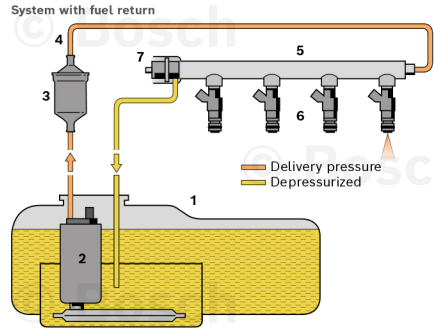
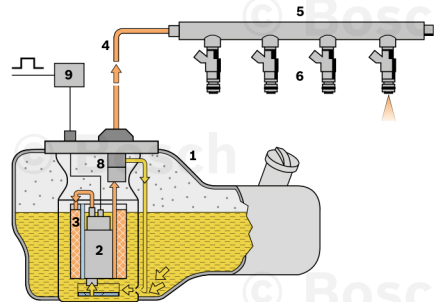


Fuel Supply and Delivery with Manifold-Injection Gasoline Engines

Fuel supply and delivery with manifold injection



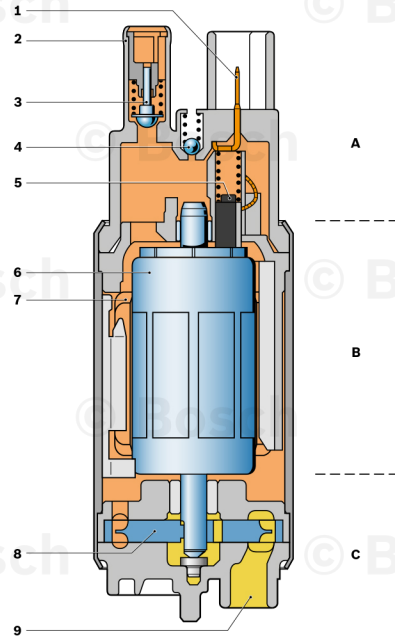
Demand-controlled returnless system



- 1 Fuel tank
- 2 Electric fuel pump
- 3 Fuel filter (outside of the fuel tank or integrated in the fuel-delivery module)
- 4 Pressure line
- 5 Rail

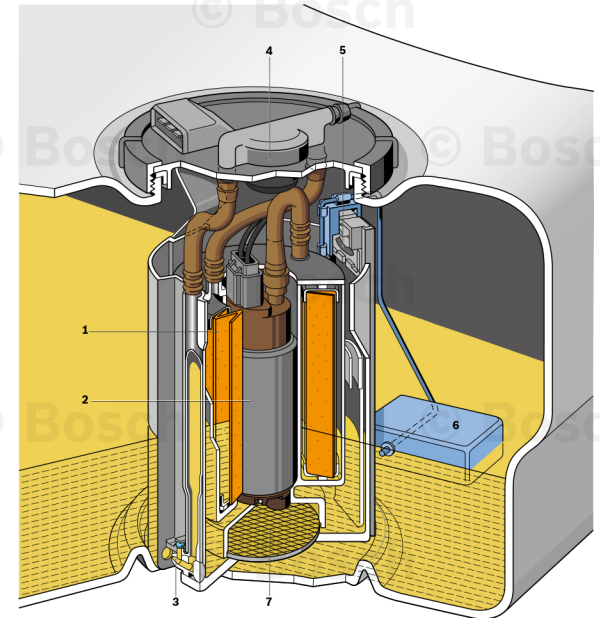
- 6 Fuel injectors
- 7 Pressure regulator
- 8 Pressure-limiting valve and pressure sensor (pressure sensor alternatively in the rail)
- 9 Clock module for controlling the electric fuel pump

Electric fuel-pump design using a flow-type pump as an example



- A Fitting cover
 - B Electric motor
 - C Pump barrel
- 1 Electrical connection
 - 2 Hydraulic connection (fuel outlet)
 - 3 Non-return valve
 - 4 Pressure-limiting valve
 - 5 Commutator with carbon brushes
 - 6 Motor armature with windings which are energized by the commutator
 - 7 Magnet
 - 8 Impeller ring of flow-type pump
 - 9 Hydraulic connection (fuel inlet)

Fuel-delivery module



- 1 Fuel filter
- 2 Electric fuel pump
- 3 Suction-jet pump
- 4 Pressure regulator
- 5 Fuel-level sensor
- 6 Floater
- 7 Prefilter