

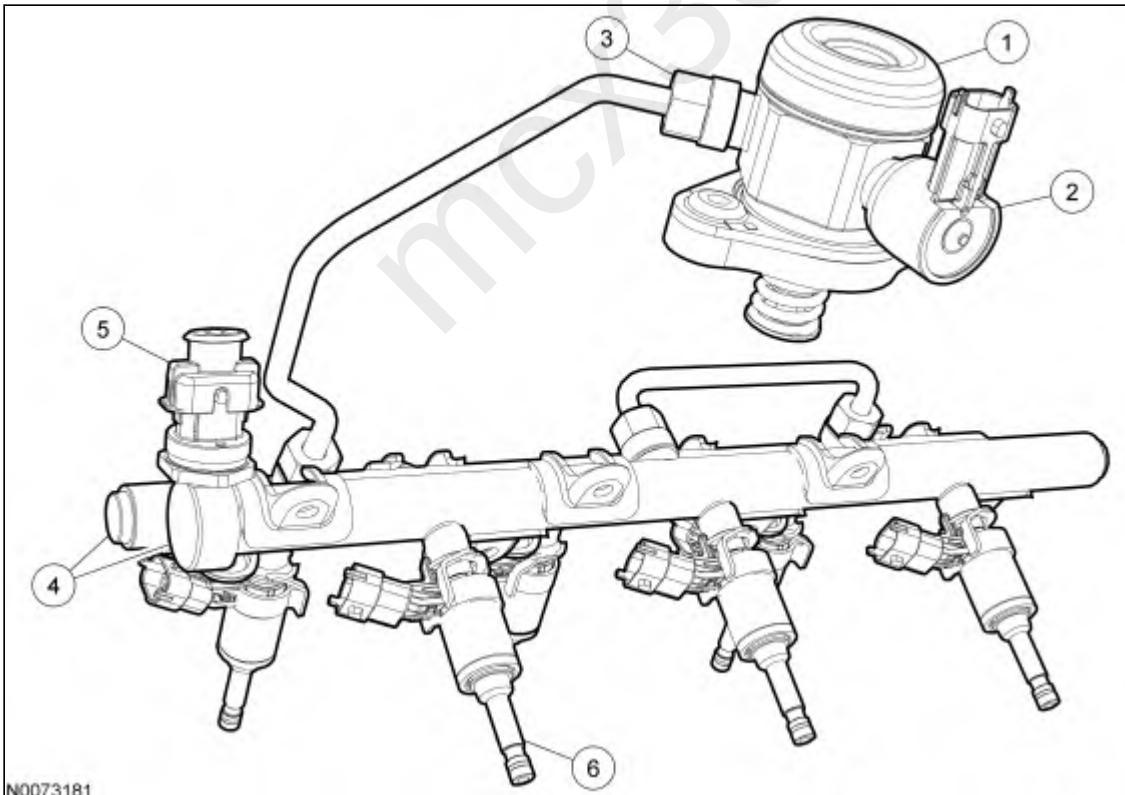
High Pressure Fuel System

Overview

The high pressure fuel system receives low pressure fuel from the fuel pump assembly and delivers fuel at high pressure to the direct injection fuel injectors.

The high pressure fuel system consists of the fuel injection pump, the fuel volume regulator, the fuel rail pressure (FRP) sensor, the fuel supply line, the fuel rail, and the fuel injectors. For additional information on the fuel system components, refer to [Engine Control Components](#) in this section. Operation of the system is as follows:

1. The fuel injection pump receives fuel from the fuel pump assembly, increases the fuel pressure from approximately 448 kPa (65 psi) to a PCM determined pressure up to as high as 15 MPa (2175 psi), and delivers it to the fuel rails.
2. The fuel volume regulator controls the volume of low pressure fuel that enters the inlet check valve and the pump piston inside the fuel injection pump. The PCM regulates fuel pressure by controlling the timing of the fuel volume regulator solenoid.
3. High pressure fuel exits the fuel injection pump and is delivered to the fuel rails through the fuel supply line.
4. The fuel rails distribute and channel high pressure fuel to the fuel injectors.
5. The FRP sensor provides a feedback signal to indicate the fuel rail pressure so the PCM can command the correct injector timing and pulse width for correct fuel delivery at all speed and load conditions.
6. The fuel injectors meter fuel flow to the engine. A given cylinder fuel injector can deliver single or multiple injections for each cylinder event. The amount of fuel is controlled by the length of time the fuel injectors are held open.



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Typical High Pressure Fuel System

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