

Short Description

Common Rail Injector LI1



The LI1 injector platform was developed for use in large series of light, medium and heavy duty engines. With its ultra short and slim design and flexible connection dimensions, the compactly-designed injectors ensure maximum freedom in the installation space of the engine. Housing passage diameter of 21 mm or an injector length up to min. 90 mm are possible. The specially designed injectors support effortless replacement of the mechanical nozzle holders and thus compliance with the latest emission standards. All heat-sensitive components are located in the cooled area of the cylinder head, where they are protected against heat stress and wear. For maximum efficiency, the LI1 features a continuous leak-free operation and is configured to ensure minimum control leakage < 15 ml/min. The software-controlled Injection Timing Control (ITC) function enables the smallest amounts of fuel to be metered individually for each injector. It ensures constant injection quantities per injector over the entire service life. The injector platform covers a large spray-hole flow range for engines from 1 to 2.7 litres of displacement per cylinder.

Features

- Smart platform concept for mass production: identically constructed precision components
- Injection timing control (ITC) function can be activated via software module, no additional sensors or connections on the injector are necessary
- Maximum flexibility through in-house production of nozzle variants
- Reduced pressure loss in the injector
- Different injection rates possible thanks to a 3-way valve
- Very short spraying distances (at least 100 μ s), up to seven injections possible (digital rateshaping)
- Extreme robustness against aggressive fuels (compatible with EN590, Jet A1 fuels, B10 S10 / B30, SS 155435, ASTM)
- Robust, standardised, E1 electrical interface (up to 30 g sinusoidal vibration load) for up to 100 plug cycles
- Reliable in the harshest environments according to VDI 3838, ISO 10816-6, protection class IP6K9K
- Euro VI, US 10, EU Stage V, US EPA Tier 4f-compatible

Technical Data

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Technical Information

System pressure	250 – 2,500 bar
Nozzle diameter	7 mm
Hydraulic flow rate	400 – 1,200 ml/30sec
Number of injections	7
Min. injection separation	100 μ s
Permanent leakage	0
Control leakage	< 15 ml/min
Injector configuration	Side Feed Top Feed
Weight	~ 0.300 kg
Service life on-highway	Medium Duty: 1 million km Heavy Duty: 1.6 million km
Service life off-highway	Medium Duty: 15,000 hours Heavy Duty: 25,000 hours
Number of nozzle holes	7 – 12
K factor	0 – 5
HE rounding degree	15 – 35%
Min. opening pressure for engine start	210 bar
Machine's environment	-30°C to +125°C
Permissible vibrations according to	VDI 3838/ISO 10816-6

Applications: On-Highway, Agriculture/Forestry, Civil Engineering, Marine, Power Generation

