

2004 ENGINE

Engine Mechanical - 4.6L (LH2) (Repair Instruction, 5 Of 5) - SRX

REPAIR INSTRUCTION

STARTER MOTOR INSTALLATION

1. If installing a NEW starter motor, transfer the cables from the old starter motor.
2. Install the positive battery cable to the starter motor stud.

NOTE: Refer to Fastener Notice in Cautions and Notices.

3. Install the starter motor stud nut.

Tighten: Tighten the starter motor stud nut to 9.5 N.m (84 lb in).

4. Install the solenoid wiring harness to the starter solenoid stud.
5. Install the starter solenoid stud nut.

Tighten: Tighten the starter solenoid stud nut to 3.4 N.m (30 lb in).

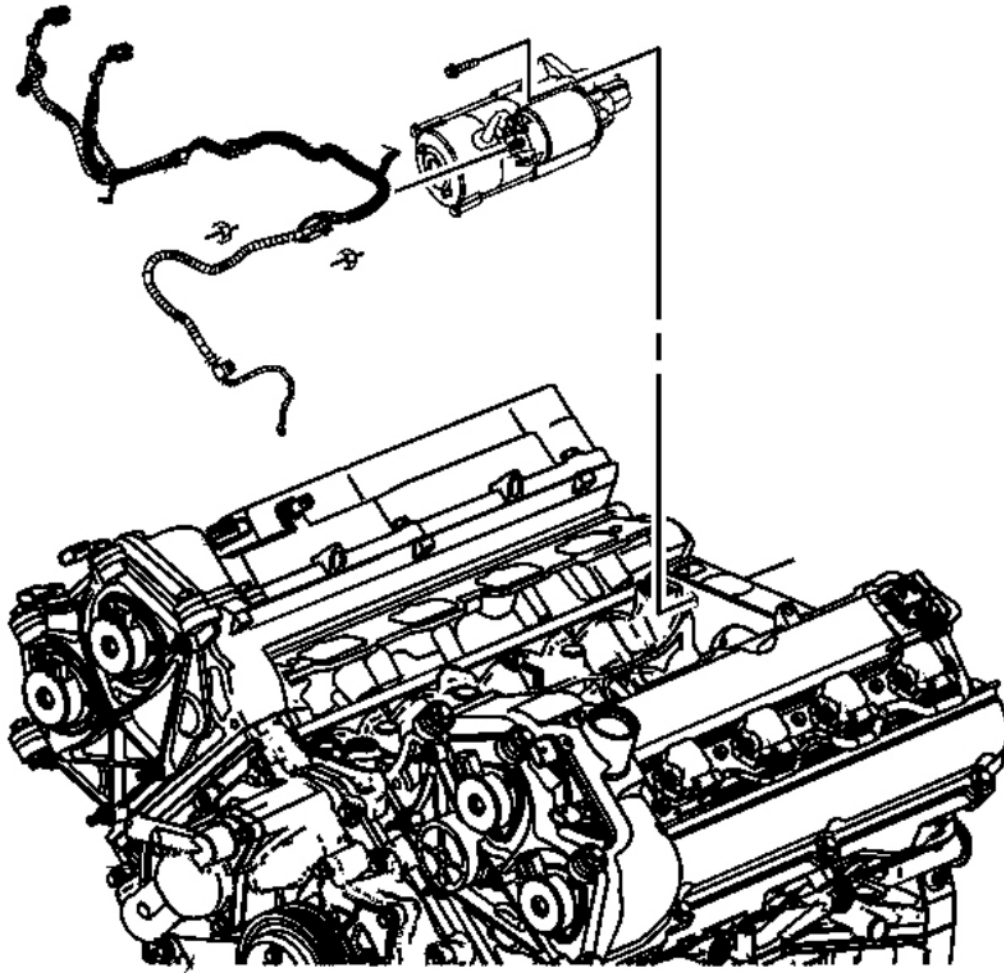


Fig. 1: View Of Starter Motor

Courtesy of GENERAL MOTORS CORP.

6. Position the starter motor in position.
7. Install the starter motor bolts.

Tighten: Tighten the starter motor bolt to 30 N.m (22 lb ft).

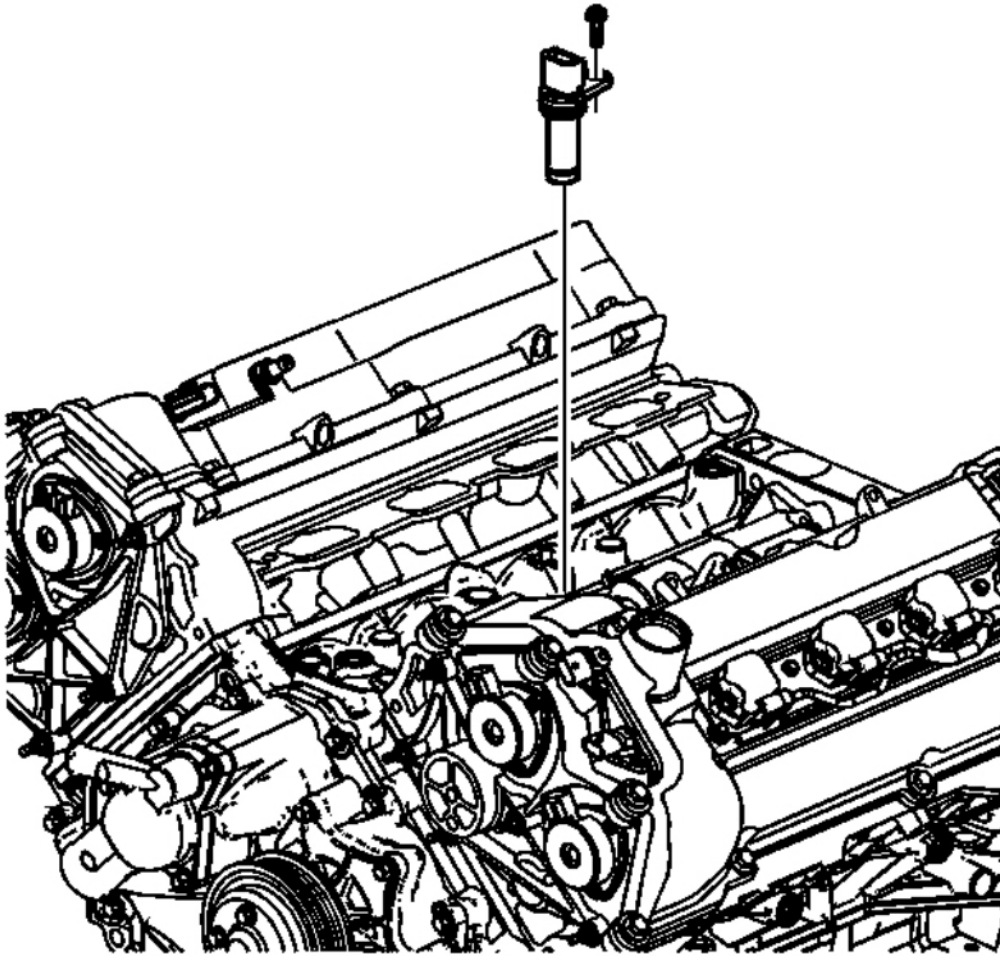


Fig. 2: View Of Crankshaft Position Sensor & Bolt
Courtesy of GENERAL MOTORS CORP.

8. Install the crankshaft position sensor.
9. Install the crankshaft position sensor bolt.

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

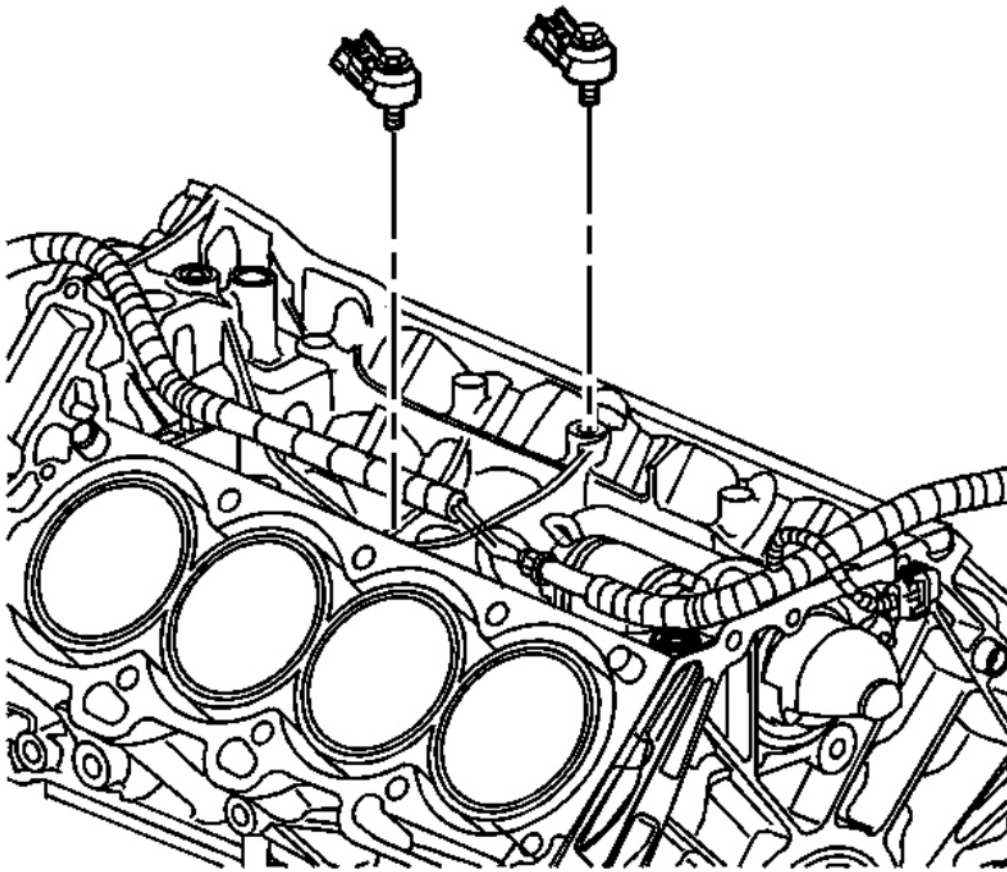


Fig. 3: View Of Knock Sensors
Courtesy of GENERAL MOTORS CORP.

10. Install the knock sensors.
11. Install the knock sensor bolts.

Tighten: Tighten the knock sensor bolts to 10 N.m (89 lb in).

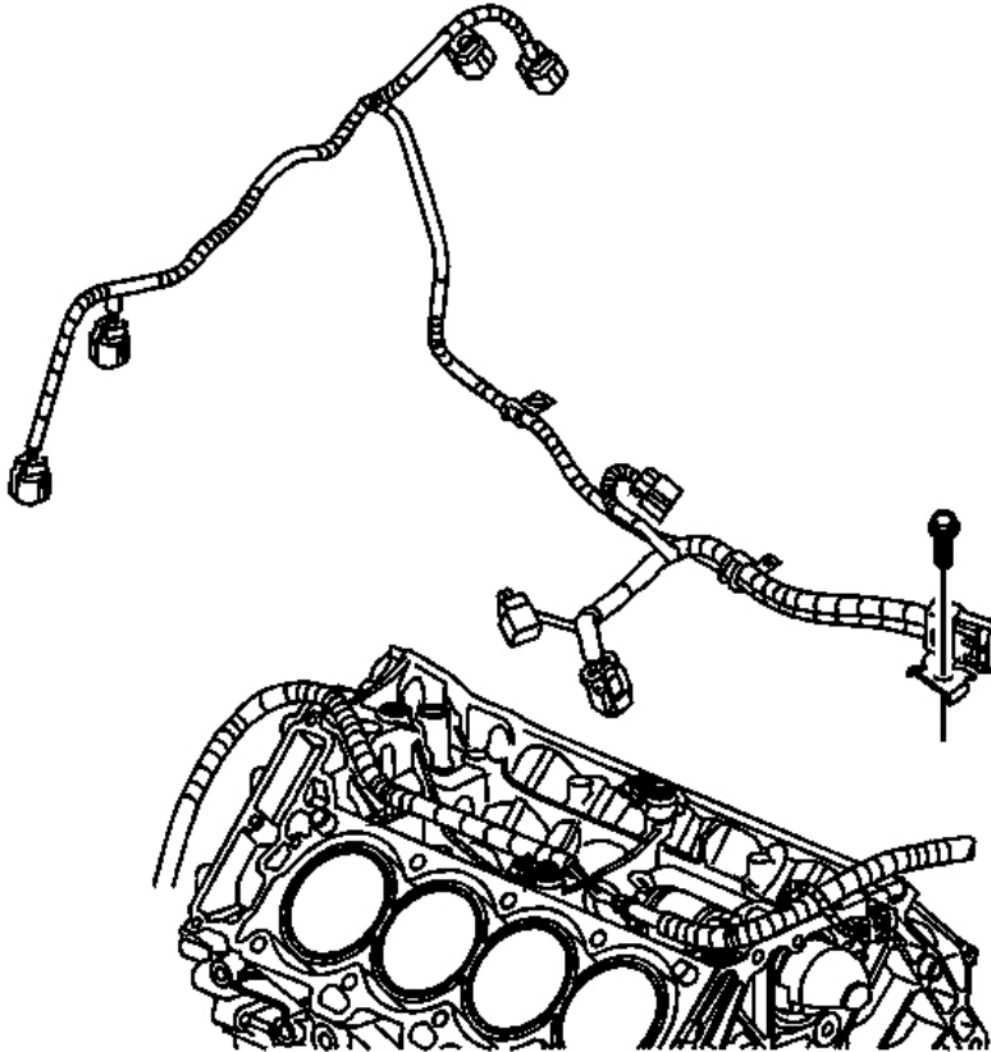


Fig. 4: View Of Knock & Crankshaft Position Sensor Wiring Harness
Courtesy of GENERAL MOTORS CORP.

12. Install the knock and crankshaft position sensor wiring harness.
13. Connect the knock and crankshaft position sensor wiring harness brackets to the center, back and front of the block valley.

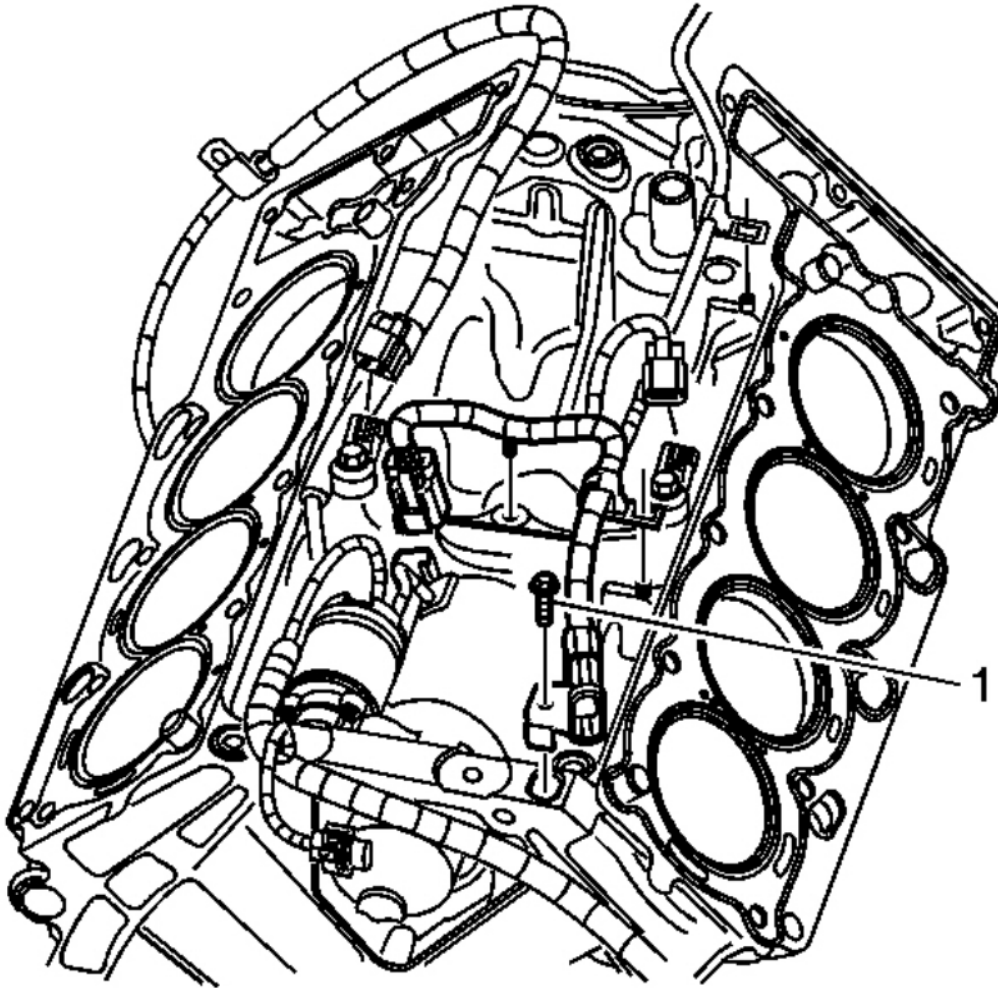


Fig. 5: Locating Knock & Crankshaft Position Sensor Wiring Harness Bolt
Courtesy of GENERAL MOTORS CORP.

14. Install the knock and crankshaft position sensor wiring harness bolt (1).

Tighten: Tighten the knock and crankshaft position sensor wiring harness bolt to 10 N.m (89 lb in).

15. Connect the knock and crankshaft position sensor wiring harness to the knock sensors and crankshaft position sensor.

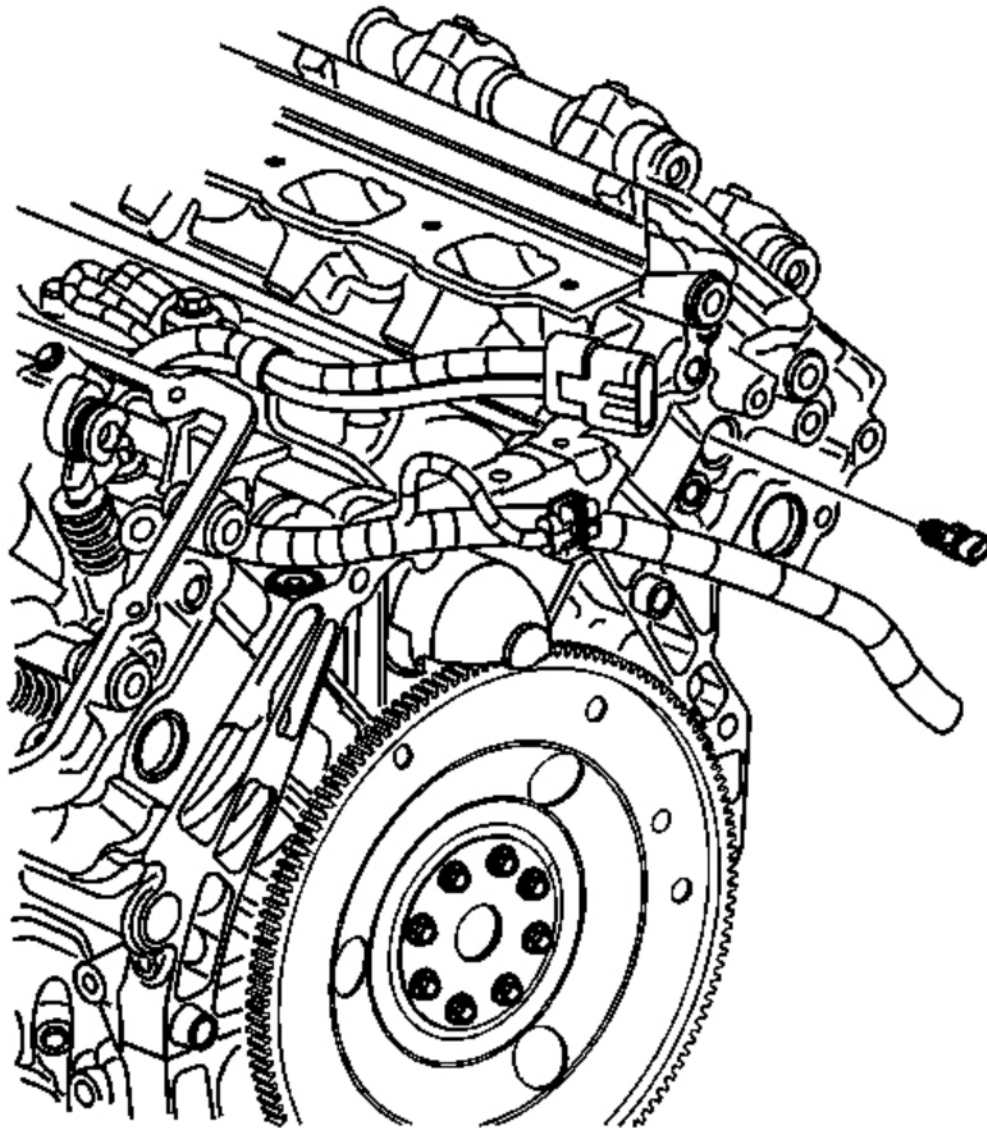


Fig. 6: View Of ECT Sensor

Courtesy of GENERAL MOTORS CORP.

16. Install the ECT sensor to the right cylinder head.

Tighten: Tighten the ECT sensor to 20 N.m (15 lb ft).

INTAKE MANIFOLD INSTALLATION

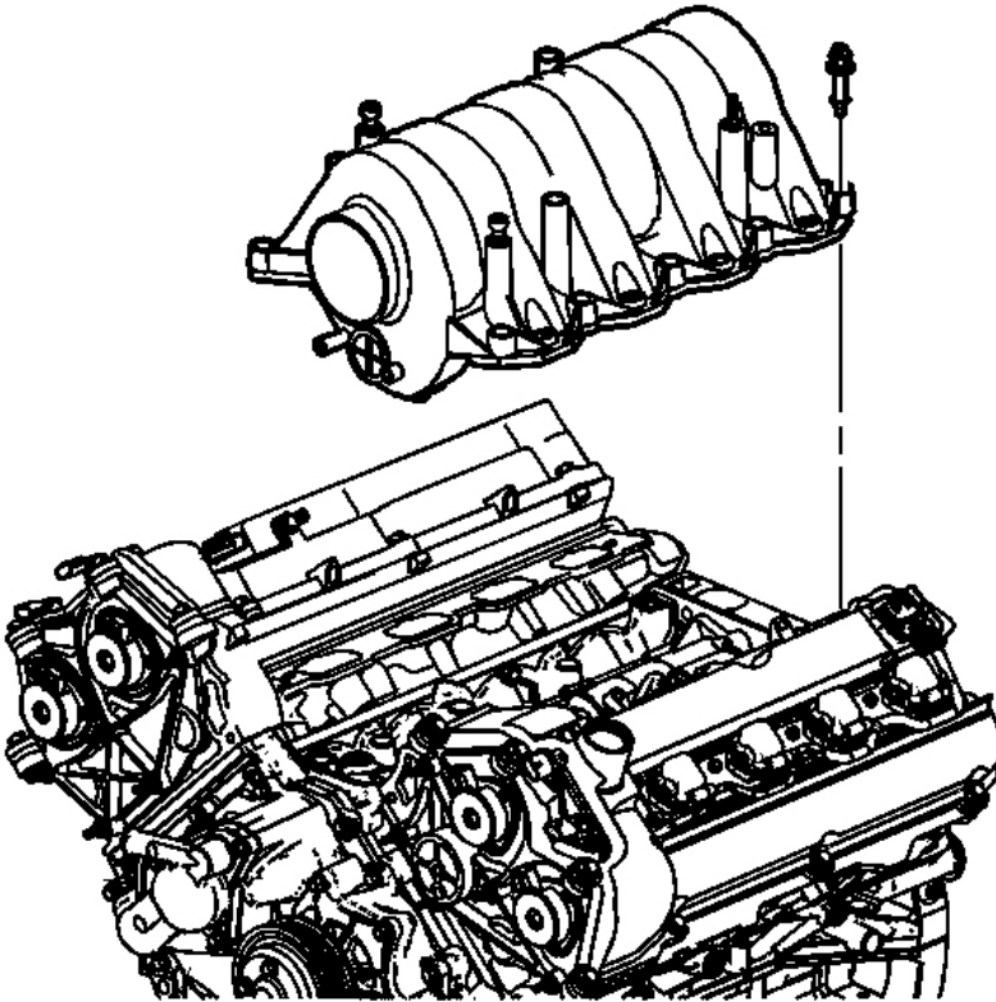


Fig. 7: View Of Intake Manifold & Bolts
Courtesy of GENERAL MOTORS CORP.

1. Ensure the gaskets are in the intake manifold.
2. Place the intake manifold in position.
3. Position the front of the intake manifold into the plenum duct.
4. Position the rear of the intake manifold downward onto the cylinder heads.

5. Loosely install the 10 bolts attaching the intake manifold to the cylinder heads.

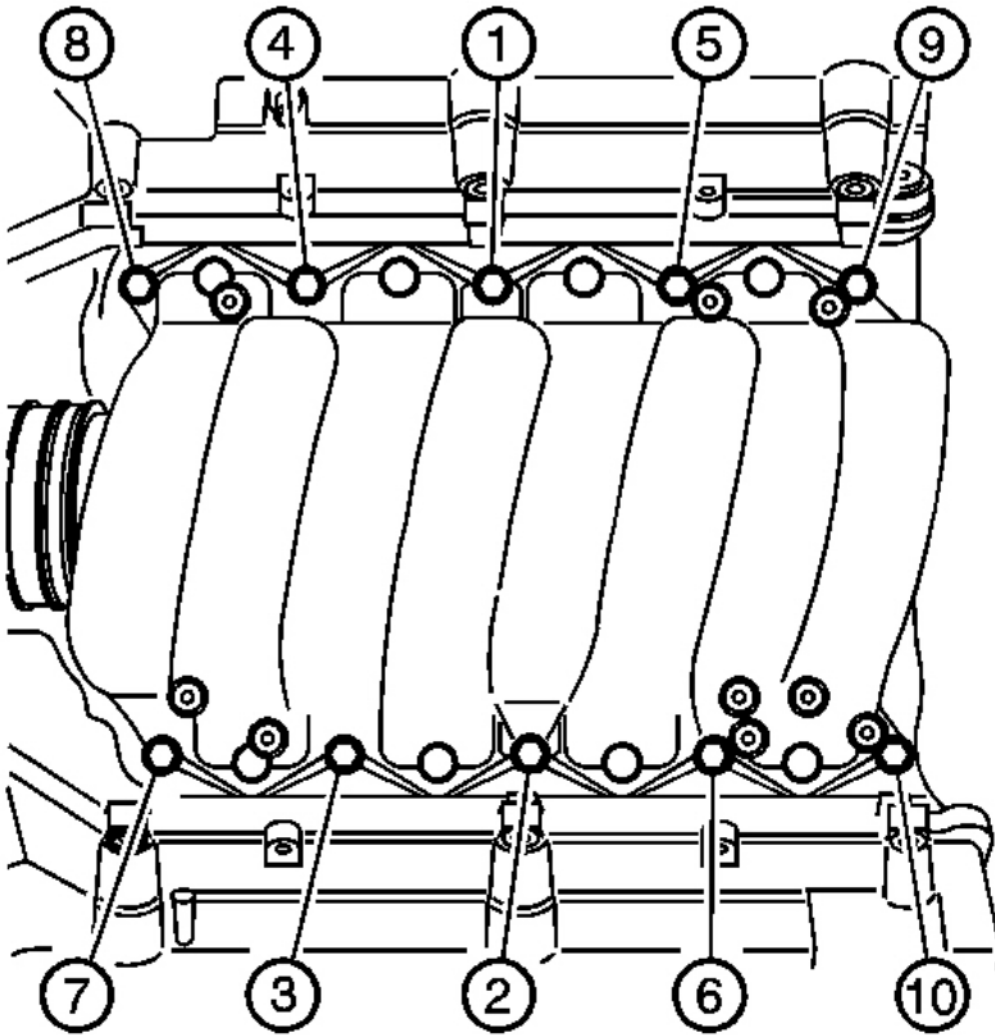


Fig. 8: Tightening Intake Manifold Bolts
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice in Cautions and Notices.

6. Tighten the intake manifold bolts in sequence (1-10).

Tighten: Tighten the intake manifold bolts to 10 N.m (89 lb in).

7. Ensure that the plenum duct is fully attached to the front of the intake manifold.

Tighten: Tighten the plenum duct clamp to 2.25 N.m (20 lb in).

8. Lubricate the intake manifold fuel injector bores with light mineral oil GM P/N 9981704, clean engine oil or equivalent.

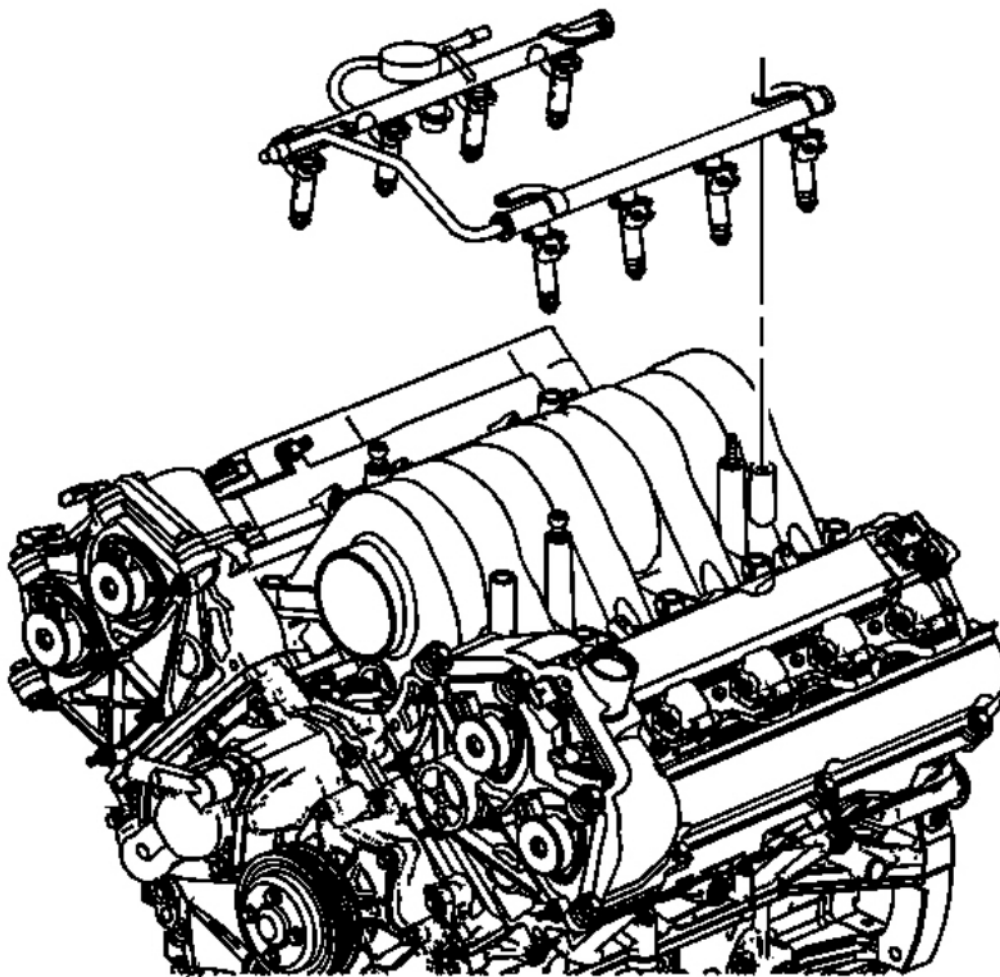


Fig. 9: View Of Fuel Rail & Injector Assembly
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: DO NOT force the injectors into position.

9. Install the entire fuel rail and injector assembly into the intake manifold by pressing the fuel rail and injector simultaneously into the correct position.

