

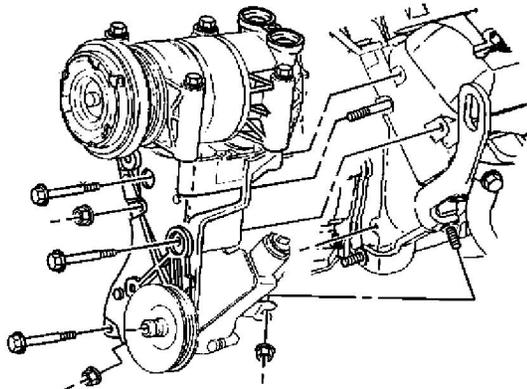
# Cylinder Head Replacement - Left Side

## Special Tools

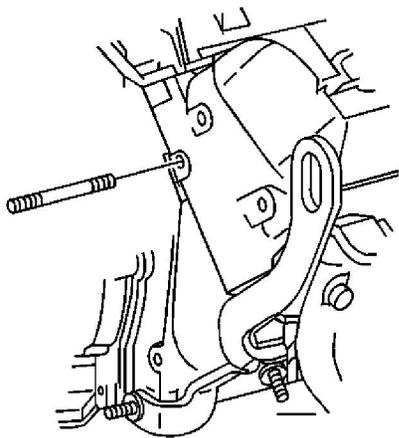
[J 36660-A](#) Electronic Torque Angle Meter

## Removal Procedure

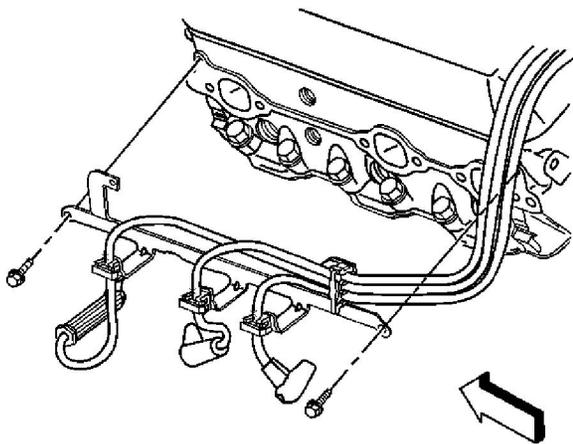
1. Disconnect the negative battery cable. Refer to [Battery Negative Cable Disconnection and Connection](#) .
2. Drain the cooling. Refer to [Cooling System Draining and Filling](#) .
3. Remove the drive belt. Refer to [Drive Belt Replacement](#) .



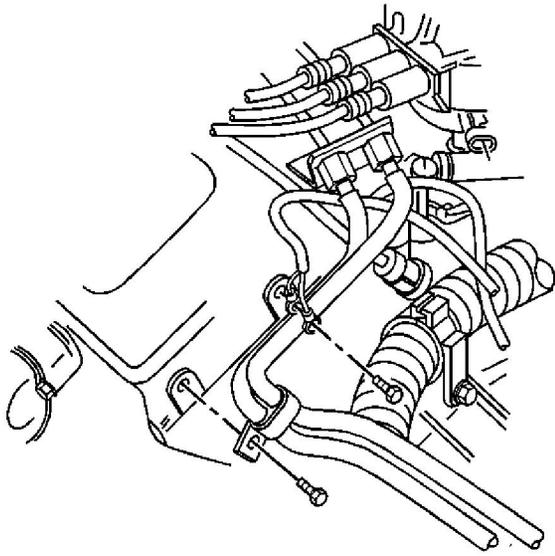
4. Loosen the nut holding the power steering pump rear bracket to the side of the engine.
5. Remove the nut holding the power steering pump rear bracket to the front of the engine.
6. Remove the three bolts and the nut holding the power steering pump mounting bracket to the engine.
7. With the power steering pump and the A/C compressor still attached, slide the power steering pump mount bracket off of the stud and set aside.



