Fuel Charging and Controls

Sequential Multi-Port Fuel Injection (SFI)

The fuel charging and controls system consists of the:

- electronic Throttle Body (TB).
- fuel injectors.
- fuel rail.
- fuel rail pressure and temperature sensor.
- two fuel pump driver modules.

The fuel charging and controls system is:

- a Sequential Multi-Port Fuel Injection (SFI) system.
- Pulse Width Modulated (PWM).
- Mass Air Flow (MAF) controlled.

Fuel is metered into each intake port in a sequential firing order. Fuel injectors pulse to follow engine firing order, in accordance with engine demand, on a tuned intake manifold.

The basic fuel requirement of the engine is determined from the data supplied to the PCM by the MAF sensor, which measures the amount of air being drawn into the engine.

The various sensors detect any changes in the operating conditions and send signals to the PCM. This permits the PCM to control the opening duration (pulse width) of the fuel injectors and maintain optimum exhaust emission control and engine performance for all operating conditions.

Throttle Body (TB)

The TB :

- controls air supply to the intake manifold by electronically positioning the throttle plates.
- is not adjustable.

Fuel Rail

The fuel rail:

- receives fuel from the fuel supply tube.
- delivers fuel to the fuel injectors.

Fuel Injectors

The fuel injectors:

- are electronically operated by the PCM.
- atomize the fuel as the fuel is delivered.
- each have an internal solenoid which opens a needle valve to inject fuel into the intake manifold.
- are deposit-resistant.

Fuel Rail Pressure and Temperature Sensor

The fuel rail pressure and temperature sensor:

- maintains constant fuel pressure to the fuel injectors and throughout the fuel system.
- is spring-loaded and operated by intake manifold vacuum.

Fuel Pump Driver Module

The fuel pump driver modules:

- each control one FP .
- receive signals from the PCM.
- duty cycle the FP .