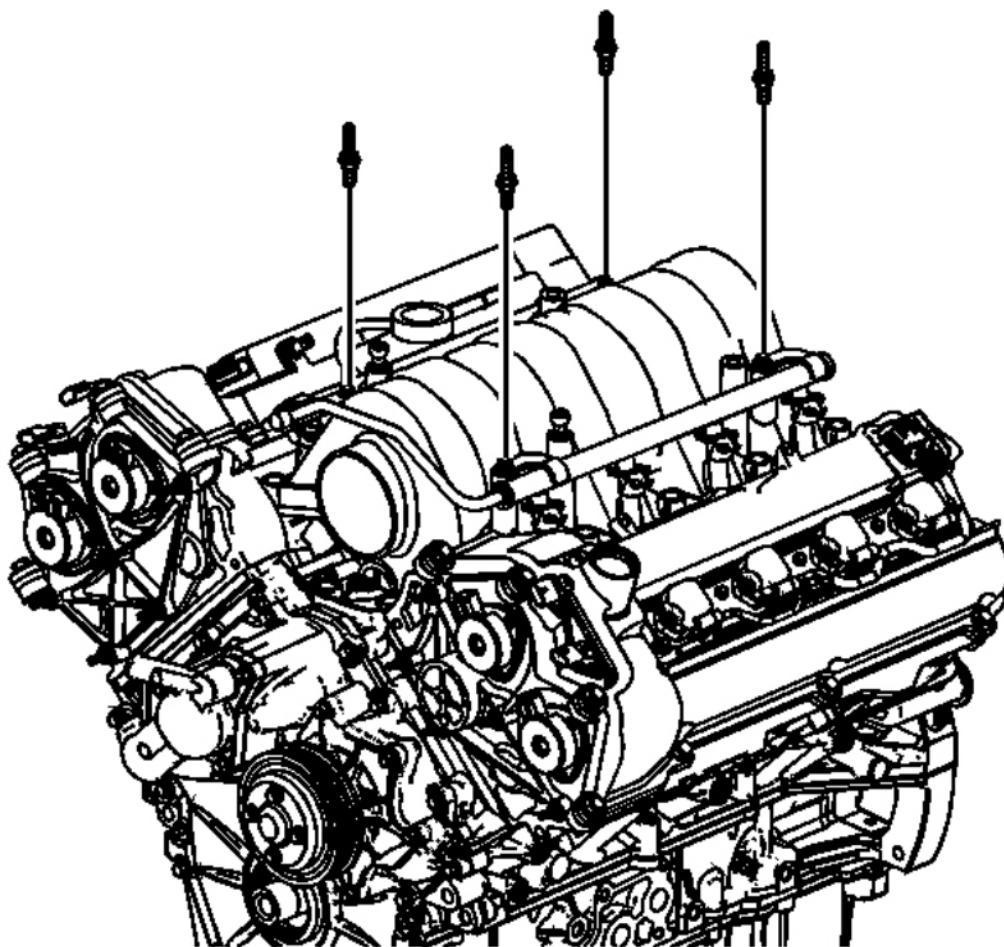


Fig. 10: View Of Fuel Rail-To-Intake Manifold Bolts
Courtesy of GENERAL MOTORS CORP.

10. Install the bolts attaching the fuel rail to the intake manifold.

Tighten: Tighten the fuel rail bolts to 10 N.m (89 lb in).

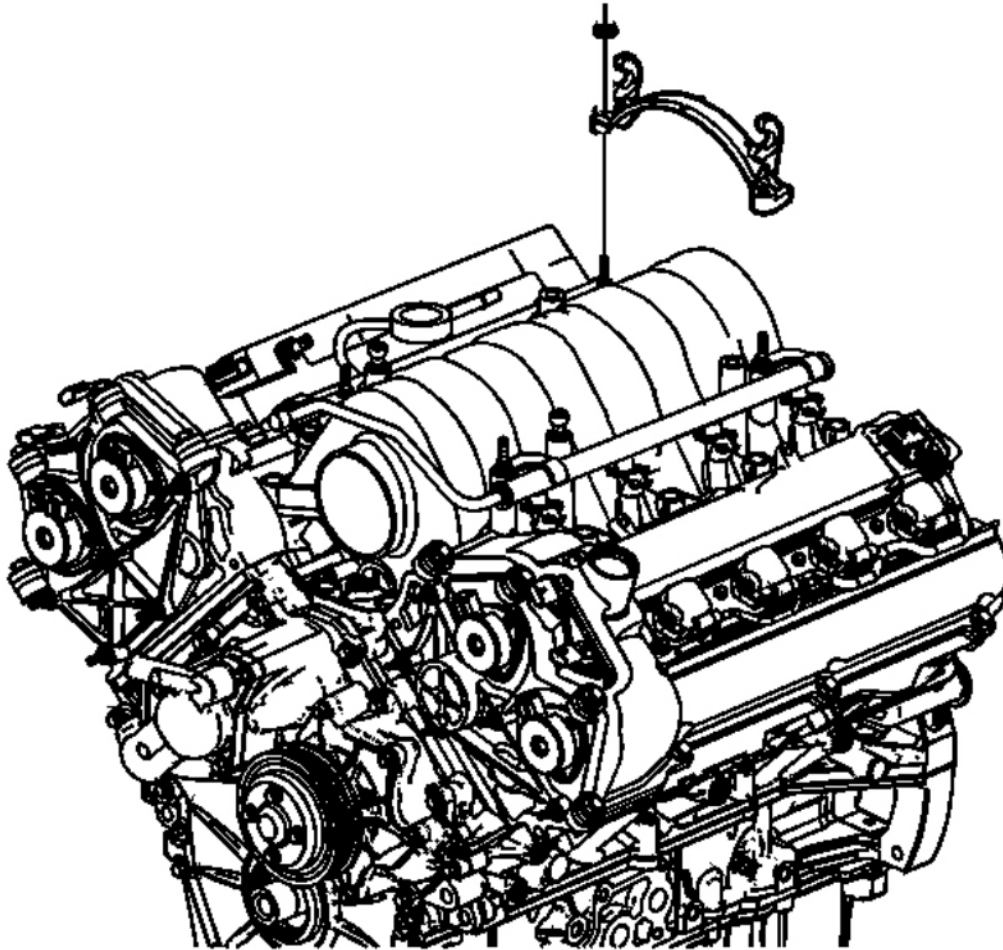


Fig. 11: View Of Sight Shield Bracket
Courtesy of GENERAL MOTORS CORP.

11. Install the sight shield bracket.
12. Install the sight shield bracket nuts.

Tighten: Tighten the sight shield bracket nuts to 10 N.m (89 lb in).

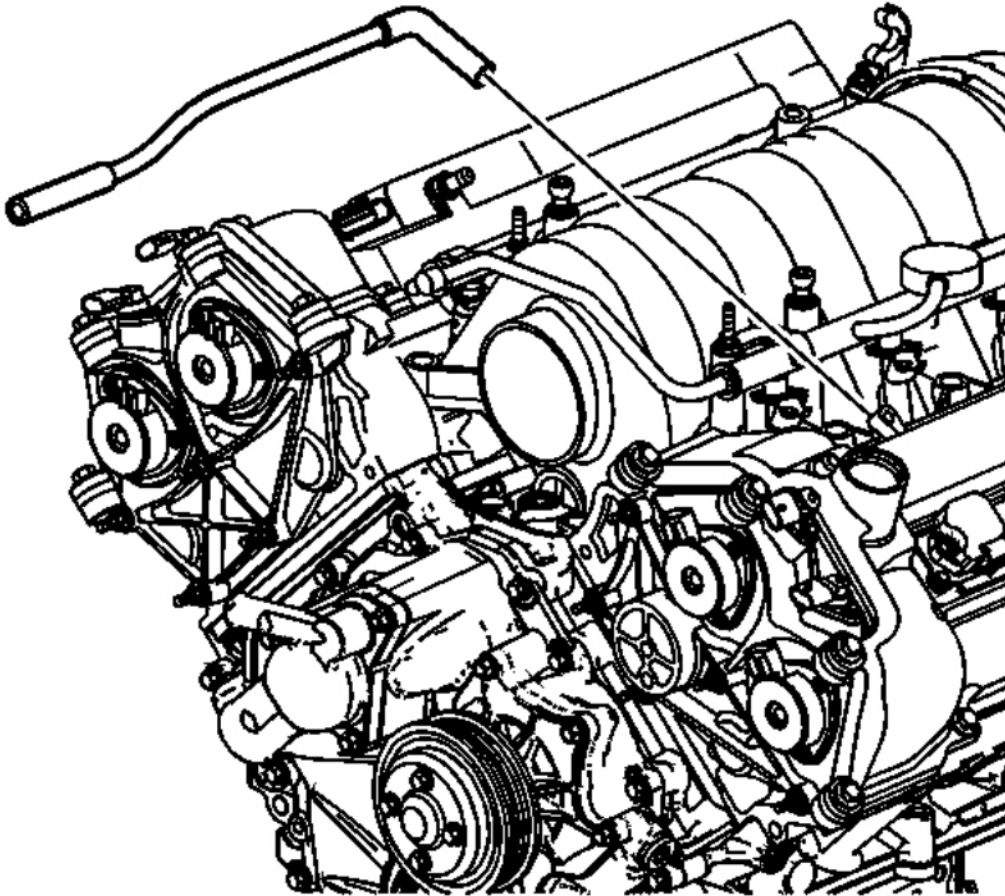


Fig. 12: View Of PCV Fresh Air Tube
Courtesy of GENERAL MOTORS CORP.

13. Connect the PCV fresh air tube to the camshaft cover.

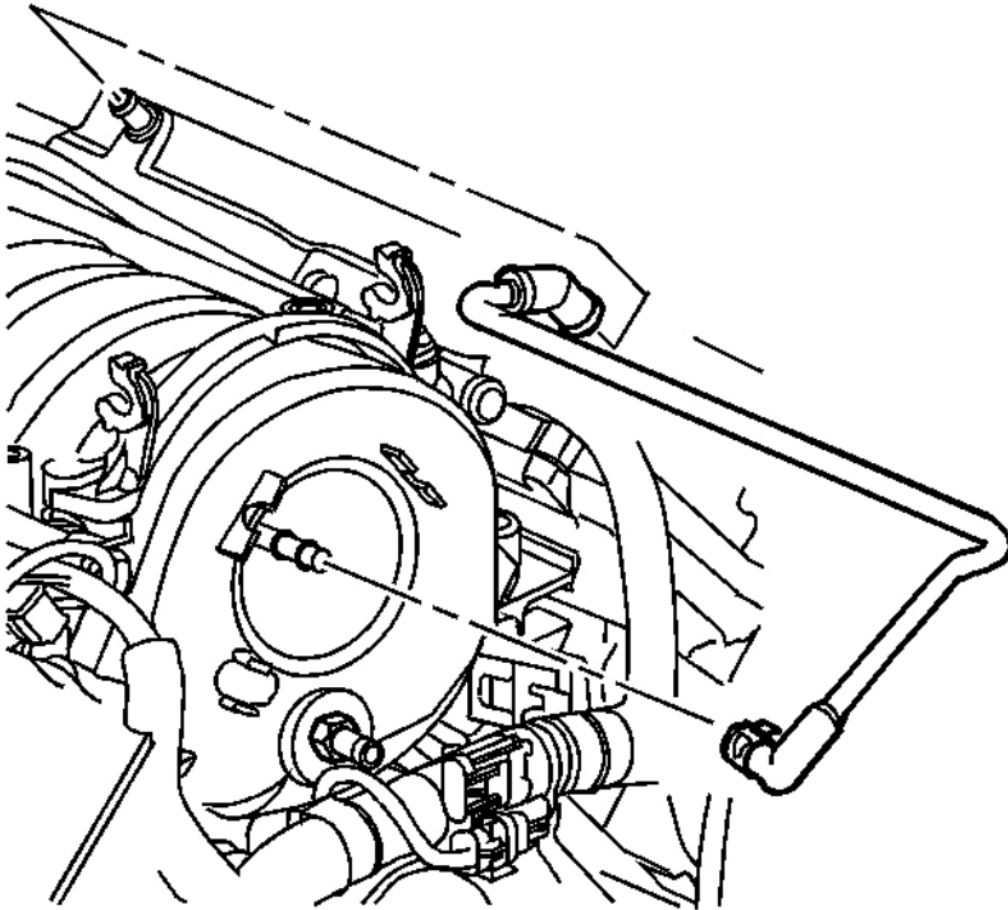


Fig. 13: View Of PCV Dirty Air Breather Tube
Courtesy of GENERAL MOTORS CORP.

14. Connect the PCV dirty air tube to the camshaft cover.

WATER OUTLET HOUSING INSTALLATION

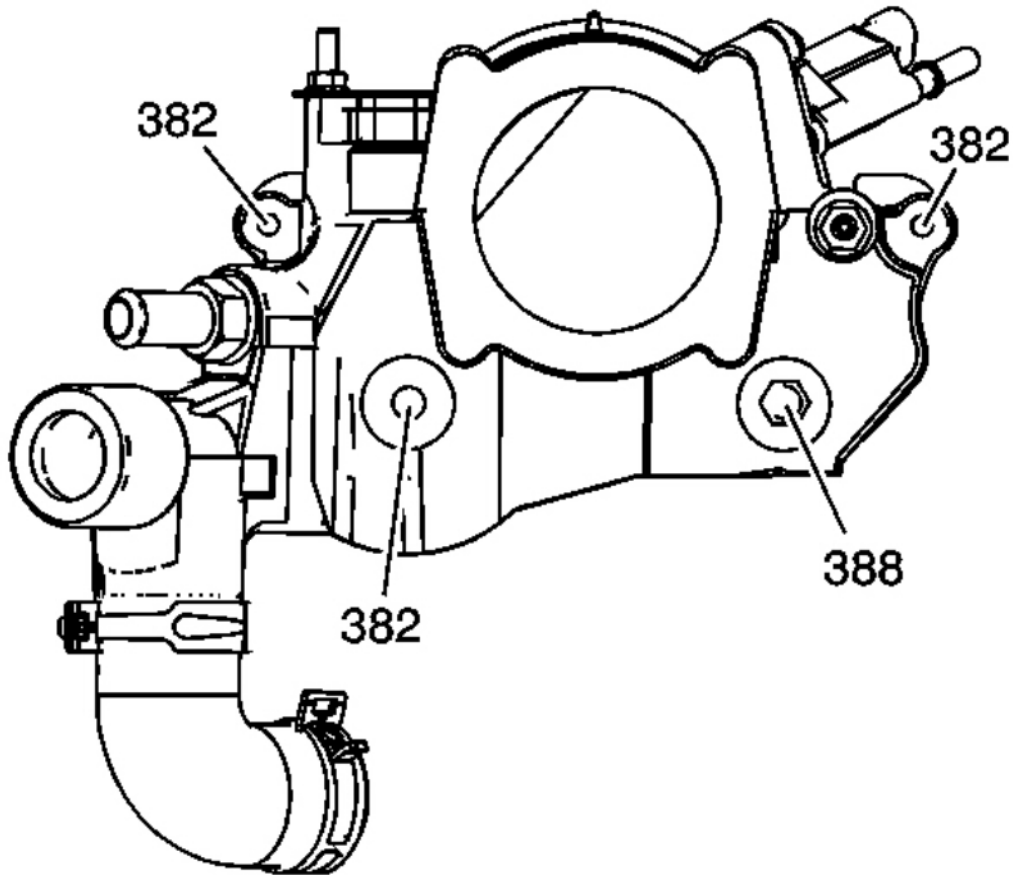


Fig. 14: Locating Water Outlet Housing Bolts
Courtesy of GENERAL MOTORS CORP.

1. Install the water outlet housing bolts (382, 388) into the water outlet housing. Ensure the longest bolt is installed in the lower left position (388).
2. Install the water outlet housing gaskets to the water outlet housing.

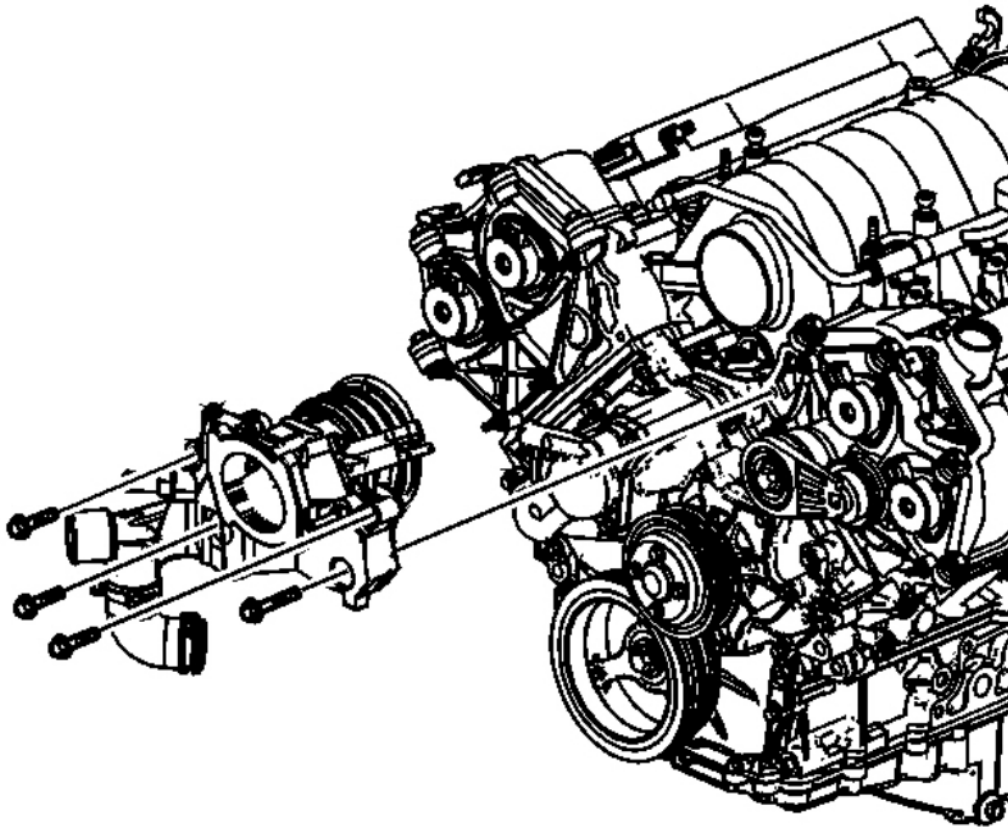


Fig. 15: View Of Water Outlet Housing
Courtesy of GENERAL MOTORS CORP.

3. Place the water outlet housing in position to the cylinder heads while installing the bypass hose onto the engine front cover.

NOTE: Refer to Fastener Notice in Cautions and Notices.

4. Install the water outlet housing bolts into the cylinder heads.

Tighten: Tighten the water outlet housing bolts to 25 N.m (18 lb ft).

5. Place the bypass hose clamps into position.

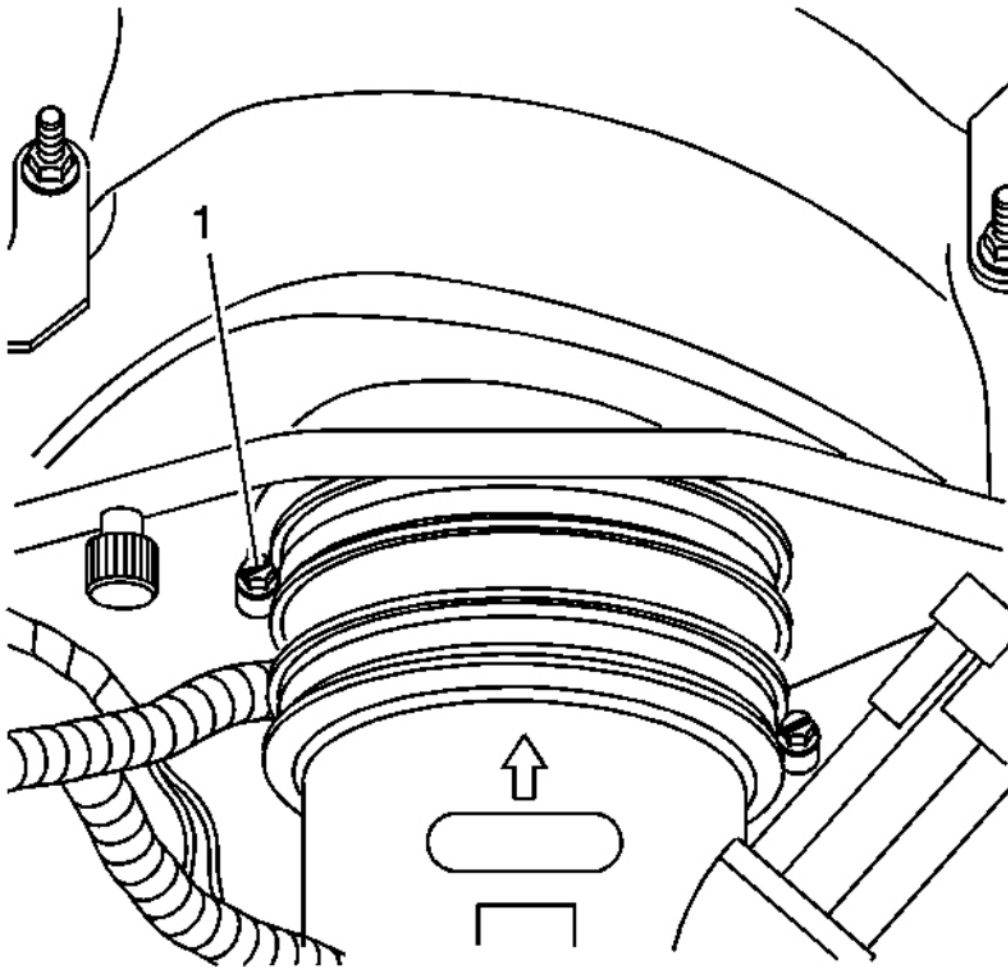


Fig. 16: View Of Plenum Duct Clamp
Courtesy of GENERAL MOTORS CORP.

6. Ensure that the plenum duct is fully attached to the front of the intake manifold.

Tighten: Tighten the plenum duct clamp (1) to 2.25 N.m (20 lb in).

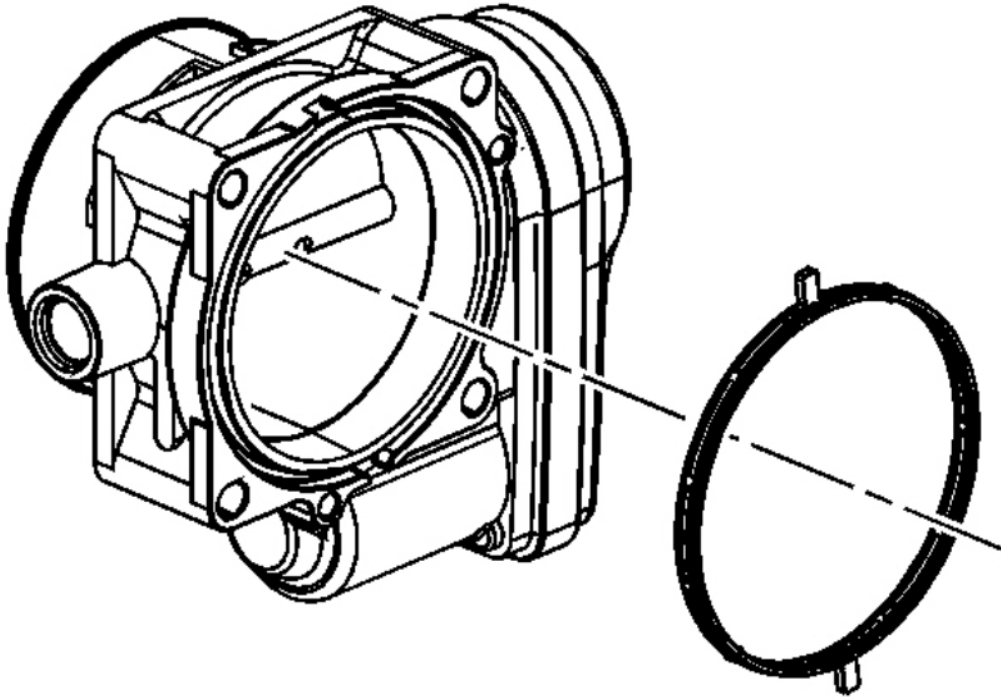


Fig. 17: View Of Throttle Body Gasket
Courtesy of GENERAL MOTORS CORP.

7. Install a NEW throttle body gasket.

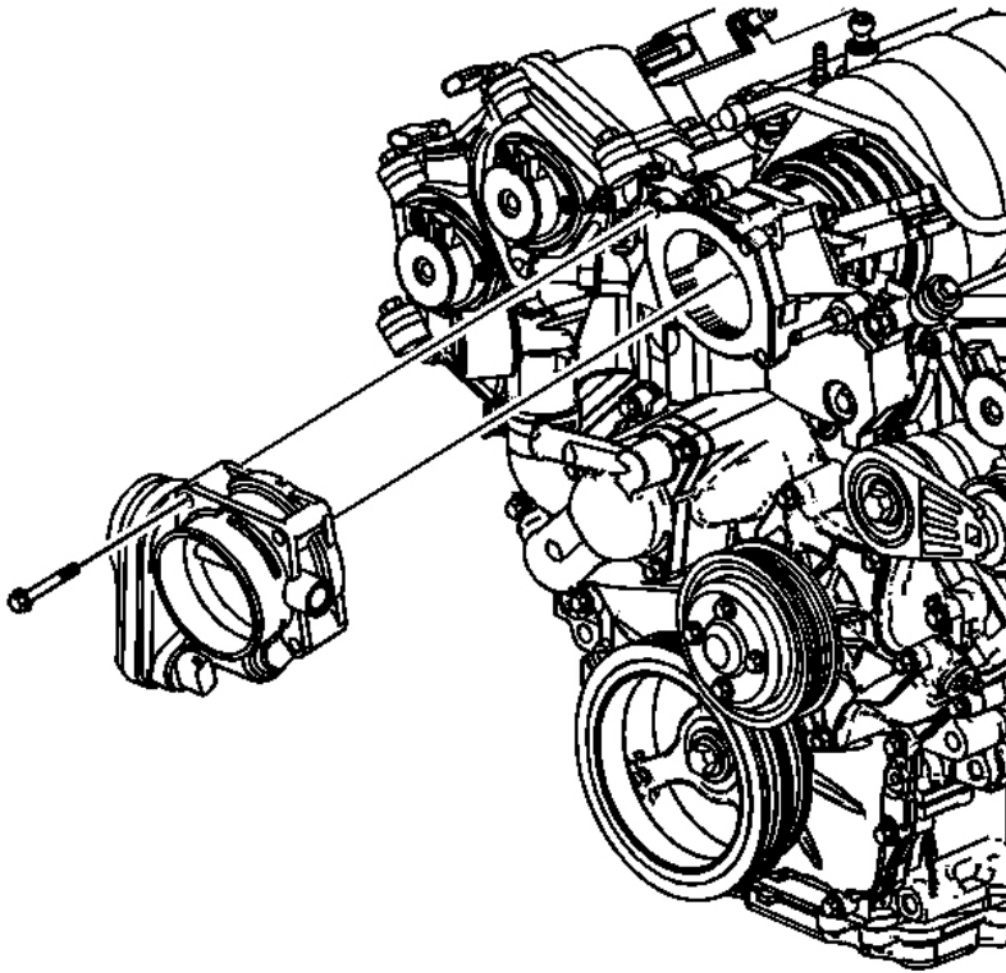


Fig. 18: View Of Throttle Body Assembly
Courtesy of GENERAL MOTORS CORP.

8. Install the throttle body to the water outlet.
9. Install the throttle body bolts.

Tighten: Tighten the throttle body bolts to 10 N.m (89 lb in).

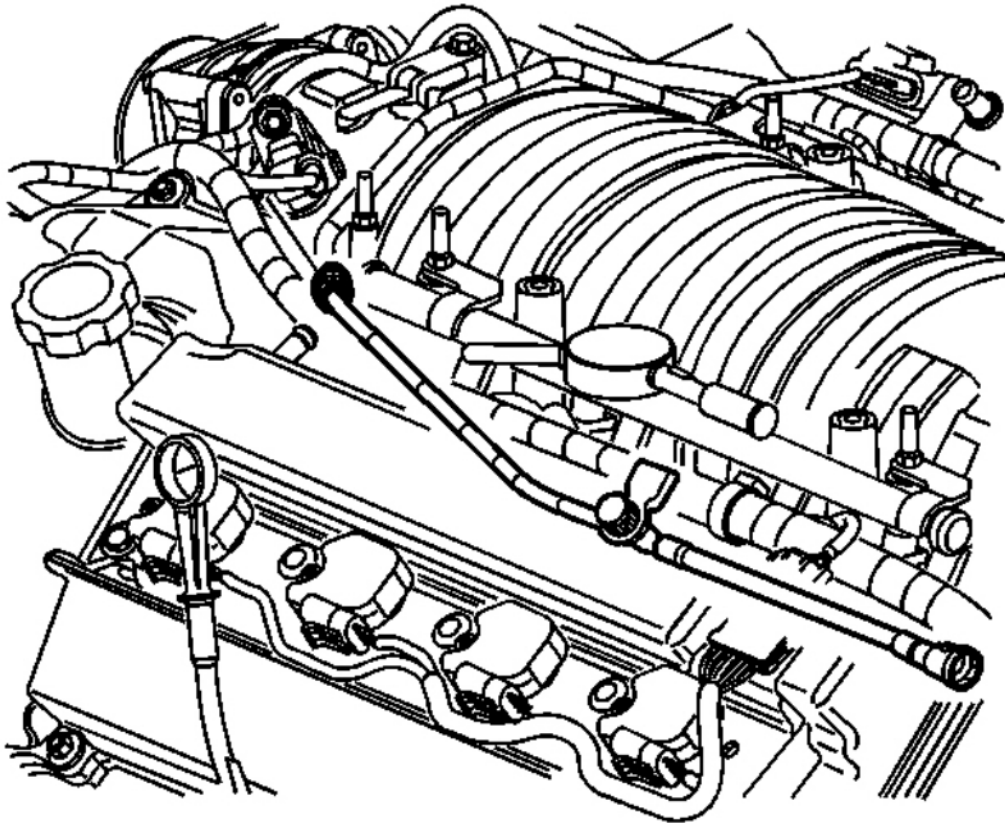


Fig. 19: View Of EVAP Purge Valve Tube
Courtesy of GENERAL MOTORS CORP.

10. Install the evaporative emission (EVAP) purge valve tube onto the EVAP purge solenoid.

DRIVE BELT TENSIONER INSTALLATION

P/S Pump and A/C Compressor Drive Belt Tensioner

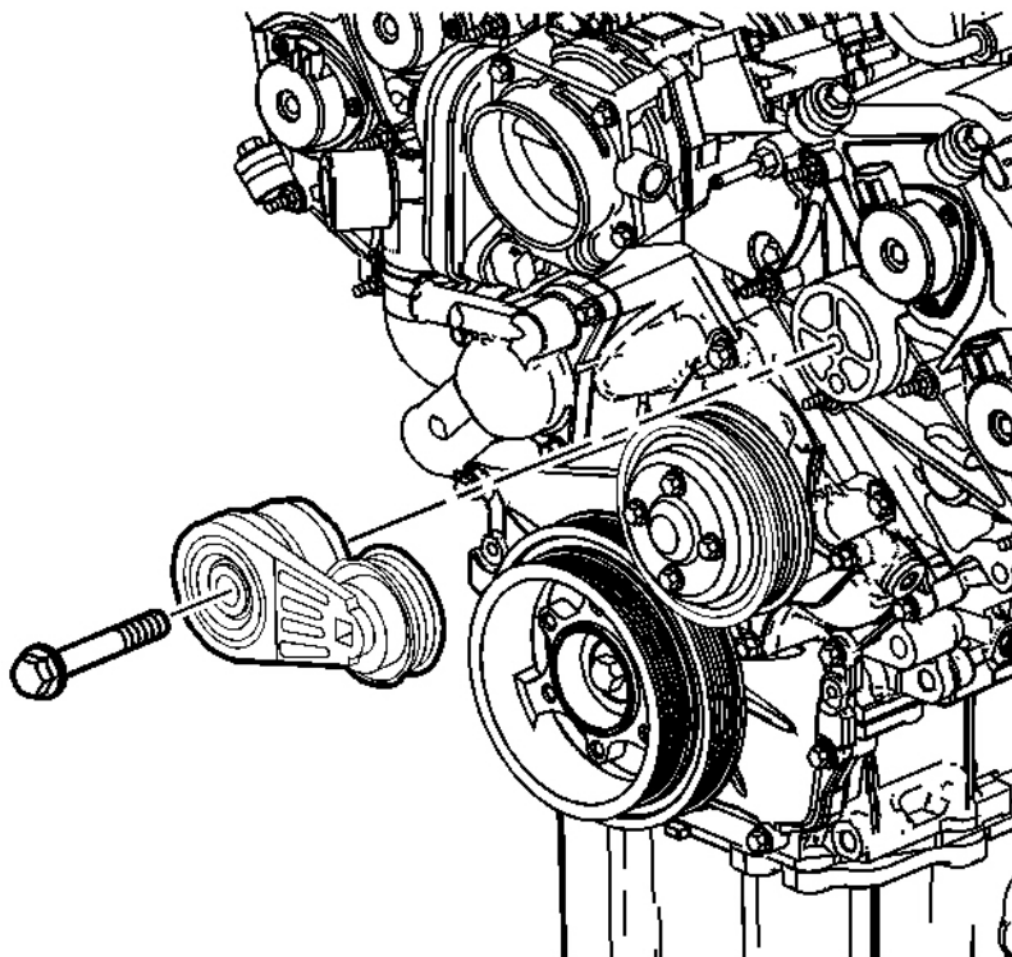


Fig. 20: View Of Drive Belt Tensioner
Courtesy of GENERAL MOTORS CORP.

