

FACT SHEET

Engine D11K460, EU6SCR



The D11K460 is a 460 hp, 10,8-litre, in-line, six-cylinder diesel engine equipped with an overhead camshaft, four valves per cylinder and common rail fuel injection. The engine meets the Euro 6 exhaust emissions requirements.

The D11K is designed for long-haul and distribution operations. It is based on a robust and dependable design with an overhead camshaft, four valves per cylinder and precisely controlled common rail fuel injection.

The timing mechanism is located at the rear of the engine, which results in less vibration and permits the fitting of a rear-mounted power take-off.

The D11K is a low-emission engine in terms of both exhaust gases and noise. Euro 6 legislation reduces nitrogen oxide (NO_x) by 80% and particulate emissions by 50% compared with Euro 5. In order to meet legislative requirements, Volvo Trucks has developed an after-treatment system that, in the silencer, combines a Diesel Oxidation Catalyst (DOC), a Diesel Particulate Filter (DPF), a Selective Catalytic Reduction unit (SCR) and an Ammonia Slip Catalyst (ASC).

The D11K can be equipped with VEB (Volvo Engine Brake) and EPG (Exhaust Pressure Governor). These systems provide extremely high braking effect, further improving safety and reducing wear on the wheel brakes.

FEATURES AND BENEFITS

- Maximum torque within a broad rev range.
- Fuel efficient.
- Low-emission variant, Euro 6.
- Common rail fuel injection.
- Extremely high engine braking effect with VEB and EPG (option).
- Rear-mounted power take-off with high power output (option).

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Fuel efficient common rail system

The D11K is equipped with common rail fuel injection that provides high injection pressure, up to 2400 bar, and has the capability of multiple injections. The result is lower combustion noise and reduced emissions.

The combustion chamber and inlet manifold are designed for optimum combustion. The gas-fill ratio is extremely high, which contributes to the high efficiency.

The design creates a fuel-efficient engine with high power and immense torque within a broad rev range. This gives the D11K excellent driveability.

Fulfilling the Euro 6 standard

The additional components in the after-treatment system serve two main purposes: to improve gas flow and make sure the exhaust gases reach the after-treatment system at optimum temperature, thus ensuring that the emission level is not exceeded.

The Diesel Oxidation Catalyst (DOC) produces the nitrogen dioxide (NO₂) necessary for the Diesel Particulate Filter (DPF) to efficiently combust the particulates. In cold conditions, it also provides the heat needed for regeneration.

The Diesel Particulate Filter (DPF) collects particulate matter (PM) until it is automatically burned off during regeneration.

In the mixing zone in the Selective Catalytic Reduction unit (SCR), the exhaust gases are sprayed with AdBlue. When they reach the catalyst, the nitrogen oxides (NO_x) are efficiently transformed into harmless nitrogen gas and water.

Low noise emission at idling

The D11K meets the high restriction for noise level in the Euro6 legislation. The crankshaft and camshaft feature hydraulic vibration dampers that minimize noise and vibrations. Pre-injection of fuel is used to further dampen noise at idling. The idling speed is lowered to 550 rpm which contributes to low noise level while at standstill.

Crankcase ventilation

The D11K offers a choice of two types of closed crankcase ventilation. CCV-C is recommended down to -25 degrees Celsius. CCV-OX is only recommended for arctic markets.

Both system promotes an extremely clean and environmentally compatible engine.

Timing and power take-off at the rear

The engine timing mechanism is located at the rear and drives the power steering pump, oil pump, fuel feed pump and air compressor. It is a compact, quiet and thoroughly sealed design that saves weight. With the timing mechanism at the rear, the engine's cooling is also improved since the flow of incoming cooling air is not obstructed.

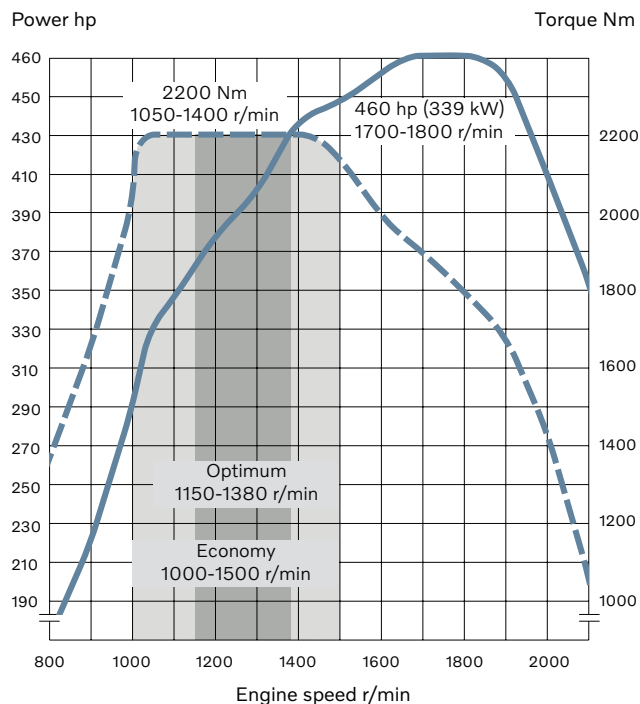
The D11K can be equipped with a power take-off designed for propshaft operation or direct-mounted hydraulic pumps. PTO mounting on the engine's flywheel results in a dependable design and permits high torque levels, up to 1,000 Nm in continuous operation.

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SPECIFICATION

Type designation D11K460, EU6SCR
Max power output at 1700–1800 r/min 460 hp (339 kW)
Max revs 2150 r/min
Max torque at 1050–1400 r/min 2200 Nm
No. of cylinders 6
Bore 123 mm
Stroke 152 mm
Displacement 10.8 dm³
Compression ratio 17:1
Exhaust brake effect (EPG) at 2400 r/min 160 kW
Engine braking effect (VEB) at 2400 r/min 290 kW
Economy revs range 1000–1500 r/min
Optimum rev range 1150–1380 r/min
Oil-change volume incl. oil filter approx. 36 l
Oil filters 2 full-flow, 1 bypass
Cooling system, total volume approx. 36 l
Dry weight (base engine) approx. 975 kg
Exhaust after treatment system, weight approx. 130 kg



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