

## Strongest in the Class

The engine features the latest design of mid position twin entry waste gate turbo with pulse charging. Higher turbo pressure at low rpm will secure excellent acceleration.

The optimize miller inlet valve timing ensures high torque at low rpm and low emissions due to lower pressure and temp in the cylinders.

With the new injectors with variable needle opening pressure noise is further reduced.

All this technical features results in a very strong and smooth running engine with world-class performance, combined with low emissions and low fuel consumption.



### World-class performance

State-of-the-art engine technology featuring the world's most efficient charge air cooler, high pressure unit injector system, in combination with twin entry turbo charger and miller timing, all of which ensure high power, low fuel consumption, and outstanding torque over the whole speed range with virtually no sign of smoke. All controlled by the Volvo EMS electronic management system. The low end torque beats any competitor which will allow the operator to handle the vessel very safe with a lot of power available. The new D13 engine has lower fuel consumption than its predecessor which further reduces the life cycle cost for the owner.

### Durability and high quality

The D13 MH has the same robust basic architecture as all other heavy duty platforms, D9, D11 and D16. The in-line six concept with robust block design, rear-end transmission, ladder frame and a one-piece cylinder head with overhead camshaft and 4-valve technology contributes to excellent operating economy, high reliability and long-term durability.

The D13 MH is built in the world's most highly automated diesel engine factory line with robotic machining and computer controlled audit checks, which ensures the highest quality level through out

### Powerful control system

EVC-D, a new generation of the proven Electronic Vessel Control offers the best helmsman experience available!

The new ergonomically designed controls engage smoothly and allow for maneuvering with fingertip precision in any situation. For non classed applications the type approved EVC-D control system will give gear and speed control of the vessel.

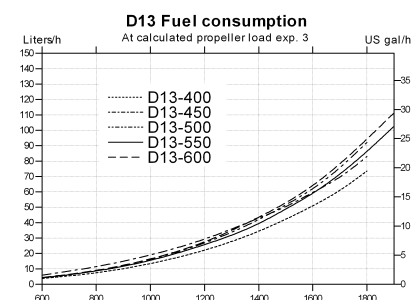
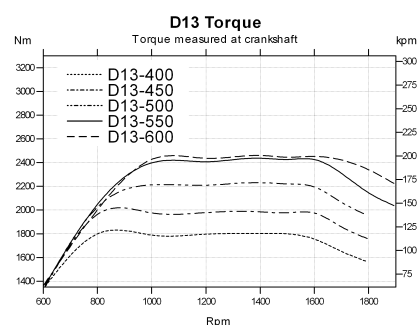
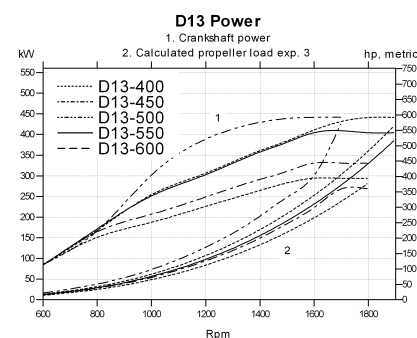
For fully classed vessels the Volvo Penta MCC system offers flexibility in selection of alarm panels and control levers from other sources and possibility to integrate with various bridge control systems.

### Fully classed, fully emission approved

The engine is fully classifiable to meet all major classification requirements. The engine meets the latest of EU IWW, CCNR, IMO and EPA emission legislation requirements.

### Trouble free service

Scheduled maintenance and preventive repairs will keep you from unnecessary and expensive downtime. For each genset application Volvo Penta dealers can offer extensive life cycle cost analysis including fuel and maintenance cost. Qualified Volvo Penta dealers stand by for service and support in more than 100 countries all over the world. A complete set of documentation will be delivered with the set according to Volvo's high quality publication standard. The optional extended coverage (CXC) will give protection for one or two additional years.



# D13 MH

## 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 aluminum alloy pistons with three piston rings
- Rear-end transmission

### 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
- 5-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

- Air filter with replaceable inserts
- Mid-positioned twin entry turbocharger and charge air cooler

### Cooling system

- Freshwater-cooled charge air cooler
- Seawater-cooled plate heat exchanger
- Coolant system prepared for hot water outlet
- Easily accessible seawater impeller pump in rear end

### Electrical system

- 24V/110A alternator

### Instruments/controls (option)

- Complete instrumentation including key switch and interlocked alarm
- EVC monitoring panels for single or twin installations
- Electronic remote control for throttle and shift
- Plug-in connections
- SDU shutdown unit for classified installations
- MCC – Marine Control System

### Optional equipment

Contact your Volvo Penta representative.

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.

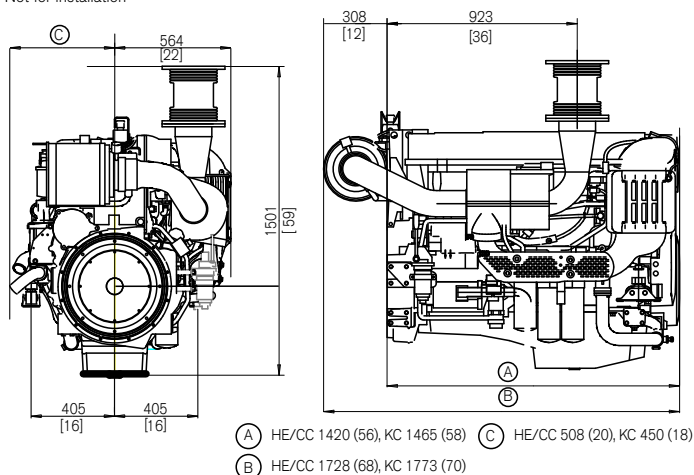
## Technical Data

Engine designation .....	D13 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.) .....	131/158 (5.16/6.22)				
Displacement, l (in <sup>3</sup> ).....	12.78 (779.7)				
Compression ratio.....	18.5				
Dry weight bobtail (KC), kg (lb).....	1480 (3263)				
Dry weight bobtail (HE), kg (lb).....	1520 (3351)				
Rating/rpm .....	R1/1800 rpm	R1/1800 rpm	R1/1800 rpm	R2/1900 rpm	R2/1900 rpm
Crankshaft power, kW (hp) .....	294 (400)	331 (450)	368 (500)	404 (550)	441 (600)
Max. torque, Nm (lbf.ft) @ 1400 rpm.....	1756 (1295)	1975 (1457)	2164 (1596)	2363 (1743)	2399 (1769)
Specific fuel consumption.....	Recommended fuel to conform to: ASTM-D975 1-D & 2-D, EN 590 or JIS KK 2204				
g/kWh (lb/hph) @ 1800 rpm .....	208 (0.336)	211 (0.342)	212 (0.343)	211 (0.342)	207 (0.335)
Certificates .....	IMO NOx,	IMO NOx,	IMO NOx,	IMO NOx,	IMO NOx,
.....	EU IWW,	EU IWW,	EU IWW,	EU IWW,	EU IWW,
.....	CCNR Stage 2	CCNR Stage 2	CCNR Stage 2	CCNR Stage 2,	CCNR Stage 2,
.....				US EPA Tier 2	US EPA Tier 2

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 Sales Guide.  
The engine is classifiable by major classification societies.

## Dimensions D13 MH

Not for installation



# VOLVO PENTA

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