Crane Upgrades

Higher, faster, greener. Again.

KALMAR
CRANE UPGRADES

Kalmar offers the widest range of cargo handling solutions and services to ports, terminals, distribution centres and to heavy industry. Kalmar is the industry forerunner in terminal automation and in energy efficient container handling, with one in four container movements around the globe being handled by a Kalmar solution. Through its extensive product portfolio, global service network and ability to enable a seamless integration of different terminal processes, Kalmar improves the efficiency of every move. www.kalmarglobal.com

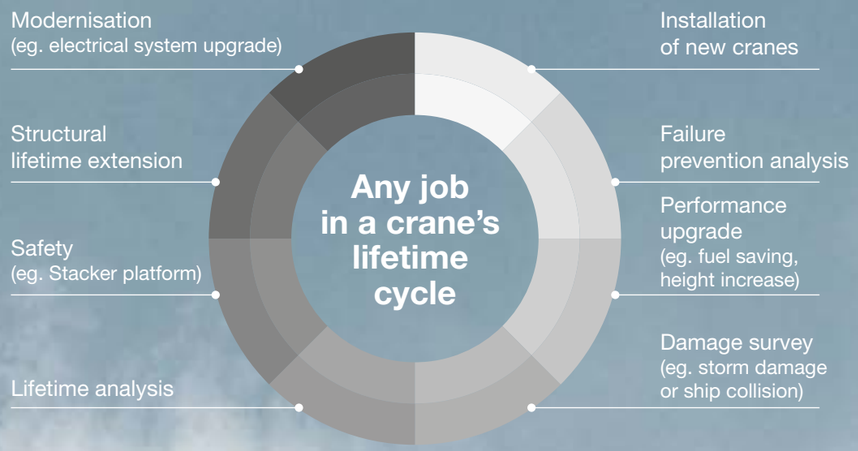
Kalmar
Porkkalankatu 5
FI-00180 Helsinki, Finland
Tel. +358 20 777 4000
crane.upgrades@kalmarglobal.com

Any crane. Any job. Anywhere.

KALMAR

Any crane, any job, anywhere

With today's ever-increasing demands on speed, productivity and efficiency, why settle for the limits of your current equipment? With Kalmar, you have the option to significantly enhance your existing crane, as an alternative to acquiring a new one. We can modify, modernise, refurbish and repair any crane, from the largest ship-to-shore cranes to various yard cranes. Regardless of brand. With 150 years of experience in the business and our global presence, we can take on any crane, any job, anywhere.



Inspection and consultancy

We recommend that you start every crane upgrade project with a relevant inspection of the equipment. Our detailed engineering analysis process sets the industry standard. It may include a full survey and equipment failure inspection, risk analysis, component stress testing, and extended lifetime calculations. For example, we can evaluate whether your equipment should be repaired or modified, and determine if it should be replaced or upgraded to increase handling capacity. Our experts are ready to advise on equipment modernisation, and provide solutions to increase reliability or reduce fuel consumption and carbon emissions. We also offer innovative methods to save energy through the latest available technologies.

Through periodic inspection of mechanical, structural and electrical components, as well as investigations following collisions or damage, you'll receive comprehensive reports and repair schedules.

Repair and refurbishment

Our services include mechanical, structural and electrical refurbishment such as the reengineering of major structural and mechanical components. It's possible to install new electrical control systems, refurbish gearboxes and drives, or replace trolleys, driver cabs and access ways. Straddle carriers and complete yard stacking cranes can also be refurbished according to tailored and detailed plans.

Since availability is a critical factor for you, our modular approach is designed to focus on repair and refurbishment procedures that most efficiently maximise crane productivity and minimise out-of-operation time.

If a disaster strikes, our fleet of containerised workshops can be quickly deployed, as our rapid response team proved following a hurricane at Freeport, Grand Bahama (p. 13).

Relocation

In some cases, it may be necessary to transport a crane to a new location to maximise utilisation. Often this is due to the sale of a crane, but several multi-terminal operators relocate cranes frequently among their own terminals. Moving any port crane, especially a ship-to-shore crane, requires detailed engineering work and other planning in which your safety is always the top priority. Kalmar has over 100 years of experience in such projects around the globe, from initial evaluation to actual short or long distance relocation.

