Voith Turbo

VOITH

Product Range
Marine

We bring your ships
worldwide on course

Safety and precise maneuvering on the seas, lakes, rivers, waterways and harbors of the world is of maximum importance. Safe drive systems are an essential prerequisite for this. For over 80 years, Voith has been designing systems that are safe for people and the environment: a unique propulsion system – the Voith Schneider Propeller, the Voith Turbo Fin, the Voith Cycloidal Rudder, the Voith Water Jet and also worldwide proven ship concepts such as the Voith Water Tractor. Voith Turbo Marine offers tailor-made drives for a wide variety of applications – for harbor assistance and escort duties, ferries, supply and special vessels for the oil industry, for military applications and for special ships and mega yachts.

Voith Schneider Propeller (VSP)

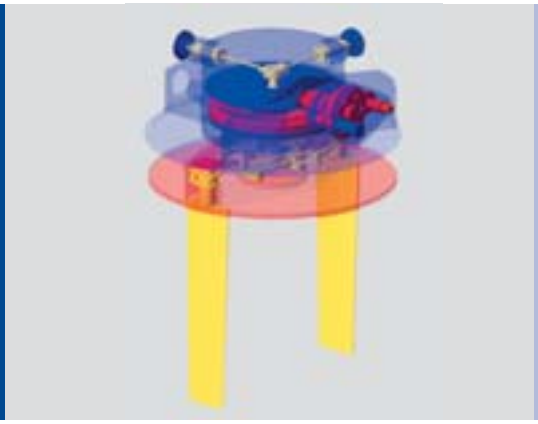
Driving and steering – forwards and backwards, sideward and more: the VSP allows thrust in all directions and at all levels – fast, stepless and accurate. A rotating rotor casing with four, five or six blades moves around its vertical axis. Like the tail fin of a dolphin, the propeller blades generate thrust by additional oscillations around their own axis.

The advantages of the Voith Schneider Propeller (VSP) are:

- Optimum maneuverability, even in narrow ports with currents and side winds
- Minimum power requirements at highest safety for ship and environment
- Environmental-friendly concept with minimum exhaust and noise emission
- Maximum availability and minimum maintenance thanks to simple and robust design

For Safe Shipping Worldwide –
Propulsion Systems and Ship Concepts from Voith Turbo Marine

Voith Turbo Fin



Voith Cycloidal Rudder

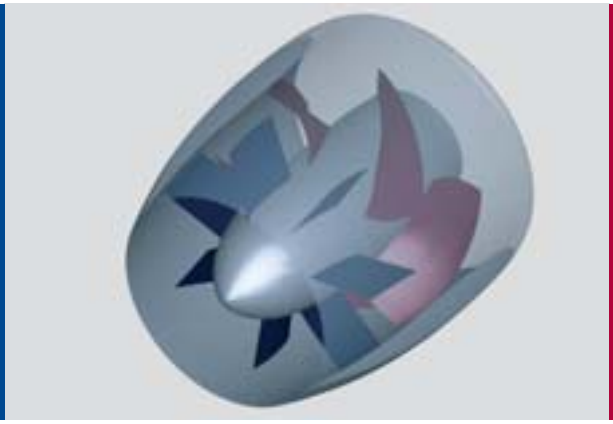
Voith Turbo Fin (VTF)

More safety for marine escorts: Voith Turbo Fin is an innovation at the skeg of the VWT. A cylinder rotates at the leading edge of the fin and prevents flow separations. The steering forces of the VWT and the safety of the escorted vessel are thus significantly increased.

Voith Cycloidal Rudder (VCR)

High-performance rudder for all speeds. The VCR combines the technology of the Voith Schneider Propeller with the requirements of a modern heavy-duty rudder. With only two blades (similar to the VSP) it functions as a high-performance rudder during free running. In the low speed range, it replaces standard drive systems and offers maximum maneuverability.

Fire-Fighting Vessel



Voith Water Jet

Voith Roll Stabilization (VRS)

The first propeller worldwide that is capable of reducing the rolling motion of a ship: thanks to its rapid thrust variation capacity, the Voith Schneider Propeller and the Voith Cycloidal Rudder can be utilized for roll stabilization. Up to 90 percent of the rolling motion of the ship can be suppressed in this way. As a result, ships such as offshore supply vessels can continue their operations even in bad conditions. The Voith Roll Stabilization is also beneficial for people. An operating vessel, a ferry or a yacht: the reduced rolling motion of the ship provides a significant increase in comfort for all people on board.

Voith Water Jet (VWJ)

The first water jet propulsion system from Voith: the new deep-immersed Voith Water Jet (VWJ) has been developed especially for ships running at speeds between 25 and 40 knots. This drive is not only powerful – thanks to its low-noise operation and high efficiency it is also ideal for frigates, corvettes and mega yachts.

