

# TAD1643VE-B

**16.12 litre, in-line 6 cylinder - 565 kW**

UNECE Reg 96 Power band E (equal to EU Stage II)

**TAD1643VE-B is a powerful, reliable and economical off-road Diesel Engine range built on the Volvo Group in-line six concept.**

Designed for the easiest, fastest and most economical installation. Well balanced to produce smooth and vibration-free operation with low noise level, featured with high torque. To maintain a controlled working temperature in cylinders and combustion chambers, the engine is equipped with piston cooling. The engine is also fitted with replaceable cylinder liners and valve seats / guides to ensure maximum durability and service life of the engine. The state of the art, high-tech injection and air charging system with low internal losses contributes to excellent combustion and low fuel consumption. Easily accessible service and maintenance points contribute to the ease of service of the engine.

## Technical description:

### Engine and block

- Optimized cast iron cylinder block with optimum distribution of forces without the block being unnecessary heavy.
- Wet, replaceable cylinder liners
- Piston cooling for low thermal load on pistons and reduced ring temperature
- Tapered connecting rods to reduce risk of piston cracking
- Crankshaft has induction hardened bearing surfaces and fillets with seven main bearings for moderate load on main and big-end bearings
- Nitrocarburized transmission gears for heavy duty operation
- Keystone top compression rings for long service life
- Viscous type crankshaft vibration damper
- Replaceable valve guides and valve seats
- Overhead camshaft and four valves per cylinder equipped with camshaft damper to reduce noise and vibrations.

### Lubrication system

- Full flow oil cooler
- Full flow disposable spin-on oil filters
- The lubricating oil level can be measured during operation (Standard dipstick only)
- Gear type lubricating oil pump, gear driven by the transmission



- **Proven and straight-forward design - built on Volvo Group technology**
- **High power and torque already at low engine speed**
- **Compact, simple installation and easy to service**
- **Exhaust emission reduction system without EGR**
- **Similar engine footprint for all emission standards**
- **High sulfur-in-fuel tolerance**
- **Wide range of optional equipment**

### Fuel system

- Self de-aerating system. When replacing filters all fuel stays in the engine.
- Non-return fuel valve
- Electronic Unit Injectors
- Fuel prefilter with water separator and water-in-fuel indicator / alarm
- Gear driven low-pressure fuel pump
- Fuel pressure switch

### Turbocharger

- Efficient and reliable turbo charger
- Electronically controlled Waste-gate, allowing for mobile, stationary and high altitude applications

### Cooling system

- Air to air intercooler
- 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 sleeve thermostat with minimum pressure drop
- Tropical radiator
- Radiator guard

- Fan hub
- Pusher and suction type fans.
- Fan & belt guard

### Electrical system

- Engine Management System (EMS) 2.3, an electronically controlled processing system which optimizes engine performance. It also includes advanced features for diagnostics and fault tracing.
- The instruments and controls connect to the engine via the CAN SAE J1939 interface, either through the Control Interface Unit (CIU) or the Digital Control Unit (DCU).
- Sensors for oil pressure, oil temp, boost pressure, boost temp, coolant temp, water in fuel, fuel pressure and two speed sensors. Crank case pressure, piston cooling pressure, oil level and air filter pressure drop sensors.
- Standard 80A alternator

### Exhaust emission reduction system

- Without EGR

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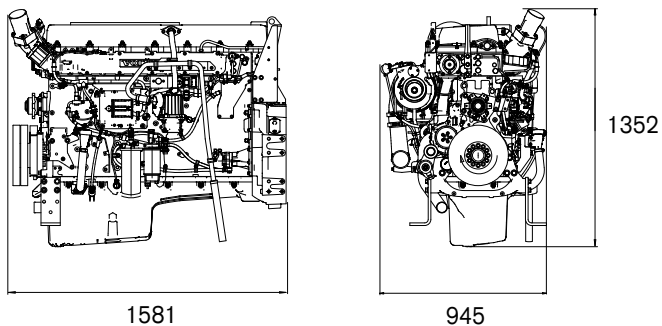
## Technical data

