

Kalmar

SHUTTLE CARRIERS



From quayside to
stack in a moment.



When **SPEED** is of the essence

The third generation Kalmar Shuttle Carrier™ range enables you to decouple your container movements from quayside to landside, allowing your cranes to operate at their optimal best at all times. Kalmar Shuttle Carriers are able to pick and place containers directly on the ground, so other cranes are never kept waiting and are free to get on with their main job, moving containers.

Manoeuvrable and agile.

Kalmar's range of shuttle carriers are extremely agile. Our electric and hybrid models feature a drive and steering system that controls each wheel individually. This gives our shuttle carriers the ability to move diagonally in a "crab" mode, or even pirouette on the spot around its vertical axis. This high level of manoeuvrability enables much shorter work cycles and can help reduce terminal congestion.

A flexible range for you.

Kalmar Shuttle Carriers are built on 70 years of experience working with terminal operators around the world and feature three different power sources, advanced safety features and one of the best operator experiences available.

Cut your CO2 emissions.

We support our customers' ambitions to become more eco-efficient by providing solutions, such as our electrically powered Kalmar FastCharge™ Shuttle Carrier that will help you reduce your fuel consumption and emissions, optimise cargo flows and cut overall operational costs. Eco-efficiency is the future of cargo and material handling, with new and more advanced technologies helping us do more with less. You can also cut noise and light pollution when you fully automate your operations with a Kalmar AutoShuttle™ solution.

ECO
EFFICIENCY
IN ACTION



A FLEXIBLE

range for you

Every Kalmar Shuttle Carrier features a modular design that can be tailored to meet the needs of your business. You have three different shuttle carrier solutions to choose from:

Kalmar FastCharge™ Shuttle Carrier.

The eco-efficient Kalmar FastCharge Shuttle Carrier uses electric drive units with the latest battery technology, which can be charged on the go during your shuttle carriers work cycle. Being powered by electrically charged Lithium-Ion batteries also means you will produce zero emissions at source.



Kalmar Hybrid Shuttle Carrier.

The Kalmar Hybrid Shuttle Carrier delivers all the power you're used to, with up to 40% reduction in fuel consumption and up to 50 tons less CO₂ emissions per annum than a traditional diesel-electric machine. A regenerative energy system captures electrical braking and spreader-lowering energy and stores this for re-use in Lithium-ion batteries.



Kalmar Shuttle Carrier.

The Kalmar Shuttle Carrier offers high performance, excellent fuel efficiency and low noise. Featuring a diesel-electric drive, this shuttle carrier complies with the latest exhaust emission regulations.



The Kalmar AutoShuttle™.

The Kalmar AutoShuttle can pick, carry, stack and place containers independently. The Kalmar AutoShuttle delivers a safe, eco-efficient and effective automated horizontal transport option. Its scalability and flexibility mean it is suitable for a variety of terminal operation modes.



Thinking of automating?
Kalmar AutoShuttle™ uses the Kalmar One AutoShuttle Application, which is a proven automation solution for container handling. All Kalmar Shuttle Carriers can be delivered automation ready or can be retrofitted for automation at a later date.

Why a 3rd generation
Kalmar Shuttle Carrier is a great

CHOICE

Ergonomic cabin design.

The cabin was designed in cooperation with our customers. It features a spacious interior, window shaping to reduce night-time reflections, and low cabin noise. Ergonomically designed with an intuitive user interface, dimmable LED lighting and an optional 180 degree electrically adjustable seat, it puts everything in easy reach for your operators.



Kalmar Shuttle Carriers are highly efficient, productive, safe and comfortable to operate. They are the best choice of horizontal transport to work in partnership with your ASCs and quayside cranes, driving even greater efficiencies between your quayside and landside operations.

Extremely efficient. All of our shuttle carriers are fitted with the most efficient drive units, with our electric and hybrid machines exceeding the most stringent carbon emissions standards globally. In fact, our hybrid machine can reduce your carbon emissions by up to 40% and our electrically powered eco-efficient Kalmar FastCharge Shuttle Carrier has zero emissions at source. Automated stop-start technology helps drive greater efficiencies when you are coupling an electric power source with a diesel one.

Easier to maintain. With safe and easy to access servicing points and less moving parts, our electrically powered shuttle carriers will ensure you spend less time and effort keeping your equipment operating optimally. Plus, our electric and hybrid shuttle carrier ranges feature a rope hoist system with only six pulleys, making it highly efficient, safer and easier to maintain than other systems.

