

INDUSTRIAL CRANES  
NUCLEAR CRANES  
PORT CRANES  
HEAVY DUTY LIFT TRUCKS  
**SERVICE**  
MACHINE TOOL SERVICE

PROCESS INDUSTRY

**KONECRANES**<sup>®</sup>  
Lifting Businesses<sup>™</sup>

# ADVANCED DIAGNOSTICS & PERFORMANCE SERVICES

For Heavy/Process Industries



# LIFTING BUSINESSES

## IN HEAVY/PROCESS INDUSTRIES

### GLOBAL CRANE LEADERSHIP

For crane products and services, companies around the globe trust Konecranes. Whether manufacturing, process industries, shipyards, ports and terminals, we bring together productivity-enhancing lifting solutions and services to drive operational performance and reliability.

In Region Americas, Konecranes is the industry leader in overhead crane maintenance services and lifting technology.

### BEYOND MAINTENANCE

Konecranes provides an extensive range of advanced diagnostic planning and performance services uniquely designed to meet the demands of heavy process industry.

#### Advanced Diagnostics

- > Crane Reliability Survey
- > RailQ – runway survey, crane geometric survey
- > Critical Component Assessment
- > Remote Monitoring
- > Maintenance Assessment Plan

#### Performance Services

- > Prescription/Reverse Engineered Parts & Components
- > Rebuilds & Overhauls
- > Engineered Modernization
- > Customized Training Programs
- > Outage Support
- > Maintenance Outsourcing
- > Smart Solutions™

### KONECRANES BY THE NUMBERS WORLDWIDE

<b>10,000</b> EMPLOYEES	<b>545</b> LOCATIONS WORLDWIDE	ACTIVE IN ALMOST <b>50</b> COUNTRIES	ESTIMATED ANNUAL PRODUCTION OF <b>6,000</b> CRANES
<b>1.5</b> MILLION ANNUAL SERVICE CALLS	ESTIMATED ANNUAL PRODUCTION OF <b>30,000</b> ROPE HOISTS <b>29,000</b> CHAIN HOISTS	MAINTENANCE CONTRACTS COVERING MORE THAN <b>362,000</b> CRANES OF DIFFERENT MAKES	LISTED ON THE NASDAQ OMX HELSINKI

We serve our customers by helping them enhance the safety and productivity of their operations through innovative technologies, customized maintenance programs and dedicated people. We seek to first understand our customer's business before applying our industry-wide experience and expertise. We then prove value through periodic performance reviews of mutually agreed upon goals. In essence, we are not just lifting things, we are "Lifting Businesses."



### INVESTMENTS IN R&D AND PERSONNEL

Our expertise is supported by strong investments in R&D, comprehensive engineering expertise and process industry experience gleaned from hundreds of thousands of cranes, hoists and other lifting equipment supplied and maintained around the globe.

Our services are based on the latest maintenance tools and technologies implemented by highly trained and experienced crane professionals.

Konecranes technical experts, technicians and service personnel are dedicated to helping your business decrease the cost of downtime and increase the productivity of uptime. This is what we call... Lifting Businesses.

### OUR FAMILY OF BRANDS

Our family of hoist and crane brands are operating in the most demanding of applications and environments including steel and other primary metals, wood yards, petrochemical and mining, as well as ports, shipyards and intermodal terminals. We know cranes and heavy/process industry.

**KONECRANES®**

**MORRIS**  
MATERIAL HANDLING  
OEM of P&H® Crane & Hoist Parts

**PROVINCIAL**  
CRANES

**CMS**  
CRANE MANUFACTURING  
& SERVICE

**NORTHERN™**

**Branco**

**SHEPARD  
NILES®**

**EUCLID**

**LYTTA CRANES**  
HOUSTON, TEXAS

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# DIAGNOSTIC, ANALYTIC & PLANNING SERVICES

... beyond your typical crane inspection to areas that cannot be seen.

## KNOWLEDGE IS POWER



### Crane Reliability Survey (CRS)

The Crane Reliability Survey (CRS) is an engineering assessment designed to give a reliable estimate of the remaining service life of the crane, including its structures, mechanical components and electrical systems.

