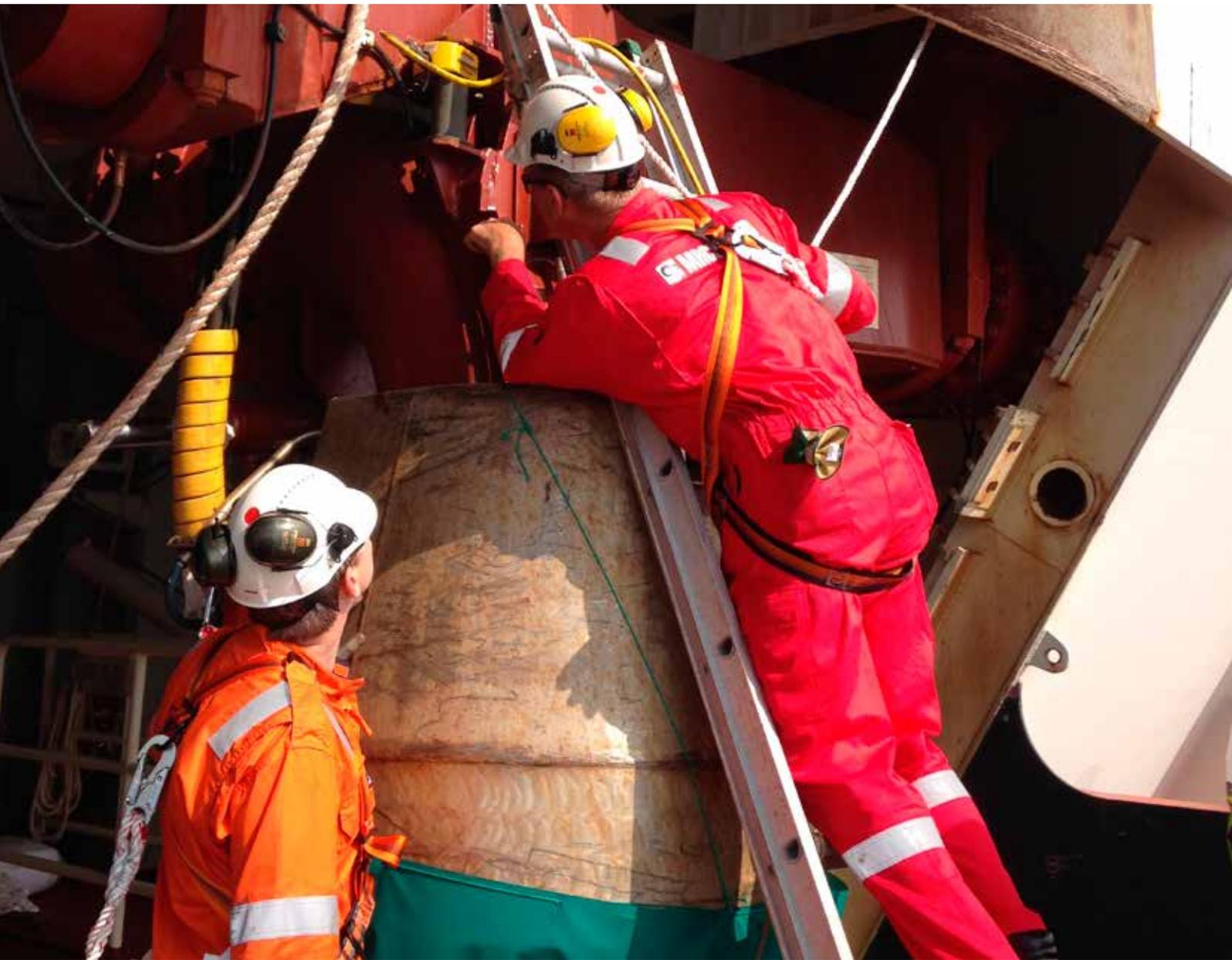


# MacGregor Global Lifecycle Support

Service portfolio



At your service



**MACGREGOR**

Designed to perform with the sea

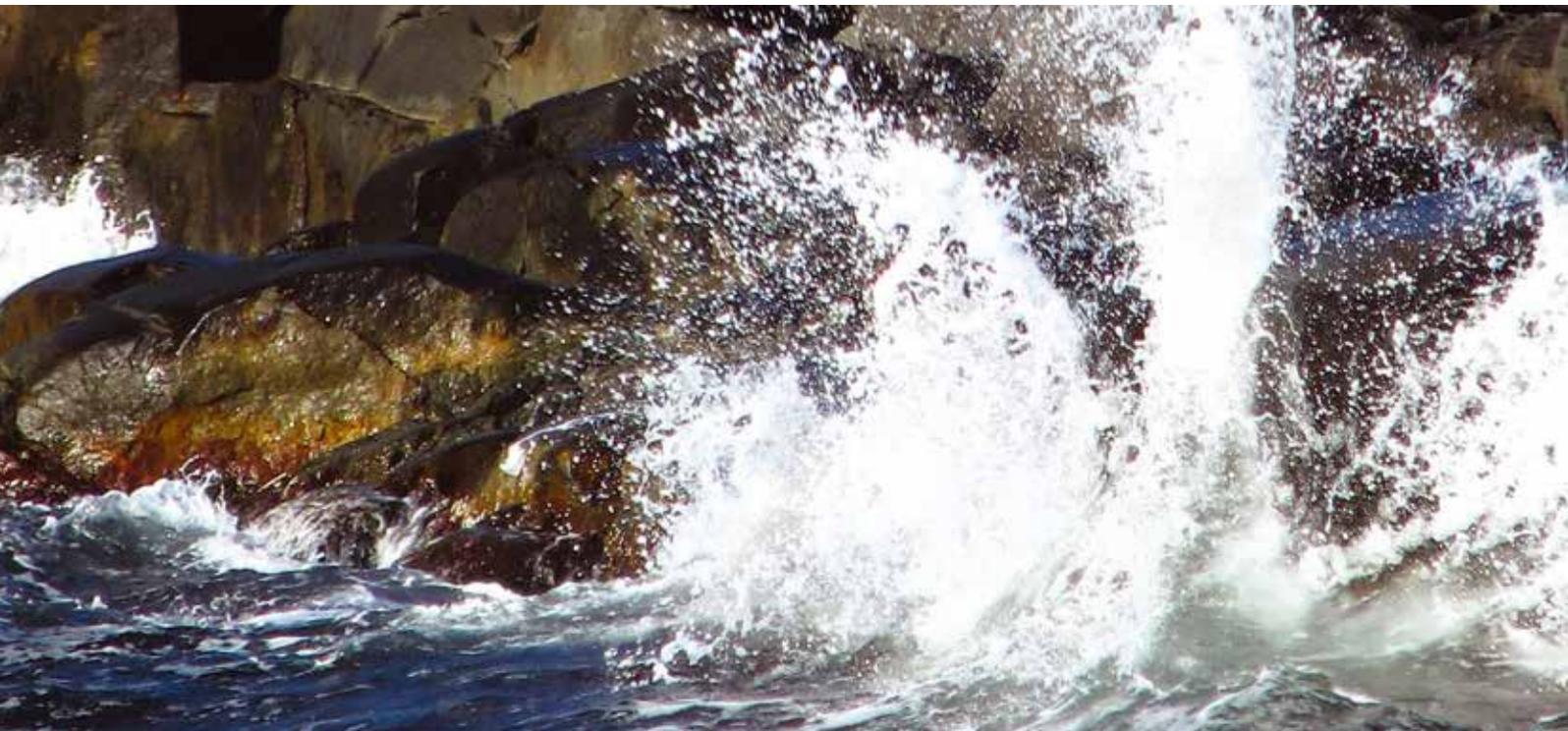
# Passion for performance – united by the sea

MacGregor is a family of innovators. By engineering solutions that make the sea more accessible, safe and reliable, we support you whose livelihood depends on the changing conditions of the sea. To enable that we have a variety of strong product brands and committed experts with a passion for solving challenges – and the power of the sea is sure to provide those.

Our founders braved new frontiers in different times and places. Those origins merge at today's MacGregor, inspiring us to continue the stories, and create new ones. The spirit of our founders lives on in the pride we have for what we do, and our determination to find new solutions for the people we work with. Together with you we will write the next chapters.

We are a global team of professionals, who create value for you; the shipbuilders, owners and operators,

in the offshore and marine industries. Understanding your business and way of life is key to our work. It is the foundation to addressing your needs with tailored solutions for load handling, cargo handling, mooring or essential auxiliary equipment. Your productivity, sustainability, and equipment lifetime benefit from our combination of expertise and technology. As innovators, we work together with you to set benchmarks in innovative solutions and value creation. Our deep respect for and experience of the sea lays the foundation for adapting to its challenging conditions. Wherever we work around the world, we work together with a passion for performance and a love of challenges – united by the sea. Our shared values – integrity, quality and safety – propel us forward, and are an important factor in our ability to continue to deliver what our customers need to succeed; solutions that are *designed to perform with the sea*.





**On board**



**In port**



**Offshore**

# Keep your fleet up and running

MacGregor offers integrated cargo flow solutions for maritime transportation and offshore industries. We are a global company with facilities near ports worldwide.

Our service solutions support customers in their onboard, port and offshore operations worldwide. Today, half of the world's ocean-going ships are fitted with MacGregor equipment. We understand how this equipment is used on board. Turn to us when you want a reliable partner to keep your systems up and running on ships, rigs and in ports and terminals.

MacGregor's comprehensive service portfolio ensures the sustainable through-life performance of our products, adding value and increasing the profitability of our customers' business.

## **MacGregor service portfolio**

- Spare parts and logistics
- Maintenance and repairs
- Conversions and modernisations
- Inspections
- Drydocking
- Service contracts
- Crew and personnel training
- Remote control services
- Supervision
- Support services



# Maintenance and repairs

MacGregor ensures the safe, continuous, reliable and sustainable performance of your equipment.

MacGregor's aim is to prevent unforeseen problems and eliminate unscheduled downtime. Our work starts with consultancy where we undertake a thorough inspection of your equipment and understand how it is used in your operations. We can determine the feasibility of modernisations and upgrades, extending equipment's lifetime productivity.



