

Fig. 2: View Of Left Exhaust Manifold, Bolts, Stud & Gaskets (4.3L)
 Courtesy of GENERAL MOTORS COMPANY

1. Install the exhaust manifold bolts (3) and stud (4) to the manifold.
2. Install NEW exhaust manifold gaskets (1) onto the bolt and stud.

CAUTION: Refer to Fastener Caution .

3. Position and install the exhaust manifold (2) to the cylinder head.
 1. Tighten the bolts/stud a first pass to 15 N.m (11 lb ft).
 2. Tighten the bolts/stud a final pass to 30 N.m (22 lb ft).
4. Install the spark plugs. Refer to **Spark Plug Replacement** .
5. Install the catalytic converter assembly. Refer to **Catalytic Converter Replacement (L20, LMF)**, **Catalytic Converter Replacement (V6)**, **Catalytic Converter Replacement (LGH)**, **Catalytic Converter Replacement (LC8, L96)**.
6. Install the left wheelhouse splash shield. Refer to **Wheelhouse Splash Shield Replacement** .
7. Install the left front wheel and tire. Refer to **Tire and Wheel Removal and Installation (6-Lug Wheel)** , **Tire and Wheel Removal and Installation (8-Lug Wheel)** .

EXHAUST MANIFOLD REPLACEMENT - LEFT SIDE (V8)

Removal Procedure

1. Raise and support the vehicle. Refer to **Lifting and Jacking the Vehicle** .

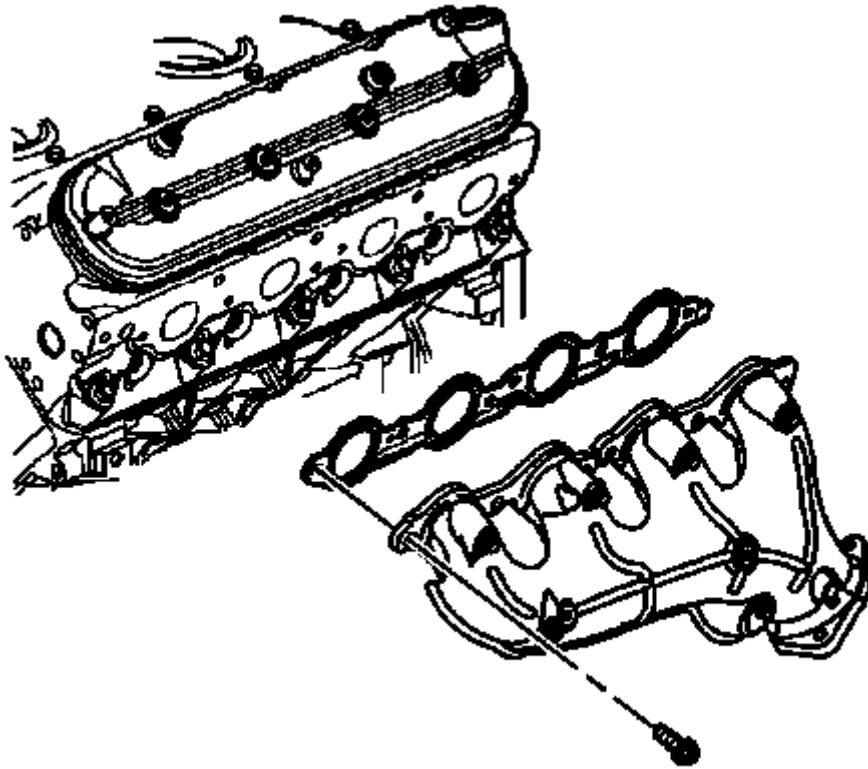


Fig. 3: View Of Left Exhaust Manifold (4.8L, 5.3L, 6.0L)
Courtesy of GENERAL MOTORS COMPANY

2. Separate the catalytic converter from the exhaust manifold. Refer to **Catalytic Converter Replacement (L20, LMF)**, **Catalytic Converter Replacement (V6)**, **Catalytic Converter Replacement (LGH)**, **Catalytic Converter Replacement (LC8, L96)**.
3. Lower the vehicle.
4. Remove the engine cover. Refer to **Engine Cover Replacement** .
5. Disconnect the exhaust gas recirculation (EGR) pipe from the exhaust manifold, if equipped.
6. Remove the spark plug wires from the spark plugs. Refer to **Spark Plug Wire Replacement** .
7. Remove the exhaust manifold bolts and remove the exhaust manifold from the vehicle.
8. Discard the gasket and the exhaust manifold to catalytic converter seal.

