

250/SP

(AQ151/SP)

250, four-cylinder, 4-stroke, fresh water cooled carburettor engine, with SP.

The 250 engine is a willing powerful and efficient unit and when combined with the Singleprop Power Trim drive gives high boat performance balanced by good economy and low service costs.

Compact dimensions and low weight offer valuable benefits from the point of view of engine installation in the boat hull.

The completely sealed fresh-water cooling system prolongs engine life and provides for the connection of onboard heating, if required.

Overhead camshaft with fixed valve clearances, helps to extend service intervals.

Servicing and maintenance is easily carried out since the engine, drive and transom shield are assembled as separate units, which makes for maximum accessibility.

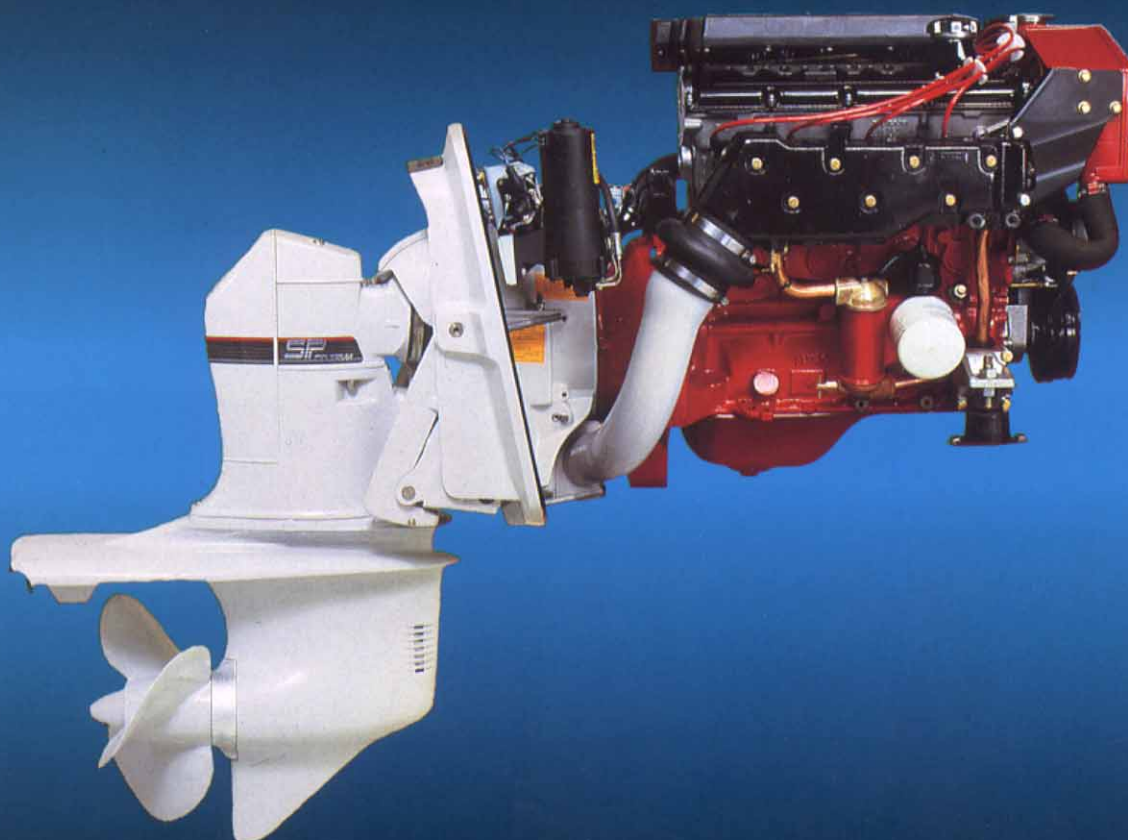
The seawater pump is located at the front of the engine to simplify replacement of the impeller.

The Power Trim enables optimum adjustment of the working drive angle for improved acceleration, top speed and fuel consumption when cruising.

