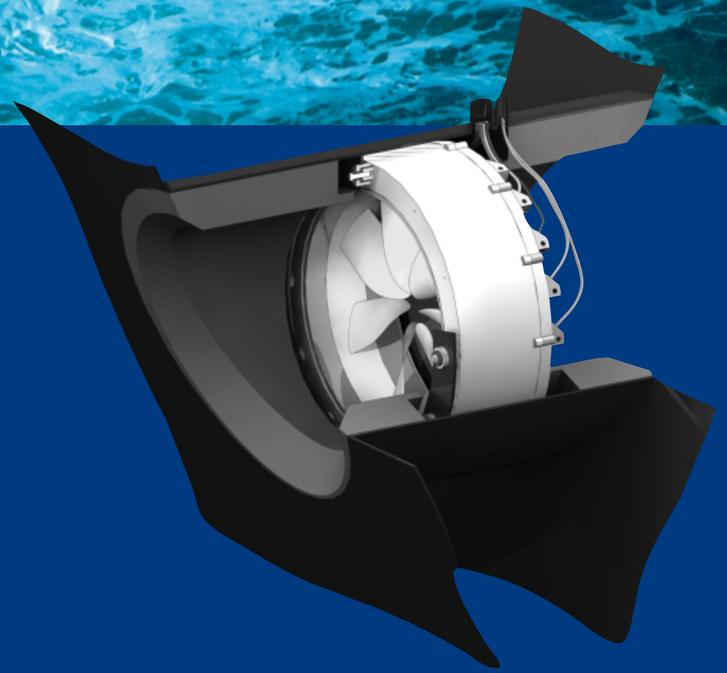
The EPS Thruster

Once in a while a new system comes along that revolutionises the way we look at shipbuilding and design. The new EPS thruster from Van der Velden™ Marine Systems is one such innovation. Amazingly quiet, this electrically operated system offers exceptional sideways power. Moreover, the compact EPS takes up half the space of a conventional bow or sternthruster and provides significant savings in weight. The future is here today.



SMART MARITIME SOLUTIONS

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MARINE SYSTEMS
VAN DER VELDEN

The EPS Thruster

A Silent Revolution In Thruster Technology

SMART MARITIME SOLUTIONS

High quality – Low maintenance

The entire EPS thruster and all its related parts have been designed and manufactured to the highest possible quality standards. The simple construction and exchangeable blades means the EPS thruster is very easy to maintain. Use of high performance ceramic bearings and other high-tech materials further enhances the system's reliability and strength.

Huge savings in space and weight

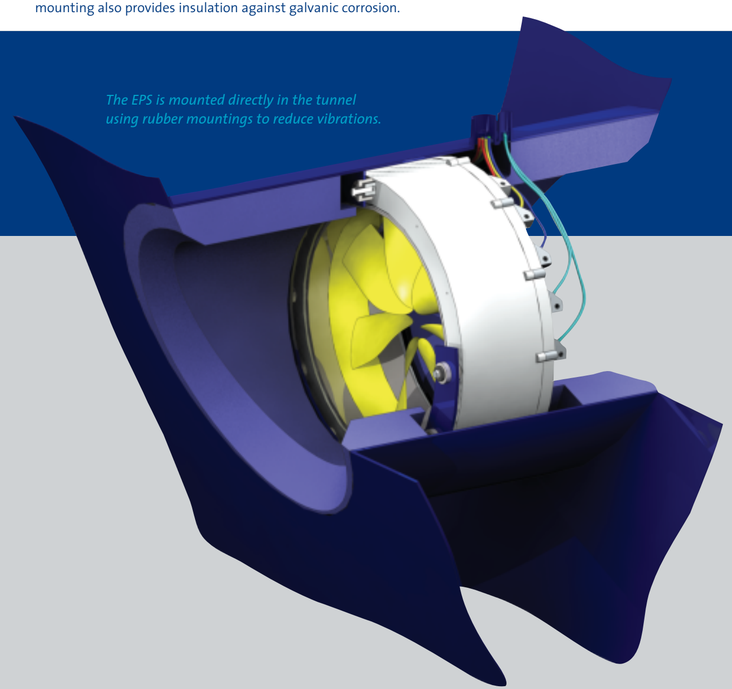
The EPS is so compact that it takes up only around one third of the precious onboard real estate compared to a traditional bow or sternthruster. It also offers weight reductions in the region of 50%. The motor driving the thrusters is integrated within the outer ring. It requires only limited space and offers excellent cooling properties thanks to the exceptionally large cooling area. Meanwhile, the EPS thruster itself can be mounted inside the tunnel without the need for additional access holes in the hull (this also means that the EPS can be fitted at a later stage of the build programme). Special streamline inserts improve the inflow and thus the effective thrust, while helping to further reduce noise.