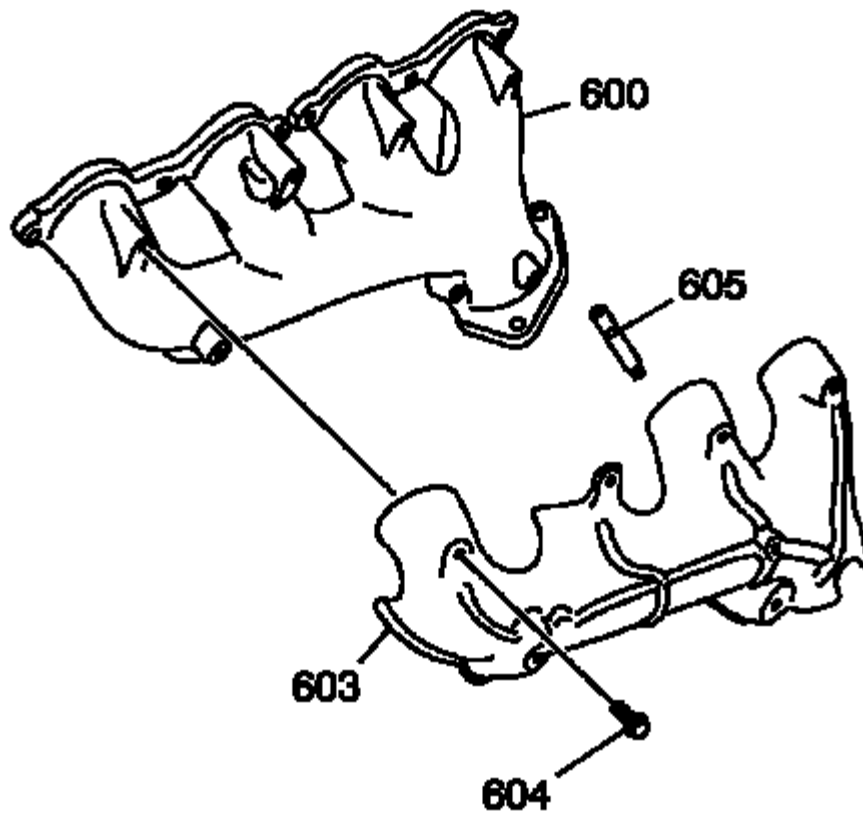


Fig. 4: View Of Heat Shield, Bolts And Manifold
Courtesy of GENERAL MOTORS COMPANY

9. Remove the heat shield (603) and bolts (604) from the manifold (600), as required.
10. Remove the studs (605), as required.

