Longitudinal section of a VSP

1. Rotor casing
2. Blade
3. Kinematics
4. Thrust plate
5. Roller bearing
6. Propeller housing
7. Reduction gear
8. Bevel gear
9. Driving sleeve
10. Control rod
11. Servomotor
12. Gear pump
13. Control shaft
14. Indicator plate

Types and dimensions
Voith Schneider Propeller

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Successful worldwide

Propulsion and steering – ahead, astern and sideways: The Voith Schneider Propeller (VSP) developed more than 90 years ago generates thrust in all directions. Propulsion and steering are combined in one unit, thus allowing prompt, safe and precise maneuvering, even under adverse conditions. An additional feature: Voith Roll Stabilization (VRS)

The VSP is suitable for a wide range of applications – from harbor tugs to offshore supply vessels. And it has been operating successfully in all these applications for decades. The VSP is distinguished by its high reliability and low maintenance requirements. Its low fuel consumption translates into minimum power requirements while at the same time maximizing safety for the vessel and the environment.

The VSP principle is strikingly simple and fascinating at the same time: A rotor casing fitted with four, five or six propeller blades rotates about a vertical axis. As is the case with the tail fin of a dolphin, a superimposed oscillating motion of the blades around their own axis generates thrust. The magnitude of thrust is determined by the rotational speed of the rotor casing; The blade angle determines the direction of thrust.

### VSP sizes

<table>
<thead>
<tr>
<th>Propeller type/size</th>
<th>Control system ME/ECA*</th>
<th>Control system EC**</th>
<th>VRS*** option</th>
<th>Blade orbit diameter A [mm]</th>
<th>Blade length B**** [mm]</th>
<th>Housing height C [mm]</th>
<th>Housing diameter D [mm]</th>
<th>Number of gearsteps</th>
<th>Weight without oil [abt. kg]</th>
<th>Oil filling [abt. l]</th>
<th>Max. propeller input power [kW]</th>
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Note: Input speeds can be adapted to all common diesel and electric motor rpm either by internal gearbox (2-gear-step VSP) and/or by intermediate gearbox (single-gear-step VSP).

* Either mechanical or add on electronic control system possible  
** Electronic Control System  
*** Voith Electronic Roll Stabilization  
**** Maximum blade length (can be shortened)