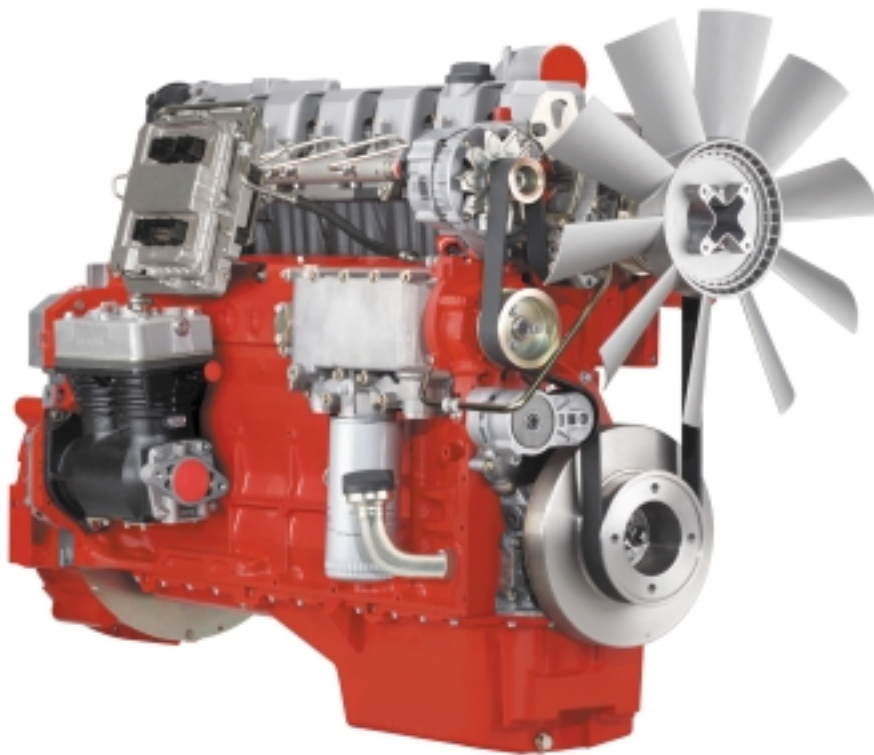


# TCD 2013

The Engine for Construction Equipment.  
74.9 – 243 kW | 100 – 325.9 hp at 2100/2300 rpm



The engine company.



# Engine description

<b>Cooling sytem:</b>	Liquid cooling.
<b>Crankcase/ cylinder:</b>	Crankcase of grey cast iron, wet liners.
<b>Crankcase breather:</b>	Open.
<b>Cylinder head:</b>	Greycast block type cylinder head.
<b>Valve arrangement/ timing:</b>	Hanging in cylinder head, one intake and one exhaust valve per cylinder (2013: two intake and exhaust valves each), actuated via tappets, pushrods and rocker arms, driven by camshaft in bi-metal bearings.
<b>Piston:</b>	Three-ring piston, two combustion rings, one oil scraper ring.
<b>Piston cooling:</b>	Oil-cooled with spray nozzles.
<b>Turbocharging:</b>	Wastegate turbocharger with charge air cooling (air/air).
<b>Connecting rod:</b>	Drop-forged steel.
<b>Crankshaft bearings:</b>	Bi-metal bearings, one fit bearing (2013 4V: tri-metal bearings).
<b>Connecting rod berrings:</b>	Four-metal, tri-metal sliding bearing.
<b>Crankshaft:</b>	Drop-forged steel.
<b>Camshaft:</b>	Steel in bi-metal bearings.
<b>Camshaft drive:</b>	From the camshaft via straight, high toothed spur gears.
<b>Lubrication:</b>	Forced-feed circulation lubrication.
<b>Lube oil cooler:</b>	Externally arranged.
<b>Lubricating oil filter:</b>	Paper-type microfilter as replaceable cartridge, full-flow filter.
<b>Injection pump/ governor:</b>	Two high-pressure plug pumps, electronical speed governor (EMR3).
<b>Fuel lift pump:</b>	Outer gear pump in belt drive (2013 4V: gear driven gear pump).
<b>Injector:</b>	7-hole nozzle in Injector.
<b>Fuel filter:</b>	Replaceable cartridge.
<b>Alternator:</b>	Three-phase alternator, 14 V / 55 A (Standard).
<b>Starter motor:</b>	12 V / 3 kW (Standard).
<b>Heating:</b>	Optional connection for cab heating.
<b>Options for customized applications:</b>	e.g. 12 V / 24 V electrical equipment, hydraulic pumps, flywheel housings, oil pans, cooling fan positions.