1. Place the P/S pump and A/C compressor drive belt tensioner in position to the camshaft position actuator housing. Ensure to properly locate the drive belt tensioner anchor pin in the recess in the camshaft position actuator housing.

NOTE: Refer to Fastener Notice in Cautions and Notices.

2. Install the P/S pump and A/C compressor drive belt tensioner bolt.

Tighten: Tighten the P/S pump and A/C compressor drive belt tensioner bolt to 50 N.m (37

lb ft).

Generator Drive Belt Tensioner

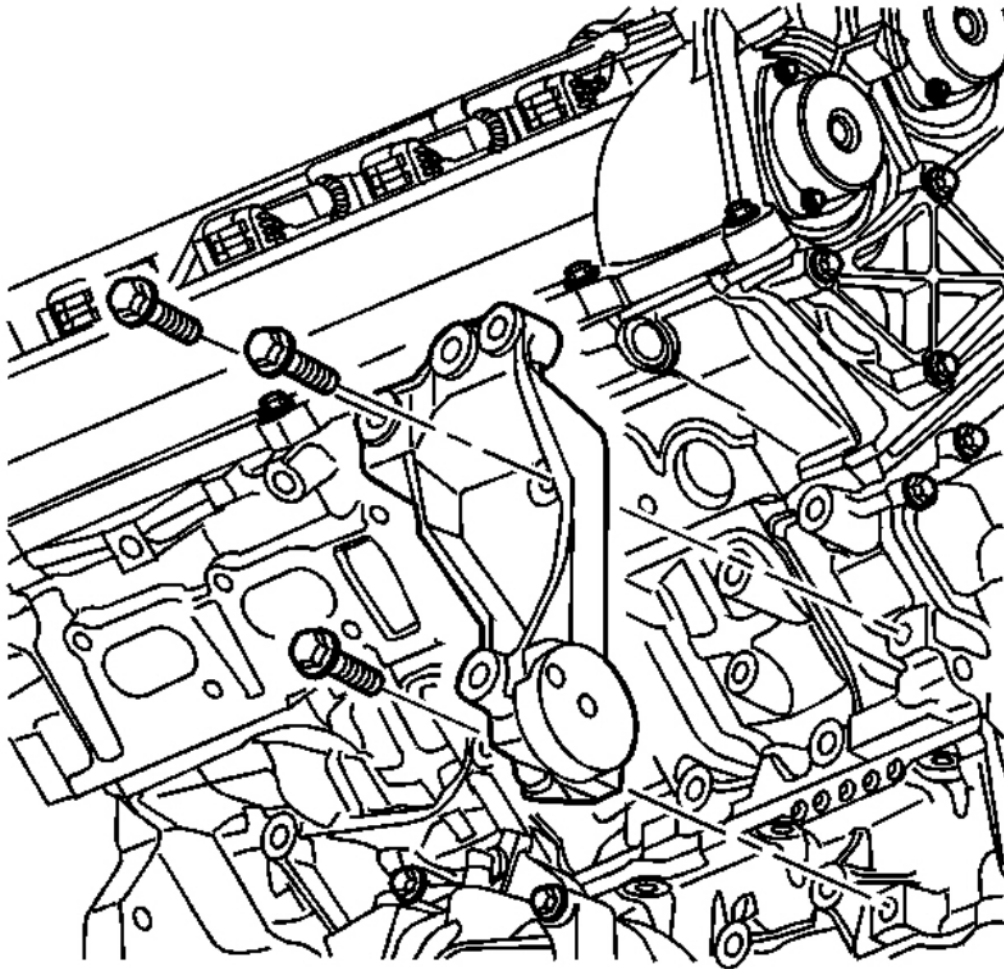


Fig. 21: View Of Generator Bracket
Courtesy of GENERAL MOTORS CORP.

1. Place the generator bracket in position to the engine.

NOTE: Refer to Fastener Notice in Cautions and Notices.

2. Loosely install the generator bracket bolts.

3. Tighten the generator bracket bolts in proper sequence.

Tighten:

- Tighten the generator bracket front upper bolt to 50 N.m (37 lb ft).
- Tighten the generator bracket rear upper bolt to 50 N.m (37 lb ft).
- Tighten the generator bracket lower bolt to 50 N.m (37 lb ft).

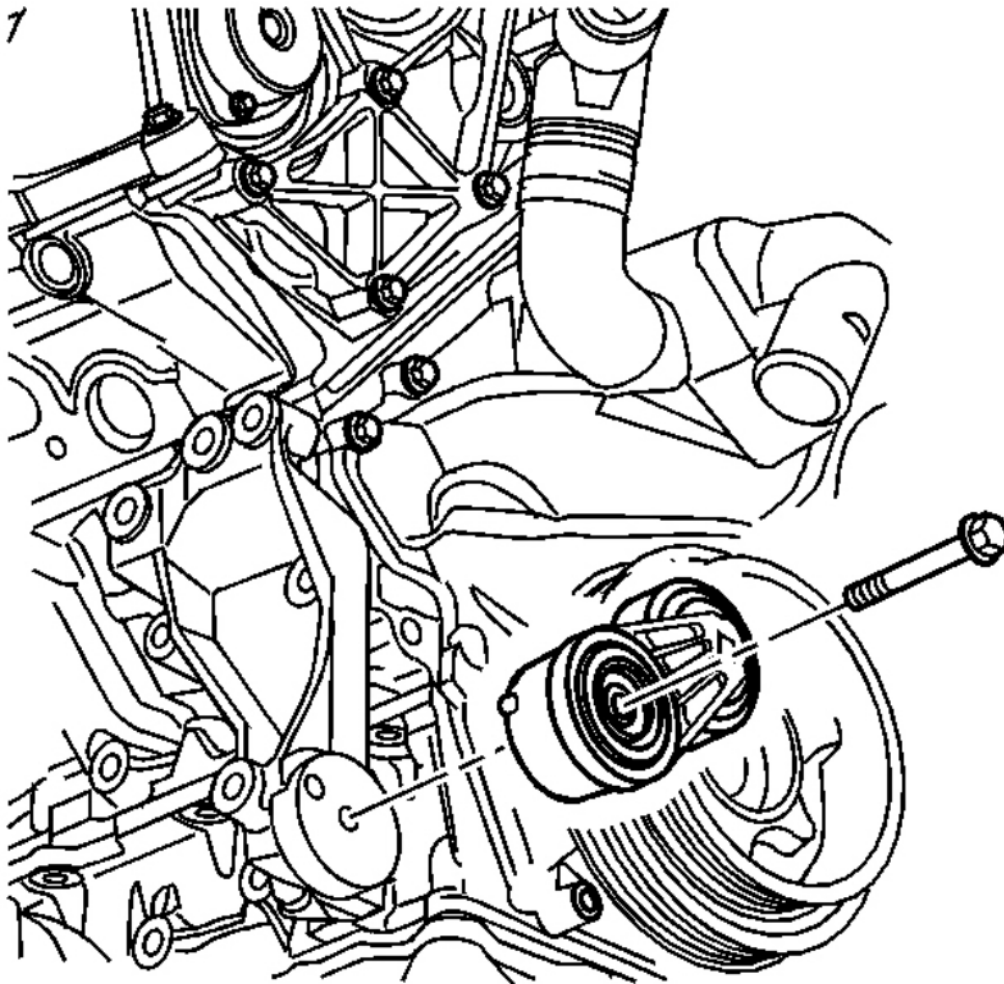


Fig. 22: View Of Generator Drive Belt Tensioner
Courtesy of GENERAL MOTORS CORP.

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4. Place the generator drive belt tensioner in position to the generator bracket. Ensure to properly locate the drive belt tensioner anchor pin in the recess in the generator bracket.
5. Install the generator drive belt tensioner bolt.

Tighten: Tighten the generator drive belt tensioner bolt to 50 N.m (37 lb ft).

AIR CONDITIONING (A/C) COMPRESSOR INSTALLATION

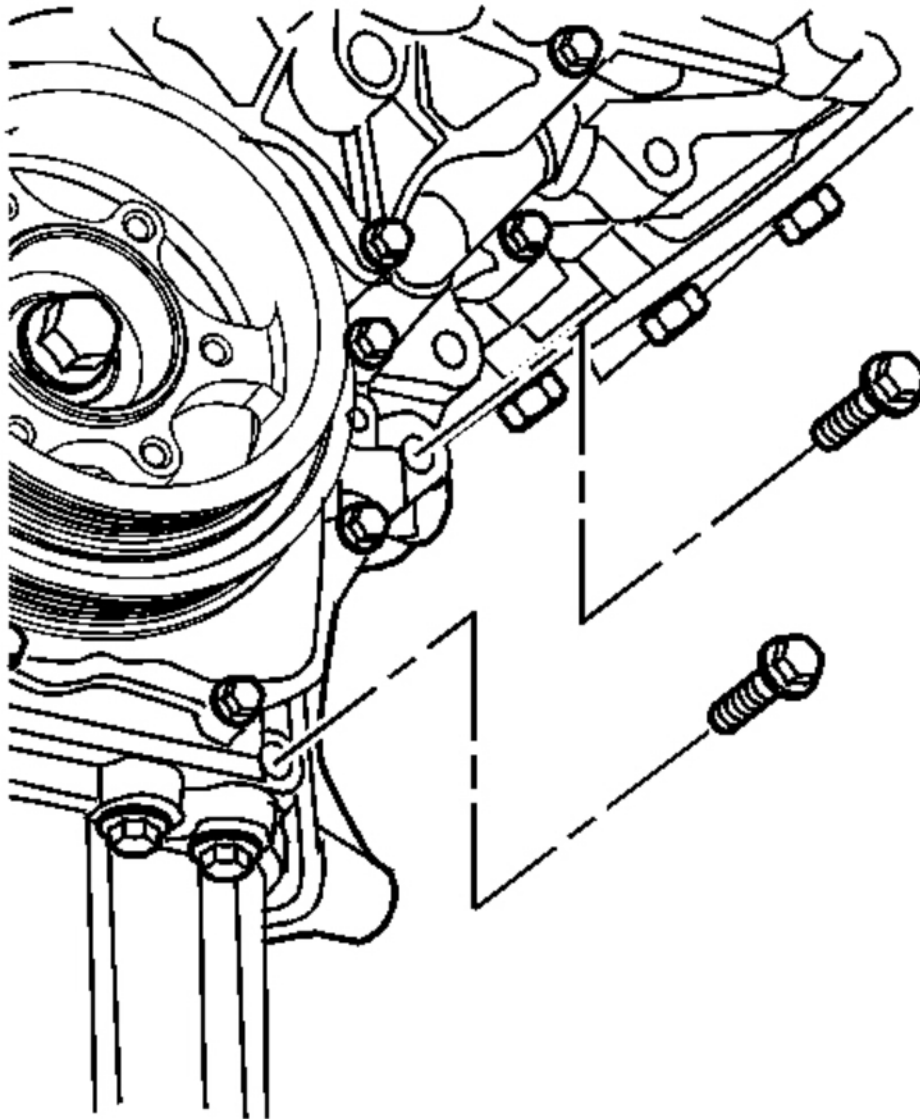


Fig. 23: View Of Front A/C Bracket Bolts
Courtesy of GENERAL MOTORS CORP.

1. Place the air conditioner bracket in position to the engine.

NOTE: Refer to Fastener Notice in Cautions and Notices.

2. Loosely install the front air conditioner bracket bolts.

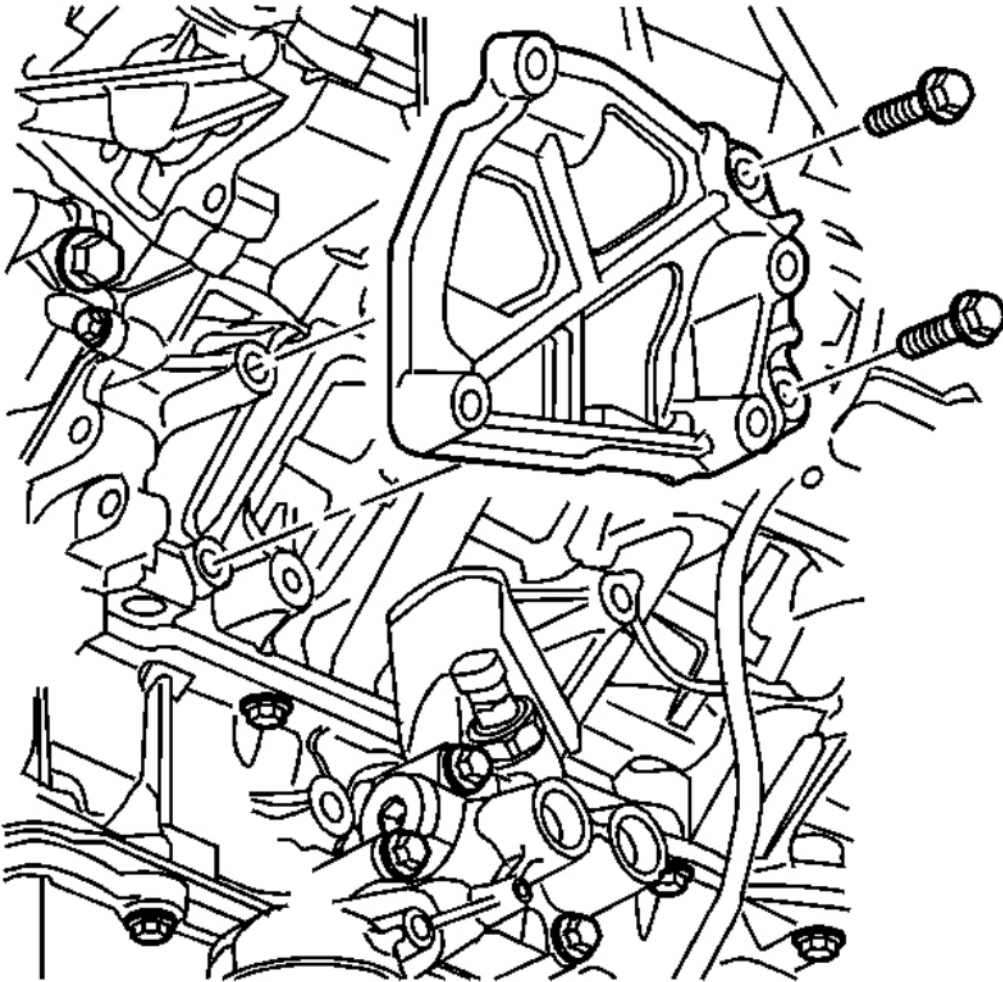


Fig. 24: View Of A/C Bracket Bolts
Courtesy of GENERAL MOTORS CORP.

3. Loosely install the side air conditioner bracket bolts.
4. Tighten the air conditioner bracket bolts in proper sequence.

Tighten:

- Tighten the air conditioner bracket front upper bolt to 50 N.m (37 lb ft).

- Tighten the air conditioner bracket front lower bolt to 50 N.m (37 lb ft).
- Tighten the air conditioner bracket side upper bolt to 50 N.m (37 lb ft).
- Tighten the air conditioner bracket side lower bolt to 50 N.m (37 lb ft).

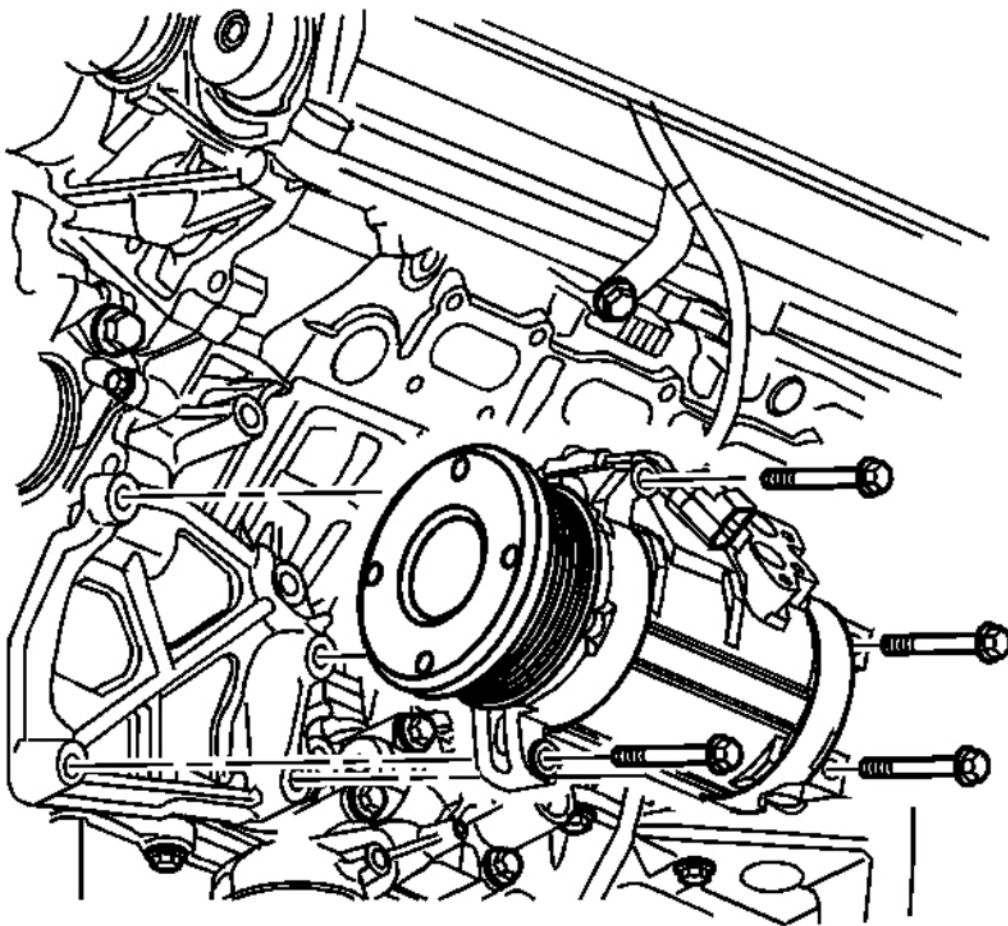


Fig. 25: View Of A/C Compressor
Courtesy of GENERAL MOTORS CORP.

5. Place the air conditioner compressor in position to the front air conditioner bracket.
6. Loosely install the air conditioner compressor bolts. Ensure the longer bolt is installed in the front lower position.
7. Tighten the air conditioner compressor bolts.

Tighten: Tighten the air conditioner compressor bolts to 25 N.m (18 lb ft).

GENERATOR INSTALLATION

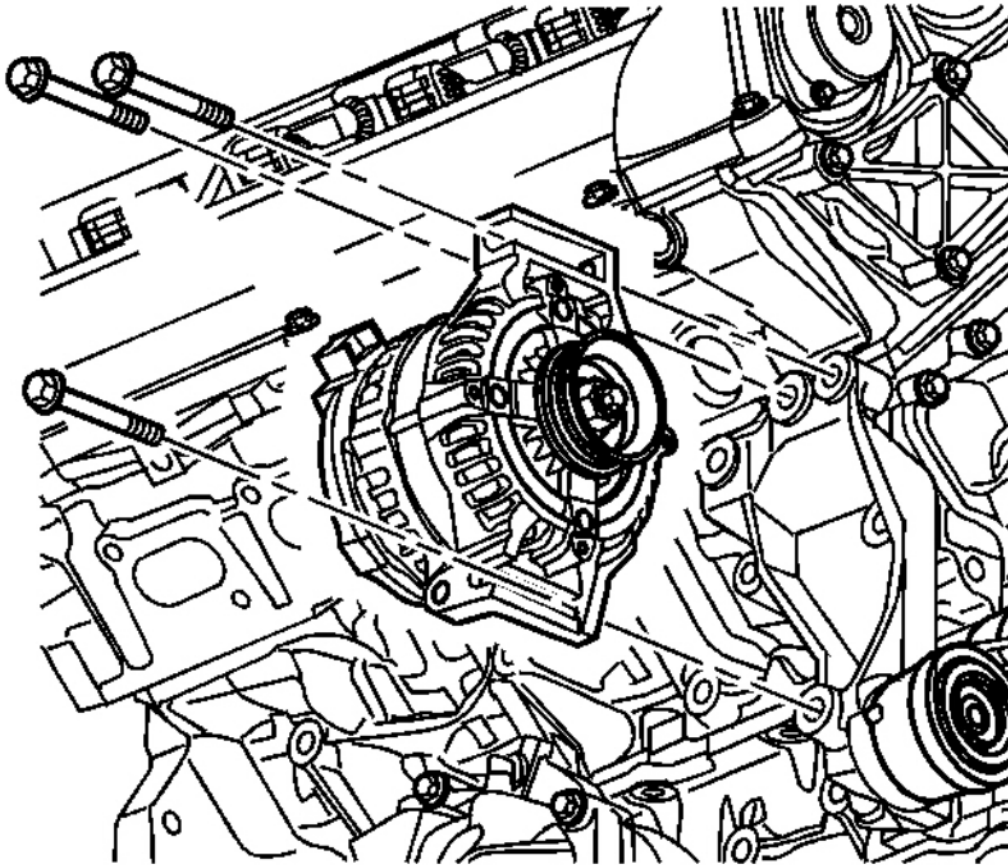


Fig. 26: View Of Generator

Courtesy of GENERAL MOTORS CORP.

1. Place the generator in position to the generator bracket.

NOTE: Refer to Fastener Notice in Cautions and Notices.

2. Loosely install the generator bolts.
3. Tighten the generator bolts in proper sequence.

Tighten:

- Tighten the generator upper rear bolt to 50 N.m (37 lb ft).
- Tighten the generator lower bolt to 50 N.m (37 lb ft).
- Tighten the generator upper front bolt to 50 N.m (37 lb ft).

DRIVE BELT IDLER PULLEY INSTALLATION

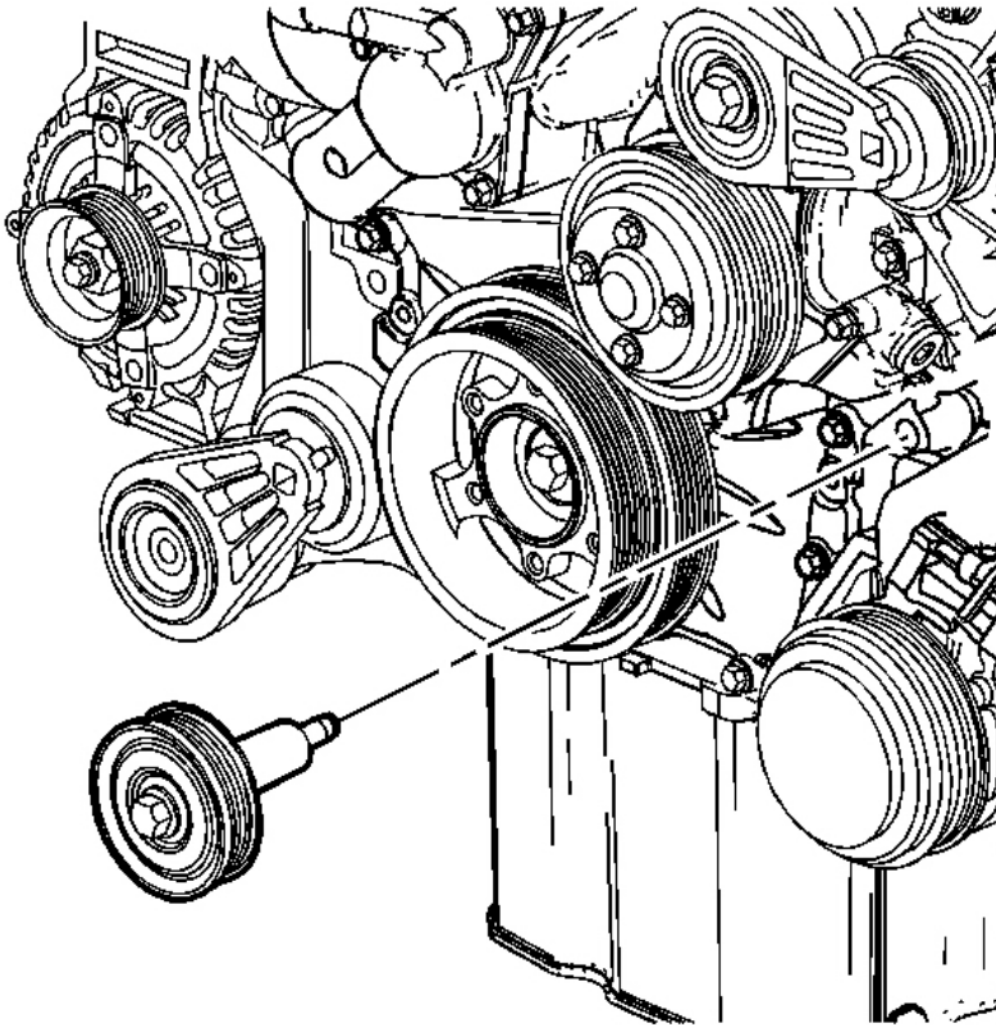


Fig. 27: View Of Drive Belt Idler Pulley
Courtesy of GENERAL MOTORS CORP.

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1. Place the drive belt idler pulley in position to the engine.

NOTE: Refer to Fastener Notice in Cautions and Notices.

2. Install the drive belt idler pulley bolt.

Tighten: Tighten the drive belt idler pulley bolt to 50 N.m (37 lb ft).

POWER STEERING PUMP INSTALLATION

Tools Required:

J 25033-C Pulley Installer

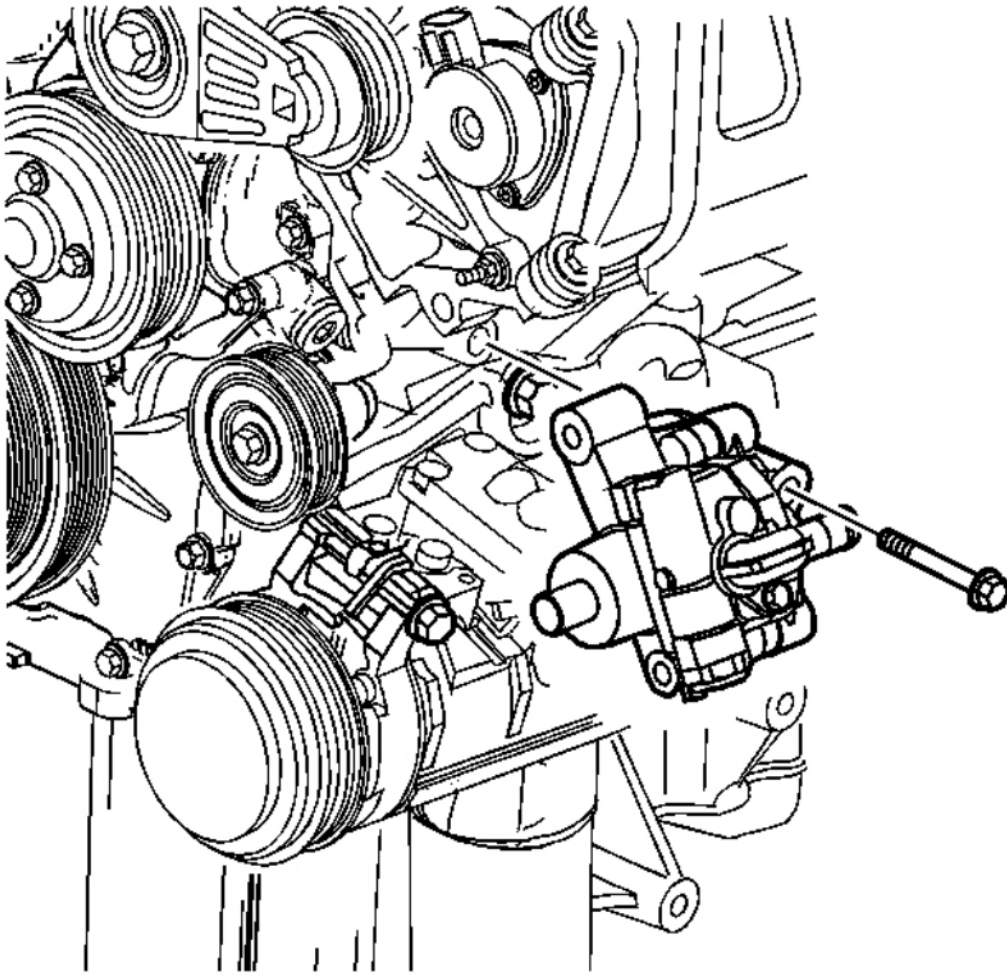


Fig. 28: View Of Power Steering Pump
Courtesy of GENERAL MOTORS CORP.

1. Place the power steering pump in position to the engine.

NOTE: Refer to **Fastener Notice** in Cautions and Notices.

2. Loosely install the power steering pump side bolt.

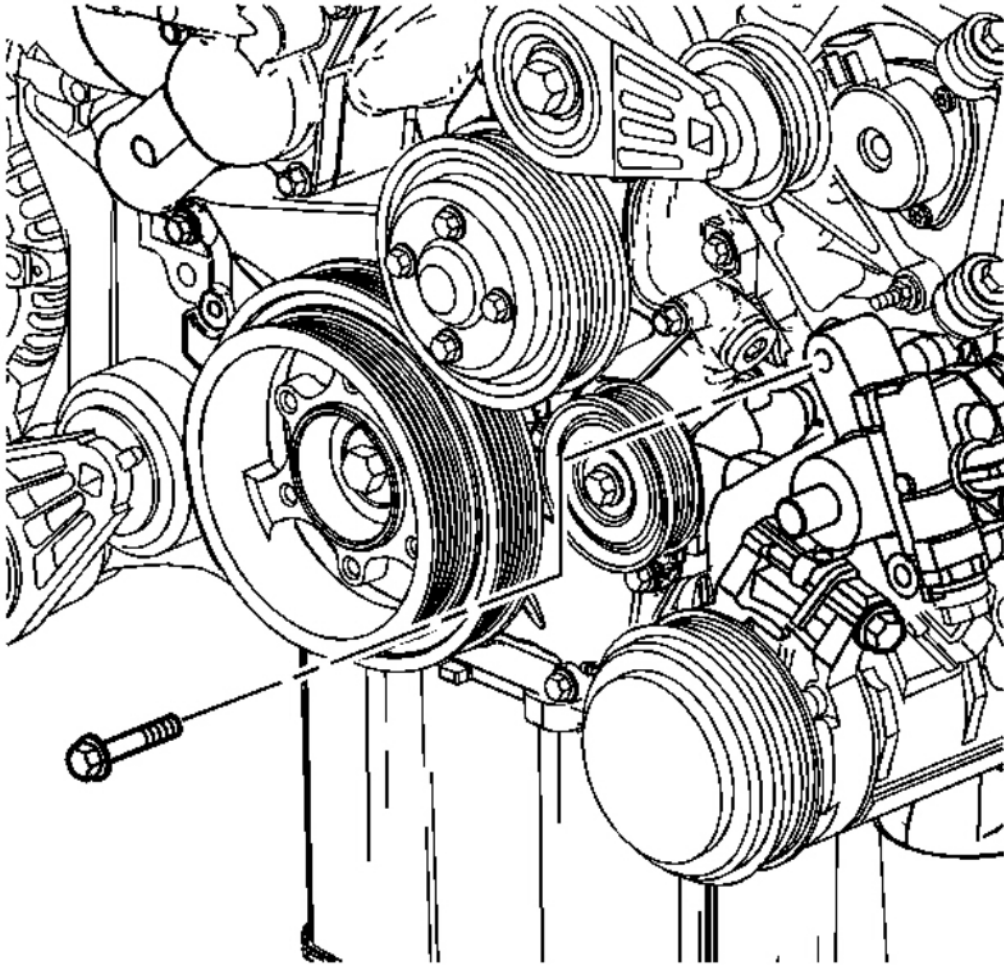


Fig. 29: View Of Power Steering Pump Front Bolt
Courtesy of GENERAL MOTORS CORP.

