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VEPER® introduces new engines with Common rail injection

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New VEPER® L and XL models will be equipped with new Common rail engines. Common rail direct fuel injection is a direct fuel injection system for diesel engines. With new engines VEPER® L and XL models, will not only meet the new emissions standards, they will also have more power, torque and capabilities.

Solenoid or piezoelectric valves make possible fine electronic control over the fuel injection time and quantity, and the higher pressure that the common rail technology makes available provides better fuel atomization, higher torque and power.

To lower engine noise, the engine's electronic control unit can inject a small amount of diesel just before the main injection event (*pilot* injection), thus reducing its explosiveness and vibration.

New VEPER® L and XL models will be equipped with Common rail technology with five and eight injections per stroke and injection pressure up to 2500 bar.

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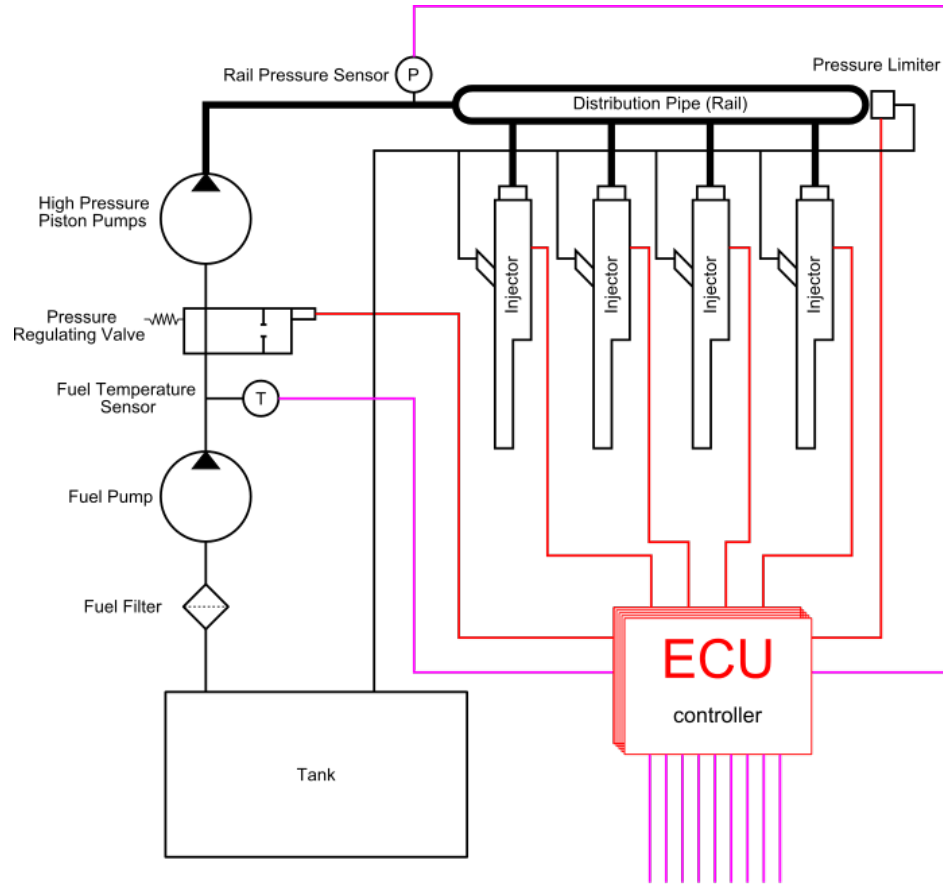


Diagram of common rail technology

VEPER® skid steers with Common rail engines require a very short to no heating-up time, depending on the ambient temperature, and produce lower engine noise and fuel consumption than older engine injection systems. To maximize performance and reliability, all VEPER® models in the L and XL Series feature new electronic engine control.