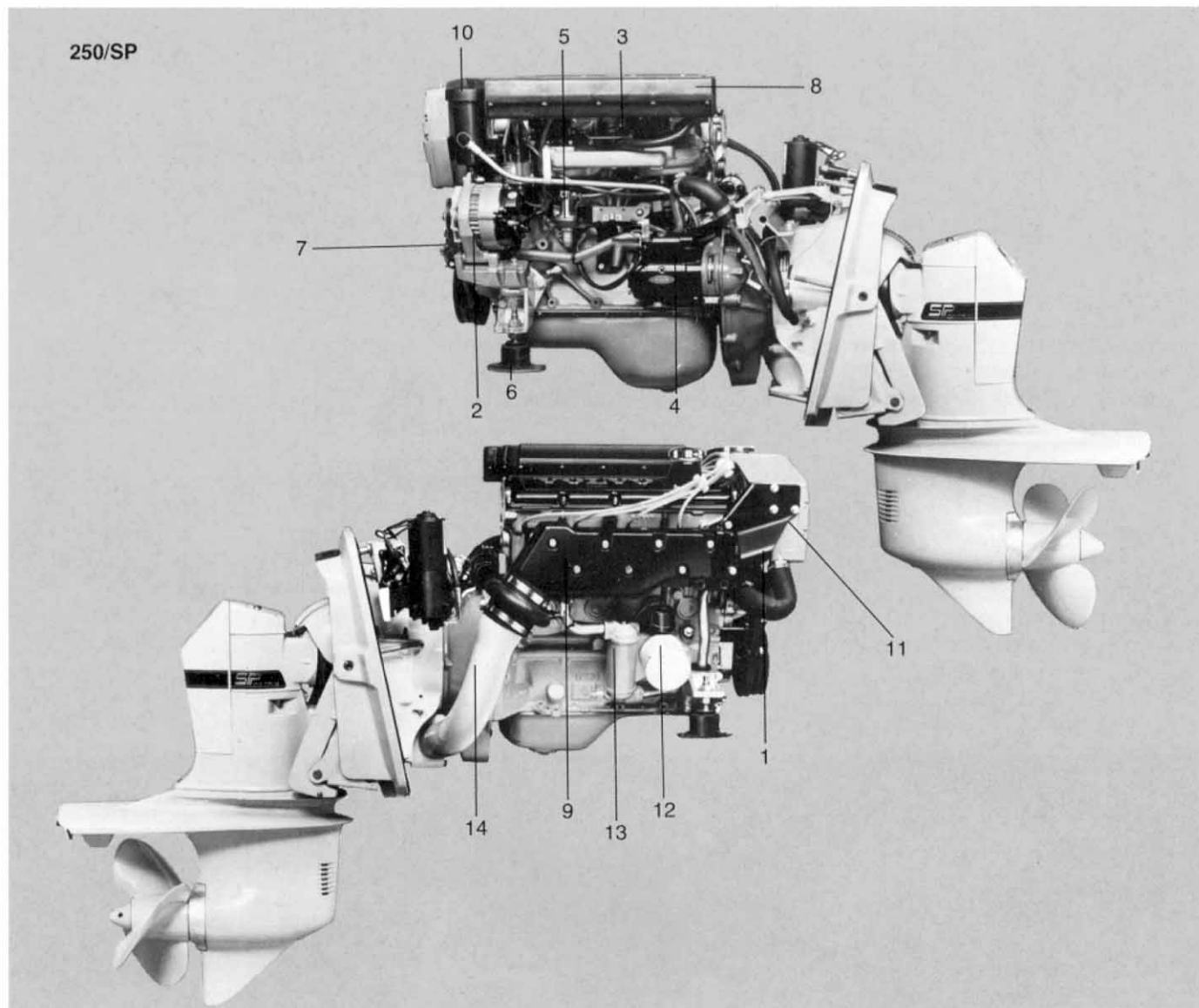
The design of the transom shield kit makes installation simple, safe and quick.

