

# Steering towards zero-emission shipping



## Why?

The maritime industry needs to move towards sustainable shipping with zero emissions.

To meet increasingly stringent environmental regulations

Consumers are demanding greener solutions

Our seas and our planet need to be protected

### Other advantages include:

- Commercial and financial benefits for investors.
- More cost-efficient shipping operations.
- A better brand image for ship owners.

## How?

One key area of concern is oil leakage from the shaft line. These can lead to:

harm to marine ecosystems

restricted access to ports

potential fines

One solution to comply with environmental regulation is **water lubricated seals and bearings** - these are already standard in navy installations.

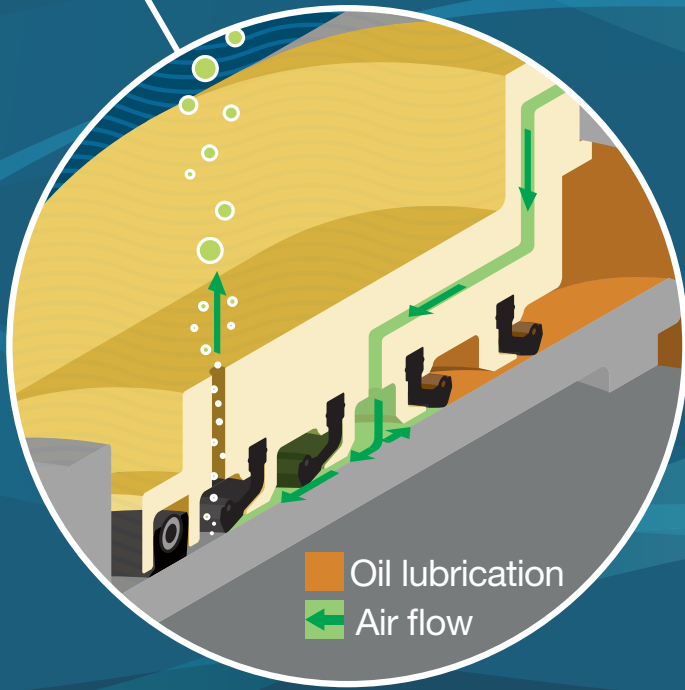
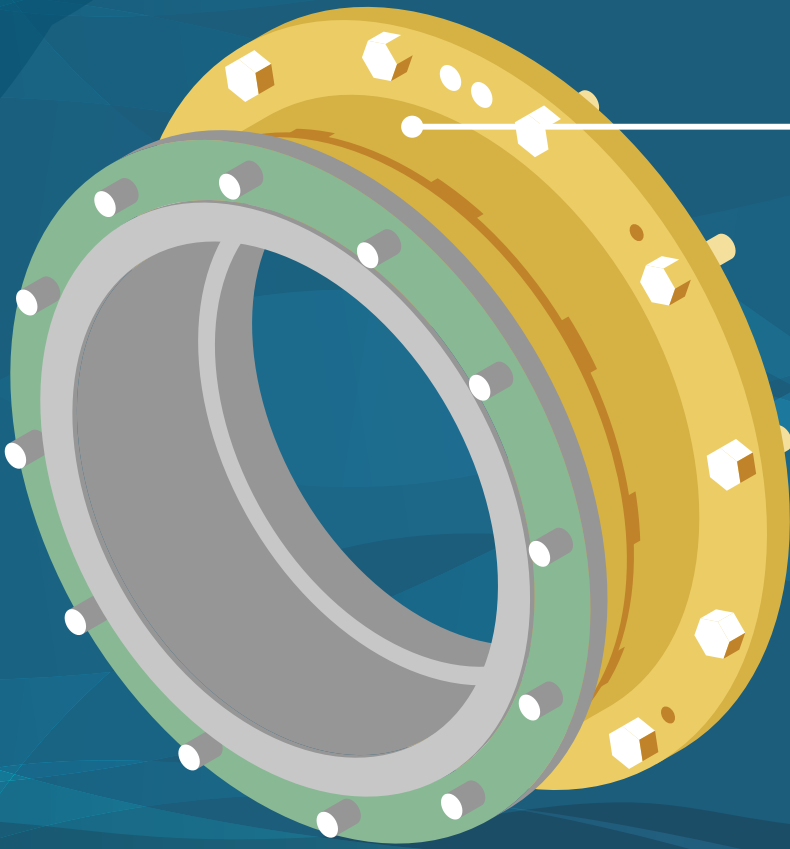
- No risk of oil leakage.
- Lower lifecycle costs.
- No need for an aft seal.

### Recent regulations

- Restricted entry to US ports  
Revised VGP (2013)
- Restricted visits to polar ice cap  
Polar Code (2017)

An alternative, environmentally friendly solution is an air seal, which is suitable for commercial applications.

- Continuous collection of potential oil or water leakages.
- Air barrier between oil and seawater avoids the need for costly, environmentally acceptable lubricants and oil treatment systems.
- Closed oil lubrication and air supply systems reduce leakages.



## What?

Wärtsilä has developed a range of high quality, water and oil lubricated shaft line products and packages that can be used on all vessel shaft sizes.

## When?

The best time to upgrade to our environmentally compliant, water and oil lubricated solutions is:

when existing seals and bearings equipment is nearing the end of their product life

if a ship is scheduled to go into dry dock for maintenance

now, as there's no better time to steer towards zero emissions

## Why Wärtsilä Seals & Bearings?

- Long marine engineering history with a worldwide customer base.
- Engineered, environmentally compliant water and oil lubrication systems.
- Global network of professionals, service centres and workshops.

Wärtsilä – leading the way towards sustainable shipping