

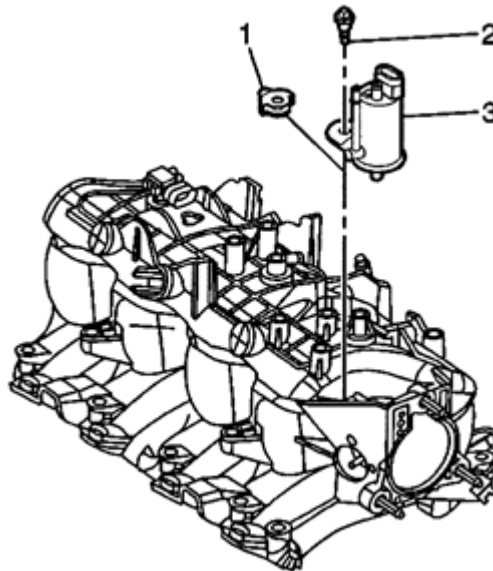
## 4.8L, 5.3L and 6.0L Engines

### To Remove:

**NOTE:** The intake manifold, throttle body, fuel injection rail, and fuel injectors may be removed as an assembly. If not servicing the individual components, remove the manifold as a complete assembly.

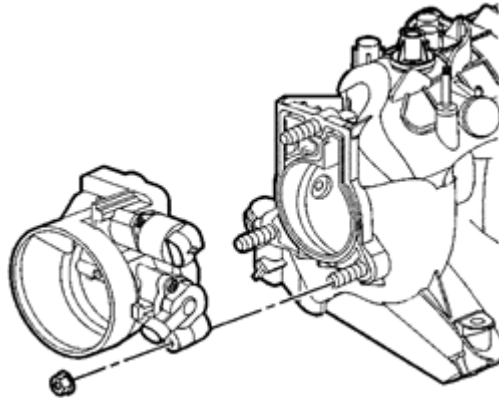
1. Remove or disconnect the following:
  - PCV hose and valve
  - MAP sensor, if required
  - EGR valve
  - Knock sensor harness electrical connector from intake and set harness aside
  - EGR pipe bolts from intake manifold, exhaust manifold, and cylinder head
  - Vacuum brake booster hose from rear of intake manifold
  - Engine coolant air bleed clamp and hose from the throttle body
  - Accelerator control cable bracket and bolts, if required

### EVAP solenoid removal-4.8L, 5.3L & 6.0L



- EVAP solenoid, bolt, and isolator
- Intake manifold bolts
- Intake manifold with gaskets
- Intake manifold-to-cylinder head gaskets from the manifold and discard the intake manifold gaskets
- Fuel rail with injectors

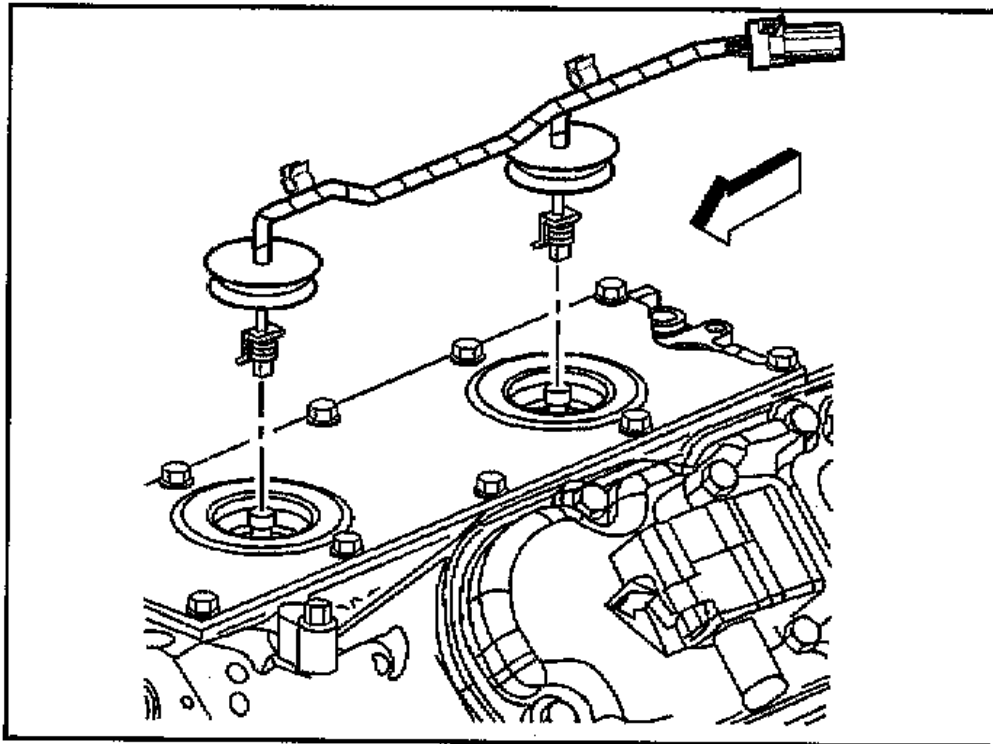
## Throttle body removal-4.8L, 5.3L & 6.0L



