

INDUSTRIAL CRANES
NUCLEAR CRANES
PORT CRANES
HEAVY-DUTY LIFT TRUCKS
SERVICE

MODERNIZATION SERVICES

KONECRANES[®]
Lifting Businesses[™]

INDUSTRIAL CRANE MODERNIZATION

THE SMART WAY TO EXTEND OVERHEAD CRANE SERVICE LIFE





NEW LIFE FOR VINTAGE CRANES

“Konecranes provided us with a much safer way to run our cranes. We have gained in productivity, safety, and we’ve had no inspection or detection problems since we’ve done this work. There have also been no repairs whatsoever. In the long run, this modernization is going to save us a lot of money. And when it comes to safety, we can’t put a price on it. That’s priceless.”

Jerome Mead

Operations and Quality Manager, AM Castle Metals

MAKE YESTERDAY'S CRANE WORK HARD FOR YOU TODAY AND TOMORROW

Modernizations can provide a complete transformation of your existing crane as an alternative to replacing it.

As your business evolves, you may find you need to increase the speed and lifting capacity of your crane, enhance ergonomics and operator comfort, apply new safety features and positioning capabilities, or simply replace high-maintenance, obsolete components with newer technology. Whatever your need, a modernization may be a viable option to protect and extend your original investment.

REBUILDING PRODUCTIVITY

A decision to modernize is often based on a need to achieve greater performance and throughput, and sometimes to support an entirely new process. We can rebuild your old crane to meet the demands of today's high-technology standards, typically at a substantially lower cost than for a new crane.



COMMON MODERNIZATIONS

Replacement of hoists, trolleys, operator cabs and controls to achieve increased capacity, speed, duty, ergonomics and/or load control.

Konecranes professionals are skilled and experienced in modernizations, large and small. We have the scale, expertise, technology and resources to modernize any make or model of overhead crane.

PLANNING FOR FUTURE LIFTING OPERATIONS

If you're considering whether a modernization is a valid option, you need a tool to help make decisions about the future use of your cranes.

A **Crane Reliability Study** is an engineering assessment that evaluates the current condition of your crane and provides a theoretical estimate of its remaining design life. The study looks at structures, mechanical components and electrical systems, and highlights possible maintenance and modernization needs.

We'll evaluate the overall condition of your crane structures and components in detail with a focus on safety, productivity, reliability, usability and remaining design life. We'll also provide a detailed report and further consultation with advice on maintenance, modernizations and future investments.



PROLONG THE ECONOMIC SERVICE LIFE OF YOUR CRANE

If you have an older crane, safety regulations and production requirements may have changed since it was built. Konecranes can update your crane to help you maintain safety and productivity, even as production demands increase. A modernization will also help you stay in compliance with current safety requirements and may reduce the risk of failure, helping you avoid costly downtime, injuries or damage to facilities, materials or products.

ELECTRICAL UPGRADES

1. MOTORS

DC and AC long-life motors are designed and built for hard reversing and plugging. Many options are available including AC squirrel cage motor, external blower motor and DC mill motor.

2. CONTROL SYSTEM UPGRADE

Upgrade to a variable frequency drive. Air conditioned E-house with variable frequency controls, static stepless and DC controls are available for severe applications.

3. BRIDGE DRIVES

Drives can be upgraded with heavy duty foot-mounted gearboxes. Shaft-mounted motor reducers can also be applied to eliminate cross shaft maintenance and alignment issues.

4. FESTOON SYSTEM OR ENERGY CHAIN

Festoon systems increase safety by replacing wear-prone open conductors and collectors. Energy Chain protects the power and control cables from mechanical wear and reduces the risk of external damage.

5. RADIO CONTROL

Floor-operated controls allow the operator ease of mobility and a good view of the load. The controls can be equipped with real-time load data.

6. LIMIT SWITCHES

Prevent the hook block from damaging the drum. Bridge and trolley travel limit switch protection. Collision avoidance systems, zone control and automation.

MECHANICAL UPGRADES

7. ERGONOMIC CAB AND ARM CHAIR

An open cab on the crane or enclosed insulated, air conditioned cab help provide maximum visibility. A deluxe console chair offers optimum comfort to the operator.

8. END TRUCKS AND WHEEL ASSEMBLIES

Anti-friction bearings help meet increased productivity demands. Konecranes high-capacity end trucks are designed to lengthen wheel life and improve crane tracking.

9. SELF-ADJUSTING, BONDED NON-ABESTOS, SELF-ALIGNING BRAKES

These brakes reduce maintenance by automatically compensating for lining wear. DC AISE spring set, electric release or AC impulse-actuated shoe brakes are available.

10. HOIST GEAR CASE

Upgrading lift capacity. Shafts rotate on spherical bearings encapsulated in machined retainers. Helical/spur gearing is precision machined and heat treated for long life.

11. PLATFORMS

Increase safety and maintenance accessibility by adding or improving platforms.

