

# VOLVO PENTA INBOARD DIESEL

# D7A T

**6-cylinder, 4-stroke, direct-injected, turbocharged marine diesel engine  
crankshaft power\* 108–129 kW (147–175 hp)**

\* Power rating – see Technical Data

## Reliable and powerful

The D7AT is a highly reliable, type approved, marine diesel engine. Well-matched engine speed to rated power with excellent torque characteristics along with a variety of power take-off options makes it particularly well suited for displacement and semi-planing workboats in medium and heavy duty service.

## Robust and silent

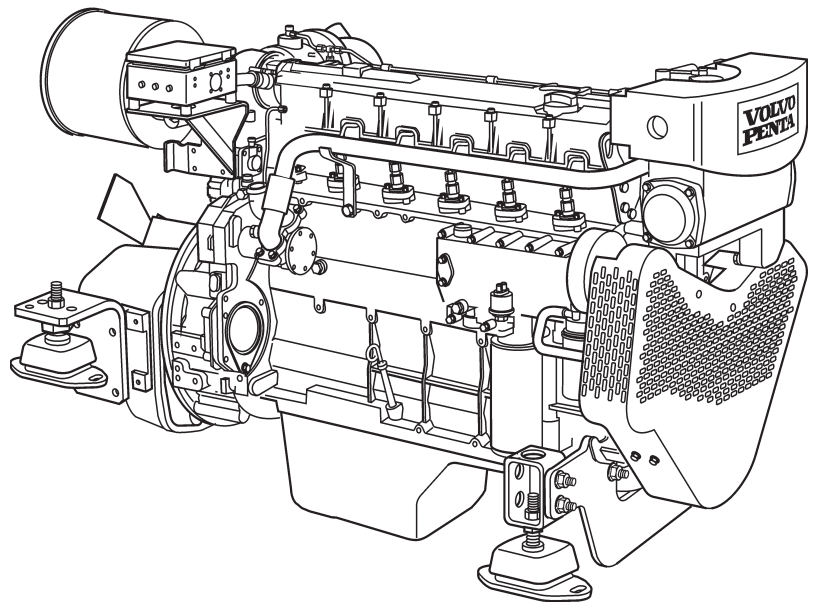
A rigid in-line cylinder block with generously dimensioned crankshaft bearings, together with watercooled exhaust manifold and turbo, are just some of the design features making this silent running and sturdy engine. The owner of a D7AT not only benefits from many hours of trouble-free operation, but also enjoys improved onboard comfort.

## Economical and service friendly

Price is not the only concern when investing in a new engine. As confirmed by marine professionals, it is the operational costs, such as cost for fuel, spare parts, service and maintenance, that makes the real difference in economy.

The D7AT is equipped with unit pumps that control the fuel distribution for each cylinder. Six-hole high-pressure injection nozzles optimize the fuel-air mixture. This improved combustion results in high thermal efficiency, low fuel consumption, reduced exhaust emissions, faster response to load variations and ease in maintenance.

Easily accessible maintenance points and single side servicing contribute to the ease of servicing the engine. Liners of wet and replaceable type, inclined connecting rod caps and replaceable valve seats make even major maintenance possible to carry out on-board.



## Safely supported

Volvo Penta has a well-established, well-trained, network of authorized service dealers in more than 100 countries throughout the world. These service centers offer Genuine Volvo Penta Parts as well as skilled service personnel to help you protect your investment.

## Technical description:

### Engine and block

- Cylinder block, head and flywheel housing made of cast iron
- Belt guard
- Combined 10" and 11.5" flywheel with SAE 3 housing
- Nitrocarburized transmission gears
- Press-hardened crankshaft
- Forged aluminum pistons
- Cylinder liners of wet type

### Lubrication system

- Oil filler in valve cover
- Oil sump made of cast iron
- Manual oil drain pump
- Rotary lubrication oil pump
- Freshwater-cooled oil cooler
- Full flow oil filters of spin-on type
- Closed crankcase ventilation system

### Fuel system

- Fuel feed pump
- Fine fuel filter of spin-on type
- Unit pumps
- Six-hole injectors
- Mechanical governor with smoke limiter
- Fuel stopping solenoid 24V

