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## TECHNICAL SERVICES

When it comes to technical services, it can be difficult to find the people, expertise and time to ensure your vessels are fully optimised. At AtZ, that's exactly what we specialise in.

We can provide fully detailed assessments of your vessels and equipment, project manage your dry dock and specialise in creating preventative maintenance solutions for you.

Over 35 years of combined industry experience.

### Our team. Our Knowledge

Our team of highly experienced technical engineers offer industry knowledge gained throughout their time at several multi-national marine propulsion design and service providers.

### From desk to dock

With a wealth of project management and technical experience, we plan and deliver. We work with you from design specification to onsite installation.

### Your industry is our industry

Our knowledge is built on businesses like yours. We understand your vessels and the importance of remaining fully operational. We are an extension of your team.

### We find your best fit

Our impartial guidance and multi-supplier approach mean we are focused on finding you the best solution meaning you can be confident in both our services and products.



# Equipment Survey



## AtZ vessel and equipment surveys

AtZ understand the importance of having your vessel at sea and the requirement for ship owners and operators to seek independent vessel maintenance, docking or pre contract technical expertise.

On behalf of our customer, we can provide full and detailed condition assessment of a vessel's propulsion systems and anti-pollution, oil monitoring equipment. This can help prevent unexpected down-time and expenditure.



AtZ have wide ranging and time-served experience in the operation, maintenance and repair of key vessel propulsion and anti-pollution systems. Engaging our services, we can provide an expert and efficient means to:

- Review drawings and historical maintenance reports and summarise recommendations
- Attend vessel to perform equipment survey and functional equipment tests to assess condition
- Prepare risk analysis of equipment failure and recommend contingencies
- Collate repair and maintenance estimates to create complete proposals for rectification or maintenance budgeting.

### Analysing data, equipment and installation of:

- Stern tube and rudder seals
- White metal and composite stern tube bearings
- Deckma Hamburg oily water monitoring equipment
- Bilge water overboard discharge filtration.

### Through our partner network, we can assist in undertaking surveys for:

- Thruster, steering and stabiliser systems
- Repair, upgrade or retrofit of control systems
- Underwater dive inspections
- Boroscope inspection
- Non-destructive testing (NDT)
- Shaft and equipment alignment
- Propellers.

## Case study

### Bilge Water Filtration Upgrade Survey

A fleet of RoRo vessels needed to upgrade their bilge water filtration system to enable overboard discharge.

AtZ surveyed the vessels and provided a detailed report of:

- Assessment of existing arrangement and performance issues
- Equipment upgrade proposal
- A detailed piping and installation plan.

Head over to our [website](#) to read this case study in full, along with other examples of how AtZ have helped our customers.





# Project Management and Dry Dock Services

AtZ understand docking is a significant part of ship maintenance. When operators or management companies lack the resources to manage work independently, we're able to provide project management, technical support, supervision and expertise, supporting all dry dock activities.



## Pre-dock project management

### Procurement assistance

- Alternative supply sourcing and assessment
- Define parts scope
- Define work scope.

### Detailed work plan for each piece of equipment

- Project software utilisation and reporting
- Risk assessment and contingency planning ("what if" scenarios)
- Classification society, yard and contractor liaison
- Plan integration to overall dock plan.

## Dry Dock Project Management of Propulsion Equipment

- Shaft lines
- Thrusters
- Steering gear
- Stabilisers.

## Post-dock project management

- Sea trial attendance
- Reporting
- Wash up and lessons learnt.



## Technical Services Supporting your dry dock experience

Our technical experience allows us to best represent your organisation in both the preparation and execution of docking activities. Many of our projects will include close liaison with a wide range of other partners and suppliers on your behalf, allowing you to focus on business-critical activities.



Our team are able to support docking in locations around the world, and where appropriate, are able to recommend both OEM and alternative aftermarket solution providers.

Recent docking works include Cruise, Naval and Bulk vessels within mainland Europe and the Far East.