Our CRS reports will highlight possible maintenance overhaul and modernization needs of the crane and allow you to make informed decisions regarding maintenance planning as well as equipment overhaul and replacement.

The original design service life of a crane and its critical components can be significantly reduced by a change in production throughput, high-capacity lifts, additional work shifts, overloads and shock loads.

It is important to create a service life benchmark, in particular as it comes to older, process duty/critical cranes in order to avoid unsafe conditions and sudden failures.

### RailQ-Runway Survey, Crane Geometric Survey

RailQ is an advanced survey technique that reduces the time it takes to perform a runway survey from days to hours, minimizing costly downtime. It's faster, safer and more accurate. RailQ is typically performed with the aid of an automated robot, which increases accuracy and effectiveness. The robot is also safer since there is no need for a person to walk the runway positioning targets. RailQ produces accurate and repeatable data that can be easily interpreted and visualized through our interactive tools.

### Critical Component Assessment (CCA)

The CCA is an advanced inspection process utilizing Non-Destructive Technology (NDT) to uncover defects and deficiencies in critical load-bearing and safety-related overhead lifting components not normally discovered during routine inspection.

Undetected defects and/or deficiencies can lead to catastrophic failure. Most compliance and preventive maintenance inspections rely on visual observations and measurements. Unfortunately, what you can't see can hurt you. Certain defects and deficiencies cannot be seen with the naked eye; others may occur within components that are not normally disassembled for inspection.

By utilizing NDT, proprietary technologies and proven techniques, our certified inspectors and technicians apply their experience and expertise to uncover defects and deficiencies in critical components that are not readily evident. Typical components targeted are gear trains, motors, hooks and hook shanks and wire rope.

### Remote Monitoring with 24/7 support

Konecranes can provide remote monitoring equipment, as well as monitoring services including productivity reports, 24/7 technical support and remote trouble shooting. We can begin working on the crane before our technicians arrive on site.

### Maintenance Assessment Plan (MAP)

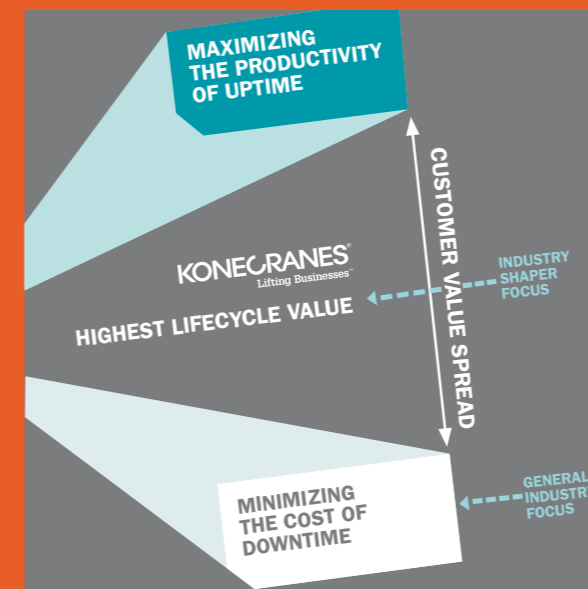
MAP is a process designed to analyze the effectiveness of your current maintenance practices and capabilities, benchmark the current state of your equipment, establish maintenance and downtime costs and provide options and recommendations for improvements.

#### What it looks at

- > Current condition assessment
- > Past maintenance and usage history
- > Current and future production requirements
- > Individual cranes, as well as the entire production envelope

#### What it gives you

- > Recommended optimal maintenance program
- > Opportunities/gaps in maintenance and material handling
- > An option to supplement your maintenance in key areas
- > A comprehensive economic planning report



# PERFORMANCE SERVICES

...to increase crane safety, performance and operations.

## Prescription/Reverse Engineered Parts & Components

Through the Reverse Engineering Process, virtually any obsolete, hard-to-find or first-time replacement part can be manufactured at or above the original specifications. Parts and components for all brands are custom engineered and designed to meet or surpass the OEM requirements as originally supplied with the crane. Typical improvements include changes to the material, design and/or manufacturing process which can improve performance and the overall lifespan of the part.

