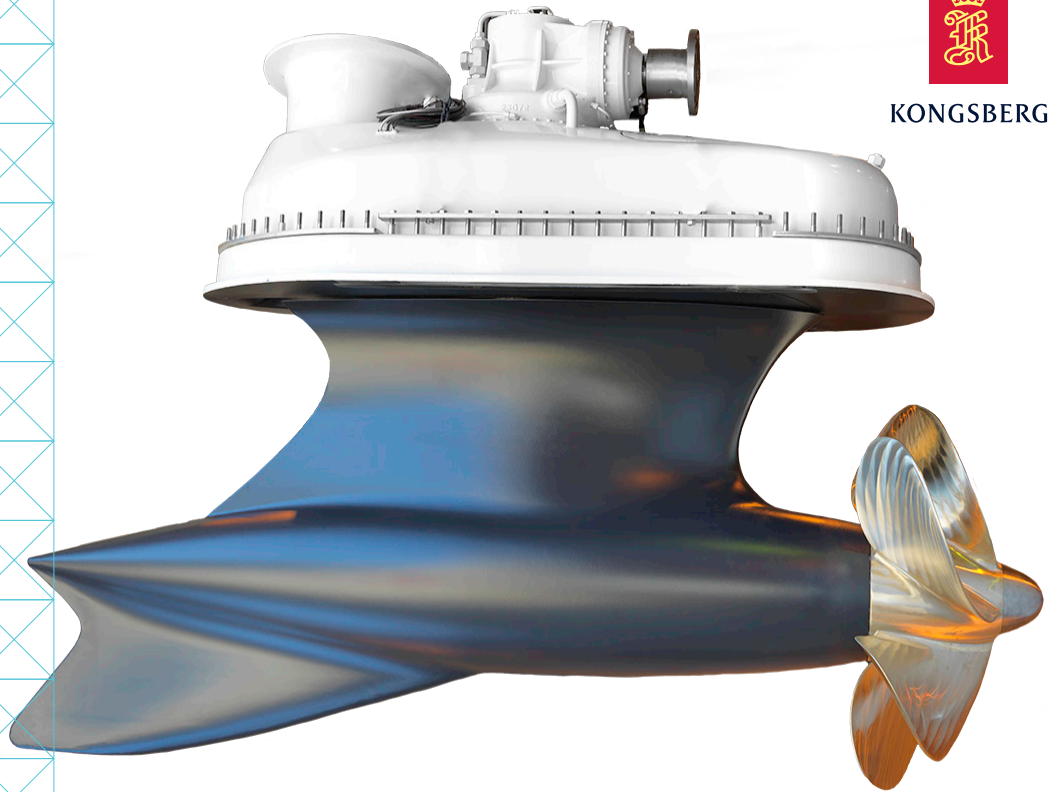


AZIPULL CARBON



KONGSBERG



A hydrodynamically optimised underwater unit with a wide chord provides rudder effect and improves the vessel's course stability, aided by a skeg extending below the gear housing. It also recovers swirl energy from the propeller as increased useful thrust.

KONGSBERG MARITIME AZIMUTH THRUSTERS

AZP C65 steerable pulling thruster for yachts

MAIN CHARACTERISTICS

- Low drag, high efficiency pulling thruster
- Low weight
- Hydrodynamically optimized
- Improved comfort levels (reduced noise and vibrations)
- Service speed up to 30 knots
- Course stability
- Easier boat handling both at high speeds and manoeuvring
- Reduced engine room footprint
- Can be linked to a variety of prime movers

Azipull Carbon

The Azipull Carbon 65 steerable thruster is a low drag, high efficiency propulsion system for yachts, designed to the requirements of the industry. Course stability, and low noise and vibration levels are other key characteristics.

To achieve the weight targets for vessels where weight distribution and displacement are critical, extensive use is made of advanced carbon fibre epoxy composites in both the steerable leg and fixed inboard components.

This steerable thruster is based on mechanical power transmission with upper and lower bevel gears to transfer power from the horizontal input shaft in the upper unit down the steerable underwater parts to the horizontal propeller shaft and pulling propeller.

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The Kongsberg Maritime control system provided with the thruster supports two operating modes, transit and manoeuvring, each with its own operating envelope and with selected engine speed as a main parameter. AZP C65 is designed to be used in conjunction with a diesel engine fitted with a marine reverse gear and trolling valve. The proprietary gearbox provides ahead and astern rotation and the control system operates the trolling valve to give sensitive control of boat speed when manoeuvring. Input shaft speed to the thruster is nominally 1,500 rpm, so gearbox ratios will be chosen to suit the selected engine. The bevel gear transmission in the thruster reduces the speed to 600rpm of the nickel aluminium bronze fixed pitch propeller.

Steering power is provided by two hydraulic cylinders in the inboard unit. For safety the steering angle is linked to speed. In transit mode the control system will normally limit the angle to plus or minus 8 to 20 degrees depending on speed. In manoeuvring mode a full ± 35 degrees is available. A hydraulic system covers steering, cooling and lubrication, using a double gear pump driven by a live PTO on the gearbox.



The flow of water to a pulling propeller is only determined by the hull, and it is possible to obtain a more homogeneous inflow to the propeller in this type of thruster. More uniform inflow avoids unsteady cavitation, and by that minimizing propeller noise and vibration and reducing oscillations in shaft torque.

AZP C65 provides an underwater exhaust system. Cooling water injected exhaust from the engine goes to a connection on the inboard part of the thruster. From there it is transferred to the lower leg and released from the after edge of the foil. Some of the energy which would otherwise be wasted is recovered as increased thrust.

TECHNICAL DATA - AZP C65 STEERABLE THRUSTER

Power rating (yacht applications)	2000kW
Continuous service speed	up to 30 knots
Weight complete	2800kg (dry)
Azimuth angle	± 35 degrees
Class	RINA rules for pleasure yachts
Typical draught of yacht	approx 2m

