

# Propulsion Product Services

## Azipod® Propeller Shaft Seal Modernization

The reliable Azipod® sealing system helps avoid oil leaking into the sea and to prevent the ingress of seawater into the bearing sump. A complete sealing system modernization improves the reliability of the sealing system and minimizes the risk of any oil leaks. The solution includes a new type of outer shaft seal, in which bearing oil and seawater are insulated from each other by means of a controlled pressurized-air chamber.

### The solution

The conventional lip seal system on the propeller bearing side is usually formed by three to five seal rings forming chambers filled with oil, between the propeller and propeller bearing.

In the modernization, the propeller bearing side is formed of five seal rings between the propeller bearing and the propeller. The outermost seal rings form the first chamber against the seawater. That chamber is filled with grease and acts as a dirt barrier. The second chamber is filled with pressurized air. Any leakage from the bearing housing or from seawater is gathered in the second chamber and drained out automatically at specified intervals to the drainage system. The third and fourth chambers, filled with oil, are connected to the pressurized seal tanks located above the shaft line inside the Azipod unit.

The air control unit in the Azipod room automatically detects any draft changes and adjusts the pressures to maintain the optimal pressure difference in the second, third, and fourth chambers.



### Benefits

- Improved reliability
  - The pressurized-air chamber creates a barrier between the bearing oil and the seawater
- Improved functionality
  - Any change in the hydrostatic pressure of the shaft sealing is automatically detected, and the air pressure is adjusted on the basis of draft variations
- Seal condition monitoring
  - The drainage can be monitored
- Cost-effective modernization
  - The solution provides an efficient way of minimizing the risk of oil pollution through the shaft seal

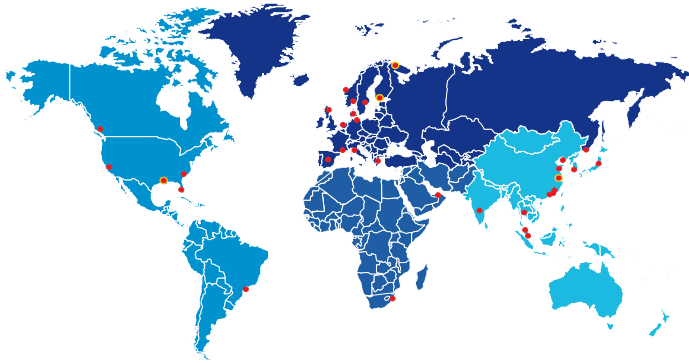
### Available options

Additional air channel installation for the pressurized shaft seal. This is necessary if there is not a seventh air channel available in the existing swivel.

### Availability

The modernization can be performed for all common Azipod V-series models. For details of its availability for other models, contact your nearest Azipod service center.

### Worldwide presence

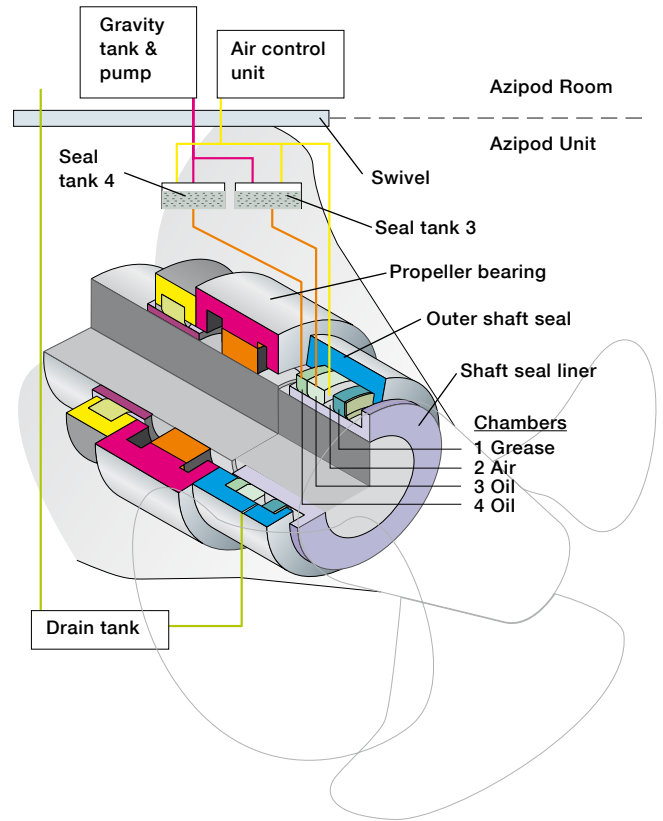


- ABB Marine and Crane Services
- Azipod Service Center

### 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.

### Modernized solution



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### 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](http://www.abb.com/marine)

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