3. Loosely install the power steering pump front bolt.
4. Tighten the power steering pump bolts.

Tighten: Tighten the power steering pump bolts to 50 N.m (37 lb ft).

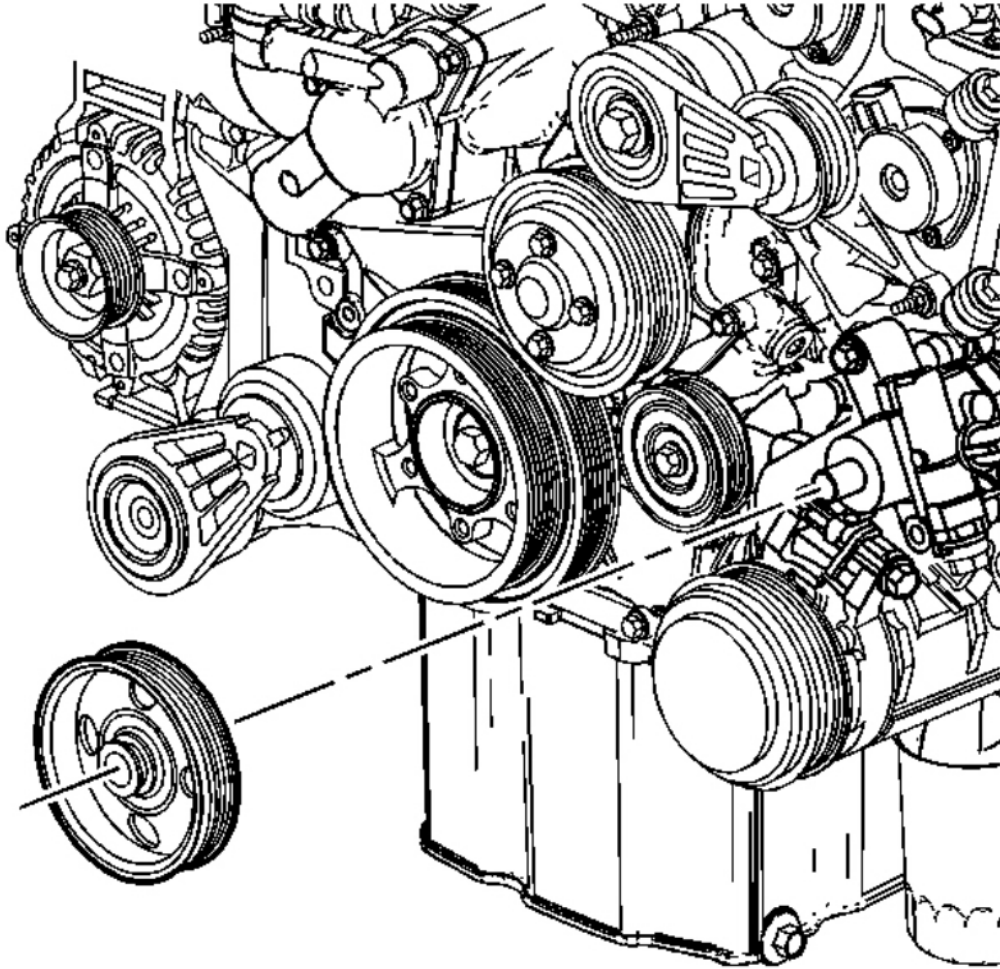


Fig. 30: View Of Power Steering Pulley
Courtesy of GENERAL MOTORS CORP.

5. If removed, place power steering pulley in position to the power steering pump.

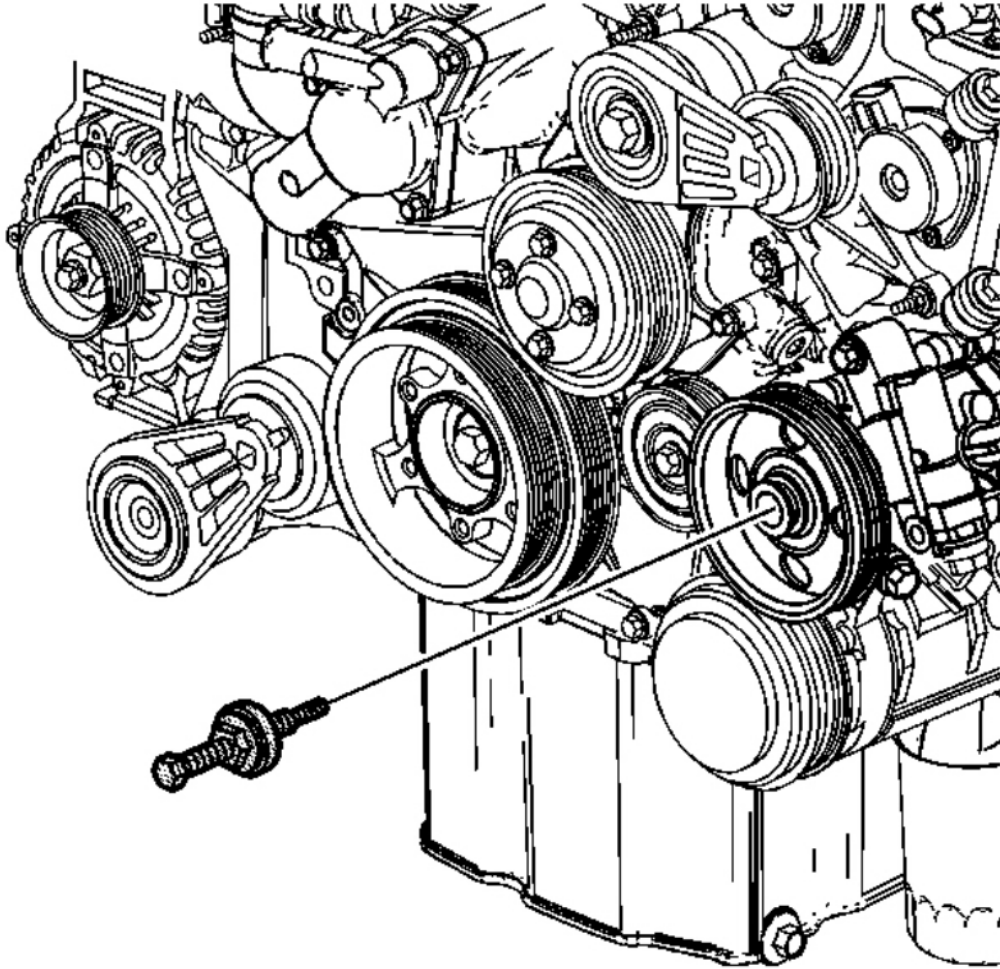


Fig. 31: View Of J 25033-C

Courtesy of GENERAL MOTORS CORP.

6. Install the **J 25033-C** into the threads of the power steering pump shaft. Ensure the **J 25033-C** threads completely into the shaft of the power steering pump before the pressing components of the **J 25033-C** contact the power steering pulley.

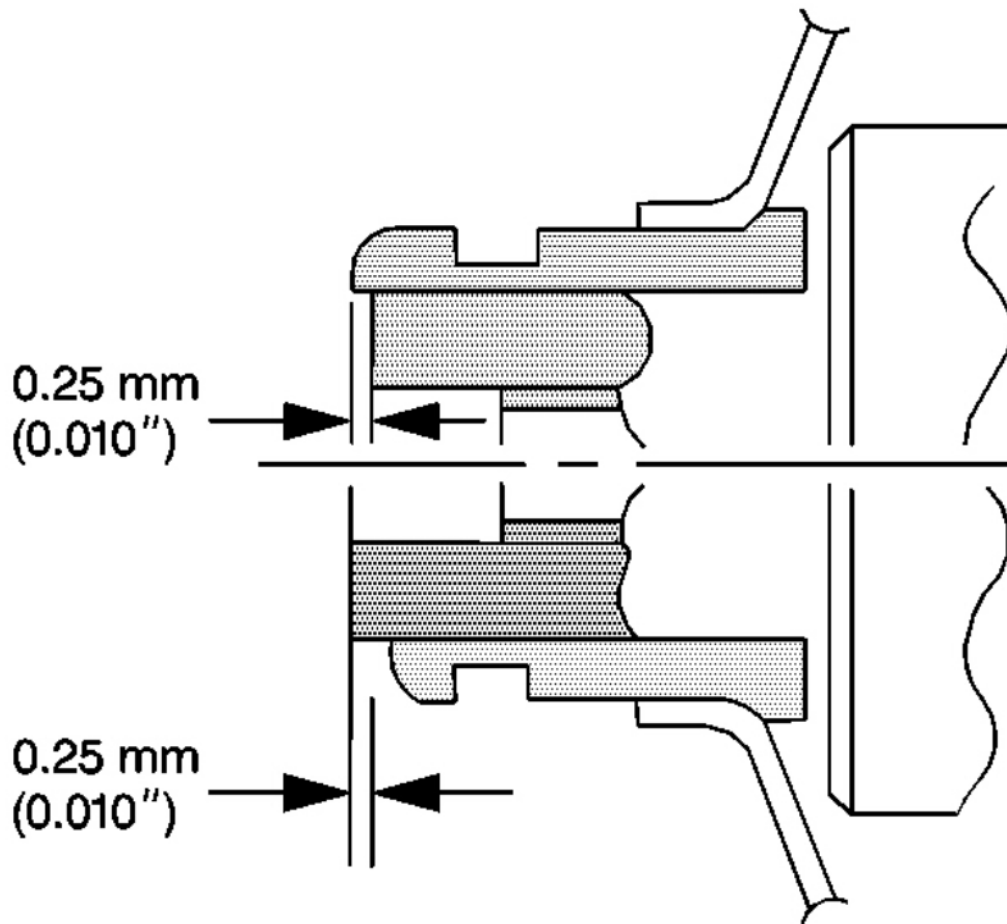


Fig. 32: Measuring Axial Tolerance Of Power Steering Pulley On Pump
Courtesy of GENERAL MOTORS CORP.

7. Tighten the nut on the **J 25033-C** until the hub of the power steering pulley is flush with the end of the power steering pump shaft.
8. Remove the **J 25033-C**.

DRIVE BELT INSTALLATION

Inner Drive Belt

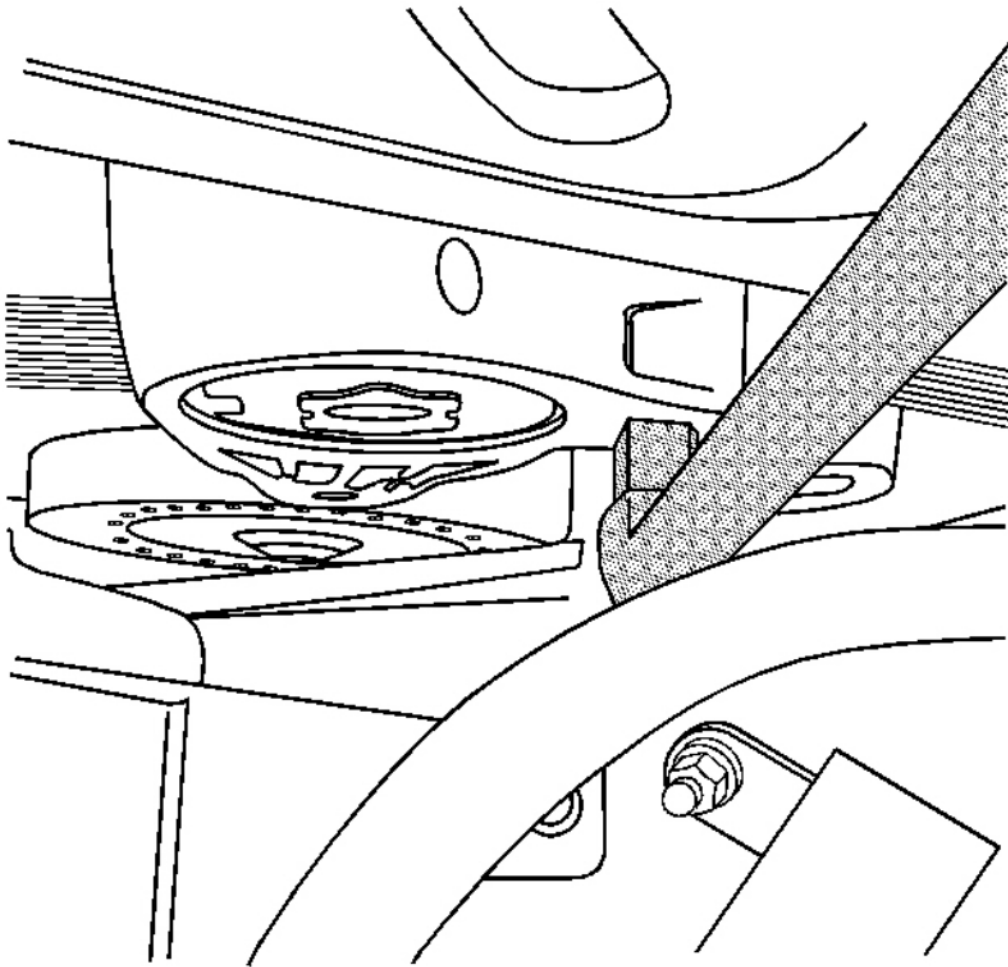


Fig. 33: View Of Drive Belt Tensioner & Pulleys
Courtesy of GENERAL MOTORS CORP.

1. Insert a 1/2 inch drive extension into the inner drive belt tensioner.
2. Push down on the extension in order to allow the installation of the inner drive belt.

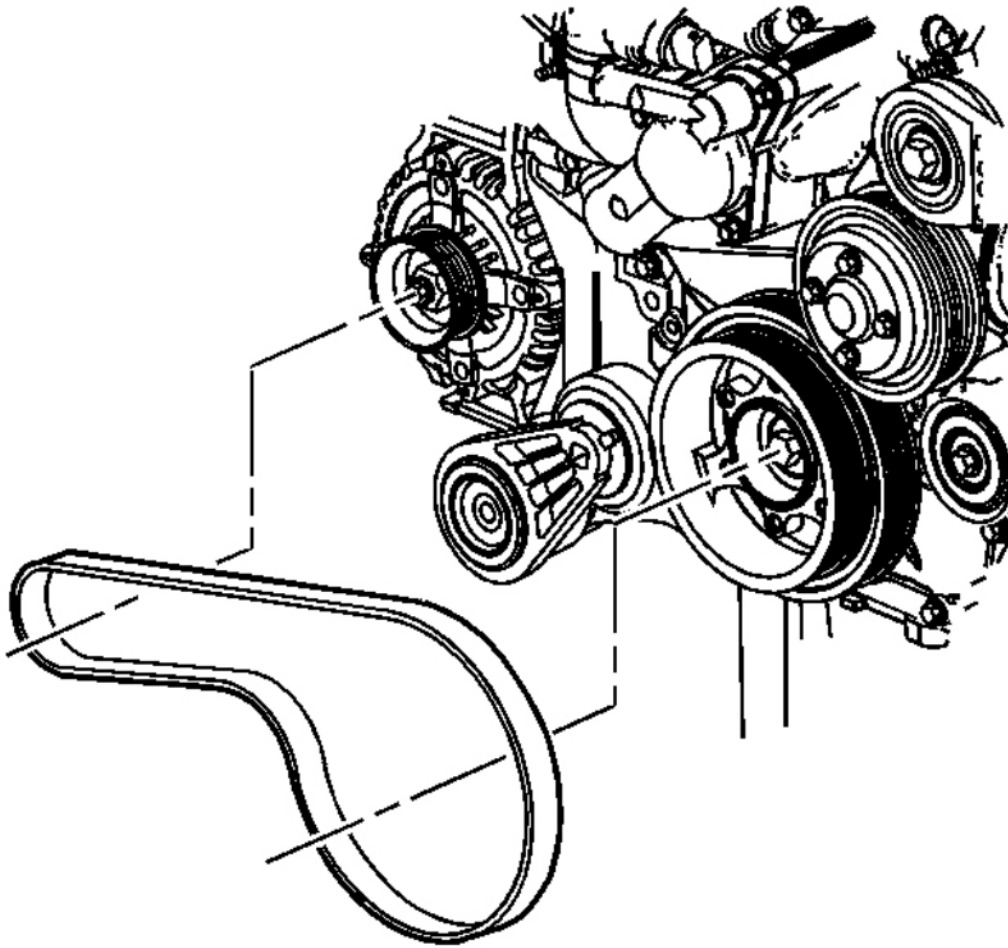


Fig. 34: View Of Inner Drive Belt
Courtesy of GENERAL MOTORS CORP.

3. Route the inner drive belt around the crankshaft balancer inner pulley, the generator pulley and the inner drive belt tensioner pulley.
4. Ensure the inner drive belt is properly seated in all the pulleys.
5. Slowly release the inner drive belt tensioner back to its original position. This will apply tension to the inner drive belt.
6. After installation, inspect the inner drive belt for proper routing and the correct alignment.

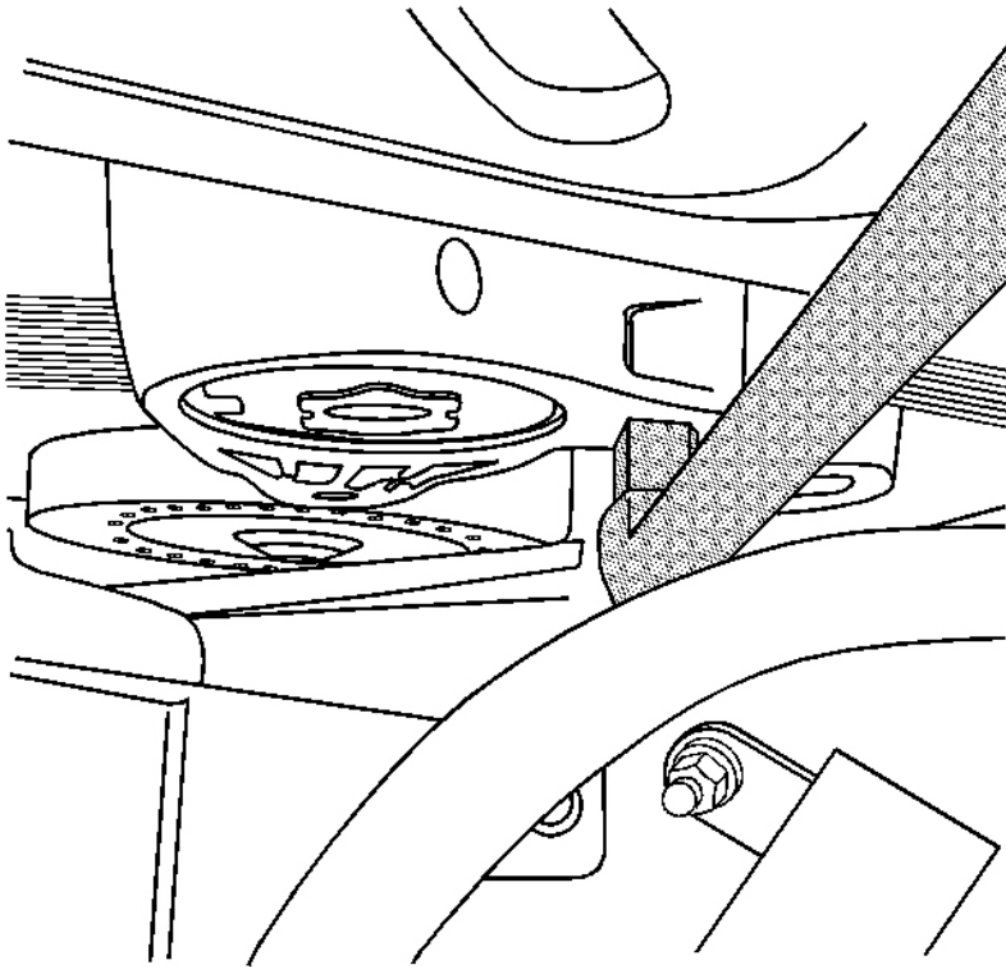


Fig. 35: View Of Drive Belt Tensioner & Pulleys
Courtesy of GENERAL MOTORS CORP.

1. Insert a 1/2 inch drive extension into the outer drive belt tensioner.
2. Push down on the extension in order to allow the installation of the outer drive belt.

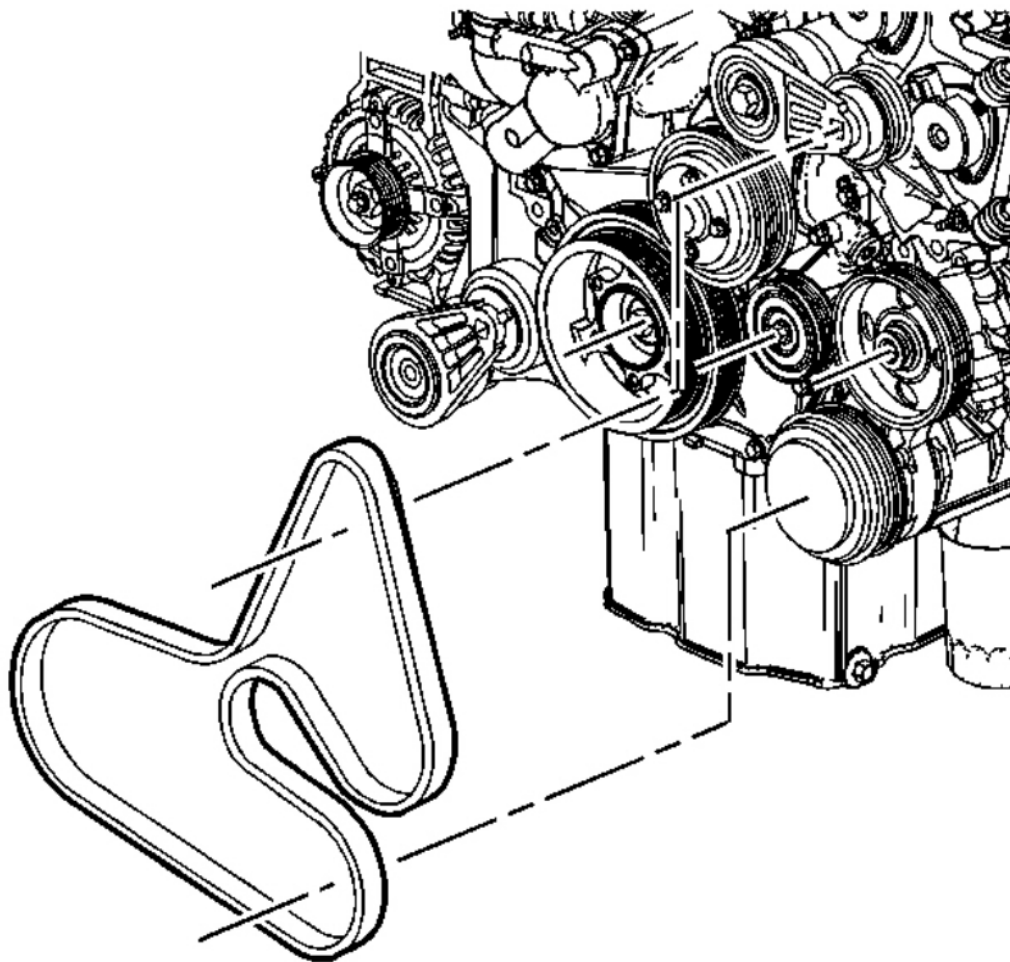


Fig. 36: View Of Outer Drive Belt
Courtesy of GENERAL MOTORS CORP.

3. Route the inner drive belt around the crankshaft balancer outer pulley, the A/C compressor pulley, the drive belt idler pulley, the P/S pump pulley, the water pump pulley and the outer drive belt tensioner pulley.
4. Ensure the outer drive belt is properly seated in all the pulleys.
5. Slowly release the outer drive belt tensioner back to its original position. This will apply tension to the outer drive belt.
6. After installation, inspect the outer drive belt for proper routing and the correct alignment.

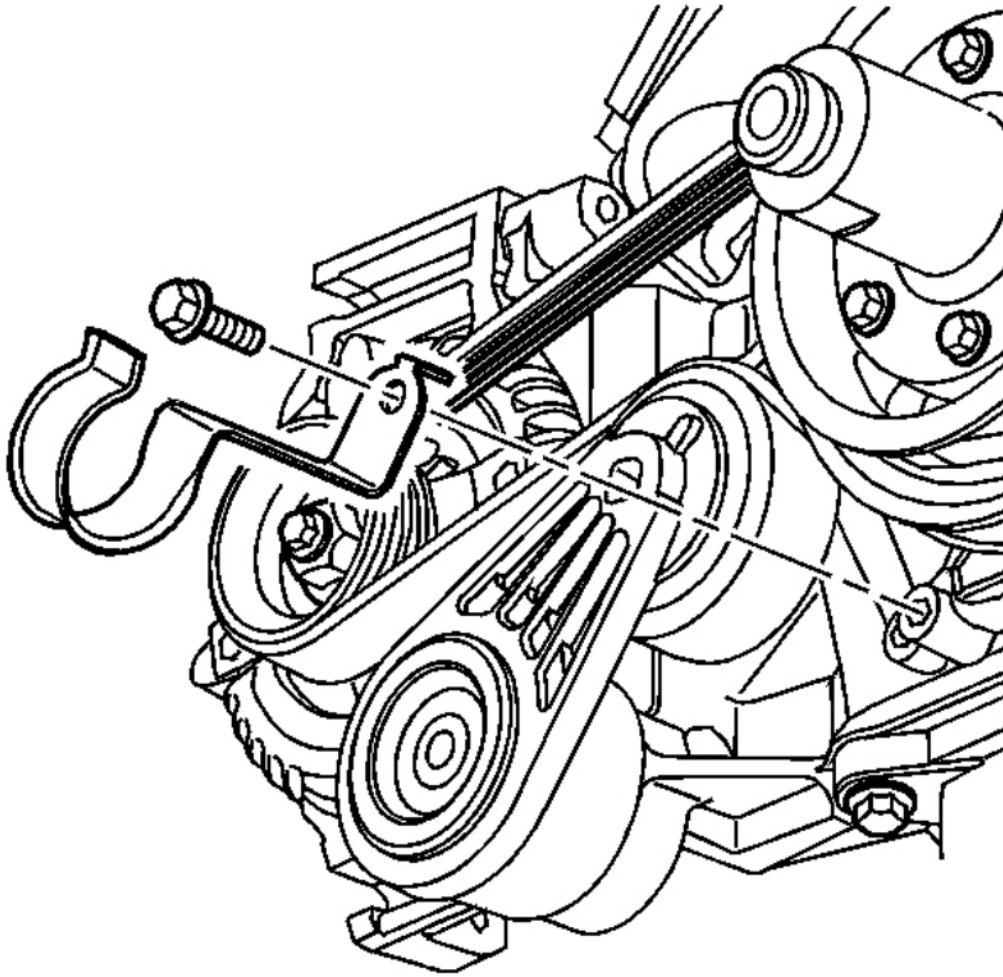


Fig. 37: View Of Radiator Hose Bracket
Courtesy of GENERAL MOTORS CORP.

7. Install the radiator hose bracket.

NOTE: Refer to Fastener Notice in Cautions and Notices.

8. Install the radiator hose bracket bolt.

Tighten: Tighten the radiator hose bracket bolt to 25 N.m (18 lb ft).

EXHAUST MANIFOLD INSTALLATION - LEFT

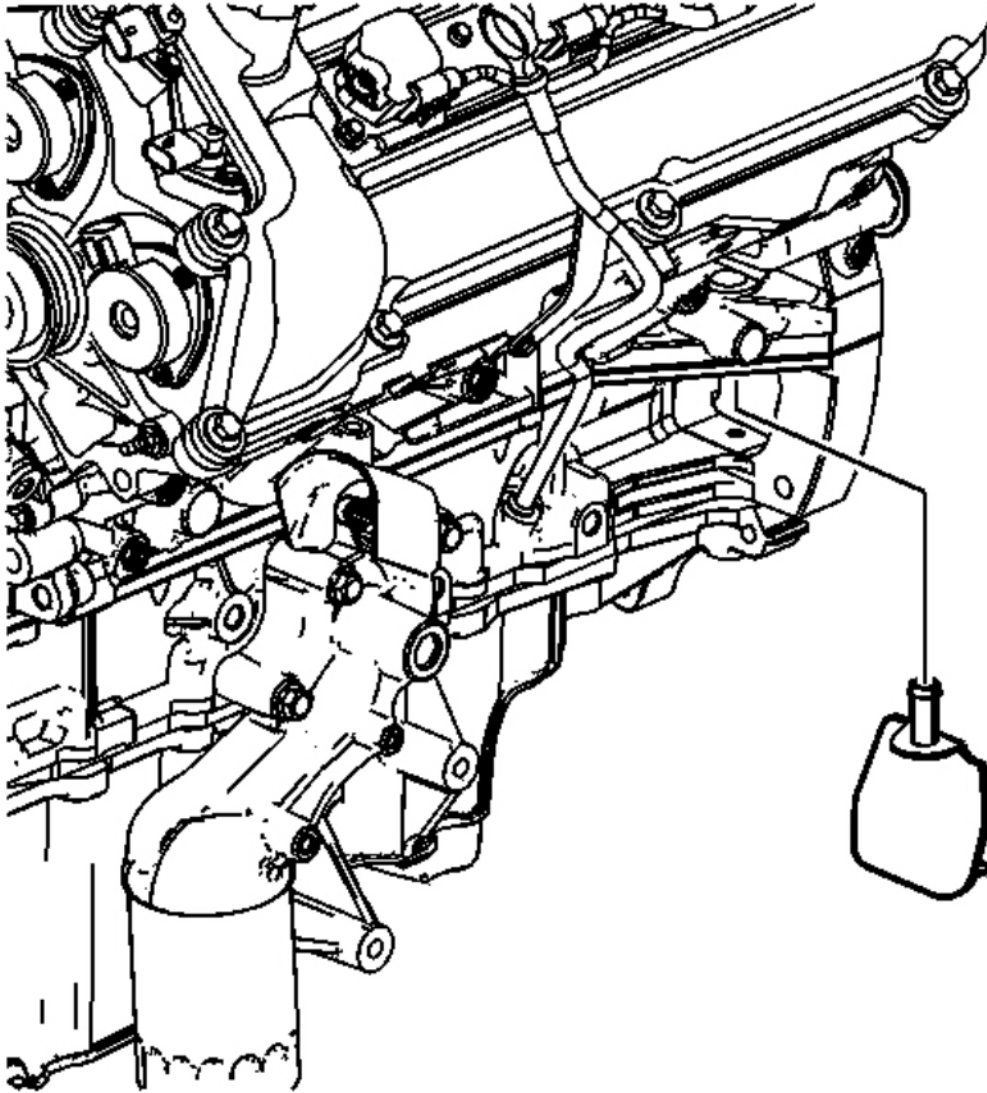


Fig. 38: View Of Left Engine Flywheel Housing
Courtesy of GENERAL MOTORS CORP.

1. Install the left engine flywheel housing cover.

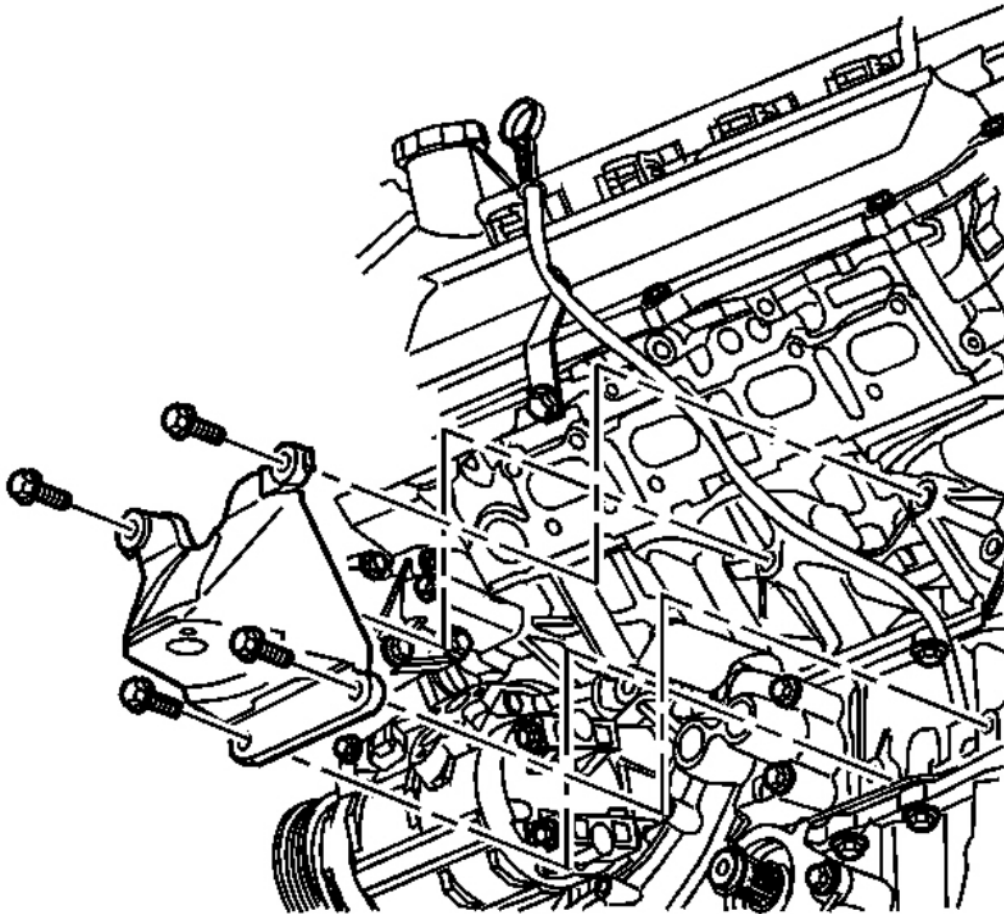


Fig. 39: View Of Left Engine Mount Bracket
Courtesy of GENERAL MOTORS CORP.

