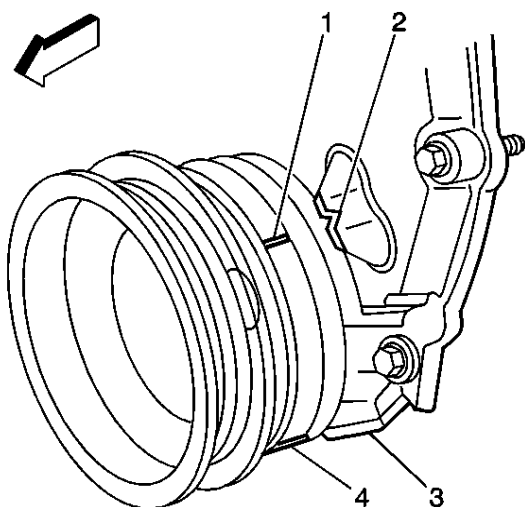
Tighten the power steering pump mounting bracket bolts and the power steering pump rear bracket nuts to 41 N·m (30 lb ft).

14. Install the AIR reactor pipe bracket nut to the power steering pump rear bracket front stud, if equipped.

**Tighten**

Tighten the AIR reactor pipe bracket nut to 41 N·m (30 lb ft).

15. Install the drive belt. Refer to [Drive Belt Replacement](#) .
16. Install the fuel supply and return pipes to the rear of the intake manifold. Refer to [Fuel Hose/Pipes Replacement - Engine Compartment](#) in Engine Controls - 4.3L.

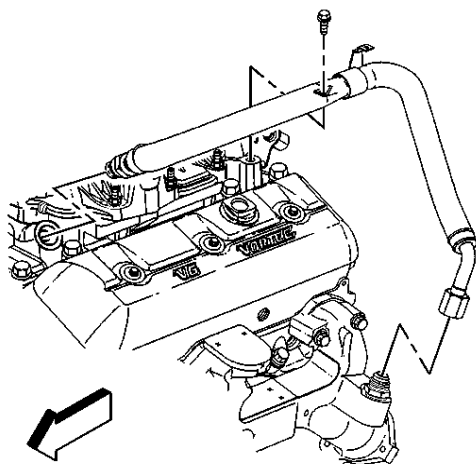




### Important

In order to install the distributor for the correct engine timing, position the engine to number one cylinder top dead center.

17. Remove the spark plug for number one cylinder.
18. Rotate the crankshaft until number one cylinder is in the compression stroke.
19. Align the 2 reference marks on the crankshaft balancer (1) and (4) with the 2 alignment marks (2) and (3) on the front cover.
20. Install the spark plug. Refer to [Spark Plug Replacement](#) in Engine Controls - 4.3L.
21. Install the distributor. Refer to [Distributor Replacement](#) in Engine Controls - 4.3L.
22. Install the EVAP canister purge solenoid valve. Refer to [Evaporative Emission \(EVAP\) Canister Purge Valve Replacement](#) in Engine Controls - 4.3L.

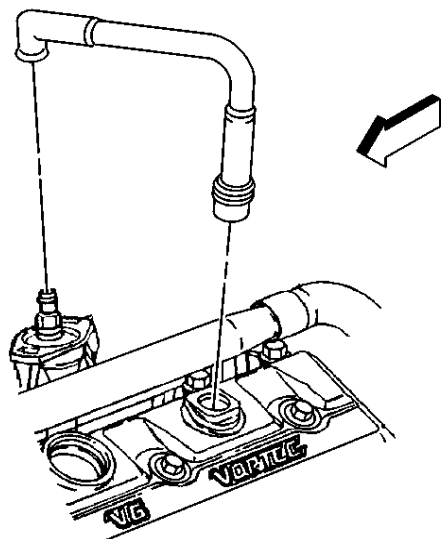


23. Install the EGR valve inlet pipe to the intake manifold and the exhaust manifold.

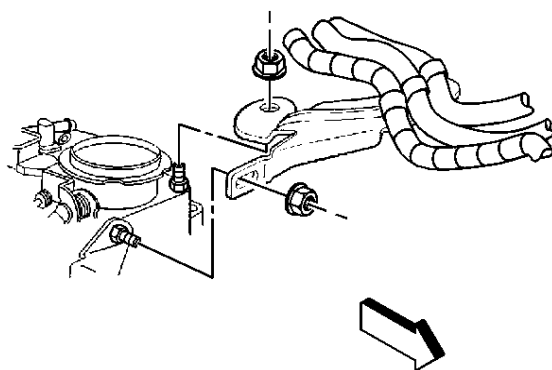
#### Tighten

- a. Tighten the EGR valve inlet pipe intake manifold nut to 25 N·m (18 lb ft).
  - b. Tighten the EGR valve inlet pipe exhaust manifold nut to 30 N·m (22 lb ft).
  - c. Tighten the EGR valve inlet pipe clamp bolt 25 N·m (18 lb ft).
24. Install the spark plug wire harness retainer on the EGR valve inlet pipe.