## Rebuilds and Overhauls

If the performance of your crane was initially meeting your needs but now is beginning to be affected by its age and usage, rebuilding or overhauling components can be an effective means of extending the life of your equipment. To minimize interruption, overhauls for components such as coil or sheet grabs, brakes, gearboxes and complete hoists can be taken off-site to our rebuild centers. If conditions warrant, we can also provide new hoists and other components. From our vast set of experience and capabilities, we will always recommend the best long-term solution.

## Engineered Modernizations

When your cranes fail to meet the requirements of your business, productivity suffers. As changes in production outpaces your aging cranes,

consider strategic upgrades and improvements. We can provide technologies to increase capacities, speeds, control, ergonomics and safety. Our unique smart solutions can effectively address almost any challenge.

## Outage Support

We can put together a team to augment your workforce during peak demands.

## Maintenance Outsourcing

We will tailor full on-site services that suit your unique needs including dedicated on-site technicians—you focus on your business, let us worry about your cranes. We will jointly develop KPIs to measure and track success. We recommend a Maintenance Assessment Plan as the first step in this process.

## CUSTOMIZED TRAINING

We train four ways:

- > Konecranes Training Institute Courses in Milwaukee: Students benefit from access to our 5,200 sq. ft. hands-on lab located in the Milwaukee area.
- > Konecranes Training Institute Courses in Los Angeles: We offer a number of our selected courses at our Los Angeles training center.
- > Regional Seminars: Scheduled in 40 cities per year reducing your costs and time for travel.
- > On-Site Courses: Eliminate additional travel expenses and let us do a standard course at your site or customize a course to meet your needs.

## YOU FOCUS ON YOUR BUSINESS – LET US WORRY ABOUT YOUR CRANES



**INSPECT**



**CORRECT**



**ENHANCE**

# SMART SOLUTIONS

## PROVEN TECHNOLOGIES AND APPLICATIONS

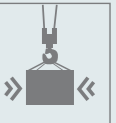
We have developed these technologies in real-life conditions to deal with operational challenges faced every day by crane operators around the world.

Each SMART SOLUTION can be applied on both old and new cranes.

SMART SOLUTIONS™ by Konecranes will make your crane smarter, and therefore your business more effective. That's another reason we say with confidence ... Lifting Businesses™

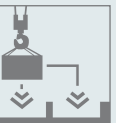
### Sway Control

Reduces accidents by preventing load sway. Keeps the load steady even when a relatively inexperienced operator is driving the crane. Quickens the learning curve of operator training.



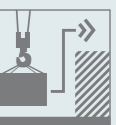
### End Positioning

Positioning prevents material damage. The operator can teach the crane designated positions for the load. Positions can be set up with the crane's remote control.



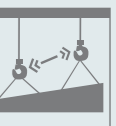
### Adjustable Working Limits

**Adjustable working area:** It is possible to define the area in which the crane is allowed to move. This is adjustable by the operator according to the task needed. **Protected area:** As a safety feature, the crane can be set up not to go to or to slow down in certain areas of the plant.



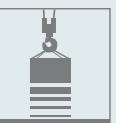
### Syncho

Makes it safer to handle long pieces with two or more hooks. Syncho keeps the hooks at the same elevation during hoisting so that there is little danger of the load becoming unbalanced.



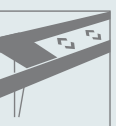
### Shock Load Control

Protects the crane structure by reducing avoidable stress caused by a heavy load being picked up from the ground.



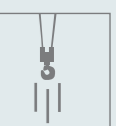
### Skew Control

Ensures smooth and steady tracking as the crane travels down the runway. Reduces adverse loads on the crane runway and surrounding structure.



### Extended Speed Range

The hook is lifted faster when it is empty or with small load.



### Remote Diagnostics

Collects a wide variety of information on crane performance and condition so that maintenance procedures can be timed exactly right.



### 24/7 Global Remote Service

Track your crane's operating condition through our 24/7 remote service. Among other advantages, correctly timed maintenance based on actual usage can improve the safety of your crane.





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SERVICE



MACHINE  
TOOL  
SERVICE



Konecranes is a world-leading group of Lifting Businesses™, serving a broad range of customers, including manufacturing and process industries, shipyards, ports and terminals. Konecranes provides productivity-enhancing lifting solutions as well as services for lifting equipment and machine tools of all makes.

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