

# 251 DOHC/SP

(AQ171/SP)

## 251 DOHC 4-cylinder, 16-valve, 4-stroke, carburettor engine with SP.

251 DOHC\* is a technically-advanced engine designed primarily for runabouts where the demands made on performance are high. Together with the SP drive and Power Trim, the 251 DOHC provides exceptional performance: Speed, acceleration and fuel economy.

The engine has four valves per cylinder, which makes for a higher volumetric efficiency through improved breathing. It also gives better fuel economy and performance.

The twin overhead camshafts combined with hydraulic valve lifters give accurate control of the valve timing. Normally, valve adjustment will not be needed.

The electronic ignition system guarantees very accurate control of the ignition process throughout the entire engine speed range and will normally not require any maintenance or adjustment.

The charging regulator always gives the correct termi-

nal voltage at the battery and automatically compensates for voltage drop in the electrical system. This gives very efficient battery charging.

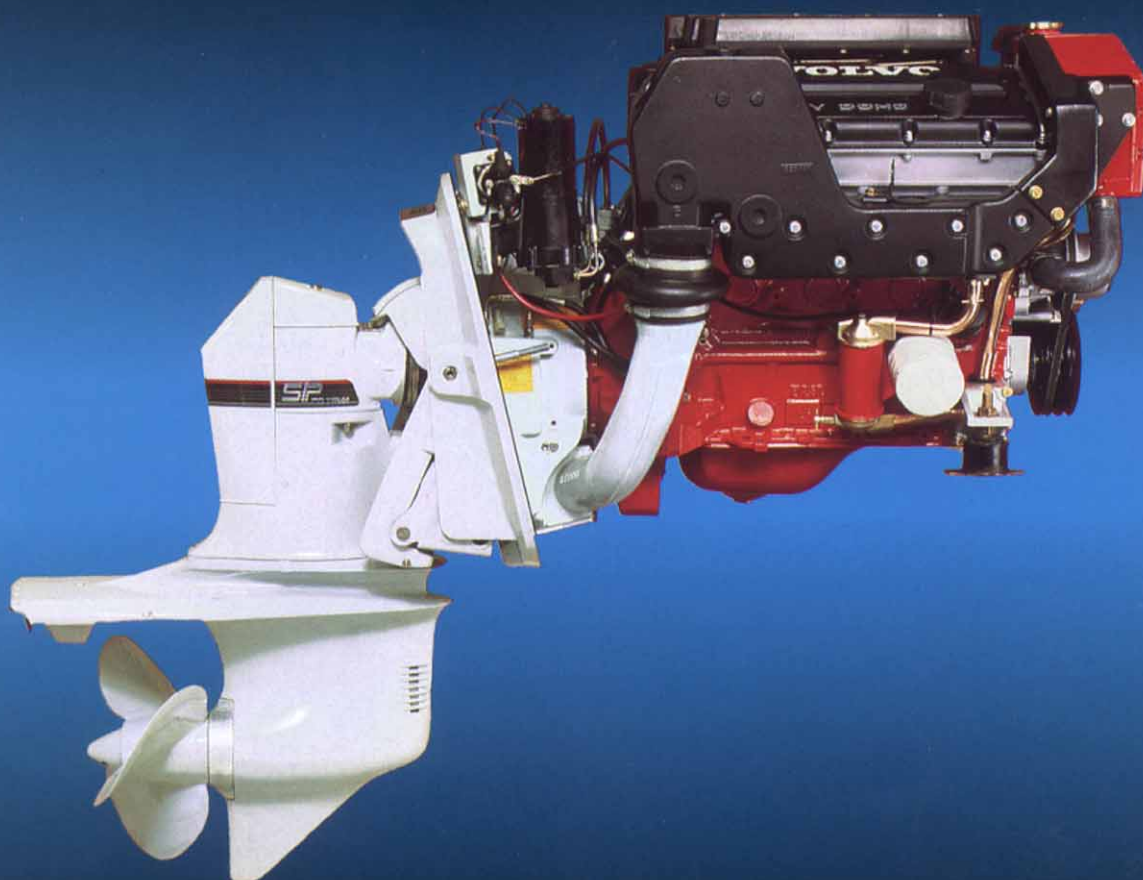
Power Trim enables the drive to be adjusted to the best operating angle for better acceleration, increased top speed or lower fuel consumption.

