FPT
POWERTRAIN TECHNOLOGIES

HIGH PRESSURE PUMP

CHOOSING OUR GENUINE PARTS

MYFPT
BY CUSTOMER SERVICE

GENUINE PARTS

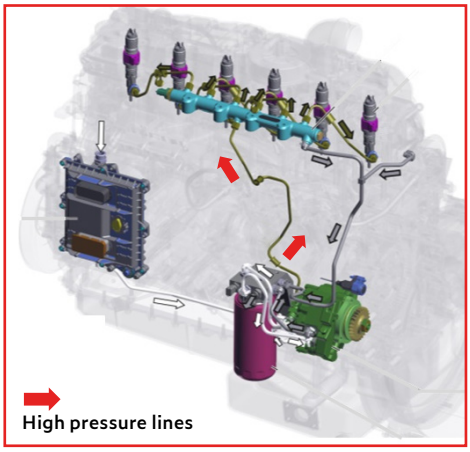
How the High Pressure Pump works

High fuel injection pressures are crucial for minimizing particulate emissions. The advent of Common Rail systems in diesel engines has made high-pressure fuel pumps an essential component of the fuel supply system. This system comprises a low-pressure circuit and a high-pressure circuit, both working together to decrease particulate emissions.

In the low-pressure circuit, an electric fuel pump draws fuel from the tank and delivers it to the high-pressure pump. This high-pressure pump is responsible for generating the required pressure, while the injectors regulate the fuel quantity based on their opening duration. Fuel is consistently available at the injector inlet at the injection pressure specified by the Engine Control Unit (ECU).

The operating pressure is controlled in the following ways:
- Electronically, via a solenoid valve attached to the pump body and managed by the control unit
- Through a Pressure Control Valve (PCV) installed on the rail

The high-pressure circuit comprises the following components:
- Lines connecting the high-pressure pump outlet to the common rail
- The common rail itself
- Supply lines for the common rail injectors


High pressure lines

The system is completed by a return circuit, which redirects the surplus fuel flow from the common rail and injectors back to the tank.

Main functions:

1. FUEL DELIVERY AT OPTIMUM PRESSURE LEVEL
2. ALLOWS FOR MULTIPLE INJECTIONS PER CYCLE
3. CO_2, NO_x, REDUCTION IN PM EMISSIONS

MAXIMUM ENGINE PERFORMANCE WHILE MINIMIZING FUEL CONSUMPTION AND EMISSIONS

Performance of Genuine High Pressure Pumps

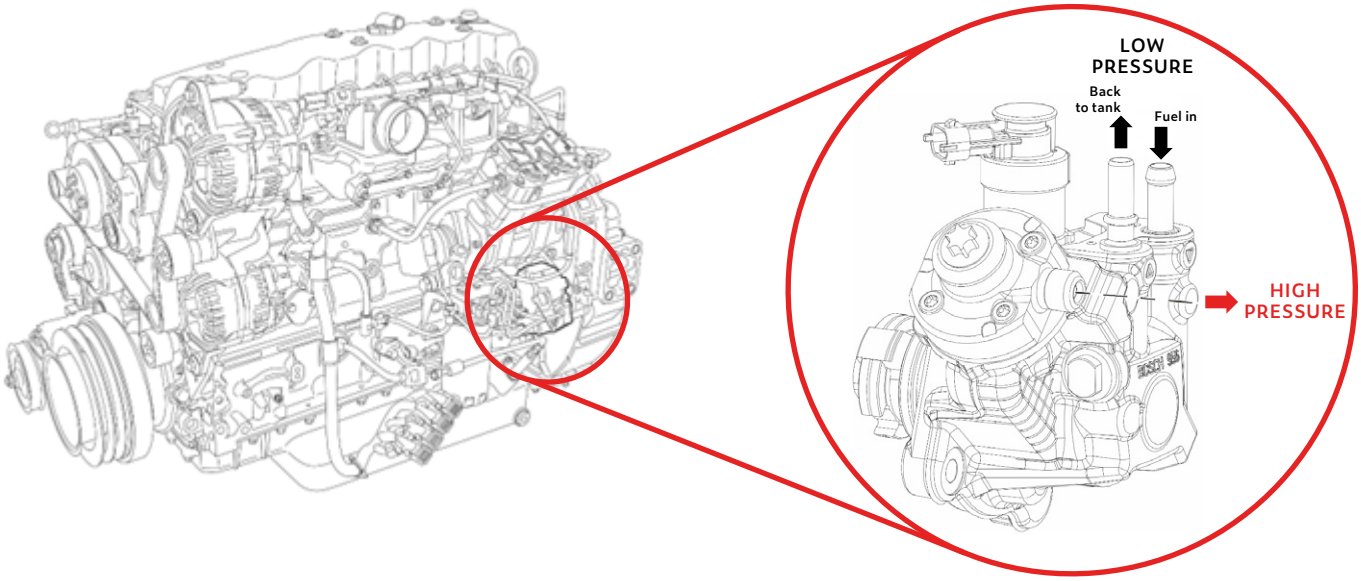
In order to generate the extremely high operating pressure, a mechanical pump with radial or inline pistons is used, powered by the engine's timing belt.