2. Install the left engine mount bracket.

NOTE: Refer to Fastener Notice in Cautions and Notices.

3. Install the left engine mount bracket bolts.

Tighten: Tighten the engine mount bracket bolts to 58 N.m (43 lb ft).

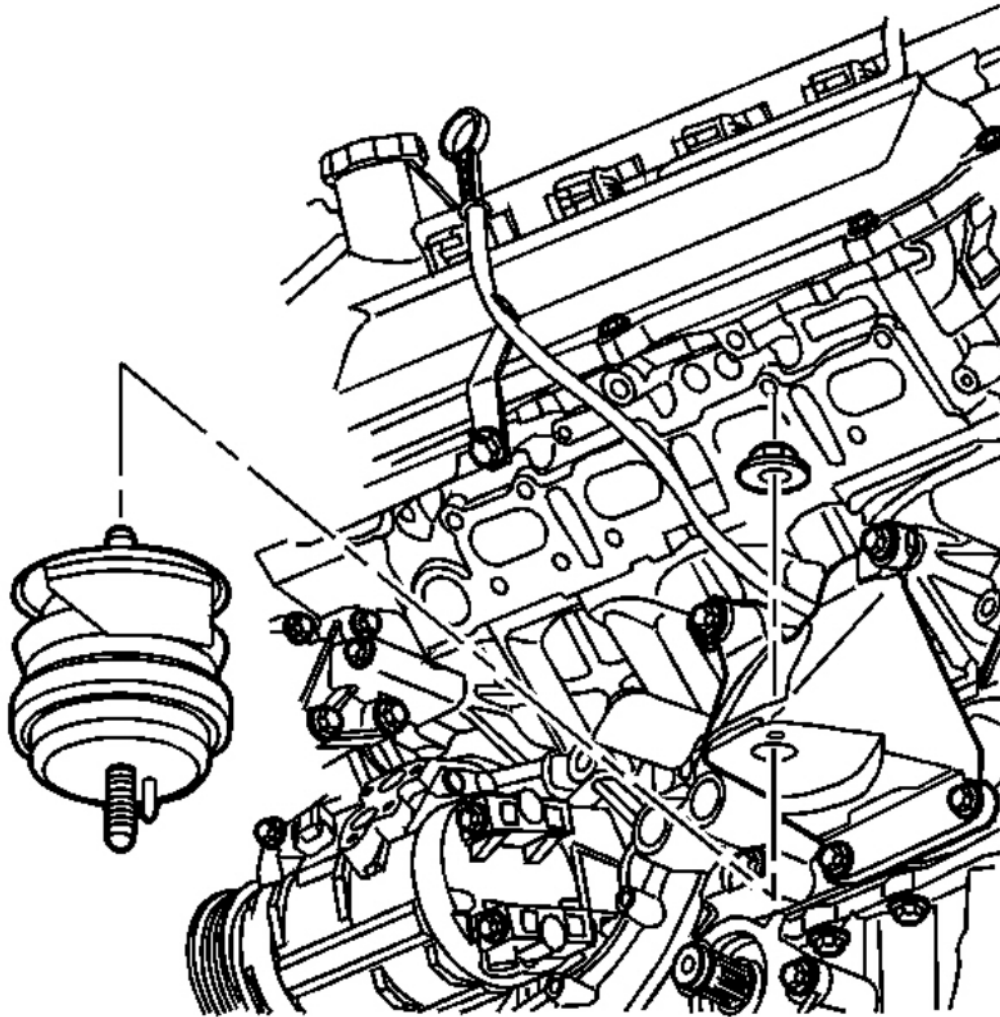


Fig. 40: View Of Left Engine Mount
Courtesy of GENERAL MOTORS CORP.

4. Install the left engine mount.
5. Install the left engine mount upper nut.

Tighten: Tighten the engine mount upper nut to 58 N.m (43 lb ft).

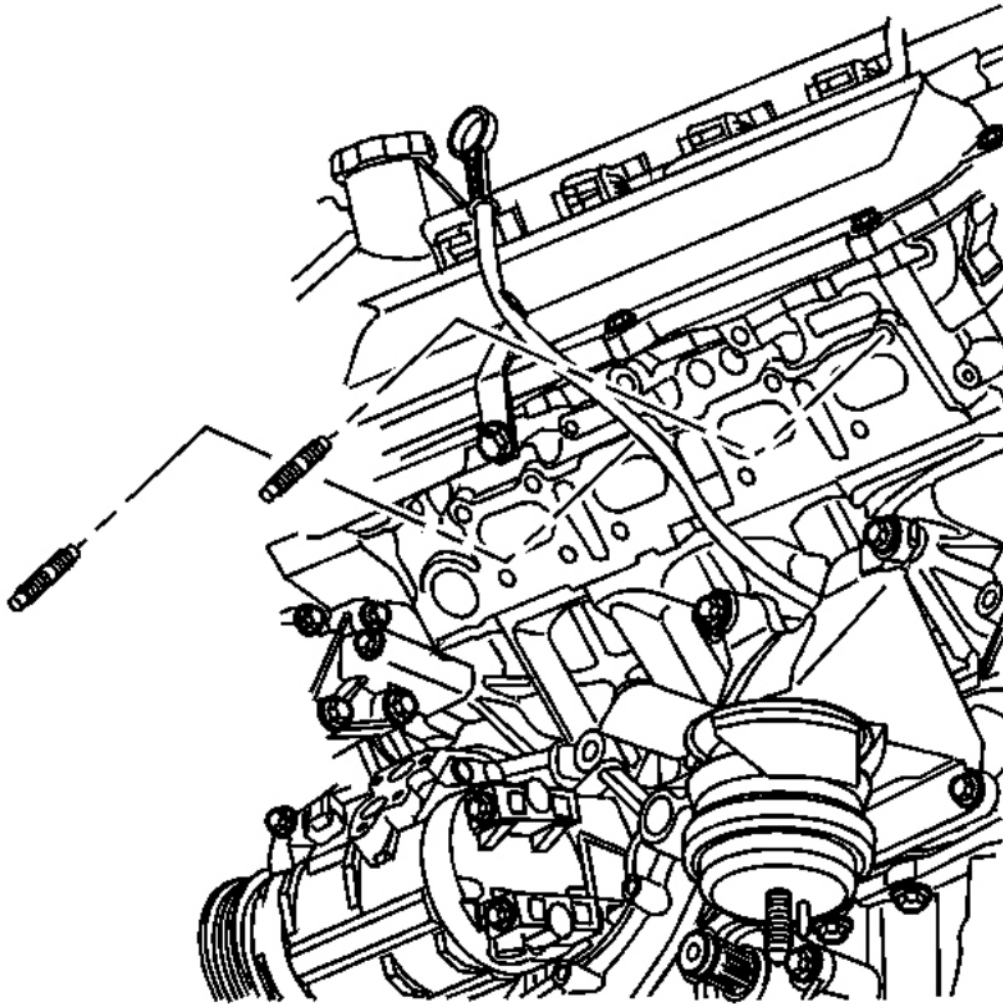


Fig. 41: View Of Left Exhaust Manifold Studs
Courtesy of GENERAL MOTORS CORP.

6. Install the left exhaust manifold studs to the left cylinder head.

Tighten: Tighten the exhaust manifold studs to 6 N.m (53 lb in).

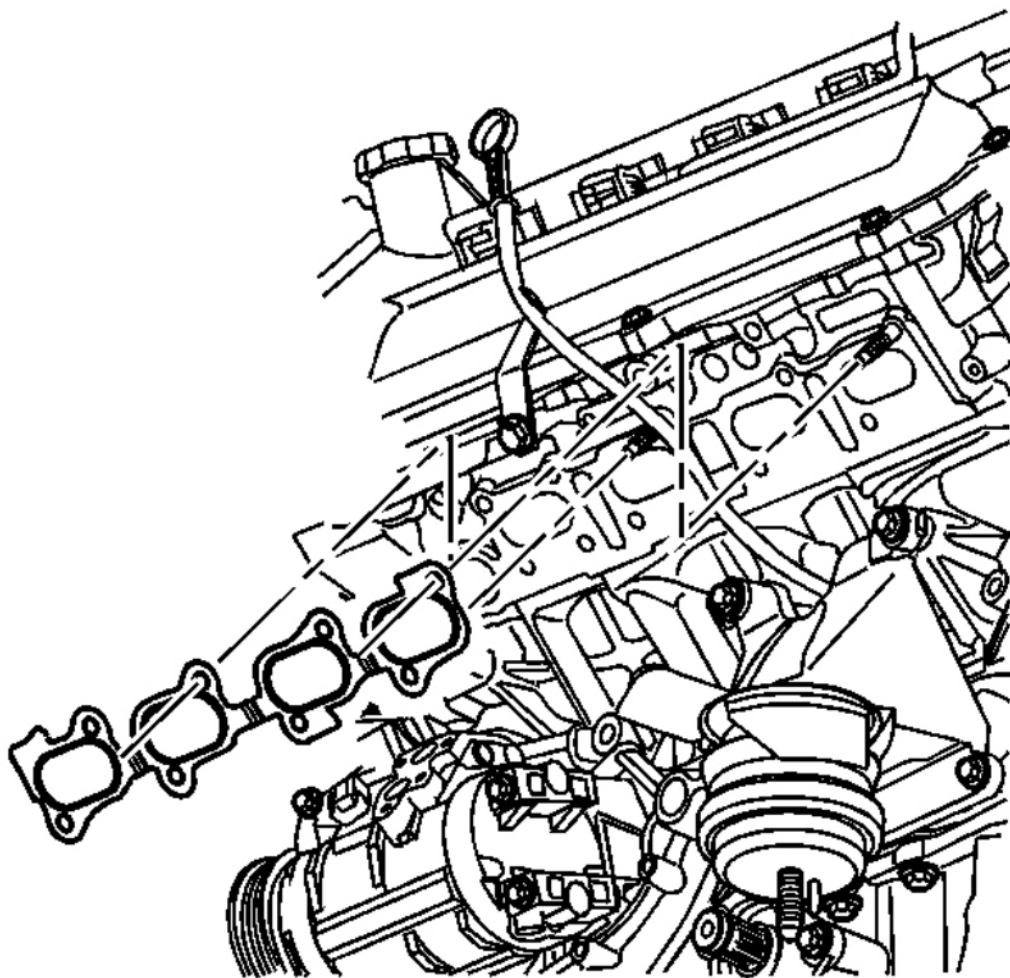


Fig. 42: View Of Left Exhaust Manifold Gasket
Courtesy of GENERAL MOTORS CORP.

7. Install the NEW left exhaust manifold gasket.

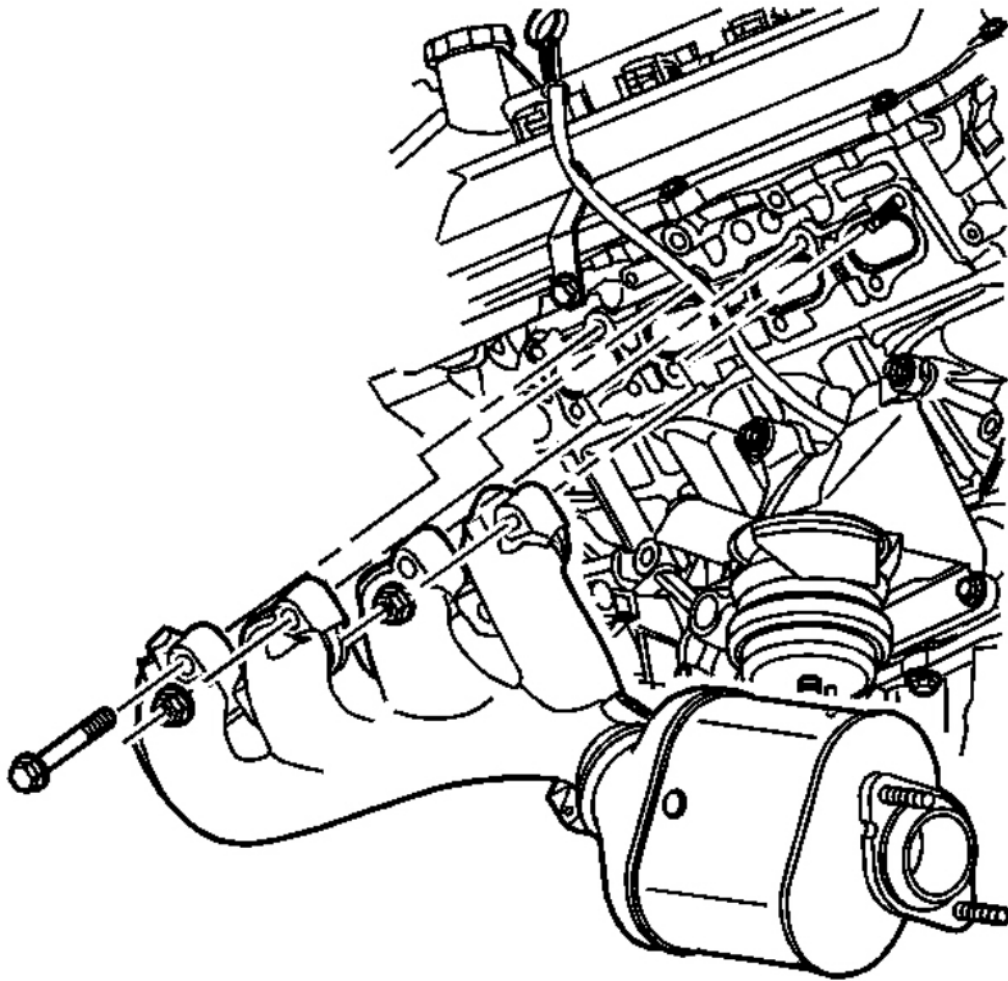


Fig. 43: View Of Left Exhaust Manifold
Courtesy of GENERAL MOTORS CORP.

8. Install the left exhaust manifold.
9. Loosely install the left exhaust manifold bolts to the left cylinder head.

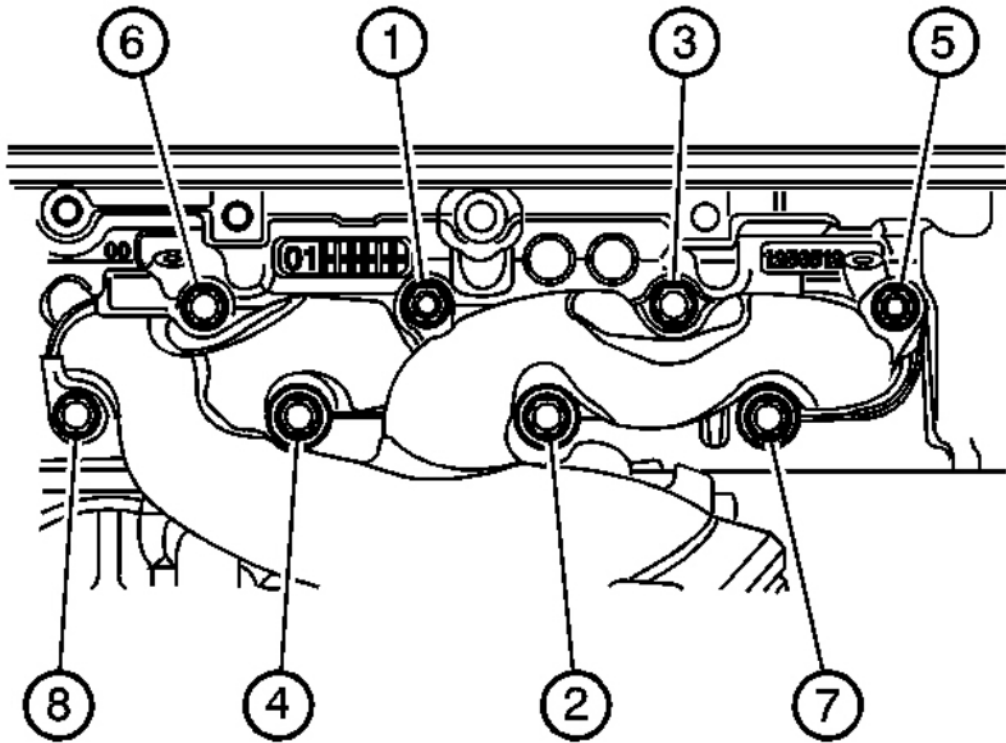


Fig. 44: Tightening Exhaust Manifold Bolts
Courtesy of GENERAL MOTORS CORP.

10. Tighten the exhaust manifold bolts and nuts in the sequence shown.

Tighten: Tighten the exhaust manifold bolts and nuts to 25 N.m (18 lb ft).

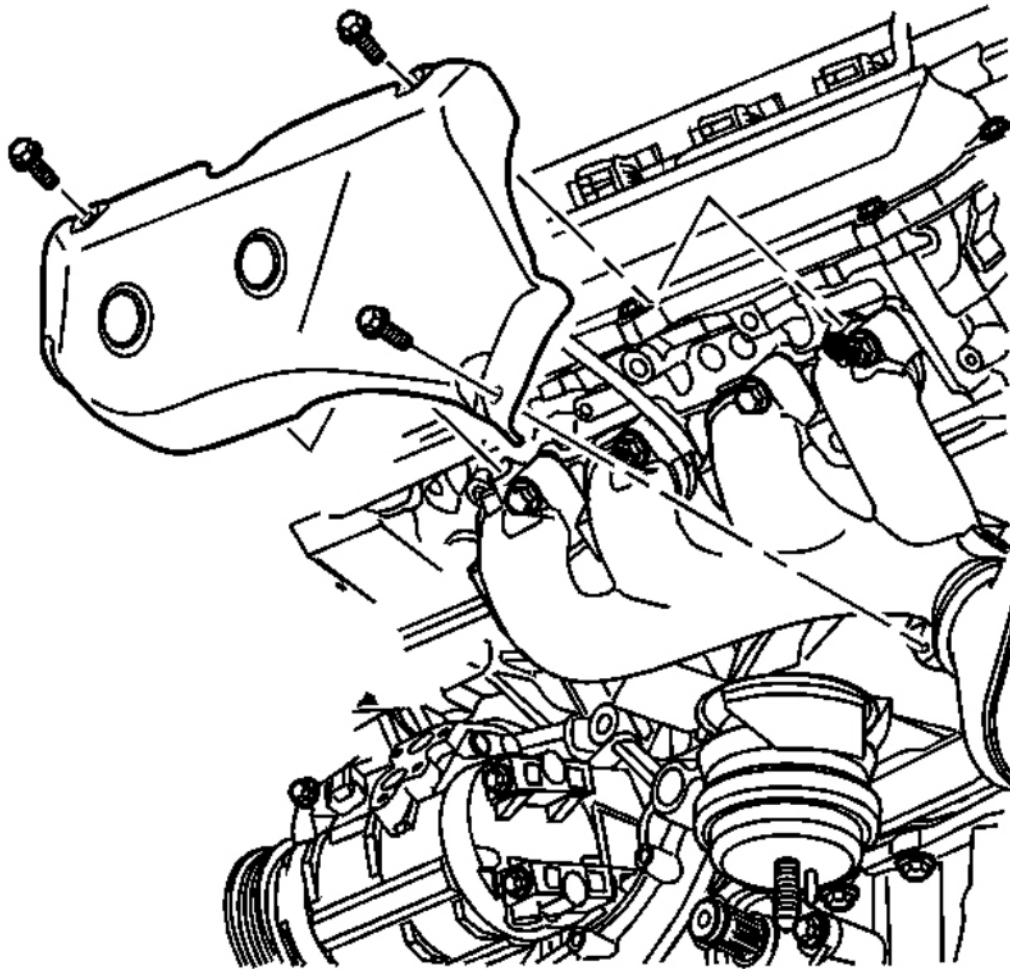


Fig. 45: View Of Left Exhaust Manifold Heat Shield
Courtesy of GENERAL MOTORS CORP.

11. Install the left exhaust manifold heat shield.
12. Install the left exhaust manifold heat shield bolts.

Tighten: Tighten the exhaust manifold heat shield bolts to 10 N.m (89 lb in).

EXHAUST MANIFOLD INSTALLATION - RIGHT (RWD)

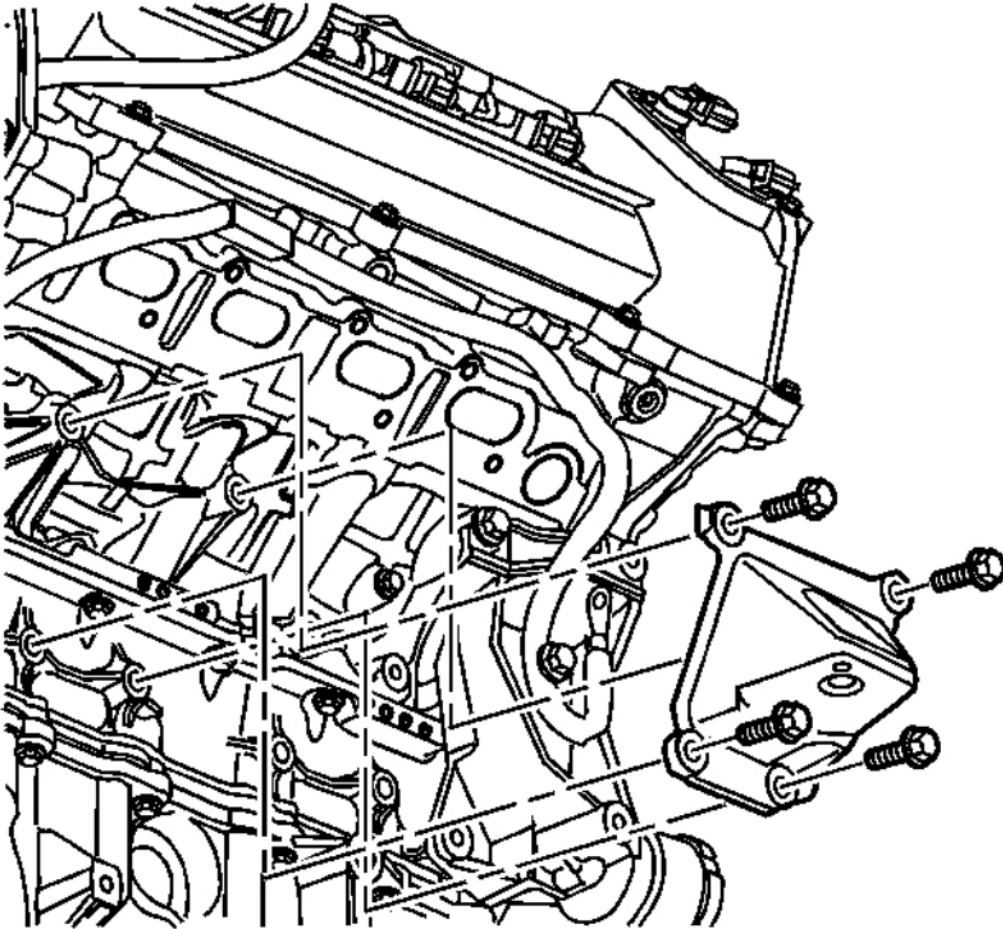


Fig. 46: View Of Right Engine Mount Bracket - RWD
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice in Cautions and Notices.

1. Install the right engine mount bracket.
2. Install the right engine mount bracket bolts.

Tighten: Tighten the engine mount bracket bolts to 58 N.m (43 lb ft).

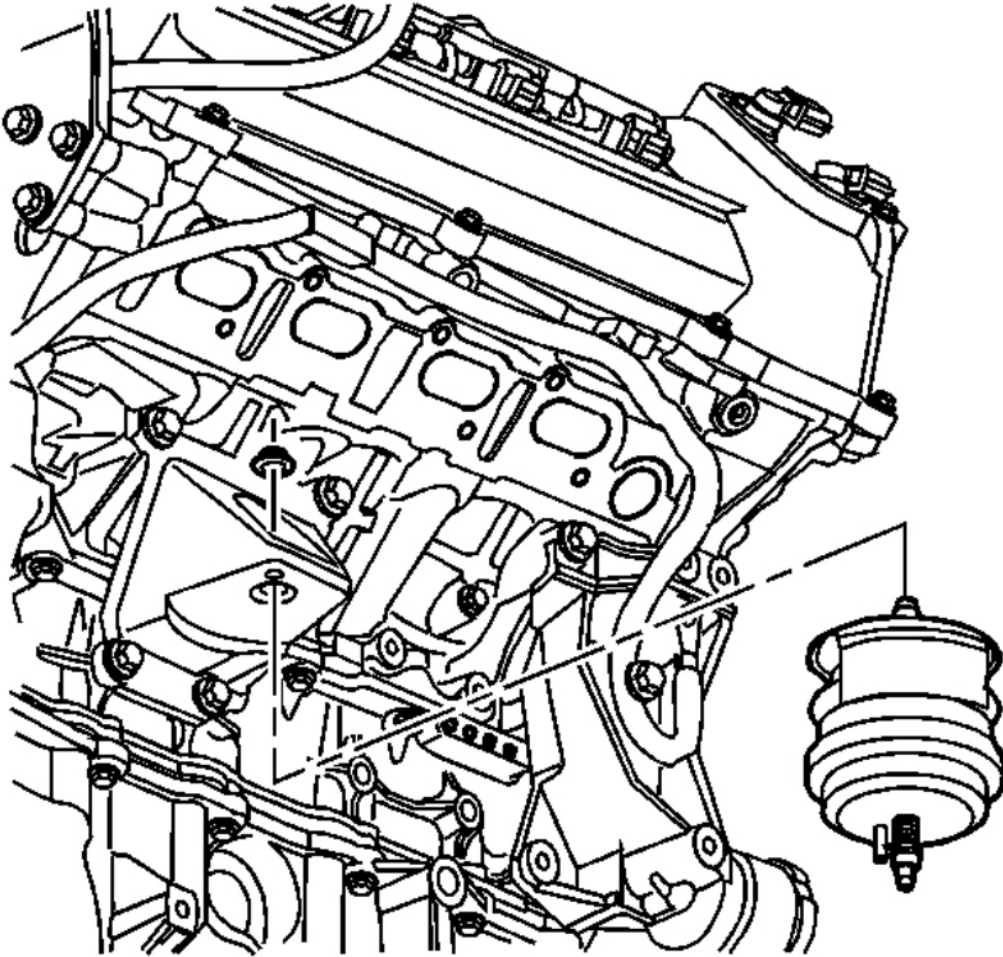


Fig. 47: View Of Right Engine Mount - RWD
Courtesy of GENERAL MOTORS CORP.

3. Install the right engine mount.
4. Install the right engine mount upper nut.

Tighten: Tighten the engine mount upper nut to 58 N.m (43 lb ft).

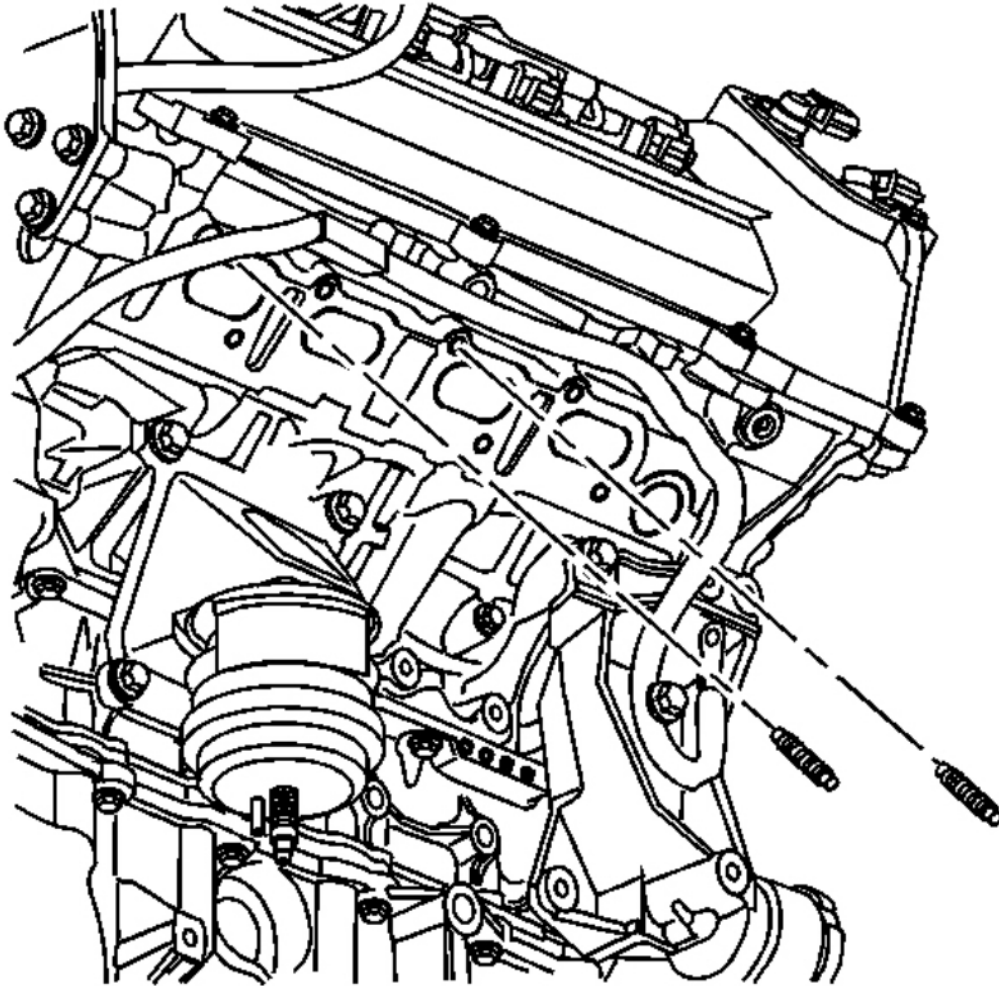


Fig. 48: View Of Right Exhaust Manifold Studs
Courtesy of GENERAL MOTORS CORP.

5. Install the right exhaust manifold studs to the right cylinder head.

Tighten: Tighten the exhaust manifold studs to 6 N.m (53 lb in).

