SEALS & BEARINGS
RELIABLE SEALS & BEARINGS SOLUTIONS FOR THE LONG HAUL
Lifecycle efficiency, risk reduction, environmental leadership
EXECUTIVE SUMMARY

RELIABLE SEALS & BEARINGS
SOLUTIONS FOR THE LONG HAUL
Setting your radars across the vessel’s entire 20-25 year operating horizon makes it clear that there’s a lot more to choosing stern tube solutions than picking the lowest price tag. Ship owners and operators are increasingly looking at more advanced solutions that, despite being initially more expensive, can quickly more than pay for themselves by lasting longer, preventing expensive emergency dockings and downtime, and avoiding leakages, and thus, big fees and possible image bruises.

At the same time, demand for extremely fast responses regarding seal and bearing component and spare part deliveries is becoming the norm, putting pressure on seal and bearing suppliers to take on a more lifecycle oriented role as a service provider.

Wärtsilä is the industry leader regarding both of these trends. Our Seals & Bearings product portfolio is the most comprehensive in the market, and we continuously develop innovative, environmentally compliant and longer lasting new products. At the same time, our global service network can provide the fastest response in the business, providing expertise anywhere in the world at very short notice when necessary.
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Three main themes characterise the current market situation. Lifecycle costs are getting more attention, there’s a growing risk consciousness and a demand for uncompromising reliability, and environmental legislation has a growing effect on everything.

The 2008 crash hit hard, but now it finally looks like the market could be starting to turn around. However, although shipyards are slowly starting to see orders for new builds coming in, they are still struggling with over capacity and facing hard price pressure for their new build contracts in order to fill their vacant slots.

Ship owners and operators are looking for solutions to reduce their maintenance costs in the highly contested shipping market. On one hand this means a growing price consciousness regarding spare parts. But on the other hand it also means that ship owners and operators are increasingly looking beyond the initial outlay and searching for longer lasting performance and lifecycle cost efficiency.
CASE: Water lubricated solutions for heavy lift cargo vessels

Following the tail shaft removal due to damaged original vessel equipment, European Investment and Trading, the owners of EIT Palmina and EIT Paloma decided on a retrofit with a Wärtsilä Environmental Solution. The Wärtsilä Enviroguard Stern Seals and Wärtsilä Envirosafe Composite Bearings were chosen because they offer a low risk, fully proven solution with a lower lifecycle cost. To ensure the vessels were available for operation, a very fast delivery time was required. Wärtsilä was able to meet the tight schedule successfully.
Partnering for lower lifecycle costs
Ship owners are increasingly expecting seal and bearing providers to offer closer partnerships comparable to, for example, engine service and maintenance, where various service agreements are already commonplace. This shift in thinking is a result of the growing awareness of lifecycle costs, and the realisation that focusing solely on short term savings and a traditional do it yourself approach to maintenance and servicing can become risky and expensive in the long run.

As the seals & bearings solution provider with the widest range of products, both oil and water lubricated, Wärtsilä is uniquely positioned to help ship owners find solutions for improving lifecycle efficiency. Our complete product portfolio, technology know-how, constant innovation and a global service network means that we can always find the ideal solution for the customer instead of being forced to push a single technology for every need.

Products that last longer
We are constantly developing solutions and technologies to improve the durability and longevity of our products. More advanced, higher level seal technologies reduce risks and improve reliability and resistance against damage caused by impurities or debris in the water.

Whereas the initial outlay for our premium solutions is higher than our standard solutions, the advantages they offer in the long run make them more cost efficient over the lifecycle due to lower servicing costs and longer service intervals – including up to 7½ year docking intervals for our stern tube seals.

There is an increasing focus on improving lifecycle cost management among ship owners. With the perspective shifting from short term savings to a 20–25 year period, also the demands on components such as seals and bearings is shifting towards higher level, technologically advanced products that can offer a longer service life to compensate for their higher initial cost.

Stern tube seals are a key factor as ship owners are looking for ways to reduce operational costs or extend the period between dry dockings to 7–10 years.
Why worry about seals, bearings and stern tubes when someone else can do it? Peace of mind could be the most important feature to look for in stern tube solutions.
Reliability and avoiding risks is always a priority at sea, and in a highly competitive market
unnecessary downtime is simply out of the question. This is especially evident in the offshore and
cruising sectors where the costs can quickly escalate and become extremely high. Emergency
dockings should of course not happen, but if things go wrong, corrective actions need to be fast.

A small saving can lead to huge losses
The first and most important part in reducing risks is choosing
the right equipment. The stern
tube, seal and bearing system
is a relatively cheap part in the
context of the entire vessel. But,
if any of these fail, it can suddenly
become very expensive. Therefore,
reliability and longevity should
be the most important aspects in
choosing a stern tube solution.

Choosing a supplier with a
complete product portfolio is
a way to be sure of getting the
best solution – instead of the one
the particular supplier happens
to offer. Wärtsilä can offer the
ideal technology for every need,
from basic oil lubricated seals to
water lubricated, and deliver the
entire stern tube installation as
a preinstalled, ready to mount
package to the shipyard. This
makes the installation faster and
more straightforward, reducing
schedule as well as assembly and
commissioning risks.

Operational security
When schedules are tight and the
ship booked for a long time ahead,
even minor delays can have major
operational consequences due to
loss of business, cancellations,
badwill and quickly escalating
costs. Reliable stern tube seals
are one of the key factors in
ensuring uninterrupted service.
However, just as important as the
chosen technology is the seals and
bearings supplier’s commitment
and ability to promptly deliver
spare parts and service.

