

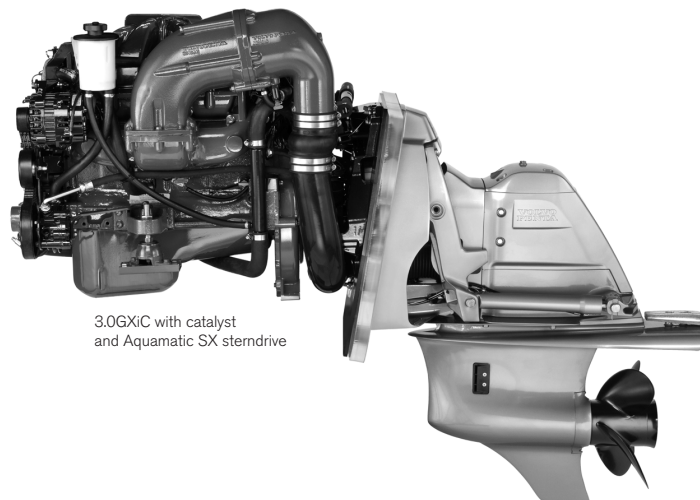
VOLVO PENTA AQUAMATIC

3.0GXiC/SX

112 kW (150 hp)

Clean, compact and reliable

The in-line four-cylinder 3.0GXiC is a clean, compact and reliable gasoline engine for sport boats, walkarounds, leisure fishing boats and many other types. Breakerless ignition system and hydraulic valve lifters give excellent reliability and low maintenance. A 3.0-liter displacement with high torque over the entire speed range and the advanced fuel-injection system is a perfect combination for the SX single-propeller drive. The engine is equipped with a catalytic converter that significantly reduces the amount of harmful emissions.



3.0GXiC with catalyst and Aquamatic SX sterndrive

Engine

Compact and reliable in-line 4-cylinder seawater-cooled gasoline engine with cast iron cylinder block and cylinder head, specially developed for marine environment. With a 3.0 liter displacement and high torque, the engine is ideal for single and twin applications.

Virtually maintenance-free breakerless ignition system. Easily accessible seawater pump located in the front of the engine. The 3.0GXiC engine is equipped with hydraulic valve lifters, which eliminate the need of valve adjustment. The crankshaft is supported with five main bearings for extra strength and smooth running.

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 reduc-

tion 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.

Catalyst engine

Volvo Penta's new 3.0GXiC with catalyst has been developed with the latest in gasoline exhaust after-treatment technology. A high efficiency three-way catalytic converter based on robust stainless steel metallic substrates drastically reduces the emissions of hydrocarbons, nitrogen oxides and carbon monoxide.

Aquamatic sterndrive

The SX single propeller drive is of the most modern design featuring exhaust through the propeller hub and cavitation plate for quiet and efficient operation, a cone clutch for easy and smooth shifting, pattern-matched spiral bevel gears for optimum strength and minimum

gear whine, and a break-away shaft coupling to prevent costly drivetrain repairs.

The hydrodynamic design of the lower drive housing ensures excellent course stability both at high speed and when maneuvering at low speeds and in reverse. The drive is equipped with easily maneuvered hydraulic power trim for obtaining the best running position at different sea and load conditions.

For maximum corrosion protection the drive has gone through a 23 step paint process and comes equipped with sacrificial anodes both on the drive and transom shield.

Either right- (standard) or left-handed propellers can be used. A choice of stainless steel and aluminum propellers are available for different applications.

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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Technical description:

Engine and block

- Cylinder block and cylinder head 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

Fuel system

- Multi Port Fuel Injection system - MPI
- 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
- Complete exhaust line with pipe and bellows for exhaust outlet through the drive
- Heated lambda sensors with double protection tube
- High efficiency stainless steel metallic catalyst substrate
- Thermostatically controlled seawater-cooled aluminum exhaust riser and manifold with EC² Ceramic coating
- OBD-M diagnostic compliance

Cooling system

- Thermostatically controlled seawater cooling
- Crankmounted seawater pump
- Serpentine belt with spring tensioner
- 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 performance 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
- Starter motor power 1.0 kW

- 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
- Audio alarm kit - engine oil pressure and temperature as well as exhaust overheat, and a low voltage audio alarm. The alarm kit contains a MIL lamp to warn of emission related faults. 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
- Maneuver switch for power trim
- Wiring harness from trim pump to maneuver switch for power trim

Drive

- Single propeller drive which can be run with both right- and left-hand propellers
- 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 drive cavitation plate
- Overload protection sleeve (break-away coupling)
- Standard tilt specification 52° (42° and 32° available as option on engine order)
- The drive can be turned 28° in each direction
- Built-in kick-up function to reduce possible damage, in the event the drive strikes an underwater object
- Serpentine belt-driven power steering pump
- Active corrosion protection as accessory
- 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	3.0GXiC
Propeller shaft power, kW (hp)	112 (150)
Max. engine speed, rpm	4800
Displacement, l (in ³)	3.0 (181)
Number of cylinders	I-4
Fuel system	MPI
Bore/stroke, mm (in.)	101.6/91.4 (4.00/3.60)
Compression ratio	9.2:1
Volvo Penta Aquamatic drive	SX
Ratio	2.18:1 or 1.97:1
Dry weight engine, transom shield and drive, kg (lb)	333 (734)
Dimensions (not for installation):	
Engine length	
inside transom, mm (in.)	858 (33.7)
Engine width, mm (in.)	661 (26)
Height above crankshaft, mm (in.)	534 (21)
Height below crankshaft, mm (in.)	200 (7.9)
Propshaft power according to ISO 8665.	
Duty rating: R5 (Pleasure Duty)	



The engine fulfills the emission requirements EPA and EU RCD and also complies with the stringent C.A.R.B. (4-star) regulations.

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