Highly productive. Our range of shuttle carriers offers you the highest levels of productivity, as you can handle a full range of containers from 20ft to 53ft and, when fitted with an extendable twin-lift spreader, two 20ft containers can

be handled simultaneously. All of our shuttle carriers are easy to operate and have servicing intervals of up to 1000 hours, keeping your machine's downtime to a minimum. Plus, all servicing points are easily accessible from the top of the frame.

Safer. Kalmar Shuttle Carriers feature the strongest frame in the industry, with a streamlined yet extremely rigid design with no external bracing. The structure enables easy access to all key components, which are well protected within the frame. Coupled with superior cabin visibility, your operators will stay safe and be in control at all times.

Our entire range of shuttle carriers feature active stability control. This system continually monitors the speed, turning radius and spreader position and will slow the machine down automatically when needed. This helps the driver operate the shuttle carrier in a safe manner.



BE SAFE

Lower your **EMISSIONS** without compromising on power

Lower carbon emissions. Lowering your carbon emissions often means compromising on power, but that doesn't need to be the case. Our hybrid shuttle carrier is able to reduce your emission by up to 40% by using a regenerative power system coupled with a highly efficient diesel engine that uses less fuel. You will also benefit from lower noise levels as both our electric and hybrid machines are incredibly quiet. Any light pollution can also be dramatically reduced when operating our Kalmar AutoShuttles as they do not require lights to work in the dark.



Clean power on the go.

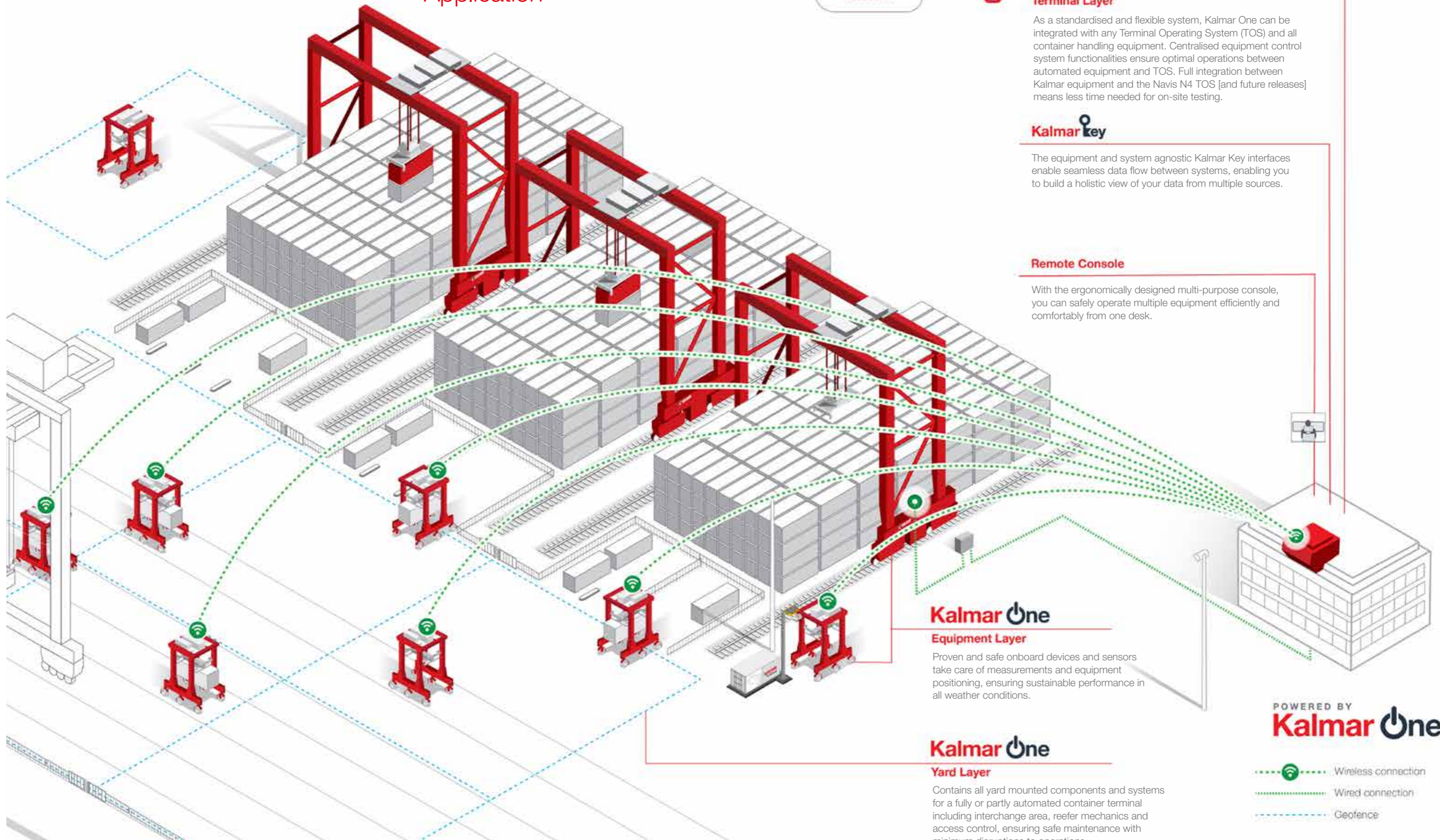
Kalmar's new FastCharge™ system allows you to charge your electric and hybrid shuttle carriers while they are hard at work in the yard. No more spare batteries, or lengthy re-charging times, as your shuttle carriers can now connect with strategically placed fast charging stations that allow you to re-charge during normal operations when your machine is idling. Typical re-charging time is just 30-180 seconds. The result? You get faster turnaround times, increased productivity with over 90% utility rates, less noise and with our electric shuttle carriers, zero emissions at source.



