

Propulsion Product Services

Azipod® Hydrodynamic Optimization

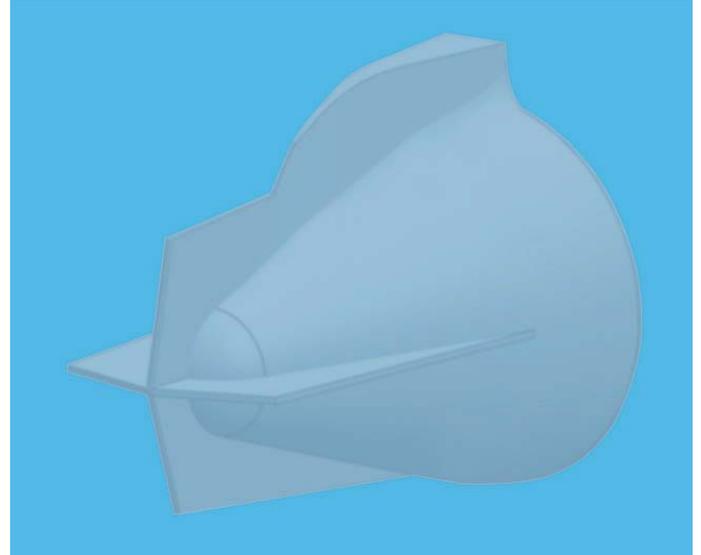
ABB utilizes the latest know-how and scientific research to develop the Azipod® propulsor's hydrodynamic characteristics to a new level. Azipod Hydrodynamic Optimization offers several new solutions for improved efficiency of Azipod operation. The structural changes in the strut, fin, and pod cap enable the same thrust while the Azipod propulsor uses less energy. The propeller modification is designed to improve the propeller's hydrodynamic efficiency. The new optimization solutions can also be delivered separately, but the best outcome can be expected when they are implemented simultaneously.

The solution

The new hydrodynamic structural modernizations have been developed to obtain the same thrust with lower energy usage of the Azipod propulsor in the normal operation modes. By shaping the strut and fin structures in a new way and by adding X-tails to the pod cap of the Azipod propulsor, we enable streamlining of the water flow around the Azipod unit. The reshaped asymmetric strut will better interact with the flow of water guided by the propeller and the hull of the vessel.

The new fin structure receives the flow of water coming from the propeller at a new, smoothed angle, and its new curved design redirects the flow more efficiently. The flow of water meets the surface of the Azipod propulsor at various angles, depending on the contact point. To be able to maximize efficiency, the angles of water attack induced by the propeller's blades must be minimized, for the smoothest possible flow of water.

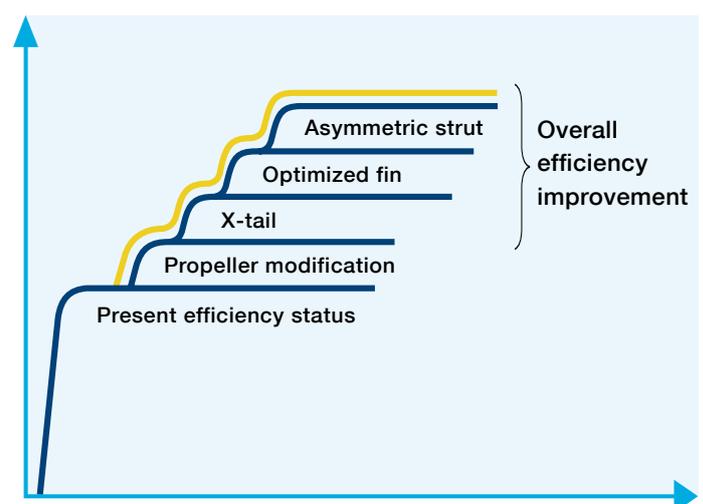
The new X-tail installed for the pod cap structure will straighten the water flow after it leaves the hull of the Azipod propulsor and therefore minimize further swirling of water. Both application of newly developed criteria in the redesign of the propeller and optimization of the turning direction allow the efficiency of the propeller to be improved. The hydrodynamic modernizations have no effect on the steering capability or other characteristics of Azipod system operation.



Benefits

The new optimization solutions are designed to improve the efficiency of the Azipod unit. Through optimized hydrodynamic characteristics of the Azipod propulsor, it is possible to improve the efficiency of propeller operation and the flow of water around the Azipod propulsor.

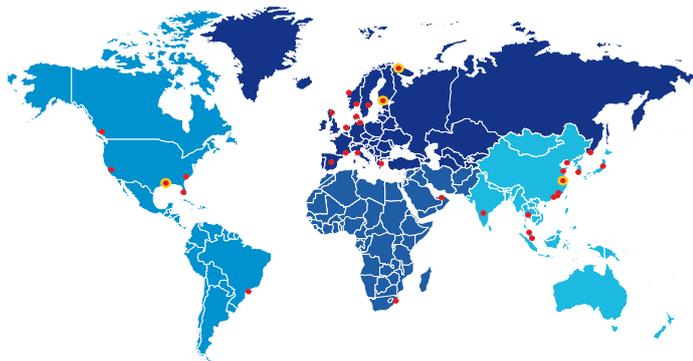
Hydrodynamic efficiency



Delivery and Installation

In a standard Azipod Hydrodynamic Optimization delivery, the strut, fin, and X-tail modifications are prefabricated to ensure correct geometry and fast installation during dry-docking. As an option, the existing pod cap can be replaced with a new one, which has the X-tail modification already installed. In this case, the installation can be done even during very brief dry-docking. The propeller modification must be specified and agreed upon case-specifically, on account of the many variables related to the design and installation.

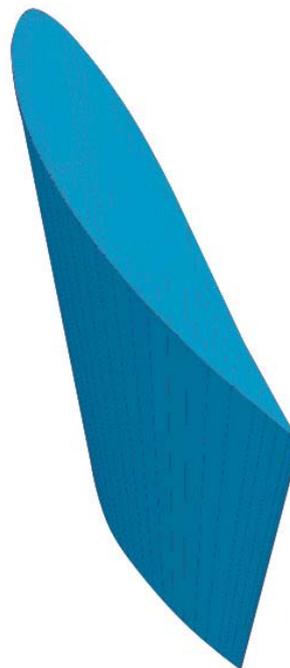
Worldwide presence



- ABB Marine and Crane Services
- Azipod Service Center

Azipod® propulsion

An Azipod unit is a podded electric propulsion unit where the variable speed electric motor driving the fixed pitch propeller is in a submerged pod outside the ship hull, and the pod can be rotated around its vertical axis to give the propulsion thrust freely to any direction. Thus the ship does not need rudders, stern transversal thrusters or long shaftlines inside the ship hull.



Availability

The Azipod Hydrodynamic Optimization is available for ships equipped with two or three Azipod VO units.

Azipod life cycle services

Operation Support

24/7 Support

Training

Maintenance Services

Condition Monitoring

Preventive Maintenance

Spare Parts Services

Enhanced Spares Availability & Logistics

Exchange and Overhaul Service

Modernizations

Energy Efficiency Solutions

Retrofits And Upgrades

For more information please contact your nearest Service Center:

www.abb.com/marine

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