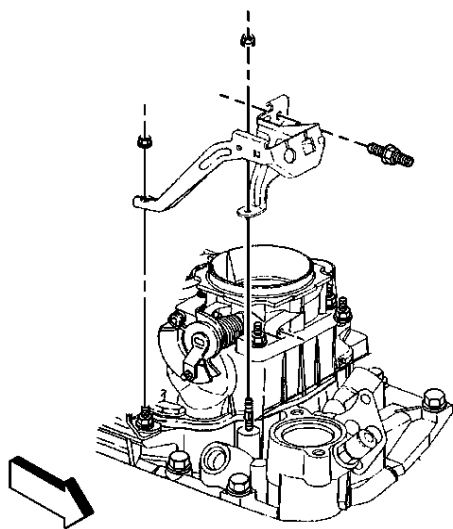
25. Install the PCV hose assembly to the intake manifold and the valve rocker arm cover.



26. Install the accelerator cable and cruise control cable bracket to the throttle body.

**Tighten**

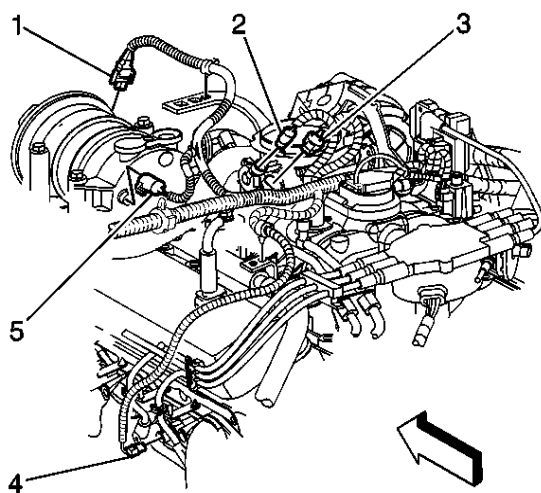
Tighten the accelerator cable and cruise control bracket nuts to 9 N·m (80 lb in).



27. Install the accelerator cable bracket to the intake manifold and the throttle body.

**Tighten**

Tighten the accelerator cable bracket studs and nuts to 12 N·m (106 lb in).

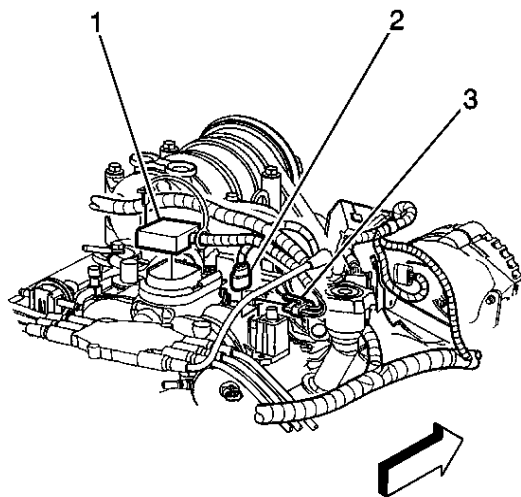


28. Position the engine wiring harness.

29. Install the engine wiring harness clips in the brackets.

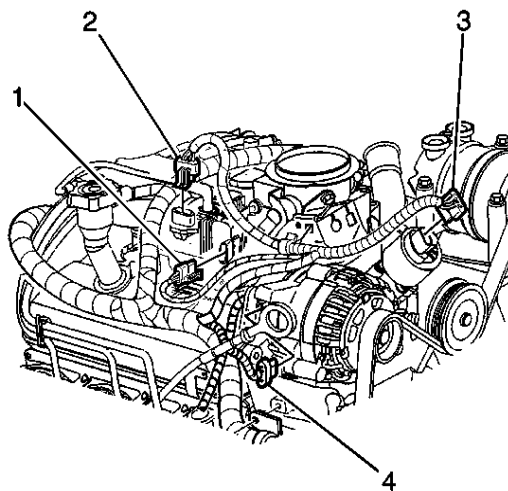
30. Connect the following electrical connectors:

- The idle air control (IAC) motor (3)
- The throttle position (TP) sensor (2)
- The A/C compressor cutoff switch, if equipped (5)
- The A/C clutch switch, if equipped (1)
- The engine coolant temperature (ECT) sensor (4)



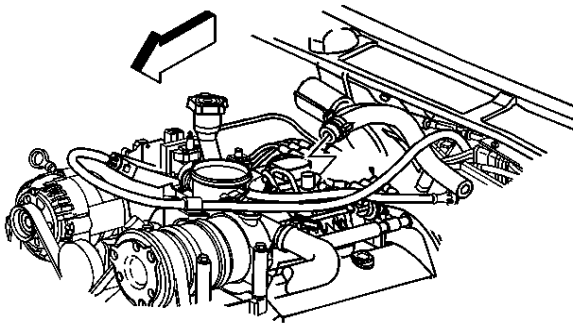
31. Connect the following electrical connectors:

- The fuel meter body assembly (1)
- The EVAP canister purge solenoid valve (2)
- The manifold air pressure (MAP) sensor (3)

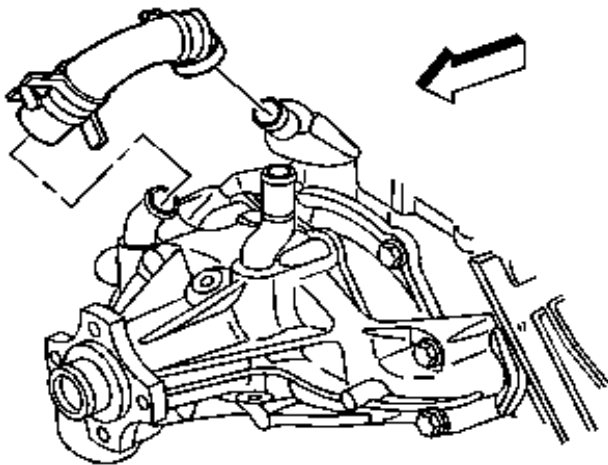


32. Connect the following electrical connectors:

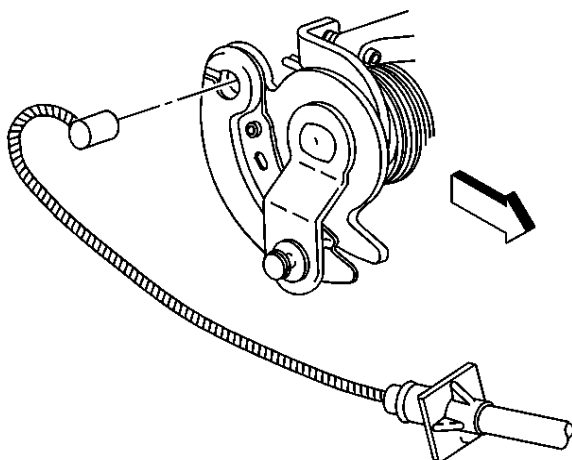
- The exhaust gas recirculation (EGR) valve (3)
- The ignition coil (2)
- The ignition control module (ICM) (1)
- The generator (4)



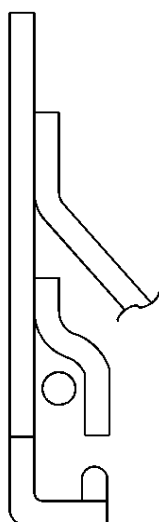
- 33. Connect the power brake booster vacuum hose.
- 34. Connect the vacuum hose to the intake manifold, if equipped with A/C.



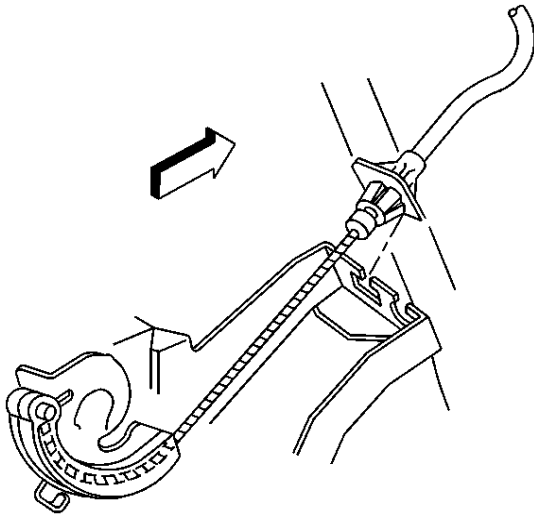
- 35. Install the water pump inlet hose to the intake manifold.
- 36. Install the heater hose to the intake manifold. Refer to [Heater Hose Replacement - Inlet](#) and [Heater Hose Replacement - Outlet](#) in Heating, Ventilation and Air Conditioning.
- 37. Install the radiator inlet hose to the thermostat housing. Refer to [Radiator Hose Replacement - Inlet](#) in Engine Cooling.
- 38. Install the cruise control cable, if equipped to the bracket and the throttle shaft. Refer to [Cruise Control Cable Replacement](#) in Cruise Control.



