

# VOLVO PENTA INBOARD DIESEL

# D13-900

662 kW (900 hp) crankshaft power acc. to ISO 8665



## Excellent Performance and Pleasant Cruising

Volvo Penta's D13 in-line 6 diesel is developed from the latest design in modern diesel technology. The engine has a robust block with ladder frame, high pressure unit injector system, 4 valves per cylinder, and twin turbo technology in combination with dual stage charge air coolers. All the above together with the electronic engine management system results in a very smooth running engine with world-class diesel performance, combined with low fuel consumption and emissions.



### World-class performance, pleasant cruising and top class economy

The high pressure unit injector system, controlled by electronic management, 4-valve technology, cross-flow inlet combined with twin turbo technology and dual stage charge air coolers ensure high power, efficient combustion with low fuel consumption, and outstanding torque. Already at 1200 rpm, the engine delivers an incredible low-end torque of close to 3300 Nm, which gives a superb acceleration with virtually no sign of smoke. This matched with the engine's high load carrying capability creates a sporty feeling and power, when needed.

Furthermore, the engine management system offers constant power output regardless of fuel temperature (5-55°C/41-131°F), avoiding unnecessary power loss in warm climate.

### High quality

The D13-900 has the same robust basic architecture as the Volvo D9, D11, and D16 inline-6 diesel platform.

The base engine is built in the world's most automated diesel engine factory line with robotic machining and assembly made with computer controlled audit checks, which ensures the highest quality level.

The platform features a robust block design, wet liners, rear-end transmission, ladder frame and a single cylinder head with overhead camshaft operating 4 valves per cylinder and the injectors. This contributes to smooth running, high reliability and long-term durability.

### EVC-EC

EVC Electronic Vessel Control is Volvo Penta's common electronic platform to govern the engine and transmission and to increase the integration of driver information in your boat.

It offers: electronic shift and throttle for smooth and safe control, twin engine synchronization for smooth running, a complete range of easy to read data link gauges, and an EVC System Display (option) and much more, everything in just one CAN cable.

EVC also makes boating easier and safer, having several built-in engine functions for protection and handling. It also offers software functions such as Low Speed, which reduces boat speed at idle.

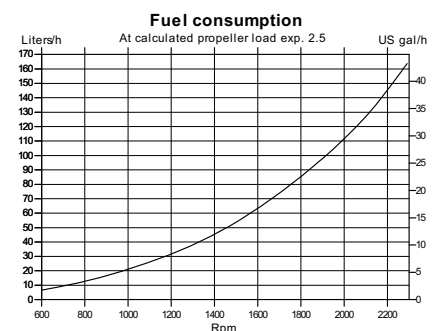
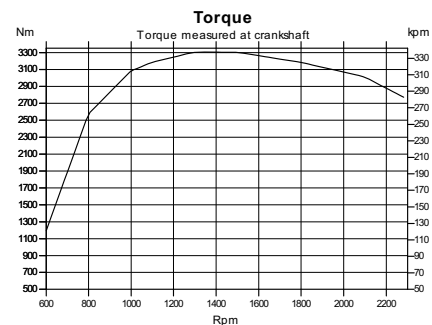
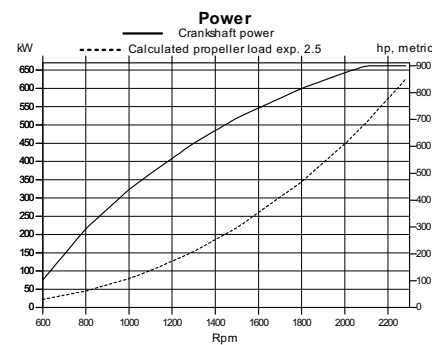
EVC is scalable from one station up to four, from a classic dashboard up to an advanced driver information system. The system is built on the latest automotive technology with waterproof connectors.

### Ease of service and maintenance

The EVC system features a self-diagnostic facility, which indicates at the dashboard if a failure should occur. The engine has a compact and clean design, and with all fluid filters plus seawater pump positioned at the port rear end, the engine is easy to service and maintain.

