

# Retractable thrusters



KONGSBERG

## Kongsberg Retractable Azimuth Thrusters

### Type ULE PM

KONGSBERG is the most experienced manufacturer of retractable azimuth thrusters, delivering hundreds of units since 1970. Our wide product range of retractable thrusters offer effective solutions for all vessel types with enhanced maneuvering and dynamic positioning requirements. ULE PM product family is the result of extensive development work based on the experience from hundreds of delivered retractable units, of which over 200 UL/ULE units are currently in operation.

Our retractable thrusters provide the full maneuvering and positioning capability of an azimuth thruster, without affecting the draft or running resistance of the vessel, when the propulsive power is not needed. In addition, the retractable thrusters provide important added redundancy and “take me home”-capability to the vessel, in case of issues with the main propulsion system.

The ULE PM type retractable thrusters represent a new generation of thrusters with many improvements, stemming from the ground up redesign of the units to meet the requirements of vessel designs. Resulting retractable thrusters are very compact in size, while having unparalleled efficiency, allowing even the small thrusters to deliver the required thrust and maneuvering capability.

ULE PM type azimuth thrusters have a unique design where an integrated electric prime mover is mounted very low between the steering gear resulting in markets lowest retractable unit for given unit size, with the units requiring over than a meter less vertical space than a traditional retractable thruster designs.

#### Typical applications of ULE PM thrusters

- Offshore supply vessels
- AHTS (Anchor Handling Tug Supply)
- Offshore construction vessels
- Fishing vessels
- Research vessels
- Shuttle tankers
- Naval vessels
- Jack-ups



#### Key advantages of KONGSBERG ULE PM thrusters

- Market leading thrust per thruster size through patent pending hydrodynamic innovations, optimized design, and integrated PM-motor
- Minimal installation footprint and height requirement achieved through new mechanical layout
- Simple installation with fixed connection interfaces. Installation can be done even in one day
- The ULE PM Combi provides the performance of an azimuth thruster and tunnel thruster with the investment and installation volume of a single thruster.

## ULE PM Combi

All ULE PM type thrusters are available as a combi unit, which feature optimized drivetrain and hydrodynamics for high thrust and fast response time. Both, while operating in tunnel as a tunnel thruster, and as azimuth thruster for maneuvering or dynamic positioning.

The high performance of ULE PM Combi thrusters allows the retractable thruster to replace a dedicated tunnel thruster in many applications. This significantly reduces the footprint and operating costs of the propulsion system.

## ULE PM & ULE PM Combi retractable thruster's standard range

ULE PM	155 P12	155 P14	175	205	205 HT	255	255 HT	305
Max power (kW)	1100	1400	1500	2000	2000	2650	3200	3500
DNV max power (kW)	1100	1400	1500	1800	2000	2650	3200	3200
Max power combi use (kW)	1000	1300	1500	1900	2000	2300	2800	3000
DNV max combi power (kW)	1000	1250	1500	1600	2000	2300	2800	3000
Input rpm (RPM)	1100	1000	900	750	750	750	750	750
Propeller type	FP	FP	FP	FP	FP	FP/CP	FP/CP	FP/CP
Propeller size (mm)	1600 & 1800	1800 & 2000	2100 & 2200	2400 & 2500	2400 & 2500	2600 & 2800	3000	3000 & 3200
Ice class	DNV ICE C	DNV ICE C	DNV ICE C	DNV ICE C	DNV ICE C	DNV ICE C	DNV ICE C	DNV ICE C

Max power rating can vary based on classification society and unit configuration

## Customer options

The KONGSBERG retractable thrusters can be further configured to meet special customer needs such as redundancy, ice, noise, and shock requirements.

KONGSBERG azimuth thrusters can be configured to comply with Vessel General Permit (VGP) and to use environmentally accepted EAL oils.

## Hydrodynamic expertise

Good hydrodynamic interaction between the thruster and the vessel hull is the foundation of efficiency and performance. KONGSBERG is the worlds only thruster manufacturer with its own hydrodynamic research center with cavitation tank. Our customers can leverage KONGSBERG's world class expertise on hydrodynamics, computational fluid dynamics and unique model testing capability to optimize the performance of the vessel and the propulsive system.

## Global customer support

The worldwide service network ensures the high-level execution of the product over its entire lifecycle, providing all solutions from one place. We always have a good supply of spare products in our storages, including certain reserved products for UL and ULE devices.

Our worldwide service ensures the availability of experienced service personnel and spare parts allowing the carefree operation of the propulsion system through the commissioning to the operational life of the vessel.