The transom shield kit is designed for simple, reliable and time-saving installation work.

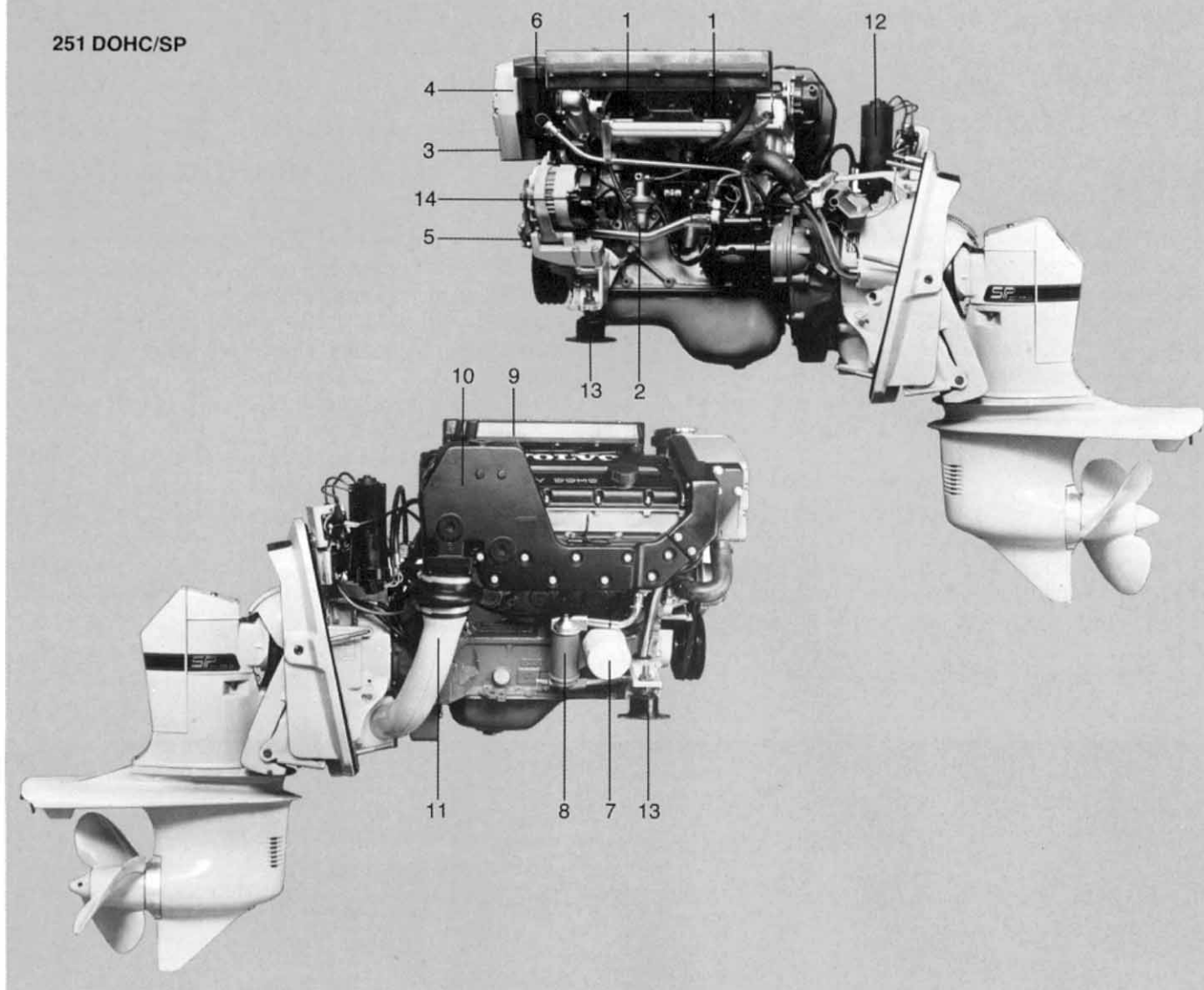
The drive is famous for its long service life and superior corrosion resistance in sea conditions. Together with the engine, it forms a compact and very reliable unit.

