

# VOLVO PENTA AQUAMATIC DUOPROP

# AD31/DP

4-cylinder, 4-stroke, direct-injected turbocharged marine diesel engine with aftercooler and Duoprop drive. 96–110 kW (130–150 hp)\*

\* Crankshaft power according to ISO 8665

## Reliable marine engine

AD31L/P is a reliable and economic marine engine with considerable power resources, developed for planing craft. With its compact dimensions, it is excellent for twin installation.

## Direct injection

Direct injection (DI) results in a low thermal load and low fuel consumption compared with swirl chamber engines (IDI) with the same cylinder capacity.

## Turbocharging

The engine is turbocharged with an exhaust-driven turbocompressor. More air can be forced into the cylinder in this way with the result that more fuel can be injected and the engine runs more efficiently. Since combustion takes place in a turbo engine with excess air, the exhaust gases are cleaner than in a naturally-aspirated engine.

The turbo also acts as an additional silencer both on the induction side and on the exhaust side.

## Aftercooler

The air heats up and expands when it is compressed. In other words, it takes up more space. The aftercooler cools the compressed and heated air and raises its oxygen content so that the engine can use the fuel more efficiently.

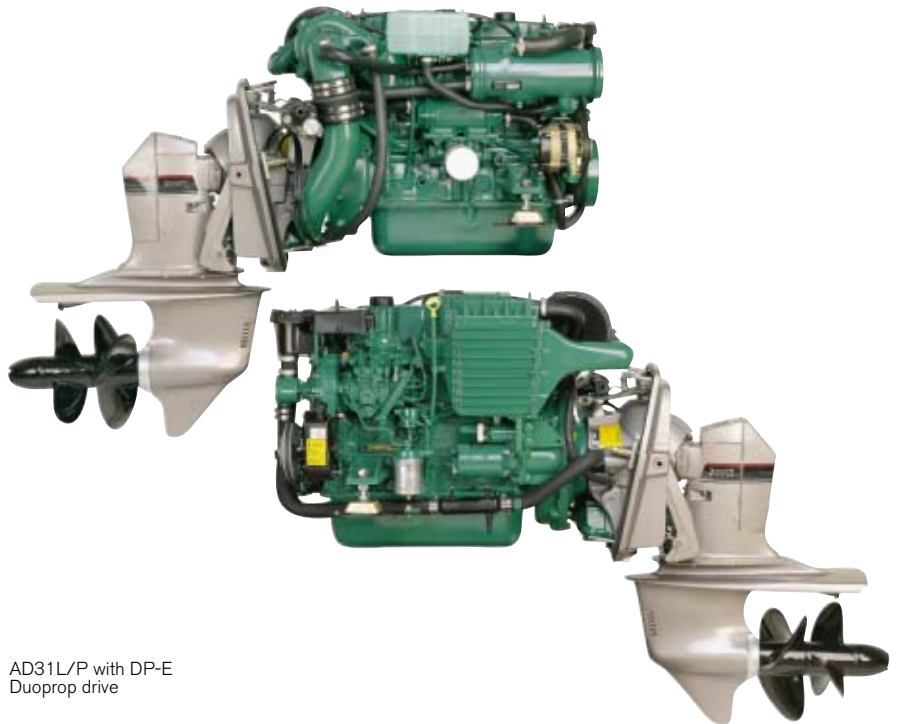
## Low exhaust emission levels

The direct injection, turbocharging and aftercooler contribute to minimizing noxious exhaust emissions and enhancing overall enjoyment of boating. The engine is certified according to SAV.

## DP drive

The DP drive with its twin counter-rotating propellers produces a harmonious drive unit with unbeatable characteristics in the boat in terms of speed, acceleration and fuel economy.

It also produces less noise and vibrations, better steering and maneuvering characteristics, better grip in the water and a shorter time to planing compared



AD31L/P with DP-E  
Duoprop drive

with single propeller systems.

The drive features standard power steering for maximum driving comfort.

## Comprehensive service network

Volvo Penta has a well-established 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 personnel to ensure that you enjoy the best possible service.

## Technical description:

### Engine and block

- Cylinder block and cylinder head made of cast iron for good corrosion resistance and long service life
- Oil-cooled pistons with two compression rings and one oil scraper ring
- Replaceable wet cylinder liners
- Replaceable valve seats
- Five-bearing crankshaft

### Engine mounting

- Flexible mounting which provides sound and vibration insulation. The engine has two

adjustable rubber mounts in front of the engine and rubber suspension between fly-wheel housing and transom shield

### Lubrication system

- Pressure lubrication system with easily replaced full-flow oil filter on the side of the engine
- Tubular oil cooler that can be cleaned

### Fuel system

- Rotor-type injection pump with a mechanical governor for accurate speed control
- Smoke limiter
- Fine filter with water separator
- Feed pump with hand primer
- Electrically operated stopping device

