

Fig. 48: View Of Oil Level Indicator Tube
Courtesy of GENERAL MOTORS CORP.

1. Install the oil level indicator tube seal (2).
2. Install the oil level indicator tube (3).
3. Clip the electrical wiring harness to the oil level indicator tube.

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

4. Install the oil level indicator tube bolt (1).

Tighten: Tighten the oil level indicator tube bolt to 10 N.m (89 lb in).

5. Install the air cleaner outlet resonator. Refer to **Air Cleaner Outlet Resonator Replacement** in Engine Controls 2.2L (L61).

Crankcase Ventilation Hoses/Pipes Replacement

Removal Procedure

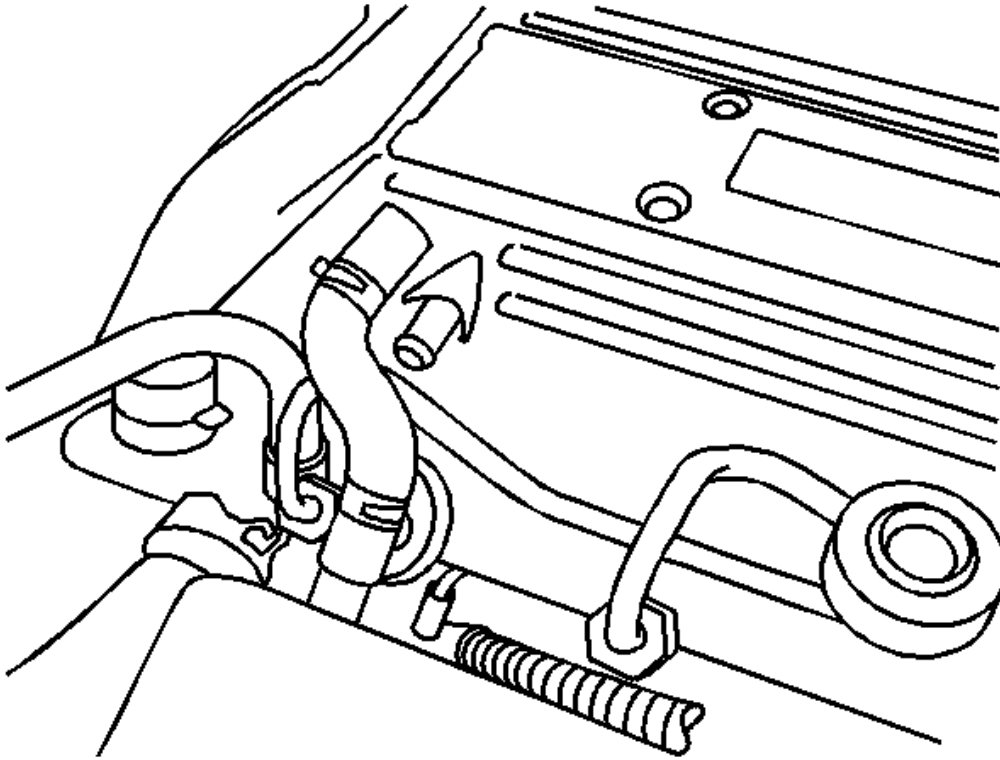


Fig. 49: Identifying Crankcase Ventilation Hose
Courtesy of GENERAL MOTORS CORP.

1. Disconnect the crankcase ventilation hose from the camshaft cover.
2. Disconnect the crankcase ventilation hose from the intake manifold.

