Hydrogen injector for direct injection

For full functionality in various applications

Powertrain and
electrified mobility

- New hydrogen injector for direct injection
- It ensures very stable shot-shot variation also with small injection timings
- To ensure functionality over lifetime, the hydrogen injector for direct injection is equipped with an innovative design to minimize wear
- The layout ensures the full functionality in a wide pressure range

Up to

17 g H_2/s

static flow rate @ 40 bar inlet pressure

Robust

design

to meet the requirements of hydrogen engine applications

Hydrogen injector for port-fuel injection

For different applications with a wide range of flow rates

Powertrain and
electrified mobility

- The hydrogen gas injectors enable a high-precision gas supply to each cylinder in hydrogen engines
- Based on already existing natural gas injector, the multi-purpose gas injector is an evolutionary development of in-series technology
- The new hydrogen injector for port-fuel injection is developed to meet the demands of commercial vehicle market requirements
- Dedicated seat design to ensure minimal leakage over lifetime

Up to

5 g H_2/s

static flow rate @ 7 bar inlet pressure

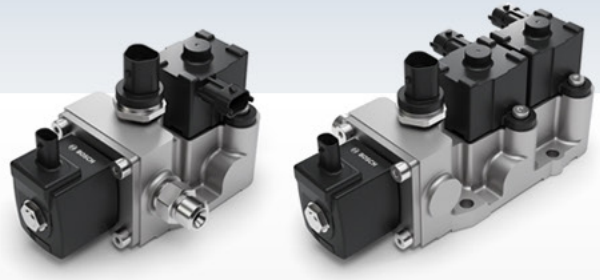
Scalable

design

to meet flow and powertrain package requirements

Hydrogen injection pressure regulator

Ensures a variable pressure level for port-fuel and direct injection applications



Powertrain and
electrified mobility

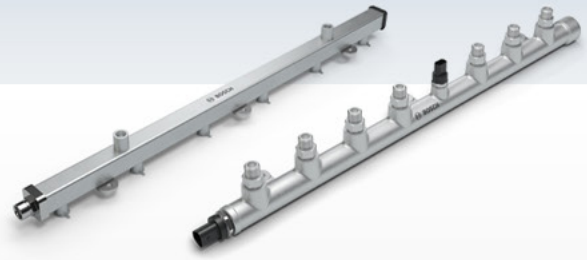
- A compact design solution with integrated proportional valve, system isolation valve, and pressure sensor
- High accuracy and quick response for optimal rail pressure regulation to enable most efficient combustion process
- Modular design with 1 and 2 valve options for variable control strategies
- For ease of adaption to customer-specific designs, the inlet and outlet can be produced with adapters

Up to
9.4 g H_2/s
for a wide range of customer applications

Up to
15 bar (PFI) / 40 bar (DI)
outlet pressure

Hydrogen injection rail

Ensures a robust H_2 distribution in a variety of powertrains



Powertrain and
electrified mobility

- Integration of temperature and pressure sensor
- Compatibility with high variance of existing combustion engines to minimize customer efforts
- Advanced dimensioning to enable minimized pressure losses and optimized pressure flow
- Robust and standardized H_2 sealing and mounting interfaces
- Usage of proven H_2 compatible materials to ensure highest quality

Scalable
design

to enable different package requirements

Up to
15 bar (PFI) / 40 bar (DI)

nominal working pressure