Upgrades and modernisation

To improve the performance of your equipment, we offer a range of services including modernising mechanical and structural components, installing new electrical systems, extending ship-to-shore booms, heightening cranes, increasing or decreasing rail spans, increasing lift capacity, and much more. Our innovative energy-saving systems, especially for diesel-operated yard cranes, make it possible to dramatically cut your operational costs and reduce environmental impact.

Crane heightening

The increasing dimensions of global container vessels set significant new requirements for the physical dimensions of ship-to-shore cranes.

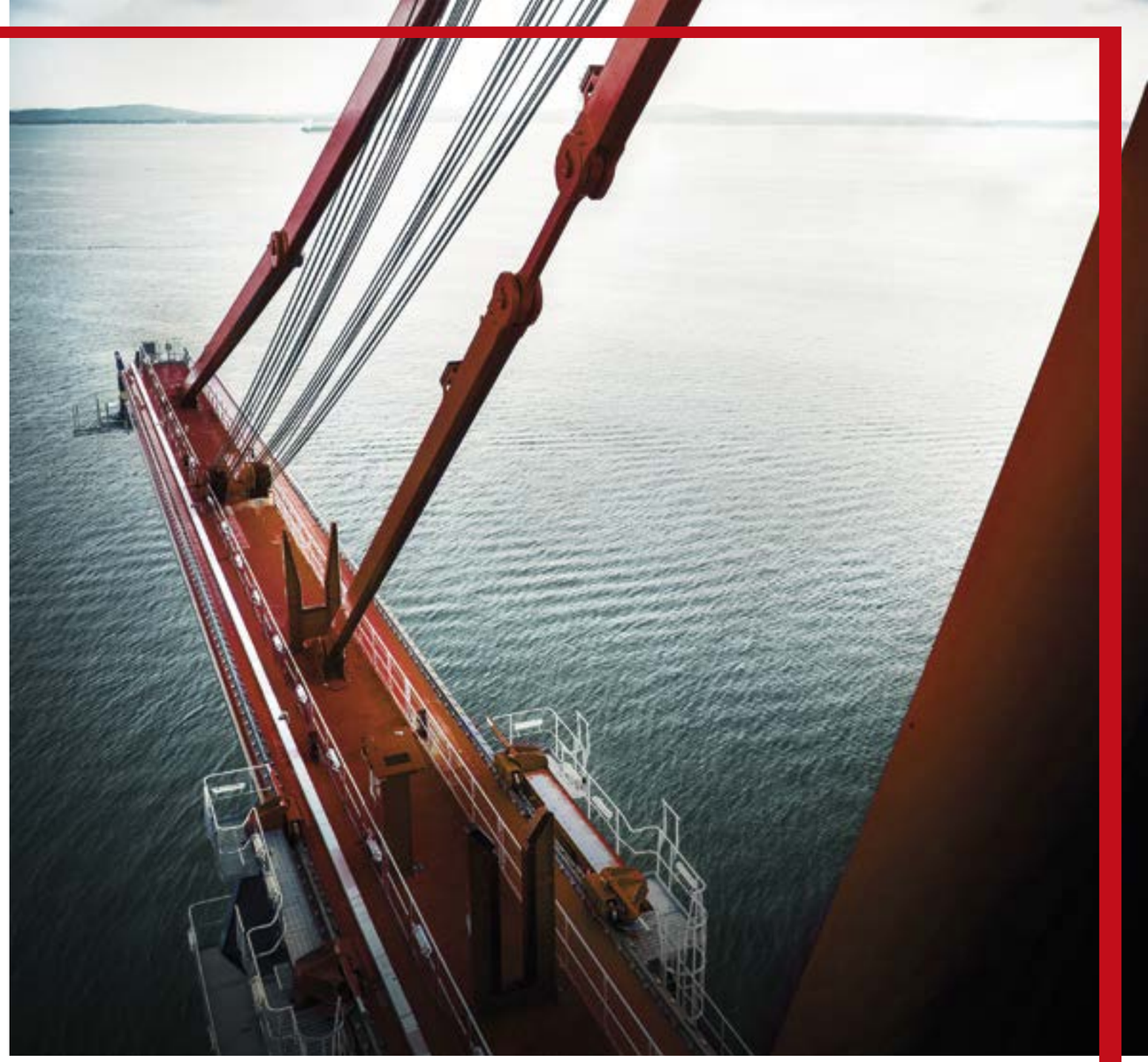
Fortunately, replacing your existing cranes isn't the only option. By heightening existing cranes, it's possible to extend their operational lives with significant savings on costs and lead times. Thanks to advanced jacking systems, even the largest ship-to-shore cranes can be heightened safely, efficiently and cost effectively.