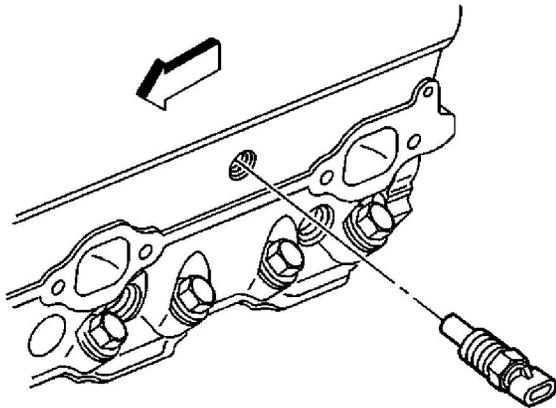
8. Remove the power steering pump mounting bracket stud from the cylinder head.
9. Remove the lower intake manifold. Refer to [Lower Intake Manifold Replacement](#) .
10. Remove the exhaust manifold. Refer to [Exhaust Manifold Replacement - Left Side](#) .



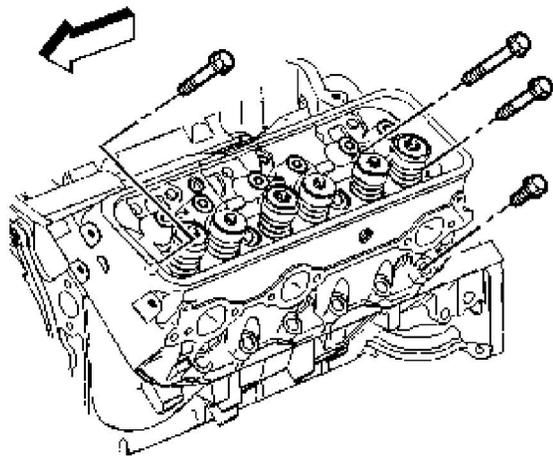
11. Remove the spark plug wire harness and the spark plug wire support.
12. Remove the valve pushrods. Refer to [Valve Rocker Arm and Push Rod Replacement](#) .



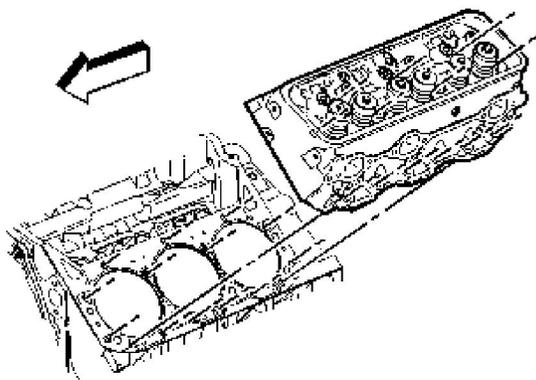
13. Remove the ground wire bolt and the ground wire from the rear of the cylinder head.
14. Secure the ground wire out of the way.
15. Remove the bolt holding the fuel pipe bracket to the rear of the cylinder head.



