

MARINE ENGINES ***129—408 HP***



**VOLVO
PENTA**

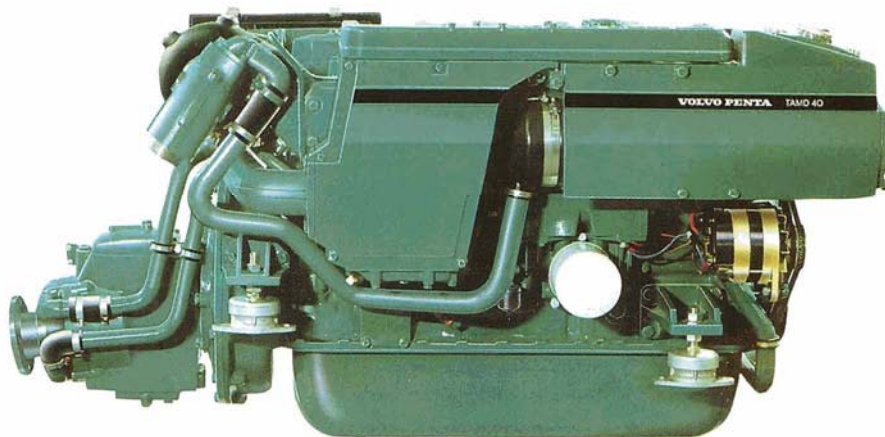
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Combining the very best of marine diesel engine and transmission technology

D40 SERIES

The TAMD 40, the turbocharged, aftercooled member of the 40 Series, is an engine that has completely revolutionized the concept of diesel engines in the marine world.

To the operational reliability, long service life and fuel efficiency of the diesel, the Volvo Penta TAMD 40 has brought to boats fast acceleration and a comfortably low noise and vibration level, features which were previously only achieved in a petrol engine. The 40 Series comprises two inboard diesel models which have the same block and features: TAMD 40, turbocharged and aftercooled; and the TMD 40 which is turbocharged but not aftercooled.



TAMD 40

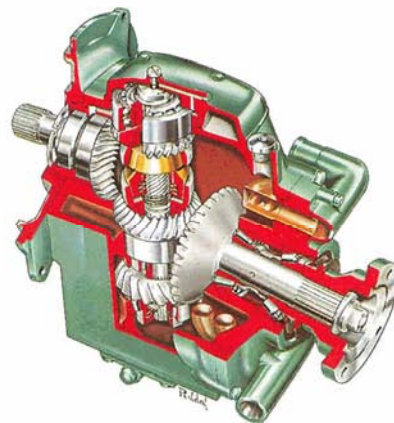
An international success right from the very start. The six-cylinder TAMD 40 now has a propeller shaft output of not less than 116 kW (158 hp). Weighing only 475 kg (1070 lb) including the gearbox, this engine has an exceptional power-to-weight ratio. With a relatively "flat" torque curve characteristic, the TAMD 40 offers outstanding acceleration and top speed resources. The properties of the 40 Series make them ideal for both planing and displacement boats, leisure boats and workboats. They have also formed a niche in the latest class of coastal fishing vessel.

The TAMD 40 comes with the Volvo Penta gearbox MS 3C and reduction ratios of 1.93:1 or 2.73:1. The Aquamatic (I/O) version of the engine is available with Volvo Penta's unique Duoprop – the out-

drive with two counter-rotating propellers – or conventional single propeller. (Your dealer can provide you with more information about our full range of Aquamatic models).

TMD 40

When ultimate output and performance are not essential, the turbocharged version without aftercooling is an excellent alternative. Output is slightly lower of course, 95 kW (129 hp), but the TMD 40B still has an excellent power to weight ratio. 460 kg (1015 lb).