Our proven experience in increasing the heights of existing RTGs, RMGs and straddle carriers can also help you to expand your port vertically – without investing in new equipment.

Fuel saving systems

As port authorities continue to impose stricter emissions standards, terminal operators constantly need new ways to increase fuel efficiency and retrofit particle traps on older diesel engines.

At a typical port, RTGs represent more than 50% of total fuel consumption. By converting inefficient diesel-powered RTGs to more sustainable solutions, we can help to significantly reduce your terminal's total emissions. Other effective fuel-saving solutions include regenerative power systems, replacement with hybrid technology, and other electrical and software upgrades.



Case: Northport, Malaysia

Enabling larger ships

Malaysian port operator Northport needed to heighten its port cranes and modernise its installations to increase their lifetime. They chose Kalmar to refurbish eight ship-to-shore cranes and heighten two of them. To do this Kalmar used a newly developed jacking system, which works with any brand of crane and can lift up to 2,400 metric tonnes – enough to handle the largest ship-to-shore cranes on the market. Instead of the usual four to six weeks needed to heighten a ship-to-shore crane, the new jacking system completed the job in just two weeks. The cranes were modernised with a new AC electrical system that lowers maintenance costs.

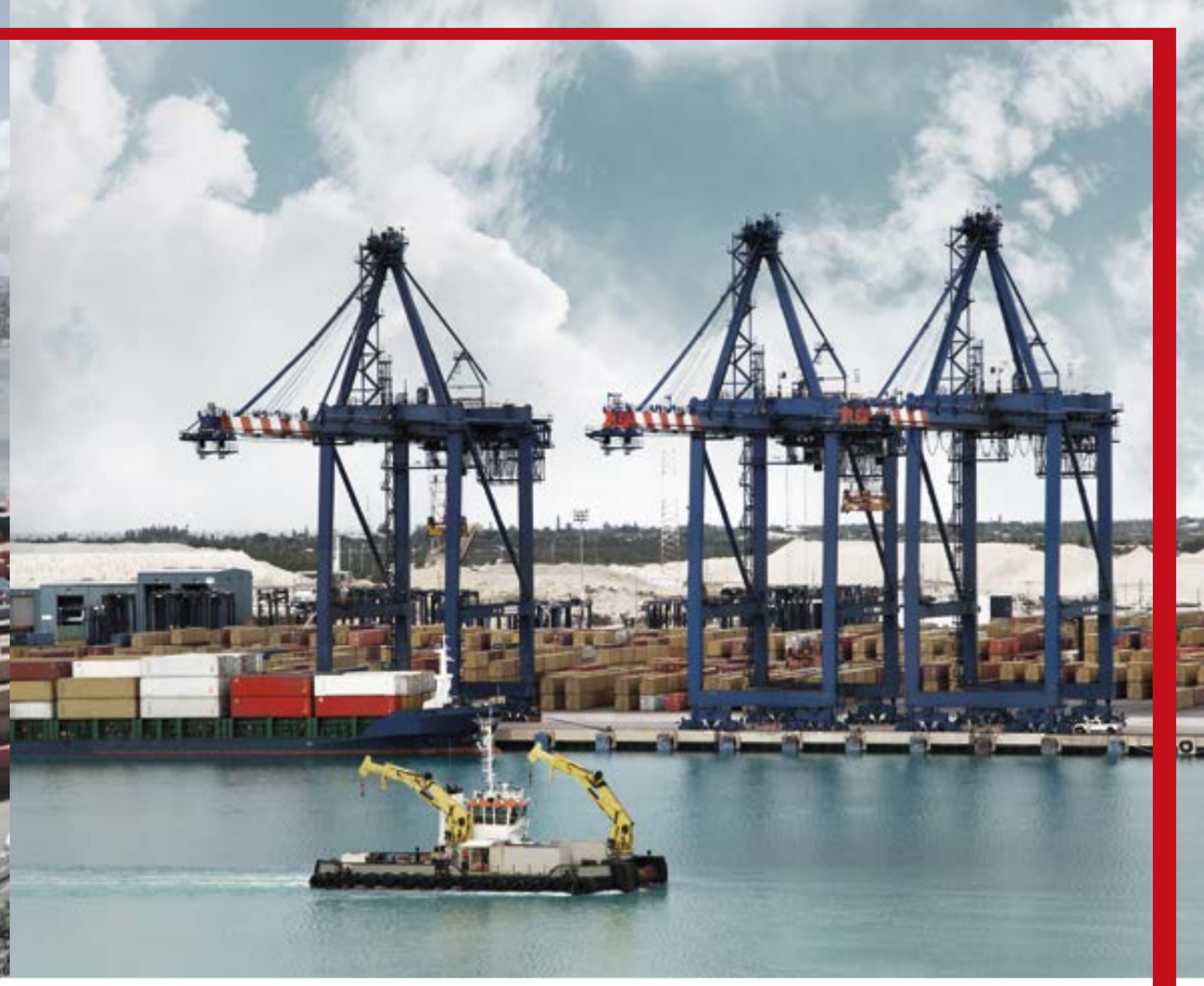
"With our jacking system, we did all the ground preparation and heightening in just two weeks", says Collin Swee, Managing Director, Kalmar Malaysia.

