

PRODUCTS FOR  
HAZARDOUS ENVIRONMENTS

# Complete range



# Lower your risk

You can't completely eliminate danger in explosive atmospheres, but with the right equipment and the right training, you can boost work efficiency while improving safety and minimizing the risk to your loads, your surroundings and your personnel.

In this brochure, we present the Konecranes range of fully optimizable cranes and hoists specially designed for the demanding requirements of hazardous environments. Our design quality, technical expertise and after-sales service ensure your equipment remains safe to run and fully operational throughout a long and productive lifecycle.



See our cranes in action and get to know the EX product range by watching an introduction video.

## CUSTOMER AREAS

- Oil refineries, rigs and processing plants
- Chemical industry
- Printing industries, paper and textiles
- Aircraft refuelling and hangars
- Surface coating industries
- Sewerage treatment plants
- Gas pipelines and distribution centers
- Gas power plants
- LNG- Natural gas plants
- Grain handling and storage
- Woodworking industry
- Sugar refineries
- Metal surface grinding, especially aluminium dusts and particles



## Certifications

Quality is especially important in hazardous environments, where safety and efficiency are key. Multiple certifications verify the high standard of our products: IECEx for the world, ATEX for Europe, TRCU for Russia, CSA US for the United States and INMETRO for Brazil. All of them are

precise and demanding. For example, the ATEX directive gives strict rules for constant production and product quality follow-up. These certificates confirm that Konecranes follows all necessary regulations.



# Environment definitions

Each regional certification has its own definition of hazardous environments. We present two here as examples of how our cranes can suit your particular circumstances.

## According to Atex:

### EX ZONES – GAS ENVIRONMENT

#### ZONE 1

A place in which an explosive atmosphere consisting of a mixture with air or flammable substances in the form of gas, vapor or mist is likely to occur in normal operation occasionally.

#### ZONE 2

A place in which an explosive atmosphere consisting of a mixture with air or flammable substances in the form of gas, vapor or mist is not likely to occur in normal operation but, if it does occur, will persist for a short period only.

### EX zones – dust environment

#### ZONE 21

A place in which an explosive atmosphere in the form of a cloud of combustible dust in air is likely to occur in normal operation occasionally.

#### ZONE 22

A place in which an explosive atmosphere in the form of a cloud of combustible dust in air is not likely to occur in normal operation, but if it does occur, will persist for a short period only.

## According to CSA US:

### CLASS I

A location made hazardous by the presence of flammable gases or vapors that may be present in the air in quantities sufficient to produce an explosive or ignitable mixture.

### DIVISION 2

A location where a classified hazard does not normally exist, but might appear under abnormal conditions.

### ZONE 2

An area in which an explosive gas atmosphere does not normally exist.



**Konecranes wants customer to advise the required EX marking.**

### Suitability for gas / dust environment

	Zone 2 / Zone 22	Zone 1 / Zone 21	Zone 0 / Zone 20	Class 1 Div 2	Read more on pages
EXCXT wire rope hoist crane	✓	✓	✗	✓	7
EXCXT wire rope hoist	✓	✓	✗	✓	6
EXN electric chain hoist crane	✓	✓	✗	✓	9
EXN electric chain hoist	✓	✓	✗	✓	8
EXCLX electric chain hoist	Zone 22 only	✗	✗	✗	10
EKM2 manual hoist	✓	✓	✗	✗	13
EXXM and EXXA workstation cranes	✓	✓	✗	✗	11
EX jib crane	✓	✓	✗	✗	12

**To find the right solution for each environment, we need to know the kind of explosive atmosphere in which you will be using your lifting device.**



# EXCXT Wire Rope Hoists

Very compact hoist dimensions due to large rope drum diameter.

This hoist represents the ideal in safety and quality within the lifting equipment industry. An innovative mechanical configuration prevents sparking – ideal for use around the flammable materials that may occur in hazardous environments – and its intuitive controls and high-level motor and gear technology have made it the industry benchmark.

**Safety**

- EXCXT is certified according to most EX approvals, like ATEX, IECEx and CSA.
- Reliable contactor controls
- 2 step hoisting limit switch for safe load handling
- Reliable mechanical overload protection

**Options**

- Solo hoist or monorail
- Buy with a whole crane or install as a modernization hoist to extend the life of your existing equipment

**Performance**

- Ensure the high quality
- Easy load handling with precise movements and ergonomic controls
- Large rope drum diameter keeps hoist compact
- IP66 hoisting and travelling motors
- Heavy-duty 50% ED hoisting motors
- 2 speed hoisting with 6:1 speed ratio enables easy and accurate load handling

Suitability for gas / dust environment			
Zone 2 / Zone 22	Zone 1 / Zone 21	Zone 0 / Zone 20	Class I / Div 2
✓	✓	✗	✓

# EXCXT Wire Rope Hoists Crane

In your everyday work, you must be able to rely on your tools. This is especially true in a hazardous environment, where safety is the most important factor.