A fuel pump draws fuel from the tank and delivers it to the high-pressure pump. Regardless of its type, the high-pressure pump is responsible for compressing the fuel to the pressure needed by the injectors and dispatching it under pressure into the common rail. The fuel pump is equipped with a flow regulator, controlled by the control unit, which determines the amount of fuel to be sent to the high-pressure pump.

Since the pressure increase is independent of the engine speed, the required pressure is available even at low engine speeds. Most common rail systems are equipped with radial piston pumps (Radialjet):

- the supply pressure to the rail is regulated to between 250 bar and 2,000 bar by the electronic control unit, via the solenoid valve of the pressure regulator. The pump is lubricated and cooled by the fuel itself;
- removal and reinstallation times for the Radialjet pump on the engine is significantly reduced compared to traditional injection pumps.

HIGH-PRESSURE RADIAL PUMP



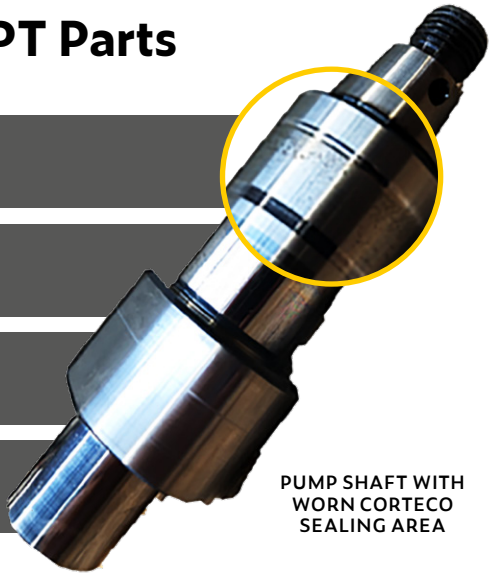
MAINTENANCE-FREE HIGH PRESSURE

Why choose a Genuine FPT High Pressure Pump?

- HIGH ENGINE PERFORMANCE AND FUEL SAVINGS
- HIGH EFFICIENCY AT LOW SPEEDS
- SMOOTH RIDE, DRIVING COMFORT AND RELIABILITY

Potential risks of not using Genuine FPT Parts

- INCREASED FUEL CONSUMPTION
- PRODUCT NOT GUARANTEED FOR FPT ENGINES
- POSSIBLE ISSUES WITH ENGINE STARTING
- LOSS OF POWER AND REDUCED ENGINE LIFE



PUMP SHAFT WITH WORN CORTECO SEALING AREA

Leakage of oil or fuel and inadequate cleanliness can negatively impact performance and potentially damage other components.