Kalmar

AUTOSHUTTLE

Application



Kalmar One

Terminal Layer

As a standardised and flexible system, Kalmar One can be integrated with any Terminal Operating System (TOS) and all container handling equipment. Centralised equipment control system functionalities ensure optimal operations between automated equipment and TOS. Full integration between Kalmar equipment and the Navis N4 TOS [and future releases] means less time needed for on-site testing.

Kalmar Key

The equipment and system agnostic Kalmar Key interfaces enable seamless data flow between systems, enabling you to build a holistic view of your data from multiple sources.

Remote Console

With the ergonomically designed multi-purpose console, you can safely operate multiple equipment efficiently and comfortably from one desk.

Kalmar One

Equipment Layer

Proven and safe onboard devices and sensors take care of measurements and equipment positioning, ensuring sustainable performance in all weather conditions.

Kalmar One

Yard Layer

Contains all yard mounted components and systems for a fully or partly automated container terminal including interchange area, reefer mechanics and access control, ensuring safe maintenance with minimum disruptions to operations.

POWERED BY

Kalmar One

-  Wireless connection
-  Wired connection
-  Geofence

Kalmar One

AUTOMATION REDEFINED

Kalmar One automation system is a flexible, scalable and open automation system.

With proven functionalities and well-established processes, Kalmar One will help you streamline and automate your operations. It offers a standardised open system that is compatible with all types of equipment irrespective of manufacturer, making it quicker, easier and more cost effective to deploy.

Each automated Kalmar equipment application is powered by Kalmar One. Kalmar One contains automation and software products and modules that are standardised and harmonised for all different application types. Each of these applications has its standard blueprint of Kalmar One products, which allows us to offer and deliver the same proven and tested solutions to all our customers yet configured to each customer's individual needs.

Safety in mixed traffic.

Instead of having to create fenced off areas to separate your automated equipment from manual equipment, Kalmar has been a pioneer in the use of geo-fencing, where virtual boundaries are created using local satellite systems or ground based transponders set into the ground to create lanes. This allows for automated equipment to work safely within a designated geo-fenced area. Manually operated equipment would continue to work normally outside of the geo-fenced area and follow standard road markings and signs.

Operate your equipment remotely.

The Kalmar Remote Console has all the required functions, controls, information and guidance enabling your operators to control equipment remotely. It is quick, safe and easy to switch between equipment allowing your operator to handle several cranes at a time. Large format screens provide a clear view of exactly what is happening with each piece of equipment. In addition, the operator can manage semi-automated moves from the desk, tracking the movement of each container and then prompting the operator when they need to take over or validate a move. Even if your operations are fully automated the console can be used for exception handling.

The console is ergonomically designed and can be personalised to optimise operator comfort and safety.



Kalmar Key. Open up your choice.

Kalmar Key provides a set of open automation interfaces that will allow you to build a complete end-to-end automation solution that is exactly right for your business by using Kalmar One as a common central automation system. With Kalmar Key, you will be able to choose who you work with and adopt an agile way to further develop the capabilities of your equipment and software, possibly with third-party developers.