Installation Procedure

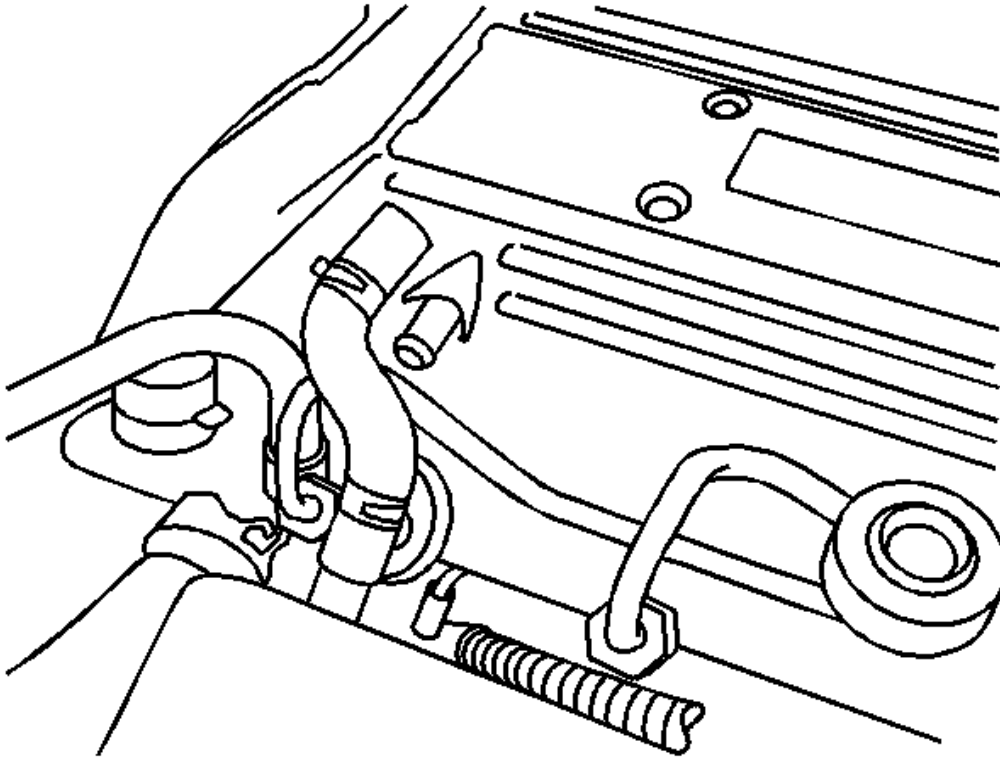


Fig. 50: Identifying Crankcase Ventilation Hose
Courtesy of GENERAL MOTORS CORP.

1. Connect the crankcase ventilation hose to the camshaft cover.
2. Connect the crankcase ventilation hose to the intake manifold.

Intake Manifold Replacement

Removal Procedure

1. Remove the air inlet duct and resonator.
2. Disconnect the IAC electrical connector.
3. Disconnect the TPS electrical connector.
4. Disconnect the MAP sensor electrical connector.
5. Disconnect the EVAP hose.
6. Disconnect the PCV hose.
7. Disconnect the purge solenoid tube.

8. Disconnect the brake booster hose.
9. Remove the oil level indicator tube bolt.
10. Disconnect the accelerator and cruise control cables.