Installation Procedure

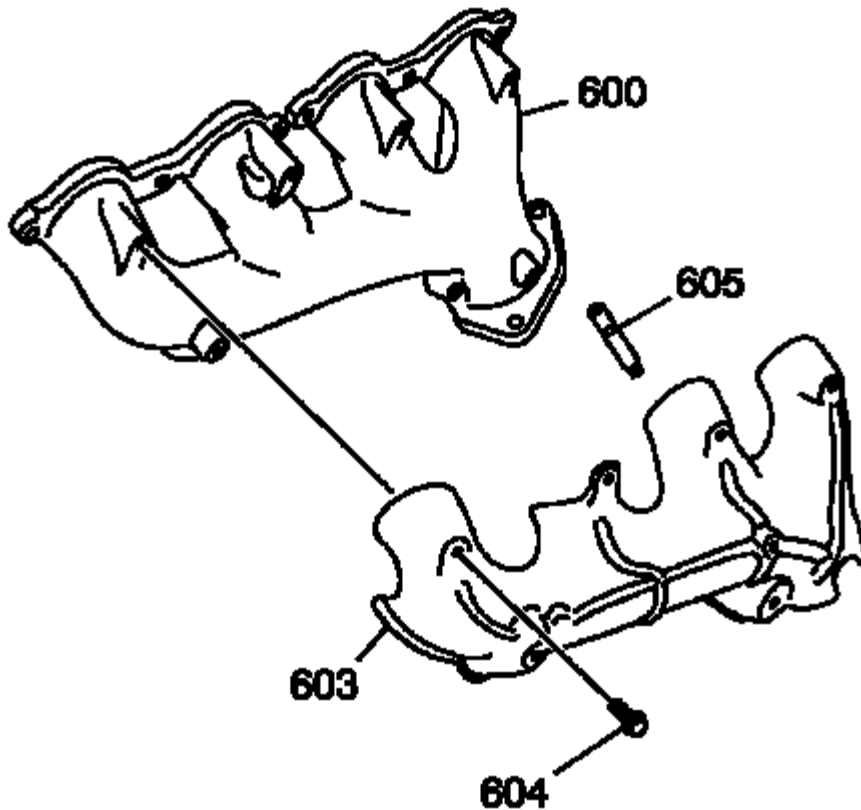


Fig. 5: View Of Heat Shield, Bolts And Manifold
Courtesy of GENERAL MOTORS COMPANY

CAUTION: Refer to Fastener Caution .

NOTE:

- Tighten the exhaust manifold bolts as specified in the service procedure. Improperly installed and/or leaking exhaust manifold gaskets may affect vehicle emissions and/or on-board diagnostic (OBD) II system performance.
- The cylinder head exhaust manifold bolt hole threads must be clean and free of debris or threadlocking material.
- Do not apply sealant to the first 3 threads of the bolt.

1. Install the heat shield (603) and bolts (604) and tighten to 9 N.m (80 lb in).
2. Install the exhaust pipe studs (605) and tighten to 20 N.m (15 lb ft).

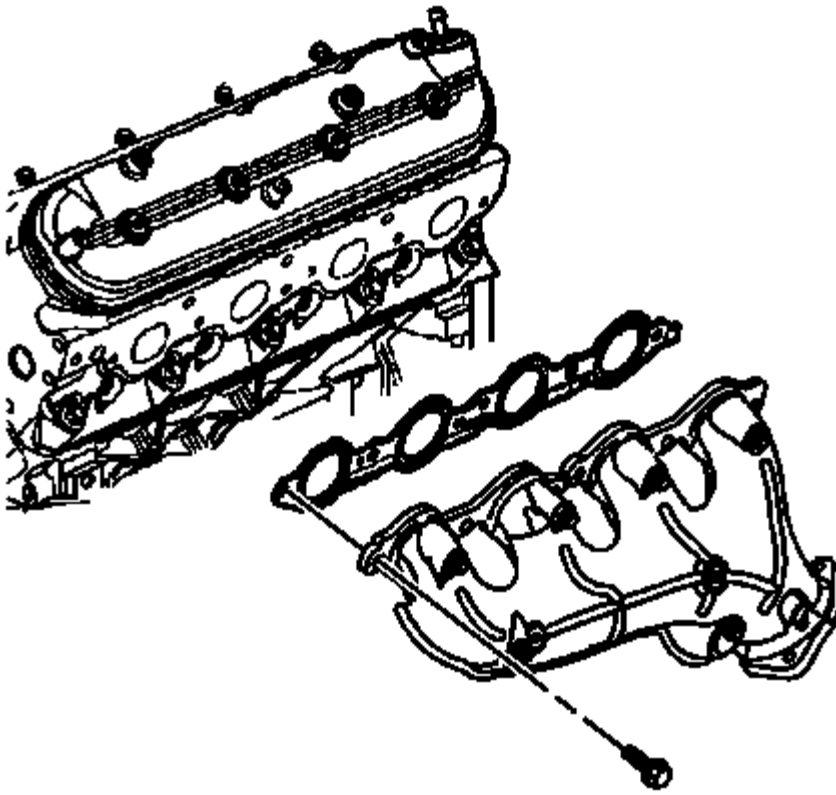


Fig. 6: View Of Exhaust Manifold, Bolts, And Gasket
Courtesy of GENERAL MOTORS COMPANY

