

# VOLVO PENTA

## AQUAMATIC 165/250



The Aquamatic 165/250 is a new six-cylinder Aquamatic model with an output of 165 h.p. The design of the unit is based on the extensive experience and the advanced technique that has made the Aquamatic one of the best known marine power units in the world for such a long time. The engine with its drive and equipment is designed and built right from the very start for heavy duty marine operation and this, together with the renowned high quality of manufacture, provides maximum running reliability, excellent economy and durability.

The high output of the engine and its high torque in combination with the low fuel consumption make it particularly suitable for large boats. Its compact dimensions when installed and its low weight in relation to output also make possible installation in fast light-weight boats. On the basis of scientific calculations and practical tests it has been found possible to adapt the ratio of the drive so as to utilize engine torque to its maximum. This ensures maximum tractive effort, even in the economical moderate engine speed range.

### Dependable at sea

■ The engine and outboard drive are fitted together through one single hole in the transom through the medium of a mounting collar in which the rear rubber mounting, the power transmission, the exhaust and cooling channels, steering, lift and control cables are built in.

■ The sturdy dimensions of the mounting collar and the large contact areas with fully protected rubber seals against the transom mean that the engine and the outboard drive form a dependable and outstandingly seaworthy unit with the boat — even in the case of extreme stresses.

■ The location of the exhaust connection at a satisfactory level above the waterline of the boat and effective protection at all joints provide full security against water forcing its way in.

### Reliable running

■ Particularly extensive test operations of the engine and the outboard drive in one of the most modern engine laboratories in the world and on marine test circuits guarantee unexcelled lifetime and running reliability.

■ The engine is dimensioned for the utilization of full output and has stainless-steel exhaust valves and hardened intake valves of the self-rotating type which seal against replaceable seats.

■ The electrical system includes an alternator with a particularly high charging capacity and is completely protected from corrosion even down to the electric cable flat pin connectors.

### Convenient for servicing

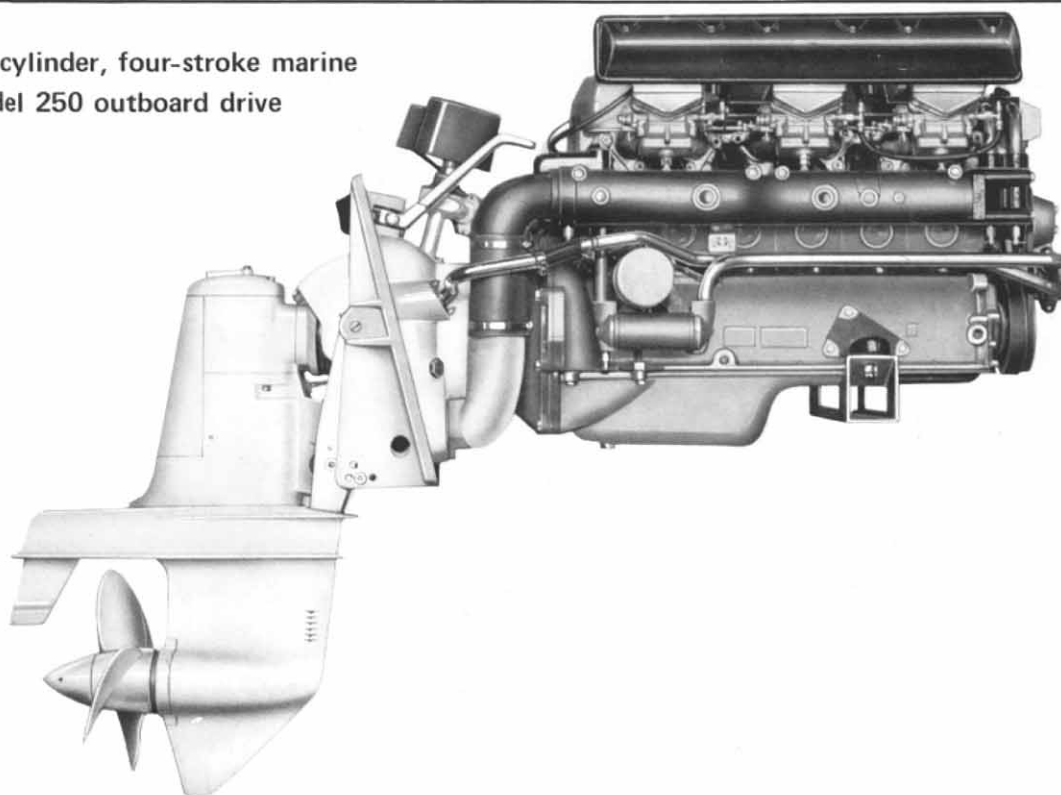
■ The Aquamatic 165/250 is a modern engine, easy to use and requires no complicated maintenance.

■ Service inspection free of charge after 20 hours running and also an extensive factory guarantee provide full servicing security.

■ Volvo Penta has built up a well-developed service organization all over the world with workshops carrying good stocks of spares and also with specially-trained personnel at your disposal. You always have Volvo Penta service within easy reach no matter where you are.

