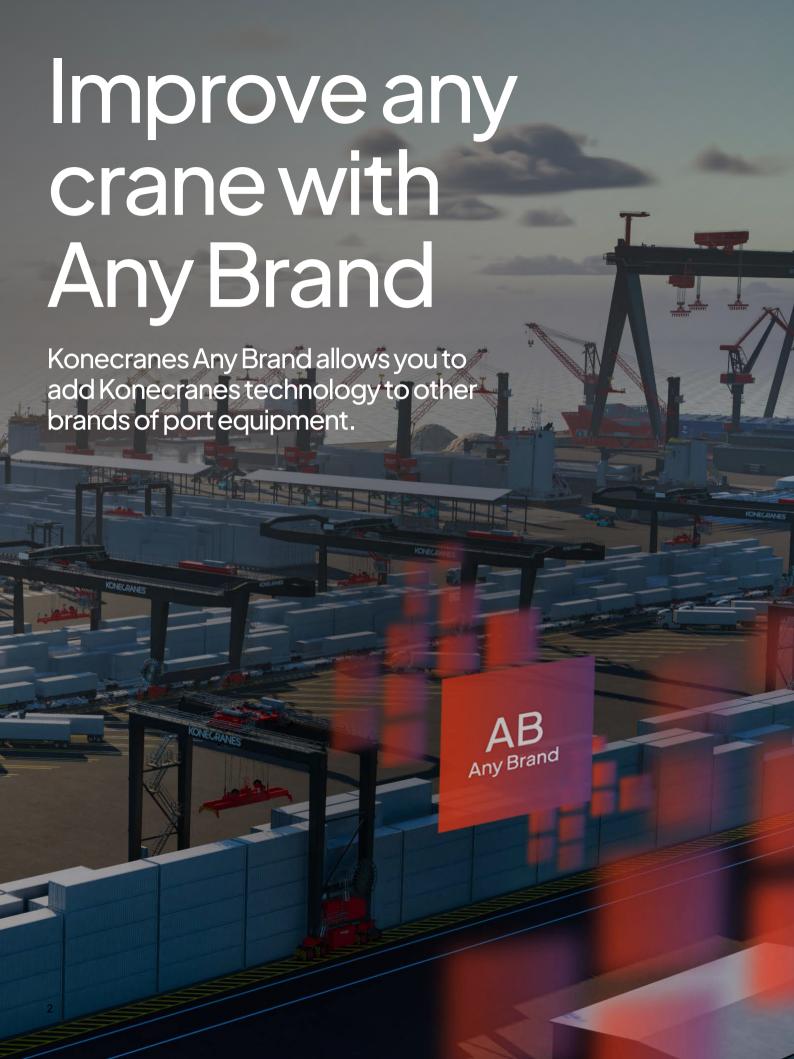
# Standardize high performance





## Standardize industry-leading expertise in your fleet

Konecranes Port Services Any Brand can improve the safety, reliability, efficiency and sustainability of any brand of port equipment. With same features on all your cranes and a service level agreement for the software, you have a simple, cost-effective way to ensure consistent performance across your operations.

#### Safety

Safety-assist retrofits use lasers and sensors installed on any brand of crane to automatically detect dangerous situations like fires, truck lifts or potential collisions and implement immediate corrective action. When you operate an entire fleet of safer equipment, you have a safer and more productive workplace.

#### Reliability

Modernizations replace old software and worn out components on any brand of crane and provide the latest in lifting technology for improved functionality and spare parts availability. Not only that, Konecranes has the technical expertise to inspect any port crane, and CheckApp allows crane operators to make their own daily inspections on a mobile device to ensure the same safety and high performance at all times.

#### **Efficiency**

Smart Feature retrofits use GPS to move any brand of crane with maximum efficiency. When steering, positioning and TOS reporting are all automatic, your crane operators can focus on lifting and placement. Konecranes digital services provide mobile apps and APIs to integrate data collection and spare parts ordering into any crane management system. You can see it all on a customized your KONECRANES dashboard.