With an equipment-agnostic approach, Kalmar Key enables a vast range of new applications and equipment to be connected for a total automation solution. Additionally, open interfaces enable a holistic view of data from multiple sources, allowing you to optimise your operations continually and with ease. Opening up your possibilities.



Automate your truck handling.

Kalmar automated truck handling is the first patented solution in the world that automates your landside operation. By introducing automated truck handling in your operations, you can build an end-to-end automated solution, which enables faster turnaround times, a higher level of safety for truck drivers and is reliable in variable weather conditions.

External truck loading uses a truck lane laser measurement system that pinpoints the exact locations of the truck trailer's twistlocks, chassis or container so that the crane can lift it and place it efficiently and safely. Automated truck handling can work with trailers with twistlocks, internal chassis and cassettes up to 4 TEU long, both coupled and decoupled operations can be supported.



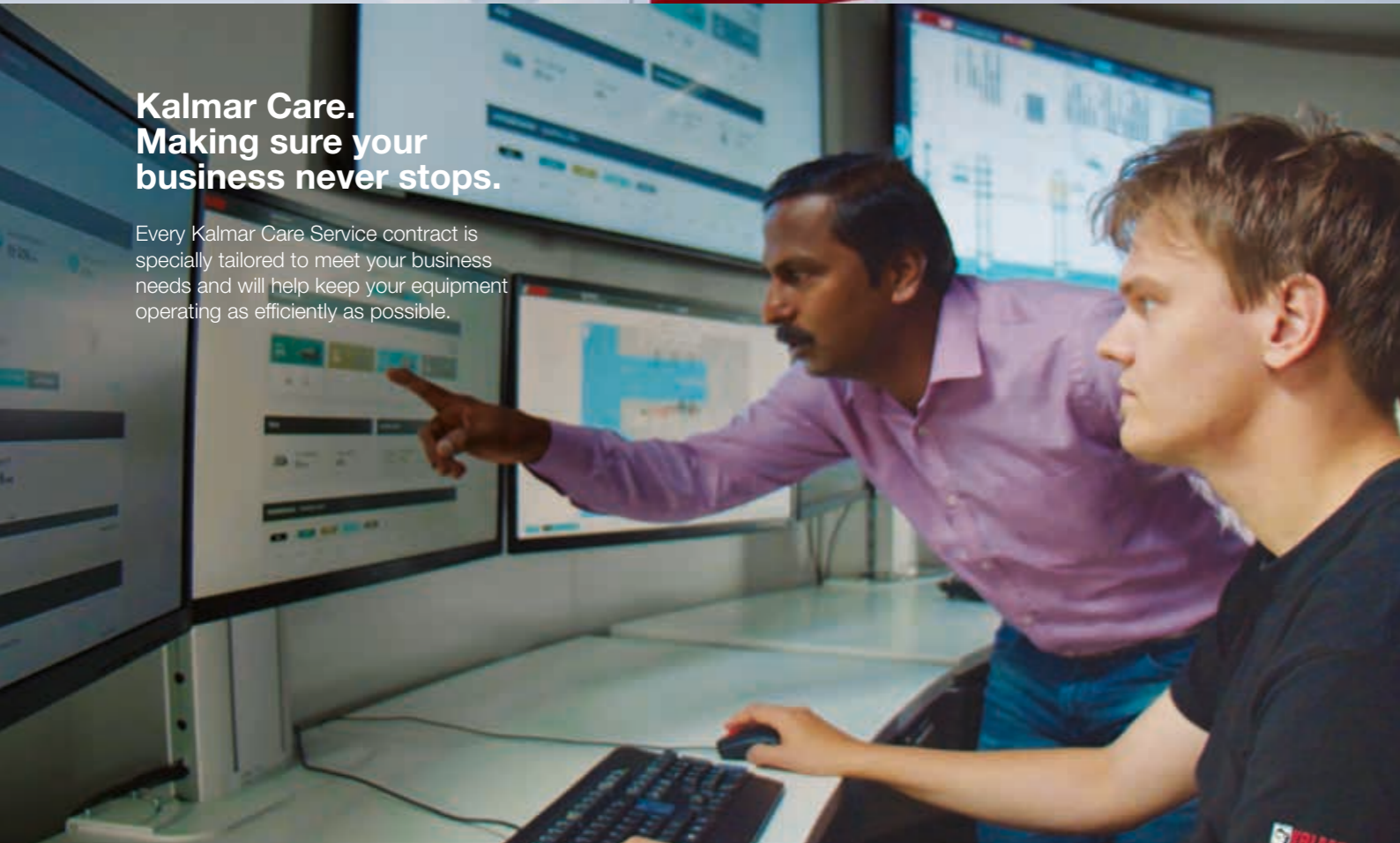
More SUPPORT

Our job doesn't stop once we deliver your new solution. We also offer a range of support services that help keep your new Kalmar Shuttle Carriers and other equipment running at their optimal best. With a global network of over 1,500 service and technical support staff in over 100 countries, we will always have someone nearby to provide the support you need.



