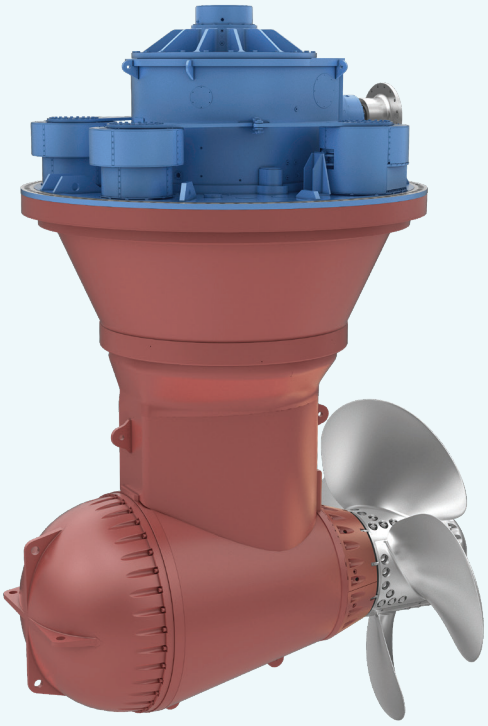
ARCTIC THRUSTER (ARC)



KONGSBERG

TYPICAL APPLICATIONS

- Icebreakers
- Antarctic research vessels
- Other ice operating vessels

KONGSBERG AZIMUTH THRUSTERS

ARCTIC THRUSTER (ARC)

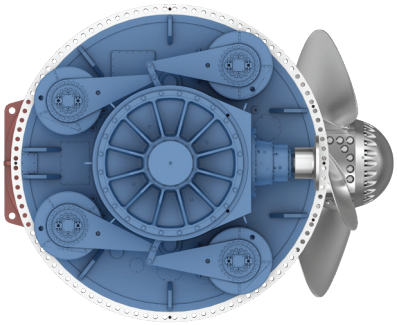
KONGSBERG's ARC thrusters have been developed with expertise for over 30 years to provide powerful thrust in arctic conditions. The newly remodeled unit meets the latest environmental requirement with VGP compliant steering tube, propeller shaft seal and outer dynamic seals. The unit has been designed and calculated to endure heavy ice loads, fulfilling the ice class rules up to Polar Class 2 and Icebreaker 7.

With both pulling and pushing adaptions available, the ARC family can be tailored for any ice condition and ice milling event. The products are modified according to the vessel's needs, from input power to propeller diameter, to ensure maximum performance and safe operation. The excellent manoeuvrability enables thrust in all directions, allowing ice to be cleared on the sides and around the vessel.

Ducted or open propeller

The ARC thrusters can be installed with a ducted (with a nozzle) or an open propeller. The advantages of using a nozzle are increased thrust at low speeds and in bollard pull condition. When efficient channel widening is required, the nozzle will enable manageable steering and powerful thrust at the same time.

An open propeller provides lower resistance at higher speeds and is the foremost choice for ice milling. When performing ice milling with an open pushing propeller, the propeller is in reversed rotation mode and the ice is cut using the trailing edge. Ice milling using an open pulling propeller is done in ahead and astern direction while cutting with the propeller leading edge.



ARC compact footprint

Features

The ARC thrusters are available in Z-drive with a FP propeller. The electric motor serves as the prime mover.

- **Steering gear** – Perform 360º turning of thruster for steering the vessel in all operating conditions. The hydraulic steering system is redundant.
- **Steering tube** – Seal lips' better flexibility and compressible air give more robustness and extend seal's lifetime.
- **Propeller shaft** – Load of all lips are balanced to optimal pressure to follow water pressure variation, keeping them in optimal condition.

KEY ADVANTAGES ON USING KONGSBERG ARC THRUSTERS

- Power rating up to 9MW
- Optimum design to meet the vessel's requirements
- Condition monitoring and lifetime prediction
- Worldwide 24-hour support
- Reliable in the most demanding environments

Propulsion alternatives:

Pushing open propeller

Pushing ducted propeller

Pulling open propeller

ARC thruster pulling type

TECHNICAL DATA

ICE CLASS THRUSTER DESIGN	3PROJECT SPECIFIC (ICEBREAKER) PROJECT SPECIFIC			
	ARC 0.5	**ARC 0.8**	**ARC 1.0**	**ARC 1.2**
Input power range (kW)	3000-4500	4500-6000	6000-7500	7500-9000
Input speed (rpm)	0-720	0-600	0-600	0-600
Prop. speed (rpm)	0-173	0-143	0-143	0-135
Prop. dia (m)	3.2-3.8	3.8-4.1	4.1-4.5	4.5-4.8
Dry weight (t)	85-100	160-170	170-180	185-200

The ARC units are designed to meet the vessel's requirements by the optimum way.

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