

5-4 FUEL SYSTEM

pling is connected together, the flared end of the female fitting slips behind the garter spring inside the cage of the male fitting. The garter spring and

cage then prevent the flared end of the female fitting from pulling out of the cage. As an additional locking feature, most vehicles have a horseshoe-shaped

retaining clip that improves the retaining reliability of the spring lock coupling.

GASOLINE FUEL INJECTION SYSTEM

General Information

♦ See Figures 15, 16, 17 and 18

The Electronic Fuel Injection (EFI) system was used 1988–94 3.8L engines. The EFI fuel system includes a high pressure (30–45 psi/209–310 kPa) tank-mounted electric fuel pump, throttle body, fuel charging manifold, pressure regulator, fuel filter, and both solid and flexible fuel lines. The fuel charging manifold includes six electronically controlled fuel injectors, each mounted directly above an intake port in the lower intake manifold. The Electronic Engine Control (EEC-IV) computer outputs a command to the fuel injectors to meter the appropriate quantity of fuel.

All vehicles with the 4.6L and 5.0L engines are equipped with a Sequential Electronic Fuel Injection (SEFI) system. In this system, fuel is metered into each intake port in sequence with the engine firing order, according to engine demand, through fuel injectors mounted on a tuned intake manifold. The SEFI system consists of two subsystems, the fuel

delivery system and the electronic control system. The fuel delivery system supplies fuel to the fuel injectors at a specified pressure. The electronic control system regulates the flow of fuel from the injectors into the engine.

The fuel delivery system consists of an electric fuel pump, fuel filters, fuel supply manifold (fuel rail), fuel pressure regulator and fuel injectors. The electric fuel pump, mounted in the fuel tank, draws fuel through a filter screen attached to the fuel pump/sending unit assembly. Fuel is pumped through a frame mounted fuel filter, to the engine compartment, and into the fuel supply manifold. The fuel supply manifold supplies fuel directly to the injectors. A constant fuel pressure to the injectors is maintained by the fuel pressure regulator. The fuel pressure regulator is mounted on the fuel supply manifold, downstream from the fuel injectors. The excess fuel supplied by the fuel pump but not required by the engine, passes through the regulator and returns to the fuel tank through the fuel return line. The fuel injectors spray a metered quantity of fuel into the intake air stream when they are

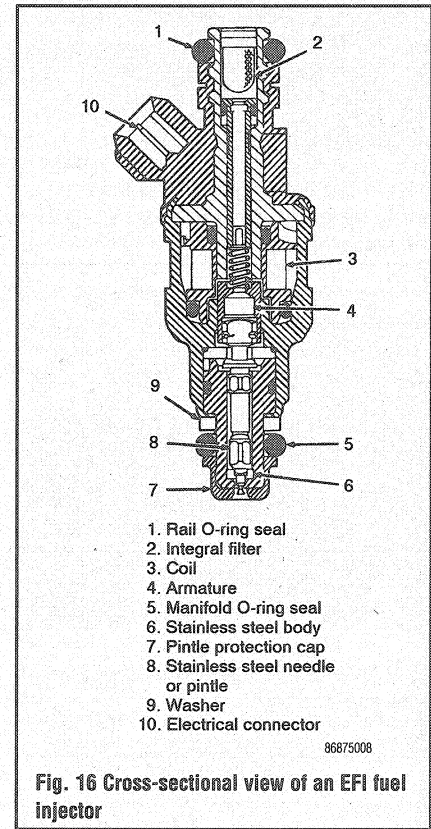


Fig. 16 Cross-sectional view of an EFI fuel injector

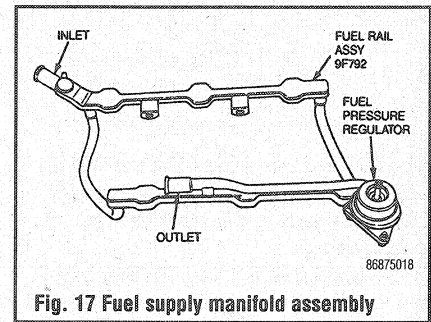


Fig. 17 Fuel supply manifold assembly

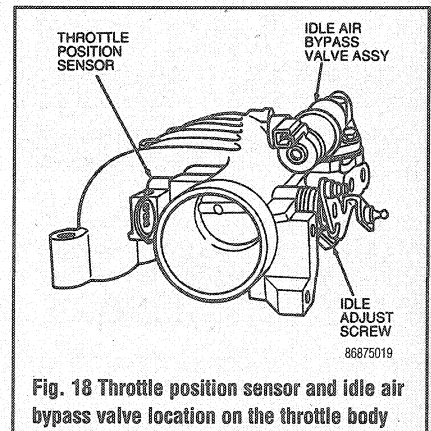


Fig. 18 Throttle position sensor and idle air bypass valve location on the throttle body