12. GIRDER MODIFICATIONS AND REINFORCEMENTS

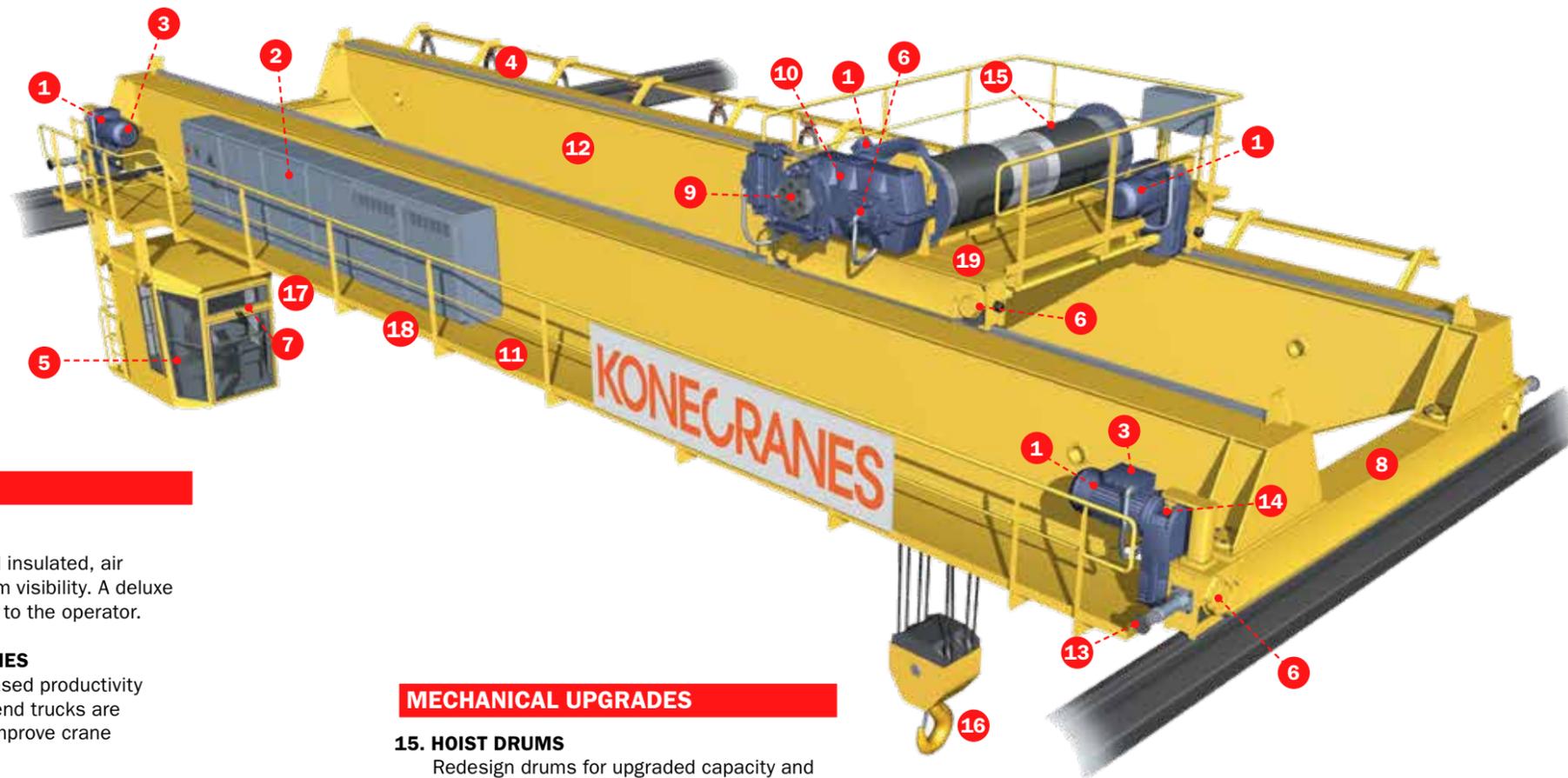
We can increase or decrease the length of the girder span, which may be required during building expansions or when fitting a used crane into an existing building. We can also provide structurally improved end ties and end trucks for severe applications to address fatigue and repair issues.

13. BRIDGE BUMPERS

Protect the crane and the building by installing a spring, hydraulic or rubber bridge bumper.

14. BRIDGE BRAKES

Brakes for cab/floor operation. Includes electric shoe, electric/hydraulic shoe, DC spring set, or electric release disc brake.



MECHANICAL UPGRADES

15. HOIST DRUMS

Redesign drums for upgraded capacity and performance.

16. HOOK BLOCKS

We offer hook blocks in a wide variety of sizes and configurations, including rotating blocks or specially-designed blocks for severe duty applications. We also offer common wear items such as hooks, frames, pins, sheaves, bearings and safety latches.

TECHNOLOGY UPGRADES

17. TRUCONNECT REMOTE MONITORING

The TRUCONNECT Modem Upgrade has been designed to equip a crane with a modem for TRUCONNECT Remote Monitoring. TRUCONNECT Remote Monitoring uses sensors to collect data, such as running time, motor starts, work cycles and emergency stops, providing visibility to crane usage.