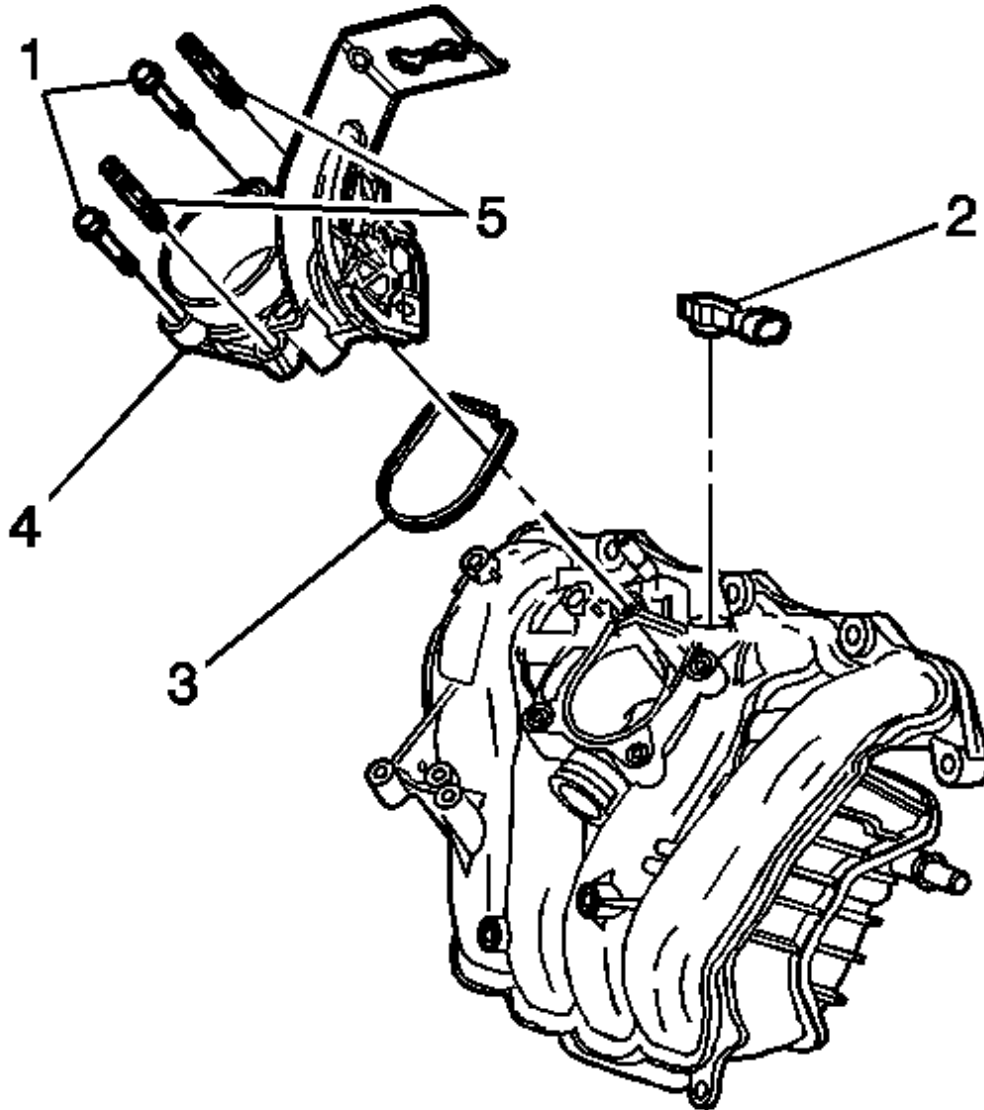


Fig. 51: Exploded View Of Throttle Body
Courtesy of GENERAL MOTORS CORP.

