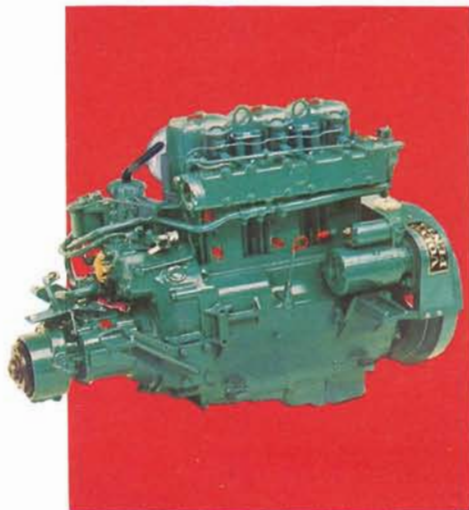
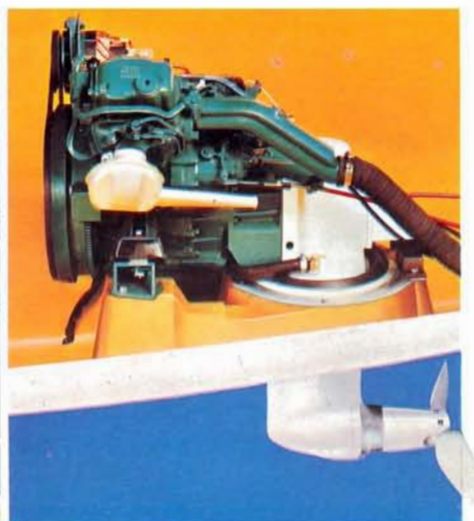
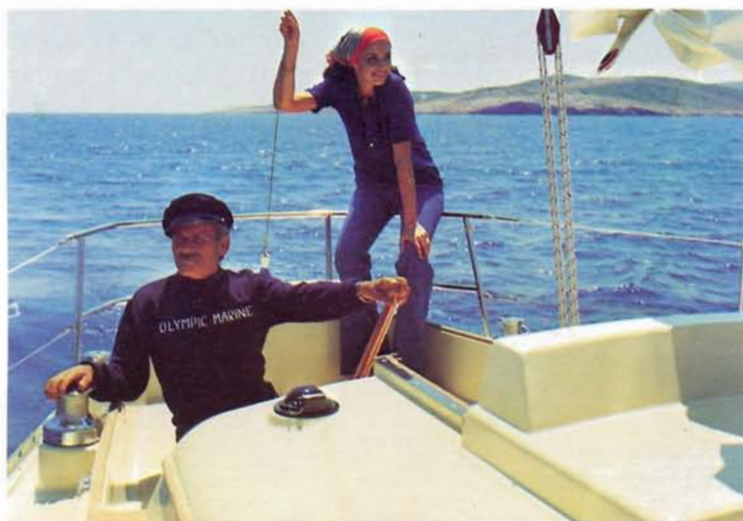


VOLVO PENTA

Auxiliary engines for sailing boats

7.5-89 hp



Quality in

Choosing the right boat can be difficult. As you know.

Once this decision has been made, another takes its place. The right engine. The use and enjoyment you get from your craft depend on it.

Here are some powerful arguments in favour of Volvo Penta light marine diesels. Features which you should demand from a boat engine.

Read and compare. You'll convince yourself. Volvo Penta has exactly the right engine for your boat and your particular needs.



A wide engine range

Eight diesels from 7.5 to 89 horsepower. Four of them can be used with the revolutionary Volvo Penta S-drive.

The engines are built to resist corrosion and saltwater damage and are fitted with advanced technical features. Small size and low weight are two other advantages they have in common. This simplifies installation and saves space on board.

Volvo Penta light diesels power sailboats, dinghies and all other types of pleasure craft. It's just a question of which engine suits you best.

Over 70 years of marine experience

A long time, in which we've learnt a great deal about the sea. The rigorous conditions a marine engine is expected to stand up to. We use this experience for constant improvement and development. Strict and careful testing is something else we've learnt the importance of – both in the workshop and during torturing trial runs.

