

# AQ311B SP

## **AQ311B V-8 4-stroke carburettor engine with Singleprop drive.**

AQ311B is a power package designed for high-speed installations in the 40 to 50 knot range, and together with the SP drive and Power Trim it gives optimum performance: Speed, acceleration and fuel economy.

The engine is specially adapted for marine use. The engine block and cylinder head are manufactured in special-alloy cast iron, which means less risk of corrosion. Piston rings and valves are made of materials which have been specially developed for marine uses.

The induction system provides a perfect fuel/air mixture which is evenly distributed to the cylinders for high output and low fuel consumption.

The engine has a breakerless electronic ignition system which makes for excellent starting characteristics even in humid weather. Another salient feature of the system is the very accurate ignition timing throughout the entire speed range.

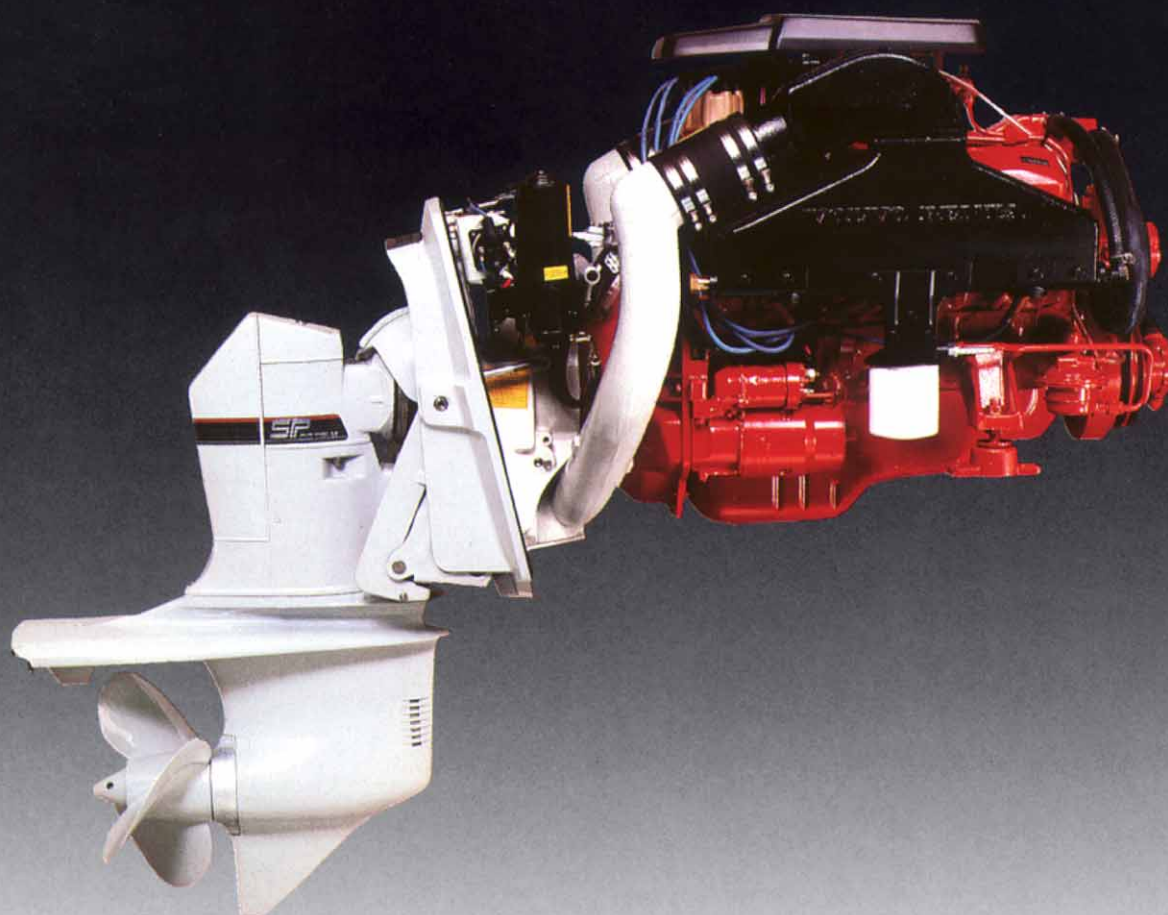
The exhaust manifold is entirely water-jacketed for a lower temperature in the engine compartment.

