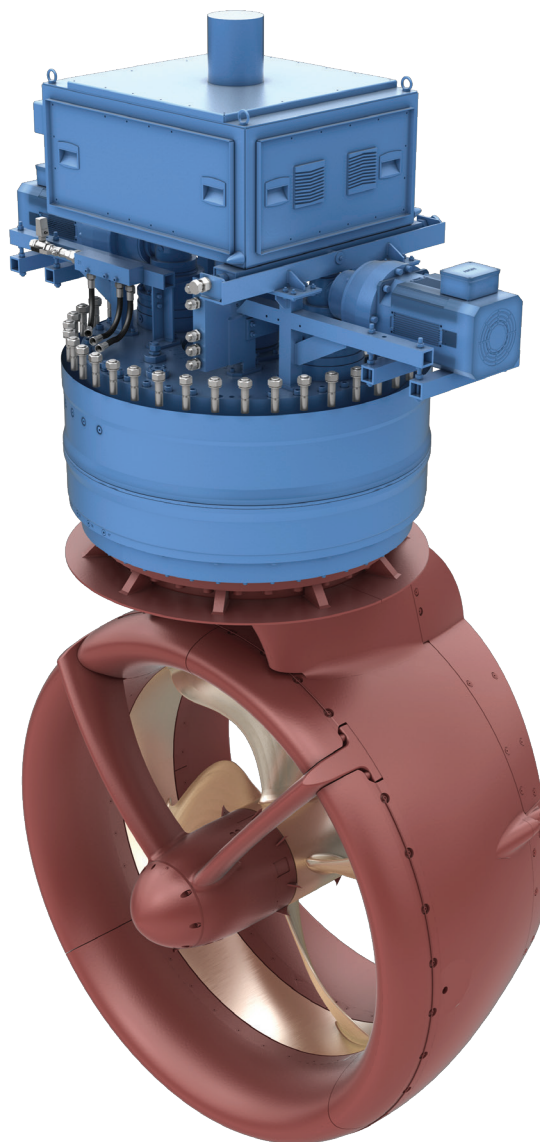




KONGSBERG



## KONGSBERG AZIMUTH THRUSTERS

# The new permanent magnetic driven azimuth thruster (AZ-PM)

The permanent magnet azimuthing thruster is a new addition to the Kongsberg Maritime family of thrusters, building on the design developed and verified on the permanent magnet tunnel thrusters with regard to thruster design and motor integration. The AZ-PM meets operational requirements with focus on performance and reliability.

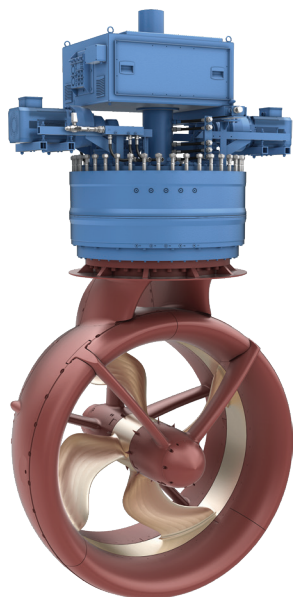
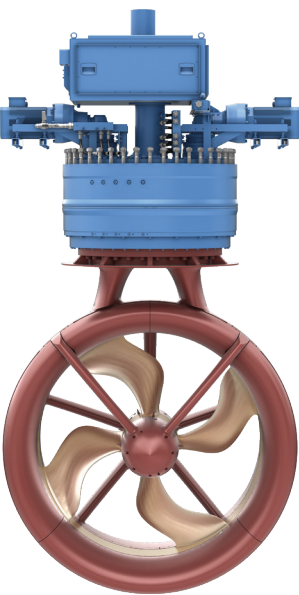
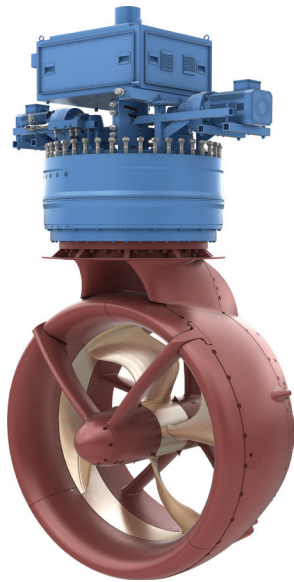
The AZ-PM is built around permanent magnet motor technology and a propeller running on roller bearings, supported by a central shaft. The central shaft is supported by stays. These stays and the central bearing housing recover some of the swirl energy created by the propeller, providing additional thrust.

The Kongsberg Maritime thruster meets strict quality requirements. The AZ-PM thruster contains fewer rotating parts compared to mechanical azimuthing thrusters, and thus has fewer components subject to wear and tear.

# THE NEW PERMANENT MAGNETIC DRIVEN AZIMUTH THRUSTER (AZ-PM)

## TYPICAL APPLICATIONS

AZ-PM is suitable for applications requiring up to 16 knot transit speed. Other applications will be investigated on request.



The azimuth PM thruster is the latest environmentally friendly thruster from Kongsberg Maritime. The highly efficient PM motor, with no requirement for an internal cooling system and no lubrication pumps results in a highly energy efficient thruster. The thruster is approved for EAL (Environmentally Approved Lubricant) and the oil volume in the thruster is reduced by more than 50% compared to other azimuth thrusters.

	AZ-PM 1900	AZ-PM 2600*
Power (kW)	500 - 1100	1100 - 2600*
Thruster (kN)	191kN at 0knot	411kN at 0knot*
RPM	252	187*
Propeller diameter (mm)	1900	2600*
Propeller type	Monobloc/FP	Monobloc/FP*
Direction of rotation	CW/CCW	CW/CCW*
Drive	AFE or 12-pulse drive	AFE or 12-pulse drive*

\* In development.  
 Approximate values, provided for information only. Actual thrust may vary for given applications.  
 De-rating may be required on 12-pulse drive installations.  
 All data is subject to change without prior notice.

### Advantages

- Compact design
- High energy efficiency
- Environmentally friendly
- Low maintenance
- Low noise and vibration

### The AZ PM consist of:

#### Underwater unit:

- Permanent Magnet motor
- Monobloc fixed pitch propeller
- Hydrodynamic fairings

#### Inboard unit:

- Steering machine
- Slip ring unit
- Lubrication system