- Throttle body and gasket
- 2. Clean the intake manifold in solvent
- 3. Dry the intake manifold with compressed air
- 4. Inspect the throttle body studs and stud inserts for looseness or damaged threads
- 5. Inspect the wire harness stud and stud insert for looseness or damaged threads
- 6. Inspect the fuel rail bolt inserts for looseness or damaged threads
- 7. Inspect the intake manifold vacuum passages for debris or restrictions
- 8. Inspect for damaged or broken vacuum fittings, damaged MAP sensor mounting bore, or broken MAP sensor retaining tabs
- 9. Inspect the composite intake manifold assembly for cracks or other damage
- 10. Inspect the areas between the intake runners. Inspect all the gasket sealing surfaces for damage
- 11. Inspect the fuel injector bores for excessive scoring or damage
- 12. Inspect the intake manifold cylinder head deck for warpage
- 13. Locate a straight edge across the intake manifold cylinder head deck surface
- 14. Position the straight edge across a minimum of two runner port openings
- 15. Insert a feeler gauge between the intake manifold and the straight edge

**NOTE:** An intake manifold with warpage in excess of **0.118 in. (3 mm) over a 7.87 in. (200 mm)** area is warped and should be replaced.

After you get the intake off you will see the knock sensors in the valley between the heads. Take the caps off and unplug the sensor.

