

LIFTING EQUIPMENT AND SERVICES  
FOR THE MIDDLE EAST

# Global expertise with local presence



# Konecranes overview

## Not just lifting things, but entire businesses

Konecranes is an industry-leading group of lifting businesses that offers a complete range of advanced lifting equipment and services to many industries worldwide. Regardless of your lifting needs, Konecranes will provide you world-leading lifting technology that increases the productivity and value of your business.



600 LOCATIONS WORLDWIDE	ACTIV IN 50 COUNTRIES	EQUIPMENT IS 62% OF TOTAL SALES	SERVICE IS 38% OF TOTAL SALES
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€ 3.16 BILLION IN SALES IN 2018	OVER 19,000 REMOTE CONNECTIONS	600,000+ ASSETS UNDER SERVICE AGREEMENT	16,100 EMPLOYEES
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# Konecranes in the Middle East

## Over 20 years’ experience in the Middle East region

Konecranes Middle East is a 100% owned subsidiary of the Konecranes Group based in Finland. With a regional head office and engineering center located in Dubai, United Arab Emirates, we serve 15 countries in the Middle East. Having sold our products in the Middle East since 1994, we have obtained a good knowledge of the market and its requirements. We have also established long-term partnership companies all over the Middle East and a joint venture with the Kanoo Group, Crane Industrial Services Company in the UAE to be in close proximity to you and to provide you with a fast and reliable service.

## Service and parts network in the Middle East

Konecranes has the world’s largest service organization, which includes equipments of different makes and industries. We have our own service branches in the UAE (Dubai and Abu Dhabi) as well as in Saudi Arabia (Jubail, Jeddah, Riyadh and Yanbu). To further support our customers in the region, a parts distribution center was opened in the Jebel Ali Free Zone, UAE to provide time effective spare parts supply for Industrial Cranes, Port Cranes and Lift Trucks of almost any brand.



## Factory

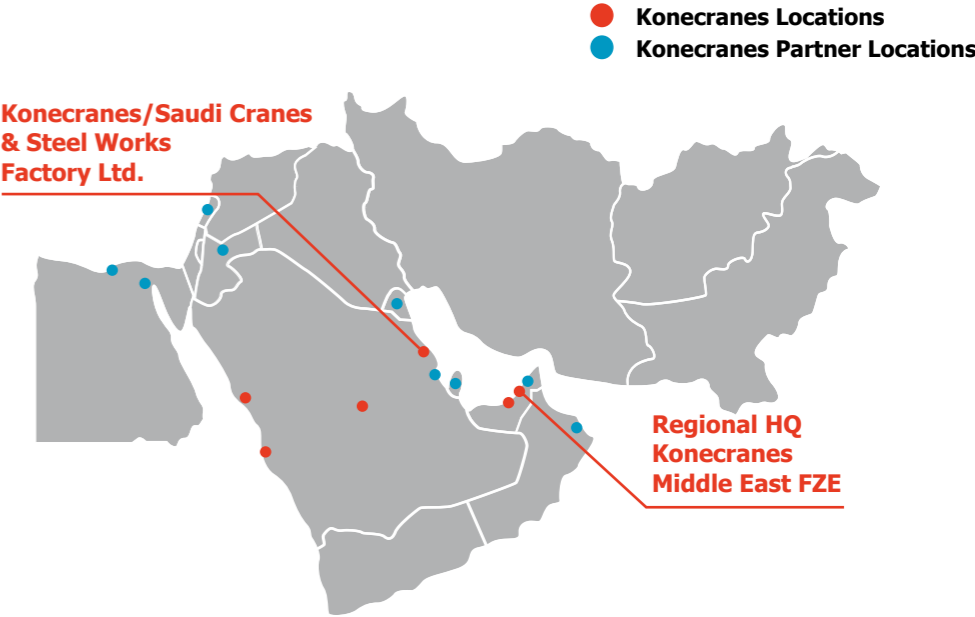
In 2011 we acquired Saudi Cranes and Steel Works Factory Co. Ltd. in Jubail, Saudi Arabia. Since 1983, the factory has been committed to the sale and manufacture of overhead cranes to the highest safety and quality standards. The state of the art manufacturing facility, with close to 200 employees, is spread over 20,000 m² and is comprised of a team of highly qualified engineering professionals who take pride in providing our customers with the best possible products and services.