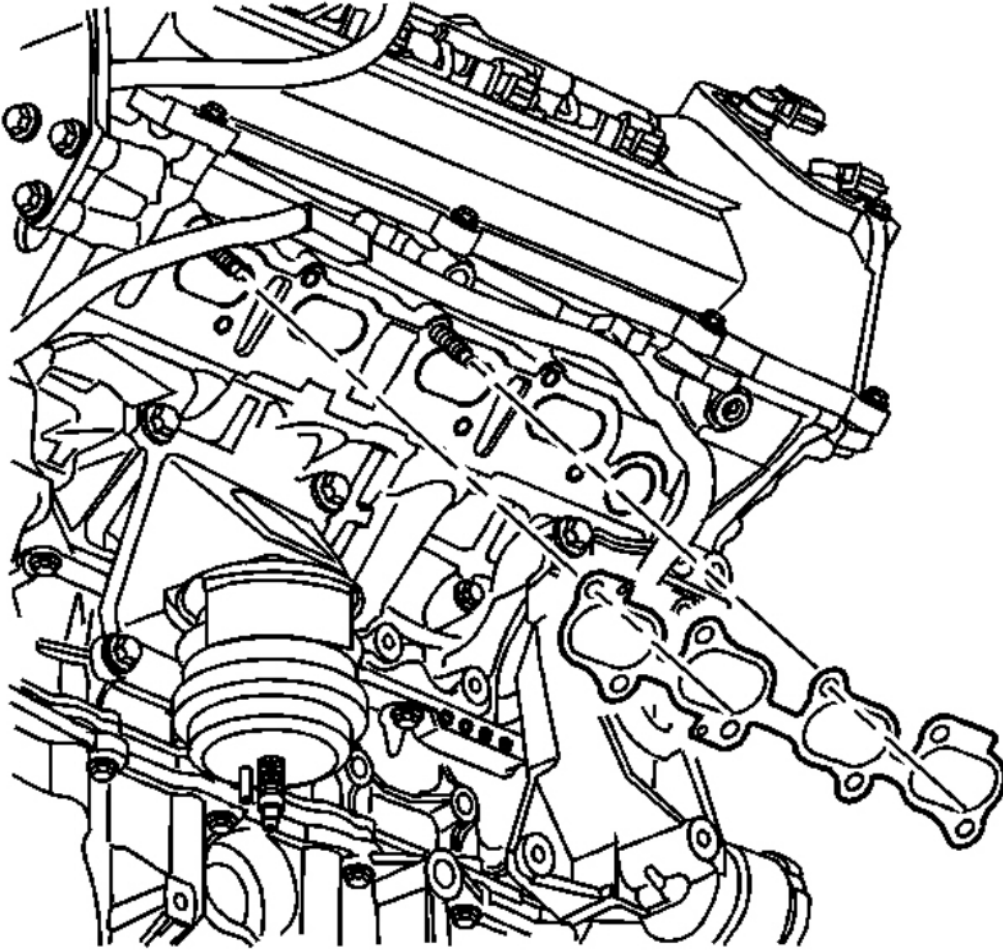


Fig. 49: View Of Right Exhaust Manifold Gasket
Courtesy of GENERAL MOTORS CORP.

6. Install the NEW right exhaust manifold gasket.

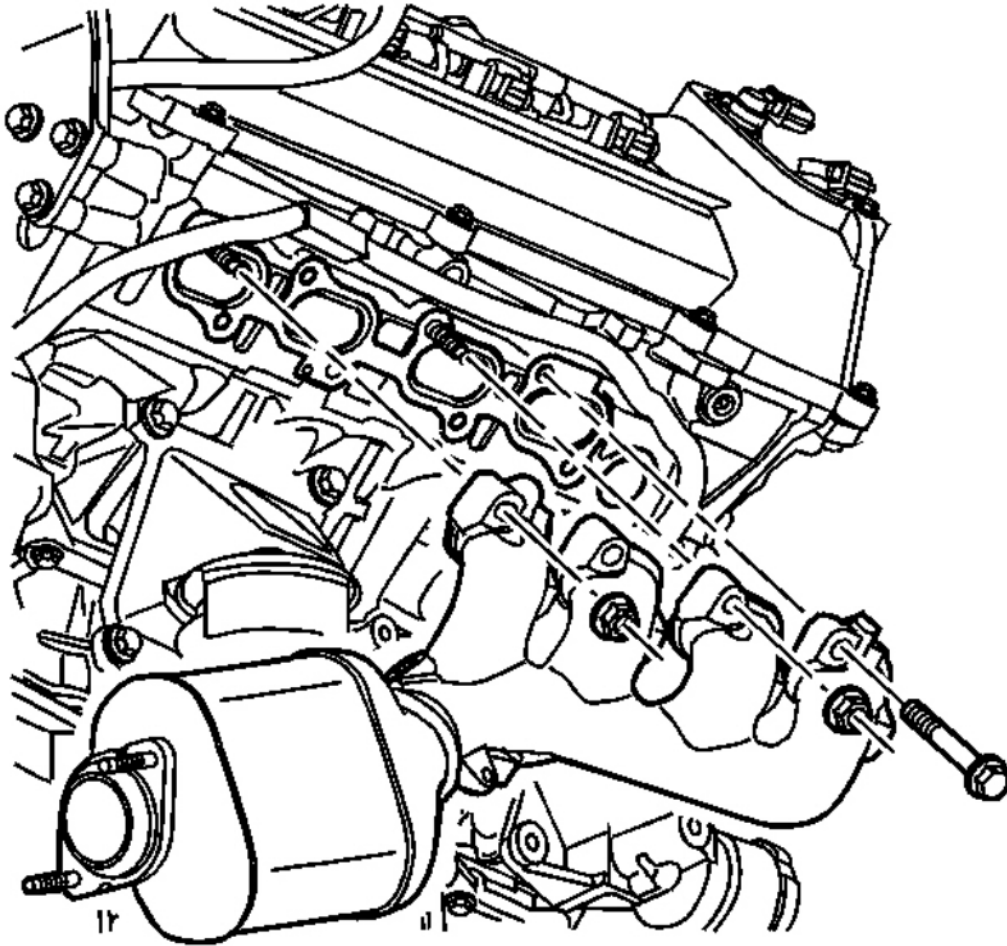


Fig. 50: View Of Right Exhaust Manifold
Courtesy of GENERAL MOTORS CORP.

7. Install the right exhaust manifold.
8. Loosely install the right exhaust manifold bolts and nuts to the right cylinder head.

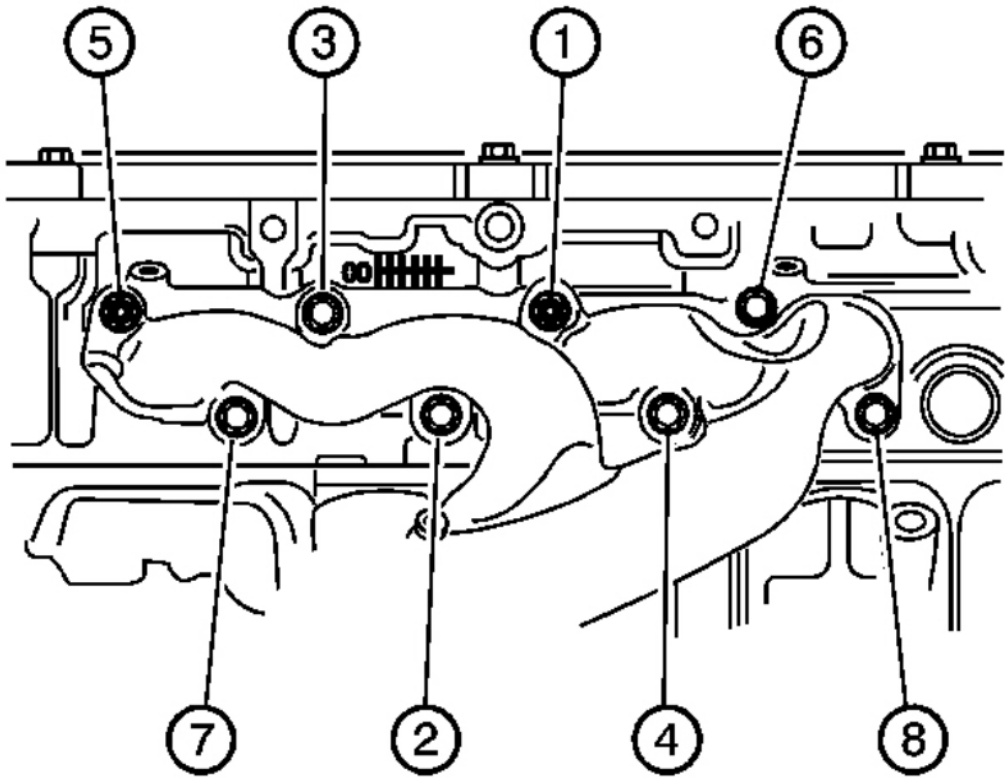


Fig. 51: Tightening Exhaust Manifold Bolts & Nuts
Courtesy of GENERAL MOTORS CORP.

9. Tighten the exhaust manifold bolts and nuts in the sequence shown.

Tighten: Tighten the exhaust manifold bolts and nuts to 25 N.m (18 lb ft).

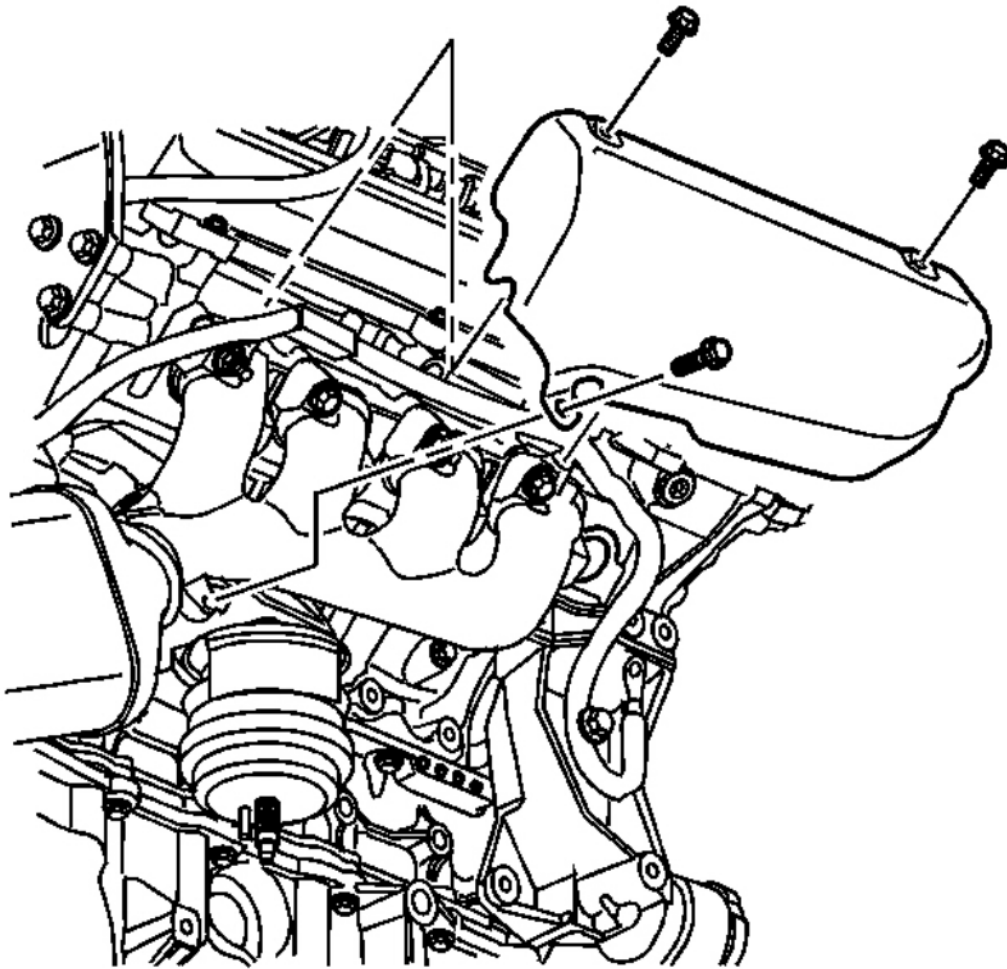


Fig. 52: View Of Right Exhaust Manifold Heat Shield
Courtesy of GENERAL MOTORS CORP.

10. Install the right exhaust manifold heat shield.
11. Install the right exhaust manifold heat shield bolts.

Tighten: Tighten the exhaust manifold heat shield bolts to 10 N.m (89 lb in).

EXHAUST MANIFOLD INSTALLATION - RIGHT (AWD)

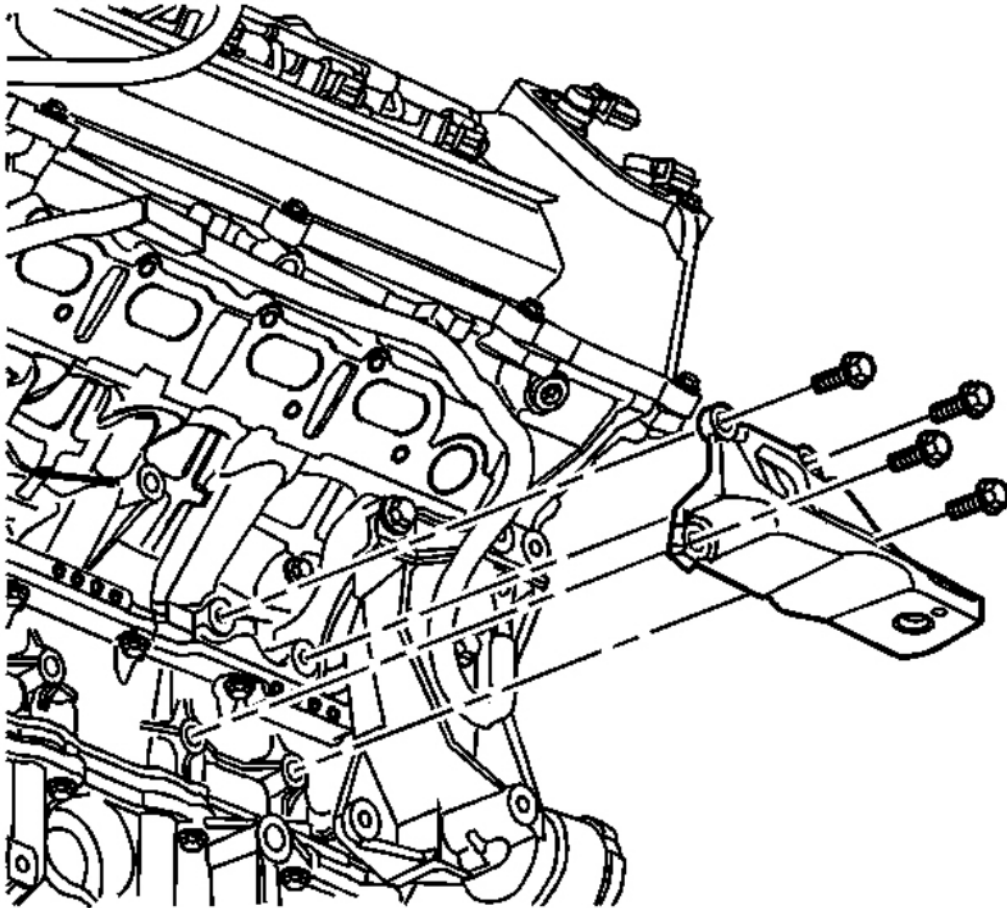


Fig. 53: View Of Right Engine Mount Bracket - AWD
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice in Cautions and Notices.

1. Install the right engine mount bracket.
2. Install the right engine mount bracket bolts.

Tighten: Tighten the engine mount bracket bolts to 58 N.m (43 lb ft).

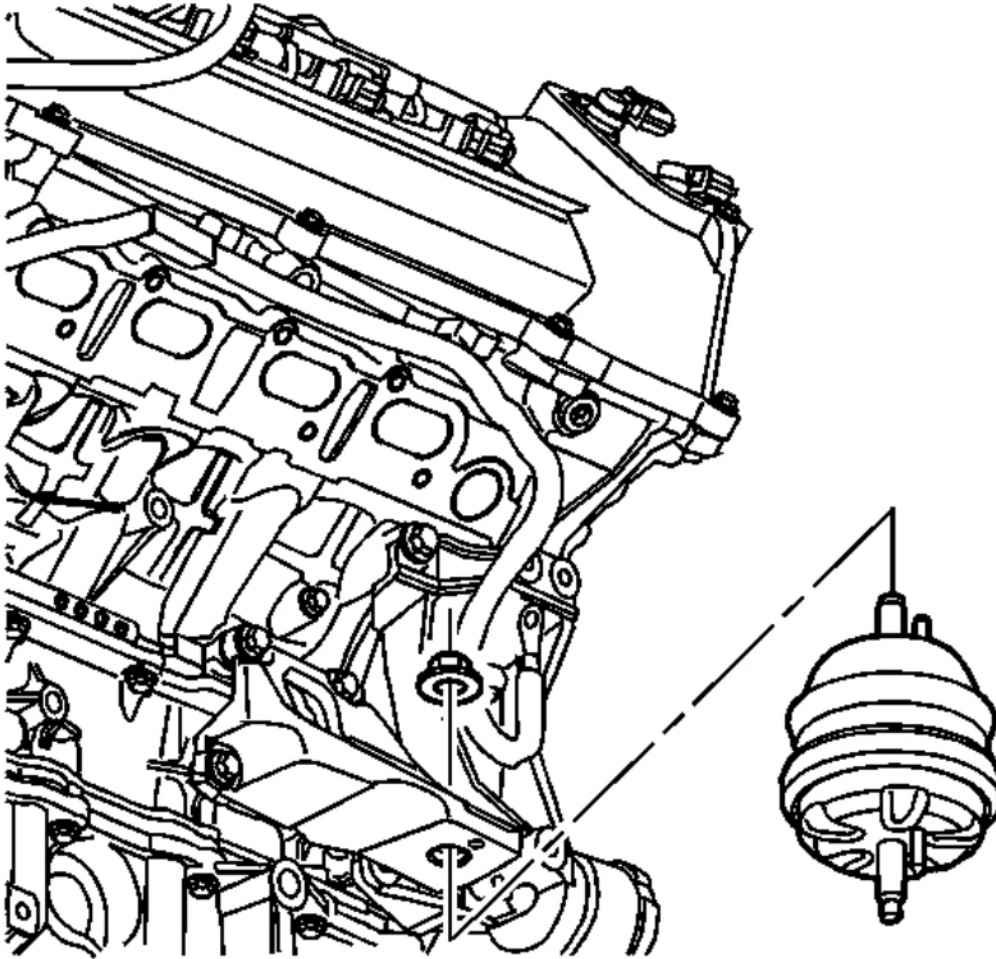


Fig. 54: View Of Right Engine Mount - AWD
Courtesy of GENERAL MOTORS CORP.

3. Install the right engine mount.
4. Install the right engine mount upper nut.

Tighten: Tighten the engine mount upper nut to 58 N.m (43 lb ft).

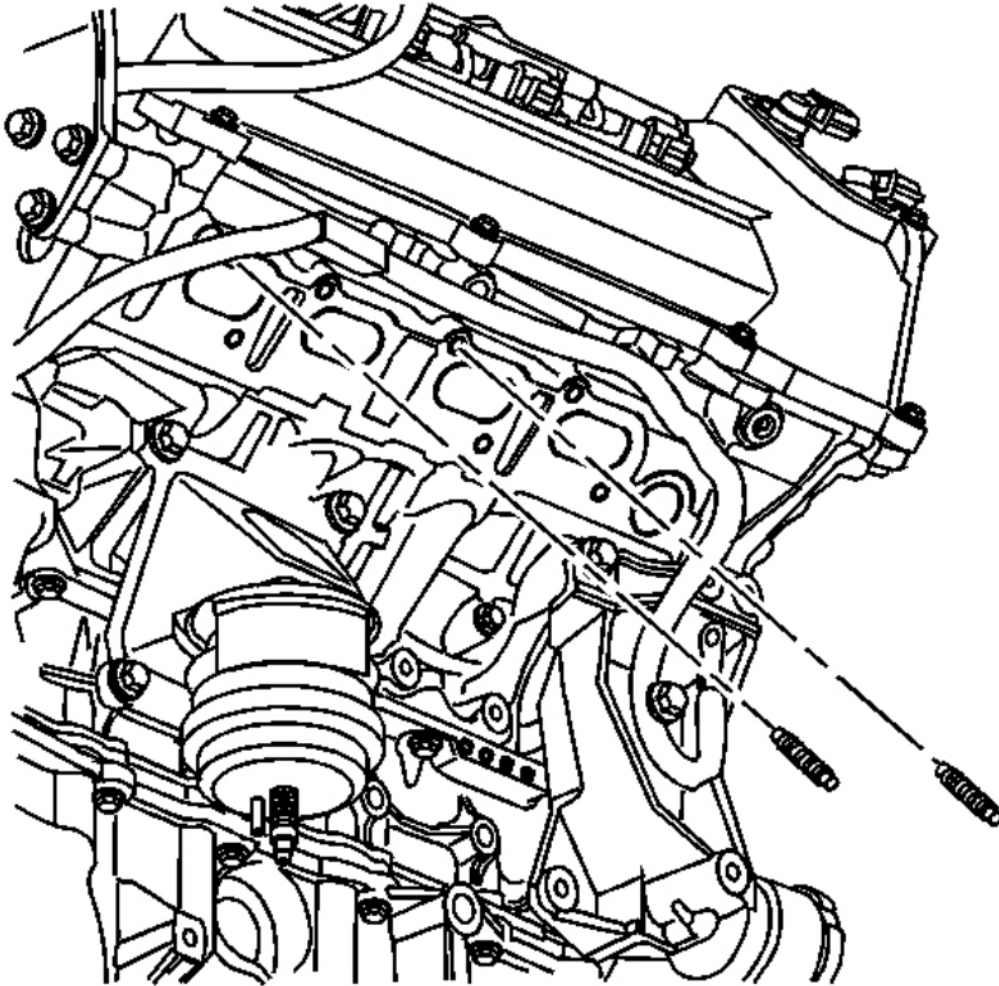


Fig. 55: View Of Right Exhaust Manifold Studs
Courtesy of GENERAL MOTORS CORP.

5. Install the right exhaust manifold studs to the right cylinder head.

Tighten: Tighten the exhaust manifold studs to 6 N.m (53 lb in).

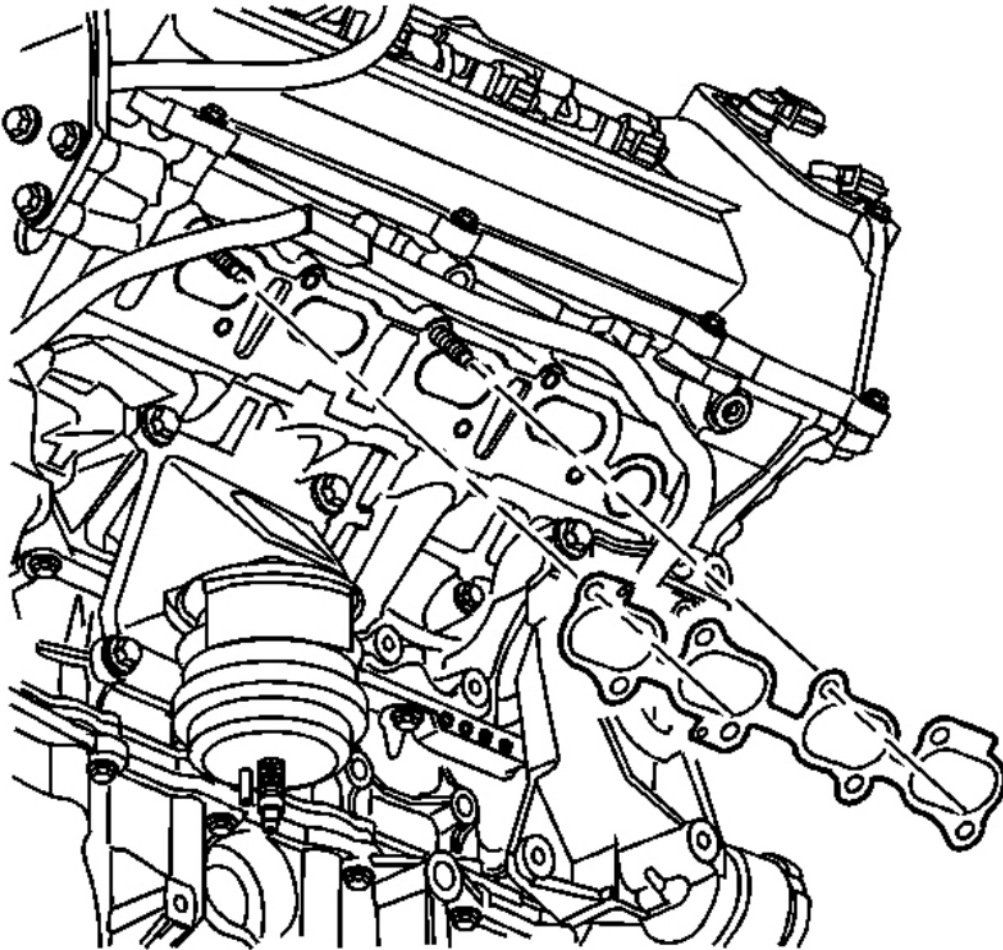


Fig. 56: View Of Right Exhaust Manifold Gasket
Courtesy of GENERAL MOTORS CORP.

6. Install the NEW right exhaust manifold gasket.

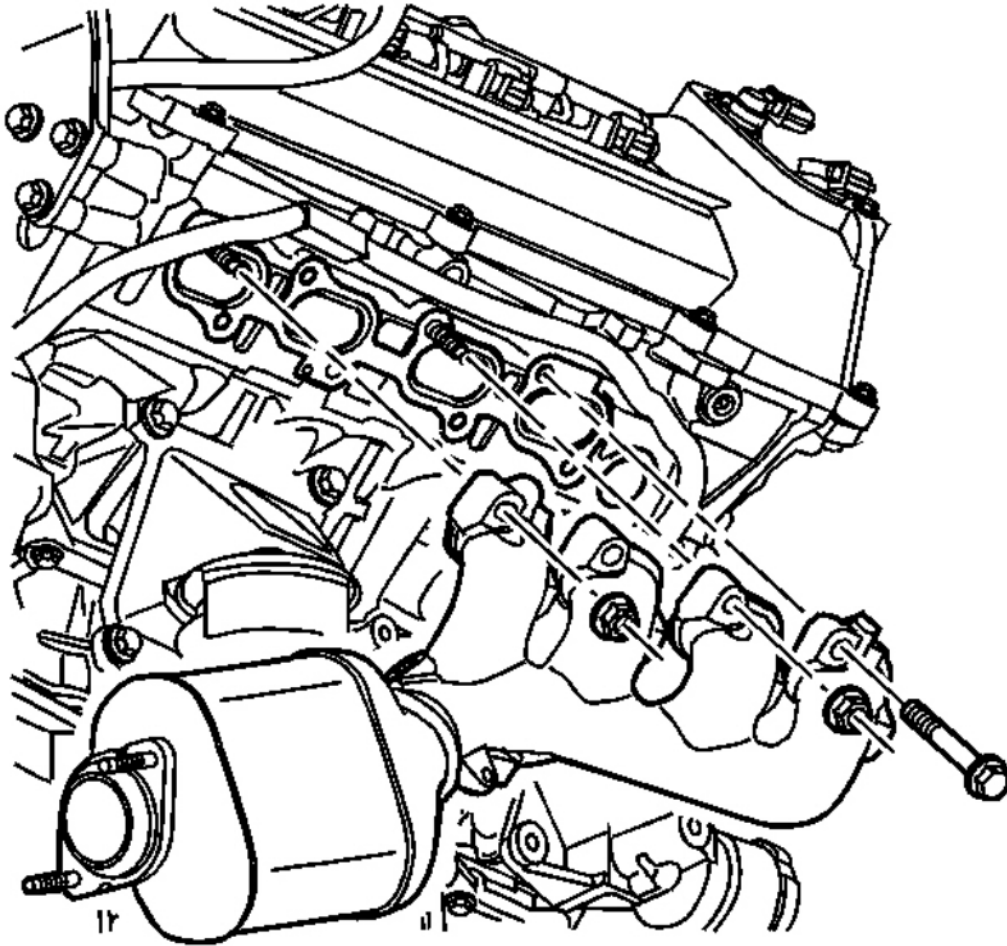


Fig. 57: View Of Right Exhaust Manifold
Courtesy of GENERAL MOTORS CORP.

7. Install the right exhaust manifold.
8. Loosely install the right exhaust manifold bolts and nuts to the right cylinder head.

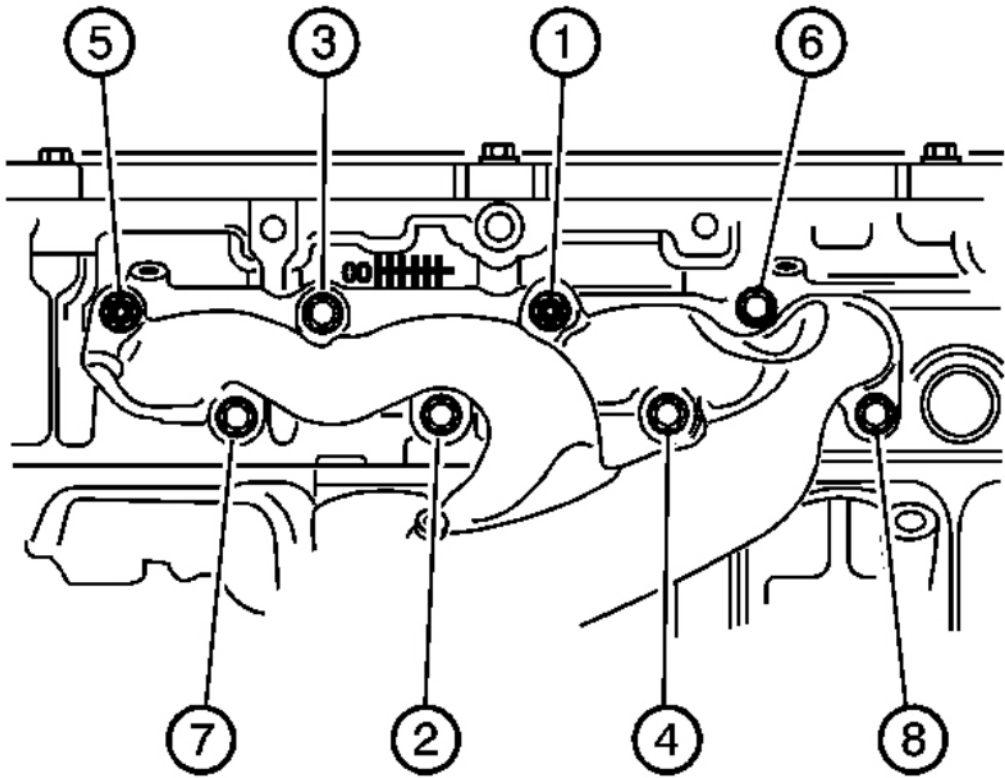


Fig. 58: Tightening Exhaust Manifold Bolts & Nuts
Courtesy of GENERAL MOTORS CORP.

9. Tighten the exhaust manifold bolts and nuts in the sequence shown.

Tighten: Tighten the exhaust manifold bolts and nuts to 25 N.m (18 lb ft).

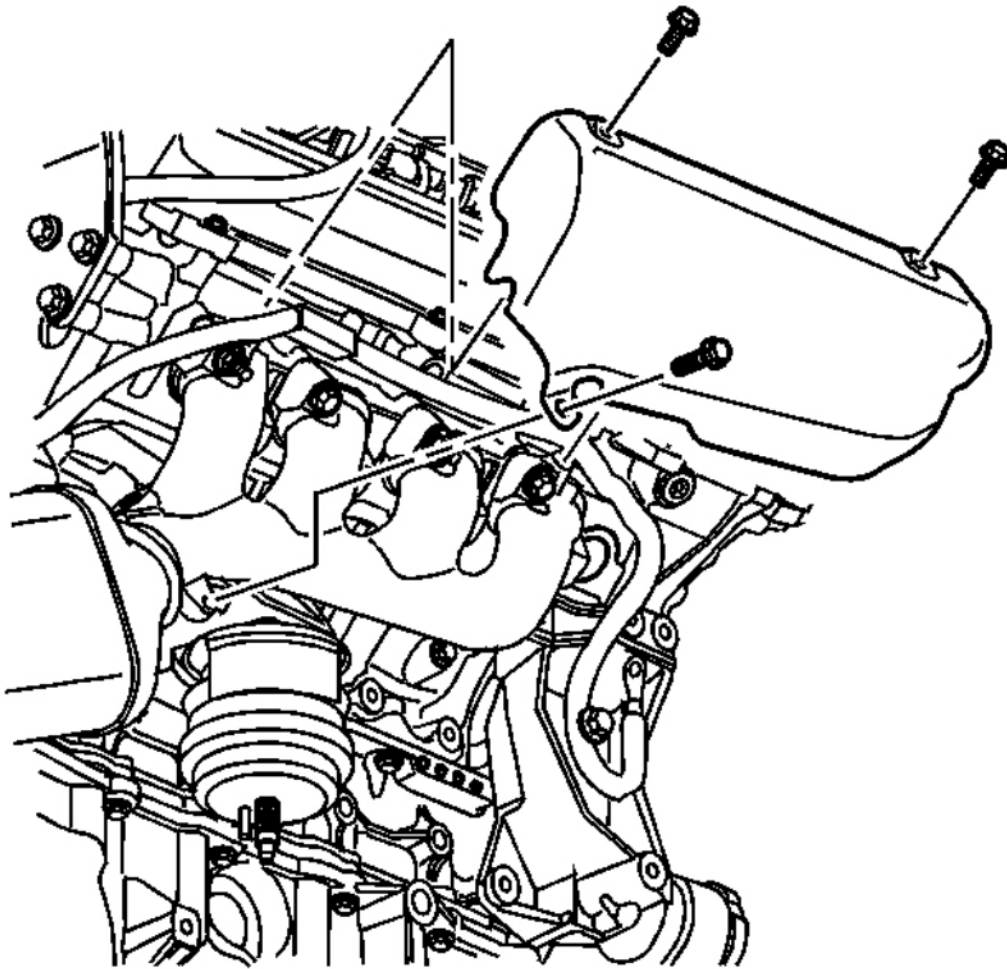


Fig. 59: View Of Right Exhaust Manifold Heat Shield
Courtesy of GENERAL MOTORS CORP.

