

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

**PETROCHEMICAL INDUSTRY**

**KONECRANES®**  
Lifting Businesses™

**BUILT FOR A LIFETIME OF RELIABLE LIFTING**  
**COKER CRANES**





## WE KNOW THE PETROCHEMICAL INDUSTRY

The coke pit is the production heart of a petrochemical plant, a harsh environment full of moisture, corrosive fumes and abrasive dust. Work is fast and continuous, and downtime is crippling to production. Konecranes can provide lifting equipment and service that can meet these challenges safely and efficiently.

### LOAD CONTROL TECHNOLOGIES REDUCE STRESS ON PEOPLE AND MACHINES

Konecranes proprietary load control technologies are software programs that operate in the background of our coker cranes, making the operator's job safer, easier, and less fatiguing. These programs also reduce stress on controls and machinery.

- DynAGrab synchronizes the hoisting machineries, sharing the bucket hold and close hoists properly between them, reducing overloads and increasing rope and mechanical component life.
- DynaTrack skew control reduces wheel and rail wear and reduces stress on wheels, bearings, rails, rail attachments and support structures.
- DynAPilot sway control reduces load sway, reducing collisions with hoppers and pit walls, reducing damage to buckets, hoppers and the pit.

In addition, Konecranes CMS Monitoring software provides equipment status and alarms and can archive that information for use in maintenance planning and trouble-shooting. And TRUCONNECT® Remote Support provides 24/7 access to a global network of crane experts and specialists, offering problem solving and troubleshooting.

Our cloud-based customer portal yourKONECRANES.com links usage data, maintenance data and asset details giving you a transparent view of events and activities over any selected time interval for one crane or your entire fleet.

### SUPPORTING YOUR ENTIRE PROCESS

Petrochemical production cranes have to be especially durable to withstand the constant wear and stress of coke-handling environments. Our service experts can provide guidance on the right inspections and maintenance for your cranes.

### EXPERTISE THAT MAKES A DIFFERENCE

By working closely with customers, Konecranes has developed a body of experience in petrochemical industry processes and material handling applications. By applying our expertise, advanced technology and service offerings, we can make a difference in the safety and productivity of your operation.



## CRANES TAILORED TO YOUR BUSINESS

Konecranes offers a variety of crane types that can be adapted to the structure of your facility and customized to your exact specifications.

- Bridge crane
- Semi-gantry crane
- Portal semi-gantry crane
- Custom crane with fixed hopper to conveyor



# SMART DESIGN FOR A TOUGH JOB

Our coker cranes include technologies that promote safe and reliable operations, improve productivity and maximize service life.

### GRAB CONTROL - DYNAGRAB

The efficiency of your coker operation depends on your operators' ability to pack full buckets quickly. Our proprietary grab control feature automates the sinking and filling process and alerts the operator when it's time to lift the load, resulting in fewer trips, shorter load cycles and less operator training.

### REGENERATIVE NETWORK BRAKING - DYNAREG

Instead of dissipating heat through resistors, regenerative braking returns runoff power to the energy grid of the crane.

### SWAY CONTROL - DYNAPILOT

By minimizing load sway, sway control can help reduce the risk of excessive load spillage or bucket impacts with obstacles such as the hopper or pit wall. Sway control makes new operators more confident, increasing safety and productivity and reducing training time.



SEE SWAY CONTROL IN ACTION

### AUTO-STEERING CONTROL - DYNATRACK

Inaccurate tracking (also known as skewing) can be a major problem for long span bridge-style coker cranes. Auto-steering control (DynaTrack) employs laser sensors for precise tracking along the runway, which can drastically reduce wear to wheels and rails, stresses to crane structures and wheel bearings and the possibility of structural overloads.

### DATA ARCHIVING - CRANE MONITORING SYSTEM (CMS)

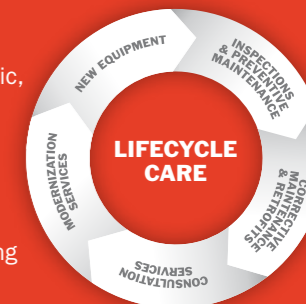
Monitor more than 400 data points and store up to four years of data with this optional feature. Data is routed to the operator's cab and the control house.