The SP drive, well-known for its long working life and outstanding salt water corrosion resistance, together with the engine, forms a compact, reliable unit in which the performance of the engine is exploited to the full.

Volvo Penta has a well-established network of authorized service workshops in more than 100 countries, providing Genuine Parts and skilled personnel to ensure that you enjoy the best possible service.



VOLVO PENTA



Standard equipment

ENGINE

Cylinder block made from a special grade of cast iron. Aluminium alloy cylinder head. Overhead valves, seat inserts made of special steel. Adjuster shims for valve clearance setting. The engine is mounted in the flywheel housing at an angle of 20° to reduce overall height. Overhead, 5-bearing camshaft driven by reinforced neoprene toothed-belt. Alloy pistons with double compression rings and oil scrape ring. Crankshaft mounted on 5 bearings.

FUEL SYSTEM

Twin down-draught carburettors with acceleration pumps (3). Fuel pump (5).

COOLING SYSTEM

Thermostatically controlled fresh water cooling with circulation pump, expansion tank (1) and heat

exchanger (11). Seawater pump with neoprene impeller (7). Cleanable seawater filter (10).

LUBRICATION SYSTEM

Pressure lubrication with full-flow, "spin-on" lubricating oil filter (12). Closed crankcase ventilation. Cleanable, tubular oil cooler (13).

INTAKE SYSTEM

Intake silencer (8) with integrated flame guard.

EXHAUST SYSTEM

Seawater cooled exhaust manifold (9) including exhaust elbow made of cast iron. Complete exhaust line (14) for connection to drive.

FORWARD ENGINE MOUNTING

Flexible front engine mountings (6), with vertical and sideways adjustment.

DRIVE

Outboard drive complete with transom shield and installation components.

All gears helically cut and the tensile strength of the lower gear is designed for operation in either direction of rotation.

The Silent Shift cone clutch (patented) provides reliable, quiet engagement and requires little effort. The drive tilt angle is 48°. The gearshift mechanism has an easily adjusted link rod to allow conversion to suit clockwise or anti-clockwise propeller rotation. Factory mounted bracket for direct connection of steering cable to transom shield. Power steering is available (as extra equipment) also suitable as a retrofit item. Zinc protection ring which prevents galvanic corrosion. Cooling water intake at front of the drive and one secondary intake at bottom of drive ensures the supply of cooling water to the engine. The patented

reverse latch mechanism gives full astern capacity at all trim angles and prevents the drive from tilting up when the throttle is pulling back quickly. Also allows the drive to kick up on striking underwater objects. "Power Trim" with electrohydraulic system, allows the drive angle to be trimmed while running. (The electrically driven hydraulic pump is mounted either to the bulkhead or to the transom.) Oil used for drive lubrication and hydraulic pumps is the same as engine oil.

with integrated transistorised regulator. Starter motor rating 1.4 kW (1.9 hp). (4).

TRIM INDICATOR (CD)



The trim angle is indicated by five green diode lamps plus a digital display. A continuous red light indicates when the drive is in the "beach" sector. The red light flashes when the drive is in the "tilt" position. The con-

trol panel has two switches with easy-to-read symbols; one for up/down drive control and one override switch to come from "tilt" sector into "beach" sector.

INSTRUMENT PANEL



(Extra equipment for some markets.) Fitted with key switch, tachometer, oil pressure gauge, voltmeter, temperature gauge, double fuses and switch for instrument lighting. Cable length 6.0 m (19.7 ft).