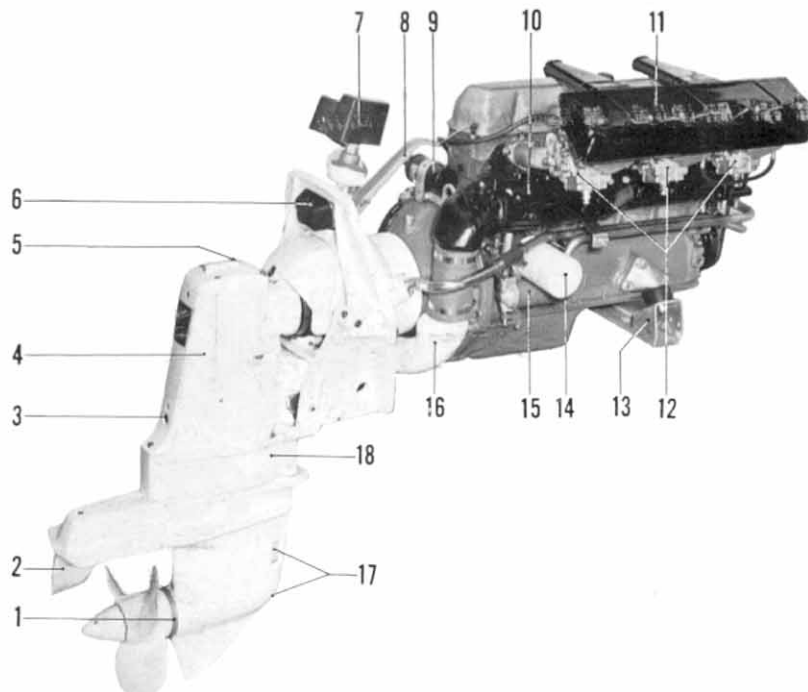
Volvo Penta six-cylinder, four-stroke marine engine with model 250 outboard drive

165 h.p.



## AQUAMATIC 165/250

1. Anti-corrosion zinc ring
2. Exhaust outlet and trimming tab
3. Oil filler
4. Casing over control units
5. Oil dipstick
6. Rubber damper for drive tip-up
7. Electro-mechanical lift
8. Steering rod with connection for steering system
9. Ignition coil
10. Water cooled exhaust manifold
11. Air intake silencer and flame arresters
12. Carburetors (Zenith Stromberg)
13. Front engine mounting with rubber block
14. Spin-on full-flow oil filter
15. Cleanable oil cooler of tubular type
16. Exhaust pipe
17. Water intake
18. 4" extension (alternatives)



### THE AQUAMATIC MODEL 250 OUTBOARD DRIVE

The model 250 outboard drive embodies all the experience acquired by Volvo Penta as a pioneer in this field. The 250 drive is completely built for salt water operation and has many characteristics which are unique to Volvo Penta. The advanced design with all the control units built in provides smooth and easily cleaned surfaces. The robust construction of the drive provides full security against extensive damage resulting from unexpected and fast tilting up of the drive, caused for example by contact with underwater obstacles. The design of the retaining pawl mechanism also permits fast reversing manoeuvres at speeds up to the planning speed of the boat without the drive "kicking up".

The quiet-acting "Silent Shift" cone clutch is easy to operate. It is located above the water, in the upper gear housing. This enables the lower gear housing to be more compact and gives both the upper gears and propeller gears extremely strong dimensions. Because of this advantage and

scientific tests in our test tanks the underwater part of the drive has been designed to produce minimal water resistance and freedom from cavitation.

### DATA

Type of operation: . . . . . Four-stroke carburetor engine with overhead valves  
 Type designation . . . . . AQ 165A/250C1)  
 Max. output (SAE) . . . . . 165 h.p.  
 Max. operating speed, r.p.m. . . . . 5000  
 Number of cylinders . . . . . 6 in line  
 Capacity, litres (cu. in.) . . . . . 2.979 (182)  
 Bore/stroke, mm (in.) . . . . . 88.9/80 (3.50/3.15)  
 Compression ratio . . . . . 9.2:1  
 Outboard drive, type designation 1)/ratio . . . 250C/1.89:1  
 Total weight, kg (lb.), approx. . . . . 280 (615)

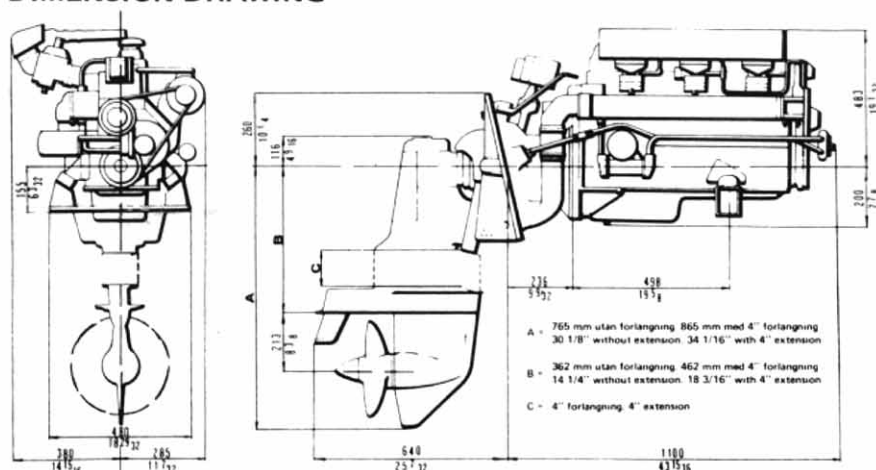
1) Type designation, drive with 4" extension 250C/4



Standard equipment includes: Instrument panel with electric revolution counter, electric temperature gauge, warning lamps for charging and oil pressure.

All the electric cables are collected into one single harness between the engine and the instrument panel with a connector about 1.5 m (5 ft.) from the engine. This facilitates installation considerably.

### DIMENSION DRAWING



We reserve the right to carry out modifications



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