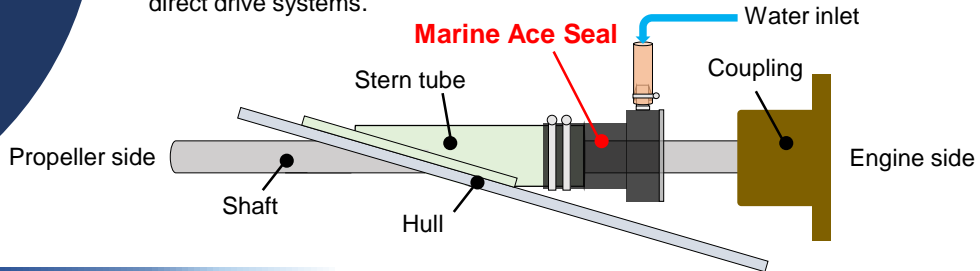


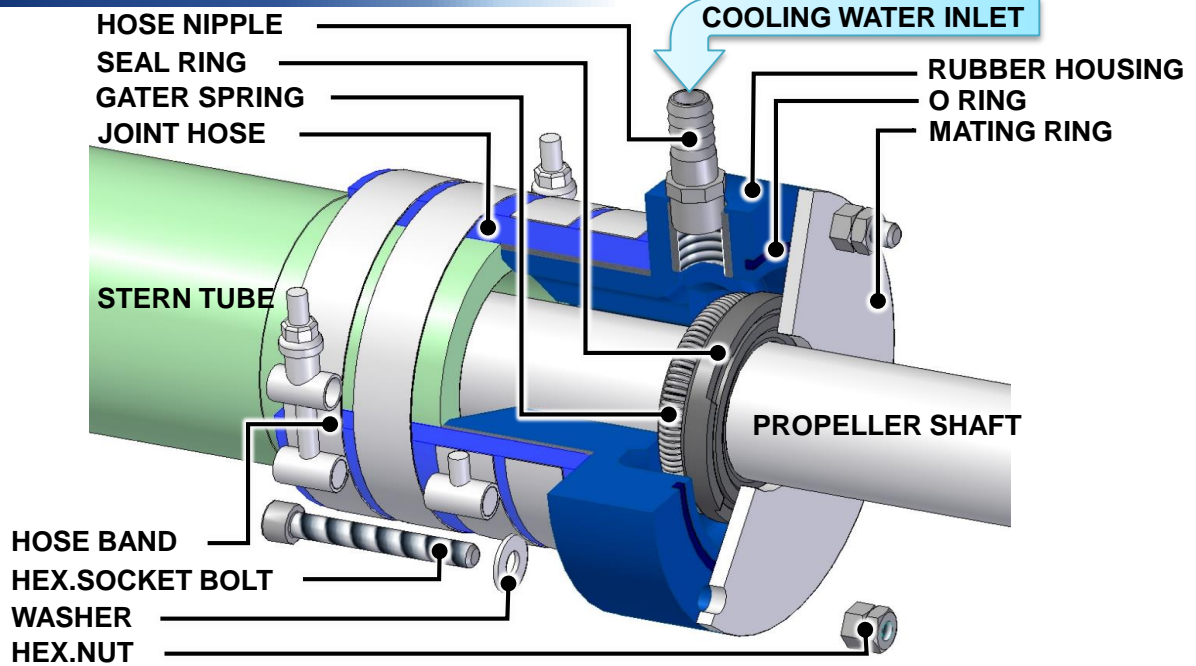
# Marine Ace Seal

## What is Marine Ace Seal?

We are the leading manufacturer of stern tube shaft sealing devices worldwide with our products installed on over 30,000 ships of 100 gross tonnages or more. The Marine Ace Seal (MAS) is our newly developed water-lubricated stern seal for small vessels with direct drive systems.



## Construction

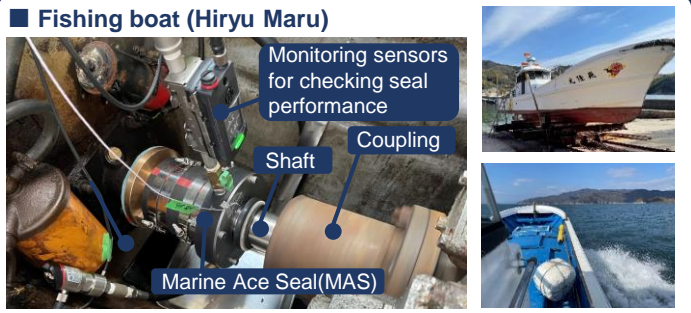


## Features and Design Outline

- Simple and robust rubber housing design
- Excellent resistance to vibration and sealing performance
- Excellent axial followability
- Excellent slurry resistance
- Propeller shaft diameter :  $\phi 45 \sim \phi 85$  (5mm increments), 2"~3" (0.5" increments)
- Allowable PV value : 0.3 MPa·m/sec  
 P (pressure in sealing device) : Max. 0.1 MPa  
 V (shaft rotation speed)
- Cooling water temperature : 0~40 °C

## Field Tests

KEMEL has done MAS field tests for several small vessels with direct drive systems and had all good test results.



Multiple sensors were attached on the Marine Ace seal to acquire the data necessary to check the seal performance in multiple driving modes.