## Benefit from our testing facilities

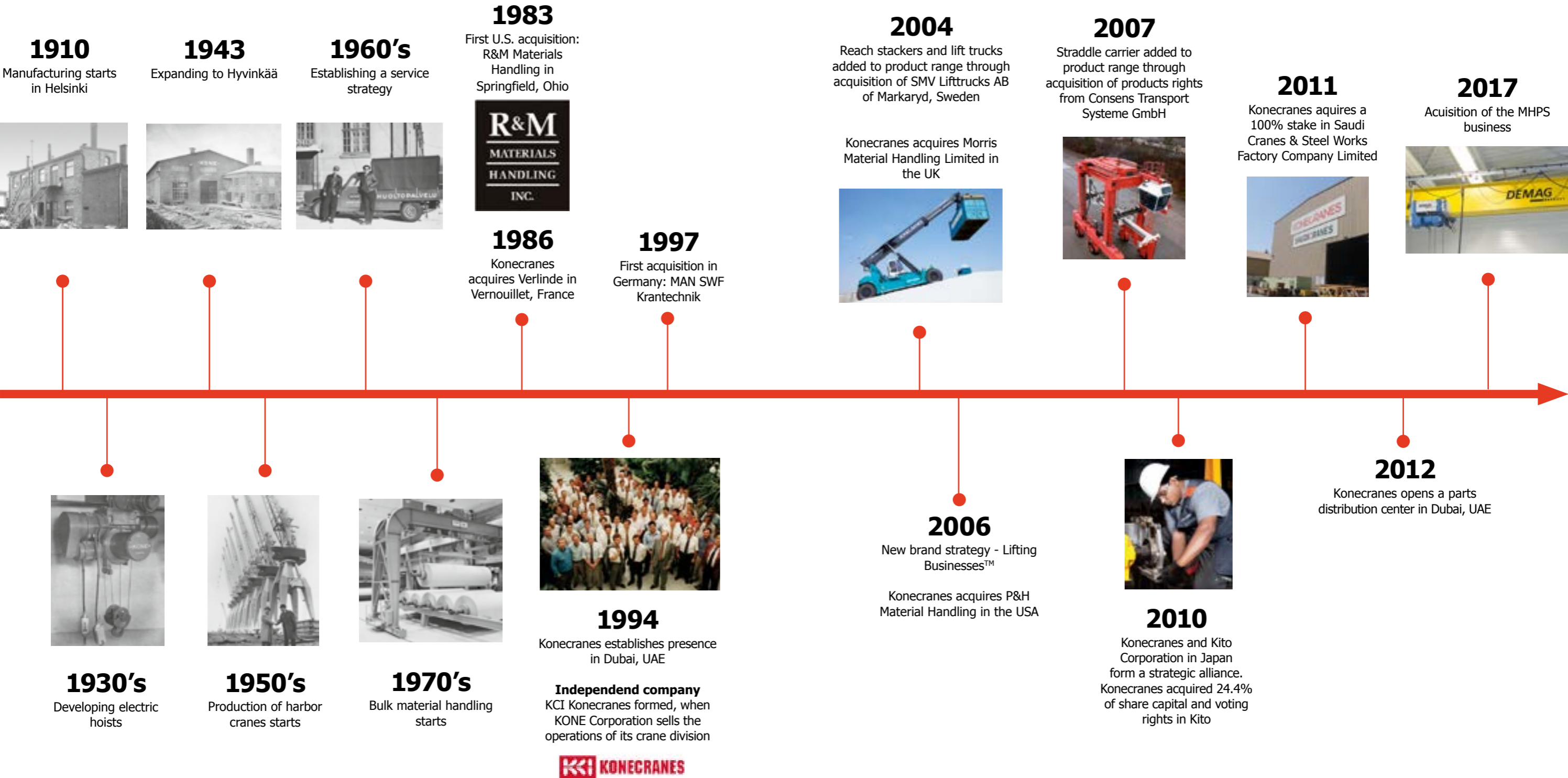
Upon customer request, we can test all crane motions even before the crane reaches your site. This is possible for deliveries of cranes throughout the region.