10. Install the right exhaust manifold heat shield.
11. Install the right exhaust manifold heat shield bolts.

Tighten: Tighten the exhaust manifold heat shield bolts to 10 N.m (89 lb in).

ENGINE WIRING HARNESS ASSEMBLY INSTALLATION

Left Side Harness Connections

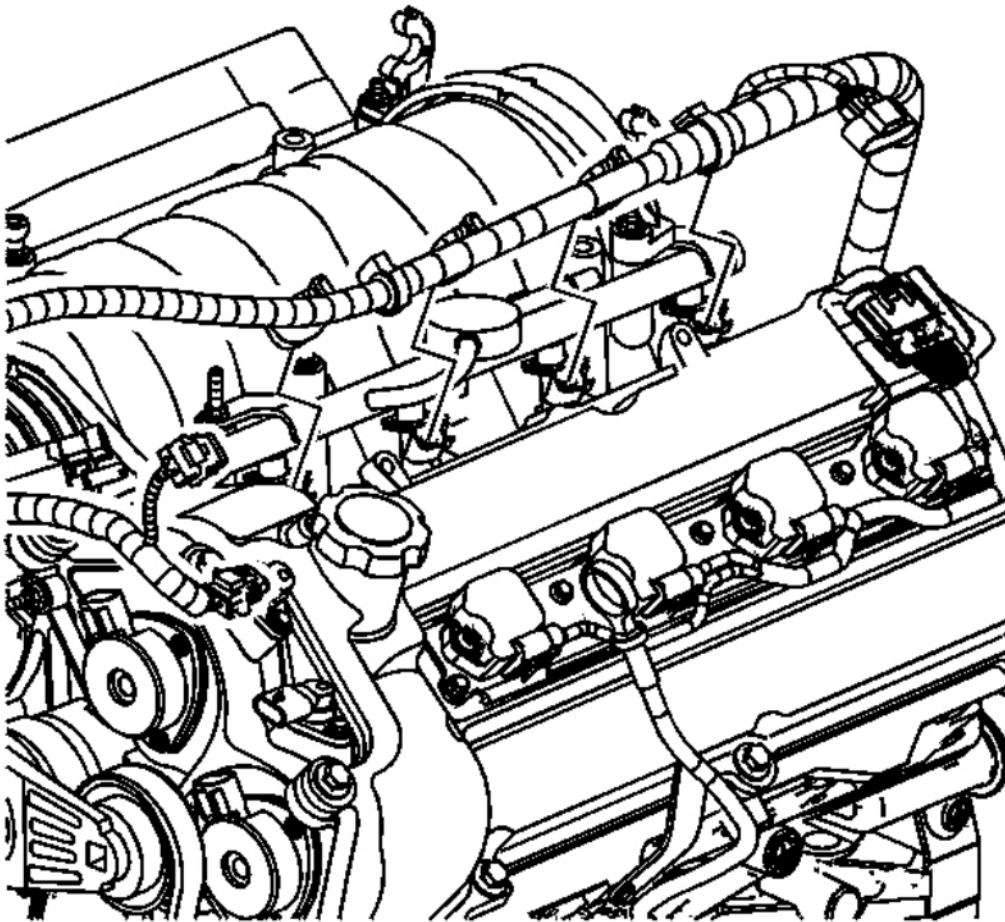


Fig. 60: View Of Left Side Fuel Injectors Engine Wiring Harness Connectors
Courtesy of GENERAL MOTORS CORP.

1. Connect the engine wiring harness to the left side fuel injectors.

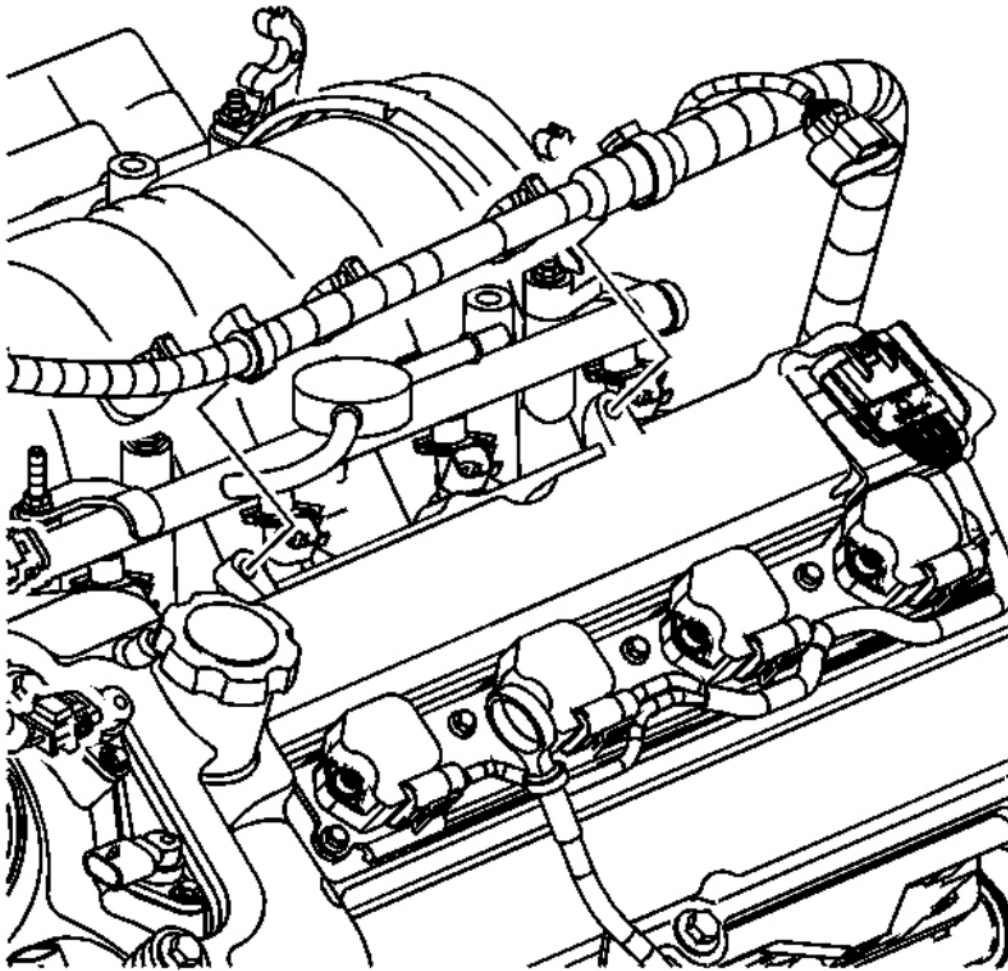


Fig. 61: View Of Left Camshaft Cover Engine Wiring Harness Connector
Courtesy of GENERAL MOTORS CORP.

2. Connect the engine wiring harness to the left camshaft cover.

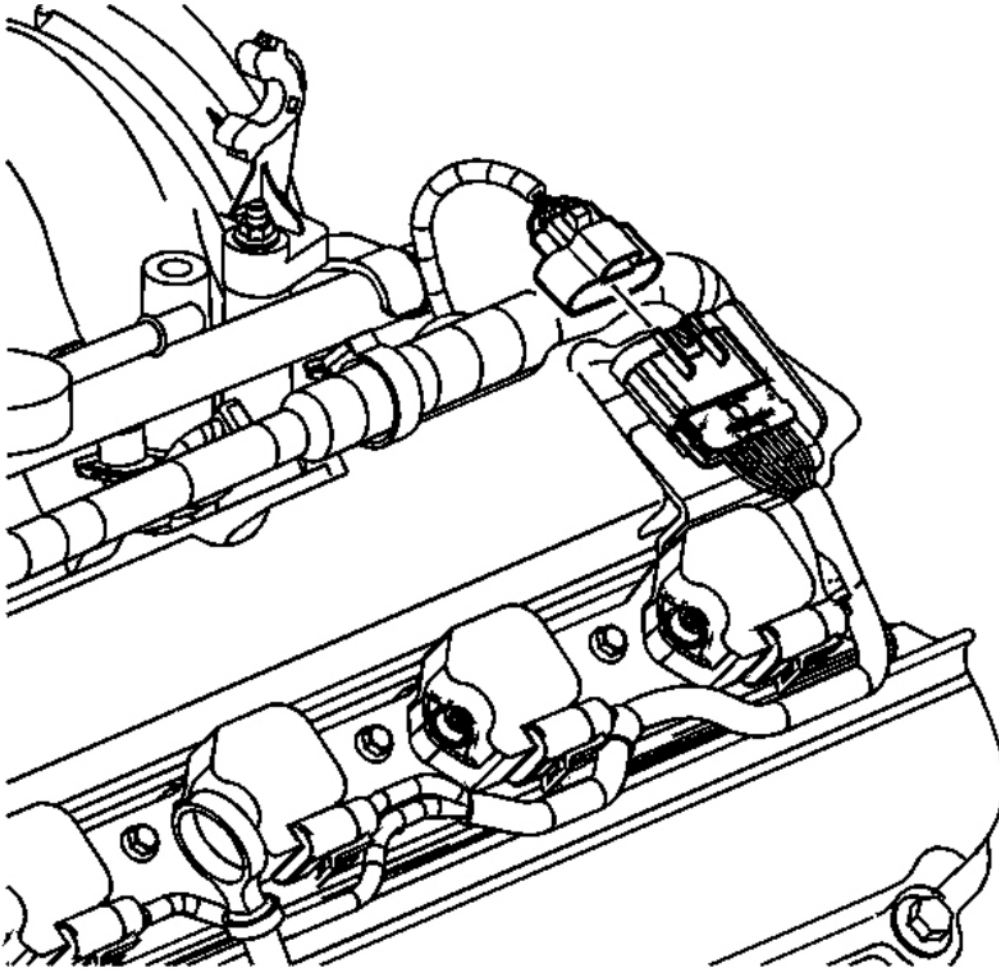


Fig. 62: View Of Left Coil Assembly Harness Engine Wiring Harness Connector
Courtesy of GENERAL MOTORS CORP.

3. Connect the engine wiring harness to the left coil assembly harness.

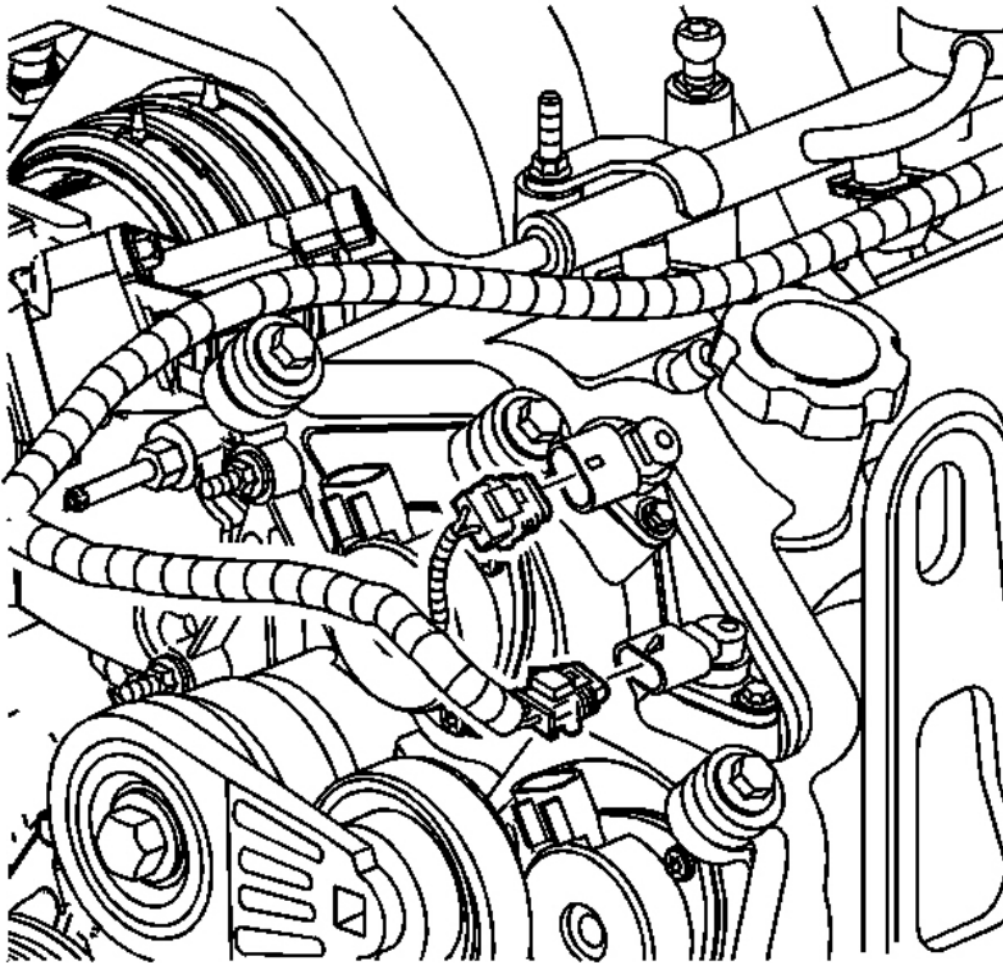


Fig. 63: View Of Left Camshaft Position Sensors Engine Wiring Harness Connectors
Courtesy of GENERAL MOTORS CORP.

4. Connect the engine wiring harness to the left camshaft position sensors.

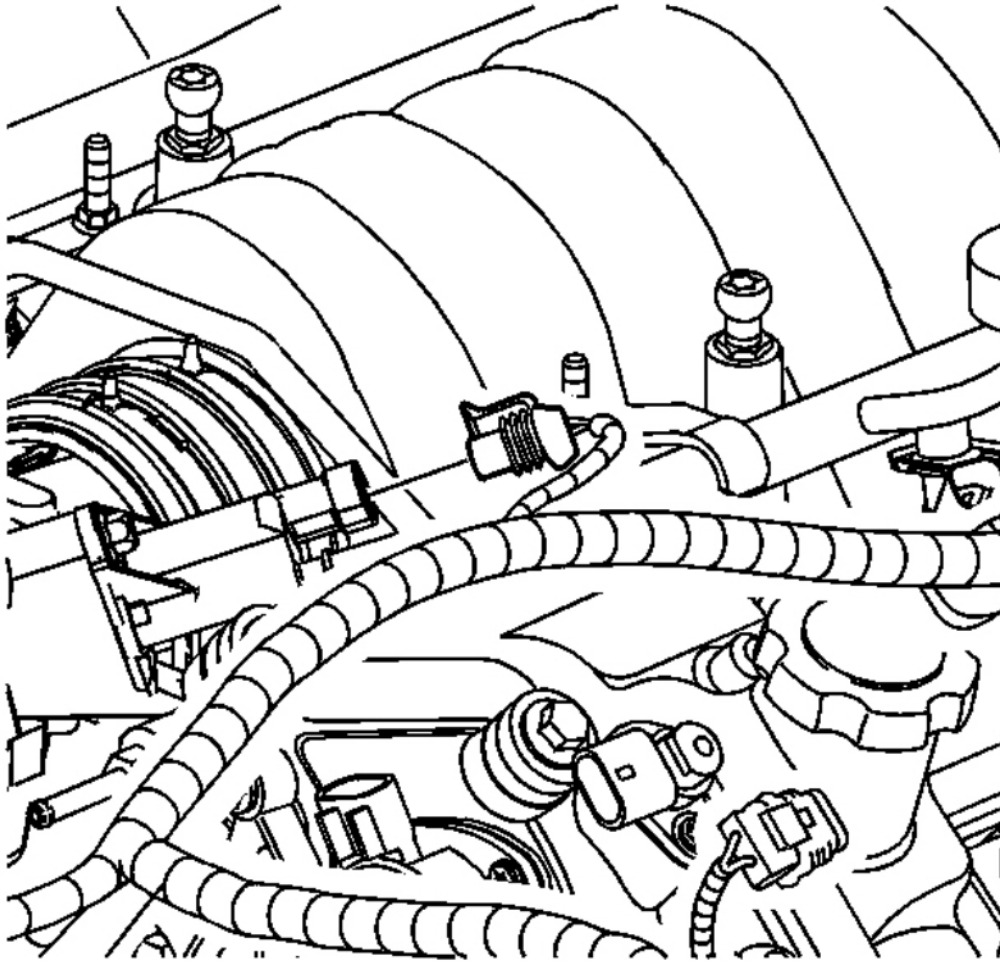


Fig. 64: View Of EVAP Purge Solenoid Engine Wiring Harness Connector
Courtesy of GENERAL MOTORS CORP.

5. Connect the engine wiring harness to the EVAP purge solenoid.

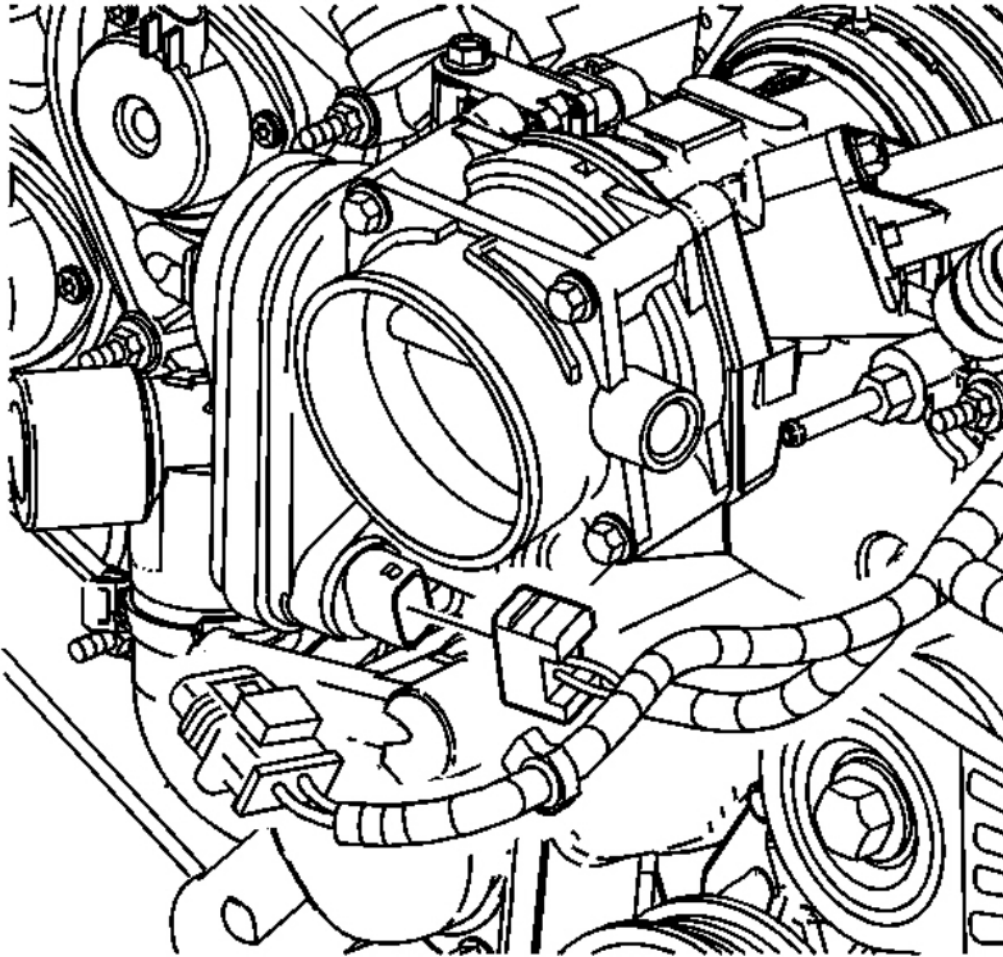


Fig. 65: View Of Throttle Position Sensor Engine Wiring Harness Connector
Courtesy of GENERAL MOTORS CORP.

6. Connect the engine wiring harness to the throttle position sensor on the throttle body.

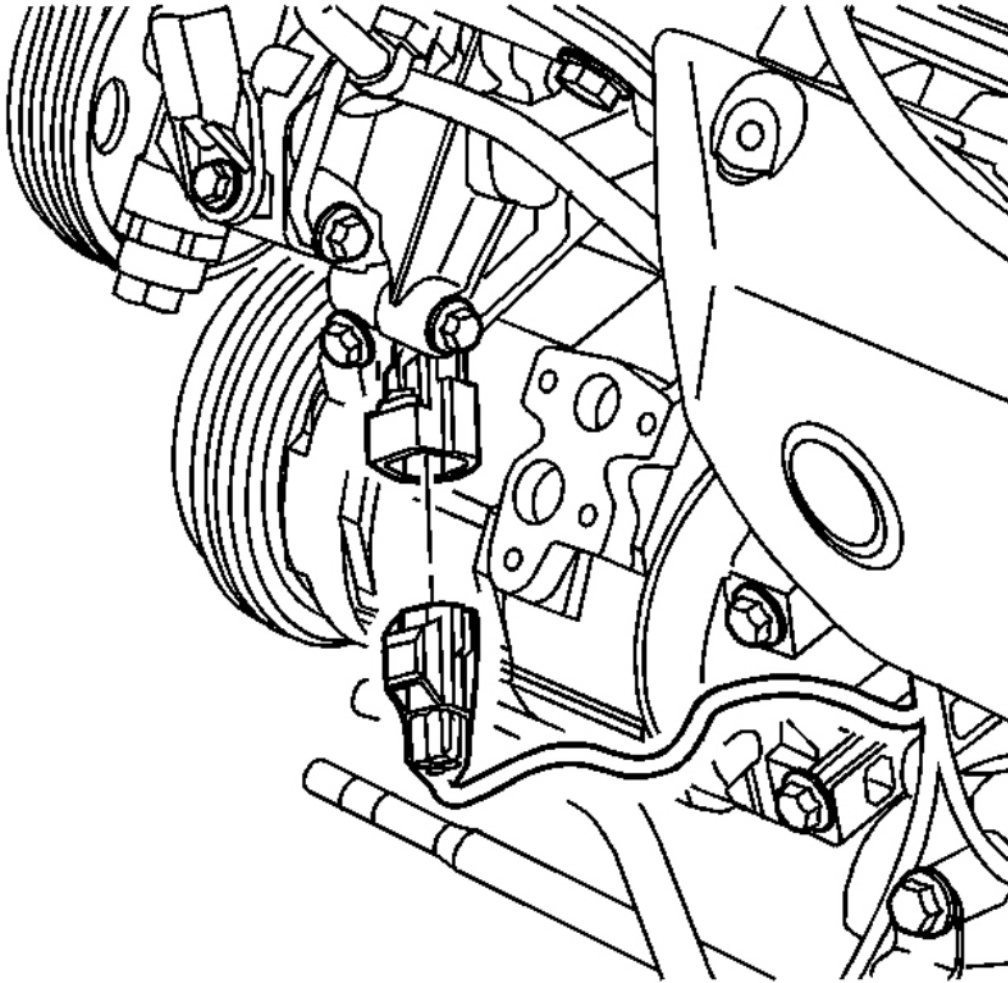


Fig. 66: View Of A/C Compressor Engine Wiring Harness Connector
Courtesy of GENERAL MOTORS CORP.

7. Connect the engine wiring harness to the air conditioner compressor.

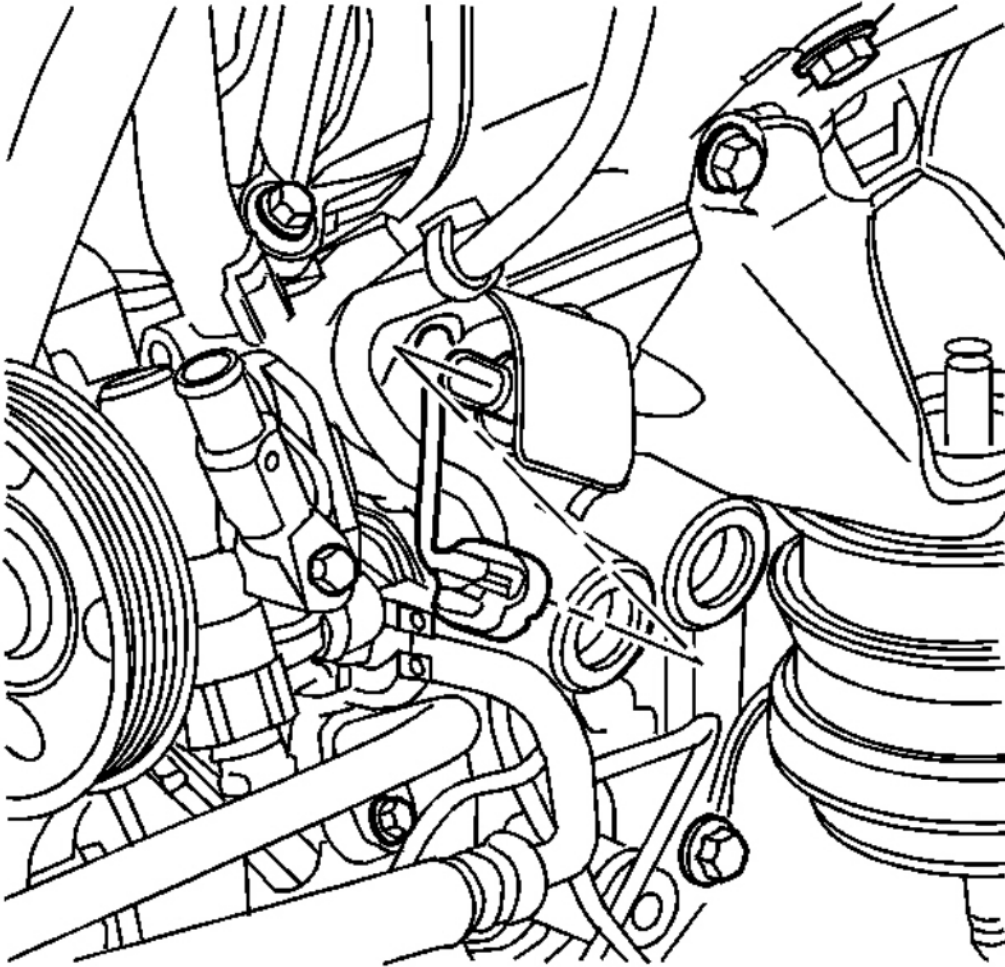


Fig. 67: View Of Oil Pressure Sensor Engine Wiring Harness Connector
Courtesy of GENERAL MOTORS CORP.

8. Connect the engine wiring harness to the oil pressure sensor.

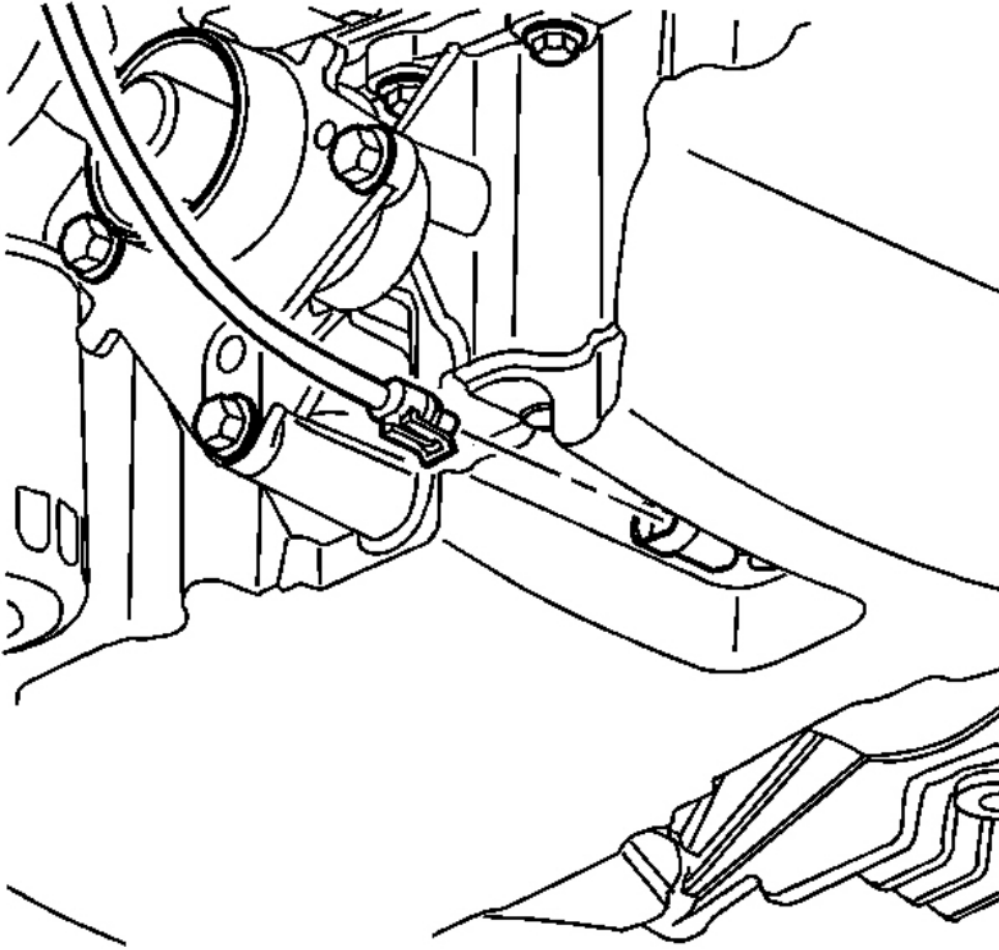


Fig. 68: View Of Low Level Oil Switch Engine Wiring Harness Connector
Courtesy of GENERAL MOTORS CORP.

9. Connect the engine wiring harness to the low level oil switch.

Right Side Harness Connections

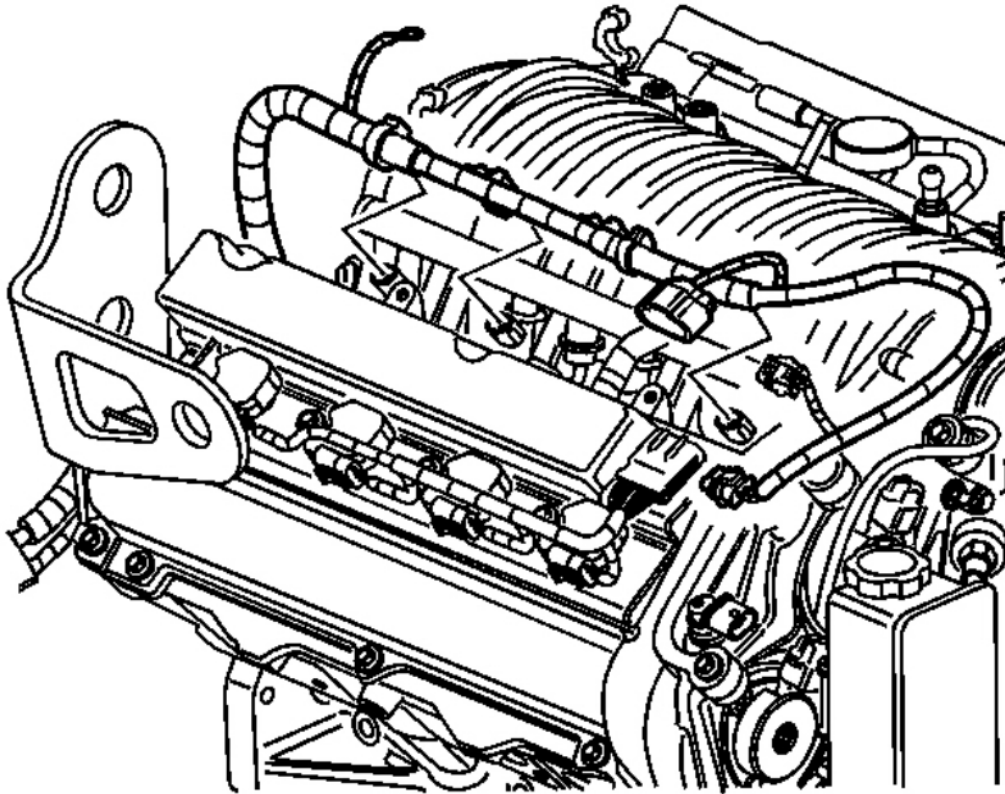


Fig. 69: View Of Right Side Fuel Injectors Engine Wiring Harness Connectors
Courtesy of GENERAL MOTORS CORP.