## Case study

### Dry dock propulsion refit project management

A large UK cruise operator needed our expertise, specifically for planning and procurement management, along with onsite project management of a propulsion refit in dry dock.

Head over to our [website](#) to read this case study in full, along with other examples of how AtZ have helped our customers.



## Oil In Water Calibration, Preventative Maintenance and Service Contracts

### Total compliance. Guaranteed

An uncalibrated or faulty oily water monitor can result in operational and unexpected downtime, along with substantial fines or impounding if discharge water contamination exceeds legal limits.

With a wealth of Oily Water Separator (OWS) monitoring system experience, AtZ are able to fully manage your calibration schedule as well as manage complete system lifecycle through upgrades and extension measures.

AtZ offer calibration services or annual calibration and maintenance contracts as a flexible, cost-saving option to ensure your systems continues to operate effectively and meets legislation at all times.

#### Why is it right for you?

A calibration and maintenance contract is ideal for customers who may not have the capacity to manage their annual calibration needs and who are looking at controlling maintenance costs, while maximising system efficiency and ensuring compliance.

#### Benefits

- Compliance assured - your calibration schedule managed.
- Scheduled calibration and service inspection, ensuring reading accuracy
- Service exchange units, meaning no lengthy downtime
- Onsite engineer visits, no matter your vessel's location
- Budget control through fixed prices and reduced maintenance costs
- Priority response for service calls and spare parts
- Regular preventative maintenance.

### Service Exchange

In the event of a failed OWS monitor, could your business afford operational downtime? Another way AtZ can keep your business at sea is with our OWS Monitor Service Exchange programme.

Should you encounter a problem, the AtZ Service Exchange programme could have a new monitor in transit to your vessel within 24 hours of you reporting the problem. Which means your vessel stays at sea whilst ensuring industry compliance.

Then you simply return your faulty OWS monitor to our team for inspection and if viable, repair and recalibration.

#### Benefits

- Continuous availability for your OWS monitor, meaning no operational downtime
- Peace of mind should you encounter a fault
- Your unit, stocked, ready for your call
- Same day despatch
- Priority response for service calls and spare parts.



## PROPULSION EQUIPMENT, SPARES AND SERVICE

Whether it's seals and bearings or an overhaul of your propulsion system, we work with some of the best brands in the industry to get you the parts you need.





## Seals and Bearings

AtZ specialise in the supply, maintenance, repair and technical support for a range of marine vessels. From systems that can stop unexpected oil leaks to advanced white metal and composite seals and bearings, we work with the best brands to ensure a longer lifecycle for your vessels.

### Prime Blue Water Lubricated Seals

The environmentally friendly stern tube sealing solution

AEGIR's Prime Blue is a water lubricated seal that offers a reliable and durable alternative to oil lubricated solutions. Supplied partially split as standard, it can be easily maintained and changed whilst the vessel remains afloat.



#### Key features

- A complete water lubricated seal assembly
- Fully split version available on request
- Can be serviced without docking
- For retrofit purposes, can be supplied with adaptor flanges or in non-standard versions
- Class approved by most major classification societies
- Available immediately from stock.



### Prime Standard Oil Lubricated Seals

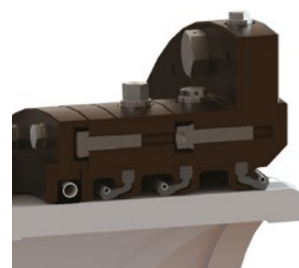
Compatible with a wide range of mineral oil and EALs

AEGIR's oil lubricated seals consist of three seal rings and a rotating shaft mounted liner. Dirt, particles and other debris cannot penetrate, seawater is kept out and oil is prevented from leaking into seawater.



#### Key features

- Compatible with a wide range of EALs
- Protection ring prevents the ingress of foreign matter. Seawater is kept out and oil is prevented from leaking
- Fully split version available on request
- 3 or 4 lip configurations
- Class approved by most major classification societies
- Available immediately from stock.