No time for downtime
The demand for faster responses
is a clear trend. In a competitive
and unsure market both shipyards
and ship owners are finding it
increasingly challenging to plan
their operations ahead, and as
a result are leaving their parts
ordering to the last minute.
Unplanned and emergency dry
dockings as well as uncertainty of
orders demand flexibility from the
parts suppliers. Extra downtime
is simply not acceptable and
can quickly become extremely
expensive. This is particularly true
in the cruise and offshore sectors.

Fast responses
The positive, agile and flexible
attitude adopted in Wärtsilä Seals
& Bearings, is our way to ensure
we can say yes to customers’
requests and offer the fastest
service in the industry. The ability
to be positive comes from an agile
and flexible way of organising
our operations. With our shipyard
customers this means having
our technological know-how in
the frontline so that they can get
quick answers to their questions,
requests for quotations etc. For
ship owners and operators it is
a matter of knowing that, when
needed, they can count on our
global field service network’s fast
response to get uptime on their
vessels.

Case: Replacement bearings in three days
An example of Wärtsilä’s capability is
the ability to produce replacements for
damaged composite and white metal
bearings ready for delivery anywhere in the
world in three days. Guaranteed!
ENVIRONMENTAL LEADERSHIP

CASE: Environmentally sound new generation ferry

The M/S Viking Grace is the world’s largest passenger vessel operating on liquefied natural gas (LNG). Currently the most environmentally-sound large ferry, and designed to comply with all upcoming emission requirements, M/S Viking Grace represents a new generation of ferries with a consistent approach to environmental issues. As part of Wärtsilä’s scope of supply, the vessel is equipped with Wärtsilä Seals & Bearings shaft lines including environmentally sound shaft line seal systems. The vessel operates on the Turku–Stockholm route in the Baltic Sea.
Environmental legislation is one of the key drivers in the marine industry at the moment. Led by the US and Canada, environmental legislation is getting more stringent all over the world, which will also mean zero pollution requirements for stern tubes.

For the ship operator the new regulations could lead to not only financial and legislative consequences, but also being completely banned from certain areas unless the vessel is upgraded to comply with the new regulations.

**Environmentally driven product development**

New regulations put pressure on product development, as manufacturers have to be able to deliver products that fulfill the increasingly stringent requirements. There is growing demand for higher performance seals that offer better reliability, biodegradable lubricants, as well as completely water lubricated systems that can 100% guarantee zero pollution.

Only those manufacturers that can combine technological leadership with environmental leadership in a commercially viable way can survive in a market where constant product development is required.

**Future proofing you environmentally**

Developments in environmental legislation are also leading to a growing demand for environmental upgrades for existing vessels. Wärtsilä is able to answer these needs and assume full responsibility for service and maintenance over the entire vessel lifecycle. With the needed service capability and resources in place globally and armed with a deep understanding of different ship systems, we are ready to take on even large conversion projects involving extensive dismantling of the vessel.

**Typical environmental upgrades from standard oil lubricated seals and bearings**

- Air system oil lubricated seal and bearing using bio-degradable oils
- Void space oil lubricated seal
- Water lubricated seal and composite bearing

Keeping up with all the latest developments in environmental legislation in different parts of the world can be a burden for the ship owner that a specialised partner can relieve.
CHOOSING THE RIGHT PARTNER
CAN MAKE A BIG DIFFERENCE IN KEEPING RISK AT BAY AND SHIPS AT SEA.

GETTING YOUR BEARINGS STRAIGHT

Questions to consider when looking for a seals and bearings partner

1. Does the partner offer high quality products as well as high quality OEM spares?
2. Is the partner able to offer solutions that are environmentally future proof as well as commercially viable?
3. Is the partner able to deliver complete solutions on a turnkey basis?
4. Does the partner have a complete portfolio of products and solutions, or are they stuck with one technology for all needs?
5. Does the partner offer lifecycle services for their solutions?
6. Is the partner able to offer support and services globally?
7. Can you rely on prompt response from your partner in emergencies?
8. Does the partner understand the costs related to downtime?
9. Does the partner have sufficient understanding of all systems on the vessel, as well as the ability to handle all upgrade and conversion projects over your vessel’s lifecycle?
10. Does the partner fully master IMO and other international regulations?
11. Does the partner fully master local legislation around the world?
12. Does the partner offer guaranteed compliance with regulations?
With the focus turning to lifecycle solutions, parts suppliers have to take up the role of service provider, building a closer relationship and having constant dialogue with the customer. This means providing solutions for maintenance and cost optimisation as well as developing new products that comply with changing regulations and answer the demands for longer operation life.

It also means taking initiative in finding the fastest solutions for deliveries, providing quick responses to inquiries and orders, and offering a global 24/7 service network with qualified engineers, needed stocks around the globe and flexible production capability for urgent needs. In short, it means better customer service.

**Because we care**
Wärtsilä Seals & Bearings focuses on customer care. From the delivery of your vessel and through all operations, we will be there whenever, wherever. With more than 125 years of seals and bearings experience, from R&D through to Global Field Service, Wärtsilä has the ability to answer your needs.

By offering a complete stern tube package including seals and bearings that are all manufactured by Wärtsilä, we can offer a lifecycle solution and the best customer service with the quickest response times and environmental compliance now and in the future.

Signed, sealed and delivered – that’s just the starting point for a long term partnership.
Wärtsilä® Seals & Bearings

LIFECYCLE EFFICIENCY, RISK REDUCTION AND ENVIRONMENTAL LEADERSHIP

We offer you
- The widest product and solutions portfolio
- Complete in-house expertise in all our offering
- Proven product quality with the longest lifetime
- More than 125 years of experience
- Environmental leadership
- The largest global service network in the Marine industry

Your benefit is
- The optimal solution for your needs
- The fastest service wherever, whenever
- Future proofed Environmental solutions
- Maximised uptime for your vessel

We minimise your total lifecycle cost!

For more information visit www.wartsila.com.

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