Volvo Penta has a well-established service network in more than 100 countries. Authorized workshops, with Genuine Parts and staffed by qualified personnel, make sure you get the best service.

\*Double Overhead Camshaft



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## Standard equipment

### ENGINE

Engine block manufactured of special-alloy cast iron for good resistance to corrosion and long service life. Cylinder head of aluminium-alloy with replaceable valve seats of special steel. The engine is mounted onto the flywheel casing at an angle of 20° to reduce the installation dimensions. Pistons are made of aluminium alloy with two compression rings and one oil scraper ring. Two inlet valves and two exhaust valves per cylinder. Twin overhead camshaft, five bearings, with cogged drive belt of reinforced neoprene rubber. Overhead valves and hydraulic valve lifters. Crankshaft with 5 main bearings.

### FUEL SYSTEM

Twin down-draught carburettors with acceleration pump (1). Fuel pump (2).

### COOLING SYSTEM

Thermostatically controlled fresh water cooling with heat exchanger (3),

expansion tank (4) and circulation pump. Cooling system prepared for hot water supply. Raw water pump with neoprene impeller (5). The system has a raw water strainer which can be removed for cleaning (6).

### LUBRICATION SYSTEM

Pressurized lubricating system with full-flow, oil filter of spin-on type (7). Oil cooler of tubular type that can be opened for cleaning (8).

### INTAKE SYSTEM

Intake silencer with flame damper (9).

### EXHAUST SYSTEM

Raw water cooled exhaust riser of cast iron (10) with stainless steel insert. Complete exhaust system (11) for connection to drive unit.

### DRIVE

Complete with transom shield, fly-wheel casing and installation parts. All

gear-wheels are helically cut and the tensile strength of the lower gear is for operation in both directions.

Cone clutch (patented) for reliable, smooth and light engagement.

The drive tilt angle is 48°.

The shift mechanism has an easily reversible link rod for switching from counter-clockwise to clockwise propeller rotation.

Attachment for steering cable mounted on shield.

Sacrificial zinc ring to counteract corrosion.

Coolant inlet in leading edge and at bottom of drive for reliable supply of cooling water to the engine.

Reverse latch of patented design for reliable reversing action in all angles of trim permits the drive to kick up if run aground or in collision with objects in the water.

Power Trim version with electric motor powered hydraulic system (12) for trimming of drive angle while running (The motor-powered hydraulic pump is mounted either on a bulkhead or on the transom.)

speigel.)



## ENGINE MOUNTS

Flexible mounting for insulation from noise and vibration. The engine has two adjustable rubber mounting points at the front and a rubber mounting between the fly-wheel casing and the rear of the shield.

## STEERING SYSTEM

Power steering is also available as an optional extra. (Only one kit supplied as standard for a twin installation.)

## ELECTRICAL SYSTEM

Corrosion-protected 12 V electrical system. Alternator (14) with 14 V/50 A charging capacity. Designed for marine operation. The alternator is prepared for the fitting of a twin diode unit which will automatically distribute charging current to two or more batteries. Automatic fuse 40 A with resetting button mounted on engine. Starter motor output 1.25 kW (1.7 hp).

Inductive, electronic ignition system, micro-processor controlled and with high tension distributor mounted on camshaft.

## 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 control 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 on selected markets.)