### PRIMAIR Air Seals

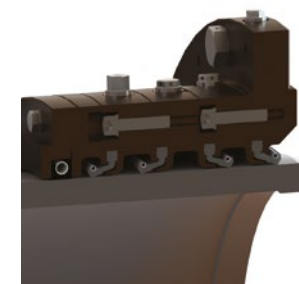
The most reliable sealing system

AEGIR's next generation stern tube sealing technology physically seals the stern tube oil from the sea via an air space.



#### Key features

- Works on constant air flow/variable pressure technology
- Maintains a perfect balance inside the seal box, reducing stress on the seal ring material
- Physically separates the stern tube oil from the seawater by means of an air space, eliminating a seawater oil interface
- A monitored air space removes the risk of cross contamination
- Meets VGP requirements even when using conventional mineral oils
- Class approved by most major classification societies.



### Composite Bearings

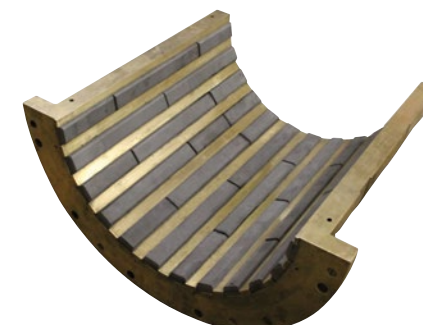
Outstanding performance in stern tube and rudder applications

ACM's composite bearings have been formulated from a high load composite bearing material constructed from a synthetic fibre reinforced thermoset resin and incorporates lubricating additives. This provides excellent mechanical strength, together with a low coefficient of friction, delivering excellent performance in marine environments.



#### Key features

- High load capability and very low swell
- Low wear characteristics ensure long life
- EAL compatible
- Resistant to particle embedding and excellent shock resistance
- Can be freeze fitted
- Short delivery time – less than one week.







## White Metal Bearings

### Specifying the most suitable bearing for your vessel

As the seals and bearings experts, AtZ can specify and supply white metal aft and forward stern tube bearings, along with intermediate shaft bearings. Made of cast iron lined with white metal, they're suitable for a variety of applications.

#### Key features

- Supplied pre-machined for ease of installation on site
- Suitable for new applications and retrofit projects
- Fully customisable for specific applications
- Excellent sliding properties
- Soft lining material lowers edge pressure sensitivity
- Emergency running properties and protection of the shaft material.



## Stop Oil Leak Additive

### A quick and reliable way to stop unexpected oil leaks

Designed with Teflon particles to form a protective layer, ABCON's preventative solution is available in 12 different additives. All created to stop leaking stern tube seals, thrusters and hydraulic equipment. Unlike other products, ABCON is added at only 10% maximum of system volume and reacts directly with the seal ring material causing it to swell and form a Teflon seal to prevent further leakage.

#### Key features

- Adds only 5-10% of the total oil volume in your system
- No installation engineer needed – can be done by crew
- Classified as non-dangerous goods, it can be shipped to any location
- Enables you to keep sailing until you dry dock.



## Technical Services

### Field Service Installation and Repair

#### Bearings

AtZ have a long history in the supply, maintenance and technical support of both white metal, composite stern tube bearings and rudder stock bearings and liners to commercial, cruise and military vessels.

We offer a full and comprehensive consultative service, ranging from technical specification and supply to onsite supervision of final machining and installation.

We can undertake a carefully planned procedure during a vessel docking, taking ownership throughout the process and working in close partnership with the yard, class and vessel superintendents. This assures completion of planned operations to time and to budget. We also help in root cause analysis and technical investigations if a performance issue is identified, working from start to finish to understand and address any unexpected problem.



#### Seals

With seals commonly being replaced every five years, we understand that, at times, schedule or circumstance means you are unable to undergo your routine maintenance or repair while in dry dock. That's why we can supply alternatives to dry dock seal repair. Our expert team can complete this work in dock, in situ afloat or as underwater dive repair.