The Sound of Silence

You *can hear* silence with the EPS thruster – it is a rushing sound as the powerful propellers displace water at an unprecedented rate. Listen very carefully and you might just hear the sound of the electromotor responsible for this force. But the characteristic roar caused by cavitation – the noise that drives your neighbours mad in the marina and draws frowns from the quay – is gone.
The primary source of noise pollution with thrusters is the gap between the propeller blades and the tunnel. The EPS has neither gear or propeller shaft: Blades are connected to an outer ring, rather than to a hub as is the case with conventional thrusters. Without the clearance between propeller and tube, the source of cavitation disappears. To further reduce the induction of mechanical vibrations into the hull, the EPS tunnel thruster is mounted on a ring using a flexible rubber mounting. This rubber mounting also provides insulation against galvanic corrosion.

Proven Performance

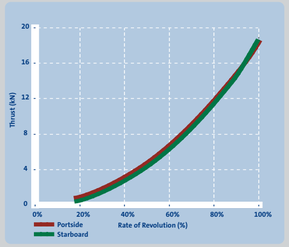
The EPS thruster has completed the most stringent testing regime at the world-renowned Maritime Research Institute Netherlands (MARIN). These full-size tests were observed by leading lights from the Dutch yachtbuilding and naval architecture community. Comments included: "I've never seen so much water displaced with so little noise," and "I am very impressed - this is above all our expectations." The first EPS orders have already been placed...



The EPS is mounted directly in the tunnel using rubber mountings to reduce vibrations.

A Powerful Performance

Conventional thrusters usually have a significant gap in power when comparing port and starboard. The EPS offers an equally powerful thrust on both sides of the vessel. And there are many other performance benefits: Greater steering power, a higher degree of accuracy and super-fast reactions make manoeuvring a breeze. Moreover, tests have proven that the engine is exceptionally reliable even with sustained periods of use. The blade geometry is optimised using the latest Computational Fluid Dynamics technology.



Equal performance in port & starboard directions

The choice is yours

The standard EPS delivery package consists of the following:

- EPS thruster including composite material blades
- Five metres of cable to junction box
- EPS mounting ring and rubbers
- Tunnel & streamline inserts
- State-of-the-art frequency controllers
- Standard bridge control position

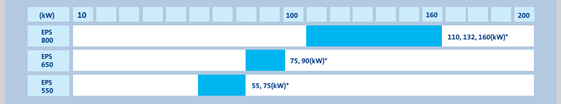
The EPS 800 is available with a redundant control using two frequency controllers. You can opt to add PLC controls to communicate with a touch screen panel or integrated bridge system.

Range

TYPE	d (mm)	D (mm)	B (mm)	T (mm)	M (kg)
EPS 800	800	1020 - (max. 1060)	350	1090	450
EPS 650	650	850 - (max. 890)	285	950	300
EPS 550	550	750 - (max. 790)	240	850	180

d = Inner diameter / effective thruster diameter
D = Outer diameter (maximum outer diameter)
B = Thruster width
T = Minimum required inner tunnel diameter
M = Thruster mass

Power



Standard Duty S2-30 min
(For special applications e.g. Dynamic Positioning (DP) S1 duty available on special request)
* Power according to IEC standards and standard frequency controller sizes

Especially for sailing yachts

The EPS thruster will soon be available in a retractable version, designed to suit the specific needs of sailing yachts. An uninterrupted hull shape helps keep drag to a minimum and the retractable EPS will contribute to smooth sailing.