ELECTRICAL SYSTEM

Corrosion-protected 12 V electrical system. Engine-mounted 40 A main fuse. Separate drive fuse (80 A melt fuse, one spare supplied with engine). Brushless alternator 14 V/50 A (2)

DATA

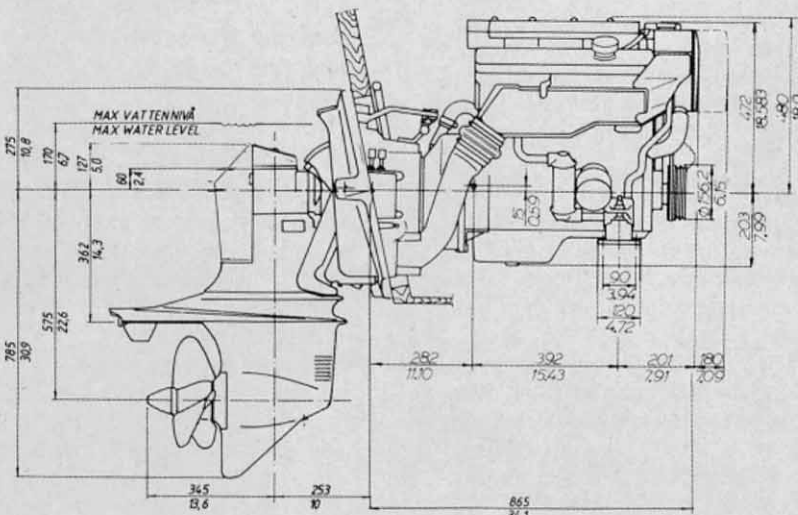
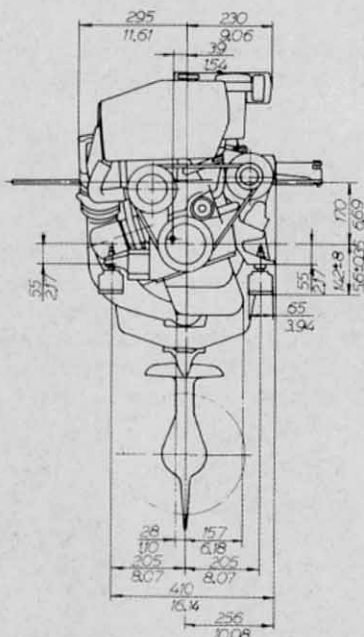
Type of operation	4-stroke fresh-water cooled carburettor engine with overhead valves
Engine designation	250
Crankshaft power ^{1) 2)} at 5500 r/min	107 kW (146 hp)
Propeller shaft power ^{3) 4)} at 5200 r/min	99 kW (135 hp)
Recommended max. revolutions at full load	4800–5500 r/min
Number of cylinders	4, in-line
Capacity	2.49 dm ³ (152 in ³)
Cylinder bore/stroke	96/86 mm (3.78/3.38 in)
Compression ratio	9.7:1
Grade of fuel	min 91 octane RON
Drive, type designation/reduction	SP/2.15:1
Total weight (engine transom shield and drive) approx.	250 kg (551 lbs)

¹⁾ Crankshaft power acc. to SAE J607.