Volvo Penta MS 3C – for the best performance

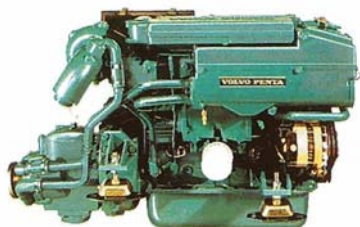
No matter how good its performance, an engine can never be better than the transmission which converts its output to propulsive force. This is why Volvo Penta has applied "in-house" high technology transmission engineering resources in developing the ultra-effective MS 3 marine gearbox.

Thanks to a unique manufacturing process, we can produce a cone clutch and gears with precision machined contact surfaces which give silky smooth shifting and quiet efficient running. In addition, the Volvo Penta MS 3 is designed for continuous operation, for both right and left hand propellers, ideal for twin installations.

Designed in transmission protection includes a special slip clutch which reduces the risk of damage should the transmission be subjected to extreme torque. This of course also reduces the risk of transmission damage should the boat run aground.

The MS 3 is only available with Volvo Penta marine engines and with reduction ratios of 1.93:1 or 2.73:1 to provide a perfect match to a variety of boats and applications. The output shaft has a down angle of 8° to reduce the installation height of the engine and improve access in the engine compartment.

A Four with the features of a Six – D30 Series



If you're in the market for a marine engine but find the 40 Series versions too powerful for your boat, choose an engine from the four-cylinder 30 Series!

The TMD 30 with a propeller shaft output of 63 kW (86 hp) for example. Or maybe you prefer the TAMD 30 which, with aftercooling, has an output of 77 kW (105 hp).

(Your Dealer can provide you with more detailed information on the Volvo Penta 30 Series.)

The engines of the 40 Series are an ideal alternative to large inboard petrol engines in leisure boats.

You get a very reliable and fuel-efficient diesel with outstanding performance and ample power reserves for driving extra equipment.



Power and reliability combined

TAMD 60 & D70 SERIES

The TAMD 60, like the engines of the 70 Series, is used to power both leisure boats and workboats.

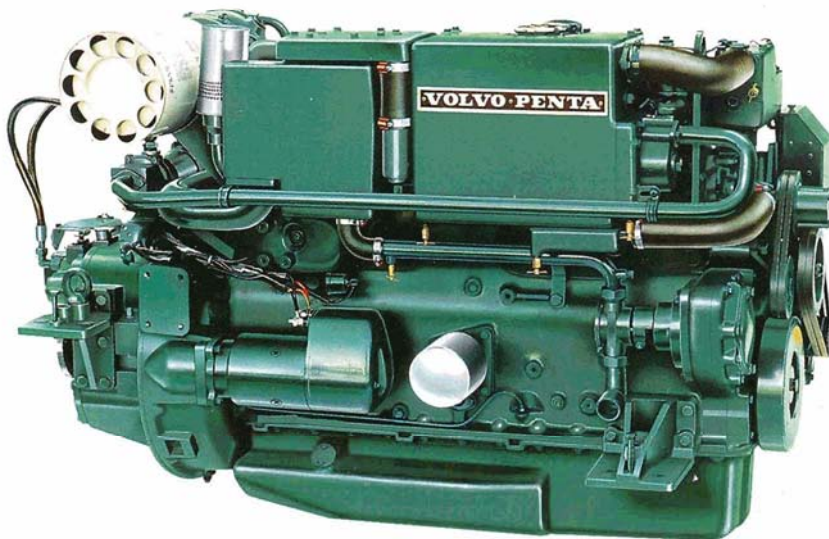
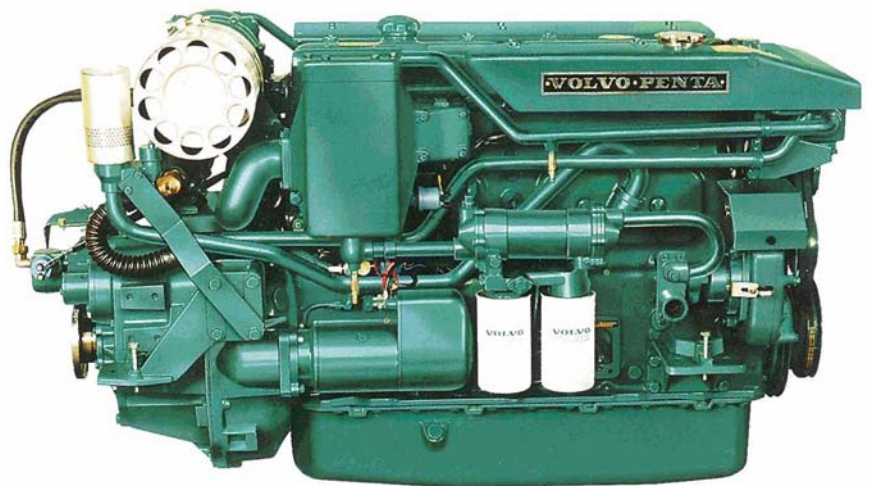
In-line, six-cylinder Volvo diesel engines with flywheel outputs ranging from 107 kW (145 hp) to 220 kW (300 hp) in four different versions with good fuel efficiency and smooth reliable running as prominent features. The TAMD 60 and 70 Series engines combined with Twin Disc gears offer a wide selection of reduction ratios.