## Extensive Project Management experience

With a wealth of experience in project management, our team at Konecranes Middle East can assist you at all stages of your project. From planning, manufacturing and site operation until handing over the project to the end client, we can provide you with a single source solution. Having worked in close cooperation with major local and global EPC companies over the years, we have gained the knowledge and the experience to manage complex projects for a variety of industries, including the energy, metal, infrastructure, petrochemical, port and general manufacturing sectors. By successfully managing numerous projects, we know the importance of providing our clients with comprehensive documentation and responding quickly to customer needs, while keeping you up to date of any status change.



# A long history of Lifting Businesses



# Experience in a wide range of industries

Konecranes has gained an extensive and diverse global customer base by providing lifting equipment and service excellence in a number of industries worldwide.



Automotive



Container handling



General Manufacturing



Mining



Petroleum and Gas



Power



Waste-to-Energy and Biomass



Metals Production



Shipyards



Paper and Forest

# General Manufacturing

For over 80 years, Konecranes has been making cranes for nearly every imaginable purpose in manufacturing. We understand your requirements for lean manufacturing, varied loads and short cycle times.

### Applications:

Chain Hoist Cranes, CXT® Cranes, SMARTON® Cranes

### Konecranes product range in general manufacturing workshop

- 1 Smart CXT, CXT compact maintenance crane/
- 2 SMARTON® cranes XK-A/XK-S light crane system with manual hook block, CLX or ATB AirBalancer
- 3 Jib cranes with manual hook block, CLX or ATB AirBalancer
- 4 Crane for explosive atmosphere
- 5 Agilon automatic warehouse system
- 6 TRUCONNECT® Remote Services for cranes and MTS (Machine Tool Service)
- 7 Lift trucks and reach stackers
- 8 Crane service and MTS (Machine Tool Service)

### An example of process flow and support operations in general manufacturing workshop

- 1 Raw material prefabrication
- 2 Part manufacturing
- 3 Heat treatment and grinding
- 4 Heavy part manufacturing
- 5 Painting
- 6 Assembly
- 7 Packaging and shipping
- 8 Production planning, development and quality control
- 9 Maintenance operations



## Power

### Substations, Middle East

We provided numerous electrical overhead cranes and monorail hoists to substations spread throughout the Middle East. These cranes have lifting capacities of 3.5–5 tons and spans of up to 11 meters. The cranes were used for the initial installation of GIS equipment in the stations and then for their maintenance.



## Container handling

### Khalifa Port, Abu Dhabi, United Arab Emirates

We have been the lead supplier of the port's automated container handling equipment. So far, this includes 42 Konecranes Automated Rail Mounted Gantry (ARMG) cranes with a lifting capacity of 40 tons and a Terminal Operating System (TOS) for real-time planning and control of the terminal, as well as automation sub-systems. A further 10 ARMGs will be delivered at the beginning of 2017.

## Precast

### United Precast Concrete, Dubai & Abu Dhabi, United Arab Emirates

United Precast Concrete's production process relies heavily on overhead cranes to lift precast elements, like Hollocore slabs with spans of up to 21 meters. Twin hoists, with synchronized movements have been installed to enable the lifting of long items without causing any rotation mid-air. Chief Production Manager Victor D'Souza states: "...[W]hat sets Konecranes apart is that they proactively and consistently deliver a quality product and service."



## Manufacturing

### Advanced Pipes and Casts Co. W.L.L (APC), Doha, Qatar

We delivered a 16 ton and a 42 ton Lifttruck to assist in the production of reinforced concrete pipes, Manholes and Box culverts. The 16 Lifttruck is equipped with pipe handling clamps, while the 42 ton Lifttruck has STD forks to handle oversized concrete pipes of up to 4.2 meters in diameter.

## Waste-to-energy

### Tersa, Waste-to-Energy Plant, Spain

We installed two state-of-the-art overhead cranes, along with high-tech equipment in the control room. The new control room now features ergonomic seats, touch screens, keypads and displays. We also provide ongoing support that includes 24/7 service, weekly greasing, reviews of the cranes every two months, and frequent reviews of the hydraulic grabs.



## Steel

### Legnano Teknoelectric Company Middle East, Dubai, United Arab Emirates

We installed CXT Doublegirder cranes of varying lifting capacities to assist in Legnanos production process of magnetic cores. Twin hoists enable synchronised lifting of long and heavy parts, without causing any rotation of the lifted items, while stepless speeds and True vertical lift allow for precise lifting and positioning. All cranes support not only the production process, but also complement the customer company colors, giving an overall modern and customized appearance.