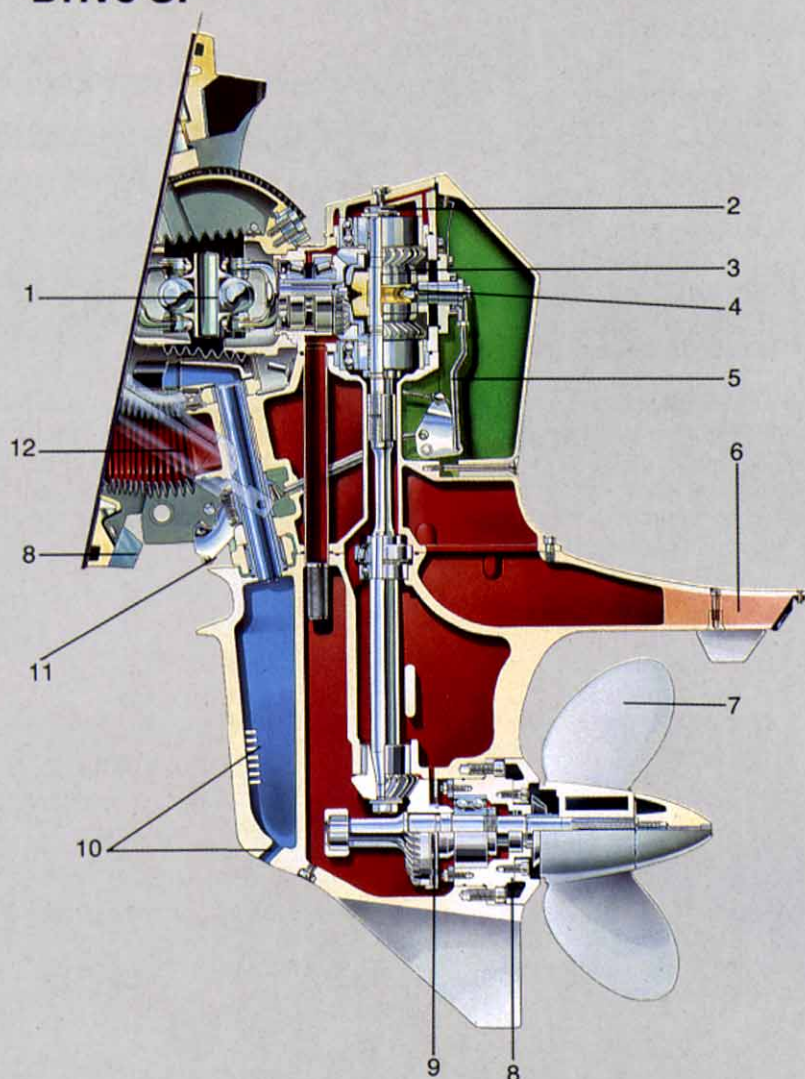
²⁾ Usable power will be reduced by transmission or gearbox losses.

³⁾ Prop. shaft power acc. to ISO 8665 or acc. to the technically identical standards SAE J1228 and ICOMIA 28–83.

⁴⁾ Prop. shaft power indicated at mid of recommended speed range.



Drive SP



1. Double universal joint. Robust and maintenance-free.
2. Oil dipstick.
3. Helically-cut gears for low noise level.
4. Patented cone clutch, Silent Shift type. Operates smoothly and quietly and requires little effort.
5. The direction of propeller rotation can be reversed by simple relocation of the link rod in the drive.
6. Cavitation plate with exhaust outlet.
7. Space for propellers up to 16" diameter.
8. Zinc ring in front of the propeller with extra zinc anode on the transom shield, gives efficient protection against galvanic corrosion.
9. Oil pump, vane type. Oil type same quality as engine.
10. Cooling water intakes.
11. Reverse latch-mechanism, patented design. Also allows drive to kick up on striking underwater objects.
12. Trim cylinders connected with stainless steel pipes in the hydraulic system.

Accessories

FUEL SYSTEM

Water separator. Copper fuel line kit. Flexible fuel hose length 700 mm (27.6 in). Separate connecting cover for fuel tank. Suction pipe for fuel tank connecting cover. Tank ventilator.

ELECTRICAL SYSTEM AND INSTRUMENTS

Extension cable harness (main panel). T-cable harness "Flying Bridge". Power Trim instrument and switch for "Flying Bridge". Extension cable harness, length 3.0 m (9.85 ft), for trim function. Main switch. Safety switch (man overboard). Neutral switch for VP controls. Batteries. Charge distributor with battery restriction and automatic compen-

sation for voltage drop in electrical system.

Extra instruments: Fuel tank gauge, water tank gauge, hour meter, rudder indicator.

CONTROLS AND OPERATING SYSTEMS

Single lever control both for throttle and for shift operation. Mounting alternative: Single or twin top or single, side mounted.

Throttle and shift cables.

Tie rods for twin installation.

Steering systems with cables and connection kits for STS 330 push pull type. (See application guide in installation handbook.)

Power steering. Dual station equipment for control, and steering equipment.

TRANSMISSION

High Speed propellers.
Drive extensions.

MISCELLANEOUS

Engine compartment fan. Flexible hose for fan. Electrical bilge pump. Oil scavenging pump electrical or manual. Tool kit. Oil for engine and drive. Touch-up paint. Anti-corrosion spray.

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