

# TCD 2010

The Engine for Construction Equipment.  
50 – 85 kW | 67 – 114 hp at 2600 rpm



The engine company.



## Engine description

<b>Cooling system:</b>	Water-cooled, water circulation pump driven by V-belt, thermostat and integrated bypass system.
<b>Crankcase:</b>	Ribbed, thin-wall grey cast iron.
<b>Crankcase breather:</b>	Closed-circuit system.
<b>Cylinder head:</b>	Cast iron cross flow cylinder head with separate aluminum inlet manifold.
<b>Valve arrangement/ Timing:</b>	Overhead valves in cylinder head, two valve per cylinder, actuated via rocker arms, push rods and hydraulic tappets, driven by low-noise helical cut gears and camshaft.
<b>Charging:</b>	One turbo charger on TD 2010 plus charge air cooling on TCD 2010.
<b>Piston:</b>	Three-ring piston, two compressions rings and one oil scraper ring.
<b>Piston cooling:</b>	Oil jet.
<b>Connecting rod:</b>	Drop-forged steel rod, fracture split.
<b>Crankshaft and big end bearings:</b>	Bi-metal shell bearings.
<b>Crankshaft:</b>	Casted, made from high grade SG iron with cast-on counterweights, fillet-rolled.
<b>Camshaft:</b>	Chilled cast iron.
<b>Lubrication system:</b>	Gear driven lubricating oil pump.
<b>Lube oil cooler:</b>	Internally arranged water-cooled.
<b>Lube oil filter:</b>	Full flow spin-on cartridge filter.
<b>Fuel injection system:</b>	Direct-injection.
<b>Injection nozzle:</b>	Multi hole nozzle.
<b>Injection pump/ Governor:</b>	Rotary fuel injection pump, fixed and variable speed, mechanical governing.
<b>Fuel lift pump:</b>	Diaphragm pump.
<b>Fuel filter:</b>	Replaceable cartridge with water trap.
<b>Alternator:</b>	Three-phase alternator, 14 V / 50 A (Standard)
<b>Starter motor:</b>	12 V / 2.3 kW
<b>Options:</b>	Intake manifold connections, exhaust manifolds connections, hydraulic pumps drives, engine mounts, multi oil pan drains, dipsticks, SAE 4/5 flywheel housings, fly wheels, oil filter position horizontal, vertical and remote, oil filler in cylinder head cover and low level fill on side of crankcase, motor electric 12 V and 24 V, electrical fuel lift pump, electronic governing.

# Characteristics

4 cylinder in-line engines turbocharging and charge air-cooling | Water cooled | Compact engine design | Advanced fuel injection and combustion system | Full line customized options | Cold starting ability for extreme climatic conditions | Full power at flywheel end for axial or radial drives | Two optional PTOs from gear end cover

## Your benefits

- Compact engine, for low cost and space saving installations.
- Competitive power to weight ratio.
- Low exhaust emissions meeting EU-Nonroad 2004/26/ EU Stage III B and US-EPA Tier 4 interim Nonroad.
- Simple design with high reliability.
- Long maintenance intervals reducing after sales cost for your customers.

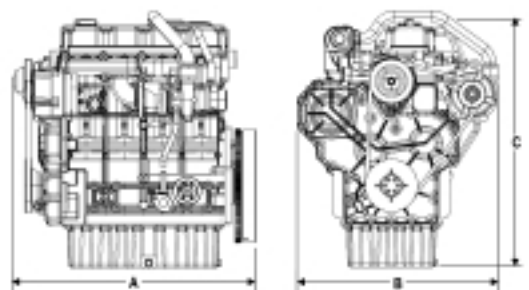
Engine model		TD 2010 L4	TCD 2010 L4
Number of cylinders		4	4
Bore/stroke	mm   inch	98/120   3.86/4.72	98/120   3.86/4.72
Swept volume	l   cu inch	3.62   221	3.62   221
Compression ratio		18:1	18:1
Rated speed	rpm	2600	2600
Mean piston speed	m/s   ft/m	10.4   2047	10.4   2047

### EU Stage III B / US-EPA Tier 4 interim power ratings for mobile construction machines<sup>1)</sup>

Power acc. to ISO 14396	kW   hp	55.9   75	85   114
at engine speed	rpm	2600	2600
Mean effective pressure	bar   psi	7.1   103	10.8   157
Max. torque	Nm   ft-lb	300   221	404   298
at engine speed	rpm	1400	1400
Minimum idle speed	rpm	900	900
Specific fuel consumption <sup>2)</sup>	g/kWh   lb/hph	220   0.38	215   0.35
Weight acc. to DIN 70020, Part 7A <sup>3)</sup>	kg   lbs	270   595	270   595

### Dimensions

in mm   inch	A	B	C
<b>TD 2010 L4</b>	715   28.1	592   23.3	756   29.8
<b>TCD 2010 L4</b>	715   28.1	592   23.3	756   29.8



1) Power ratings at flywheel gross, without cooling system.

2) At optimal operating point. Specific fuel consumption based on diesel fuel with a specific gravity of 0.835 kg/dm<sup>3</sup> at 15° C (6.96 lb/US gallon at 60° F).

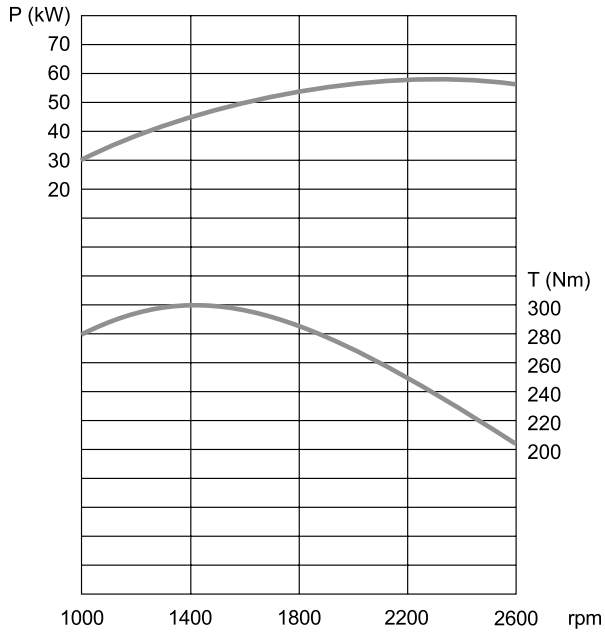
3) Not including starter motor/alternator, radiator and operating fluids but including flywheel and flywheel housing.

The values given in this data sheet are for information purposes only and not binding.

The information given in the offer is decisive.

# Standard engines

## Engine TD 2010 L4



## Engine TCD 2010 L4