Kalmar Care. Making sure your business never stops.

Every Kalmar Care Service contract is specially tailored to meet your business needs and will help keep your equipment operating as efficiently as possible.



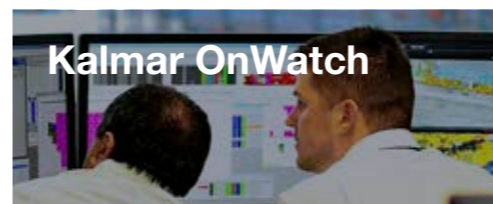
Kalmar Insight

Kalmar Insight* is a performance management tool for cargo handling, which gives you an easy to use overview of your fleet operations, by aggregating data from multiple sources, including Kalmar equipment and equipment built by other manufacturers. This information is then accessed through a user-friendly interface that is available on mobile, tablet or more traditional screens. You can review your entire fleet activities and schedule your maintenance activities based on your equipment's operating hours. All enabling you to take action on real-time information, that will help improve your overall operations immediately.



Kalmar Software Maintenance and Support [M&S]

The Kalmar Software Maintenance and Support team will be by your side for the lifetime of your application, making sure that your chosen automation solution is always up to date and running optimally. Our software support packages will ensure you have the latest version of your software loaded with the latest error fixes and functionality enhancements. You will have access to our experts so you can solve problems quickly and keep your software running efficiently.



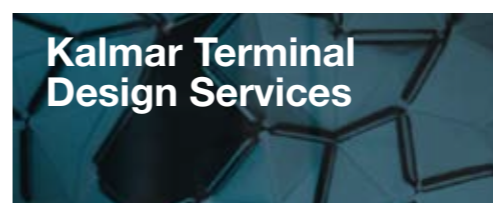
Kalmar OnWatch

Proactive support. With Kalmar OnWatch you can connect and take advantage of the knowledge and skills of the team of Kalmar experts located around the world through our digital support channels. Our team of experts will proactively monitor your terminal and work hand in hand with your operations team to address any potential issues before they can cause downtime or disruption to your operations.



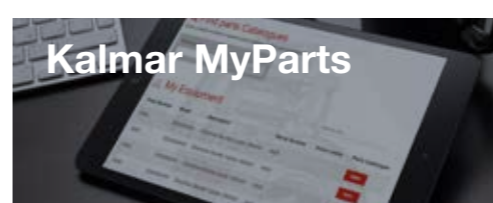
Kalmar Genuine Parts

When the right part matters. When something needs to be replaced urgently, you need a spare part that meets your exact needs – immediately. Kalmar offers a rapid delivery service for over 50,000 premium-quality genuine parts to anywhere in the world, with installation support if needed.



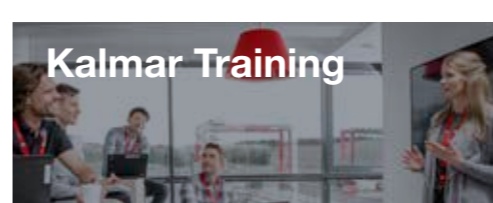
Kalmar Terminal Design Services

Building a new terminal, changing operational mode or renewing your current operations is a demanding and risky task, which is why you want a knowledgeable and experienced partner. Kalmar Terminal Design Services, with over 250 projects delivered globally in the last 15 years, provides a full range of design services to help you realise your ambitions and improve the capacity and flow of cargo through your terminal.



Kalmar MyParts

Open 24/7. Kalmar MyParts allows you to order genuine Kalmar parts online 24/7. You can also access information on your Kalmar equipment to ensure that you are ordering exactly the right part.



Kalmar Training

Get the best from your people. Proper training is key to optimising your operations as it helps you improve the skills of your workforce. Kalmar Training provides technical, operational and systems training, to name a few, on our terminal and industrial solutions. These courses ensure that your operators and technicians are properly prepared to perform their work safely and efficiently.

*Installation costs and/or an annual subscription fee may apply.



KALMAR

Making your every move count

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