With this crane, you get all the benefits of the EXCXT hoist, as well as these additional features:

**Safety**

- Crane electrics located in EX enclosures with separate D-type flameproof section
- EX-certified crane components
- Minimized hook approaches due to compact hoist

**Performance**

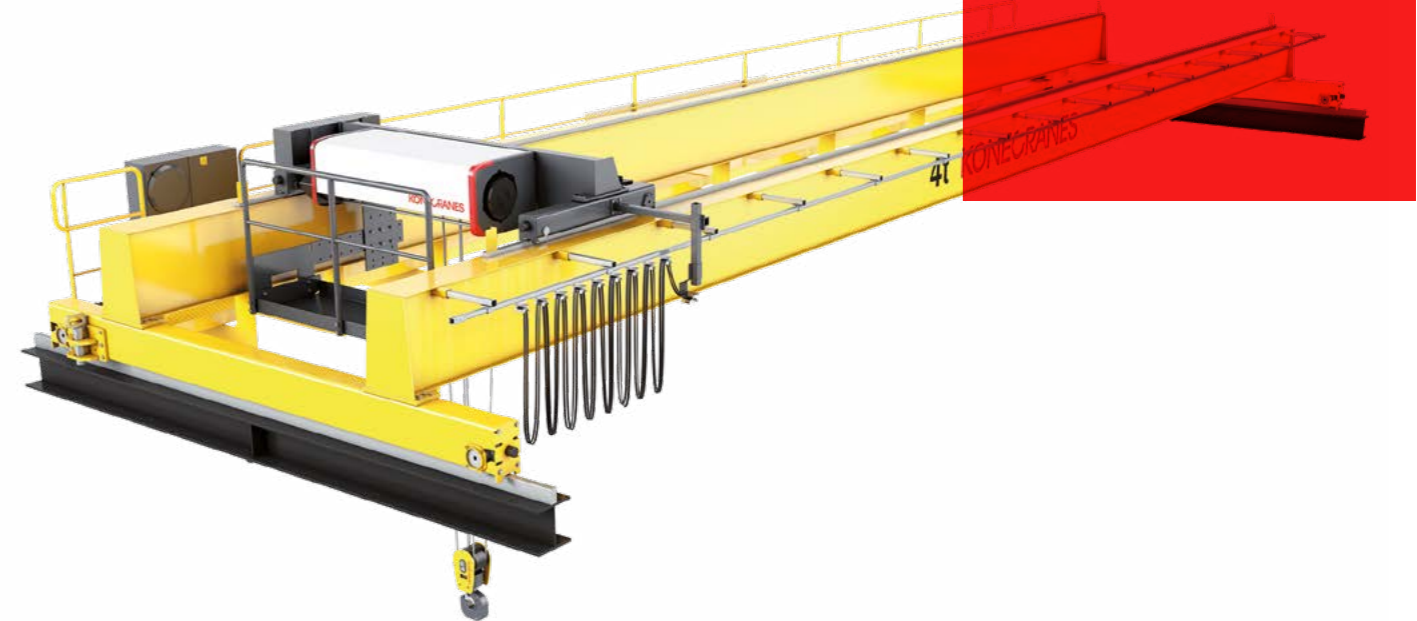
- Easy maintenance
- Design allows compact dimensions
- Sturdy steel structure for strength and durability

**Options**

- Multiple options available such as radio, crane controls, crane lights and stand-by heaters for humid conditions

Suitability for gas / dust environment			
Zone 2 / Zone 22	Zone 1 / Zone 21	Zone 0 / Zone 20	Class I / Div 2
✓	✓	✗	✓

Specially-designed components give a longer lifetime.





# EXN Electric Chain Hoists

This durable hoist gives you a high level of performance and reliability you need for an unpredictable hazardous environment. It has the flexibility to be configured for your particular conditions, designed to increase the safety of your operators and the surrounding area.