1. Connect the engine wiring harness to the right side fuel injectors.

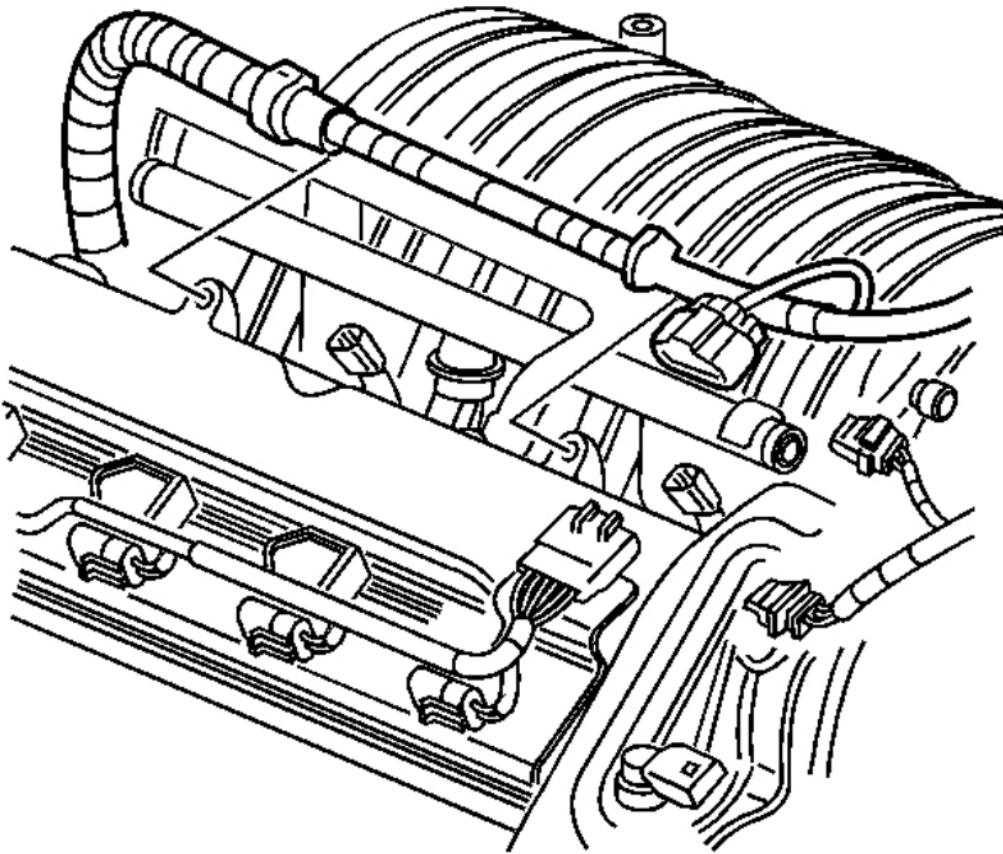


Fig. 70: View Of Right Camshaft Cover Engine Wiring Harness Connector
Courtesy of GENERAL MOTORS CORP.

2. Connect the engine wiring harness to the right camshaft cover.

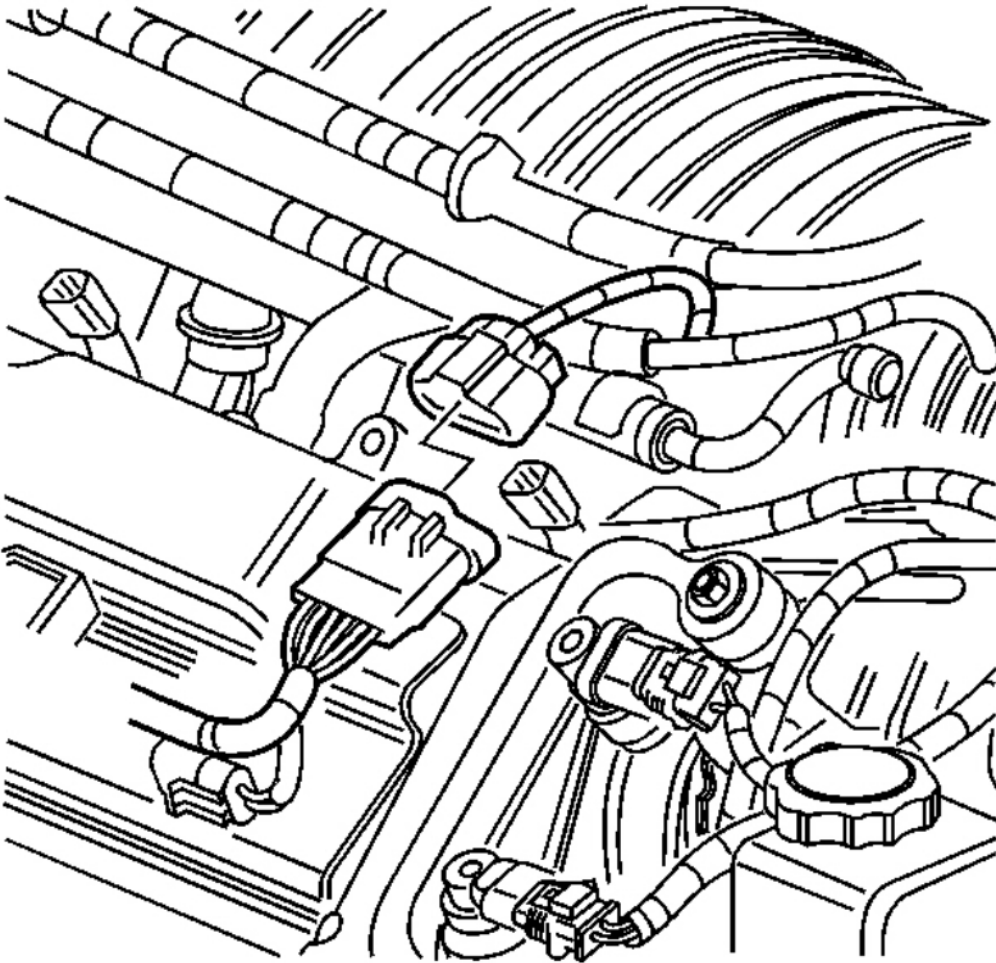


Fig. 71: View Of Engine Wiring Harness & Right Ignition Coil Harness
Courtesy of GENERAL MOTORS CORP.

3. Connect the engine wiring harness to the right coil assembly harness.

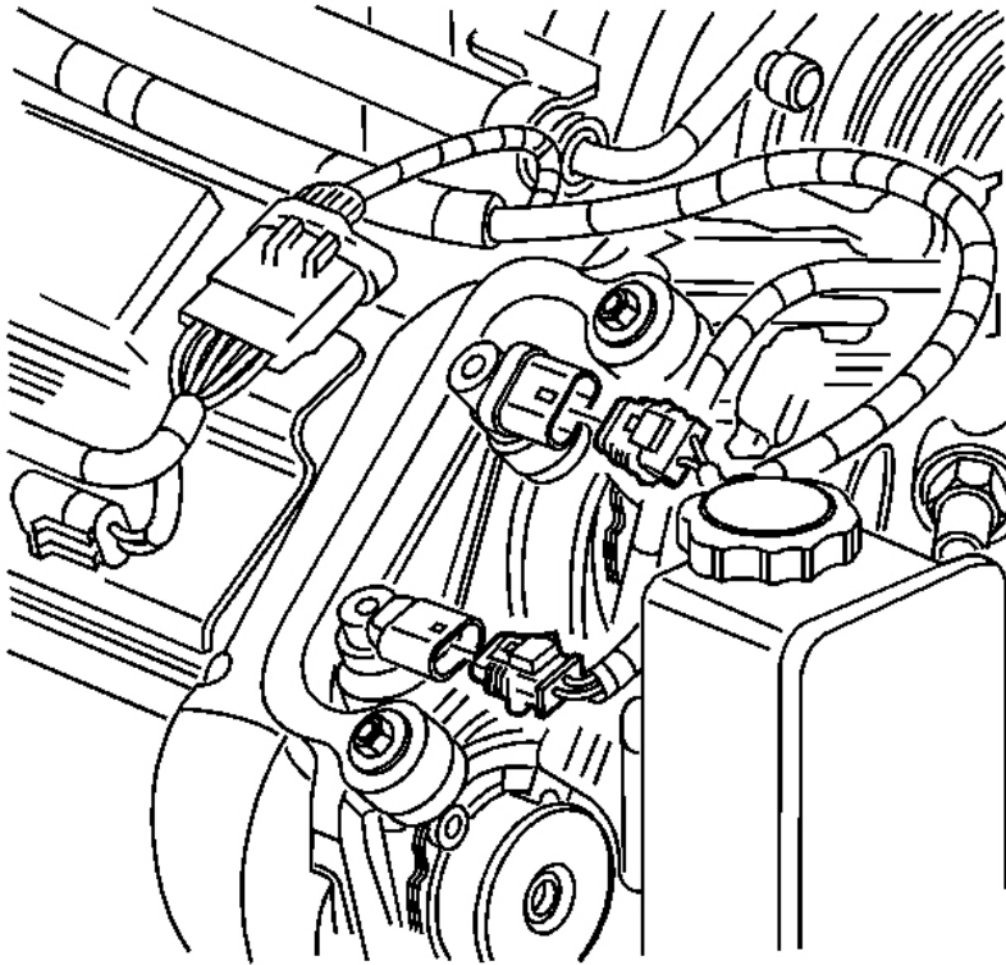


Fig. 72: View Of Right Camshaft Position Sensors Engine Wiring Harness Connectors

Courtesy of GENERAL MOTORS CORP.

4. Connect the engine wiring harness to the right camshaft position sensors.

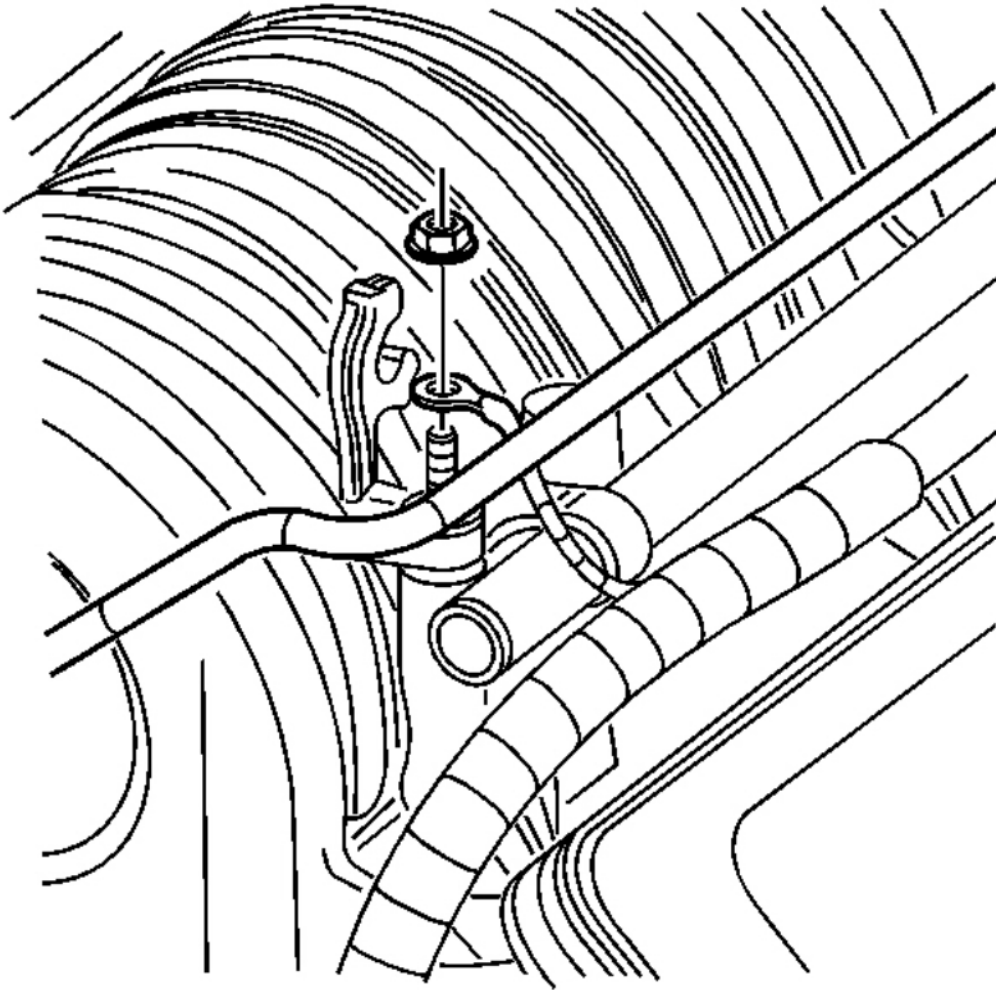


Fig. 73: View Of Intake Manifold Stud Engine Wiring Harness Ground
Courtesy of GENERAL MOTORS CORP.

5. Connect the engine wiring harness ground to the intake manifold stud.

NOTE: Refer to Fastener Notice in Cautions and Notices.

6. Install the engine wiring harness ground nut.

Tighten: Tighten the engine wiring harness ground nut to 10 N.m (89 lb in).

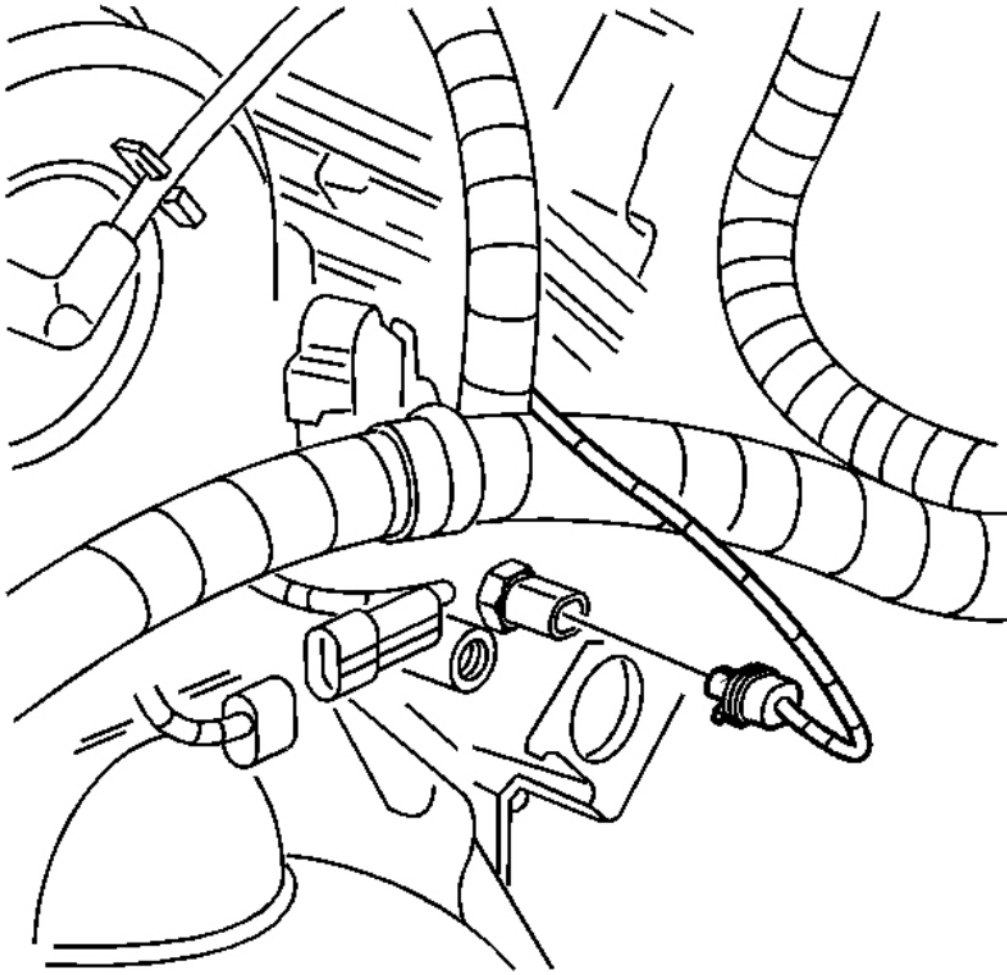


Fig. 74: View Of ECT Engine Wiring Harness Connector
Courtesy of GENERAL MOTORS CORP.

7. Connect the engine wiring harness to the ECT sensor at the rear of the right cylinder head.

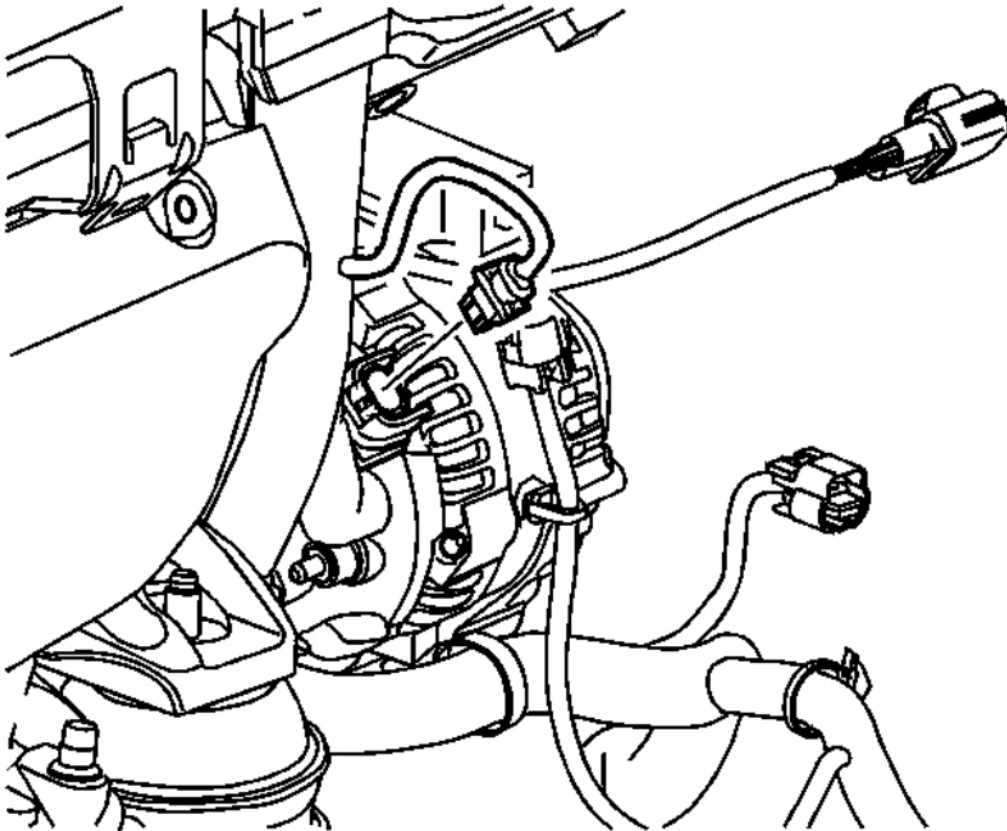


Fig. 75: View Of Generator Engine Wiring Harness Connector
Courtesy of GENERAL MOTORS CORP.

8. Connect the engine wiring harness to the generator.

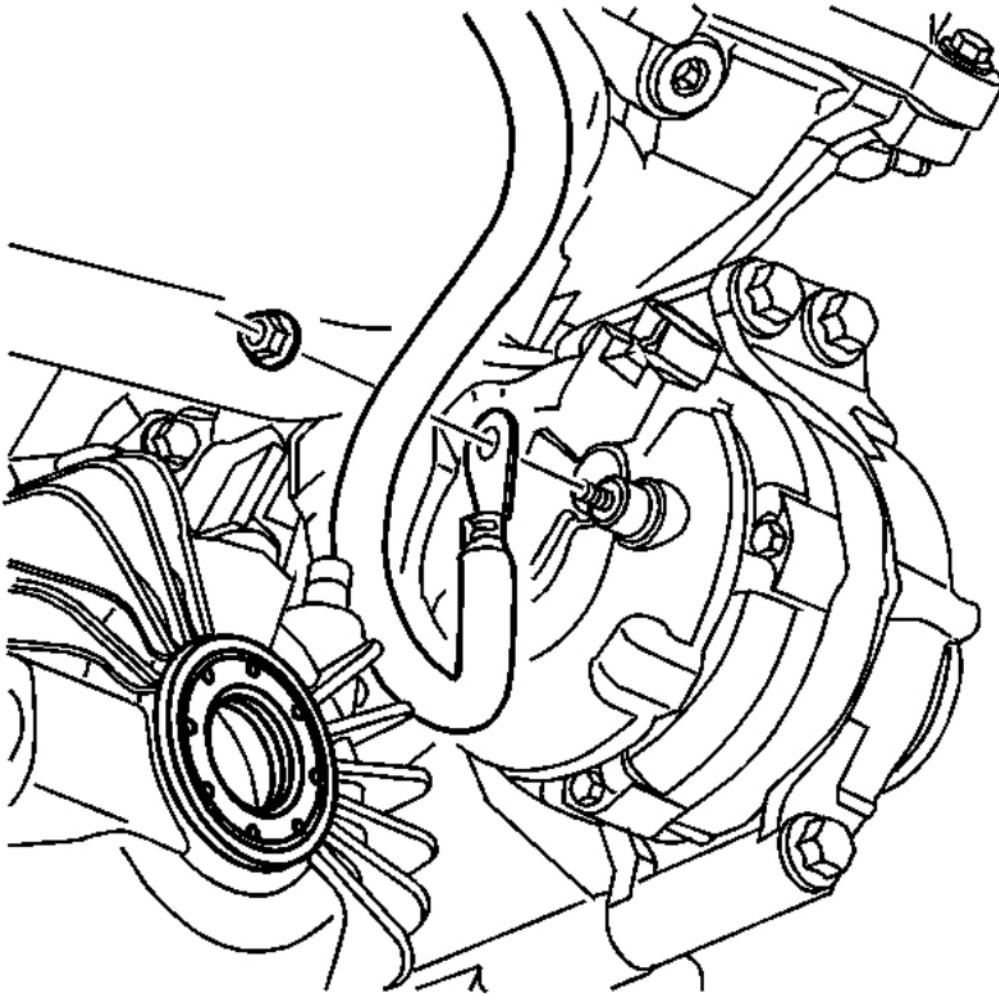


Fig. 76: View Of Generator Starter Motor Wiring Harness Connector
Courtesy of GENERAL MOTORS CORP.

9. Connect the starter motor wiring harness to the generator.
10. Install the starter motor wiring harness generator nut.

Tighten: Tighten the starter motor wiring harness generator nut to 10 N.m (89 lb in).

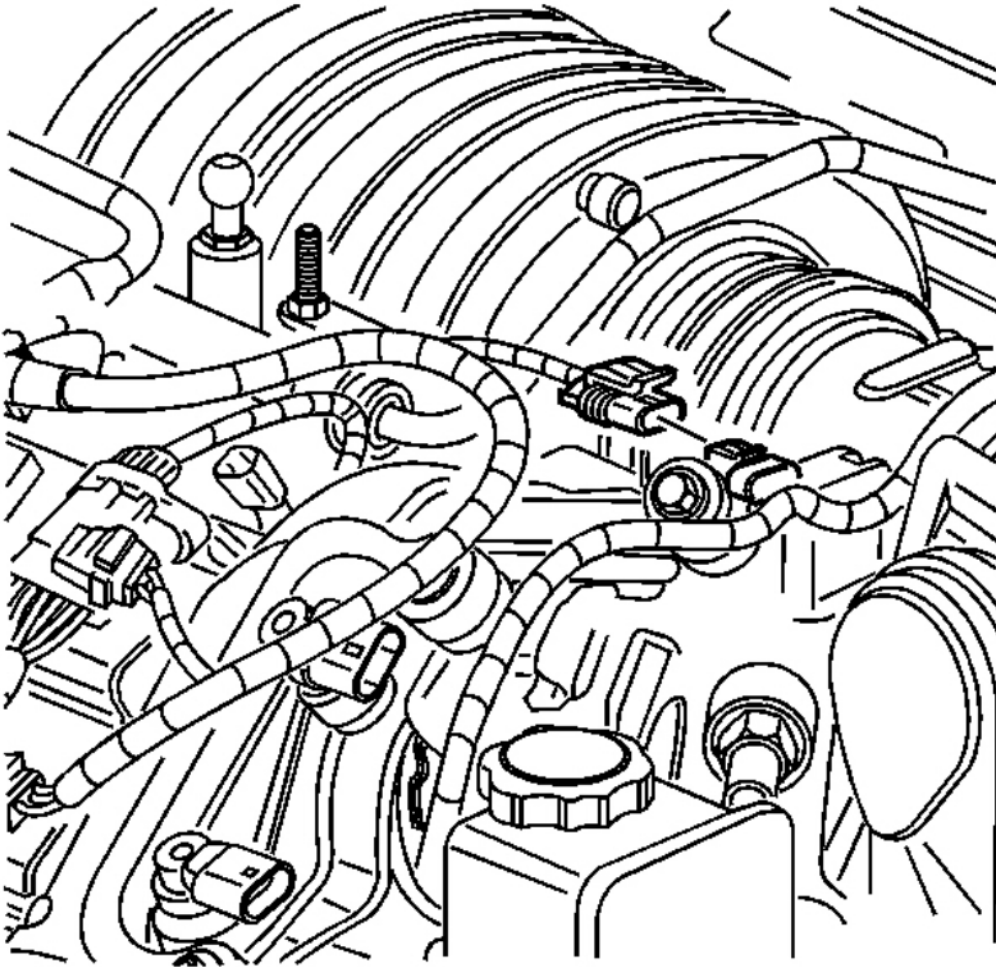


Fig. 77: View Of MAP Sensor Engine Wiring Harness Connector
Courtesy of GENERAL MOTORS CORP.

11. Connect the engine wiring harness to the MAP sensor.

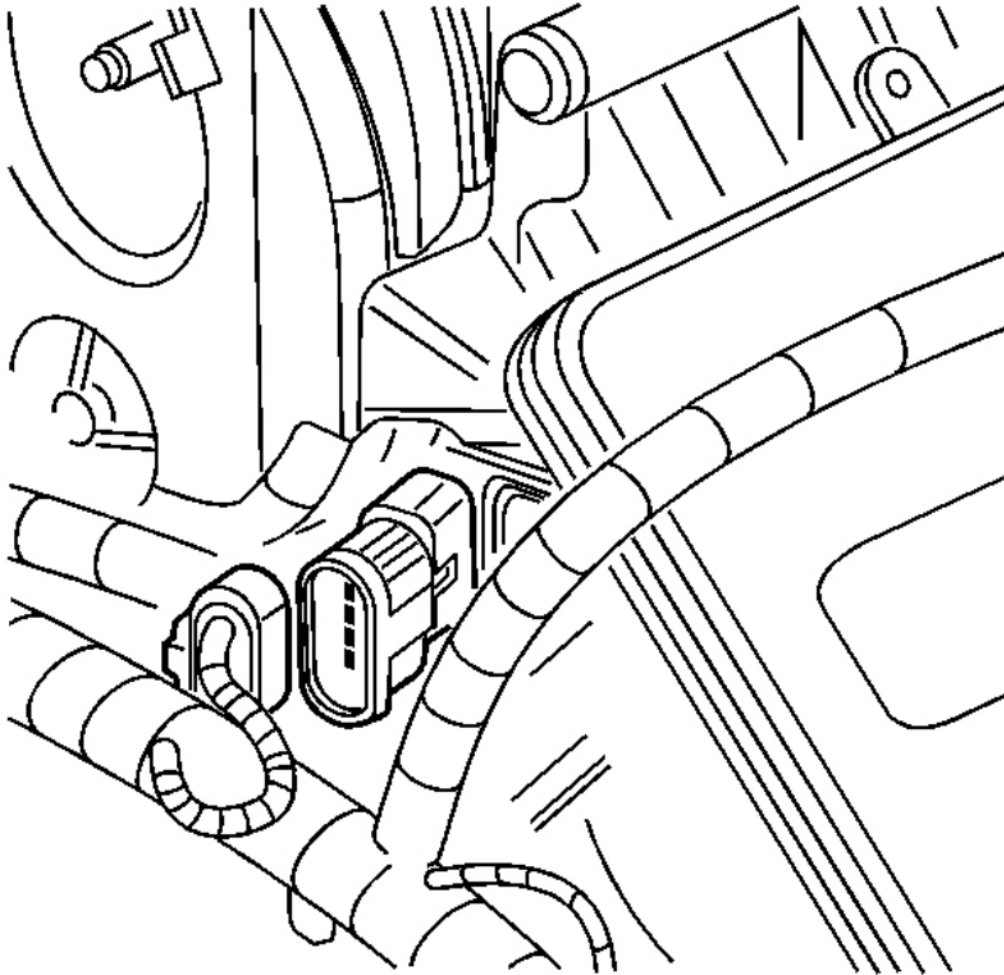


Fig. 78: View Of Knock & Crankshaft Position Sensor Wiring Harness Engine Wiring Harness Connector
Courtesy of GENERAL MOTORS CORP.

12. Connect the engine wiring harness to the knock and crankshaft position sensor wiring harness.

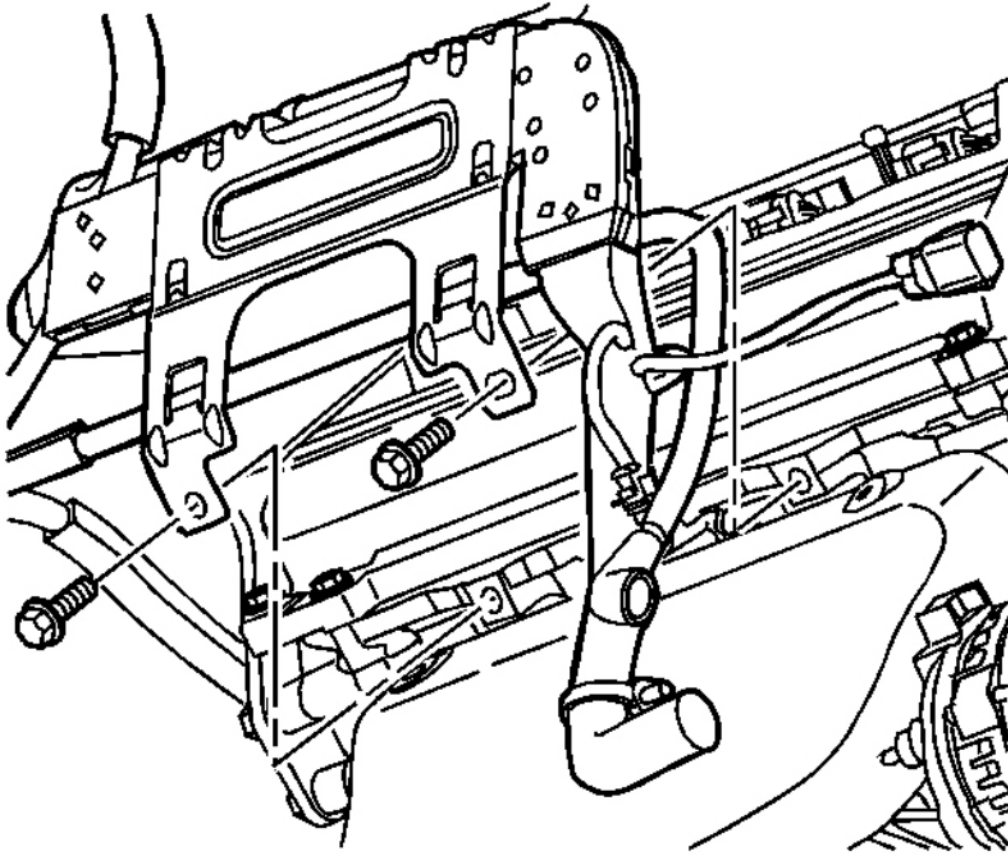


Fig. 79: View Of Engine Wiring Harness Bracket
Courtesy of GENERAL MOTORS CORP.

13. Install the engine wiring harness bracket to the side of the right cylinder head.
14. Install the engine wiring harness bracket bolts.

Tighten: Tighten the engine wiring harness bracket bolts to 45 N.m (33 lb ft).