

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.
- Fuel Pump Driver Module (FPDM).

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 PCM controls the fuel injection system. Injector pulse width is varied to control the amount of fuel flow. Varying Fuel Pump (FP) output controls fuel pressure. The PCM commands the [FPDM](#), which directly controls the [FP](#). The [TB](#) is electronically controlled by the engine management system. Throttle plate angle is changed electronically in response to throttle pedal movements initiated by the driver.

Throttle Body (TB)

The [TB](#):

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

Fuel Injectors

The fuel injectors:

- are electronically operated by the PCM.
- atomize the fuel as the fuel is delivered.
- each have an internal solenoid that opens a needle valve, which injects fuel into the intake port in the cylinder head.
- are deposit resistant.

Fuel Rail

The fuel rail:

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

Fuel Rail Pressure and Temperature Sensor

The fuel rail pressure and temperature sensor:

- measures the pressure and temperature of the fuel rail and sends these signals to the PCM.
- uses intake manifold vacuum as a pressure reference.

Fuel Pump Driver Module (FPDM)

The FPDM :

- receives signals from the PCM.
 - duty cycles the FP.
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