

# VOLVO PENTA INBOARD DIESEL

# TMD22P

4-cylinder, direct-injected freshwater-cooled turbocharged marine diesel engine  
Crankshaft power\* 57.4 kW (78 hp)

\* Power rating – see Technical Data

The TMD22P is a marine engine of advanced design manufactured from quality components and designed to fulfil customer requirements.

## Service life

The TMD22P is fitted with freshwater cooling as standard. This reduces internal corrosion and enables the engine to maintain a consistent and optimal working temperature under all conditions.

## Comfort

Smooth running with very low vibration levels results from a dynamically balanced design and high efficiency rubber insulation

The engine's high torque provides excellent operating characteristics to aid maneuvering, particularly in confined spaces.

Additional on board comfort features are available from an extensive range of matched accessories.

## Environment

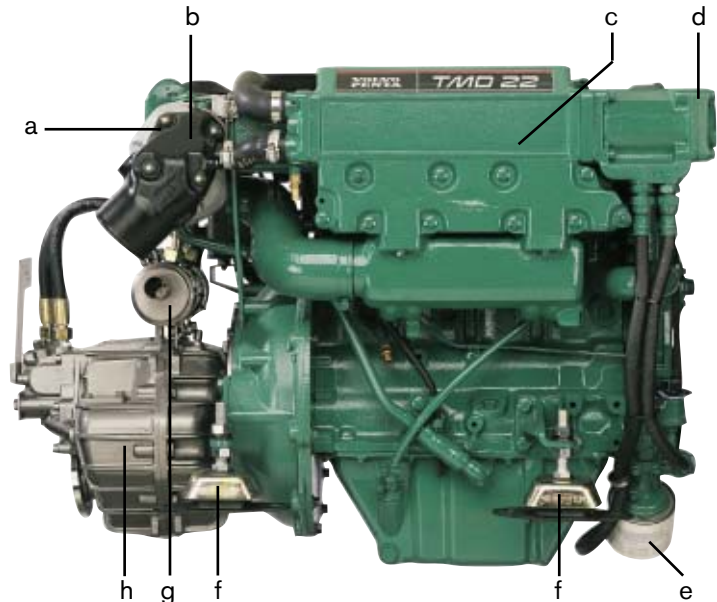
The engine's direct injection and advanced combustion system ensure high efficiency and low fuel consumption, which minimize noxious exhaust emissions and enhance overall enjoyment of boating. The TMD22P is certified according to BSO II and SAV.

## Transmissions

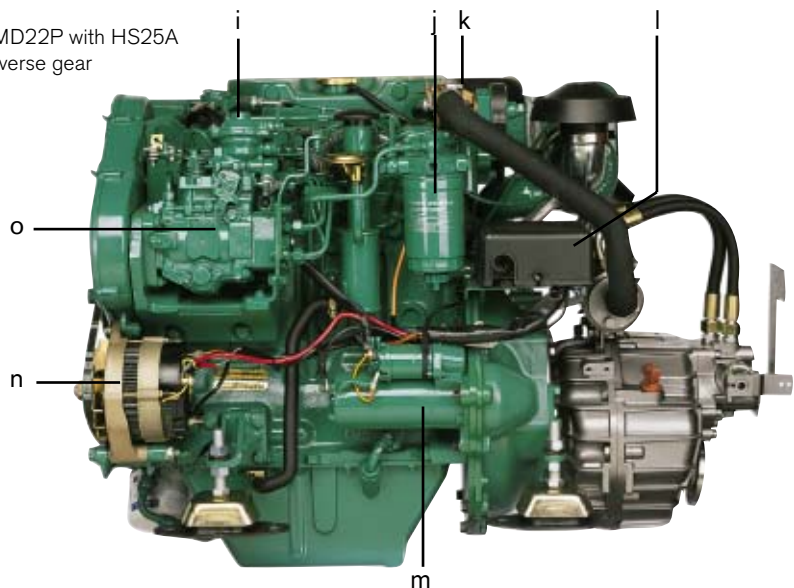
For increased flexibility, in both design and installation, completely matched down angle hydraulic, and straight or down angle mechanical reverse gears are available. All built for durability and smooth operation.

## Application

Due to the turbo wastegate technology, the engine's characteristics allow full throttle operating range from 3500 to 4500 rpm. This gives high flexibility for different applications.



TMD22P with HS25A reverse gear



The engine illustrated may not be entirely identical to production standard engines.

- |  |                            |
|--|----------------------------|
| a. Turbo                                       | h. Reverse gear            |
| b. Exhaust elbow, wet type                     | i. Fuel feed pump          |
| c. Heat exchanger with integral expansion tank | j. Fuel filter             |
| d. Oil cooler                                  | k. Seawater pump           |
| e. Oil filter                                  | l. Electrical terminal box |
| f. Flexible engine mounting                    | m. Starter motor           |
| g. Seawater intake                             | n. Alternator (GEN)        |
|  | o. Injection pump          |

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# TMD22P

## Technical Data

Engine designation .....	<b>TMD22P</b>
Crankshaft power, kW (hp) .....	<b>57.4 (78)</b>
Propeller shaft power <sup>1)</sup> , kW (hp) .....	<b>56.0 (76)</b>
Full throttle operating speed, rpm .....	<b>3500–4500</b>
Displacement, l (in <sup>3</sup> ) .....	<b>2.0 (122)</b>
Number of cylinders .....	<b>4</b>
Bore, mm (in.) .....	<b>84 (3.3)</b>
Stroke, mm (in.) .....	<b>89 (3.5)</b>
Compression ratio .....	<b>18:1</b>
Dry weight with reverse gear	
HS25A, kg (lb) .....	<b>260 (573)</b>
MS25A, kg (lb) .....	<b>249 (549)</b>
MS25L, kg (lb) .....	<b>247 (545)</b>

Duty rating: R5

1) With MS25L

Technical data according to ISO 8665. Fuel with a lower calorific value of 42,700 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.