# A SERVICE-MINDED TEAM

### OUR APPROACH TO CRANE MAINTENANCE

Lifecycle Care is a systematic, consistent, comprehensive and professional approach to maintenance, supported by world-class tools and processes. Highest lifecycle value results from maximizing the productivity of uptime in addition to minimizing the cost of downtime. We believe merely keeping your cranes running is not sufficient. We must also help you achieve the highest productivity during every shift.



### PREVENTIVE MAINTENANCE FOR IMPROVING SAFETY AND PRODUCTIVITY

An active preventive maintenance program is recommended for your lifting equipment. We can create a maintenance plan based on your equipment, operating environment, manufacturer recommendations and statutory requirements.

### PARTS FOR ALL MAKES AND MODELS

We offer genuine Konecranes spare parts as well as replacement parts for all other makes and models. We keep tens of thousands of crane parts in stock across 13 distribution centers around the world.

### CRANE OPERATOR TRAINING

This training gives participants the working knowledge to assist in reducing operator errors that may lead to unnecessary downtime. Crane operator training can provide additional knowledge to help avoid possible serious injury to personnel caused by improper crane operation.



**MOMENT ISOLATING MACHINERY MOUNTING**

Our moment-isolating machinery mounting protects the gearbox from the natural structural deflection that occurs when cranes lift and lower loads. Instead of rigid mounting to the trolley frame, the gearbox articulates in unison with the drum shaft. This reduces several maintenance concerns such as drum gear misalignment, cracking drum welds and fatigue on the drum tail-end shaft. The drum can be removed without opening the gearbox, and machinery can be replaced after maintenance without shimming and re-aligning components. This hoist machinery mounting yields lower maintenance costs and higher uptime/profitability.

**DRUM AND WIRE ROPE FEATURES**

Our cranes have a high drum-to-wire rope ratio (30:1). A larger drum size increases the wire rope life. This rope reeving system can significantly reduce maintenance costs over time.

**ROPE STORAGE**

Konecranes has designed its rope drums with space for three re-reevings of the rope in the drum of the closing lines. The quantity of the rope reeved in the bucket, which is the highest-wear portion of the rope, can be cut and re-reeved three times before complete replacement of the closing ropes is required. This reduces the downtime associated with rope replacements and helps increase production.

**LOAD CELLS ON EACH DRUM, WITH SUMMING**

To help prevent overloaded or unbalanced loads, we use intelligent load cells on each drum with a load-summing feature. Proprietary software is used for proper sharing of the load by the hoisting and closing machineries, and to prevent overloads, detect slack-loads, and provide data for collection of load handling history.

**DURABLE BEARINGS AND GEARS**

Our bearings are available with 50,000 hours bearing life, even longer than CMAA Class F requires. All gearing is 58 HRC, hardened and finish-ground, built to AGMA Class Q 11 minimum. We carburize our gears for the durability needed to withstand daily, near-constant use. For easier maintenance, we group lubrication fittings together at one central point on the trolley/hoist and both ends of the bridge end trucks for ease of maintenance.

# DESIGNED FOR SAFETY AND ERGONOMICS AND BUILT TO LAST

We understand that coke-producing facilities run around the clock in harsh environments. With short maintenance intervals and little time for major overhauls, unplanned downtime can have significant impact on productivity and revenue.

All of our cranes come with durable, high-quality components built for years of reliable coke lifting. The design features of our coker cranes are developed through dialogue with refinery users all over the world.

All cranes in the hazardous production area must be protected against wear and corrosion from heat, dust, moisture and constant use. That's why our coker cranes are built to withstand your toughest conditions.

All variations of our coker cranes are assembled with the same standardized components. Interchangeability reduces part counts and speeds up delivery of replacement spares.