These diesels are based on a robustly dimensioned engine block with strategically ribbed and slightly convex walls. Together with the in-line six's inherent characteristics of good dynamic balance, this design results in engines which have remarkably low noise and vibration levels.

TAMD 60

The TAMD 60 is a direct-injected six-cylinder turbocharged diesel with after-cooling. Thanks to Volvo Penta's long experience in aftercooling, development the TAMD 60 C has an extremely low fuel consumption.

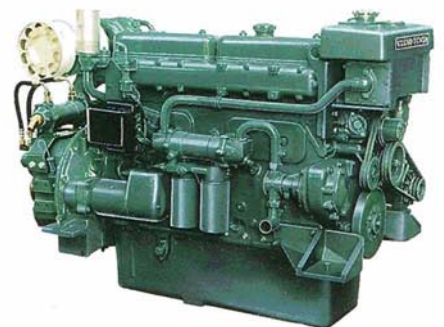
Flywheel output is 184 kW (250 hp) at 2,800 r/min in light duty operation. Various transmissions are available including the Twin Disc 502 with a 10° angled output shaft for low installation height and easy access for maintenance.



TAMD 70

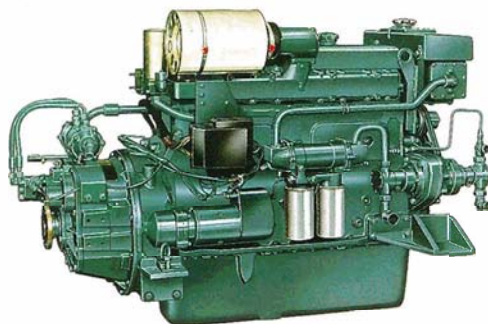
The TAMD 70 is turbocharged and after-cooled. Flywheel output is 220 kW (300 hp) at 2,500 r/min, light duty operation.

This engine can be combined with the Twin Disc 506 or 507 gearboxes with a variety of ratios to suit the type of boat and operating conditions.



MD 70

The normally aspirated MD 70 has the same block and basic design as the turbocharged versions which guarantees durability and long service life. The flywheel output is 107 kW (145 hp) at 2,500 r/min.



TMD 70

The TMD 70 is turbocharged but does not have aftercooling. Tried, proven and reliable with a maximum flywheel output of 143 kW (200 hp) at 2,500 r/min.