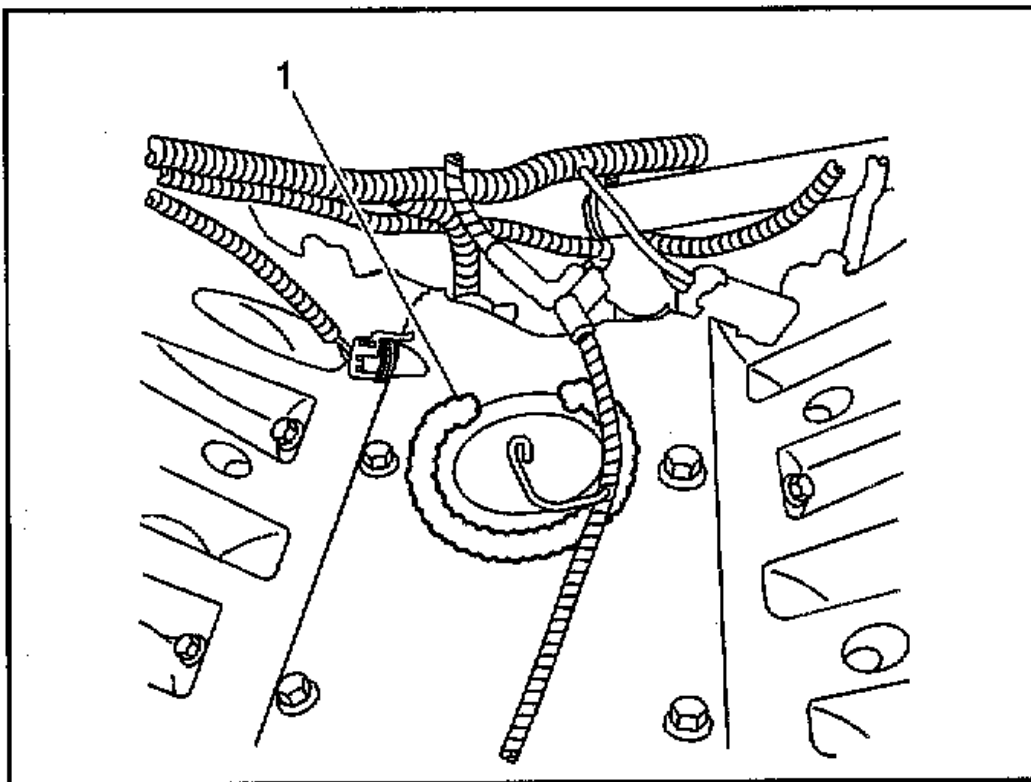


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Remove the rear bank knock sensor.  
Install the new rear bank knock sensor.

**Tighten**

Tighten the knock sensor to 20 N·m (15 lb ft).  
Install the wiring harness assembly to the knock sensor.



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Apply a bead of RTV silicone sealant approximately 9 mm (3/8 in) wide and 6 mm (1/4 in) high along the outside edge of the ridge on the engine block valley cover around the rear bank knock sensor. DO NOT form a complete circle. Leave the rear section open as shown.

From the underside of the intake manifold, completely remove the rear intake manifold seal (foam material).

#### To Install:

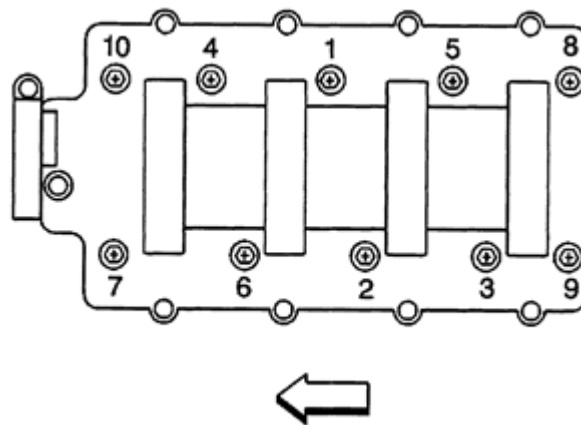
**NOTE:** Use the correct fastener in the correct location. Replacement fasteners must be the correct part number for that application. Fasteners requiring replacement or fasteners requiring the use of thread locking compound or sealant are identified in the service procedure. Do not use paints, lubricants, 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.

1. Install or connect the following:

- MAP sensor
- EVAP solenoid, bolt, and isolator and tighten the EVAP solenoid bolt;  
Torque to: **89 inch lbs. (10 Nm)**
- New intake manifold-to-cylinder head gaskets
  - A. Apply a **5 mm (0.20 in)** band of a threadlocking compound to the threads of the intake manifold bolts and install the intake manifold
- Intake manifold bolts and tighten intake manifold bolts as follows:
  - A. First pass in sequence; Torque to: **44 inch lbs. (5 Nm)**
  - B. Tighten intake manifold bolts final pass in sequence; Torque to: **89 inch lbs. (10 Nm)**

Intake manifold bolt tightening sequence- 4.8L, 5.3L & 6.0L



- PCV valve and hose
- Engine coolant air bleed hose and clamp onto the throttle body
- EGR valve
- Knock sensor harness electrical connector to intake
- EGR pipe bolts to intake manifold, exhaust manifold, and cylinder head
  - A. Tighten the EGR pipe-to-intake manifold bolts; Torque to: **89 inch lbs. (10 Nm)**
  - B. Tighten the EGR pipe-to-cylinder head bolts; Torque to: **37 ft. lbs. (50 Nm)**
  - C. Tighten the EGR pipe-to-exhaust manifold bolts; Torque to: **22 ft. lbs. (30 Nm)**
- Vacuum brake booster hose to rear of intake manifold
- Accelerator control cable bracket and bolts, if applicable and tighten the accelerator control cable bracket bolts; Torque to: **89 inch lbs. (10 Nm)**
- Test drive the vehicle to confirm the repairs.