## Petrochemical

### Saudi Aramco Total Refining and Petrochemical Co. (SATORP), Kingdom of Saudi Arabia

We supplied two single leg gantry cranes for one of the biggest coke producing refineries in the Middle East. Both SLGs are equipped with a clamshell type bucket and operate directly over the coke pit, transporting coke 24/7. Built to withstand the hazardous environment and the constant use, these cranes have especially engineered components to help reduce maintenance, increase efficiency and prolong the equipment life.



# Product overview

Konecranes offers a complete range of products and services to fulfill your lifting needs.

## Workstation Lifting Systems



Jib Cranes



XK-A Aluminum Workstation Cranes



XK-S Steel Workstation Cranes



Wall-mounted Jib Cranes



Chain Hoists

## Industrial cranes



Chain Hoist Cranes



Wire Rope Cranes



CXT Explorer



SMARTON



Tailored Cranes/Custom Cranes



Gantry Cranes

## Port Equipment



Ship-to-Shore Cranes



Rubber-Tired Gantry Cranes



Shipyards Cranes



Rail-Mounted Gantry Cranes



Bulk Handling Cranes



Automated Stacking Cranes

## Lift trucks



Reach Stackers



Container Lift Trucks



Fork Lift Trucks

## Spare parts Service Modernization



Spare Parts



Comprehensive Service



Modernization

# Workstation Lifting Systems

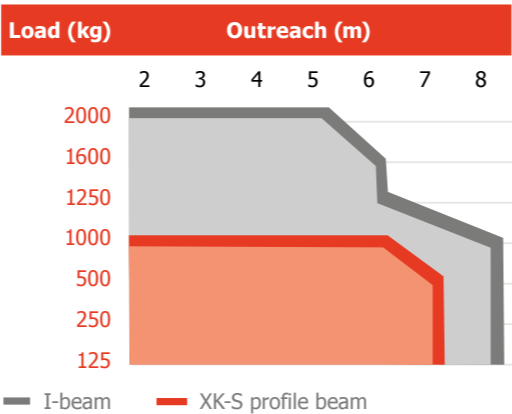
Ergonomic and reliable lifting throughout your whole process



### Jib Crane / Wall-mounted Jib Crane

- Motorized trolley with easy load handling is ideal for heavier and larger loads
- Various designs for jib arms based on customer requirements
- Easy and steady slewing with robust bearing and adjustable slewing resistance.
- No external power supply needed as jib and hoist can get electricity from below, side, or above.
- Robust festooning and easy running with reliable cable carriers.
- Flexible anchoring by foundations with cast-in anchors or by adapting to existing concrete floor with base plate and chemical anchors.
- Improved safety with standard on/off safety switch with pillar jibs.

Load and outreach



### XK-A Aluminum Workstation Crane

- Load capacity up to 2,000 kg
- Service hatch for easy trolley inspection and maintenance
- Energy supply via festoon or integrated conductor lines
- Motorized trolley for bridge and/or trolley
- Anodized aluminum surface is optimal for clean environments
- Lighter than steel by about 50% and with less rolling resistance
- Minimal maintenance required and lifetime protection against corrosion

Performance data single-girder cranes

PROFILE SIZE	100	I	II-L	II	II-H	A12	A16	A18	A22
Load Capacity [kg]	Girder Length (m)								
80	3	6	8	8		5	8	8	8
125	3	5	8	8	14	4	6	8	8
250		3	7	8	13	2	4	7	8
500		2	4	7	11	2	3	4	6
1000			2	4	7			3	4



### XK-S Workstation Crane

- Load capacity up to 2,000 kg
- Service hatch for easy trolley inspection and maintenance
- Energy supply via festoon or integrated conductor lines
- Motorized trolley for bridge and/or trolley
- Long suspension distances and span lengths
- Longer lifetime and reduced maintenance costs due to dust and dirt protection

Performance data double-girder cranes

PROFILE SIZE	100	I	II-L	II	II-H	A12	A16	A18	A22
Load Capacity [kg]	Girder Length (m)								
	5	9	10	12	14	7	8	8	8
250		6	10	12	14	5	8	8	8
500		4	7	11	14	3	4	8	8
1000			5	7	12			5	6
1600				5	9				5
2000				4	7				4

