

VOLVO PENTA AQUAMATIC DUOPROP

8.1/DP

8-cylinder, 4-stroke, gasoline marine engine
Up to 313 kW (420 hp)

Engine

The 8.1/DP is an electronic fuel injected 8.1 liter gasoline engine in a V-8 configuration. This engine is ideal for the sport performance segment in single and twin applications. The engine features seawater cooling and a cast iron cylinder block, cylinder heads and exhaust manifolds that are specially developed for the marine environment. An easily accessible seawater pump is located in the front of the engine. A canister type fuel filter is also easily accessible. The 8.1 is equipped with hydraulic valve lifters, which eliminates the need for valve adjustment. The crankshaft is supported by five four-bolt main bearings for extra strength and smooth running. The advanced combustion system minimizes noxious exhaust emissions and enhances overall enjoyment of boating.

Fuel injection

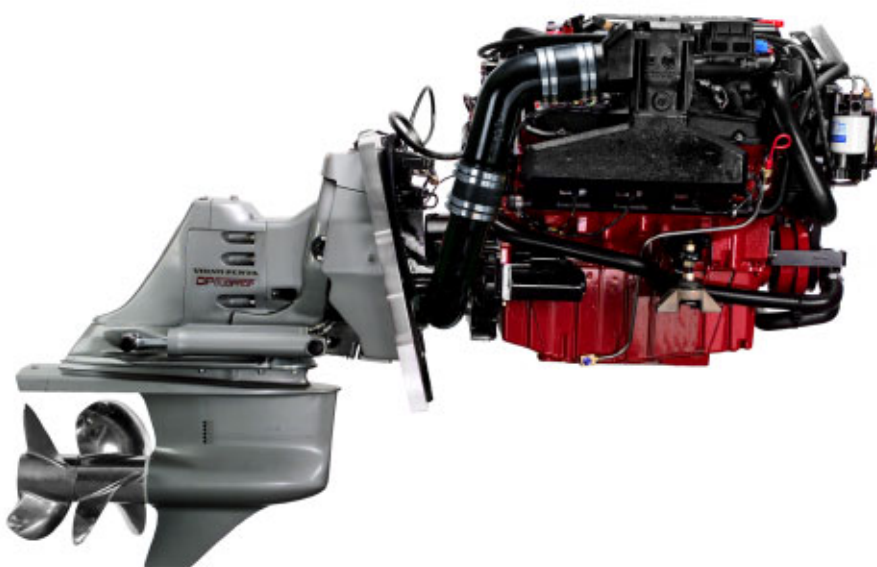
The Multi Port Fuel Injection system is monitored by an Electronic Control Module (ECM) and gives the following advantages: more responsive and smoother acceleration, excellent turnkey starts in all weather conditions, smooth reliable idling, reduced fuel consumption, and improved control of emissions.

Additional features built into the system include: engine knock control for compensation of less than perfect gasoline, overspeed protection, rpm reduction of the engine for low oil pressure and high engine temperature, platinum tipped spark plugs for longer life and trouble free starts, altitude compensation for air density, and self-diagnostic capabilities. Also, there are two fuel pumps for low and high pressure respectively.

Aquamatic sterndrive

The Duoprop drive with its twin counter-rotating propellers features exhaust outlets through the propeller hub and cavitation plate producing a harmonious

8.1GX_i with DP-S
Duoprop drive



drive unit with unbeatable characteristics in the boat in terms of speed, acceleration, steering, maneuvering, fuel economy and less noise and vibration.

The drive is equipped with a cone clutch for easy and smooth shifting, pattern-matched spiral bevel gears for optimum strength and minimum gear whine, a break-away shaft coupling to prevent costly drive train repairs, and sacrificial zincs located both on the drive and transom shield.

The drive is equipped with easily maneuvered hydraulic power trim for obtaining the best running position at different sea and load conditions.

A choice of stainless steel and aluminum propellers are available for different applications.

The 8.1 features standard power steering for maximum driving comfort.

Electrical system

The electrical system features a 12 V corrosion-protected marine electrical system which meets the U.S. Coast

Guard requirements. The engine is wired for easy plug-in connection to the instrument panel. The engine electrical system and the electric hydraulic power trim is protected by a 50 A circuit breaker and comes equipped with a 75 A alternator. Full instrumentation including trim gauge and wiring harness (option on certain markets).

