VOLVO PENTA

VOLVO PENTA **MARINE AUXILIARY DIESEL**

D16-MH

16.1 liter, in-line 6 cylinder - Variable engine speed

D16-MH is a reliable, powerful, fuel-efficient and clean marine diesel engine. It´s based on Volvo Group´s proven engine platform and is designed by Volvo Penta to power a wide range of marine auxiliary applications.

This 16.1 liter diesel engine has a robust block, high pressure unit injector system, 4 valves per cylinder, twin parallel turbocharger with wastegate and charge air cooler.

Together with Volvo Group´s Engine Management System it offers powerful response, fuel efficiency and excellent emission performance. The SCR (Selective Catalytic Reduction) exhaust after treatment system is tailored for a perfect fit. The SCR unit, also a silencer, reduces noise by 35-40 dBA. The robust cylinder block is fitted with a ladder frame for smooth operation and low noise.

Typical applications:

- Pumps
- Cranes
- Hydraulic power packs
- Air compressors
- High-pressure water systems
- Fire-fighting equipment
- Nitrogen pumps
- Dry bulk handling

- **Proven design - built on Volvo Group technology**
- **Fuel-efficient and low emission levels**
- **Powerful response**
- **Low weight, noise and vibrations**
- **Type-approved**
- **Classifiable by all major societies**
- **Compact installation and easy to service**

The engine can be equipped with a wide range of optional equipment and is available with Heat Exchanger (HE), Keel Cooled (KC) or Radiator Cooled (RC) cooling system. Two options for on-board electronic control: The type-approved MCC (Marine Commercial Control) or Open CAN Interface.

The engine and equipment can be covered with the Extended Coverage which prolongs the standard warranty up to five years - or the corresponding number of running hours.

The compact and space saving design makes for easy installation and easily accessible service points.

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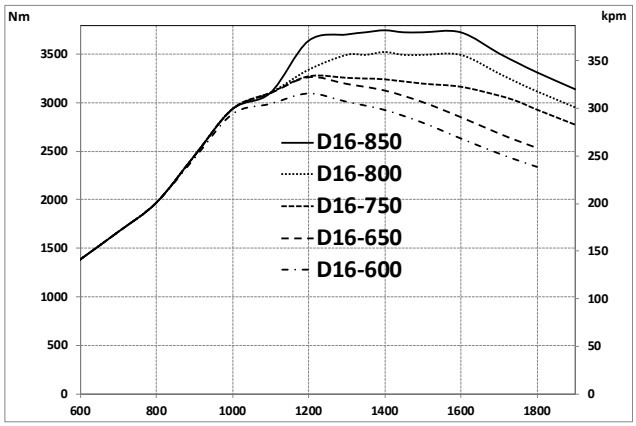
EN SAVOIR PLUS

Technical data

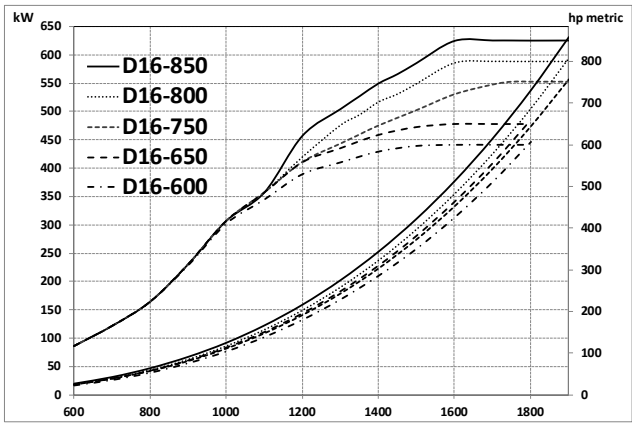
Engine designation	D16 MH				
No. of cylinders and configuration	in-line 6				
Method of operation	4-stroke, direct-injected, turbocharged diesel engine with charge air cooler				
Bore/stroke, mm (in.)	144/165 (5.67/6.50)				
Displacement, l (in³)	16.1 (983.9)				
Compression ratio	16.8:1				
Dry weight bobtail (KC), kg (lb)	1730 (3814)				
Dry weight bobtail (HE), kg (lb)	1815 (4001)				
Dry weight bobtail (RC), kg (lb)	2005 (4420)				
Rating	1	1	1	2	2
Rated speed	1800 rpm	1800 rpm	1900 rpm	1900 rpm	1900 rpm
Crankshaft power HE/KC, kW(hp)	441 (600)	478 (650)	551 (750)	588 (800)	625 (850)
Crankshaft power RC, kW(hp)	411 (559)	448 (609)	516 (702)	553 (752)	-
Max. torque, Nm (lbf.ft)					
@ 1200 rpm	3096 (2283	3265 (2406)	3271 (2412)	-	-
@ 1500 rpm	-	-	-	3524 (2598)	3747 (2763)
Emission compliance	IMO Tier III, US EPA Tier 3	IMO Tier III, US EPA Tier 3	IMO Tier III, US EPA Tier 3	IMO Tier III, US EPA Tier 3	IMO Tier III -
Specific fuel consumption, g/kWh at 100% load					
@1200 rpm	198	198	197	197	198
@1500 rpm	194	193	193	195	198
@1800 rpm	199	199	198	199	200
@1900 rpm	-	-	200	201	202
Recommended fuel conform to	ASTM-D975 1-D & 2-D, EN 590 or JIS KK 2204.				
Flywheel housing/SAE size	14"/SAE1				