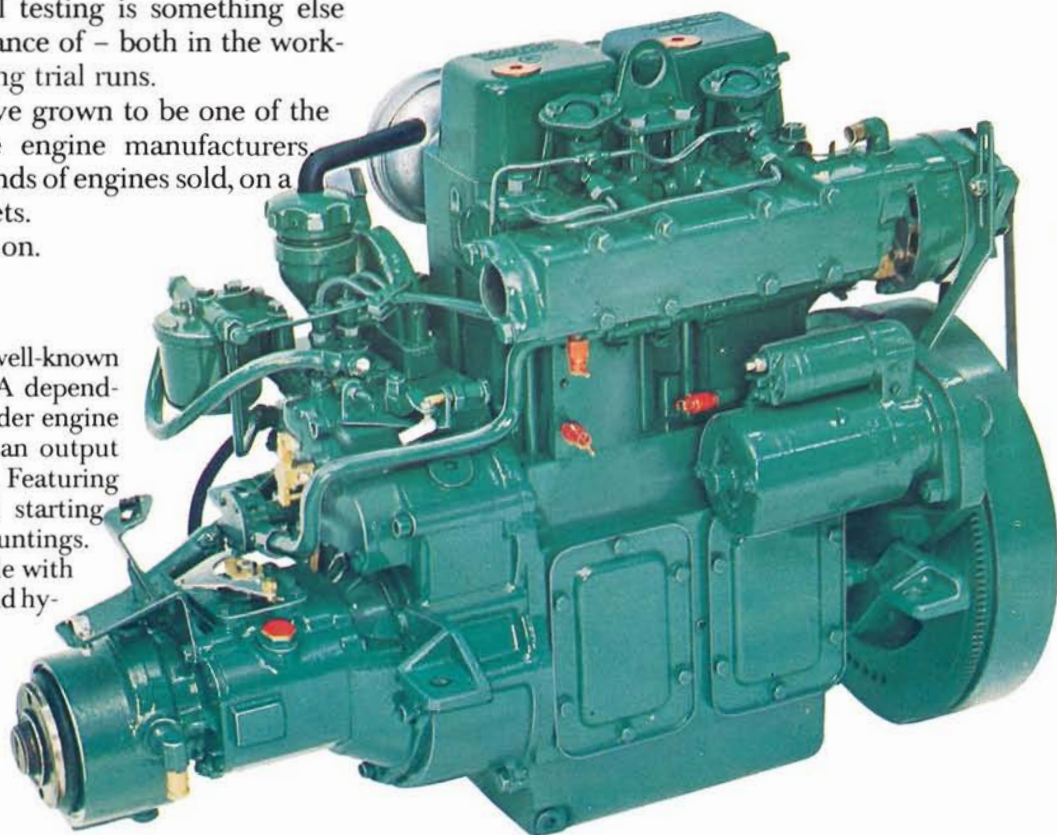
Over these years we've grown to be one of the world's leading marine engine manufacturers. With hundred of thousands of engines sold, on a hundred different markets.

A good basis to work on.

MD 11C

A modification of a well-known best-seller – the MD 2B. A dependable and robust, two-cylinder engine with direct injection and an output as high as 23 hp. (17 kW). Featuring wet cylinder liners, hand starting and adjustable engine mountings.

The MD 11C is available with MS reverse gear, S-drive and hydraulic transmission.



minute detail

First class economy, first class reliability

The purchasing price of an engine is one thing. Total running cost another. Facts constantly brought to mind when you own an engine.

Volvo Penta light diesels are built in such a way that you can afford to run them as much as you like.

Fuel consumption is low in comparison with engine performance. High-precision injection and compact design save fuel. Factors which help to reduce weight on board.

The engines are fitted with a number of useful details. To make you feel safe at sea and to save you unnecessary trouble. Sea-water cooling, instrument panel complete with acoustic alarm system (MD 5 and MD 7), 35A alternator – these are the sort of details we mean.

Your dealer can tell you about the others.

Worldwide service

Once you've bought your Volvo Penta, you won't be needing us that often. The engine is built for minimum service.