For support services, we are available on a 24/7 basis.





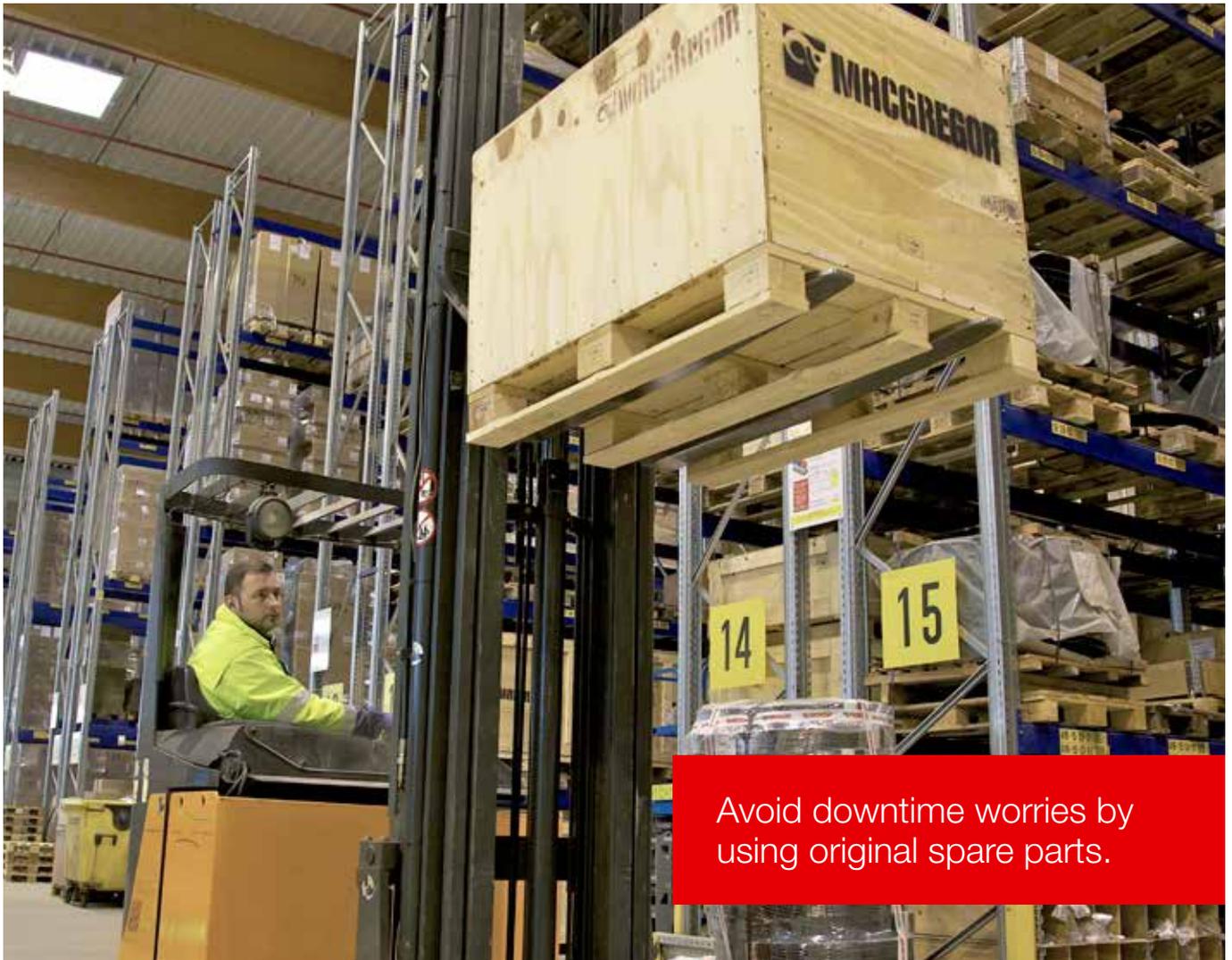
### Accident repair services

If your MacGregor equipment is accidentally damaged, what is your next move? Immediately contact MacGregor's damage repair consultants. They will provide an appropriate response as fast as possible.

Unfortunately, sometimes things do not go to plan, accidents happen and the resulting damage means costly downtime. Returning to full operational capabilities can be a difficult task. That is why MacGregor has a dedicated team of consultants who can help you every step of the way.

- We will assign a project leader to coordinate the end-to-end process of getting you back in business
- Engineering services, drawings and certifications
- We will act as your consultant with your insurance company and other legal entities
- There are no up-front charges for our consultancy services





Avoid downtime worries by using original spare parts.

# Spare parts and logistics



Using the wrong spare parts or ignoring the need to replace worn parts in time can lead to equipment malfunction and other problems.

We supply original spare parts and components – hydraulic, electronic and mechanical – to any destination worldwide from our logistic centres.





### Sealing solutions

MacGregor sealing systems ensure complete weathertightness and effective functioning of the seal over an extended service life. Climate, cargo types and diverse customer requirements specify the criteria for selecting the right sealing solution. MacGregor seals are manufactured according to exacting specifications to secure the optimum rubber quality for a particular application. Our sealing solutions are designed to provide the best possible protection for your cargo and to reduce the need for maintenance to a minimum – resulting in reduced costs and increased safety.