11. Remove the throttle body.

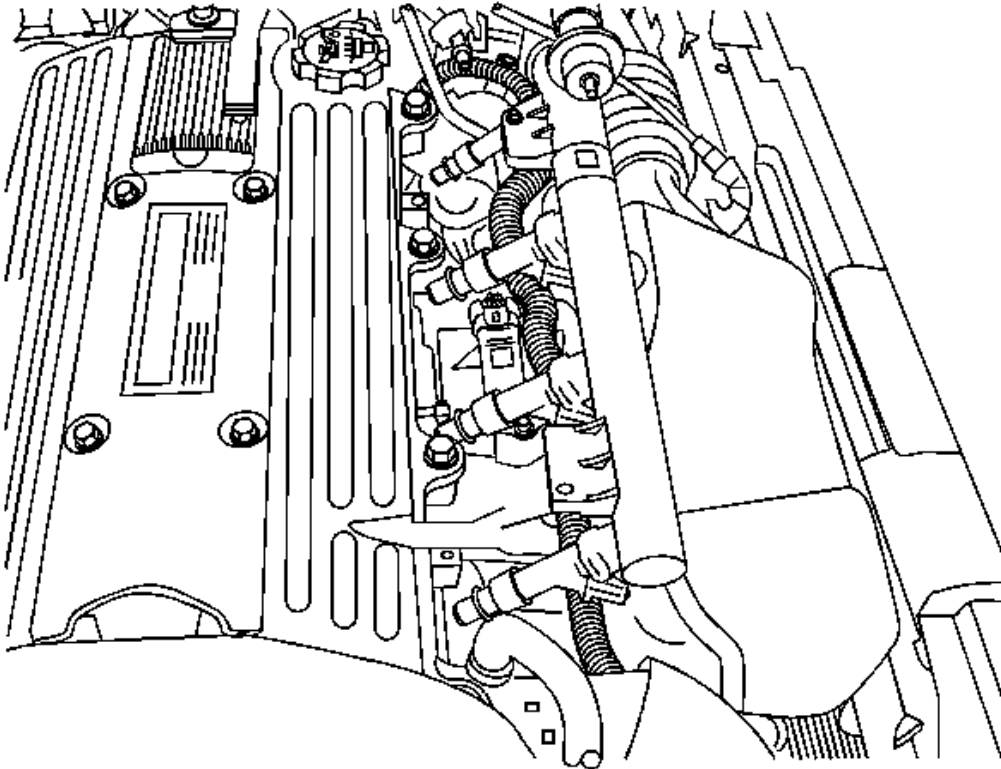


Fig. 52: View Of Fuel Rail
Courtesy of GENERAL MOTORS CORP.

12. Remove the fuel rail. Refer to **Fuel Rail Assembly Replacement** in Engine Controls-2.2 (L61).

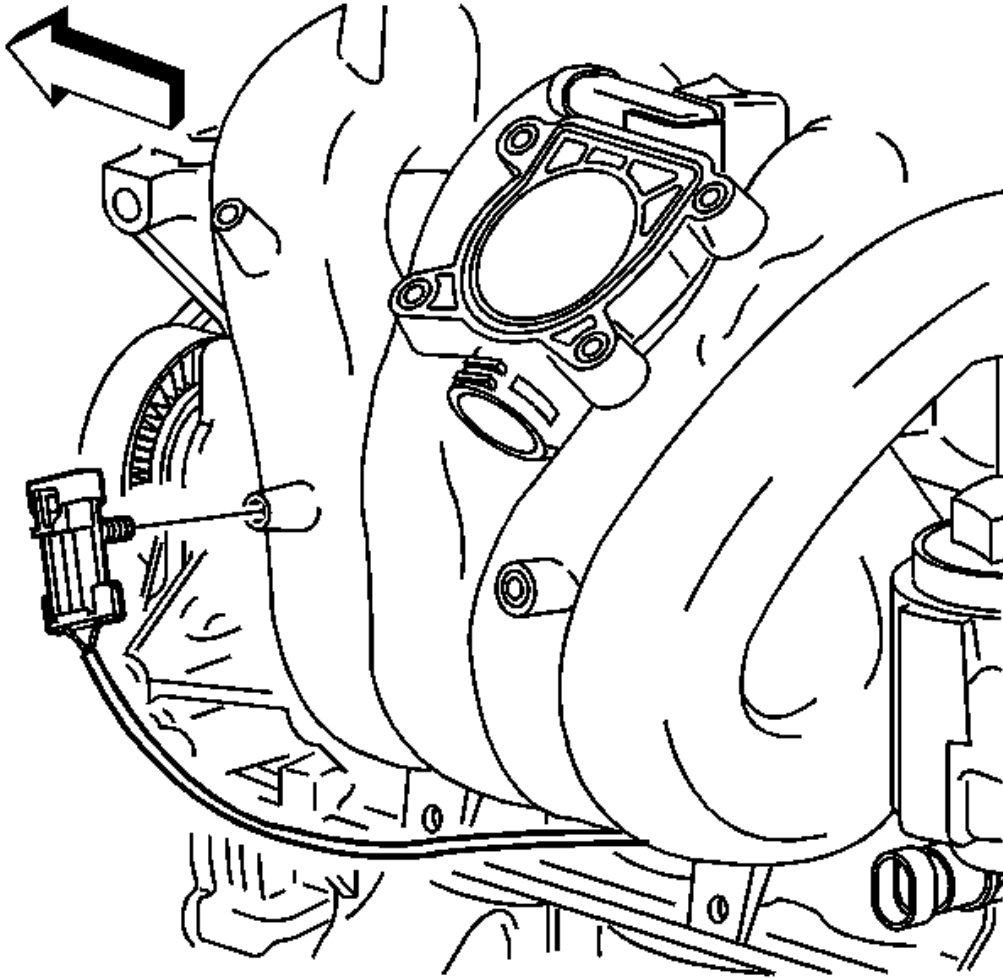


Fig. 53: View Of Knock Sensor Connector
Courtesy of GENERAL MOTORS CORP.