Technical data according to ISO 3046 Fuel Stop Power and ISO 8665. Fuel with a lower calorific value of 42700 kJ/kg and density of 840 g/liter at 15 °C (60 °F). Merchant fuel may differ from this specification which will influence engine power output and fuel consumption. Ratings R1 & R2, see explanation in Volvo Penta's Product Guide.

Torque at crankshaft



Power



1. Crankshaft power
2. Propellershaft power at prop. load $x^{3.0}$

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Technical description

Engine and block
- Cylinder block and cylinder head made of cast-iron
- One-piece cast-iron cylinder head
- Ladder frame fitted to engine block
- Replaceable wet cylinder liners and valve seats/guides
- Drop forged crankshaft with induction hardened bearing surfaces and fillets with seven main bearings
- Four valve per cylinder layout with overhead camshaft
- Each cylinder features cross-flow inlet and exhaust ducts
- Gallery oil-cooled cast steel pistons with three piston rings
- Rear-end transmission
- Closed crankcase ventilation

Engine mounting
- Flexible engine mounting (option)

Lubrication system
- Integrated oil cooler in cylinder block
- Twin full flow oil filters and by-pass filters of spin-on type

Fuel system
- Electronic Unit Injectors, one per cylinder, vertically positioned at the center in between the four valves
- 6-hole high pressure injector nozzles
- Gear-driven fuel pump, driven by timing gear
- Electronically controlled central processing system (EMS – Engine Management System)
- Electronically controlled injection timing
- Twin spin-on fine fuel filters with change over valve

Air inlet and exhaust system
- Twin replaceable air filters
- Twin parallell turbocharger with water-cooled turbine housing and wastegate

Cooling system
- Freshwater-cooled charge air cooler
- Seawater-cooled plate heat exchanger
- Coolant system prepared for hot water outlet
- Seawater impeller pump
- Electrically controlled two stage fresh water pump

Electrical system
- 24V/110A alternator

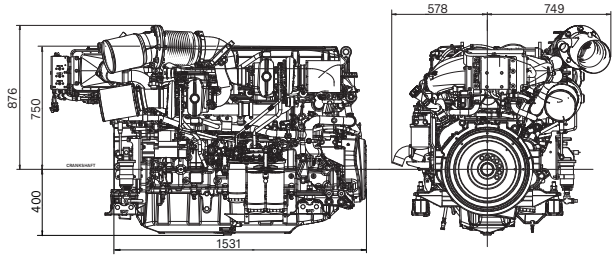
Instruments/controls
- Two options for onboard electronic control:
  1. MCC (Marine Commercial Control), an open system that is type-approved. Incl. separate safety shutdown system
  2. Open CAN Interface, engine delivered without control system. Different options with or without shut down senders and switches.

Exhaust aftertreatment system
- SCR (Selective Catalytic Reduction)
- Aqueous UREA solution 32% or 40%
- Complete system – developed, certified, and serviced by one company
- Fully integrated capabilities
- SCR unit reduces noise by up to 35 dBA
- Wide range of installation options available

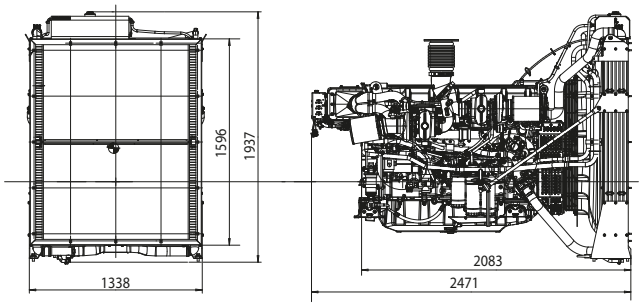
Dimensions

Not for installation, mm

Engine with HE & KC



Engine with RC



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.

Contact your local Volvo Penta dealer for more information regarding Volvo Penta engines and optional equipment/ accessories or visit www.volvopenta.com

AB Volvo Penta
SE-405 08 Göteborg, Sweden
www.volvopenta.com