Wherever your location, AtZ has you covered. We have associated service stations in Europe, Asia, Africa and the Americas, meaning we have a global reach so we can get to you quickly.



## Case study

### Bearing failure problem resolved

ATZ Marine Technologies was approached by a large UK cruise operator to supply replacement white metal bearings for a complete shaft line at short notice.

Head over to our [website](#) to read this case study in full, along with other examples of how AtZ have helped our customers.



# MARINE ENVIRONMENTAL MONITORING AND FILTRATION

We understand the importance of adhering to environmental regulations and ongoing compliance. Our environmental monitoring and filtration services are specifically designed to help our customers achieve regulatory standards on board their vessels.

## Propulsion Overhaul

We're the experts in propulsion overhaul engineering

Whether part of routine maintenance, emergency breakdown due to damage at sea or in any dock worldwide, our team can assist.

Not only is AtZ your propulsion service partner, we are also able to provide full project management of overhaul maintenance, and supply a full and comprehensive stock of propulsion spare parts. AtZ are your full turnkey solution provider.

Our propulsion engineering services include inspection, maintenance, repair and overhaul of FPP, CPP, thrusters, stabilisers, steering gear, shaft seals and stern tube bearings. We can also service, test, adjust and retrofit complete propulsion control systems.

AtZ also have an expert team of underwater repair engineers.



### Case study

## Propulsion Equipment Refit

For an upcoming cruise ship refit, a large cruise operator required assistance with the overhaul of the four Wärtsilä Thrusters but wanted to investigate alternatives to OEM supplied parts and field service engineering expertise.

Head over to our [website](#) to read this case study in full, along with other examples of how AtZ have helped our customers.



## Bilge Water Monitoring

As the official UK supplier of Deckma oil-in-water monitors, we support our customers to ensure their vessels are fully legislation compliant with units certified as 15-ppm Bilge-Alarm according to IMO-Resolution MEPC.107(49)

Certified by the US Coast Guard, the German authority BG-Verkehr, and by other Canadian, Chinese, Russian and European authorities.

AtZ understand the importance of keeping your vessel at sea and the impact large fines can have to an organisation should bilge water discharge not meet minimum environmental legislation.

As the official Deckma agent, AtZ have the technical expertise to not only supply a unit, but have a range of pre and aftermarket support services to ensure your operational downtime is kept to a minimum.

### Key features

- Designed specifically for use in conjunction with oil-water separator units
- Commissioning and calibration
- Repair and maintenance
- Full lifecycle support
- Upgrade specification and design
- Service contracts (see page 8)
- Service exchange program (see page 8).



## Case study Increasing the accuracy and efficiency of bilge water monitoring

We helped an international commercial fleet ensure the efficiency of their bilge water monitoring, checking all on-board Deckma monitoring equipment and ensuring it was environmentally compliant.

Head over to our [website](#) to read this case study in full, along with other examples of how AtZ have helped our customers.

## Bilge Water Filtration

Designed to support cleaner oceans, Wavestream bilge water filtration technology provides effective control and prevention of oily bilge water discharge.

Lloyds Register type approved and available in four sizes, Wavestream can be used on a variety of vessels. Simple to install, Wavestream is fitted after the bilge pump, allowing only clean and legislation-compliant bilge water to be discharged overboard.

AtZ are able to provide replacement and retrofit filters, survey existing equipment and specify and commission new bilge water filtration systems.

### Key features

- Used in all types and size of vessels, available in 4 sizes
- Multiple filter arrangements and stainless-steel systems available
- Installed after the bilge pump, ensuring only clean legislation-compliant bilge water is discharged
- Cartridge change out should be part of a regular maintenance schedule
- Lloyds Register of Shipping Type approved.