Our comprehensive portfolio of original seals and sealing systems range from traditional sponge and solid rubber seals to advanced panel-joint sealing solutions, offering various operating capabilities and flexible cargo handling.

The performance of a seal is determined not only by the mechanical and chemical properties of the rubber material, but also by the geometry of the seal profile. The kinematics and movement of the hatch cover panels in a seaway, and when operating, have to be taken into account as well. MacGregor offers tested and proven seals and sealing solutions that mean trouble-free operations and safe cargo handling for all types of vessels. Read more about Sponge, Flexseal, Cat Profile, C Gasket, Omega and Omega Lite in our sealing solutions brochure.



### Pads

Read more about our Lubripad, Polypad, Unipad, Flexipad and Blupad in our bearing pad solutions brochure.



### Emergency boxes

To ensure the performance of your ship's equipment, it is vital to have quick and easy access to critical spare parts. This way expensive downtime can be avoided. Our emergency box contains the most critical electric, hydraulic and mechanical spare parts that will keep the cargo handling equipment running. The parts have been selected by our experts, based on years of experience.

More information:

- Emergency box for cargo cranes



- Pusnes emergency box



- HMD A davit emergency box





**Spare parts kits**

Having strategic spare parts on board when you leave a port should enable you to repair and maintain minor items. We will help you custom-design a spare parts kit that uniquely fits your needs and vessel.

More information:

- Pusnes brake test kit



- Complete spare parts kit for HMD A davits



- Modernisation kits (MODs)



- A strategic spare parts kit for offshore load-handling equipment



**Spare parts agreements**

Read more about the comprehensive agreement for compressor spare parts on our website.



**Filtration spares**

Read more about oil water separators, lube oil filtration and fuel filtration on our website.