#### Sustainability

Upgrading the power sources on any brand of crane can reduce carbon emissions, making it more sustainable for the future. Install an eco-efficient drive and control system, add a more fuel-efficient engine, or fully electrify your equipment. Retrofits and modernizations also extend the operational life of your fleet, minimizing total cost of ownership and decreasing waste.



#### Smart Features

- · Auto steering
- · Auto TOS
- · Auto Truck Guiding · Auto-path Optimizing
- · Auto positioning

#### Safety Features

- · Fire suppression system
- · Gantry collision prevention
- · Stack collision prevention
- Truck lift prevention

#### Digital Services

· CheckApp

Services Agreement Crane Inspections

Crane Modernization

## Adapt and thrive

Konecranes is the premier port services provider to brownfield terminal developments. Our range of retrofit products will enable your fleet to adapt to a fast-changing environment. Welcome to your evolution.

#### **Smart Features**



Auto-Steering Retrofit

TOS

Auto-TOS Reporting



Auto-Truck Guiding

Safely lifting, moving and positioning containers or loads is the primary function of an operator. This product steers the crane intwo position, while the operator focuses on lifting.

#### **Benefits**

- Prevent collisions caused by loose configurations
- Operator is focused only on accurate lifting and placement
- Prepares crane for further automation features
- Can initiate traverse turns in railyards
- More precisely optimized stack alignment for greater stack density
- Accurate, real-time heading at all times
- Option for additional reefer collision prevention.

Now every crane can count its moves, map the position of every load and interface directly with the TOS.

#### Renefits

- Keeps TOS data up-to-date in real-time
- Process is invisible to the operator
- 100% accurate yard inventory
- Eliminates misplacing containers in the yard
- Tracks moves regardless of whether they follow TOS instructions, are diverted from them or are completely unauthorized
- Proprietary DGPS algorithms\
   calculate centimetre level accurate
   GPS positions.

Accurate truck positioning for faster truck handling and improved yard safety.

#### **Benefits**

- RTG can pick up or place container with minimum movement
- Reduced truck handling times
- Safer yard operations
- An alarm is sounded, and the hoist is stopped, if the system detects the truck cabin is in a dangerous position
- May reduce energy consumption due to reduced gantry movement.

#### Auto-Path Optimizing

System calculates optimum trolleyhoist trajectory for improved fuel efficiency, cycle times and safety.

#### **Benefits**

- Energy consumption can be reduced
- Cycle times are improved
- System prevents collision with stacks and guides container along the shortest route
- Semi-automated: all stacking operations, i.e. picking and placing containers, is still handled manually.





#### **Auto-Positioning**

Eliminates positioning errors and increases speed of operation as the crane will automatically stop precisely above the correct container or slot.

#### Benefits

- Reduces risks associated with driver fatigue and of operating in adverse
   weather
- Creates more precisely shaped container stacks
- Decreases cycle times as it enables a faster more confident approach to the target
- Reduces unnecessary movements
- Also works when positioning over trucks and railway cars
- Proprietary DGPS algorithms calculate centimetre level accurate GPS positions.

## Safety Features



#### Fire Suppression System

Automatically detect and extinguish critical area fires.

#### **Benefits**

- Designed in co-operation with fire suppression experts and crane experts especially for port equipment
- Aerosol units are not pressurized or toxic
- No expensive pipe work required
- Can be installed inside engine and generator rooms, limiting fire spread
- Fully automatic and autonomous system of activation
- Backup power supply via UPS
- Require far less maintenance compared to other conventional systems
- Aerosol is not harmful to humans or animals





#### Gantry Collision Prevention System

Assists in avoiding crane-to-crane and crane-to-obstacle collisions.

#### **Benefits**

- Laser sensors in the system perform slowdown and stop-limits within a 20-meter range
- The system works in every mode of gantry travel: normal, cross and rotate
- Longer range and better weather tolerance compared to ultra-sonic sensors
- Simplest and most accurate solution in the market
- · Highly resistant to adverse weather.



#### Stack Collision Prevention

Assists operators to lift, lower and place containers with a higher degree of safety and accuracy.

#### Benefits

- Prevents container collisions and knock-downs as the trolley moves towards the bay
- Prevents unsafe loading in the mixed bays
- Works with both loaded and empty spreaders
- · Allows for fine positioning
- Operator can navigate container in bad weather and around stacks of uneven height
- Easy to use and maintain: only uses electrical components so only sensor cleaning is required.