3. Apply a 5 mm (0.2 in) wide band of threadlock GM P/N 12345493 (Canadian P/N 10953488), or equivalent, to the threads of the exhaust manifold bolts. Refer to **Adhesives, Fluids, Lubricants, and Sealers** .
4. Position the exhaust manifold gasket to the manifold with two manifold bolts.
5. Install the exhaust manifold to the cylinder head.
 1. Tighten the manifold bolts a first pass to 15 N.m (11 lb ft). Tighten the manifold bolts beginning with the center 2 bolts. Alternate from side-to-side, and work toward the outside bolts.
 2. Tighten the manifold bolts a final pass to 20 N.m (15 lb ft). Tighten the manifold bolts beginning with the center 2 bolts. Alternate from side-to-side, and work toward the outside bolts.
6. Using a flat punch, bend over the exposed edge of the manifold gasket at the rear of the cylinder head.
7. Connect the EGR pipe to the manifold, if equipped.
8. Install the spark plug wires to the spark plugs. Refer to **Spark Plug Wire Replacement** .
9. Using a NEW seal, install the catalytic converter to the exhaust manifold. Refer to **Catalytic Converter Replacement (L20, LMF)**, **Catalytic Converter Replacement (V6)**, **Catalytic Converter Replacement (LGH)**, **Catalytic Converter Replacement (LC8, L96)**.
10. Install the engine cover. Refer to **Engine Cover Replacement** .

11. Inspect for exhaust leaks.

EXHAUST MANIFOLD REPLACEMENT - LEFT SIDE (DIESEL)

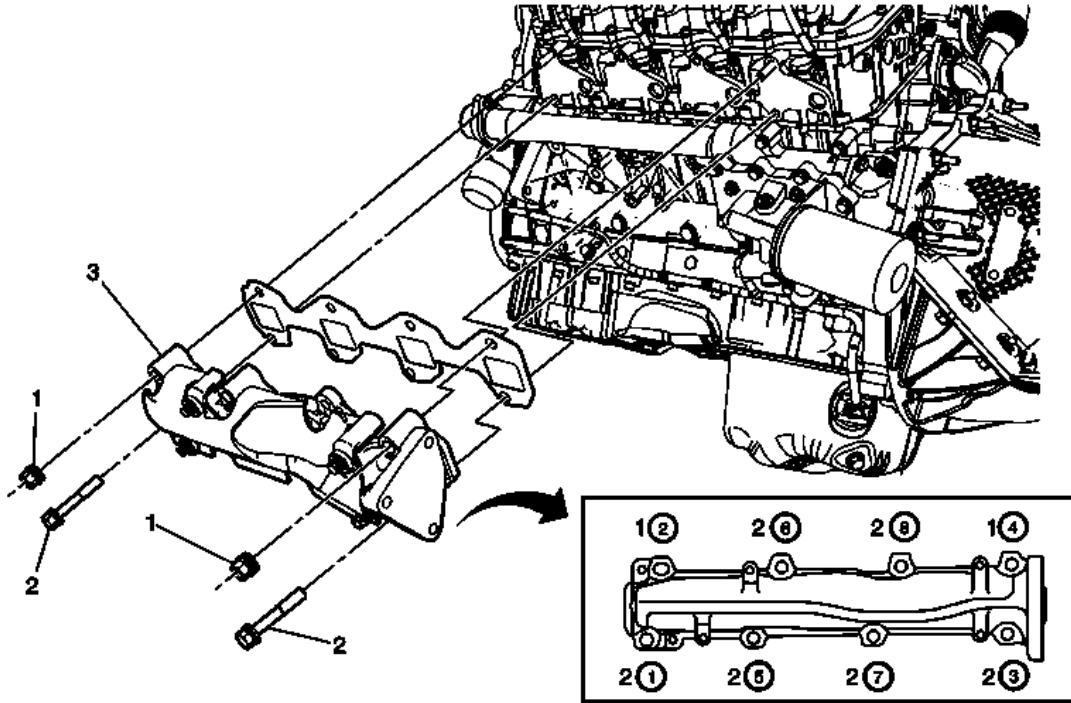


Fig. 7: View Of Exhaust Manifold
 Courtesy of GENERAL MOTORS COMPANY

Exhaust Manifold Replacement - Left Side (Diesel)

Callout	Component Name
Preliminary Procedures	
1. Remove the left exhaust manifold outlet pipe. Refer to Exhaust Manifold Outlet Pipe Replacement - Left Side (LGH) . 2. Raise and suitably support the vehicle. Refer to Lifting and Jacking the Vehicle .	
1	Exhaust Manifold Nut (Qty: 2) CAUTION: Refer to Fastener Caution . TIP: Torque the exhaust manifold nuts in the sequence shown in the graphic. Tighten 57 N.m (42 lb ft)
	Exhaust Manifold Bolt (Qty: 6)