**Recently added to our portfolio**

- Pusnes coupler valve protection covers



- Porsgrunn real-time steering gear logging



- Porsgrunn frequency-control steering gear

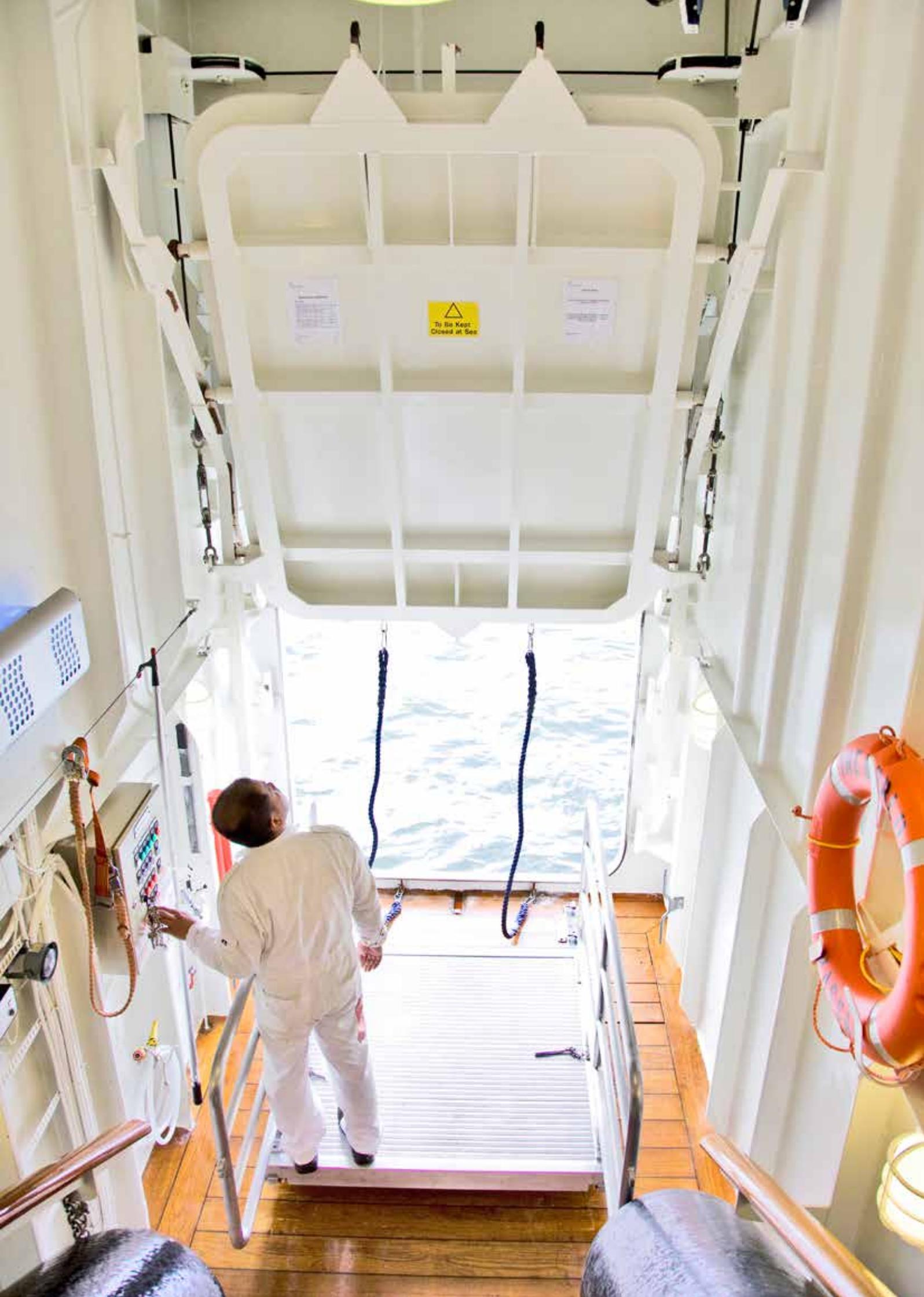


- Pusnes rope and wire layer



- Pusnes rope and wire spooling gear





# Conversions and modernisations

MacGregor's turnkey conversion and modernisation packages ensure effective cargo handling for all cargo mixes and port infrastructures.

## Conversions

The Hatlapa conversion packages include an initial study, technical solutions, 3D design, manufacturing and installation.



## Modernisations and upgrades

Modernisation involves upgrading ageing cargo handling equipment to the latest performance standards. Utilising new technology, the equipment is also more reliable and easier to service. Maximum efficiency in cargo handling operations and low maintenance requirements result in short project payback times.



Over the past 30 years, MacGregor's dedicated RoRo conversion team has carried out several hundred RoRo ship conversions, including shore facilities, and upgraded out-dated cargo flow systems to the latest performance standards. Our ability to modernise, upgrade or convert an original solution later in the ship's life cycle help shipowners get even more from their investment by optimising its performance and matching new market needs.

New RoRo cargo access equipment is based on state-of-the-art technology and adapted for easy service and maintenance.



MacGregor is experienced in modernising and upgrading PLC systems for offshore loading and mooring products.

## Retrofit, overhaul, modification and replacement services

Do you need to replace an existing air compressor? Contact us to find out more about the services we offer.







Avoid breakdowns and keep equipment operational.

# Inspections

Inspections produce unbiased reports on equipment condition and provide recommendations for necessary repair work and spare parts. Inspections do not affect your ship schedules.

## An inspection provides:

- Regular, tailored inspections for each product
- Quick analysis of the situation
- Professional, unbiased reports on findings
- Recommendations for remedial measures
- Fixed prices for maintenance
- Global availability of standby expert resources



## Annual and pre-docking inspections of Pusnes equipment

- Cover all parts of the system and possible failures or defects are identified
- Potential downtime of system is eliminated
- Detailed inspection report is submitted
- A quotation for all necessary parts is given so that spares for drydocking are available
- Various technical alternatives and upgrades are informed



## Certified inspections of RoRo equipment

As a shipowner or shipmanager you have to provide your customer with a safe and seaworthy ship.

With **UR Z17** and **UR Z24** certified MacGregor supervisors we perform inspections as required by mandatory Class procedures, **ILO C152 safety convention** and **Authority requirements**.





### **Mooring service for winches – inspections of all manufacturers considered**

An inspection programme and a tailored maintenance plan ensure that your equipment runs safely and smoothly, without any hassle.



### **Hydro-check for KGW, Becker Marine Systems and Hatlapa steering gear**

Annual visit on board to carry out:

- Analysis of hydraulic systems
- Inspection of mechanical components
- Annual flat fee per ship/fleet
- Analysis/inspection report per ship
- Certification (including for ISM and chartering)



Hydro-check is suitable for all hydraulic systems on board.

# Drydocking expertise

We offer you smooth and cost-effective drydocking services. With the help of our pre-docking inspections you can plan overhaul needs, spare parts and personnel. Our service engineers support you during the docking, from supervisory tasks to complete project management.

## Benefits for you:

- Tendering platform
- Technical preparation
- Spare parts management
- Class-relevant items
- Personnel attendance
- Certified inspections



# Service contracts

Wherever your ship is, we will always be able to support you with our global network of service engineers and supervisors. A service contract will deliver peace-of-mind and let you concentrate on your business, without having to worry about the equipment on board.

Our mission is to safely provide our customers with the fastest possible supply of spare parts, maintenance activities and technical support. Entering into a service contract is one of the best ways to reach this goal.



- MacGregor Onboard Care



- Comprehensive Compressor Management Package



- Remote diagnostics

By understanding how our customers operate, we can deliver tailor-made solutions that meet all service needs.

# Training for crew and personnel

Do not compromise on safety or efficiency! Make sure your crew and staff know the correct way to operate and maintain the equipment installed on your ship.

Providing your staff with training courses means that your equipment is properly cared for in every situation.

- Maximise your equipment's lifetime
- Reduce wear
- Improve operating efficiency and safety
- Maintenance and effective training extend the useful lifetime of the equipment and thus also reduce the impact on the environment

## Offshore load-handling training

We offer a complete range of equipment-based training courses for operators, engineers and other personnel. Some customers prefer crew courses designed specifically around a particular equipment setup; others send staff from several ships, or just one person to a standardised course.