#### Truck Lift Prevention

Sensor technology at ground-level detects any truck/trailer lift, and immediately halts the hoisting action for improved safety in manual handling mode. Works by detecting the trailer wheels.

#### Benefits

- Prevents the lifting of a trailer by automatically and rapidly stopping the lifting motion when a trailer lift is detected
- · Stops hoist automatically and smoothly
- Monitors the movement of the truck's tyres, most other brands only follow the gap between the container and truck tyres
- Saves significant time in resolving trailer/truck lift incidents
- Works with terminal tractor, road trucks or AGVs.



www.konecranes.com/any-brand-offerings



## **Digital Services**



## Services Agreement



#### CheckApp

Paperless solution, designed for quick and accurate equipment inspection records.

- Paperless, backed up and consistent reports
- Available in 25 languages
- Captures video, photo and text
- Accessible and exportable report from yourKONECRANES in real time
- Custom checklists allow you to record any kind of inspection or maintenance list
- API Capability
- Awarded ISO/IEC 27001:2013 certification for information security management
- GDPR compliant
- Secure data storage in AWS cloud.



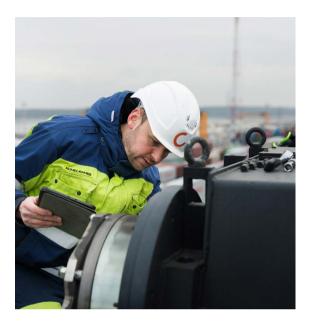
#### Lifecycle Programs

Port operators are increasingly realizing that equipment data can be the key to revolutionizing how to plan equipment maintenance with a view to reducing the total cost of ownership. However, equipment data sets are often vast, as well as complex.

A Konecranes Port Services program streamlines equipment maintenance planning by using OEM-grade digital tools as well as expert analyses.

- Lifecycle<sup>1</sup>: A simple, entry level program that forms the basis of ongoing safe operation.
- Lifecycle<sup>2</sup>: A program for terminals that are looking to improve equipment performance, as well as start the journey towards digitized maintenance management.
- Lifecycle<sup>3</sup>: An expert-enriched downtime management program, that uses a variety of our digital tools and hightouch expert engagement to ensure minimal equipment downtime.
- Lifecycle<sup>x</sup>: We call this program "x" because it is in fact a
  whole new world. Here data drives an outsourced model
  that is built to deliver the equipment availability your
  business needs to grow. We design a total eco-system
  that uses our premier services inside a single smart and
  accountable system.

## Crane Inspections



## Statutory, One-Time or Scheduled Inspections

Patented inspection tools that precisely establish the condition of your entire crane.

#### **Benefits**

- Maximize the safety and reliability of your equipment
- Proprietary software tools for industry-leading inspection standards
- Gain technical insight to make better decisions about your capital assets
- Improved spare parts stock planning
- Clear recommendations for preventive maintenance and repair actions
- Scope possibility of remote connection
- Adherence to more stringent regulations, our inspectors are always familiar with local requirements.

### **Crane Modernization**



## Complex & Custom Modernizations

Our dedicated Port Services engineering team offers a wide range of complex port crane modernizations and relocations.

 $Complex\,one-off\,modernization\,cases.\,For\,example:$ 

- Crane height and outreach modifications
- Lifting capacity increases
- Operational mode changes (e.g. from containers to bulk)
- Machinery upgrades
- Crane relocations
- Comprehensive drive and control system upgrade



## Ports. Evolved.

Scan the QR code to go online and discover what features are included in every Any Brand offering.







Konecranes is a global leader in material handling solutions, serving a broad range of customers across multiple industries. We consistently set the industry benchmark, from everyday improvements to the breakthroughs at moments that matter most, because we know we can always find a safer, more productive and sustainable way. That's why, with around 16,600 professionals in over 50 countries, Konecranes is trusted every day to lift, handle and move what the world needs. In 2023, Group sales totaled EUR 4.0 billion. Konecranes shares are listed on Nasdag Helsinki (symbol: KCR).

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