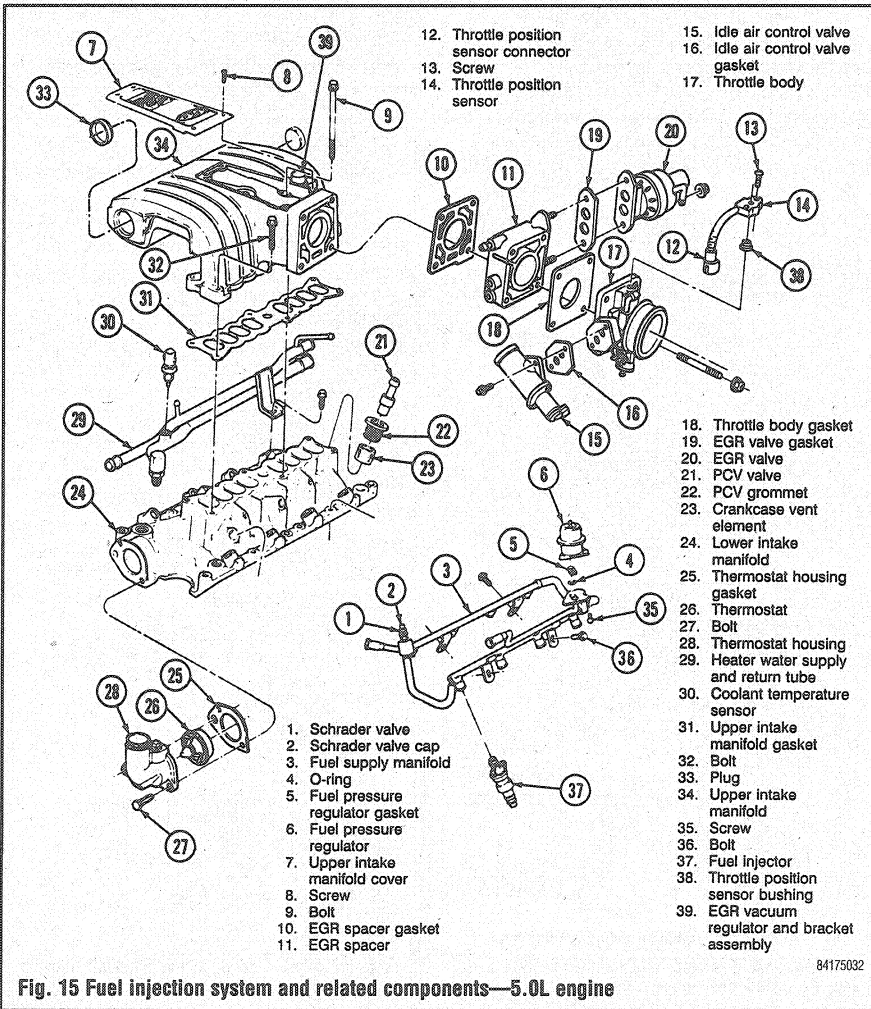


Fig. 15 Fuel injection system and related components—5.0L engine

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|---|-----------------------------------|
| 12. Throttle position sensor connector | 15. Idle air control valve |
| 13. Screw | 16. Idle air control valve gasket |
| 14. Throttle position sensor | 17. Throttle body |
| 18. Throttle body gasket | |
| 19. EGR valve gasket | |
| 20. EGR valve | |
| 21. PCV valve | |
| 22. PCV grommet | |
| 23. Crankcase vent element | |
| 24. Lower intake manifold | |
| 25. Thermostat housing gasket | |
| 26. Thermostat | |
| 27. Bolt | |
| 28. Thermostat housing | |
| 29. Heater water supply and return tube | |
| 30. Coolant temperature sensor | |
| 31. Upper intake manifold gasket | |
| 32. Bolt | |
| 33. Plug | |
| 34. Upper intake manifold | |
| 35. Screw | |
| 36. Bolt | |
| 37. Fuel injector | |
| 38. Throttle position sensor bushing | |
| 39. EGR vacuum regulator and bracket assembly | |

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