

### Delphi GDi High Pressure Fuel Pump

Delphi offers a high pressure fuel pump with its gasoline direct injection (GDi) fuel systems. Magneti Marelli is Delphi's GDi pump partner. Delphi and Magneti Marelli pump engineering teams calibrate and validate the Magneti Marelli core pump design to Delphi customer applications. Delphi is system and pump responsible to the customer.

The pump is an engine driven demand control supply pump that features a single-piston, high-content integrated design to provide value and to support a wide range of engine program objectives. It delivers operating pressure from 30 bar to 200 bar. It offers a high flow capability for larger displacement engines.

The Delphi GDi Fuel Pump includes an integrated flow control valve for accurate demand fuel control and an integrated overpressure relief valve.



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#### ► Benefits

- Enables gasoline direct injection systems, which versus conventional port fuel injection systems, offer fuel economy, power, torque and emissions benefits for engine manufacturers
- High fuel flow capability enables rail pressure build-up more quickly for faster start times
- Integrated design offers system cost savings and system mass reduction
- Design options provide packaging flexibility for the vehicle manufacturer
- Integrated over-pressure relief valve reduces system complexity
- Manufactured with corrosion resistant and multi-fuel-capable materials
- Low mass
  - Approximately 600 grams
- Capable of operating with 2-, 3- or 4-lobe cams to provide flexibility for engine design (i.e. number of cylinders)
- Allows high rpm engine operation
  - Up to 7,500 rpm
- Provides fast control valve response time
  - Less than 2 msec.
- Low power consumption
- Low audible noise
- Competitively priced

#### ► Typical Applications

The Delphi GDi High Pressure Fuel Pump is suitable for most homogeneous and stratified combustion gasoline direct injection engine programs. It is compatible with most market-approved fuels including ethanol blends.

#### ► Performance Advantages

Delphi's GDi High Pressure Fuel Pump offers significant mass reduction versus competitive products and excellent packaging flexibility. Its roller follower or tappet cam drive interface designs reduce friction and contribute to fuel economy improvement and greater power.

Delphi's GDi High Pressure Fuel Pump is a single-piston solution capable of very high output which, along with its integrated high content design, provides vehicle manufacturers with superior value. The pump's high flow capability allows application in a wide range of engine configurations.

Delphi can supply a complete GDi system including injectors, fuel rail, engine control module with control algorithms, as well the high pressure fuel pump.

▶ **The Delphi Advantage**

Delphi offers a wide range of advanced gasoline direct injection systems that provide high performance and excellent value. Our technologies are designed to respond optimally to the challenging conditions of the most demanding GDi engine programs.

As a global leader in engine management systems technology, Delphi can help manufacturers meet emissions requirements, improve fuel economy and enhance performance. Delphi is a source for high value solutions and our systems expertise is built into every product. Delphi's flexible engineering approach encourages collaboration. And, Delphi has a thorough understanding of automotive markets around the world and global network of resources.