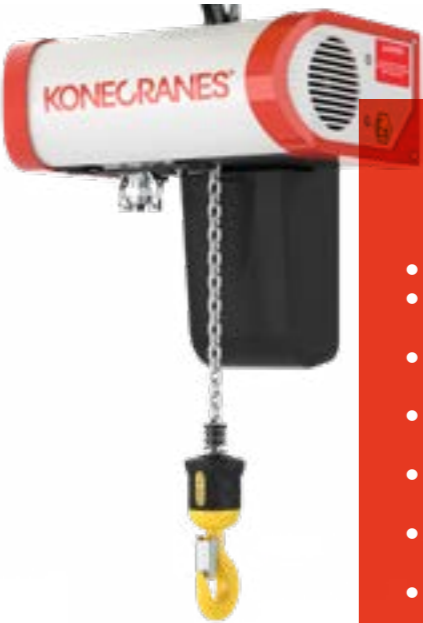
### CLX and SLX Chain Hoist

#### CLX

- Lifting capacity up to 5,000 kg
- 6:1 speed ratio allows fast and precise movement
- Improved safety with hoist limit switch, securing brake, and hook block
- Less stress on the chain with patented chain drive

#### SLX

- Lifting capacity up to 2,500 kg
- Stepless hoisting speeds with inverter for smooth vertical movement
- Extended Speed Range adjusts speed to suit the load for safety, accuracy and easier positioning
- Slack Chain Control and Shock Load Absorption improve safety and usability



### CLX & SLX KEY OPTIONS

- Robust aluminium frame
- High duty class (ED 50%, 300 starts per hour)
- Thermal protection and fan ventilation as standard
- IP55 protection as standard against dust and water moisture
- IP66 protection as option for the entire product range
- Enhanced temperature range (-20°C to +40°C, -4 °F to 122 °F)
- Various lifting speeds available (4 to 20 m/min, 16 to 65 fpm)

CLX & SLX	02	05	10	16	25
	CLX	CLX & SLX	CLX & SLX	CLX	CLX
Min. speed <sup>1</sup> (m/min)	2/1	1,3/0,32	0,7/0,16	0,7	0,7
Max. speed <sup>2</sup> (m/min)	20 (up to 125 kg)	20 (up to 250 kg)	20 (up to 500 kg)	16 (up to 800 kg)	20 (up to 1000 kg)
ESR <sup>3</sup> (m/min)		32	32		
C-dimension <sup>4</sup> (mm)	409/461	445/506	537/607	567/693	611/761

