

Wärtsilä Thruster Preservation Bag



In order to reduce costs during lay-up and reactivation of a previously stacked vessel, Wärtsilä offers the Wärtsilä Thruster Preservation Bag, a unique method for protecting and preserving the propulsion system's underwater mounted parts.

In an economically challenging market, many offshore operators will lay-up their assets. During this stacking period, which may be short- or long-term, it is essential that the assets are properly maintained.

Rigs that are not deemed to be economically viable at this current time, may well be in high demand when the market recovers.

With the Wärtsilä Thruster Preservation Bag, the thrusters are safe and fully protected against corrosion, marine growth, and oil contamination. By safely protecting the thrusters, the time between overhauls (TBO) can be extended. The Wärtsilä Thruster Preservation Bag protects any thruster during the stacking of a rig or vessel, thereby avoiding unnecessary repairs and overhauls.

Removing the Wärtsilä Thruster Preservation Bag is easy, and the thrusters are back in operation without the need for expensive and time consuming overhauls or repairs. The relatively small investment made today can save you a great deal tomorrow!

GUARANTEED QUALITY

The Thruster Preservation Bag extends the time between overhauls. The length of the extension depends on the

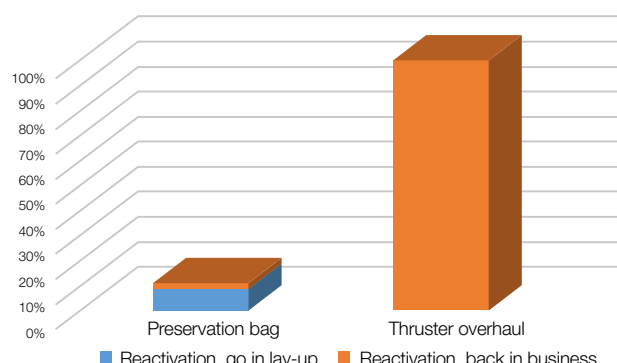
Last overhaul/seal exchange	Duration of preservation	Overhaul interval
≤ 3 years	≤ 0,5 years	> 5 ≤ 5,5 years
	> 0,5 ≤ 1 years	> 5,5 ≤ 6 years
	> 1 ≤ 2 years	> 6 ≤ 7 years
	> 2 years	7 years
> 3 ≤ 4 years	≤ 0,5 years	> 5 ≤ 5,5 years
	> 0,5 ≤ 1 years	> 5,5 ≤ 6 years
	> 1 years	6 years
> 4 ≤ 5 years	≤ 0,5 years	> 5 ≤ 5,5 years
	> 0,5 years	5,5 years

Table 1: With extended TBO

service history of the specific thruster (table 1). For all Thruster Preservation Bags installed Wärtsilä issues a performance guarantee. Should one or more preservation bags fail, Wärtsilä will grant a discount equivalent to the price of the solution on the thruster overhaul.

KEY BENEFITS

- Protects thrusters from corrosion and marine life growth
- Prevents thruster degradation and increases the time between overhauls
- Shortens the time needed to get back in business, avoiding expensive and time consuming repairs/overhauls
- Protects the environment by collecting any possible oil leakage inside the thruster preservation bag
- Doesn't affect the environment in case of leakage due to non-polluting anti-fouling and corrosion inhibitors.



Preservation cost vs overhaul costs



Thruster's propeller shaft seal after 1 year stand still.

TECHNICAL CONCEPT

The preservation bag arrangement (figure 1) forms a sealed habitat around the thruster and its steering pipe seals.

To prevent the preservation bag from damage due to the thruster's rotation around its azimuth position, the steering functionality will be disabled. The hydraulic power to the steering motors will be locked out and tagged. One steering motor will be removed and a locking device will be installed.

Depending on the amount of marine life growth on the vessel, the bottom of the vessel and the outside surface of the thruster might have to be first cleaned by divers. This is to achieve a good seal between the preservation bag and the vessel's bottom, thus preventing damage to the bag and straps by chafing caused by the marine life.

The Wärtsilä Thruster Preservation Bag is applicable to all thrusters, regardless of the original equipment manufacturer. It can be installed on any installation providing that certain conditions regarding the hull shape are met. If needed, a customized solution to suit any hull shape may be provided.

