

VOLVO PENTA INDUSTRIAL DIESEL

TD520VE

81 kW (110 hp) crankshaft power acc. to ISO 3046

The TD520VE is a powerful, reliable and economical Versatile Diesel Engine.

Durability & reliability

Designed for easiest, fastest and most economical installation. Well-balanced to produce smooth and vibration-free operation with low noise level.

To maintain a controlled working temperature in cylinders and combustion chambers, the engine is equipped with piston cooling.

Operational economy

The state of the art, high-tech injection and charging system with low internal losses contributes to excellent combustion and low fuel consumption.

The TD520VE complies with Stage 1 and EPA/CARB Tier 1 emission regulations

Easy service & maintenance

Modern injection system, integrated oil cooler and all service points located on one side provides best possible access in an installation. Replaceable cylinder liners valve guides and valve seats gives lower service and repair costs for the customer. Quality Volvo Penta support is available in more than 100 countries all over the world.

Technical description:

Engine and block

- Optimized cast iron cylinder block with optimum distribution of forces
- Piston cooling for low piston temperature and reduced ring temperature
- Drop forged steel connecting rods
- Crankshaft hardened bearing surfaces and fillets for moderate load on main and big-end bearings
- Keystone top compression rings for long service life
- Replaceable valve guides and valve seats
- PTO positions at flywheel end
- Lift eyelets
- Flywheel housing with connection acc to SAE 2
- Flywheel for flexible coupling and friction clutch

Lubrication system

- Full flow disposable spin-on oil filter, for extra high filtration
- Rotary displacement oil pump driven by the crankshaft
- Deep centre oil sump
- Oil filler on valve cover
- Oil dipstick, right side, front
- Integrated full flow oil cooler, side-mounted

Fuel system

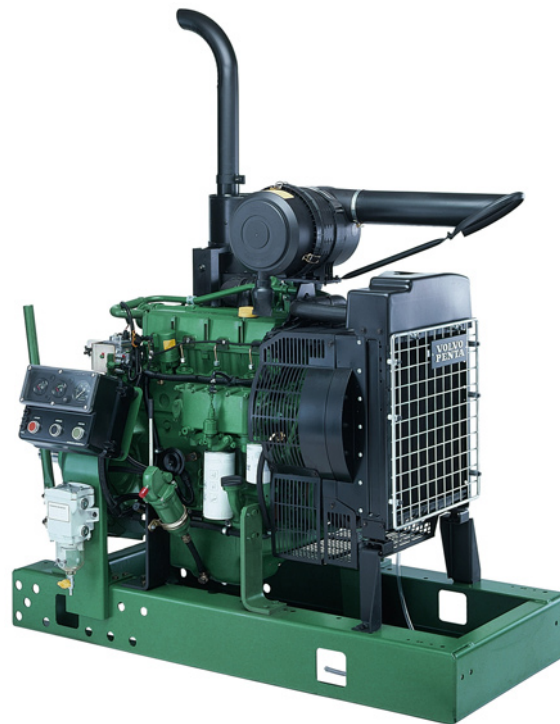
- Six hole fuel injection nozzles
- Direct injection unit pumps. Mechanical governor
- Heavy duty fuel prefilter with water separator
- Belt driven rotary low-pressure fuel pump
- Fine fuel filter of disposable type
- Fuel shut-off solenoid, electrically operated, 12 V

Intake and exhaust system

- Turbo charger
 - Closed crankcase ventilation
- ### Cooling system
- Belt driven, maintenance-free coolant pump with high degree of efficiency
 - Efficient cooling with accurate coolant control through a water distribution duct in the cylinder block. Reliable thermostat with minimum pressure drop
 - Cooling water pipe, inlet and outlet
 - Fan hub
 - Puller fan, 470mm

Electrical system

- 12V electrical system incl. sensors
- Alternator 14V / 55A
- Starter motor, Bosch, 3.1 kW / 12 V, single pole



Features

- Power Pac configuration
- Built in reliability and durability features
- High power to weight ratio
- Emission compliant, EU Stage 1, EPA/CARB Tier 1
- Noise optimized engine design
- A selection of optional equipment