39. Install the accelerator cable onto the throttle body.



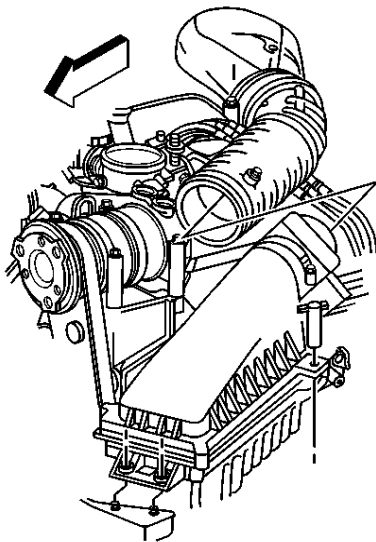
40. Wrap the cable in between the finger of the hook tab and the pulley wall. Make sure that the cable is fully seated in the pulley groove. The cable must not lie outside of the hook tab.



41. Install the accelerator cable to the accelerator cable control bracket.

#### Notice

- Handle the MAF sensor carefully.
- Do not drop the MAF sensor in order to prevent damage to the MAF sensor.
- Do not damage the screen located on the air inlet end of the MAF.
- Do not touch the sensing elements.
- Do not allow solvents and lubricants to come in contact with the sensing elements.
- Use a small amount of a soap based solution in order to aid in the installation.

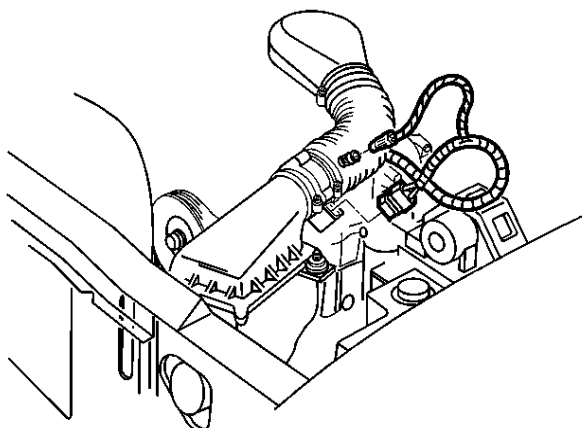


42. Install air cleaner outlet duct to throttle body.

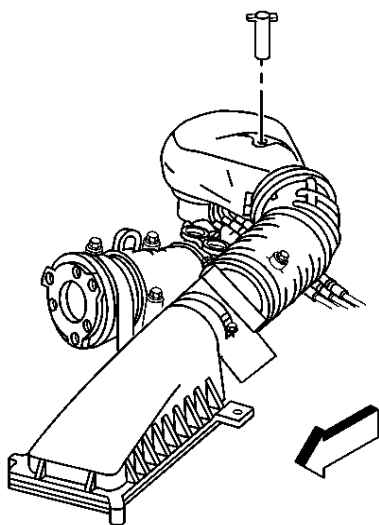
43. Install air cleaner outlet duct to MAF sensor.

**Tighten**

Tighten the hose clamp to 4 N·m (32 lb in).



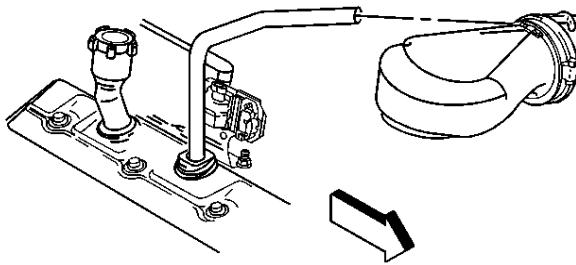
44. Connect the IAT sensor harness connector.



45. Install the air cleaner outlet duct retaining wingnut.

**Tighten**

Tighten the wingnut to 2 N·m (18 lb in).



46. Connect the breather tube to the air cleaner outlet duct.
47. Fill the cooling system. Refer to [Draining and Filling Cooling System](#) in Engine Cooling.
48. Connect the battery negative cable. Refer to [Battery Negative Cable Disconnect/Connect Procedure](#) in Engine Electrical.

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