

TMD31L

Pleasure Duty (PD), Light Duty (LD)
4-cylinder, 4-stroke, direct injected, turbo-charged marine diesel engine
– crankshaft power* 74 kW (100 hp)

* Power rating – see General Data

Reliable marine engine

TMD31L is a reliable and economic marine engine with considerable power resources and is specially developed for planing craft. With its compact dimensions, it is ideal for twin installation.

Turbo-charging

The engine is turbo-charged for efficient operation with high power/fuel consumption ratio. The turbo-charging contributes to reduced exhaust emission levels. The turbo-charger also acts as an additional silencer on both induction and exhaust sides of the engine.

Direct injection

Direct injection (DI) results in low thermal load and low fuel consumption compared to swirl chamber engines (IDI) of the same cylinder volume. Direct injected engines also have a longer service life.

Low exhaust emission levels

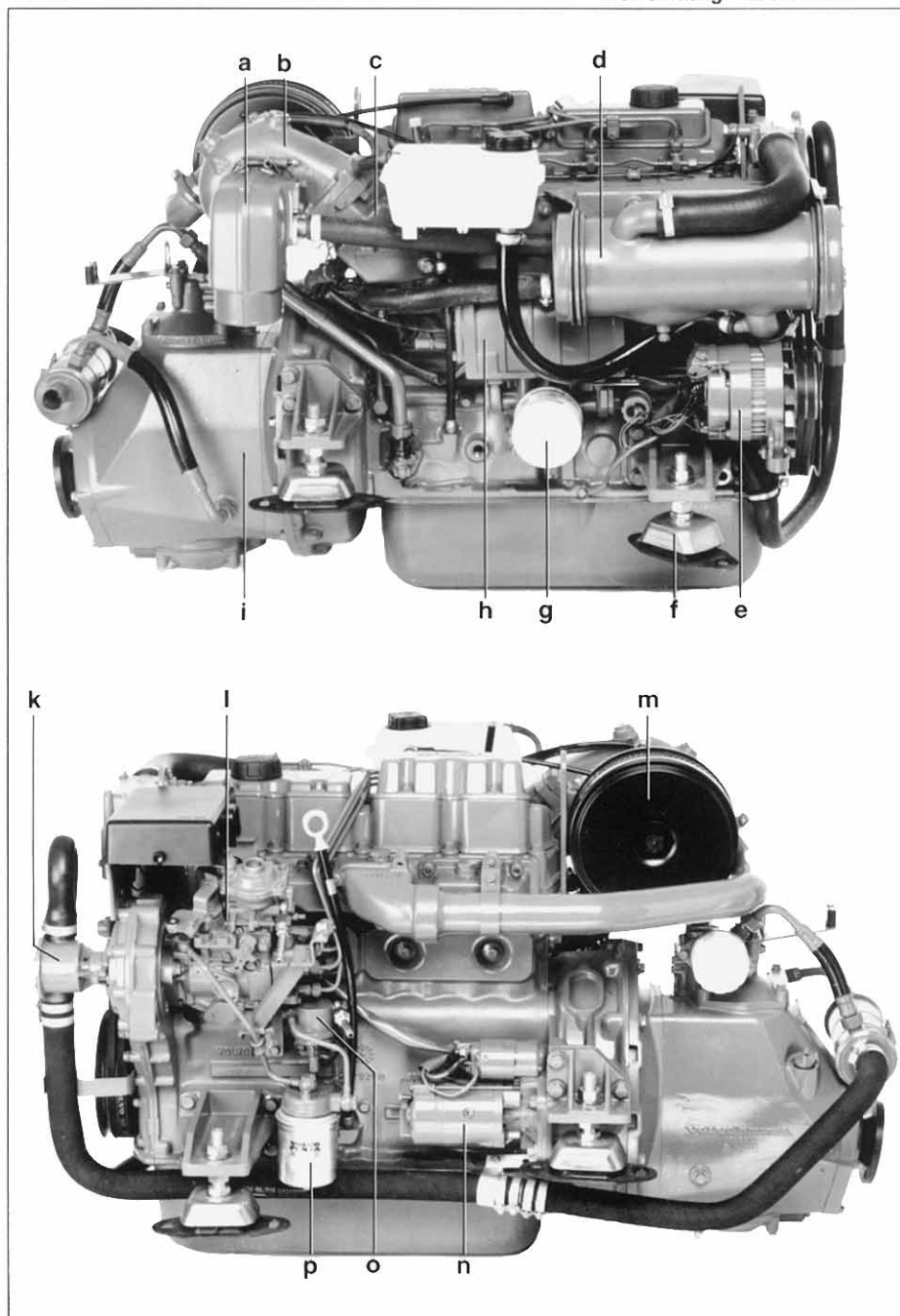
The advanced combustion system minimizes noxious exhaust emissions.

HS1 marine gearbox

Volvo Penta's hydraulically shifted marine gearbox has been specially developed with a view to increasing the standard of onboard comfort, in terms of quiet running, greater reliability and increased efficiency.

Comprehensive service network

Volvo Penta has a well established network of authorized service agents in more than 100 countries throughout the world. These service centers offer Original Volvo Penta parts as well as skilled personnel to ensure the best possible service.



The engine shown may vary from the standard unit.