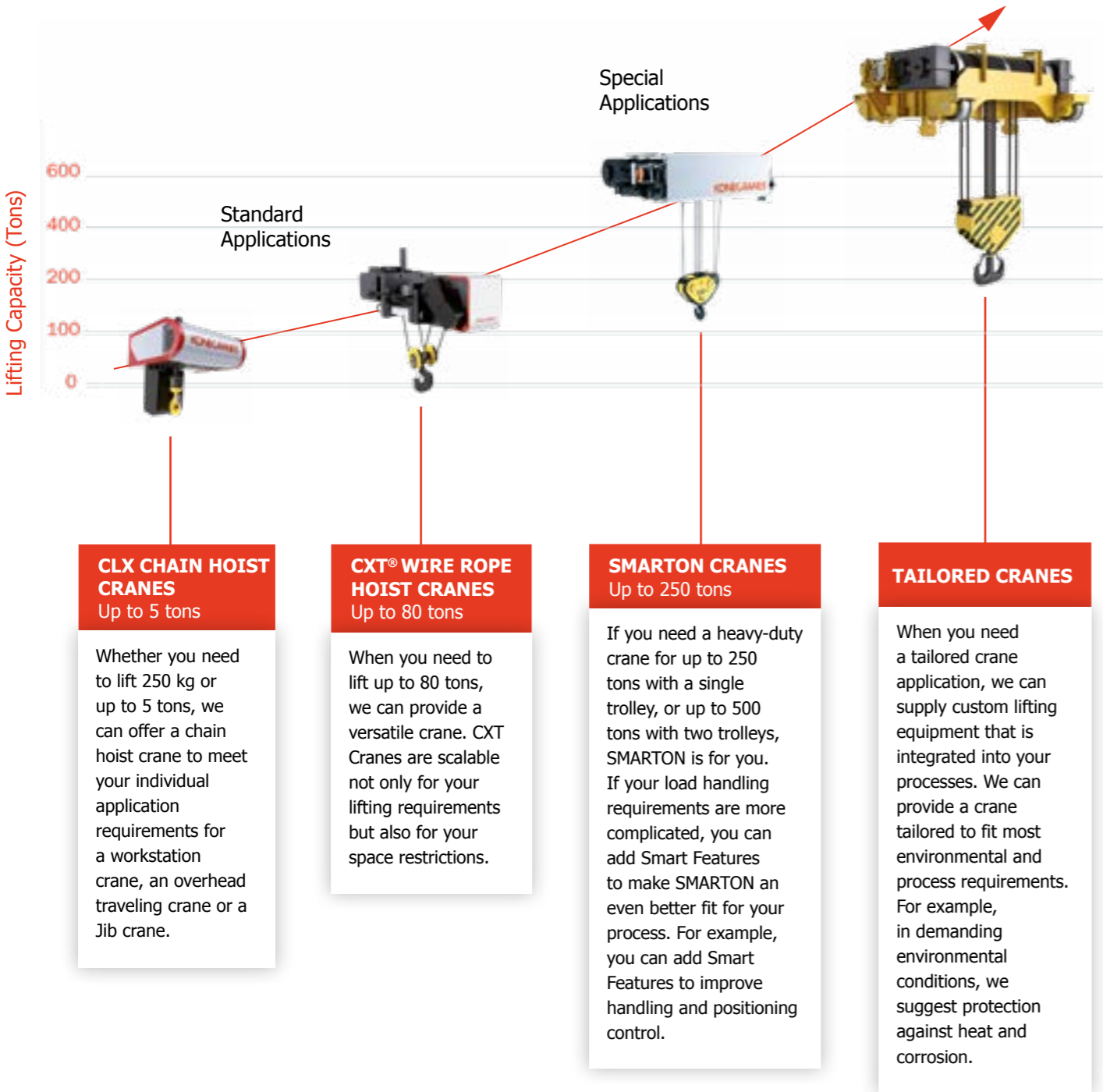


<sup>1</sup>CLX/SLX <sup>2</sup>With 50hz <sup>3</sup>ESR = Extended speed range for SLX <sup>4</sup>1-fall / 2-fall with hook suspension (8 m/m)

# Industrial crane products

## Robust and reliable equipment

Konecranes Overhead Cranes are compact, providing superior performance in minimal space. They are equipped with your choice of a CLX electric chain hoist, CXT wire rope hoist or SMARTON open winch.



## Smart features



**SWAY CONTROL** limits load swing by controlling the bridge and trolley acceleration and deceleration. Sway Control allows faster load handling and more precise positioning. This feature also reduces the risk of damage to the load, crane and surrounding area.



**ACTIVE SWAY CONTROL** is designed to dampen also the existing load sway.



**SNAG PREVENTION** is designed to stop all crane movement if the hook, sling or load accidentally gets caught on something. This safety function reduces the risk of hazardous situations while moving loads and helps to prevent damage to the load, crane and surrounding area.



**ADAPTIVE SPEED RANGE (ASR)** and **EXTENDED SPEED RANGE (ESR)** give you the opportunity to optimize the speed of your crane. An empty hook can be moved at over double the speed of a loaded hook, allowing the operator to choose the most efficient way to control the hoist. Variable hoisting speeds provide accuracy during slow speed operation and shorter load cycle times during faster operation. See page 24 for more information.



**ASSISTED LOAD TURNING** helps turn the load by keeping the ropes straight and eliminating side pull. This function makes one of the most challenging crane operations simpler and less risky. The benefits of this feature are faster load cycle times and extended crane lifetime, and it simply makes using the crane easier.



**HOOK CENTERING** is designed to eliminate side pull during lifting by automatically positioning the bridge and trolley directly over the load. This feature means less wear and tear on your crane's components, faster load cycle times and ease of operation.



**FOLLOW ME** makes lifting operations much faster because the crane can be moved above the load by simply guiding the hook by hand. This feature reduces load cycle times by making it much easier and faster to load and unload the crane.



**PROTECTED AREAS** and **WORKING LIMITS** allow the definition of protected zones, such as production machinery or storage areas, which the crane is not allowed to enter. Working Limits builds temporary "virtual walls" at which your crane will stop automatically. These functions help prevent collisions between the crane and valuable equipment located near to the crane, and thus increase safety and prevent possible damage.