### Cooling system

- 1-circuit keel cooling system with expansion tank
- Belt-driven freshwater pump
- Freshwater-cooled turbocharger and exhaust manifold

### Electrical system

- 2-pole 24V electrical system, 24V/55A alternator, 24V 4kW starter
- Senders and switches:
  - Tachometer
  - Lubrication oil pressure
  - Cooling-water temperature
  - Cooling-water level
- Rubber-suspended electrical terminal box with semi-automatic fuses and plug-in connection

# VOLVO PENTA

# D7A T

## Technical Data

Engine designation .....	D7A T
No. of cylinders and configuration.....	in-line 6
Method of operation .....	4-stroke, direct-injected, turbocharged diesel engine
Bore, mm (in.).....	108 (4.25)
Stroke, mm (in.) .....	130 (5.12)
Displacement, l (in <sup>3</sup> ).....	7.15 (436)
Compression ratio.....	17.6:1
Dry weight, kg (lb) .....	670 (1477)
Dry weight with reverse gear ZF220, kg (lb).....	760 (1676)
Crankshaft power, Rating 2, kW (hp) 2300 rpm .....	129 (175)
Rating 2, kW (hp) 1900 rpm .....	126 (171)
Rating 1, kW (hp) 2300 rpm .....	123 (167)
Rating 1, kW (hp) 1900 rpm .....	108 (147)
Max. torque, Rating 2, Nm (lbf.ft) 1500 rpm .....	662 (488)
Rating 2, Nm (lbf.ft) 1500 rpm .....	662 (488)
Rating 1, Nm (lbf.ft) 1500 rpm .....	598 (441)
Rating 1, Nm (lbf.ft) 1500 rpm .....	598 (441)
Recommended fuel to conform to.....	ASTM-D975 1-D & 2-D, EN 590 or JIS KK 2204

Specific fuel consumption, Rating 2, g/kWh (lb/hph) 2300 rpm .....	227 (0.368)
Rating 2, g/kWh (lb/hph) 1900 rpm .....	216 (0.350)
Rating 1, g/kWh (lb/hph) 2300 rpm .....	227 (0.368)
Rating 1, g/kWh (lb/hph) 1900 rpm .....	216 (0.350)

Fuel temperature 40°C (104°F)

Technical data according to ISO 3046 Fuel Stop Power and 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.

N.B. The product can also be used in an application with a higher rating than stated, e.g. R1 can be used for R2.

## Optional equipment

### Engine

- Flexible suspension for engine and reverse gear
- 10"/11.5" flywheel with SAE 2 housing

### Lubrication system

- Shallow oil sump
- Twin oil filters, for remote mounting

### Fuel system

- Hand pump
- Jacketed fuel pipes
- Single or twin fuel/water separating pre filter
- Twin fuel filters, for remote mounting

### Exhaust system

- Exhaust elbow, wet
- Exhaust elbow, dry, with integrated flexible compensator
- Silencer, dry

### Cooling system

- Engine-mounted tubular heat exchanger with integrated expansion tank
- Seawater filter

### Electrical system

- 1-pole 12V electrical system, 12V/95A alternator, 12V/3.1kW starter
- 24V/140A alternator
- Engine heater 230V/820W
- Senders: Charge air pressure Gearbox oil pressure
- Cable harness in different lengths
- Various instrument panels

### Power transmission

- PTO crankshaft front end, type stub shaft
- Hydraulic pump for steering and other duties