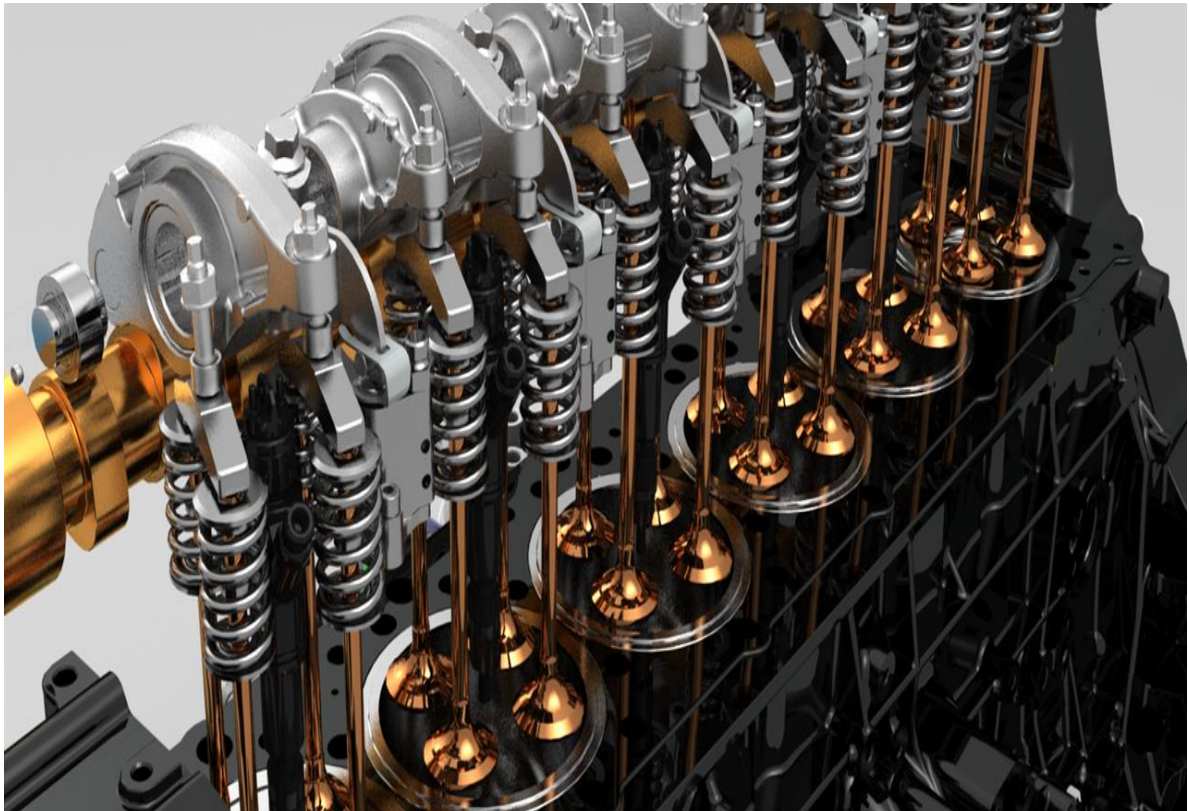
CAN-messaging capabilities, allow the operator to monitor and store diagnostic data points, including hydraulic oil temperature, fuel rail pressure and fuel tank level, engine RPM engine coolant temperature and more.



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VEPER® skid steer loaders will be equipped with Common rail engines from FPT (Fiat Powertrain Technologies). FPT has been a market leader in the development of several key diesel technologies. Most notably of which has been the invention of the high pressure Common Rail fuel system.

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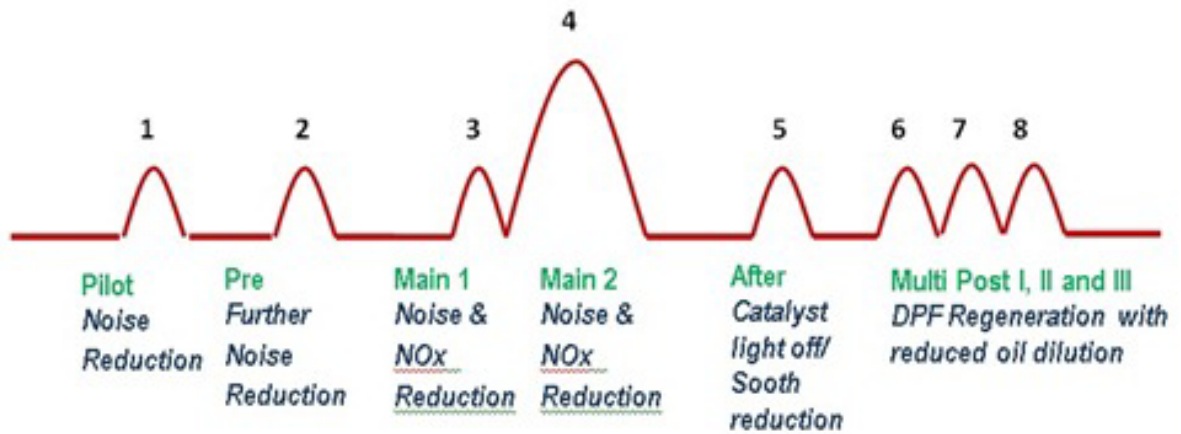
FPT multivalve system for VEPER® skid steer engines

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FPT engines adopt the most advanced technologies available on the market today: innovative architecture, multi-valve systems, turbo chargers with fixed and variable geometry, high pressure Common Rail injection systems and unit injectors with electronic control