**LOAD FLOATING** keeps the load in position after the hoisting movement stops, so the brake is applied less frequently and wears less. Load Floating allows a faster and smoother restart of the hoisting movement and better control of the load.



**HOISTING SYNCHRONIZATION** monitors and controls the position difference of the hooks and synchronizes the movement of each hoist. This function gives more accuracy when two hoists are used at the same time.



**MICROSPEED** and **INCHING** assist in very accurate and precise load handling. Microspeed turns large joystick movements on the operator interface into slow and exact load movements. Inching is designed to ensure accurate final load positioning by allowing the crane operator to move the load in small increments. Both functions reduce the risk of collision and can be used for hoisting and traveling.



**SHOCK LOAD PREVENTION** allows smooth load pick-up. The hoist drive monitors the load. If the load is picked up abruptly, the hoisting speed is automatically reduced until the load is lifted. This feature is designed to prevent shocks to the load and to the crane, extending the lifetime of the crane's steel structure and mechanical parts.



**SLACK ROPE PREVENTION** detects when the load has reached its final position and automatically stops the lowering movement. The hoist ropes do not slacken and the lifting device does not fall over. Slack Rope Prevention helps you to control your crane better and avoid potentially dangerous situations.



**TARGET POSITIONING** and **END POSITIONING** reduce the need for manual crane operation. With only a single button, target positioning brings the load to a predefined target position. End positioning brings the load to the center of a final positioning window. These features significantly reduce work cycle times when the work cycle is familiar and repetitive, and make your processes quicker and easier.

# The Core of Lifting

## The unifying element in lifting

The Core of Lifting is the unifying element in lifting, only from Konecranes. It's an integrated package of gears, motor and controls, designed and made by Konecranes in-house specifically for cranes and lifting motions. And we don't just design the key components. We also design the interaction between the key components and the software, as a whole, specifically for lifting. This in-house approach allows us to satisfy customer-specific needs with the benefits of high-volume manufacturing.

### Gears

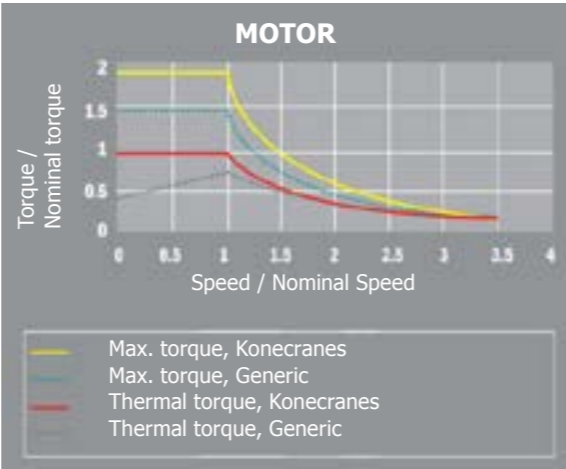
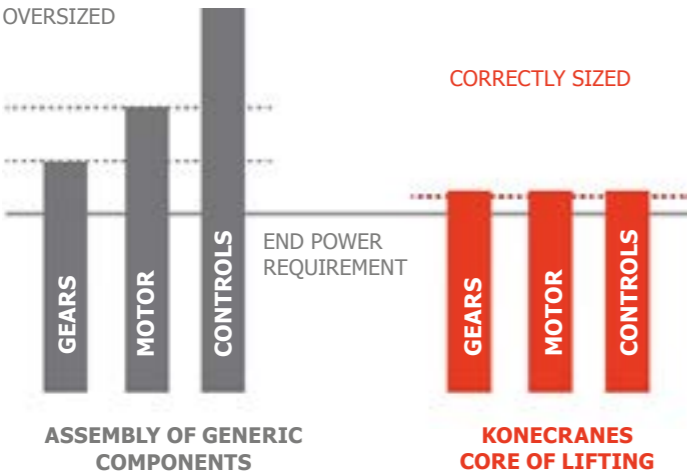
Our gears are purpose-built because of the special gear teeth needed in lifting. They have the right distribution of force for dynamic load handling: there is a very high safety coefficient against tooth fracture.

### Motors

Our motors are purpose-built because of the instant power peak needed in lifting.

### Controls

Our controls are purpose-built to fully exploit the strengths of the key components, and how they interact with each other, as a package.