**OPTIONAL SPARE INVERTERS, AIR CONDITIONERS, REGEN UNITS AND TRAVEL DRIVES**

Designed specifically for high-demand applications, Konecranes inverters can be paired with optional wired-in spare inverters and regen units. These spare inverters can be switched from spare to primary mode in minutes, allowing removal and repair of a failed unit with minimal interruption to crane operation. Redundant bridge and trolley drives are also available for optimal uptime and productivity.

**SAFER CONTROL HOUSES**

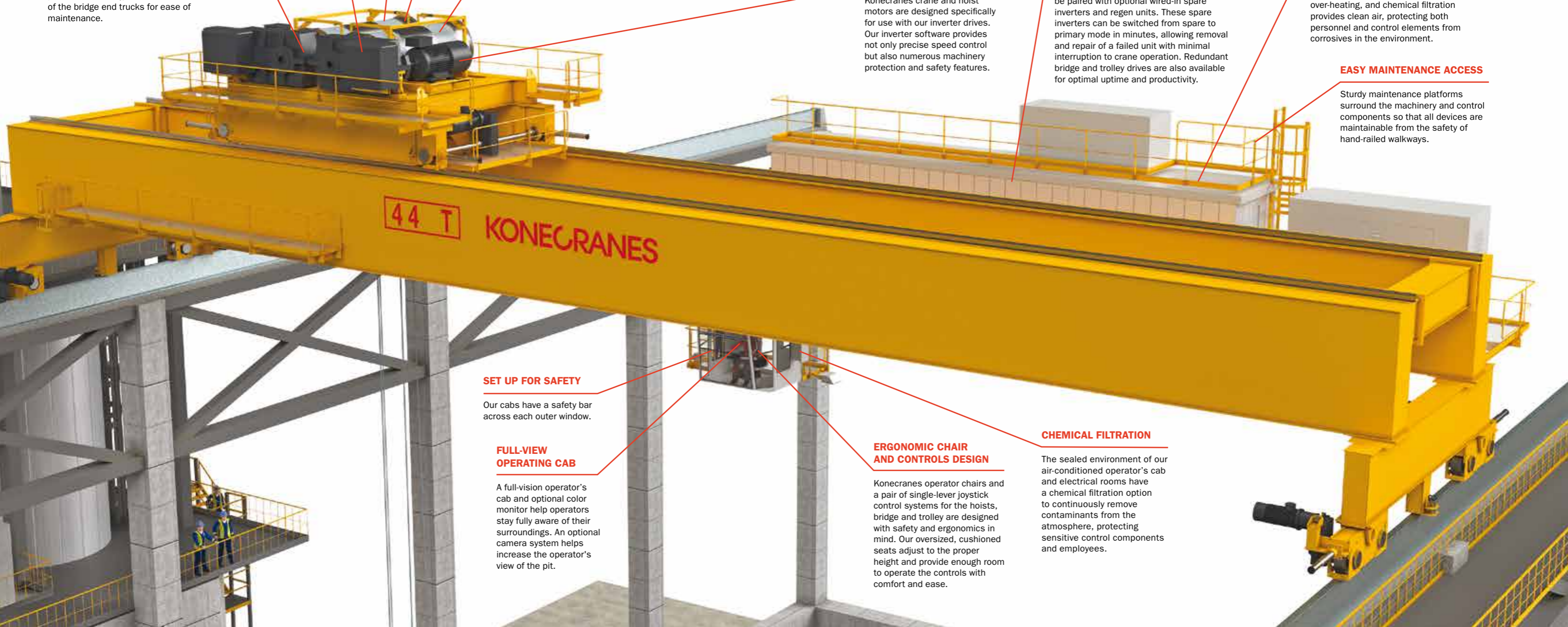
The control house is weather-protected and pressurized. An air conditioning system prevents the controls from over-heating, and chemical filtration provides clean air, protecting both personnel and control elements from corrosives in the environment.

**INVERTER DUTY MOTORS**

Konecranes crane and hoist motors are designed specifically for use with our inverter drives. Our inverter software provides not only precise speed control but also numerous machinery protection and safety features.

**EASY MAINTENANCE ACCESS**

Sturdy maintenance platforms surround the machinery and control components so that all devices are maintainable from the safety of hand-railed walkways.