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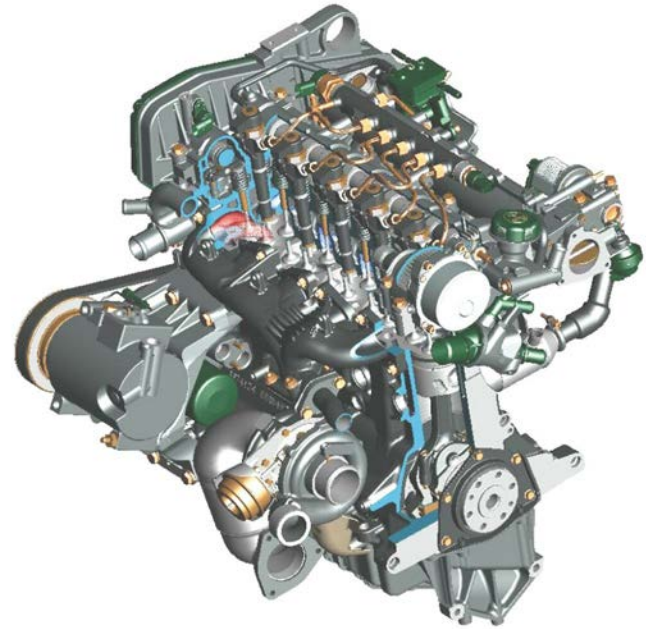
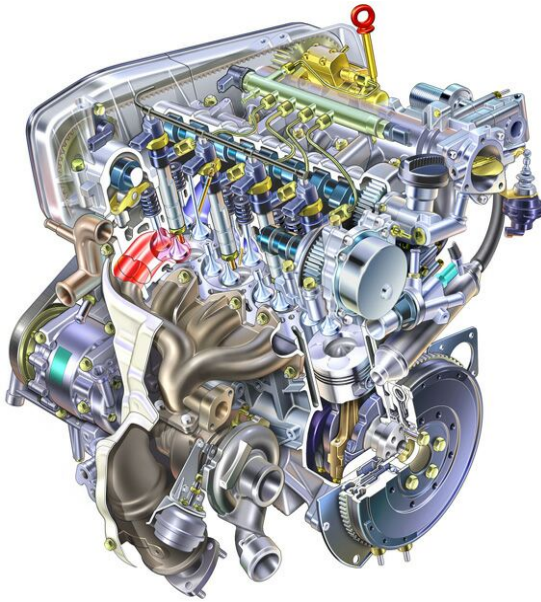
Multi injections system in VEPER® skid steers engines produced by FPT

As in automotive engineering VEPER® skid steer will use a multi-valve system or multivalve engines from FPT. A multi-valve engine has better breathing and may be able to operate at higher pressure and higher RPM than a two-valve engine, delivering more torque and power.



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VEPER® Skid steers will have two displacement engine models. VEPER® L series will be equipped with 1.6 liter with 4 valves per cylinder and VEPER® XL series will be equipped with 2.4 liter with 4 valves per cylinders.



FPT 1.6 liter engine in VEPER® L skid steer

FPT 2.4 liter engine in VEPER® XL skid steer

All FPT engines used in VEPER® skid steers use BOSCH Common rail injection system. Bosch launched the first common rail system in 1997. The system is named after the shared high-pressure reservoir (common rail) that supplies all the cylinders with fuel. With conventional diesel injection systems, the fuel pressure has to be generated individually for each injection.

Common rail systems have a modular design. Each system consists of a high-pressure pump, injectors, a rail, and an electronic control unit.

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Advantages of Common rail system used in VEPER® skid steer loaders:

- ⇒ Fuel pressure available on demand
- ⇒ Higher injection pressures and finer atomization of fuel
- ⇒ Injection pressure created independent of engine speed
- ⇒ Multiple injections per cylinder combustion are possible.

Benefits of Common rail system used in VEPER® skid steer loaders:

- ⇒ Reduction of overall exhaust emissions
- ⇒ Reduction of particulate emissions
- ⇒ Reduction of noise emissions
- ⇒ Improved fuel efficiency
- ⇒ Higher performance

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Bosch Common rail system

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VEPER® skid steer series will have Automatic Management Control of machine. New VEPER® L and VEPER® XL series with FPT engines will have aggressive performance with fuel efficiency. All new VEPER® models from 2017. year will have these options:

Hand and Foot Throttles

Hand and foot throttles allow the operator to match engine speed to the task. The hand throttle is ideal for jobs requiring constant engine speed such as cold planing, trenching or snow blowing. The foot throttle lets the operator vary engine speed and minimize fuel consumption for other tasks such as load and carry, truck loading, grading and dozing.

Electronic Torque Management

The Electronic Torque Management system maximizes power to the ground and prevents the engine from stalling in tough digging and dozing applications for maximum productivity. The system allows part throttle operation which provides smoother machine operation and reduces fuel consumption

Selectable Work Speed Control

The optional Selectable Work Speed Control lets you select the ground speed that is best suited for the application. This feature is useful in operations such as trenching and cold planing that require precise machine control at relatively slow and constant speeds.

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