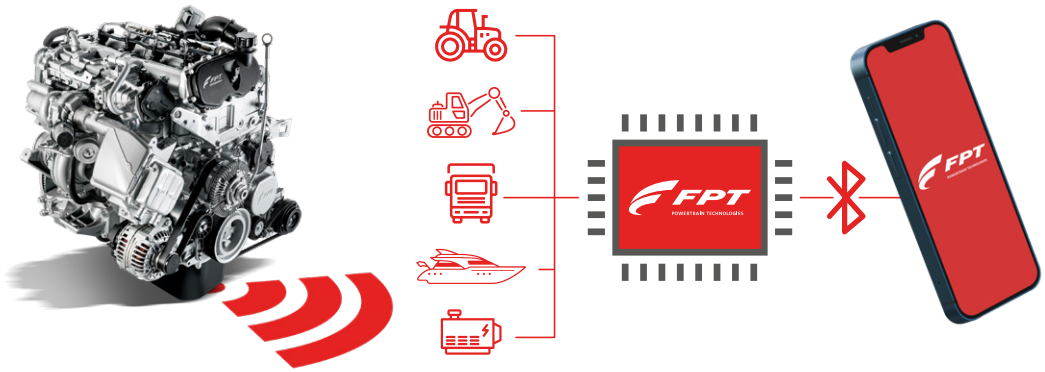
ONLY GENUINE PARTS ENSURE MAXIMUM SERVICE LIFE AND PROVIDE REDUCTIONS IN TCO

Get the most from your High Pressure Pump

Daily use of the vehicle necessitates reliable performance. This is why FPT builds its engines to the highest standards, complying with the latest environmental and legal requirements. The heart of this technology is the fuel-injection system, which ensures that the engine operates at optimal efficiency. Specifically, the high-pressure pump, with its high-tech components, guarantees a steady flow of fuel at the high pressures for which it was designed. The moving parts must function reliably at all temperatures to prevent leakage of oil and, more critically, fuel.

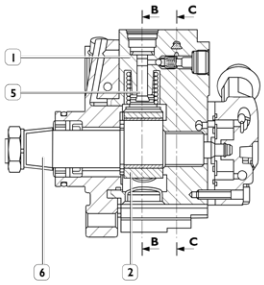
Only original FPT high-pressure pumps offer the best performance in terms of power output, constant high torque values, and maximum driving comfort, while minimizing the carbon footprint in line with our commitment to sustainability.

Engines are continually evolving, and so is FPT Industrial: always being one step ahead means guiding our customers towards an innovative digital experience through a vast range of Connected Services. Alongside our Genuine Parts offering, it is also possible to incorporate telematic services to support your mission. This way, you can prevent premature wear and damage, ensuring maximum engine performance and minimum emissions.



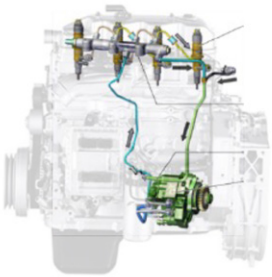
If you are looking to maintain your vehicle to the highest standards, always opt for original FPT high-pressure pumps. They are a crucial component of the engine that ensures optimal performance.

DESIGN



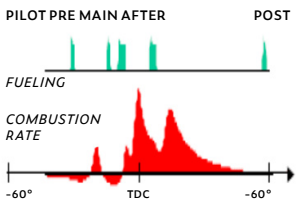
Full compliance with technical specifications

RELIABILITY



Stringent quality checks ensure the necessary functionality and service life

PERFORMANCE



Materials and technology that meet strict quality standards for the best engine efficiency

Benefits of Genuine Parts

FPT is the sole supplier that can guarantee the original quality and performance of your engine. By using Genuine parts, manufactured by the same people who built your engine, you ensure consistent, long-term performance and value for your investment.

- SUITABLE FOR THE MAINTENANCE INTERVALS SPECIFIED BY FPT
- PERFECT FIT FOR THE SYSTEM EFFICIENCY OF THE ENTIRE ENGINE
- FULLY COMPLIES WITH FPT SPECIFICATIONS
- ALL GASKETS SUPPLIED HAVE ACCURATE PROFILES TO PROVIDE A PERFECT SEAL
- MAXIMIZED PRODUCTIVITY BY REDUCING TURNAROUND TIME AT DEALER WORKSHOP
- ANTI-COUNTERFEITING TEXT ON LABEL
- COMPLETE PRODUCT RANGE FOR THE ENTIRE FLEET
- 12 MONTHS WARRANTY

No matter your location, you can access a wide range of Genuine Parts for your engine. This means enhanced performance and minimal downtime in order to maintain the highest levels of productivity.

TOP QUALITY AND PERFORMANCE ARE ACHIEVED ONLY BY USING GENUINE FPT PARTS

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24/7 CARE & ASSISTANCE

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for any further information

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