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

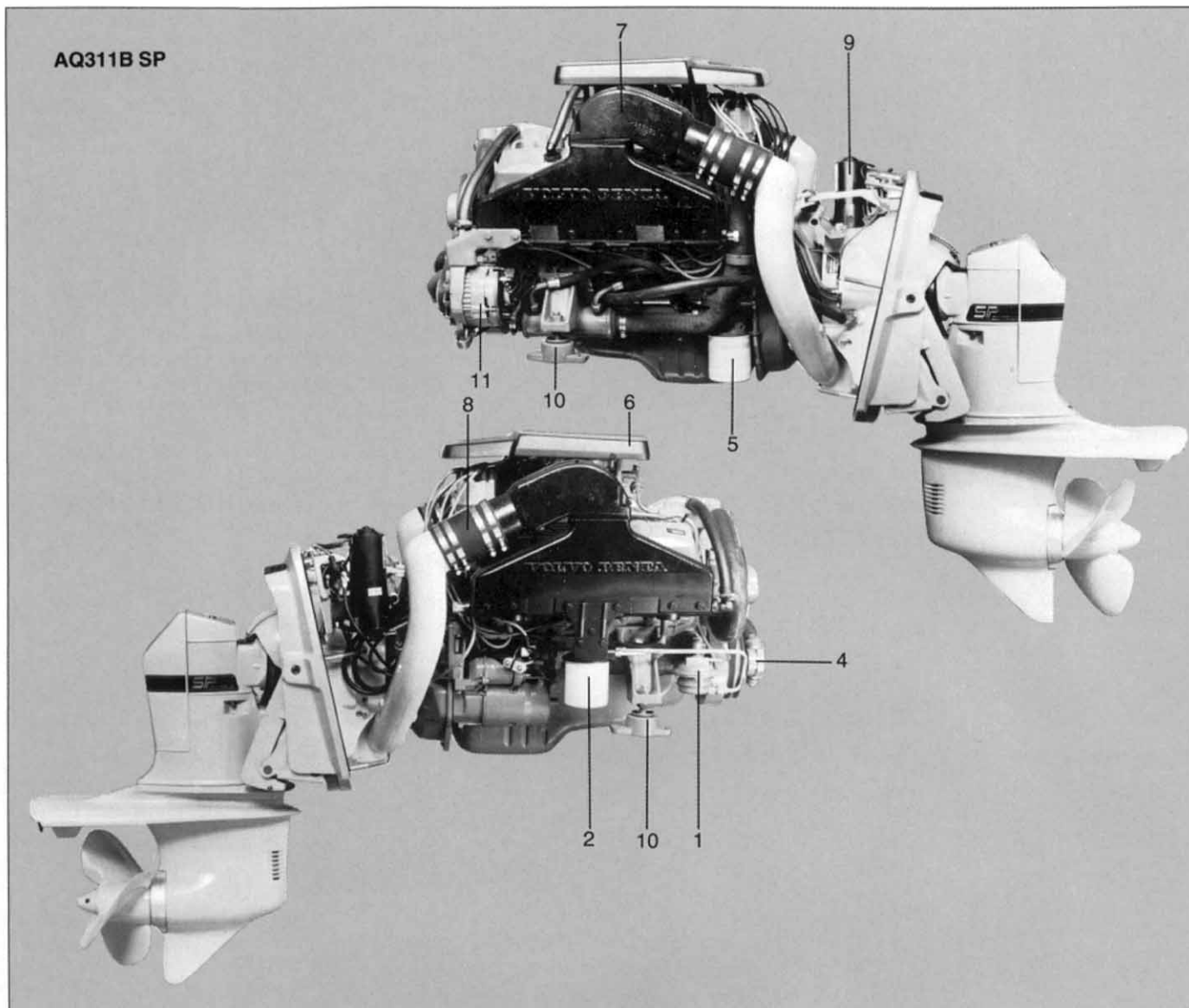
The transom shield kit is designed for simple, reliable and time-saving installation work.