Instrument panel equipped with key-operated switch, tachometer, oil pressure gauge, voltmeter, temperature gauge, fuses and switch for instrument lighting. Cable harness length 0.9 m.

Extension cable length 6 m (19.7 ft), complete with plug-in contact.

# DATA

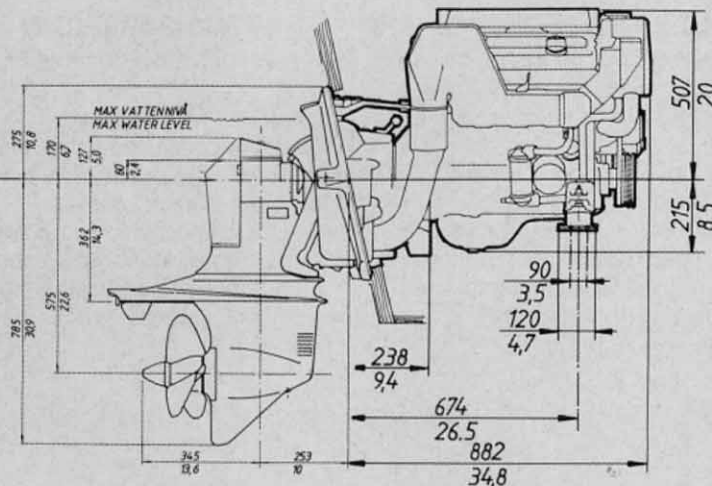
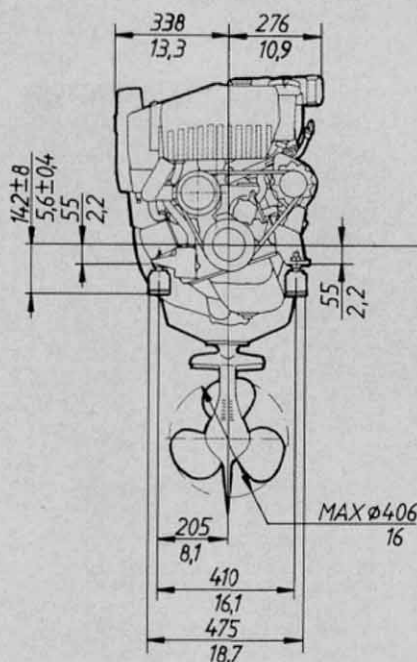
Configuration	4-stroke, 16-valve carburettor engine with overhead valves
Type designation	251 DOHC
Crankshaft power <sup>1) 2)</sup> at 5700 r/min	123 kW (167 hp)
Propeller shaft power <sup>3) 4)</sup> at 5450 r/min	110 kW (150 hp)
Recommended max. full load speed	5000–5700 r/min
Number of cylinders	4
Displacement, litres (in <sup>3</sup> )	2.49 (152)
Bore/stroke, mm (in)	96/86 mm (3.78/3.39 in)
Compression ratio	9.7:1
Fuel grade, octane RON	91
Drive, type designation/ratio	SP/2.15:1
Dry weight, engine with drive, approx. kg (lb)	289 (637)

<sup>1)</sup> Crankshaft power acc. to SAE J607.

