



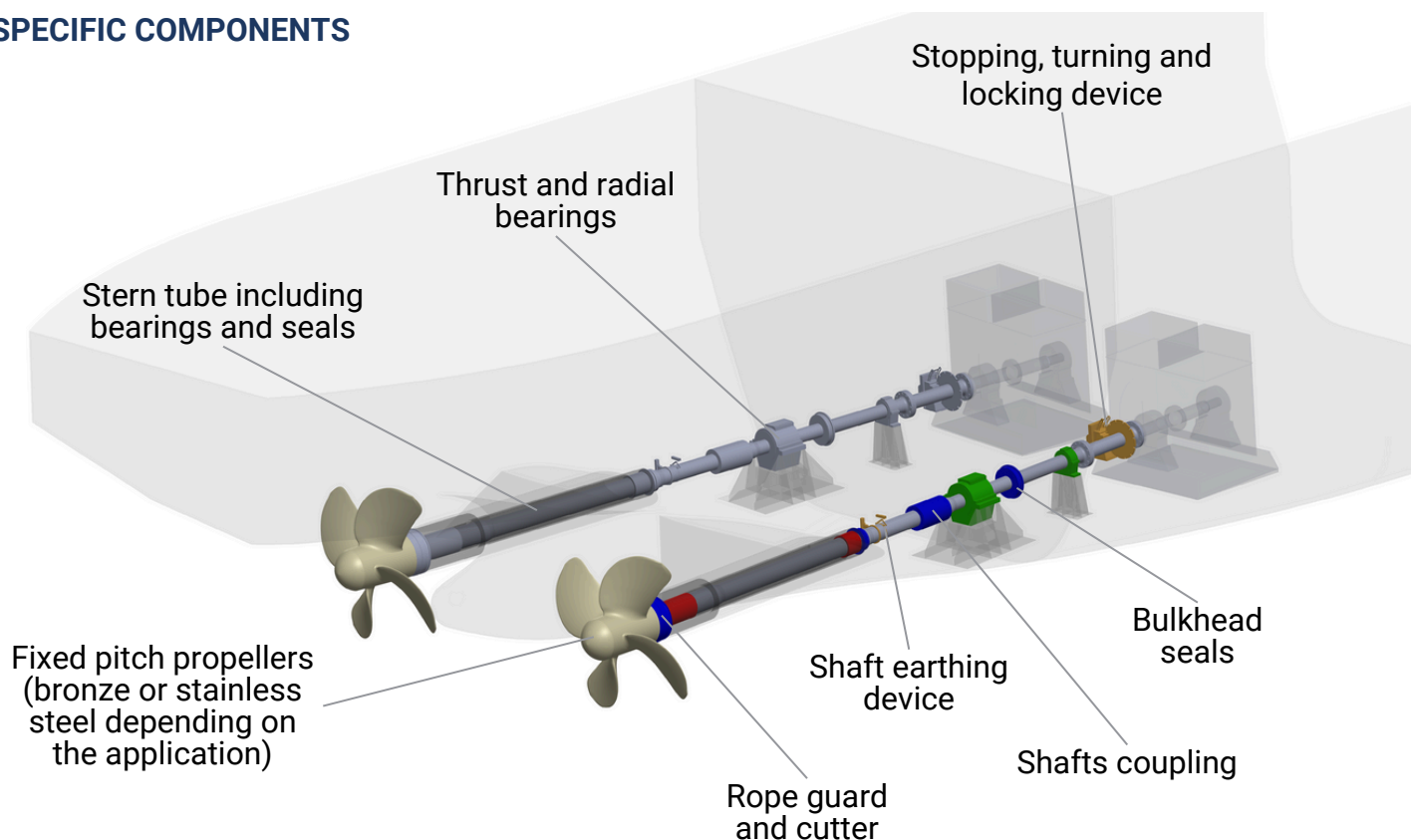
Propulsion Package Solution

Reliable, efficient shaft performance throughout the lifetime of the vessel.

Operations in ice pose a significant design challenge due to the large ice pieces interacting with the propeller. This requires the propulsion system to achieve an optimal balance between strength and efficiency. Aker Arctic's solutions ensure reliable and cost-effective performance of propulsion systems, drawing on decades of experience in designing shaft lines for icebreakers and vessels operating in extreme Arctic conditions.

Our scope of supply typically includes:

SPECIFIC COMPONENTS



SERVICES

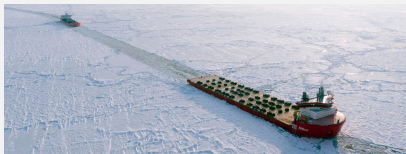
- Performance guarantee
- Design check of interface elements to propulsion shaft lines
- Classification and detail design of propulsion shaftline
- Shaft line monitoring system

Aker Arctic

Propulsion Design and Delivery References

Aker Arctic's experience in the design and delivery of shaft lines for ice-going vessels dates back to the 1980s and 1990s. This extensive database of references places Aker Arctic in a unique position to further develop shaft line concepts for a wide range of ice-going vessels.

DELIVERIES OF PROPULSION PACKAGES:



Audax, Pugnax (2015 - 2016)

Aker Arctic **delivered four 5.4-meter PC3 fixed - pitch propellers** to Arctic module carriers *Audax* and *Pugnax*.

Louhi (2015, 2016)

Aker Arctic **designed and delivered two bronze propellers** for the multi-purpose vessel *Louhi*. The propellers were tested at full scale in the Gulf of Bothnia. Based on these tests, new dimensioning



principles were developed to enable the use of bronze as a blade material for higher ice classes than had typically been used before.

Calypso (2018)

Two high ice class bronze propellers were delivered to the ice-class 1A tug *Calypso*. These propellers were dimensioned using new principles specifically developed for bronze propellers, and no damage has occurred since their delivery.



Saimaa (2020)

The *Calypso* tug is paired with a detachable bow *Saimaa* to be able to break

70 cm thick ice. Aker Arctic has **designed and delivered the complete propulsion package** for the 1ASuper detachable bow *Saimaa*.

Pohjanmaa-class corvette (2024 -)



One of the recent **propulsion packages ordered** from Aker Arctic includes shaft lines and propellers for four new ice-going multi-role corvettes under the Finnish Defence Forces' Squadron 2020 project. A key challenge in the design was meeting the stringent low underwater noise requirements while maintaining high ice class performance.

Polar new project icebreaker

Aker Arctic will deliver a **PC2 ice class propeller** for a **Polar icebreaker**.