Engine designation ..... TAD1643VE-B  
 Configuration and no. of cylinders ..... in-line 6  
 Displacement, l (in<sup>3</sup>) ..... 16.12 (984)  
 Method of operation ..... 4-stroke  
 Direction of rotation (viewed towards flywheel) ..... anti-clockwise  
 Bore, mm (in.) ..... 144 (5.67)  
 Stroke, mm (in.) ..... 165 (6.50)  
 Compression ratio ..... 17.0:1  
 Dry weight, engine only, kg (lb) ..... 1437 (3168)

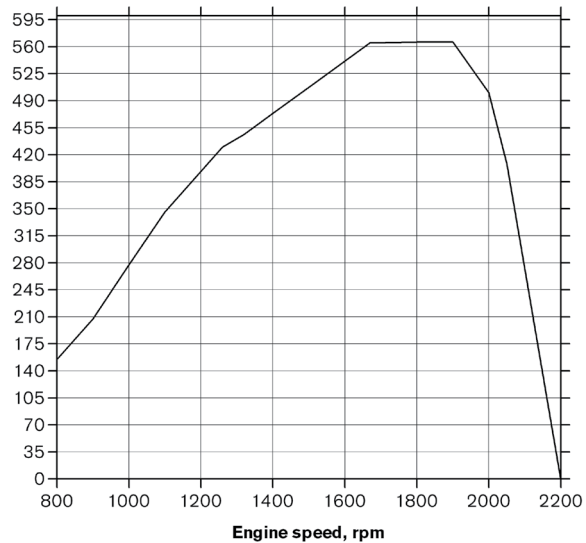
Engine	kW	Hp	rpm	Max Nm
TAD1643VE-B	565	770	1900	3260

## Dimensions

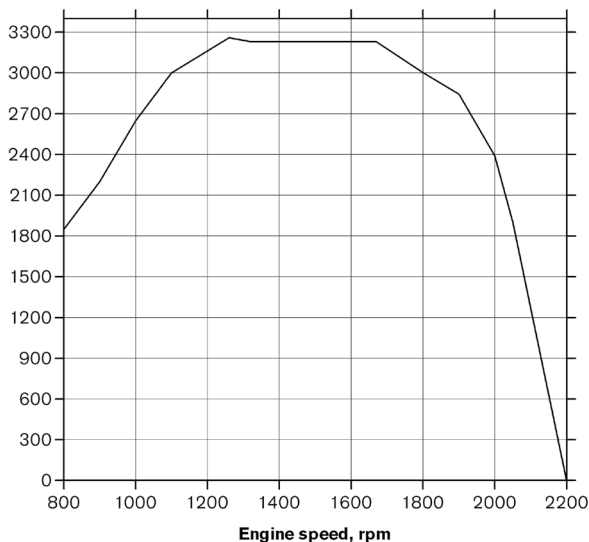
Not for installation. Dimensions in mm.



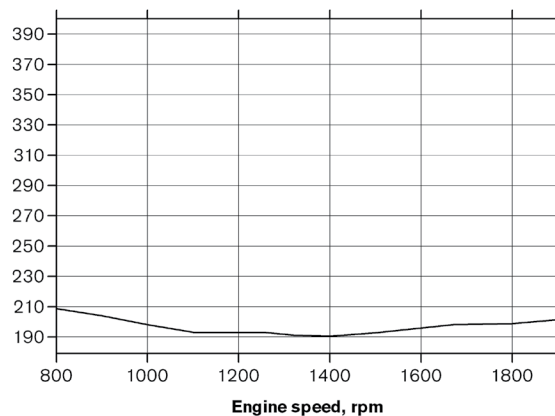
Power, kW



Torque, Nm



Fuel consumption, g/kWh



### 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.

### Additional information

For additional information, please contact your Volvo Penta representative or visit [www.volvopenta.com](http://www.volvopenta.com).

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.

# VOLVO PENTA

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