Case: TPS Valparaiso, Chile

Increasing storage capacity by 20 percent

The Port of Valparaiso is one of the busiest in Chile. To remain competitive, the port had to both increase its capacity and enable the handling of larger vessels. However, the port is so close to the city that there is very limited space for expansion. So TPS decided to expand vertically, first by heightening two and then an additional ten RTG cranes, by 2.9 metres. This raised the stacking capacity from five containers to six, which increased the storage capacity by 20 percent without increasing the footprint of the cranes.

"We were very pleased with the short time it took to complete the previous project and the resulting uplift in capacity, and that is why we decided to continue with the heightening of ten more RTGs", says Nicole Jaramillo, TPS Reliability Engineer



Case: Freeport, Grand Bahama

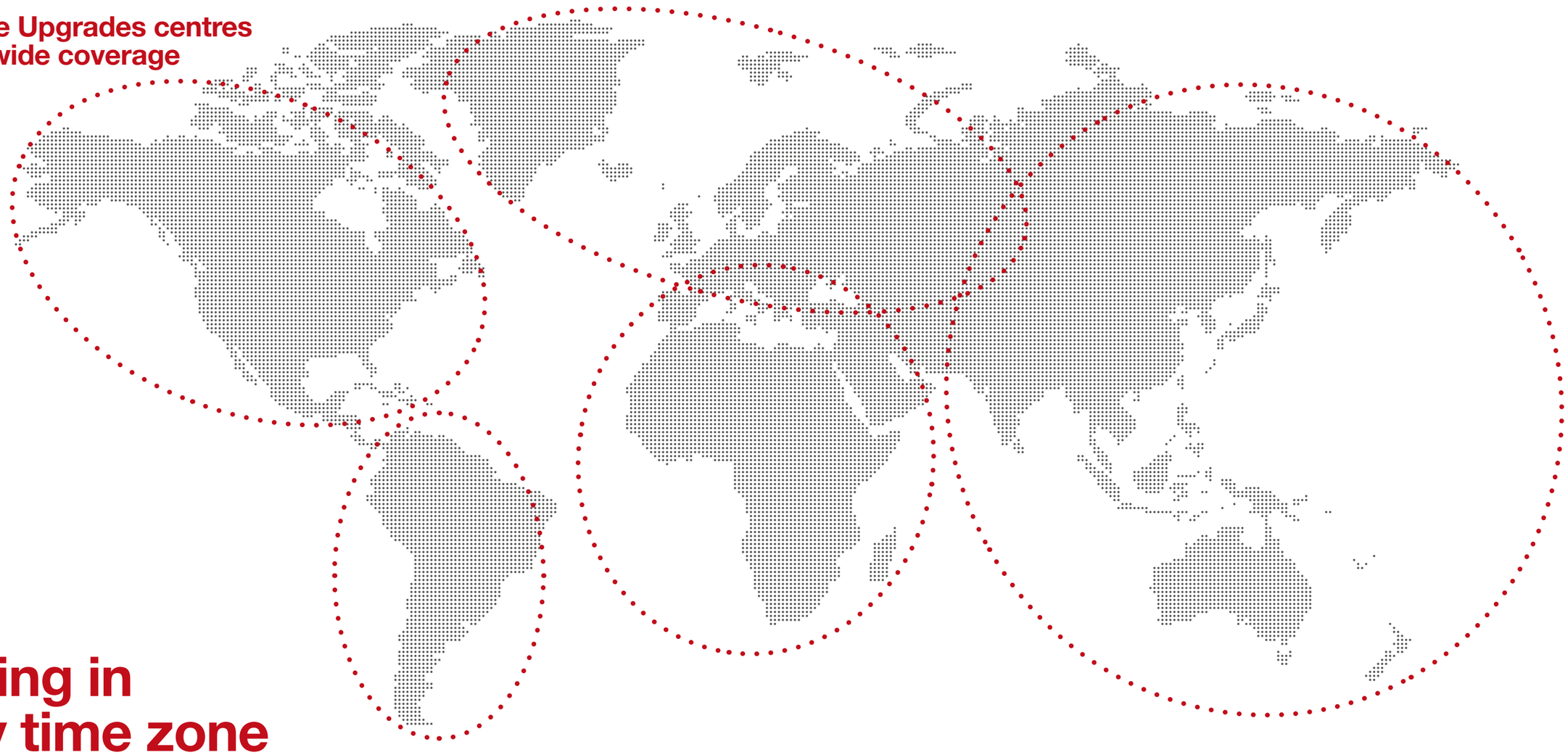
Recovering from the hurricane

Freeport, on the Island of Grand Bahama, was struck by a disastrous hurricane. The storm tore through the area, tossing the port's enormous ship-to-shore cranes into the sea like matchsticks and leaving one of the world's top container terminals severely damaged.

Kalmar was called in to help restore the port's activities. By 10 AM the following day, specialists had been flown in and were already surveying the damage. Within a week, the port was once again moving containers at 50 percent of normal capacity. About two weeks after the hurricane the Kalmar team began rebuilding the cranes, restoring one crane to its full operations each month.