But on those few occasions you need help, you'll discover that we offer the best possible assistance.



We have 4,000 service stations spread around the world. With well-trained mechanics. All necessary special tools. Well-filled part stockrooms. Another side of Volvo Penta quality.



MD 7A

The popular MD 6 has changed its name. Increased cylinder volume provides more power. The MD 7A, as the engine is now called, produces 13 hp (9.6 kW). Electrical equipment includes a separate starter motor and a 35A alternator. A full-flow oil filter and a new instrument panel with acoustic alarms for temperature and oil pressure are also incorporated.

The MD 7A is available with both MS reverse gear and the S-drive.

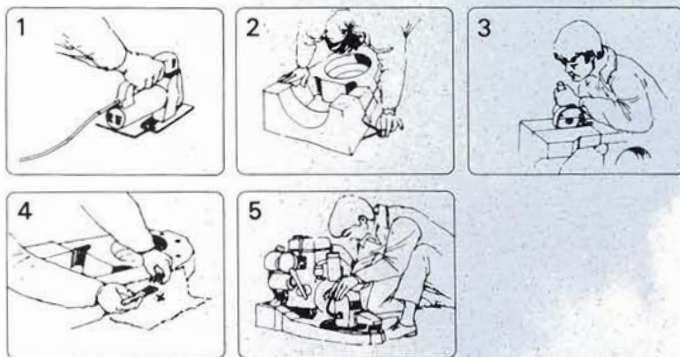
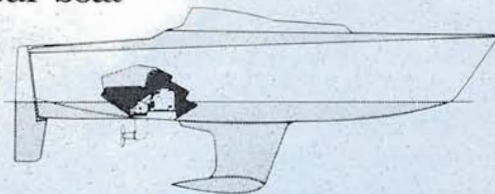


The unique

The 110S is a further development of the proven 100 drive which became a favorite with many large boat-builders all over Europe. In their yards, boats are now being fitted with the S-drive as standard.

The principle is simple. Motor inside the boat. Drive outside. A brilliant design idea for fin and twin-keel craft. The S-drive has many advantages when compared with ordinary propeller shaft installations.

Keep the good sailing characteristics of your boat



Simple installation

The engine is delivered ready to install, complete with bed. No propeller shaft, housing or joints to worry about. You are spared the irritating and time-consuming task of aligning engine to drive.

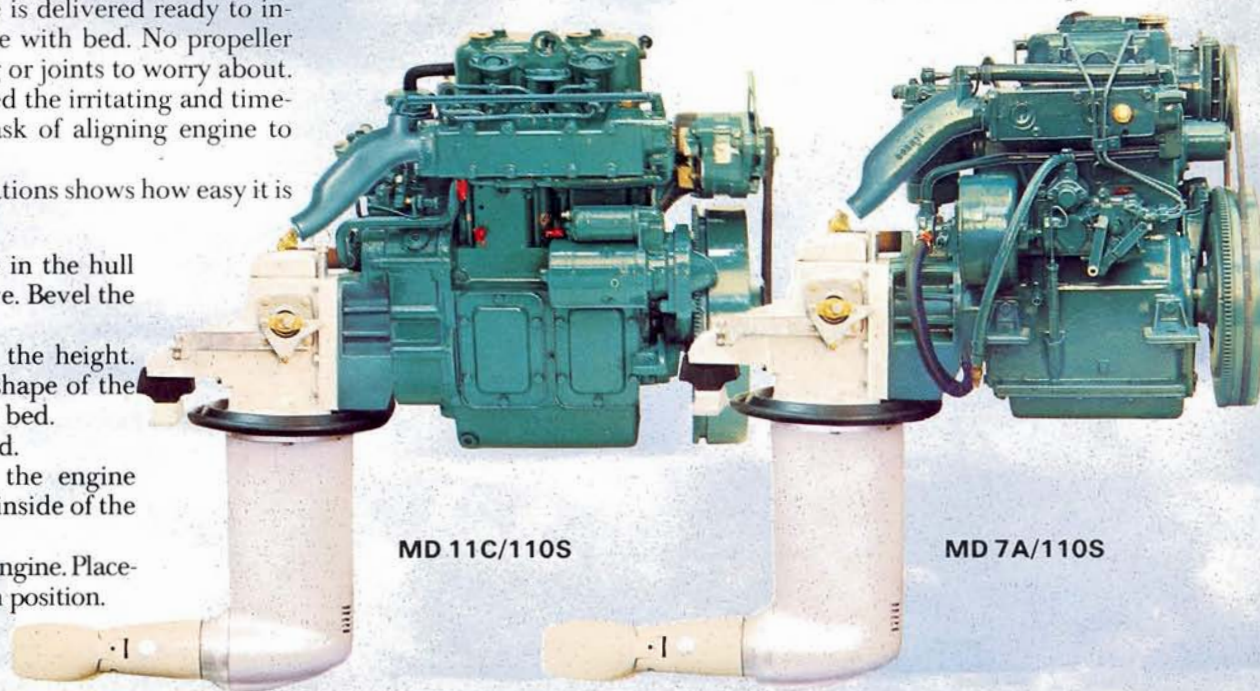
The illustrations show how easy it is to install.