16. Remove the engine coolant temperature sensor.
17. Remove the spark plugs. Refer to [Spark Plug Replacement](#).

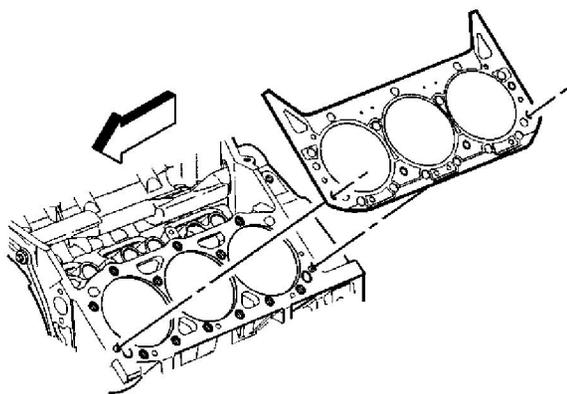


18. Remove and discard the cylinder head bolts.

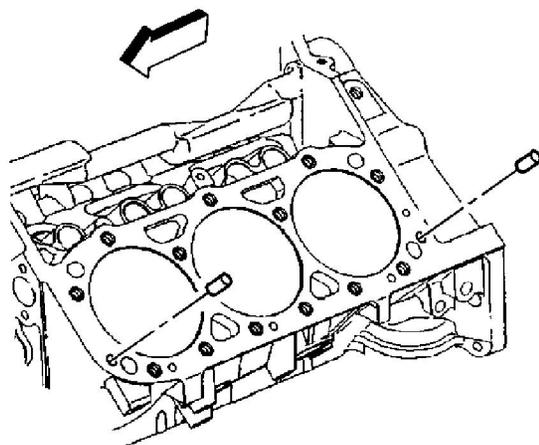


**Notice:** After removal, place the cylinder head on 2 wood blocks in order to prevent damage to the sealing surfaces.

19. Remove the cylinder head.



20. Remove and discard the cylinder head gasket.



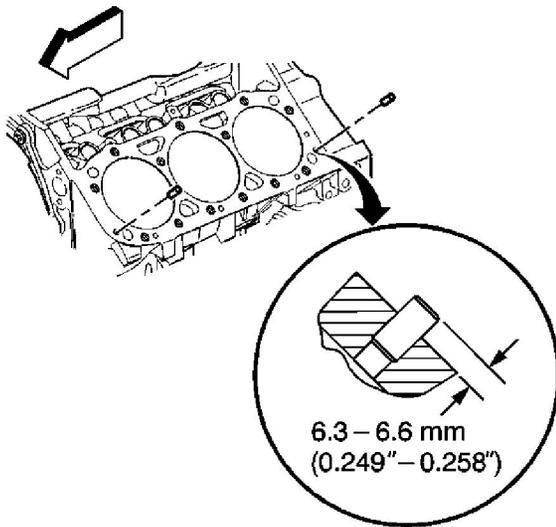
21. Remove the dowel pins (cylinder head locator), if required.

22. Clean the engine block and the cylinder head sealing surfaces.

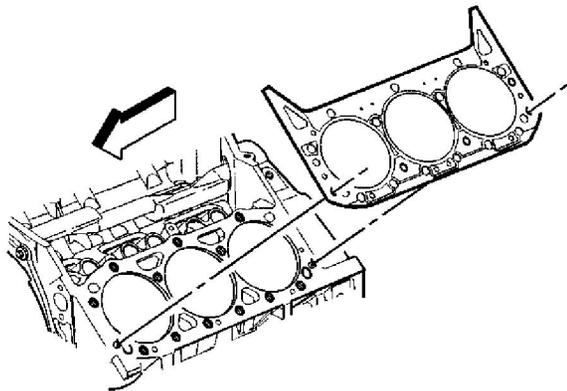
**Notice:** Clean all dirt, debris, and coolant from the engine block cylinder head bolt holes. Failure to remove all foreign material may result in damaged threads, improperly tightened fasteners or damage to components.

23. Clean the cylinder head bolts and the engine block bolt holes.
24. For further service to the cylinder head refer to the following:
  - Refer to [Cylinder Head Disassemble](#) .
  - Refer to [Cylinder Head Cleaning and Inspection](#) .
  - Refer to [Valve Guide Reaming, and Valve and Seat Grinding](#) .
  - Refer to [Cylinder Head Assemble](#) .