The mistakes being made by crane operators in our offshore crane training simulator demonstrate that crews can learn a lot, and they can do this without causing any damage to the ship or load. This saves the shipowner money, but additional cost-efficiency can be gained from being able to maximise the operational capabilities of the crane.



## Pusnes bow loading systems and RamWinches

MacGregor is a worldwide leading supplier of Pusnes bow loading and mooring systems. To make sure that the systems are operated in a safe and efficient manner, the Pusnes Academy offers crew training courses.

- Courses ensure that personnel have the necessary know-how to safely operate and maintain the equipment
- Courses can include e.g. QEHS training, operating procedures for crew, testing procedures for equipment, simulator training
- Product range: Pusnes RamWinch, Pusnes Roller RamWinch, Pusnes Dual Chain RamWinch, Pusnes bow-loading systems



## Pusnes training in mobile unit

We offer tailor-made training sessions. Many customers have already visited our mobile unit and have said they found the information they received on testing and winch operation very useful.





### **Rig training**

MacGregor has a new training centre in its Aberdeen office, in the UK, to deliver specialist skills and expertise to its engineers and customers. The Aberdeen office is the leading launch-and-recovery systems service provider within MacGregor's Global Lifecycle Support division. Central to the training centre has been the creation of a bespoke, real-time davit training rig, which replicates the operation of launch-and-recovery davit systems for workboats and lifeboats including towing boom operations.



### **RoRo training**

We offer worldwide training courses for merchant and naval crews. Tuition sessions are arranged at our RoRo Competence Centre in Gothenburg, Sweden. We can customise a training programme according to your specific operational needs on board your vessel. To find out more, please contact our training centre in Gothenburg by e-mail: [STS.Tech.Sup.GOT@macgregor.com](mailto:STS.Tech.Sup.GOT@macgregor.com).

### **Offshore deck-machinery training**

Our training centre in Singapore predominantly focuses on training MacGregor service engineers, but is ideally positioned to train customer personnel as well.



### **Cargo crane training**

It is important that your crew understands how to operate and maintain the MacGregor cranes installed on board your ship. It maximises the product's lifetime, reduces wear and improves its operating efficiency and safety. We offer training courses at our training centre in Örnsköldsvik, Sweden or at a location decided by you. All our training courses are adapted to your specific equipment.





### **Crew training in selfunloading systems**

The technical competence centre for selfunloading systems is located in Enköping, Sweden, where the first cement selfunloading system was designed over 65 years ago. The centre works in close cooperation with MacGregor's branch offices in 30 countries to offer local service for customers around the world. Contact us by e-mail: [aftersales.enk@macgregor.com](mailto:aftersales.enk@macgregor.com)



### **Training in Hatlapa equipment**

Find more information about our computer-based training in Uetersen, Germany.



### **Trained hatch cover engineers at your service**

You can rely on our service engineers' skills 24/7 worldwide when they visit on board your ships to carry out maintenance, inspection, repairs or any other jobs. They all go through an extensive training programme before they are allowed to work with cargo handling equipment on board.

### **Man Rider winch onshore training**

MacGregor Man Rider winch onshore training takes place at MacGregor's premises in Ågotnes or Bergen in Norway. Contact us by e-mail: [Sales.Bgo@macgregor.com](mailto:Sales.Bgo@macgregor.com) for your next training session.





# Supervision – an expert on board, but not on your payroll

How can you ensure that a planned work schedule is carried out with maximum efficiency? Bring on a MacGregor expert to plan and supervise the work.

Vessel downtime due to maintenance is a costly but necessary fact of life and any reduction in idle time should be taken seriously. When a vessel is out of action the maintenance team need all the help they can get to complete the planned work with maximum efficiency. MacGregor can provide a qualified expert who will work alongside your personnel and shipyard crew to supervise any planned work.

#### **Customer benefits:**

- Cost effective methods
- Ensures original equipment manufacturer (OEM) standards
- OEM technical support



- Pre-drydocking inspections
- Drydocking schedules
- Planned repair work
- Major overhauls
- Conversions
- Modifications

# Remote support services

## **Porsgrunn frequency-controlled steering gear**

MacGregor offers frequency-controlled steering gear for new builds and as an upgrade for existing vessels.

- Optimises steering gear performance
- Fewer emissions and reduced life-time costs
- Increased system efficiency
- Around 75 percent less power consumption
- Can be installed on existing vessels

## **Porsgrunn steering gear data logging**

A special tool can be installed on existing Porsgrunn steering gear. It can be used to log all steering gear operations over a period of time.

- Excellent tool to locate periodic failure
- Can log several details for long periods of time
- Steering angle, hydraulic pressure, electrical load, operating intervals and several others

## **Pusnes bow loading tension display**

MacGregor offers a display solution that makes it possible to monitor the tension of the loading hose during connection and disconnection operations.

- Selectable tension display
- Chain stopper tension
- Hose tension
- Traction winch tension
- Backlit display with clear digits for easy viewing
- Indication when tension is transferred to the hose-handling winch ensures the safe opening of the claws
- Safer operations as the operator can monitor real-time tension data during hose-handling

## **OnWatch service**

It is important to try to entirely eliminate the chance of a breakdown, which might be the result of a human error, environmental conditions or component failure. On the rare occasions when this happens, it is vital to restore normal service as quickly as possible. OnWatch offers immediate operational technical support via a secure online remote diagnostic solution for customers with advanced MacGregor offshore equipment.