"It was an extremely difficult set of circumstances, but Kalmar once again demonstrated its unique capabilities in these particularly challenging types of projects", says Charles Stewart, Engineering Manager at Freeport.

Five Crane Upgrades centres for worldwide coverage



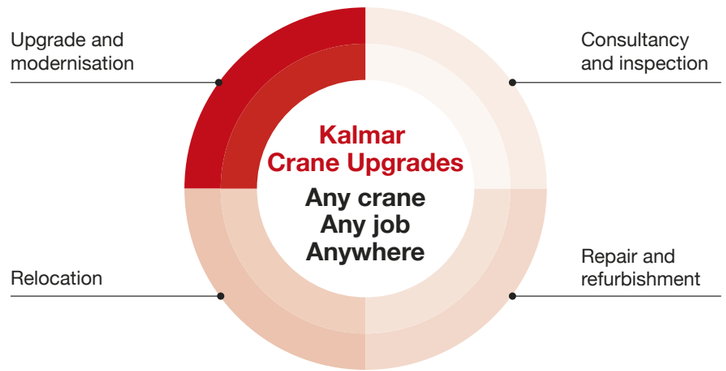
Leading in every time zone

Wherever you are, we are nearby. As the global provider of container and heavy-duty materials handling equipment, automation applications and related services, we're in an ideal position to help you increase the productivity and earning potential of your equipment, throughout its lifetime.

We have a wide range of experience and expertise, developed over 150 years in the crane and container-handling industry. We are the world's leading supplier of cargo-handling equipment to ports, terminals and intermodal facilities. Our mission is to ensure the continuous, reliable and sustainable performance of our customers.

To achieve this, we work in close co-operation with our customers. Our research and development leads the way in innovative solutions that take into account environmental considerations. We care for the safety of the environment as well as the people using our products and solutions.

These solutions are supported by services ranging from basic inspections and spare parts to maintenance contracts, on-call service and refurbishment work. In fact, a quarter of our global workforce has service-related positions. They are committed to ensuring you get the most out of your equipment – no matter where your customers are located.



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or email us crane.upgrades@kalmarglobal.com