### Safety

- Available with various EX approvals
- Slipping clutch prevents overload
- Service-friendly "DE" technology electric cubicles with separate flameproof "D" section
- Contactor controls for reliable performance
- Slipping clutch protects against overload motors

### Performance

- Frequent load handling
- 2 speed control designed for smooth and efficient load handling
- Easy maintenance
- Accurate load positioning with 4:1 traveling speed ratio
- High-performance 60% ED, 360 starts per hour hoisting

### Options

- Hook suspended hoist
- Manual chain travel trolley
- Low or normal headroom trolley
- Motorized or push trolley
- Buy as a single hoist, as part of a new crane, or install as a modernization hoist to extend the life of your existing equipment

Suitability for gas / dust environment		
Zone 2 / Zone 22	Zone 1 / Zone 21	Zone 0 / Zone 20
✓	✓	✗

Smooth and efficient load handling with 2 speed hoisting and travelling movements.

# EXN Electric Chain Hoists Crane

Suitable for a wide range of hazardous environments, the flexibility of this crane is its best feature. Its high level of reliability and ease of use means more safety, more productivity, and much less downtime.

With this crane, you get all the benefits of the EXN hoist, as well as these additional features:

### Safety

- EX-certified crane components
- Optimized approach dimensions due to compact hoist

### Performance

- Gears, motors, and other core components designed just for cranes and built to last
- Ergonomic controls

### Options

- Up to 5 tons
- Radio control, crane lights, and standby heaters for cold and humid conditions

Suitability for gas / dust environment		
Zone 2 / Zone 22	Zone 1 / Zone 21	Zone 0 / Zone 20
✓	✓	✗

Suitable for demanding Zone 1 and Zone 21 explosive atmospheres.





**Designed and tested specifically to fulfil ATEX Zone 22 environment requirements.**

## EXCLX Electric Chain Hoist for Zone 22

This durable hoist gives you a high level of performance and reliability you need for an unpredictable hazardous environment. EXCLX is designed to increase the safety of your operators and the extensive product range allows you to select the needed hoist model for your application.

### Safety

- Safe, reliable and easy to operate
- Maximum surface temperature 120°C (@40°C ambient temperature) and the most demanding IIIC dust classification ensures long and safe use in Zone 22 dust hazardous environments
- Temperature monitoring prevents overheating

### Performance

- Compact size
- 2 speed hoisting enables smooth travelling and accurate load handling
- Wide ambient temperature range from -20°C to +40 °C
- IP66 motors and enclosures

### Options

- Available hoist suspensions: eye and hook
- Available trolley models: push, chain travel and motorized
- Multiple options for increased safety and efficient load handling

Suitability for gas / dust environment		
Zone 2 / Zone 22	Zone 1 / Zone 21	Zone 0 / Zone 20
Zone 22 only	×	×

## EXXM and EXXA Workstation Cranes

Not all hazardous environments are the same, and neither are all workstations. Choose the steel EXXM for strength and durability, made to work hard and last. The aluminum EXXA has a light structure with a low rolling resistance, so load positioning is easier and more accurate than ever.

### Safety

- Fully EX-certified workstation crane system
- Good ergonomics increase operator safety

### Performance

- Optimized headroom solutions
- Designed for smooth travelling, with low rolling resistance wheels, high-quality running surface and joints
- Made from durable steel or aluminum
- Fast installation
- Easy to expand
- Steel systems have long suspension distances and span lengths
- Aluminum systems are lighter than steel by about 50% and with less rolling resistance

### Options

- Multiple options for managing different lifting needs
- Different system configurations such as monorail, single and double girder workstation cranes
- Combine EXXM and EXXA with electric chain hoists or manual hoists

Suitability for gas / dust environment		
Zone 2 / Zone 22	Zone 1 / Zone 21	Zone 0 / Zone 20
✓	✓	×

**Efficient load handling up to 2 tons.**





Jib cranes offer outstanding performance and flexibility.

## EX Jib Crane

Konecranes jib cranes are easy to install and operate. Used almost everywhere, you can find them in small workshops, big factory assembly lines, manufacturing plants. Their flexible application clearly demonstrates our technical knowledge and long experience in the design of cranes.

### Safety

- Main disconnect switch as standard
- Separate emergency stop button on hoist pendant

### Performance

- Easy and fast installation
- Designed for accurate load handling with 2 speed hoisting
- Low deadweight reduces structural stress

### Options

- Flexible enough to use almost anywhere: durable, even if your needs change
- Can be equipped with EXCXT, EXN, EXCLX or EKM2 hoists.

Suitability for gas / dust environment		
Zone 2 / Zone 22	Zone 1 / Zone 21	Zone 0 / Zone 20
✓	✓	✗

## EKM2 Manual Hoist

When you don't need to lift every day, the EKM2 manual hoist combined with the EKPT manual trolley offers an optimal, cost-effective solution. It's ideal when your facility has less frequent lifting needs, or you want a spare hoist to support your other lifting equipment during busy periods. Stainless steel chain and corrosion protection give your hoist a longer lifetime.

