

Gasoline Injection Valves

Overview, features and benefits

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Bosch injection valves

As the leading fuel delivery developer, Bosch has a range of gasoline injection valves made to the highest original equipment specifications. They are critical to the performance of a modern engine management system, and accuracy is vital for the effective running of the modern engine.

Common terms

- ▶ Injector
- ▶ Injection valve
- ▶ Fuel injector
- ▶ Cold start injector
- ▶ Cold start valve

Common types

- ▶ Piezo for direct injection
- ▶ Electromagnetic for manifold and direct injection
- ▶ Mechanical for manifold injection

- ▶ Original equipment pedigree

- ▶ Provides optimal engine performance, emissions and fuel economy

Function

- ▶ The injection valve sprays a precise quantity of fuel for a predetermined duration at a specific angle
- ▶ The spray is finely controlled and is delivered in the form of an atomised mist
- ▶ This is mixed with the air drawn into the engine
- ▶ The resulting air / fuel mixture is burnt in the engine's combustion chamber to provide power
- ▶ Modern day injectors use an electrical signal to trigger the injector
- ▶ These use electromagnetic solenoids or the very latest technology uses piezo triggering
- ▶ The injection valves are critical components efficient performance

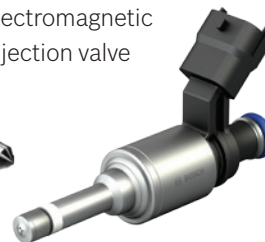
Gasoline Direct Injection (GDI)

Bosch launched its first GDI system in the VW Lupo in 2000. The injectors utilise advanced technology and are mounted directly into the combustion chamber. This type of injection system is becoming common place as it is able to meet the latest emission legislation and satisfy driver requirements in terms of power delivery and economy. The GDI injectors are becoming a common IAM replacement component.

GDI high pressure piezo injection valve



GDI high pressure electromagnetic injection valve



Critical components to ensure the correct performance of the modern engine.