TATIANA

TMD100

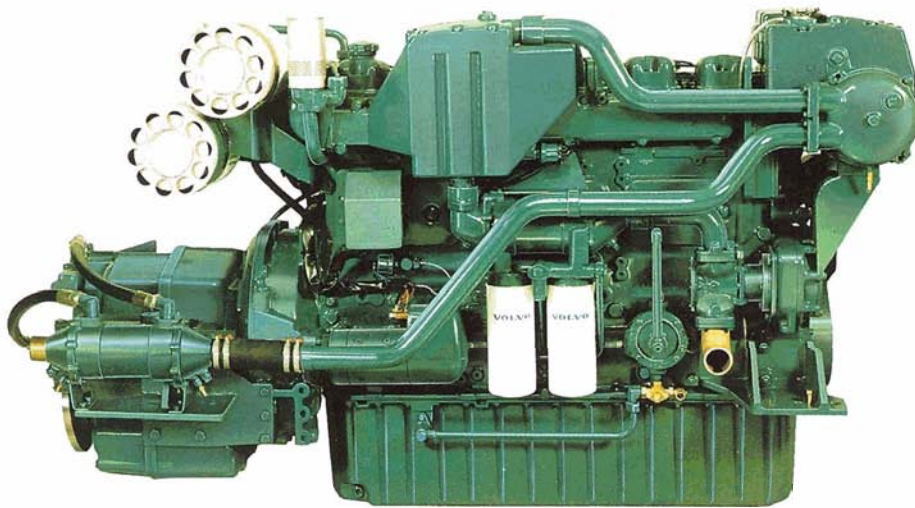
TMD121 TAMD121

The TMD 100, TMD 121 and TAMD 121 are the most powerful diesels in the Volvo Penta marine engine programme.

Turbocharged, direct-injected in-line sixes of refined, durable and efficient design that have been tried and tested in larger leisure boats and commercial uses which make the severest demands on a marine engine.

Features include a two-pole, 24-Volt electrical system and a starter motor of not less than 4.7 kW (6.5 hp) output. The pistons are specially designed for high compression ratios and volumetric efficiency which saves fuel, lowers peak combustion temperature and reduces wear. The pistons are also oil-cooled except in the TMD 100. The engine block, cylinder heads and exhaust manifold, are freshwater cooled and the cooling system has three thermostats to ensure an even temperature distribution. They all have a hydraulic reverse/reduction gear and various ratios are offered.

The TAMD 121 is turbocharged and has aftercooling which lowers the temperature of the pressurised air after the turbocharger and before combustion. This gives higher output from a given engine displacement while at the same time reduces thermal and mechanical wear which of course is beneficial to operational reliability and service life.



TAMD 121

With aftercooling, the flywheel output of this engine is efficiently raised to **300 kW (408 hp) at 2,000 r/min.** Twin Disc reverse reduction gear, ratios 1.5:1; 2:1 or 2.5:1.

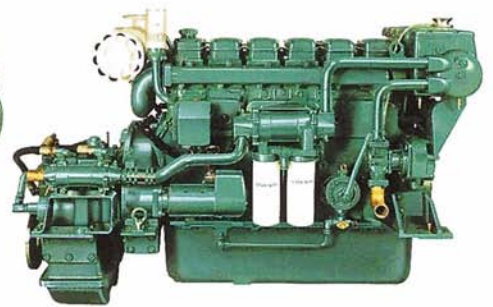
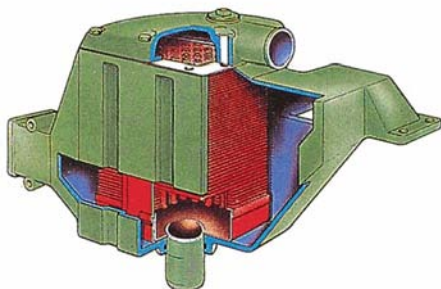
For sparkling performance, even in very large leisure boats, twin installations of the TAMD 121 give a power package with an impressive output of **600 kW (816 hp).**

Aftercooler

Aftercooling increases fuel efficiency and is beneficial to service life.

The aftercooler lowers the temperature of the air that is pressurised (and also warmed up) by the turbocharger before it enters the chambers. Since colder air is denser and richer in oxygen than warm air, aftercooling means that more energy can be squeezed out of a given quantity of diesel fuel.