The SP 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, stocking Genuine Parts and are staffed by qualified personnel, make sure you get the best service.



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## Standard equipment

### ENGINE

Engine block and cylinder head of cast iron for good corrosion resistance and long service life. V8 engine, 90° between cylinders. Pistons manufactured of aluminium-alloy have two compression rings and one oil scraper ring. Pushrods act on overhead valves through hydraulic valve lifters. Exhaust valves have rotators. Crankshaft with 5 main bearings.

### FUEL SYSTEM

Four-port down-draught carburettor with electrically operated automatic choke and acceleration pump. Fuel pump (1). Replaceable fuel filter (2).

### COOLING SYSTEM

Thermostatically-controlled raw water cooling with easily accessible impeller pump and circulation pump for more consistent temperature in

engine block. Raw water pump with neoprene impeller (4).

### LUBRICATING SYSTEM

Pressurized lubricating system with full-flow oil filter of spin-on type (5).

### INTAKE SYSTEM

Flame damper (6) of approved type.

### EXHAUST SYSTEM

Raw water cooled exhaust manifold of cast iron with high exhaust riser (7). Complete exhaust system (8) for connection to drive unit.

### DRIVE

Complete with transom shield, fly-wheel casing and installation parts. All gearwheels are helically-cut and manufactured for continuous 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 (9) for trimming of drive angle while running. (The motor-powered hydraulic pumps is mounted either on a bulkhead or on the transom.)

### ENGINE MOUNTS

Flexible mounting for insulation from noise and vibration. The en-



gine 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

12V corrosion-protected electrical system complete with instrument panel. Alternator (11) with 14V/50A 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 40A with resetting button

mounted on engine. Starter motor output 960W (1.3 hp).

## TRIM INDICATOR (DCD)



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 to override switch to come from "tilt" sector into "beach" sector.

## INSTRUMENT PANEL

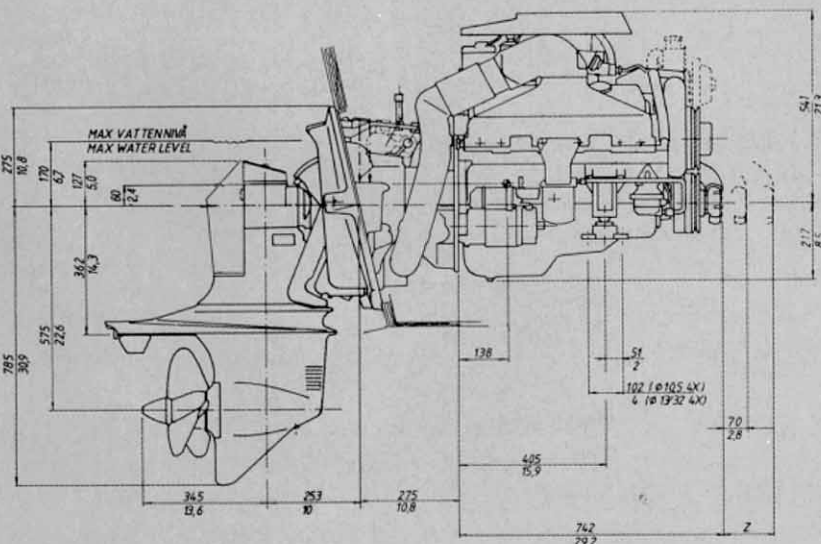
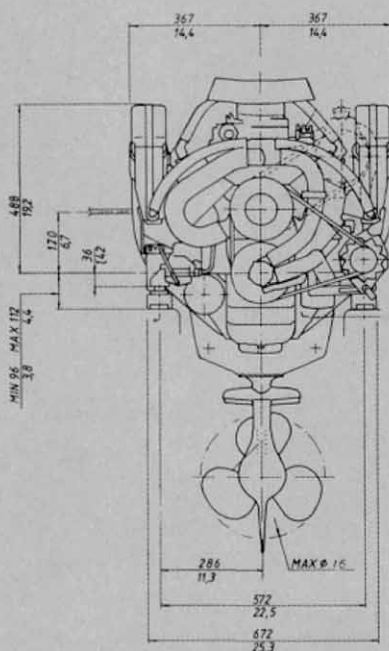


(Extra equipment on selected markets.) Instrument panel equipped with key-operated switch, tachometer, oil pressure gauge, voltmeter, temperature gauge, fuses and switch for instrument lighting. Cable harness length 0.91 m. Extension cable length 6 m (19.7 ft), complete with plug-in contact.