## Installation Procedure

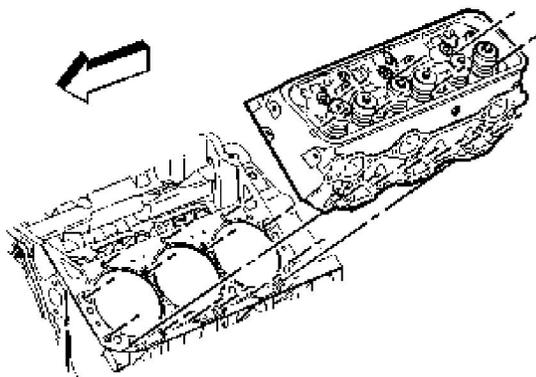


1. Inspect the dowel pins (cylinder head locator) for proper installation.



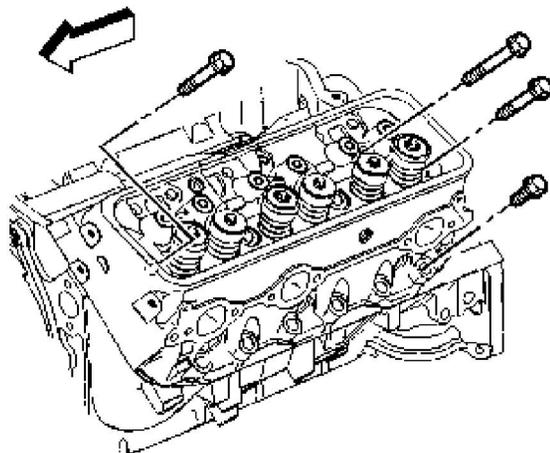
**Important:** Do not use any type sealer on the cylinder head gasket (unless specified).

2. Install the NEW cylinder head gasket in position over the dowel pins (cylinder head locator).



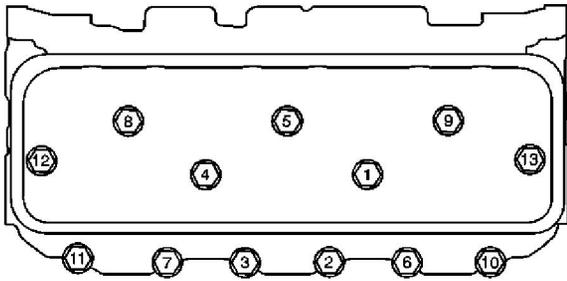
3. Install the cylinder head onto the engine block.

Guide the cylinder head carefully into place over the dowel pins and the cylinder head gasket.



4. Apply sealant GM P/N 12346004 (Canadian P/N 10953480) or equivalent to the threads of the *NEW* cylinder head bolts.
5. Install the cylinder head bolts finger tight.

**Notice:** Refer to [Fastener Notice](#) in the Preface section.



6. Tighten the cylinder head bolts in sequence on the first pass.

**Tighten**

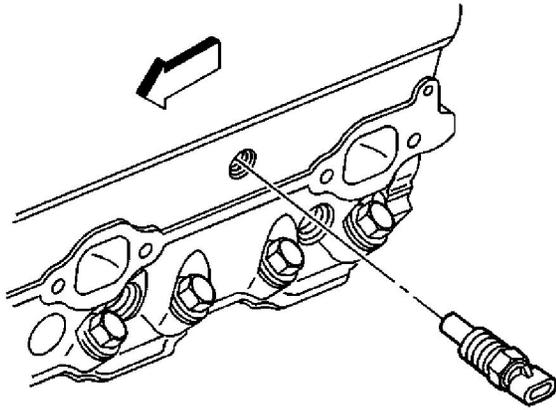
Tighten the bolts in sequence on the first pass to 30 N·m (22 lb ft).

7. Use the [J 36660-A](#) in order to tighten the cylinder head bolts in sequence.

**Tighten**

- Rotate the long bolts (1, 4, 5, 8, and 9) an additional 75 degrees.
- Rotate the medium bolts (12 and 13) an additional 65 degrees.
- Rotate the short bolts (2, 3, 6, 7, 10, and 11) an additional 55 degrees.

8. Install the spark plugs. Refer to [Spark Plug Replacement](#) .

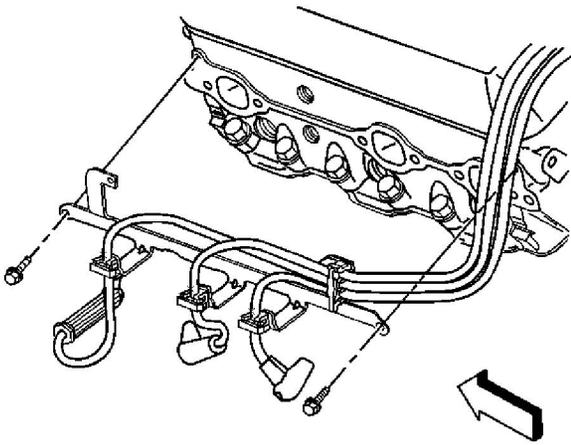


9. If reusing the engine coolant temperature sensor (if applicable), apply sealant GM P/N 12346004 (Canadian P/N 10953480) or equivalent to the threads of the engine coolant temperature gage sensor.
10. Install the engine coolant temperature sensor.