1. Cut a hole in the hull for the drive. Bevel the edges.
2. Decide on the height. Mark the shape of the hull on the bed.
3. Cut the bed.
4. Fiberglass the engine bed to the inside of the boat hull.
5. Install the engine. Place the drive in position.

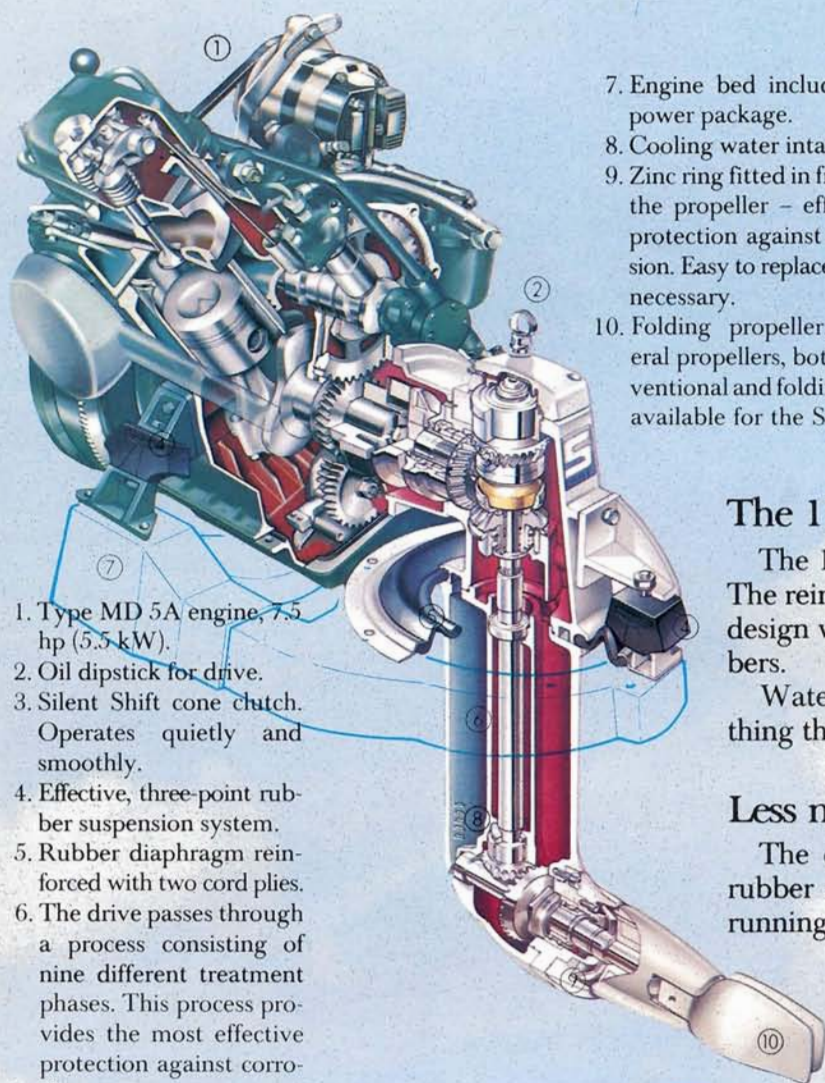
Careful calculations and practical tests (Norsk Skipsforsknings institut - The Norwegian Ship Research Institute) - have shown that the S-drive causes less drag than conventional propeller shaft units. The drive can be placed immediately behind the keel where it has minimum flow resistance and maximum power.