## Characteristics

Modern, liquid-cooled 4- and 6-cylinder in-line engines | Turbocharged with intercooler | Powerful, rugged engine providing high power density | PTO facilities integrated in geared drive | Electronic engine control with intelligent adaptation to drive management | High-pressure fuel injection with DEUTZ Common Rail System (DCR®) | 4-cylinder optional with mechanical injection pump up to 104 kW

## Your benefits

- Outstanding efficiency: Very favorable fuel consumption, simple and cost-effective installation and long maintenance intervals.
- Low noise emission: Lower costs for sound deadening.
- Compact engine layout: Variable design of the front end for maximum flexibility.
- The 2013 with DVERT® platform for future exhaust emission levels Stage III B / IV as well as EPA Interim Tier 4 / Tier 4.
- Smooth running and exceptional power output: Ensure optimum operating comfort.
- The 2013 meets the exhaust emission regulations 2004/26/EU, Step III A as well as US-EPA Tier 3 for mobile machinery.

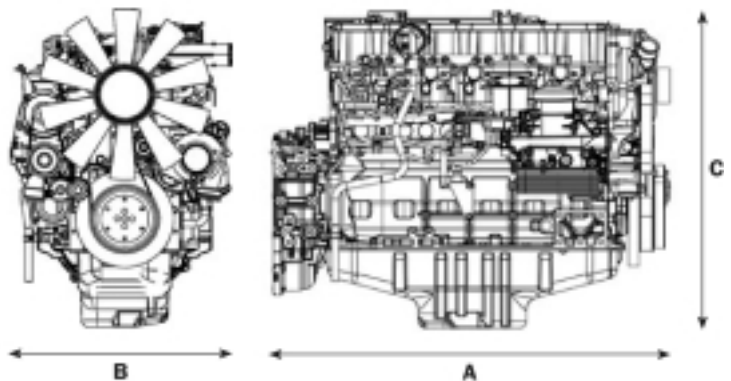
Engine type		TCD 2013 L4 2V	TCD 2013 L6 2V	TCD 2013 L6 4V
Number of cylinders		4	6	6
Bore/stroke	mm   inch	108/130   4.3/5.1	108/130   4.3/5.1	108/130   4.3/5.1
Displacement	l   cu inch	4.8   293	7.1   433	7.1   433
Compression ratio		1 : 18.1	1 : 18.1	1 : 18.1
Max. rated speed	rpm	2300	2300	2200
Mean piston speed	m/s   ft/sec	10.0   32.8	10.0   32.8	10.0   32.8

### EU Stage III A / US-EPA Tier 3 Power ratings for mobile construction machines<sup>1)</sup>

Power output to ISO 14396	kW   hp	129   173	200   268	243   325.9
At engine speed	rpm	2300	2300	2100
Mean effective pressure	bar   psi	14.1   205	14.6   212	17.2   249
Max. torque	Nm   lb-ft	670   494	1100   811	1310   966
At engine speed	rpm	1600	1500	1450
Minimum idle speed	rpm	650	650	800
Specific fuel consumption <sup>2)</sup>	g/kWh   lb/hp-hr	209   0.34	205   0.34	195   0.32
Weight to DIN 70020, Part 7A <sup>3)</sup>	kg   lb	505   1113	612   1349	660   1455

### Dimensions

		A	B	C
TCD 2013 L6 2V	mm	1269	657	1013
	inch	50.0	25.9	39.9
TCD 2013 L4 2V	mm	954	628	987
	inch	37.6	24.7	38.9
TCD 2013 L6 4V	mm	1324	700	1091
	inch	52.1	27.6	43.0



1) Power ratings without deduction for fan power requirement.

