

VOLVO PENTA AQUAMATIC DUOPROP

8.1/DPS EVC/EC

Up to 313 kW (420 hp)

Gasoline big block

Nothing beats a V-8 gasoline big block for true operating pleasure! The 8.1/DPS is a modern engine with electronic fuel injection and electronic control for faster engine response and safe starting in all weather. A truly robust design and an advanced monitoring system ensures high reliability. The Duoprop drive with twin counter-rotating propellers delivers unbeatable acceleration and handling under all operating conditions. Power steering and trim are standard. As an option, the 8.1 liter engine can be obtained with catalytic converters, which significantly reduce the amount of harmful emissions.

Engine

The 8.1/DPS 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 and cylinder heads, 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, high engine temperature, and low voltage, 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.

EVC/EC - Plug and go

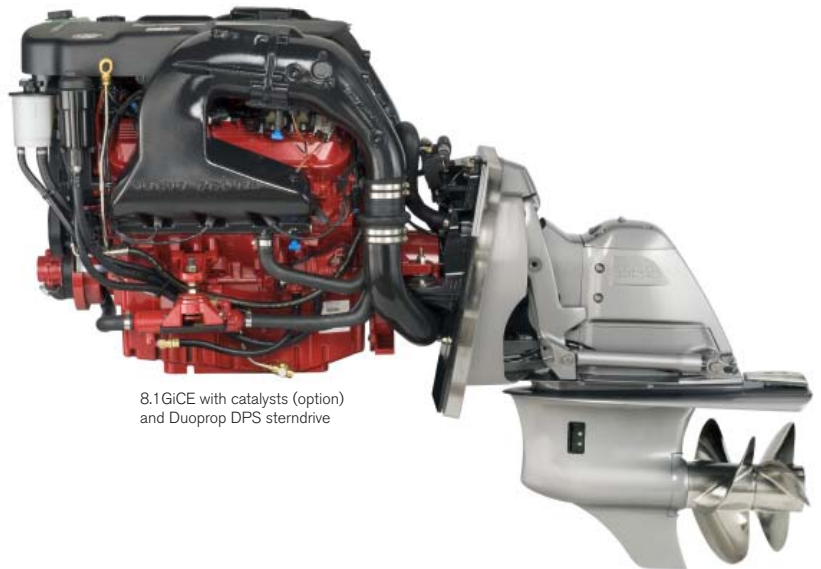
EVC Electronic Vessel Control is the latest development in engine control and instrumentation for Volvo Penta marine engines. It offers a higher level of integration in your boat: electronic shift and throttle for smooth and safe control, power trim control, a complete range of easy to read data link gauges, an EVC System Display (option) and much more, everything in just one CAN cable.

EVC makes boating easier and safer, offering twin engine and power trim synchronization and new software functions such as trip computer and power trim assistant. EVC is scalable from one station up to four, from a classic dashboard up to an advanced driver information system.

The system is built on the latest automotive technology with waterproof connectors, so it's just plug and go.

Optional catalyst

Volvo Penta's new 8.1GiCE EVC/EC with catalysts has been developed with the latest in gasoline exhaust after-treatment technology. High efficiency three-way catalytic converters based on robust stainless steel metallic substrates drastically reduce the emissions of hydrocarbons, nitrogen oxides and carbon monoxide.



8.1GiCE with catalysts (option) and Duoprop DPS sterndrive

Aquamatic sterndrive

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

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8.1/DPS EVC/EC

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 overhead 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

Lubrication system

- Pressure lubrication system with full-flow oil filter of spin-on type and environmentally friendly replaceable paper insert
- Remote oil filter

Fuel system

- Multi Port (MPI) Returnless Fuel System
- Fuel filter with water separator
- Two electric fuel feed pumps
- Flexible 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 (non-catalyst engines)
- Complete exhaust line with pipe and bellows for exhaust outlet through the drive

Optional catalyst (8.1GiCE):

- Heated lambda sensors with double protection tube
- High efficiency stainless steel metallic catalyst substrate
- Light weight aluminum exhaust manifolds with thermostatic temperature control and EC² Ceramic coating
- OBD-M diagnostic compliance

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 (non-catalyst engines)
- Flush fitting - hose connection to flush cooling system with freshwater

Electrical system

- 12 V corrosion-protected electrical system
- 14-pin engine to boat connection
- ECM unit ensures constant optimum perfor-

- mance with diagnostic capability
- Charging regulator with battery sensor for voltage drop compensation
- 75 A alternator with internal transistorized voltage regulator and internal fan
- Breakerless electronic ignition system
- Platinum tipped spark plugs
- One 40 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. The engine also has a low voltage audio alarm. Can be mounted at helm.

Instruments

(option on certain markets)

- Supports NMEA 2000 engine messages
- 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 as accessory
- Maneuver switch for power trim
- Wiring harness from trim pump to maneuver switch for power trim and trim gauge

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)
- Power Trim adjustable with EVC/EC
- Standard tilt specification 52° (42° and 32° available as option on engine order)
- 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
- Serpentine belt-driven power steering pump
- Oil cooler for power steering
- Active corrosion protection as standard
- Integrated speedometer (pitot tube) pickup in lower drive leg
- Easy to access drive anode placed on the back of the cavitation plate
- Industry standard transom cutout with 8 stud hole pattern

Power Trim

- Electrically operated hydraulic system with trim gauge for best driving comfort
- High capacity trim pump integrated with transom shield to ease installation and save space in engine compartment

Accessories

For detailed information, please see the Accessories & Maintenance Parts catalog (www.volvopenta.com).

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

Engine designation	8.1GXIE	8.1GiE 8.1GiCE (catalyst)
Propeller shaft power kW (hp)	313 (420)	280 (375)
Prop. shaft power catalyst engine, kW (hp)		298 (400)
Max. engine speed, without/with catalysts, rpm	5000	4600/4800
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	DPS	DPS
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, without/with catalysts, kg (lb)	576 (1271)	576/572 (1271/1261)
Dimensions (not for installation): Engine length inside transom, mm (in.)	1018 (40.1)	1018 (40.1)
Engine width, mm (in.)	832 (32.8)	832 (32.8)
Height above crankshaft, without/with catalysts, mm (in.)	554 (21.8)	554/608 (21.8/23.9)
Height below crankshaft, mm (in.)	247 (9.7)	247 (9.7)

* High altitude 1500 m (5000 ft)
Propshaft power according to ISO 8665
Duty rating: R5 (Pleasure Duty)



All engines fulfill the emission requirements EPA and EU RCD - the 8.1GiCE also complies with the stringent C.A.R.B. (4-star) regulations.

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