Volvo Penta has designed a propeller which folds automatically when the engine stops. For still less resistance. There are, of course, many types of conventional two-bladed propellers to choose from too.

Place the engine fore or aft of the S-drive. A choice enabling you to calculate weight distribution for unimpaired sailing performance. The engine can be installed to make the most of available space.

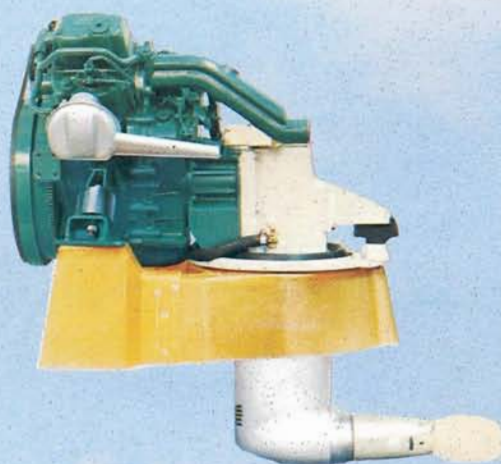


S-drive



1. Type MD 5A engine, 7.5 hp (5.5 kW).
2. Oil dipstick for drive.
3. Silent Shift cone clutch. Operates quietly and smoothly.
4. Effective, three-point rubber suspension system.
5. Rubber diaphragm reinforced with two cord plies.
6. The drive passes through a process consisting of nine different treatment phases. This process provides the most effective protection against corrosion.

7. Engine bed included in power package.
8. Cooling water intake.
9. Zinc ring fitted in front of the propeller – effective protection against corrosion. Easy to replace when necessary.
10. Folding propeller. Several propellers, both conventional and folding, are available for the S-drive.



The 110S is a strong, safe construction

The 110S is delivered complete with engine bed. The reinforced fibreglass bed is of extremely sturdy design with both longitudinal and transverse members.

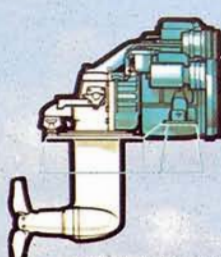
Water cooling intake in the drive itself. Everything thoroughly protected against corrosion.

Less noise, less vibration

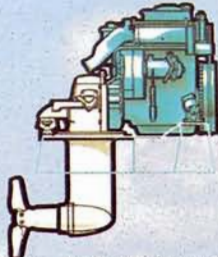
The engine is supported by a new three-point rubber suspension system for quiet, vibration-free running.



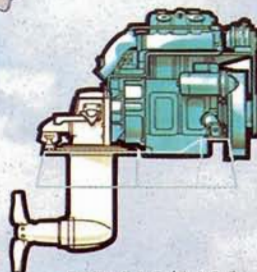
MB 10A/100S



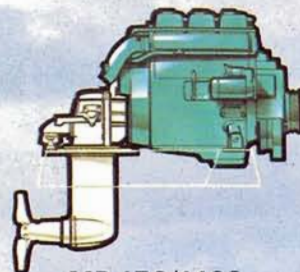
MD 5A/110S



MD 7A/110S



MD 11C/110S



MD 17C/110S

Technical Data

ENGINE/DRIVE	PETROL (GASOLINE) DIESEL		NO. OF CYL	SWEPT VOL.		OUTPUT		WEIGHT APPROX.	
				dm ³	cu.in.	kW/rs	hp/rm	kg	lb.
MB 10A/100S	●		2	1.01	62	10.3/33 ¹⁾	14/2000	140	310
MD 5A/110S		●	1	0.44	27	5.5/42 ¹⁾	7.5/2500	128	282
MD 7A/110S		●	2	0.74	45	9.6/43 ¹⁾	13/2600	192	425
MD 11C/110S		●	2	1.12	68	17/42 ¹⁾	23/2500	247	540
MD 17C/110S		●	3	1.68	102	26/42 ¹⁾	35/2500	317	700

¹⁾ Prop. shaft output according to DIN 6270 Leistung B.