TD520VE

Power Pac equipment

Lubrication system

- Oil drain pump

Fuel system

- Heavy duty fuel prefilter
- Fuel hand pump

Intake and exhaust system

- Air filter
- Silencer

Cooling system

- Radiator guard
- Expansion tank

Control system

- Speed control

Electrical system

- Cable harness
- Instrument panel, 12V

Miscellaneous

- Base frame

Optional equipment

Engine

- Additional cranshaft pulleys
- Friction clutch

Lubrication system

- Oil filling on crank case

Fuel system

- Fuel temperature switch

Electrical system

- Alarm sparator / Fault indication

Miscellaneous

- Coolant preheater
- Tool kit

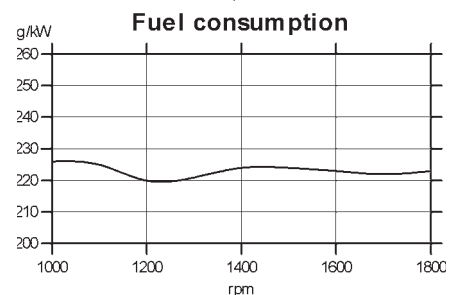
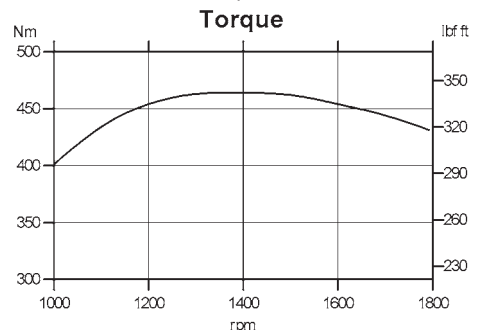
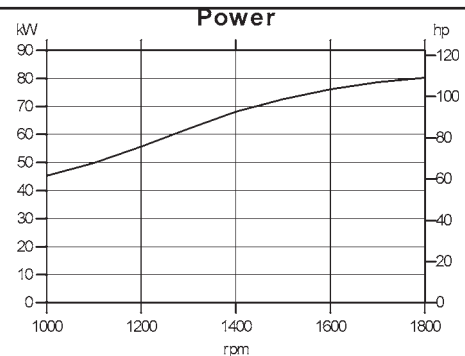
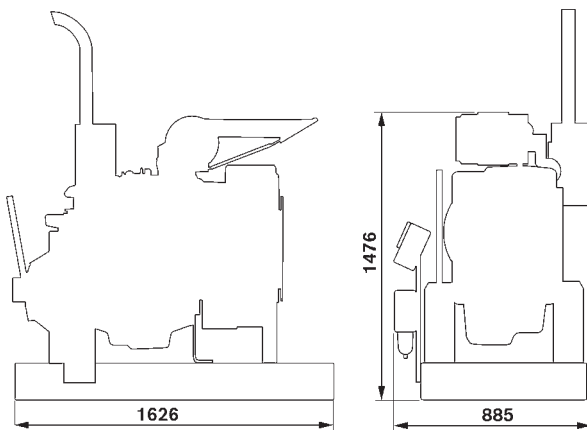
Technical Data

Engine designation	TD520VE
ICFN net power at 1800rpm with fan, kW (hp).....	81 (110)
Max Torque, Nm (lbf ft)	462 (341)
Displacement, l (in ³).....	4.76 (290)
Number of cylinders	4
Bore/stroke, mm (in.).....	108/130 (4.25/5.12)
Compression ratio	18.4:1
Dry weight, kg (lb).....	725 (1598)

The engine performance corresponds to ISO 3046, BS 5514 and DIN 6271. The technical data applies to an engine without cooling fan and operating on a fuel with calorific value of 42.7 MJ/kg (18360 BTU/lb) and a density of 0.84 kg/litre (7.01 lb/US gal, 8.42 lb/Imp gal), also where this involves a deviation from the standards.

Dimension TD520VE

Not for installation



Note! Not all models, standard equipment and accessories are available in all countries. All specifications are subject to change without notice. The engine illustrated may not be entirely identical to production standard engines.

Power Standards

The engine performance corresponds to ISO 3046, BS 5514 and DIN 6271. The technical data applies to an engine without cooling fan and operating on a fuel with calorific value of 42.7 MJ/kg (18360 BTU/lb) and a density of 0.84 kg/litre (7.01 lb/US gal, 8.42 lb/Imp gal), also where this involves a deviation from the standards.

Rating Guideline

IFN Power rating corresponds to ISO Overload Power. It is intended for applications where intermittent power is utilized less than 1 hour within any period of 12 hours of continuous operation. The average load factor must not exceed the continuous rating. ICFN Power rating corresponds to ISO Standard Power for con-

tinuous operation. It is intended for constant load applications with uninterrupted service at full load for extended periods of time.

Derating

The engine may be operated up to 1000 m altitude and 40°C ambient air temperature without derating. For operation at higher altitudes and temperatures the power should be derated according to the following factors:

Altitude derating factor < 3000 m	4 % / 500 m
Altitude derating factor > 3000 m	6 % / 500 m
Ambient temperature derating factor	2 % / 5 °C
Humidity	No derating

VOLVO PENTA

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