### Meeting new emission standards

The high pressure unit injector system in combination with electronics and an advanced combustion system are setting new standards in minimizing noxious emissions and particulates. The engine is certified to the IMO NOx, EU RCD, and US EPA Tier 2 requirements. It also meets the upcoming US EPA Tier 3 emission regulations – the world's most stringent.



# D13-900

## Technical description:

### Engine and block

- Cylinder block 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 and center position of unit injectors
- 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

### Lubrication system

- Integrated oil cooler in cylinder block
- Rear positioned twin full flow oil filter of spin-on type and by-pass filter

### Fuel system

- Electronic high pressure unit injectors
- Gear-driven fuel pump and injection timing
- Electronically controlled central processing system (EMS – Engine Management System)
- Single fine fuel filter of spin-on type, with water separator and water alarm

### Air inlet and exhaust system

- Twin turbo technology with freshwater-cooled charge air cooler
- Air filter with replaceable inserts
- Wet exhaust elbow (option)

### Cooling system

- Seawater-cooled tubular heat exchanger
- Coolant system prepared for hot water outlet
- Easily accessible seawater pump in rear end of flywheel housing

### Electrical system

- 24V/110A plus an optional extra 24V/110A alternator

### Instruments/controls (option)

- Complete instrumentation including key switch and interlocked alarm

- EVC monitoring panels for single or twin installations
- Electronic shift and throttle
- Plug-in connectors
- EVC system color display

### Reverse gear

- MGX-5096A and MGX-5114IV, with Quick-Shift® and low speed as standard, electronically shifted
- ZF335AE, with low speed as option, electronically shifted

### 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 .....	<b>D13-900</b>
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.....	16.5:1
Dry weight bobtail, kg (lb) .....	1560 (3439)
Crankshaft power, kW (hp) @ 2300 rpm .....	662 (900)
Max. torque, Nm (lb.ft) @ 1300 rpm.....	3306 (2438)
Recommended fuel to conform to.....	ASTM-D975 1-D & 2-D, EN 590 or JIS KK 2204
Specific fuel consumption, g/kWh (lb/hph) @ 2300 rpm .....	209 (0.339)

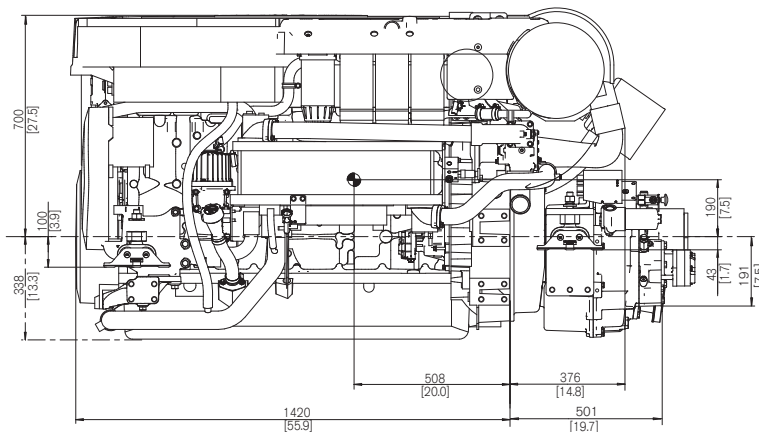
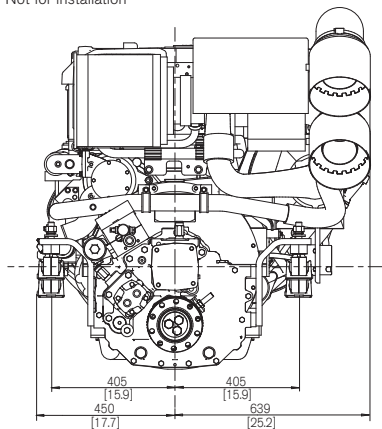
Technical data according to ISO 8665. With fuel having an LHV of 42700 kJ/kg and density of 840 g/liter at 15 °C (60 °F). Merchant fuel may differ from this specification which will influence engine power output and fuel consumption.

Rating: 5

The engine is certified to the IMO NOx, EU RCD, and US EPA Tier 2 requirements. It also meets the upcoming US EPA Tier 3 emission regulations.

## Dimensions D13-900 with MGX-5096A

Not for installation



# VOLVO PENTA

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