The engines

The MD 5A

Small and compact. Takes up minimum space through its 45° installation angle. 7.5 hp (5.5 kW) with 1.91:1 reduction gear as standard. Excellent pulling power and low fuel consumption.



MD 5A

The engine features direct injection, thermostatically controlled seawater cooling and a 35A alternator.

MD 21A

A well proven diesel. Four-cylinder, four-stroke with overhead valves and air swirl combustion chamber. Propeller shaft output 61 hp (45 kW). Thermostatically controlled fresh-water cooling plus heat exchanger and circulation pump. Corrosion-protected electrical system of 12V with 35A alternator.

The MD 21A is available with a mechanical RB reverse gear or a hydraulic transmission.



MD 17C HY-HD

MD 11C HY-HD

MD 17C HY-HD

The MD 11C and MD 17C engines are also available with a hydraulic power transmission system and propeller outputs of 17 hp (12.5 kW) and 27 hp (20 kW) respectively at 2300 r.p.m. The hydraulic versions of the MD 11 and MD 17 have as extra equipment a "slip" valve which permits infinitely variable increase of the reduction ratio up to 7:1, the result being a great improvement in the manoeuvring characteristics of the boat at low speed.

MD 17C



MD 17C

A development of the trustworthy MD 3. A three-cylinder, direct injection diesel with wet cylinder liners and a propeller shaft output of 35 hp (26 kW). Mountings have been improved with new engine brackets and adjustable rubber blocks.

The MD 17C is available with MS reverse gear, S-drive or a hydraulic power transmission system so that the engine can be located anywhere in the boat.

MD 32A

Based on the same design as the MD 21. A six-cylinder diesel with a propeller output of 89 hp (65 kW). Starter motor rating: 3 hp (2.2 kW).

The MD 32A is available with a Borg Warner hydraulic reverse gear.

Technical data

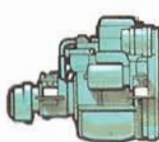
ENGINE/DRIVE	PETROL (GASOLINE) DIESEL	NO. OF CYL	SWEPT VOL.		OUTPUT		WEIGHT APPROX.	
			dm ³	cu.in.	kW/rs	hp/rm	kg	lbs.
MB 10A	●	2	1.01	62	10.3/33 ¹⁾	14/2000	120	265
MD 5A	●	1	0.44	27	5.5/42 ²⁾	7.5/2500	111	245
MD 7A	●	2	0.74	45	9.6/43 ²⁾	13/2600	175	385
MD 11C	●	2	1.12	68	17/42 ²⁾	23/2500	230	505
MD 11C HY-HD	●	2	1.12	68	12.5/42 ²⁾	17/2500	285	630
MD 17C	●	3	1.68	102	26/42 ²⁾	35/2500	290	640
MD 17C HY-HD	●	3	1.68	102	20/38 ²⁾	27/2300	347	760
MD 21A	●	4	2.11	129	45/75 ¹⁾	61/4500	290	640
MD 32A	●	6	3.16	193	65/67 ¹⁾	89/4000	395	870

¹⁾ Propeller shaft output according to DIN 6270 Leistung B.

²⁾ Continuous propeller shaft output according to DIN 6270 Leistung B.