Synonymous with Safety,
Reliability and Positioning Accuracy

Voith Water Tractor

Ferry with Voith Schneider Propeller

Applications of Voith Schneider Propeller

- Voith Water Tractor (VWT):
  Superior safety concept for ship assistance and escorting: the Voith Water Tractor combines the characteristics of the Voith Schneider Propeller with optimum ship design and thus ensures maximum performance in any situation. It is currently in service with over 800 VWT and in more than 120 harbors around the world. Worldwide, the VWT is synonymous with safety, reliability, fast response and accuracy in maneuvering and escort operations, as well as for salvaging and fire-fighting duties.

- Ferries:
  Increasing demands on safety, profitability and environmental compatibility require special ship concepts for ferry services. As “floating bridges” in an integrated traffic system, ferries are a future-oriented, economical solution. Equipped with a VSP, ferries meet the high expectations on economy, reliability and safety.

- Offshore Supply Vessels:
  Economy, accurate positioning and roll damping are among the most important characteristics expected from offshore supply vessels and special vessels operating in the oil industry. OSVs equipped with Voith Schneider Propellers fulfill these high demands excellently. Thanks to their high efficiency, they are more economical, and owing to their outstanding maneuverability and short response times, they can keep their position directly at the oil rig with maximum precision. The Voith Roll Stabilization allows safe and reliable operation of such vessels even if the weather is bad.

Offshore Supply Vessels with Voith Schneider Propeller

Contur Propeller

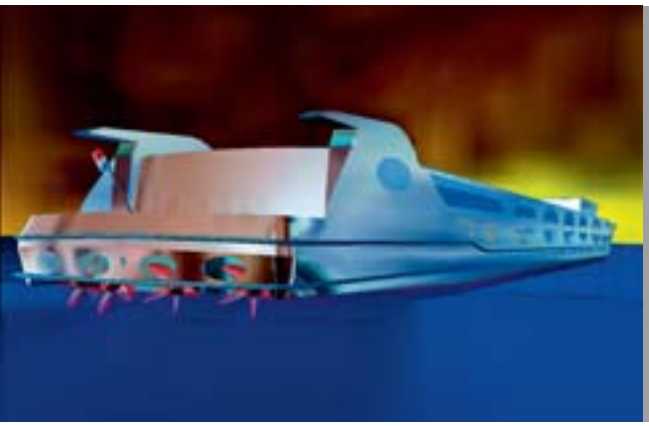
Applications of Propellers Made from Fiber Compound Materials by Voith Turbo AIR

- Naval Applications:
  Where safety and high maneuverability are essential, naval operators rely on the Voith Schneider Propeller. Its robust design, insensitivity towards external influences and low noise emissions make the VSP the ideal propulsion system for even the most challenging operations.

- Special Vessels:
  Maneuvering and positioning par excellence: be it workboats such as research vessels, floating cranes or bow steering modules – what counts is not only the fast and economic operation, but also accurate maneuvering and positioning.

Voith Turbo AIR in Rostock rounds off the portfolio of Voith Turbo Marine. The Company specializes in the development, design and production of propeller systems made from carbon fiber compound plastics (CFRP). The results are higher efficiencies, reduced noise emissions and lower vibrations.

- Contur Propeller:
  Compared to conventional bronze propellers, the weight of this intelligent CFRP propeller amounts to only 25 to 35% of these units. It excels by extremely low noise and vibration levels, as well as superior cavitation behavior. Thanks to its flexibility, the propeller pitch adapts to the load conditions. This leads to reduced fuel consumption in the full or part-load range. These characteristics provide optimum conditions for yachts, passenger vessels and military applications.



VectorProp

Inline Thruster

- Vector Propeller:
  The Vector Propeller is a controllable, surface-piercing pitch propeller made from compound plastics. Its rapidly adjustable pitch is combined with an intelligent control system. Despite the absence of conventional rudders, it distinguishes itself by maximum mobility and accurate maneuverability. Thanks to its low speed and its large diameter at unchanged draft, the system is highly effective with excellent efficiencies. The perfect system for all types of riverboats.

- Inline Thrusters:
  The Inline Thruster is a compact unit comprising an electric motor and a propeller. The outer ring contains the stator winding of the electric motor. The plastic compound propeller is integrated into the rotor and can thus be designed without a hub. The rotor is integrated into the stator via a patented bearing. This concept provides an extremely quiet propeller system without blade tip cavitation. It can be installed into any ship and comes either as a tunnel thruster or as a 360°-rotatable main and auxiliary system.

Product Range

Voith Schneider Propeller (VSP)

Voith Turbo Fin (VTF)

Voith Cycloidal Rudder (VCR)

Voith Water Jet (VWJ)

Voith Roll Stabilization (VRS)

Applications with Voith Schneider Propeller

- Voith Water Tractors
- Ferries
- Offshore Supply Vessels
- Naval applications
- Special ships
- Mega yachts

Applications of Propellers Using Carbon Fiber Compound Materials by Voith Turbo AIR

- Contur Propeller
- Vector Propeller
- Inline Thruster

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