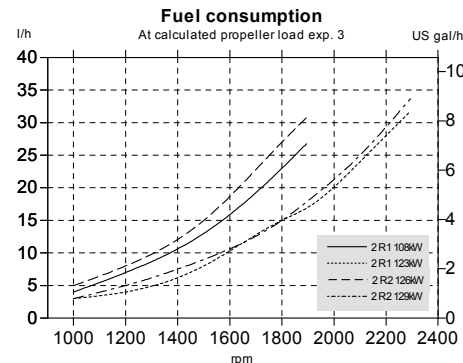
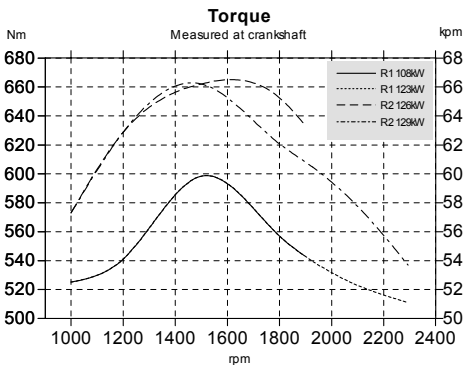
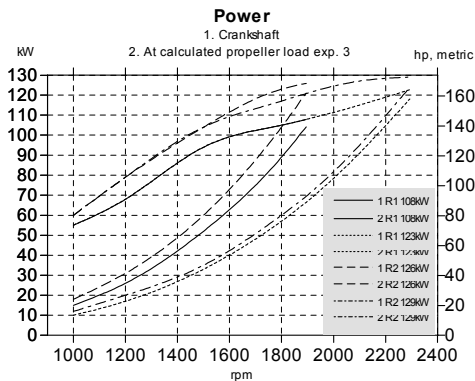
### Reverse gear

- ZF220
- ZF280

Contact your local Volvo Penta dealer for further information.

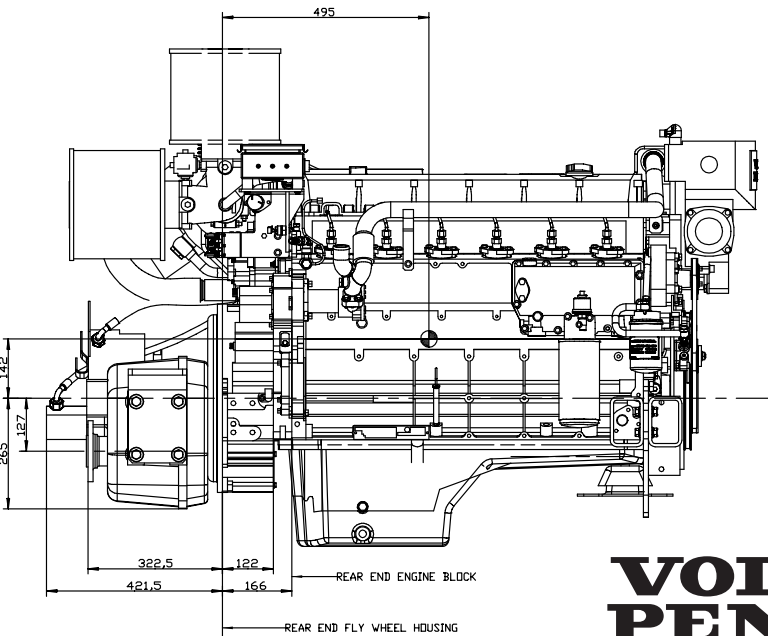
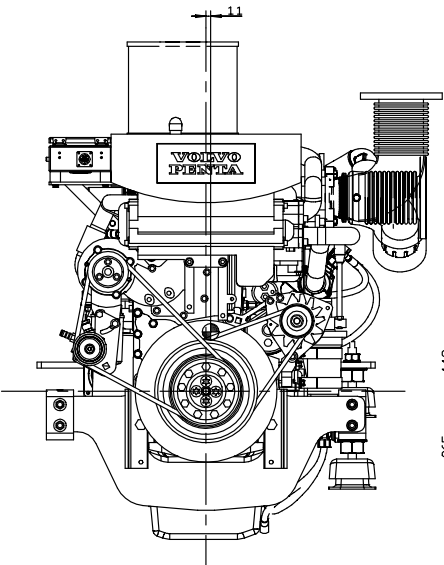
Not all models, standard equipment and accessories are available in all countries. All specifications are subject to change without notice.

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



## Dimensions D7A T/ZF220 (mm)

Not for installation



**VOLVO PENTA**

**AB Volvo Penta**  
SE-405 08 Göteborg, Sweden  
[www.volvopenta.com](http://www.volvopenta.com)