### Safety

- Stainless steel hand chain
- Copper-coated hooks and trolley wheels prevent sparks
- Rubber buffers to prevent collisions
- Overload limiter
- Spark prevention features
  - Stainless steel hand chain
  - Copper-coated hooks and trolley wheels prevent sparks
  - Rubber buffers to prevent collisions

### Options

- Lifting capacity up to 20 tons
- Chain collectors
- Push trolley, chain travel trolley or hook suspended hoist

Suitability for gas / dust environment		
Zone 2 / Zone 22	Zone 1 / Zone 21	Zone 0 / Zone 20
✓	✓	✗

### Performance

- Galvanized and calibrated load chain
- ISO hooks with safety latch to ease load handling
- Hoists and trolleys powder painted for corrosion protection

Konecranes manual hoists are a simple and reliable solution for hazardous environments.



# Keeping your equipment up and running

We provide specialized maintenance and spare parts for all types and makes of lifting equipment for hazardous environments – from a single piece of equipment to entire operations. Our objectives are to improve the safety and productivity of your operations, and maximize the durability of your cranes.

## Our approach to crane maintenance

Lifecycle care results in higher lifecycle value – maximizing the productivity of uptime, minimizing the cost of downtime, and making sure your crane lasts.

## Konecranes service programs

From the first CONTACT, to our professional evaluation of the CONDITION of your equipment, to preventive maintenance and the consultation services that provide optimal CARE, Konecranes will tailor a service program to lift your business. When a mutual COMMITMENT to maintenance outsourcing or COMPLETE maintenance and material handling outsourcing is required, Konecranes has the experience and resources to help you meet your business objectives.

## Spare parts for Konecranes EX equipment

Our global spare parts network offers an excellent availability of parts, including parts designed specifically for hazardous environments, wherever you are located.

## EX crane modernizations

Instead of replacing your whole crane, a modernization can update it with the latest technology. Our customers with equipment for hazardous environments most often replace hoists, trolleys and traveling machinery for better capacity, speed, duty and load control. They also frequently upgrade to a higher EX classification.



Read more about our service programs

## WHY CHOOSE KONECRANES SERVICE?

- One of the largest service networks in the industry
- 600 locations worldwide
- 1,75 million annual service calls
- 6,000 remote connections
- 600,000 pieces of equipment under maintenance contract





CUSTOMER STORY

# Modernization with EXCXT hoist

SABIC, the Saudi Basic Industries Corporation, is one of the world's leading manufacturers of chemicals, fertilizers, plastics and metals. At its Wilton site in Teeside, SABIC UK produces petrochemicals, including propylene and ethylene.

**"EXCXT hoists were the right solution for this project."**

Heikki Kreku  
Konecranes UK Engineering Manager



Modernization of its 20-ton pneumatic maintenance cranes has improved safety and reliability and extended crane life. Inspection and maintenance contracts make long-term use of Konecranes expertise and global service.

The plant's old cranes were fully pneumatic, with air-driven motors for all movements. Modernization included removal of the trolleys, a complete stripping of existing controls, installation of new trolleys and electrical control systems, and new power supply systems for the crane, trolley, and crane controllers.

## New hoists with secure futures

"EXCXT hoists were the right solution for this project," says Heikki Kreku, a Konecranes UK engineering manager.

Thanks to the refurbishment, spare parts are now readily available. The crane modernization has greatly reduced the risk that SABIC UK might run into any problems during a plant maintenance turnaround event.

SABIC was very pleased with the result of this modernization project. They also appreciated the safe working practice and professional conduct of the Konecranes site technicians involved. Inspection and maintenance contracts are now in place for both SABIC UK sites, Wilton and North Tees.