In addition to better fuel efficiency, aftercooling reduces thermal stress on the pistons, cylinder heads, valves, gaskets etc, and also results in cooler and cleaner exhaust gases.

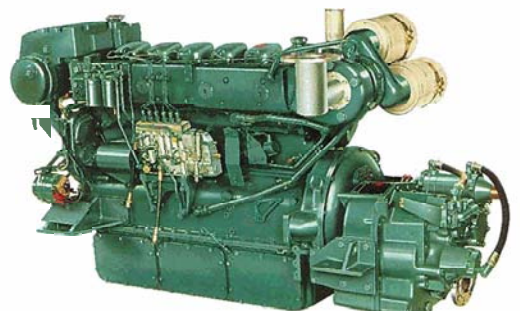


TMD 100

The TMD 100 turbocharged marine diesel has a displacement of **10 litres.** Flywheel output is **200 kW (272 hp) at 2,000 r/min.,** light duty operation. Twin Disc **509** and **510** reverse reduction; ratio alternatives are 1.5:1; 2:1; 3:1; 3.8:1 or 4.5:1.

TMD 121

This turbocharged version of the Volvo Penta **12 litre diesel** gives a flywheel output of **250 kW (340 hp) at 2,000 r/min.** The Twin Disc **510** reverse/reduction gear comes with a choice of three ratios: 1.5:1; 2:1 and 2.5:1.





VOLVO PENTA

Volvo Penta develops, builds and markets marine and industrial engines and transmissions. Volvo Penta has currently one of the world's most comprehensive product programmes in its field. It includes power units and transmissions for leisure and workboats as well as a broad industrial engine and component programme for uses i.e. in material handling equipment, irrigation systems and generating sets.

Volvo Penta has always been a leader in technological development with products which include the first turbodiesel for marine use; the Aquamatic which was the world's first commercially feasible inboard/outboard unit; the S-drive, a compact and quiet drive unit for displacement boats; and latest

among Volvo Penta world firsts, the Duoprop, an outdrive with dual, counter-rotating propellers.

Volvo Penta operates in close collaboration with other companies of the Volvo Group manufacturing cars, trucks, buses and construction machines. This gives access to significant resources and a great deal of valuable experience in a wide range of areas – to the benefit of Volvo Penta customers the world over.

Today the Volvo Group is the largest industrial enterprise in Scandinavia and it is among the world's 60 largest companies in turnover. In addition to transport equipment, the companies of the Volvo Group specialize in engineering, energy and food processing.

Technical data

Engine type	No. of cyl.	Swept volume		kW	Output		Weight	
		dm ³ (l)	cu.in.		hp	r/min	kg	lb
MD 30A	4	2.39	146	45	62 ¹⁾	3800	332	732
TMD 30A	4	2.39	146	63	86 ¹⁾	3800	369	814
TAMD 30A	4	2.39	146	77	105 ¹⁾	3800	375	827
TMD 40B	6	3.59	219	95	129 ¹⁾	3600	460	1015
TAMD 40B	6	3.59	219	116	158 ¹⁾	3600	475	1070
TAMD 60C	6	5.48	334	184	250 ²⁾	2800	750	1655
MD 70C	6	6.73	410	107	145 ²⁾	2500	800 ³⁾	1760
TMD 70C	6	6.73	410	143	200 ²⁾	2500	800 ³⁾	1760
TAMD 70E	6	6.73	410	220	300 ²⁾	2500	810 ³⁾	1785
TMD 100C	6	9.60	585	200	272 ²⁾	2000	1160 ³⁾	2560
TMD 121C	6	11.98	730	250	340 ²⁾	2000	1350 ³⁾	2970
TAMD 121C	6	11.98	730	300	408 ²⁾	2000	1360 ³⁾	3000

1) Propeller shaft output according to DIN 6270 Output B

2) Flywheel output according to DIN 6270 Output B

3) Without reverse gear

Due to intensive product development all specifications are subject to change without notice. Not all models, standard equipment or accessories are available in all countries.

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