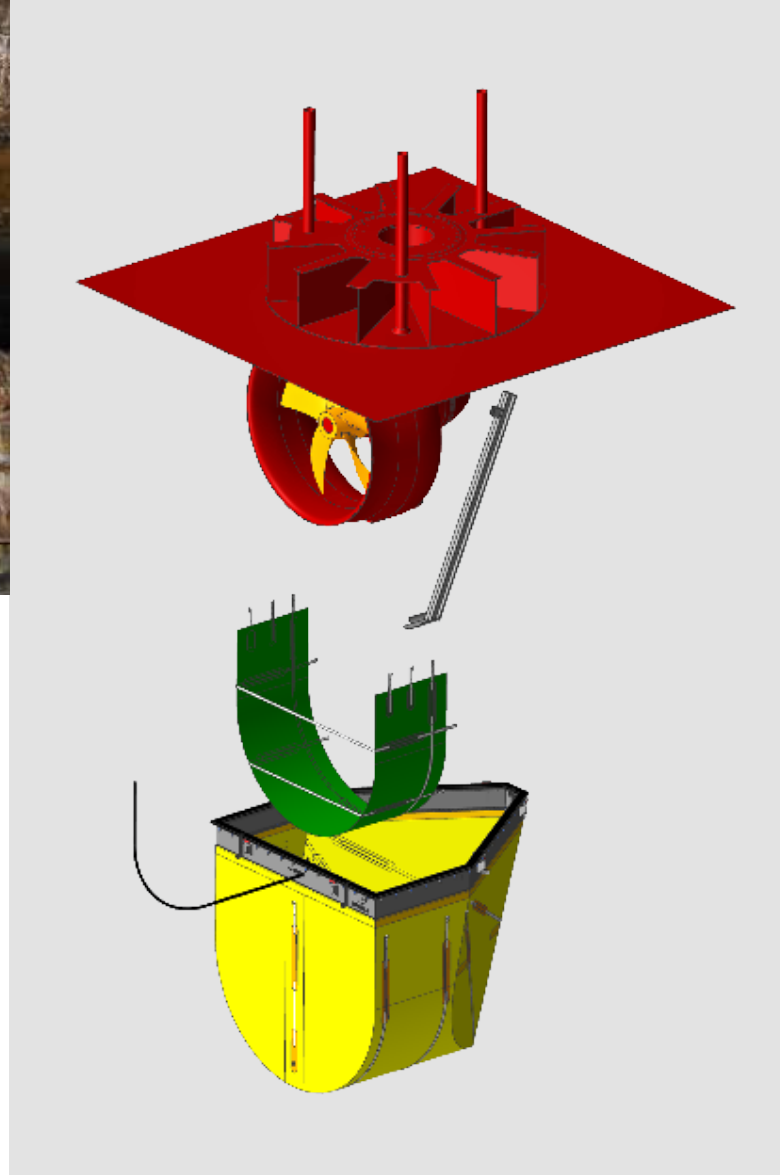
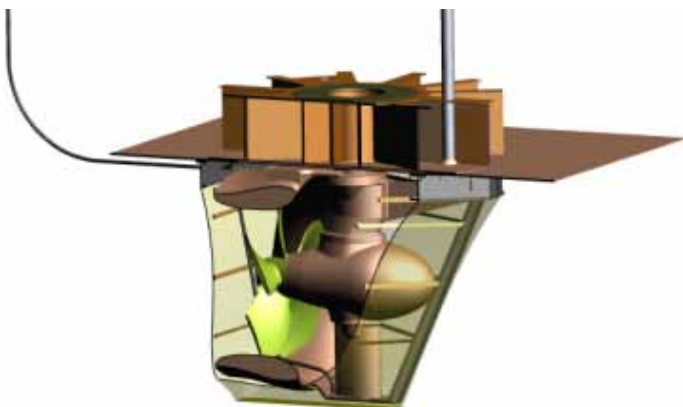


Figure 1: Wärtsilä Thruster Preservation Bag concept

SCOPE OF SUPPLY

The Wärtsilä Thruster Preservation Bag solution includes:

- Watertight PVC bag
- Steel frame for hull mounting, including hoisting eyes
- Anti-fouling and corrosion inhibitor
- On-site Wärtsilä Field Services
- On-site trident diving team
- Required diving equipment.