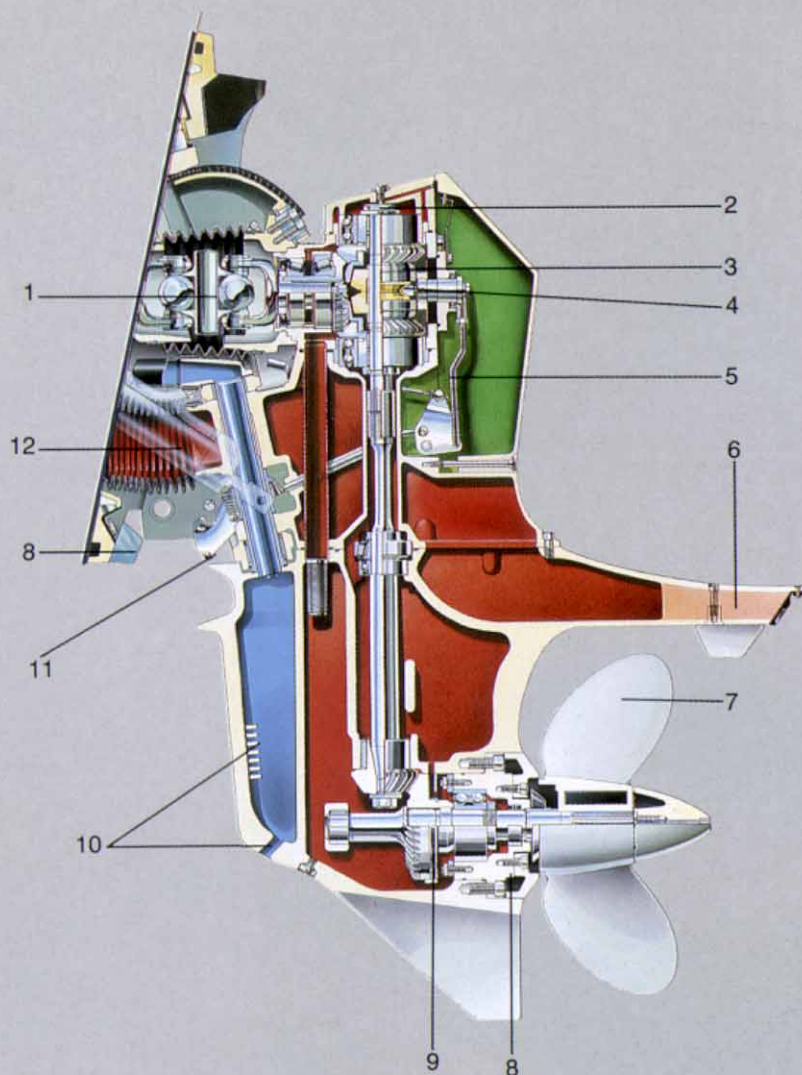
# DATA

Configuration .....	4-stroke carburettor engine with overhead valves.
Type designation .....	AQ311B
Output* at 5200 r/min .....	226 kW (307 hp)
Recommended max full load speed .....	4600-5200 r/min
Number of cylinders .....	V8
Displacement, litres (in <sup>3</sup> ) .....	5,735 (350)
Bore/stroke, mm (in) .....	101,6/88,4 (4.00/3.48)
Compression ratio .....	9,3:1
Fuel grade .....	min. 91 octane RON
Drive, type desig./ratio .....	SP 1.61:1
Dry weight, engine with drive approx kg (lb) .....	398 (877)

\*Crankshaft output according to SAE J607



## 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.

### COOLING SYSTEM

Freshwater cooling.

### 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. Genuine 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.*