Technical description:

Engine and block

- Cylinder block and cylinder heads made of cast iron for good corrosion resistance
- Pistons with two compression rings and one oil scraper ring
- Five-bearing crankshaft
- Valve train consisting of single camshaft, hydraulic valve lifters, push rods and two valves per cylinder
- Color-coded service points

Engine mounting

- Two adjustable rubber mounts, one on each side of the engine, and two between transom shield assembly and engine

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Lubrication system

- Pressure lubrication system with full-flow oil filter of spin-on type
- Remote oil filter

Fuel system

- Multi Port Fuel Injection system – MPI
- Fuel filter with water separator
- Two electric fuel feed pumps
- Stainless steel fuel lines

Inlet and exhaust system

- Marine intake manifold, developed for Multi Port Fuel Injection
- Flame arrestor
- Closed crankcase ventilation
- Seawater-cooled exhaust manifolds and risers made of cast iron
- Complete exhaust line with pipe and bellows for exhaust outlet through the drive

Cooling system

- Thermostatically controlled seawater cooling. The engines can be ordered with factory-mounted freshwater cooling.
- Crankmounted seawater pump
- Serpentine belt with spring tensioner
- Electrocoated exhaust risers and manifolds
- Flush fitting – hose connection to flush cooling system with freshwater

Electrical system

- 12 V corrosion-protected electrical system

- ECM unit ensures constant optimum performance with diagnostic capability
- Charging regulator with battery sensor for voltage drop compensation
- 75 A alternator with internal transistorized voltage regulator
- Breakerless electronic ignition system
- Platinum tipped spark plugs
- One 50 A resettable circuit breaker for the trim system
- One 20 A fuse for protection of the fuel feed pumps and one 15 A fuse for protection of the fuel injection system
- Starter motor power 1.0 kW
- Audio alarm kit – engine oil pressure and temperature as well as exhaust overheat. Can be mounted at helm.

Instruments

- (option on certain markets)
- Complete instrument panel including: Rev counter, engine temperature gauge, oil pressure gauge, voltmeter, key switch, two fuses, instrument light switch
 - Wiring harness from engine to instrument panel
 - Digital trim gauge with active corrosion protection
 - Maneuver switch for power trim
 - Wiring harness from trim pump to maneuver switch for power trim

Duoprop drive

- Cone clutch
- Coolant water intake for the engine located at the lower part of the drive
- Pattern-matched spiral bevel gears
- Exhaust outlets through propeller hub and cavitation plate
- Overload protection sleeve (break-away coupling)
- The drive can be tilted 55°
- The drive can be turned 28° in each direction with power steering
- Built-in kick-up function to reduce possible damage, in the event the drive strikes an underwater object
- Belt-driven power steering pump
- Oil cooler for power steering
- Active corrosion protection as standard
- Shift interrupter

Power Trim

- Electrically operated hydraulic system with trim gauge for best driving comfort

Accessories

An extensive range of accessories for:

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

For detailed information, please see Accessory catalogs.

Technical Data

Engine designation	8.1GXⁱ	8.1Gi¹⁾
Propeller shaft power kW (hp).....	313 (420)	280 (375)
Max. engine speed, rpm	5000	4600
Displacement, l (in ³)	8.1 (496)	8.1 (496)
Number of cylinders	V-8	V-8
Fuel system	MPI	MPI
Bore/stroke, mm	108/111	108/111
in.....	(4.25/4.37)	(4.25/4.37)
Compression ratio	9.1:1	9.1:1
Volvo Penta Duoprop drive	DP-S	DP-S
Ratio.....	1.78:1 or 1.68:1	1.95:1, 1.78:1 or 1.68:1
Dry weight engine, transom shield and drive, kg (lb).....	571 (1258)	571 (1258)
Dimensions (not for installation):		
Engine length		
inside transom, mm (in.)	1041 (41)	1041 (41)
Engine width, mm (in.)	838 (33)	838 (33)
Height above crankshaft, mm (in.)	542 (21.4)	542 (21.4)
Height below crankshaft, mm (in.)	247 (9.7)	247 (9.7)

¹⁾ SAV approved. Please contact Volvo Penta Central Europe GmbH Niederlassung Schweiz CH-3250 Lyss, Switzerland for certificate and label.

Propshaft power according to ISO 8665
Duty rating: R5 (Pleasure Duty)
IMEC Standard

Contact your local Volvo Penta dealer for further information. 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.

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