13. Remove the knock sensor connector from the intake manifold.

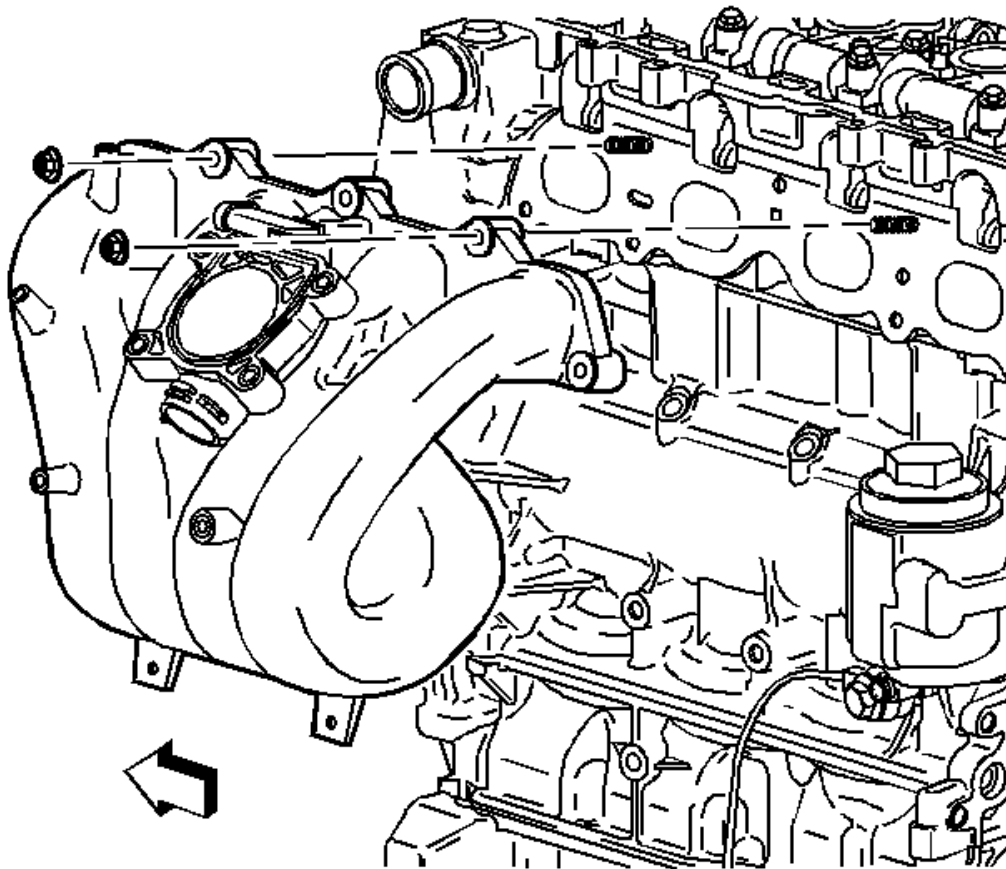


Fig. 54: View Of Intake Manifold
Courtesy of GENERAL MOTORS CORP.

14. Remove the intake manifold nuts and bolts.
15. Remove the intake manifold.
16. Remove the intake manifold gasket, if necessary. The gasket is reusable if the gasket is not damaged.

Installation Procedure

1. If removed, install the intake manifold gasket.
2. Install the intake manifold.

NOTE: Refer to Fastener Notice in Cautions and Notices.