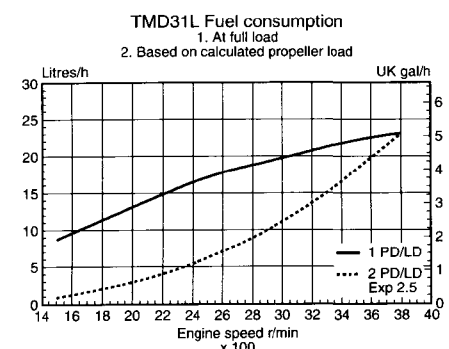
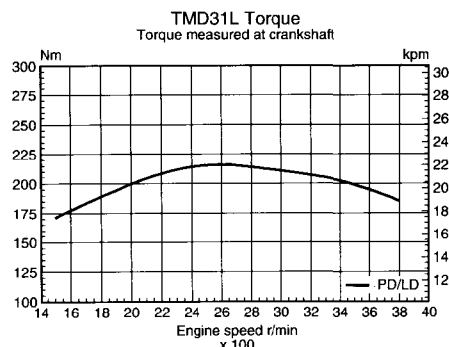
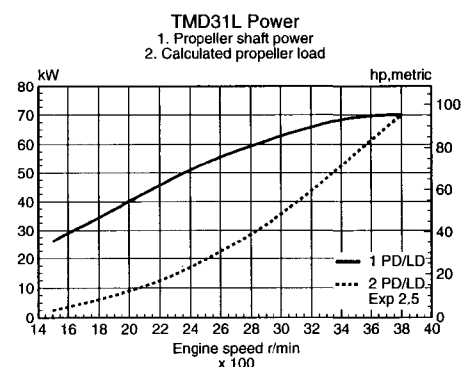
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|---------------------------------------|-----------------------------|-------------------------------------|
| a. Exhaust elbow, wet type | f. Flexible engine mounting | m. Air filter |
| b. Turbo-charger | g. Full flow oil filter | n. Starter motor 3.0 kW |
| c. Freshwater cooled exhaust manifold | h. Oil cooler | o. Feed pump with hand pump |
| d. Fresh water cooling | i. Marine gearbox | p. Fine filter with water separator |
| e. Alternator | j. Injection pump | |

**VOLVO
PENTA**

General data

Type designation	TMD31L (PD/LD)
No of cylinders	4
Configuration	4-stroke direct-injected turbo-charged diesel engine
Fuel grade EN590	1D or 2D
Bore, mm (in)	92 (3.62)
Stroke, mm (in)	90 (3.54)
Displacement, litres (in ³)	2.4 (146)
Compression ratio	17.5:1
Crankshaft power ¹⁾	
PD/LD (3800 r/min) kW (hp)	74 (100)
Propeller shaft power ¹⁾	
PD/LD (3800 r/min) kW (hp)	66 (90)
Dry weight kg (lb)	332 (732)
Dry weight with HS1 kg (lb)	390 (859)

1) Technical data in accordance with ISO 8665 and ISO 3046 Standard Fuel Stop Power. Fuel 40°C (104°F), lower calorific value of 42700 kJ/kg and density of 840 g/litre.



Engine equipped with

Freshwater cooled turbo-charger
Freshwater cooling, thermostat- controlled with tubular heat exchanger
Seawater pump with rubber impeller
Seawater cooled tubular oil cooler
Prewired el.system for connection to instrument panel
Alternator 14 V/60 A
Starter motor 12 V/3.0 kW
Engine brackets in front
Engine brackets at rear
Flexible engine mounts
Flywheel housing, SAE 4 size
Flywheel, light type
Exhaust elbow, wet type

Technical description

Engine and block

- Cylinder block and cylinder head are made of cast iron alloy for good corrosion resistance and long service life.
- Replaceable valve seatings and cylinder linings.
- Oil-cooled, forged aluminium pistons with two compression rings and one oil scraper ring.
- Nitrocarbonized crankshaft with five bearings.

Fuel system

- Rotor-type injection pump with a mechanical governor and smoke limiter.
- Fuel feed pump with hand primer.
- Fine fuel filter with water separator.
- Electrically operated stopping device.

Cooling system

- Thermostatically controlled freshwater cooling, prepared for hot water outlet.
- Tubular heat exchanger with separate transparent expansion tank.
- Gear-driven seawater pump with rubber impeller.

Lubrication system

- Pressure lubrication system with easily replaced full-flow oil filter on the side of the engine.
- Tubular, cleanable oil cooler.

Inlet system

- Inlet silencer with replaceable filter.
- Freshwater cooled turbo-charger

Exhaust system

- Seawater-cooled exhaust elbow, made of cast iron with stainless steel insert.

Electrical system

- 12 V corrosion-protected electrical system, complete with instrumentation and 14 V/60 A marine alternator. The alternator is prepared for a bulkhead-mounted double-diode set which automatically distributes the charge current to two separate battery circuits.
- Charging regulator with battery sensor for voltage drop compensation.
- Automatic 40 A fuse with reset button.
- Starter motor power 3.0 kW.

Marine gearbox

- HS1 marine gearbox with spiral bevel gears for smooth running at all speeds. Hydraulically operated clutch for smooth shifting. Seawater-cooled oil cooler.

