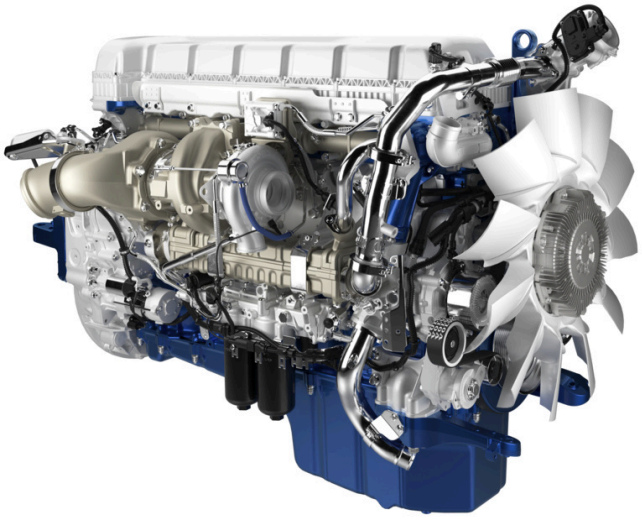
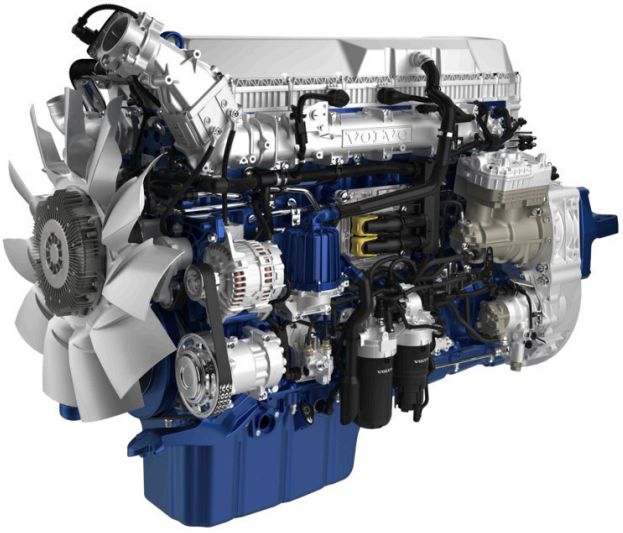
VOLVO

FACT SHEET

ENGINE VERSION

D13T460A TURBO-TC





The D13T460A, TURBO-TC is a 460 hp, 12.8 litres, in-line, six-cylinder diesel engine equipped with an overhead camshaft, four valves per cylinder and common rail fuel injection. The turbocompound unit converts exhaust gases to torque via a mechanic coupling, giving an extra boost in the lower rev ranges. The engine meets the Euro 6 exhaust emissions requirements.

The D13, TURBO-TC is based on a robust and dependable design with an overhead camshaft, four valves per cylinder and precisely controlled electronic 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 D13, TURBO-TC is a low-emission engine in terms of both exhaust gases and noise. The aftertreatment system, 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). This engine is also equipped with cooled Exhaust Gas Recirculation (EGR).

The D13, TURBO-TC can be equipped with VEB+ (Volvo Engine Brake) and EPG (Exhaust Pressure Governor). These systems provide high braking effect, further improving safety and reducing wear on the wheel brakes.

FEATURES AND BENEFITS

- Maximum torque within a broad rev range.
- High torque at low revs.
- Allow faster rear axle ratios.
- Fuel-efficient.
- High engine braking effect with VEB+ and EPG (option).
- Rear-mounted power take-off with high power output (option).

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D13T460A TURBO-TC

Efficient combustion for excellent driveability

Piston with wave pattern

The D13, TURBO-TC is equipped with common rail fuel injection that provides high injection pressure. The combustion chambers with wave pistons and inlet manifold are designed for optimum combustion. The gas-fill ratio is high, which contributes to the high efficiency.

The design creates a fuel-efficient engine with high power and high torque. This gives the D13K, TURBO-TC excellent driveability.

The torque curve of the D13, TURBO-TC engine is providing higher torque at lower revs.

Fulfilling the Euro 6 standard

The components in the aftertreatment system serve two main purposes: To improve gas flow and make sure that the exhaust gases reach the aftertreatment system at optimum temperature, thus ensuring the emission level.

The cooled Exhaust Gas Recirculation (EGR) recirculates a small portion of the exhaust back to the charge air in order to reduce the amount of NO_X.

The Diesel Oxidation Catalyst (DOC) produces the nitrogen dioxide (NO_2) 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 D13, TURBO-TC meets the relevant noise emission requirements. The crankshaft and camshaft feature hydraulic vibration dampers that minimise noise and vibrations. Pre-injection of fuel is used to further dampen noise at idling.

Crankcase ventilation

The D13K, TURBO-TC 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.

Power take-off at the rear

The D13, TURBO-TC can be equipped with a power take-off designed for propshaft operation or direct-mounted hydraulic pumps (also clutchable). 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.

Turbocompound

The D13, TURBO-TC is equipped with a turbocompound unit that is mechanically coupled to the crankshaft. This combined with a faster rear axle ratio gives a superior fuel economy and a more comfortable ride due to lower revs of the engine.

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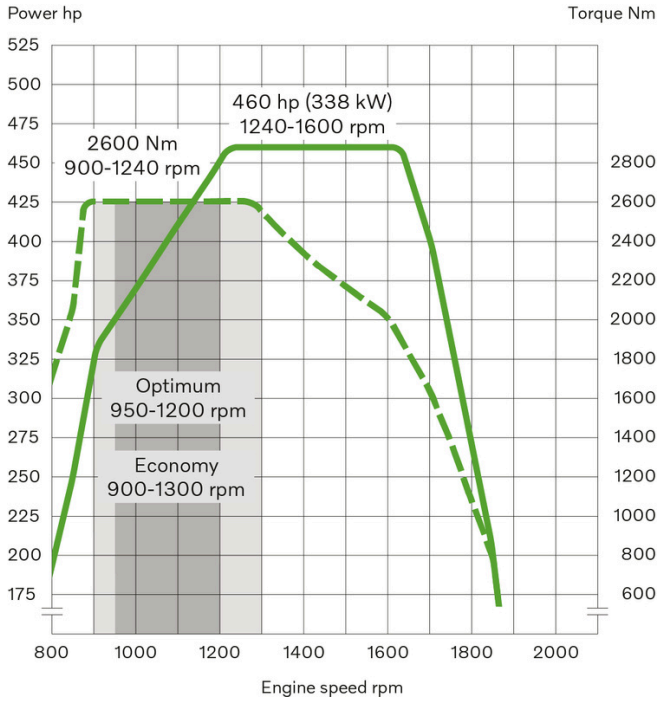
D13T460A TURBO-TC

SPECIFICATION

Type designation	D13T460A, TURBO-TC
Max power output at 1240–1600 rpm	460 hp (338 kW)
Max revs	1900 rpm
Max torque at 900–1240 rpm	2600 Nm
No. of cylinders	6
Bore	131 mm
Stroke	158 mm
Displacement	12.8 dm3
Compression ratio	18.0:1
Exhaust brake effect (EPGC) at 2300 rpm	150 kW
Engine braking effect (VEB+) at 2300 rpm	435 kW
Economy revs range	900–1300 rpm
Optimum rev range	950–1200 rpm
Oil-change volume incl. oil filter	approx. 35 l
Oil filters	2 full-flow
Cooling system, total volume	approx. 26 l
Dry weight (base engine)	approx. 1185 kg
Exhaust aftertreatment system, weight	approx. 120 kg



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