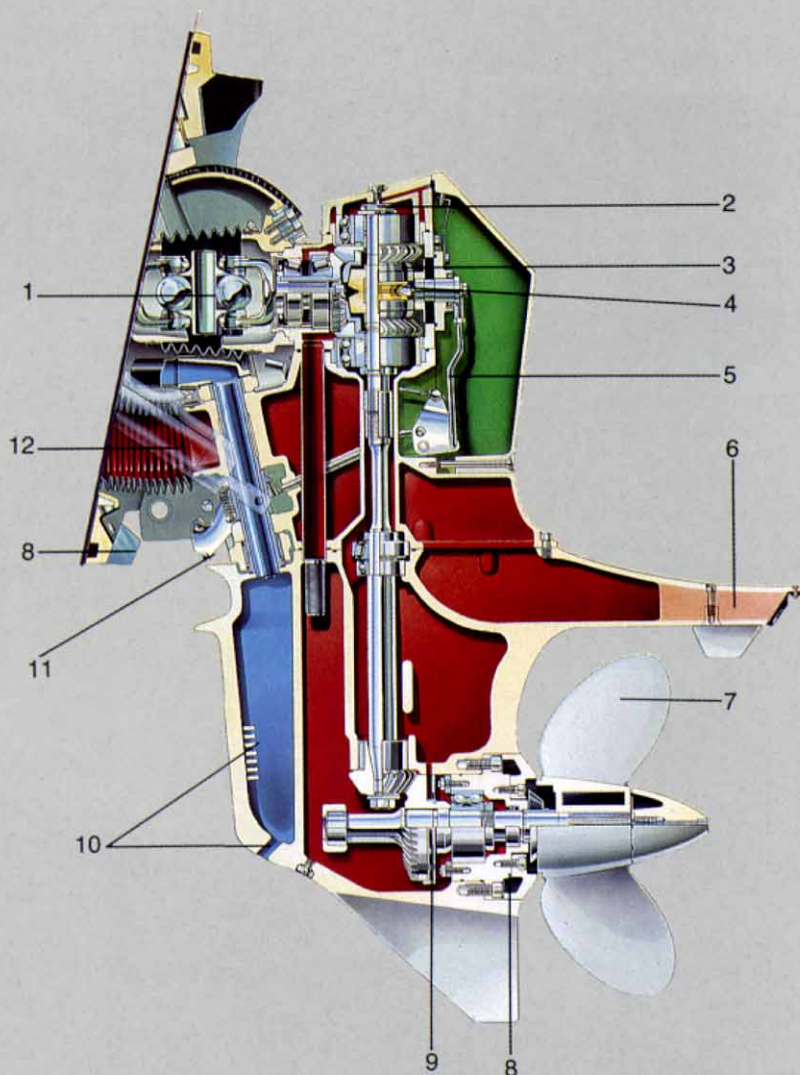
<sup>2)</sup> Usable power will be reduced by transmission or gearbox losses.

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

<sup>4)</sup> Prop. shaft power indicated at mid of recommended speed range.



## Drive SP



1. Double universal. Of heavy-duty design and practically maintenance-free.
2. Easily accessible oil dipstick.
3. Helically-cut gearwheels for quiet operation.
4. Patented cone clutch. For quiet, smooth and light operation.
5. The propeller's direction of rotation can be easily altered by shifting the link rod in the drive unit.
6. Cavitation plate with exhaust gas outlet.
7. Can accommodate propellers of up to 407 mm (16") diameter.
8. Sacrificial zinc ring in front of propeller and extra zinc anode on the shield – for efficient corrosion protection.
9. Oil pump of impeller type.
10. Cooling water intake.
11. Reverse latch of patented design provides good reversing capabilities while preventing the drive from floating up due to sudden reverse acceleration. Also permits the drive to kick up if run aground or obstructed.
12. Trim cylinders connected by stainless steel pipes to the hydraulic system.

## Accessories

### FUEL SYSTEM

Suction pipe of copper. Water separator. Fuel valve. Separate connecting cover for fuel tank.

### ELECTRICAL SYSTEM

Instrument panel for upper station "Flying Bridge". T-connector "Flying Bridge". Extension cable, instrument panel. Extension cable, trim equipment. Double diode charging distributor. Main switch. Battery.

### TRANSMISSION

Extension for drive. Propellers.

### CONTROLS

Single-lever control for single installations. Single-lever control for twin installations. Control cables. DS-units (mechanical units which combine control cables from two control stations to a joint outgoing control cable). Wheel steering incl. cables. Power steering. Tie rod.

### MISCELLANEOUS

Tool kit. On-board kit. Oil scavenging pump. Bilge pump. Touch-up paints. Lubricants.  
For other accessories, see Accessories Catalogue.

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