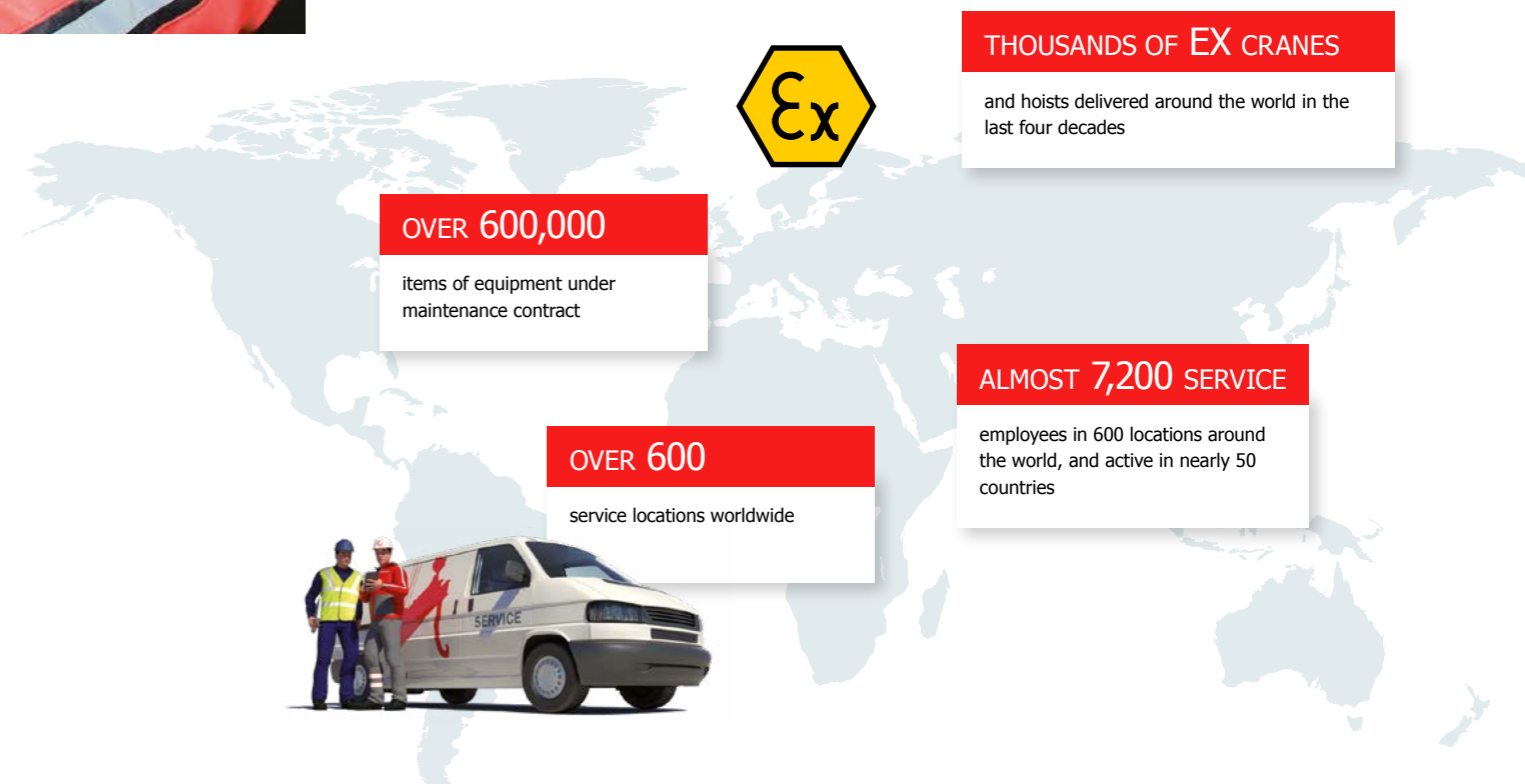
# Highest lifecycle value

Our cranes deliver high-quality performance using the best technology available, and are built to last. The technical expertise that goes into Konecranes design combined with regular maintenance and service results in less risk in your hazardous work environment and a reliable, long-term investment. We call this highest lifecycle value.

**We've been building cranes for more than 80 years. You can be sure that our technical knowledge and cumulative experience will help us to stay leaders in lifting for the next 80 years and beyond.**


From the earliest design phase, through technical optimization for your specific lifting needs, we carefully choose all components to give you the extra level of safety you require in the hazardous atmospheres of chemical and petrochemical plants, oil refineries, gas power plants, wastewater treatment plants, paint shops and other industrial sites important to your business. When a Konecranes product becomes part of your processes, its high efficiency lets you maximize the productivity of your uptime. With regular maintenance, constantly available spare parts and 24/7 customer service through our extensive global network, you minimize the cost of downtime.

In other words – you can do more for less. This is the highest lifecycle value.





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. In 2017, Group sales totaled EUR 3,136 million. The Group has 16,200 employees at 600 locations in 50 countries. Konecranes shares are listed on the Nasdaq Helsinki (symbol: KCR).

© 2018 Konecranes. All rights reserved. 'Konecranes', 'Lifting Businesses' and  are either registered trademarks or trademarks of Konecranes.



**LEARN MORE ABOUT CRANES AND HOISTS FOR HAZARDOUS ENVIRONMENTS.**

[bit.ly/KC-Hazardous-environment-Cranes-P20](https://bit.ly/KC-Hazardous-environment-Cranes-P20)