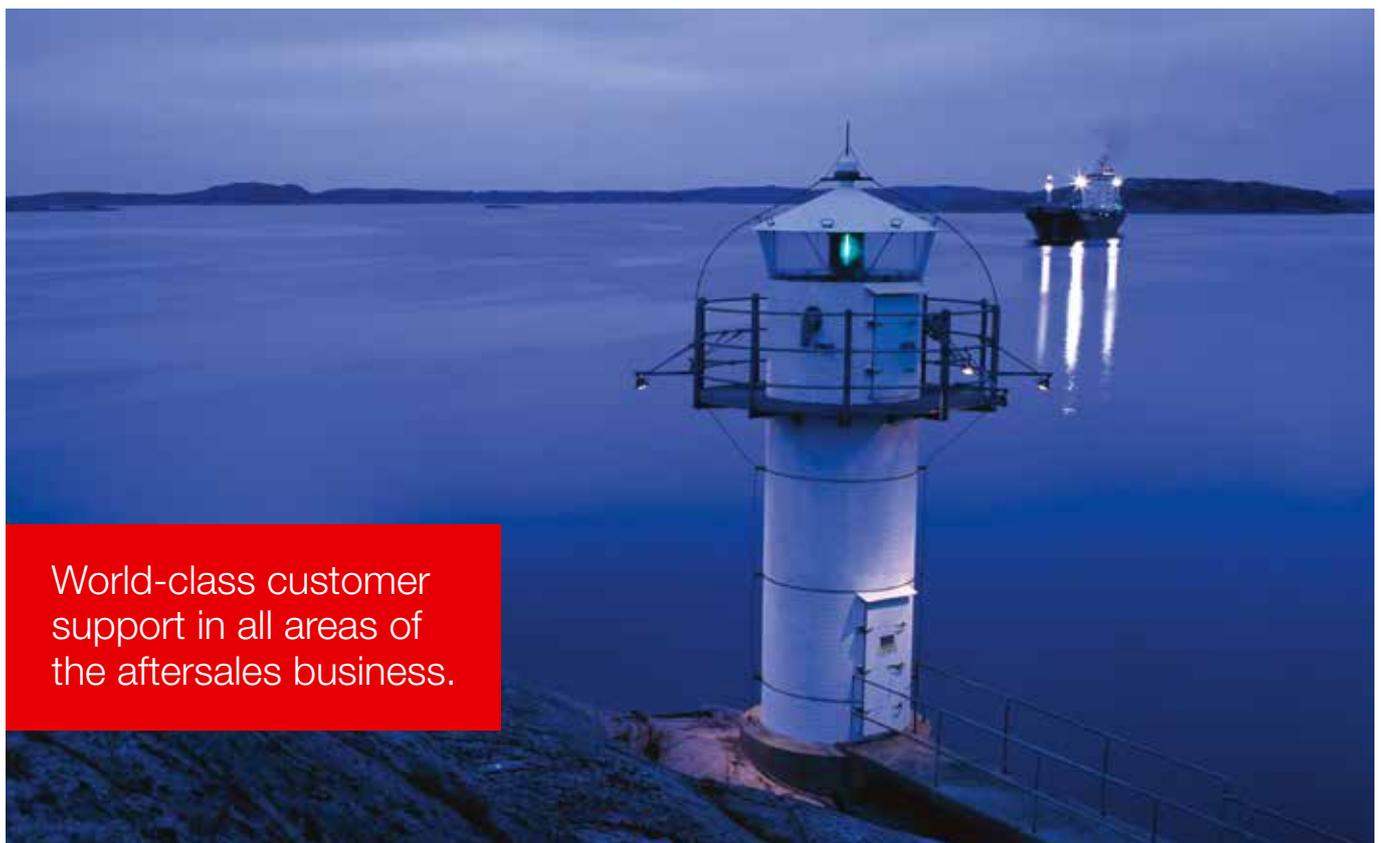


# Global 24-hour support

You can reach us wherever you are sailing. Our global service network and its trained engineers and service personnel are at your service 24 hours a day throughout the year around the globe.

Close and continuous collaboration between our network, competence centres and new sales units ensure precise, quick and efficient support for all our customers.

When you need us, we are just a phone call away and we serve our customers in their own language. If you are in any doubt about who to contact, please send an e-mail to [macgregor.service@macgregor.com](mailto:macgregor.service@macgregor.com)



World-class customer support in all areas of the aftersales business.

# It is brave to be safe

MacGregor sees that delivering a safety culture as part of its organisation is both an employee commitment and a commercial advantage.

Our work on board vessels, in ports and offshore, typically requires us to work at heights, with heavy and rotating equipment and we often deal with operations that require electrical isolation. We travel through many time zones to get to the job; we work alone in darkness at night, in blazing sun and through freezing winter storms. The demanding nature of our industry calls for a strong focus on safety.

