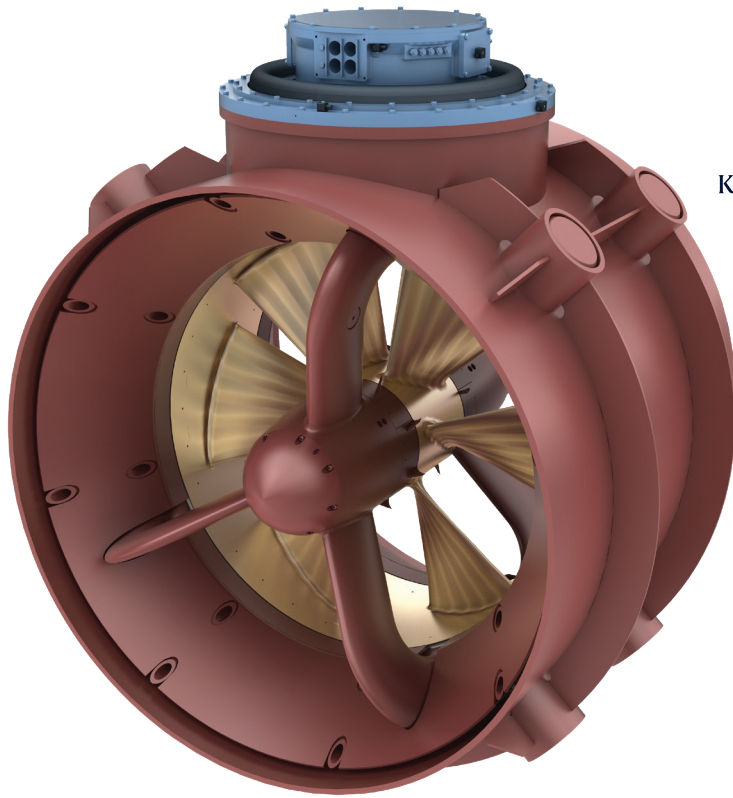


TUNNEL THRUSTER PM TT-PM 2000

TYPICAL APPLICATIONS

Suitable for and installed
in all types of vessels



KONGSBERG

KONGSBERG MARITIME TUNNEL THRUSTERS

TT-PM 2000

Tunnel thruster PM

The Permanent Magnet tunnel thruster is a new addition to the Kongsberg Maritime family of thrusters, building on a completely new approach to thruster design and motor integration. The TT-PM will meet the strictest requirements for performance, noise and vibration, and will be an excellent choice for DP operations.

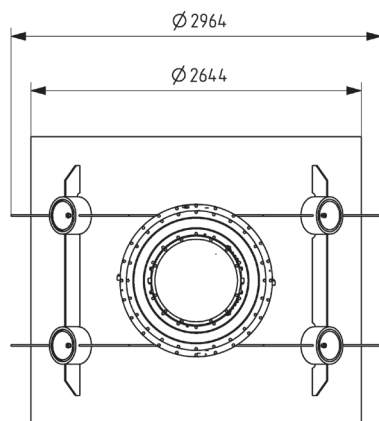
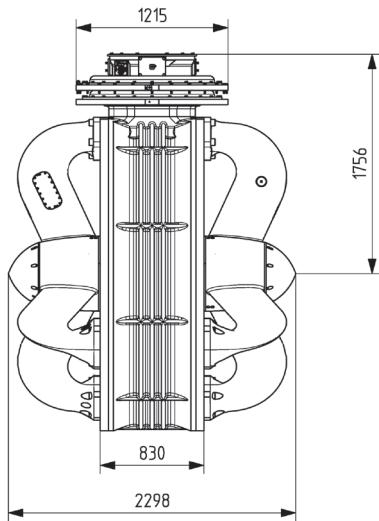
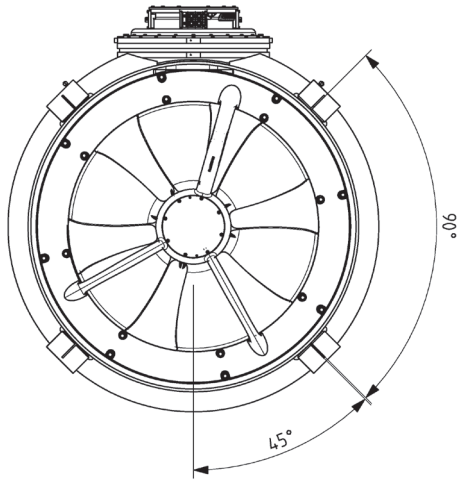
The TT-PM is built around permanent magnet motor technology and a propeller running on roller bearings, supported by a central shaft. The central shaft is supported by stays. These stays and the central bearing housing recover some of the swirl energy created by the propeller, providing additional thrust.

The Kongsberg Maritime thruster has been developed following strict requirements to quality. The thruster contains fewer rotating parts compared to mechanical tunnel thrusters, and thus has fewer components subject to wear and tear.

A new and patented mounting system, based on rubber thrust bushings, reduces the vibration and noise transferred to the steel structure. This increases comfort for the crew during operation of the tunnel thrusters. The new mounting system allows more relaxed tolerances, and permits installation of the thruster at a convenient stage in the construction of the vessel. The mounting system also allows for easy exchange of a complete thruster, with underwater exchange possible as an option to avoid docking.

The TT-PM consist of:

- Permanent magnet motor
- Monoblock fixed pitch propeller
- Lubrication system
- Resilient hull mounting system
- Hydrodynamic fairings on thruster



TECHNICAL DATA

TT-PM 2000

Propeller diameter (mm)	2 000
Tunnel diameter (mm)	2 600
Max. power continuous rating (kW)	1 600
Nominal speed (rpm)	0 - 280
Max. output thrust (kN)	211**
Oil volume (dm ³)	200
Weight thruster (kg)	12 217
Weight tunnel (kg)	6 101
Total weight (dry) (kg)	18 318
Propeller type	Monobloc/FP
Direction of rotation	CW/CCW
Drive	AFE or 12-pulse drive
Hull connection	8 x rubber bushings

** 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.