MB 10A



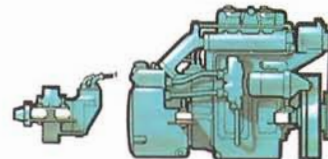
MD 5A



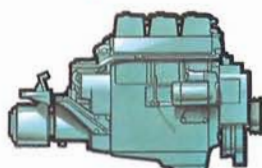
MD 7A



MD 11C



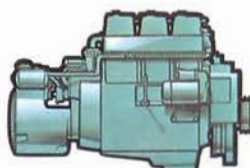
MD 11C HY



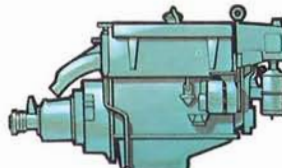
MD 17C



MD 17C HY

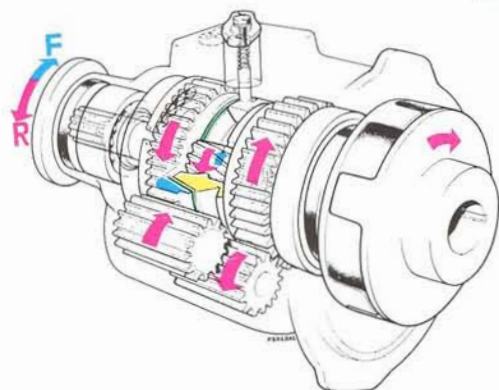


MD 21 A



MD 32A

Equipment



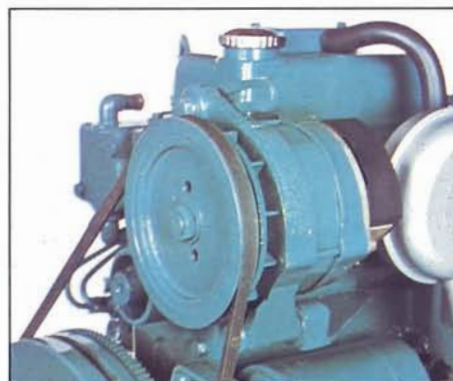
Mono Shift reverse gear

Designed and patented by Volvo Penta. Ensures smooth and quiet engagement of both "Ahead" and "Astern". This unit includes the famous cone clutch which is part of all Aquamatic outboard drives.



Advanced control panel

This is fitted with fully automatic acoustic warning devices for excessively low oil pressure and excessively high cooling water temperature. The buzzer sounds the alarm directly and can be heard all over the boat. As an extra safety measure, there are also warning lamps. Furthermore, there is room for the installation of extra instruments such as a fuel gauge.



35 A alternator

Specially designed for marine use and fully corrosion-proofed. The high rating of 35A permits high current consumption. Furthermore, the alternator is ready for the installation of a double diode unit so that two groups of batteries can be charged at the same time.

Single lever control system

The reverse gear cone clutch makes it possible to use a single lever control unit to regulate both engine speed and also change-over between

"Ahead" and "Astern". Available for side and top fitting in boats with one or two engines. This control system has been thoroughly tested and is made of corrosion-proof material.



Genuine Volvo Penta Accessories

If you invest in quality and safety concerning an engine and drive, then the same must apply to accessories. No chain is stronger than its weakest link. For this reason we recommend only Volvo Penta accessories for your boat. These accessories have been carefully selected and tested in accordance with the same severe standards applying to every component of both the engine and the drive.



1. Extremely effective silencer. Available in two versions.
2. Bronze propellers. Highly resistant to corrosion and cavitation.
3. Bronze pump with impeller and electric friction clutch. Vacuum switch optional.
4. Fuel filter with water separator/fine filter. For diesel and petrol engines.
5. Control cables. From 1.8 m to 12.5 m. Free from lubrication requirements. The stainless steel core assures maximum dependability.
6. Battery charging distributor. Fitted to the alternator. It makes it possible to carry out simultaneous charging of two separate batteries.
7. New and patented steering system lock. For combination with a key switch.
8. Steering gears. Available in two sizes. For 70° and 90° installations.
9. Volvo Penta multigrade motor oil with preservation characteristics. Available for both petrol and diesel engines.
10. Control system for top mounting. Smooth and effortless to operate.
11. Electric bilge pump. Capacity 75 litres/min. (19.8 gallons/min).
12. Single lever control for side mounting. Corrosion-resistant material with chromed lever and imitation leather grip.
13. Folding propeller. Minimizes drag and provides higher speed under sail.

**VOLVO
PENTA**

S-405 08 Göteborg, Sweden