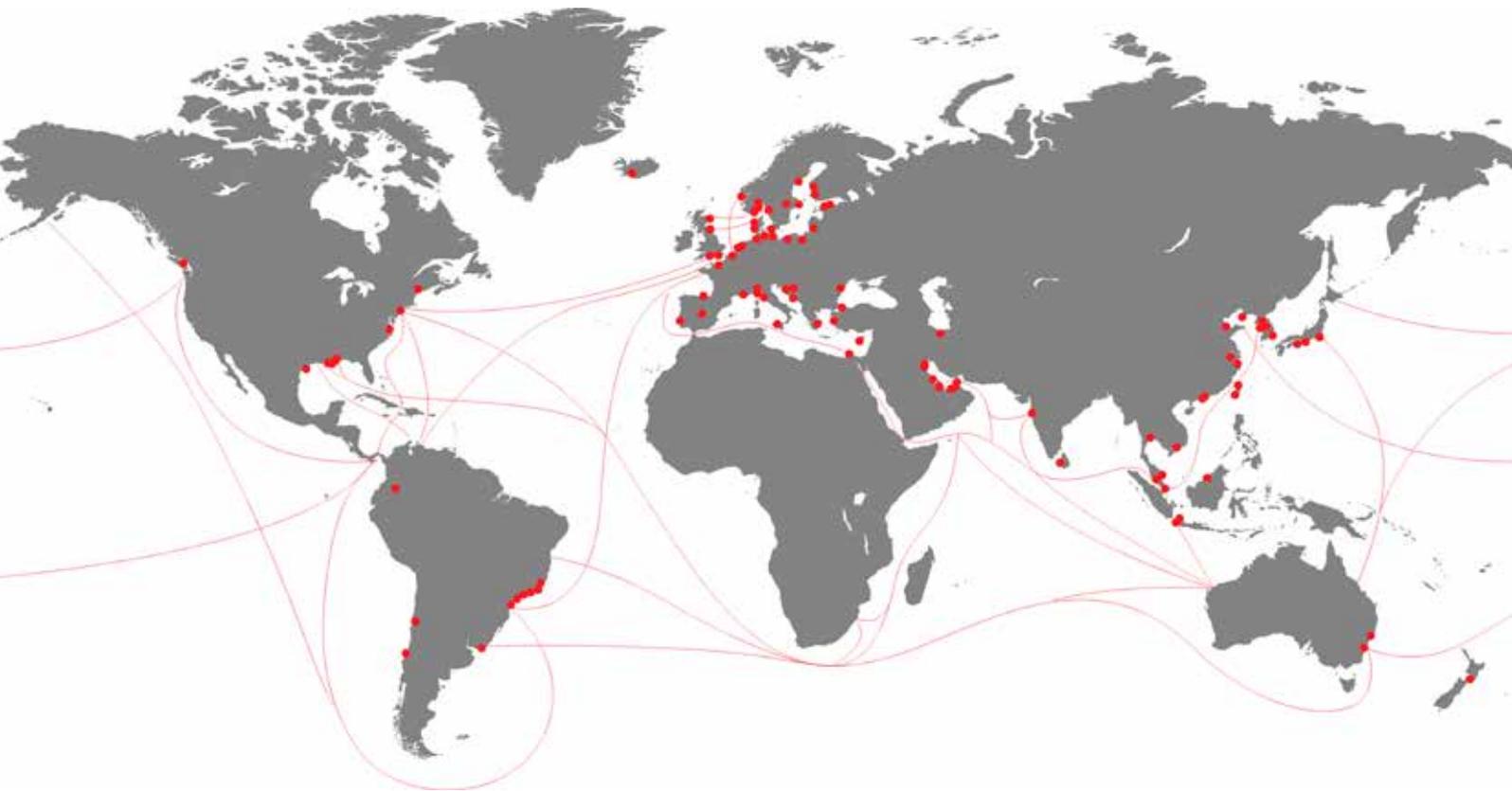
In MacGregor it is not brave to take a risk. Our heroes are those taking the time to double-check if they are unsure about something, and make their decisions based on what is safe. It is brave to be safe; we accept no other way of working.

We identify and mitigate risk as a part of our daily work, both in the office and in the field, and speak out if we have doubts or even stop a job if it is not safe. Safety is prioritised, even over production pressures when the workload is high and colleagues and customers need us to act quickly.

As part of MacGregor's commitment to a safety culture, our employees are encouraged to use its new 'safety app'. Each month employees receive an SMS or e-mail asking them to open the app and look at the month's safety information and learning modules. We know that it is brave to say no sometimes and we must dare to admit our mistakes. Only then can we learn. Only then can we do an even better job for our customers.



Wherever needed, you can rely on our support.



MacGregor shapes the offshore and marine industries by offering world-leading engineering solutions and services with a strong portfolio of MacGregor, Hatlapa, Porsgrunn, Pusnes and Triplex brands. Shipbuilders, owners and operators are able to optimise the lifetime profitability, safety, reliability and environmental sustainability of their operations by working in close cooperation with MacGregor.

MacGregor solutions and services for handling marine cargoes, vessel operations, offshore loads, crude/LNG transfer and offshore mooring are all *designed to perform with the sea*.

*MacGregor is part of Cargotec. Cargotec's class B shares are quoted on NASDAQ OMX Helsinki Ltd.*

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