The engine is certified according to BSO II and SAV:

## Technical description:

### Engine and block

- Cylinder block manufactured from high grade cast iron and cylinder head and pistons of aluminum alloy

- Pistons fitted with two compression rings and a single oil scraper ring
- Oil cooled pistons
- Overhead camshaft
- Replaceable, hardened valve seats in cylinder head

### Lubrication system

- Spin-on full flow oil filter
- Separate oil scavenger pipe
- Closed circuit crankcase ventilation
- Oil cooler

### Fuel system

- Flange mounted injection pump of rotor type with mechanical regulator for accurate speed control and smoke limiter
- Feed pump with hand primer
- Spin-on type fine fuel filter

### Exhaust system

- Freshwater-cooled exhaust manifold and seawater-cooled exhaust elbow
- Exhaust gas-driven turbo compressor with wastegate technology

### Cooling system

- Freshwater cooling system governed by thermostat and circulation pump
- Tubular heat exchanger with integral expansion tank
- Coolant system prepared for hot water outlet fittings
- Impeller pump for seawater system

## Electrical system

- 12V, two-pole, corrosion-protected electrical system
- 14V/60A marine alternator
- Charging regulator with electronic sensor for voltage drop compensation
- Electrically operated stop
- Glow plugs for excellent cold starting
- Electric starter motor (1.8 kW output)
- Extension cable harness with plug-in connection available in various lengths
- Choice of instrument panels or separate instruments

## Transmissions:

**HS25A** Hydraulic – drop center with 8° down angled output shaft. Trolling valve kit available.

– Ratio 2.29:1 and 2.71:1 (RH and LH rotation).

**MS25A** Mechanical – drop center with 8° down angled output shaft.

– Ratio 2.23:1/2.74:1 (RH/LH) and 2.74:1/2.74:1 (RH/LH).

**MS25L** Mechanical – drop center with straight output shaft.

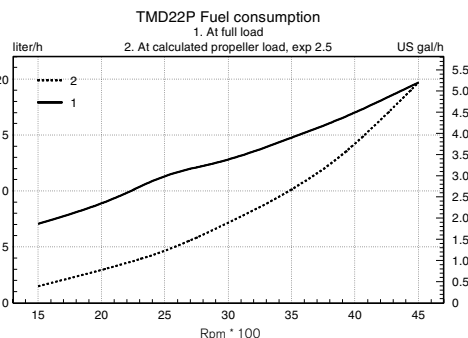
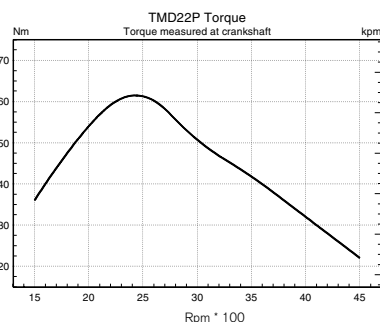
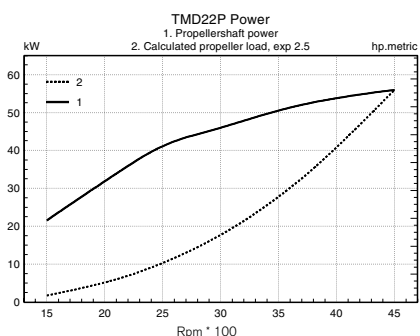
– Ratio 2.3:1/2.1:1 (RH/LH) and 2.74:1/2.72:1 (RH/LH).

## Accessories

An extensive range of accessories are available. For detailed information, please see Accessory catalogs.

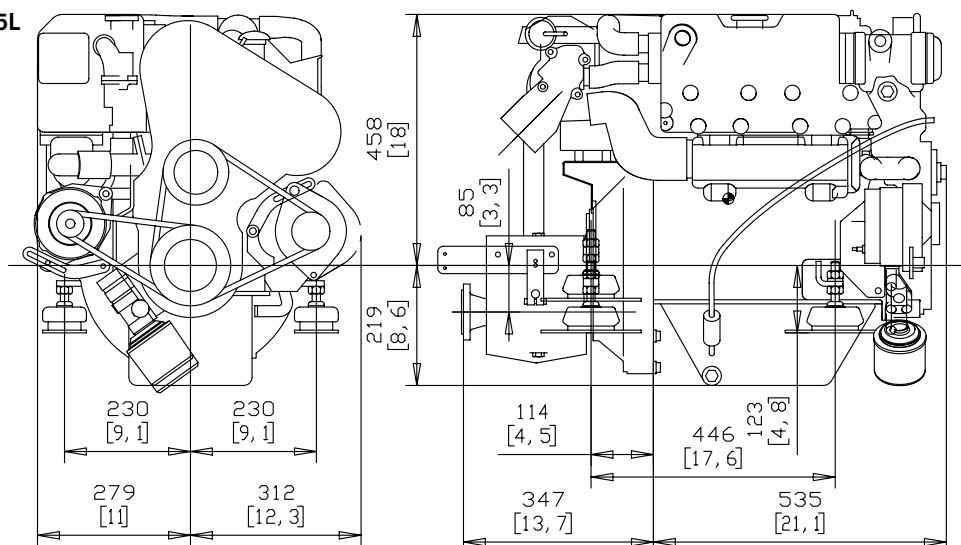
Contact your local Volvo Penta dealer for further information.

Not all models, standard equipment and accessories are available in all countries. All specifications are subject to change without notice.



## Dimensions TMD22P/MS25L

Not for installation



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