2) Specific full load 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.

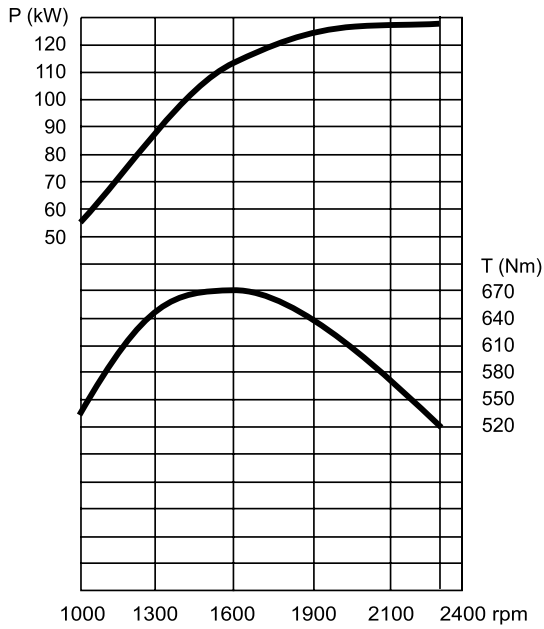
4) 1100 Nm | 811 lb-ft with switched EGR.

The values specified in this datasheet are for information purposes only and are not binding.

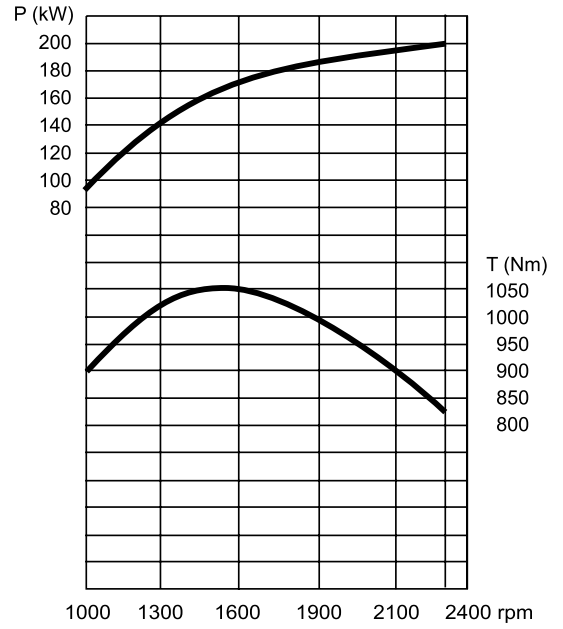
The information given in the quotation is decisive.

# Standard engines

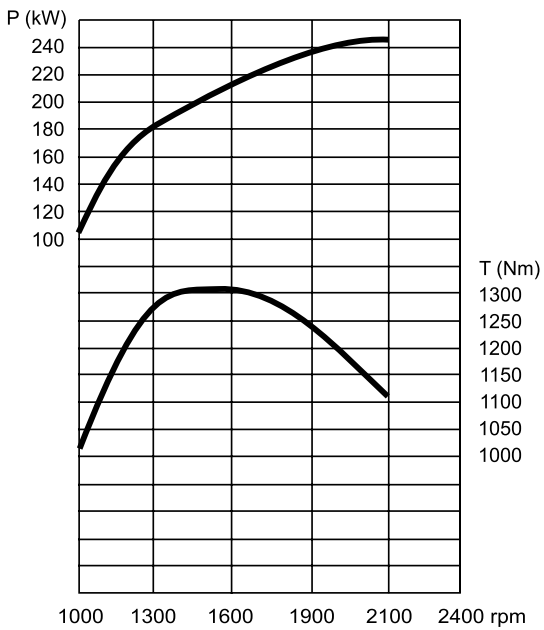
**Engine TCD 2013 L4 2V**



**Engine TCD 2013 L6 2V**



**Engine TCD 2013 L6 4V**



Bestell-Nr. 0031 2131 / 03 / 2007 / VP-V