18. SMART FEATURES

Smart Features are Konecranes-designed add-ons that work together or individually to improve safety, cycle time and load positioning. They add intelligence to your crane with purpose-built software and hardware. Smart Features include Sway Control, Assisted Load Turning, End Positioning and more.

COMPLETE TROLLEY UPGRADE

19. SMARTON TROLLEY

The SMARTON® trolley is built for heavy process industries and applications. The motor, gearbox and control unit are designed and manufactured in-house for excellent lifting performance and long life. The flange-mounted motors have integrated brakes, which support the proper alignment of the machinery.



UNITON™ TROLLEY

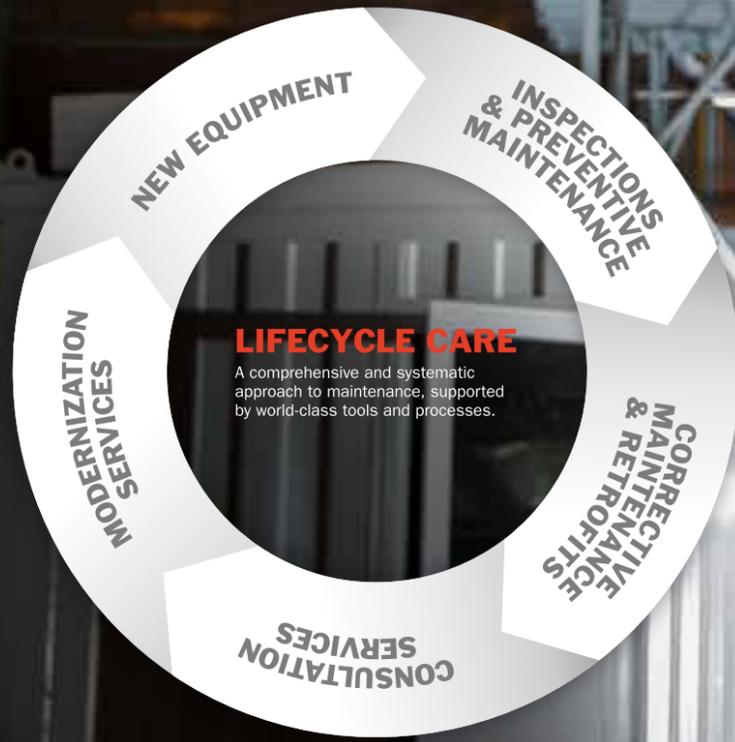
The UNITON trolley is available with multiple configurations and a wide range of hoisting speeds, load control features, and load and duty class options. With a lifting capacity of up to 160 tons on a single trolley (320 tons with two trolleys), UNITON can be built to meet project-specific requirements in almost any application. Its modular design and construction make maintenance and part replacement easy.



CJ TROLLEY

The CJ trolley is designed for heavy use in industrial applications. Its greatest attribute is its ease of maintenance. The foot-mounted gear case is integrated into the trolley, which enables easy access to the gears, shafts and pinions without needing to remove the entire trolley.





LIFECYCLE CARE IN REAL TIME

Lifecycle Care is our comprehensive and systematic approach to maintenance, supported by world-class tools and processes. In order to deliver Lifecycle Care in Real Time, we use the Industrial Internet, connecting data, machines and people. We bring together usage and maintenance data and combine it with our knowledge and experience, providing insights that allow our customers to optimize their maintenance operations and activities.

TRUCONNECT REMOTE SERVICE

TRUCONNECT® is our suite of remote service products and applications that support maintenance operations and drive improvements in safety and productivity. It is an important building block in delivering Lifecycle Care in Real Time.

Adding **TRUCONNECT Remote Monitoring** to your crane will provide you with asset usage and

operating information, text message alerts and estimations of the remaining design working period of selected components. This data will help you make informed maintenance decisions and improve the safety and productivity of your operations.

CUSTOMER PORTAL

When you have a maintenance agreement with Konecranes or TRUCONNECT Remote Monitoring, you get access to **yourKONECRANES.com**, our cloud-based customer portal. Usage data, maintenance data and asset details are linked, giving a transparent view of events and activities over any selected time interval.

Aggregated data can be viewed, analyzed and shared quickly, for a single asset or an entire fleet. Insights can be drawn by observing anomalies, patterns and trends, helping you make informed maintenance decisions.

A SERVICE-MINDED TEAM

You can depend on Konecranes well beyond installation. Upon completion of your modernization, we'll provide complete parts and maintenance manuals. We can also provide comprehensive maintenance and repair services to keep your crane performing for years to come.

INSPECTIONS AND PREVENTIVE MAINTENANCE

We can provide you with compliance and preventive maintenance inspections to satisfy your local requirements. Preventive maintenance is essential to the health of your equipment. It can include visual checks and routine maintenance work, such as adjusting and lubricating, and replacement of wearing parts.

SPARE PARTS

When it comes to parts and service, it doesn't matter who made your crane. We offer genuine Konecranes spare parts as well as replacement parts for all other makes and models.





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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 of all makes. The Group has 18,000 employees at 600 locations in 50 countries. Konecranes class A shares are listed on the Nasdaq Helsinki (symbol: KCR).

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