**SET UP FOR SAFETY**

Our cabs have a safety bar across each outer window.

**FULL-VIEW OPERATING CAB**

A full-vision operator's cab and optional color monitor help operators stay fully aware of their surroundings. An optional camera system helps increase the operator's view of the pit.

**ERGONOMIC CHAIR AND CONTROLS DESIGN**

Konecranes operator chairs and a pair of single-lever joystick control systems for the hoists, bridge and trolley are designed with safety and ergonomics in mind. Our oversized, cushioned seats adjust to the proper height and provide enough room to operate the controls with comfort and ease.

**CHEMICAL FILTRATION**

The sealed environment of our air-conditioned operator's cab and electrical rooms have a chemical filtration option to continuously remove contaminants from the atmosphere, protecting sensitive control components and employees.



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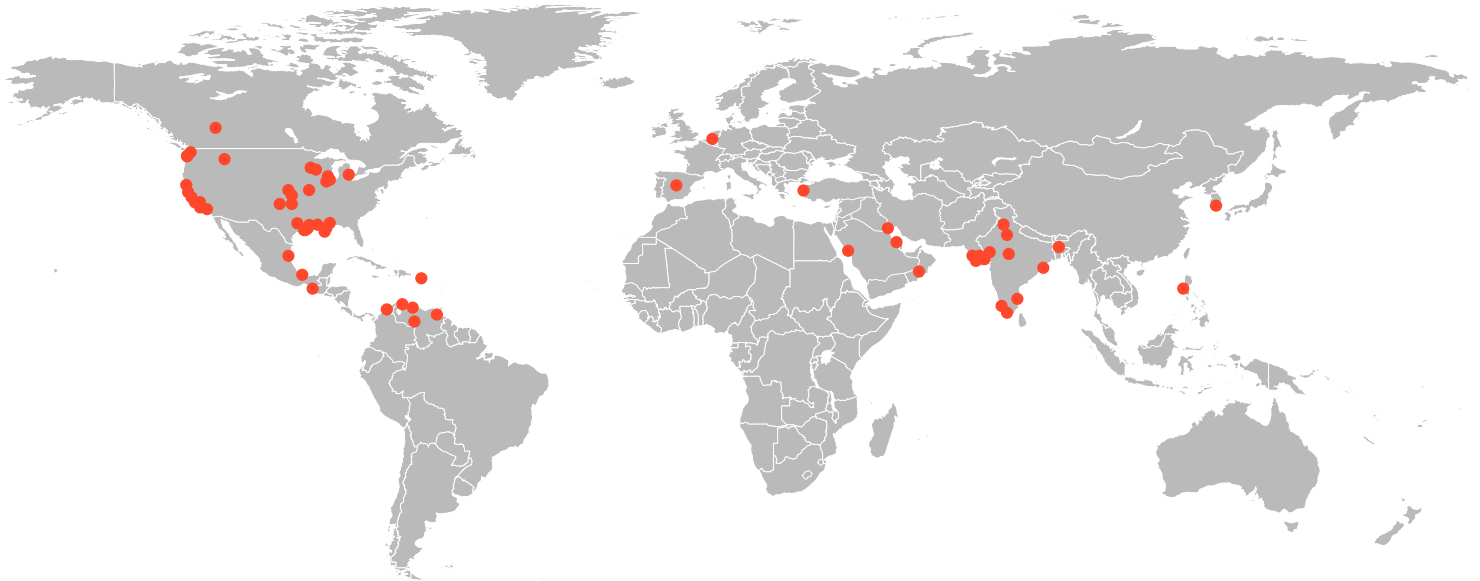


MACHINE  
TOOL  
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Konecranes is a world-leading group of Lifting Businesses™ offering lifting equipment and services that improve productivity in a wide variety of industries. The company is listed on Nasdaq Helsinki Ltd (symbol: KCR1V). With approximately 12,000 employees at 600 locations in nearly 50 countries we have the resources, technology and determination to deliver on the promise of Lifting Businesses™.

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**INSTALLING AND SERVICING COKER  
CRANES AROUND THE WORLD**

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