### Air inlet and exhaust system

- Inlet system designed to produce optimal air rotation which provides perfect combustion. This results in high power and low fuel consumption
- Air inlet silencer with replaceable filter
- Closed crankcase vent system
- Seawater-cooled exhaust elbow of cast iron with a stainless steel insert
- Complete connection for exhaust outlet through the drive
- Exhaust-driven freshwater-cooled turbo-charger

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# AD31/DP

## Cooling system

- Thermostatically regulated freshwater cooling
- Tubular heat exchanger with separate transparent expansion tank
- Gear-driven seawater pump with rubber impeller
- Coolant system prepared for hot water outlet
- Seawater strainer

## Electrical system

- 12V corrosion-protected electrical system, complete with instrumentation
- 14V/60A marine alternator
- Charging regulator with battery sensor for voltage drop compensation
- The alternator is prepared for a bulkhead-mounted double-diode set which automatically distributes the charge current to two separate battery circuits
- Automatic fuse with manual reset
- Starter motor power 3.0 kW
- Extension cable harness with plug-in connection available in various lengths

## Instrument panel:

Separate instruments and harness or complete panel fitted with:

- Key switch
- Temperature gauge
- Instrument lighting
- Alarm for temperature, oil pressure and charging
- Voltmeter
- Rev counter
- Hour meter
- Oil pressure gauge
- Alarm test

## Drive

- Complete with transom shield, flywheel cover and installation components
- The drive can be tilted up by 42°
- Protective zinc anodes prevent corrosion
- The coolant water inlet at the front of the drive provides a reliable coolant water supply to the engine
- Built-in kick-up function to reduce possible damage, in the event the drive strikes an underwater object

## Power Trim

- Power Trim is an electrically operated hydraulic system for trimming the drive angle while in use. The actual trim angle is indicated with five LEDs and a digital display on the CD Trim instrument
- An analog instrument is also available

## Accessories

An extensive range of accessories for:

- Fuel system
- Cooling system
- Control system
- Steering system
- Instruments
- Electric system
- Comfort & Safety
- Propeller & Drive
- Maintenance

For detailed information, please see Accessory catalogues.

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.

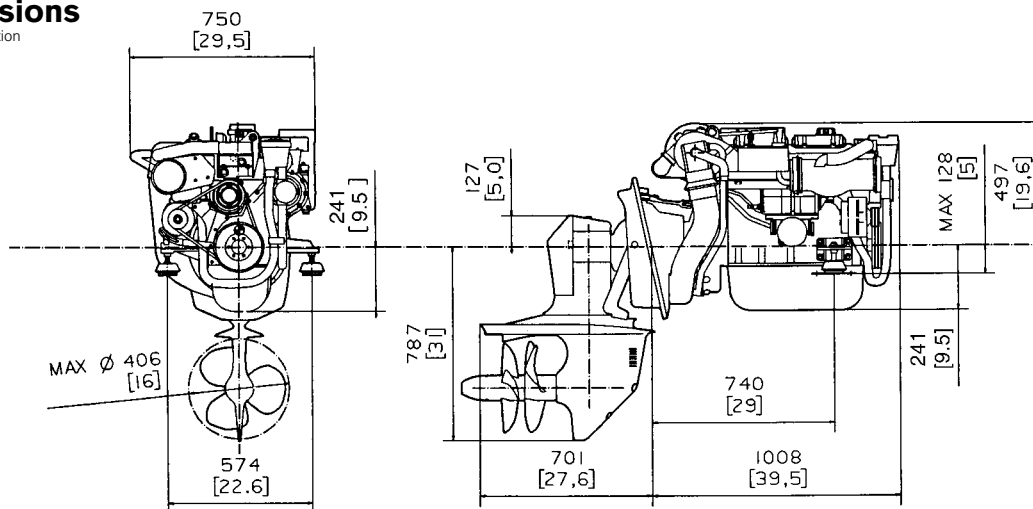
## Technical Data

	AD31P	AD31L
Engine designation.....	AD31P	AD31L
Crankshaft power, kW (hp).....	110 (150)	96 (130)
Propeller shaft power, kW (hp).....	104 (141)	90 (122)
Engine speed, rpm.....	3900	3800
Displacement, l (in <sup>3</sup> ).....	2.4 (146)	2.4 (146)
Number of cylinders.....	4	4
Bore/stroke, mm (in.).....	92/90 (3.62/3.54)	92/90 (3.62/3.54)
Compression ratio.....	17.5:1	17.5:1
Volvo Penta Duoprop drive.....	DP-E	DP-E
Ratio.....	2.3:1	2.3:1
Dry weight with DP, incl. prop., kg (lb).....	443 (977)	443 (977)
Duty rating.....	R5-R4	R5-R3

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.  
N.B. The product can also be used in an application with a higher rating than stated, e.g. R3 can be used for R4 or R5.  
The engine is certified according to SAV.

## Dimensions

Not for installation



# VOLVO PENTA

AB Volvo Penta  
SE-405 08 Göteborg, Sweden  
www.volvo-penta.com