### **Tighten**

Tighten the engine coolant temperature sensor to 20 N·m (15 lb ft).

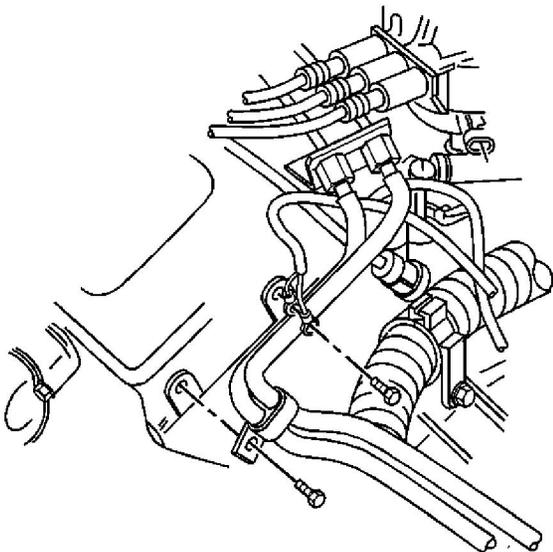
11. Install the valve pushrods. Refer to [Valve Rocker Arm and Push Rod Replacement](#) .
12. Install the lower intake manifold. Refer to [Lower Intake Manifold Replacement](#) .
13. Install the exhaust manifold. Refer to [Exhaust Manifold Replacement - Left Side](#) .



14. Install the spark plug wire harness and spark plug wire support.

**Tighten**

Tighten the support bolts to 12 N·m (106 lb in).





15. Install the bolt for and the fuel pipe bracket to the rear of the cylinder head.

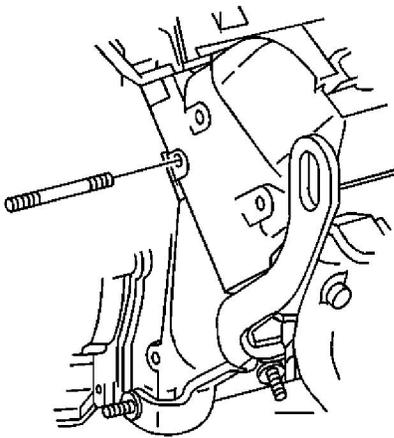
**Tighten**

Tighten the fuel pipe bracket bolt to 30 N·m (22 lb ft).

16. Install the ground wire and the ground wire bolt to the rear of the cylinder head.

**Tighten**

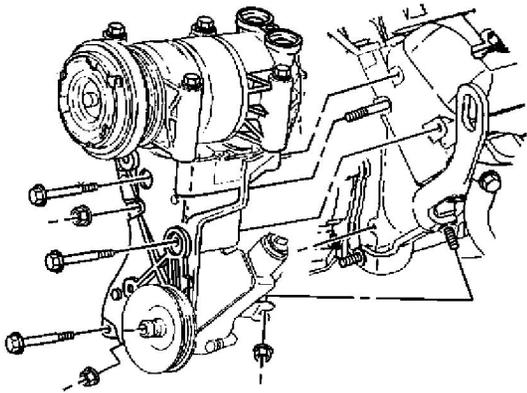
Tighten the ground wire bolt to 35 N·m (26 lb ft).



17. Install the stud for the power steering pump mounting bracket to the cylinder head.

**Tighten**

Tighten the power steering pump mounting bracket stud to 20 N·m (15 lb ft).



18. Slide the power steering pump mounting bracket with the power steering pump and the A/C compressor on the stud.
19. Position the power steering pump rear bracket on the studs.
20. Install the power steering pump mounting bracket three bolts and the nut.
21. Install the nut for the power steering pump rear bracket to the front of the engine.

### Tighten

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

22. Install the drive belt. Refer to [Drive Belt Replacement](#) .
23. Fill the cooling system. Refer to [Cooling System Draining and Filling](#) .
24. Connect the negative battery cable. Refer to [Battery Negative Cable Disconnection and Connection](#) .