## Case study Bilge Water Filtration Upgrade

AW Ship Management needed improvements in bilge water oil content levels to enable overboard discharge. With the existing arrangement, the onboard oil-water separators struggled to meet the 15ppm legislation requirement.

AtZ Marine Technologies were approached as filtration and monitoring bilge water specialists to find a solution to this problem.

Head over to our [website](#) to read this case study in full, along with other examples of how AtZ have helped our customers.

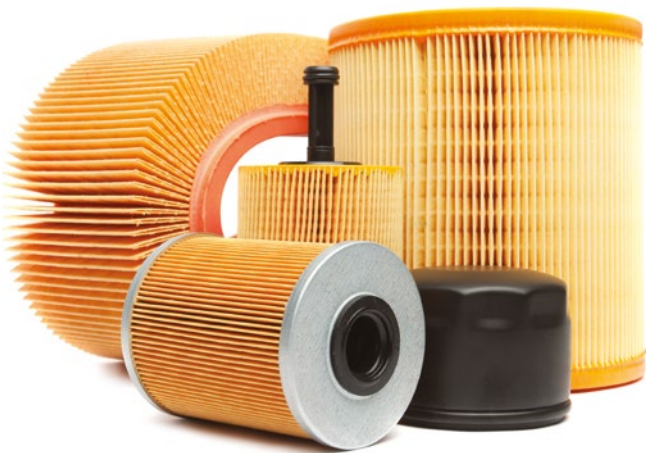




# Bilge Water Separator Spares and Oil, Air and Fuel Filters

Via our trusted network of manufacturers, we are able to supply a comprehensive list of spare parts and oil, air and fuel filters. This includes equipment spares such as coalescer material, coalescer spares and filters for oil, air and fuel.

We can assist you in sourcing both genuine and compatible aftermarket spares.



We can provide a wide range of compatible spare parts and replacement elements for systems including:

- Fuel and Lube Oil Filtering equipment
- Coalescer units
- Auxiliary and Diesel generator filter elements
- Hydraulic systems, including thrusters, CPP, Steering gear etc.
- Refrigeration and air compressors
- Ultrasonic cleaning unit supply
- Lube oil centrifugal filters.

Our specialised knowledge of marine filtration and anti-pollution systems allows us to support a huge range of equipment and applications. We can support your need to keep equipment downtime to a minimum while offering operating cost and risk reduction.

## Customer testimonials

“Carisbrooke Shipping Gold Fleet has a long-lasting relationship with AtZ Marine Technologies. From their wealth of knowledge to their extensive stock holding, a solved problem is never more than a phone call away.

Over the last year, we have docked five vessels without issue, even after an ordering error on our part. AtZ had the correct items on the shelf and had them shipped to the yard in no time at all. A great company, with excellent service and strong values.”

Alex Allen  
Carisbrooke Shipping

“I would definitely make use of AtZ again, even for a basic docking and tail shaft work. AtZ supply a full range of seals and bearings.”

Gerard Deeney  
Senior Fleet Manager,  
MTM Maritime PTE Ltd.



Marine engineering  
excellence, tailored  
to your business



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AtZ Marine Technologies Ltd is part of Axel Johnson International, a global industrial group that acquires and develops companies in strategically selected niche markets, primarily technical components and industrial process solutions.

The group is an active and long-term owner whose mission is to drive business development and growth.

It builds and develops groups of companies with shared strategic objectives, stimulating joint initiatives and knowledge sharing. Axel Johnson International has six business groups: Driveline Solutions, Fluid Handling Solutions, Industrial Automation, Lifting Solutions, Power Transmission Solutions and Transport Solutions. Axel Johnson International has an entrepreneurial culture where decentralised and committed leadership enables quick decisions. The group has four focus areas: digitalisation, service, sustainability and people development.

Axel Johnson International is headquartered in Stockholm, Sweden. The group comprises 170 companies in 30 countries. Axel Johnson International is part of the Swedish family-owned corporate group Axel Johnson.

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