

Ice Class Tugboat Propulsion Shafts

LOCKING DEVICES



PROBLEM

A major marine propulsion gearbox OEM located in Turkey required a reliable locking device for use on a new ice class, ultra-shallow draft tugboat for service in the Caspian Sea. The 30 meter long, twin-propeller vessel features two gas engines, each rated at 970 kW (1800 rpm). The tug has a 25 tonne bollard pull capacity and is also equipped for anchor handling.

The customer required a mechanical lock on each of the two propulsion shafts so the drivelines could be secured for maintenance. In addition, the locking device provides protection if one of the propulsion shafts becomes disabled or damaged while at sea. If its not locked, drag from the operational propeller can damage the non-operational redundant shaft components.

SOLUTION

To meet a challenging specification, the OEM selected the Twiflex RL65 radial locking device due to its size and capacity which was not available from other suppliers. The compact design allowed the device to fit within the restricted space under the shaftline.

The Twiflex RL65 radial locking devices supplied are rated at 75 kN. One device is installed on each propulsion shaft and acts on the customer's 470 mm dia. x 30 mm wide radially-split locking disc. Each RL65 provided 17.6 kNm locking torque to meet the 11.6 kNm requirement on each shaftline. The locking device includes proximity sensors indicating lock on/lock off status to the customer's control system. Positive lever actuation remains locked when engaged.

HIGHLIGHTS

- Wide range of Axial and Radial Locking Devices available
- Ratings from 75 kN to 500 kN
- Base and Face mounting options
- Positive lever actuation which remains locked
- Lock On / Off status sensors included
- Cost effective, compact design

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