## Gears

Konecranes gears are purpose-built because of the special gear teeth needed in lifting. They have the right distribution of force for dynamic load handling: there is a very high safety coefficient against tooth fracture. They have a smooth contact pattern that minimizes pressure on parts, reducing wear and the risk of damage.

With less power consumption, less waste, less wear, and fewer parts, you will have less downtime and less maintenance. Your crane will last much longer.

## Motors

Konecranes motors are purpose-built because of the instant power peak needed in lifting. They are accurately sized for crane applications and consume less energy than their generic counterparts.

Konecranes motors are designed to lift loads reliable and steady for many years. Our motors are tailored for their particular lifting tasks.

With careful quality monitoring we provide safe and reliable lifting equipment according to international standards.

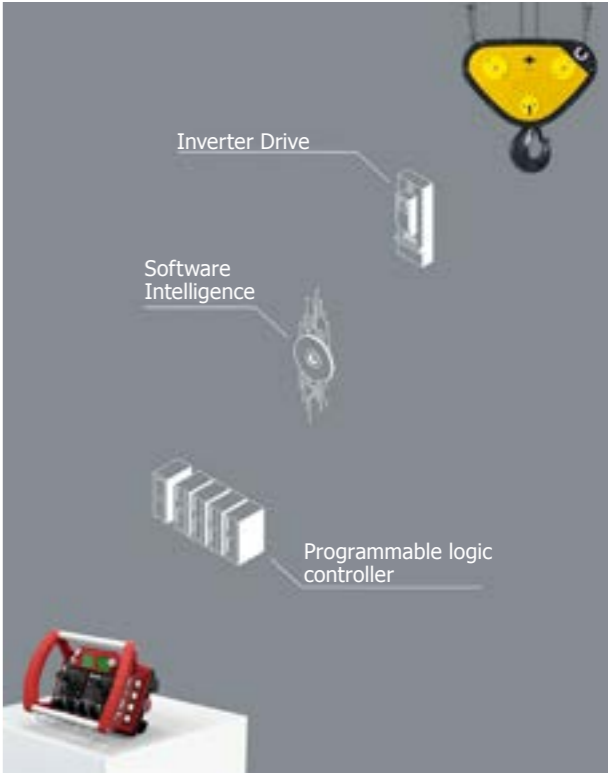
## Crane controls

Konecranes control systems are purpose-built to fully exploit the strengths of the key components, and how they interact with each other, as a package. We program the drives specifically for dynamic load handling. We laboratory-test the controls with realworld lifting parameters.

Our controls are carefully engineered and integrated into our cranes. This makes load handling safer and easier.

Possible crane controls:

- pendant
- radio
- cabin
- separate control room



Standard Applications

CLX chain hoist cranes

A strong link in your process chain

**HIGH VALUE**

**RELIABILITY**

**ERGONOMICS**

**ADAPTABLE TO A VARIETY OF FACILITIES**  
due to compact dimensions

**VERSATILE CONFIGURATIONS**  
serve the needs of various industries

Up to  
**5 TONS OF LIFTING CAPACITY**  
with a sturdy steel structure and a robust chain hoist

**EASIER OPERATION**  
with an ergonomically designed, lightweight pendant and standard emergency stop

CLX Hoist

Wide capacity range of 60–5,000 kg, and customization options to fit every operation.



**Chain drive/reeving**

- Minimum C dimensions
- Safe, no turnover of hooks with single fall units

**Hoist gear**

- Versatile speed offering
- No oil change required
- Low noise, smooth operation
- Long lifetime due to high accuracy of manufacturing technology

**Hoist brake**

- High safety and low maintenance
- No adjustments needed

**Hoist limit switch**

- Safe cutoff without extensive wear at the slipping clutch
- Protected against environmental influences
- No building height loss
- Easily accessible

**Hoist motor**

- Fast lifting speeds for high productivity
- Slow speed for precise handling
- Less inching
- Less maintenance and fewer wearing parts

**Overload limit protection**

- Protects hoist, crane and building structure from overloads
- Increased safety at worksites
- Easy to maintain

**CLX hook block**

- Safe, easy and ergonomic handling
- Increased headroom

**Chain drive concept**

- Quiet
- Less wear and longer chain service life
- Sprocket designed for the life of the hoist with the correct Konecranes chain



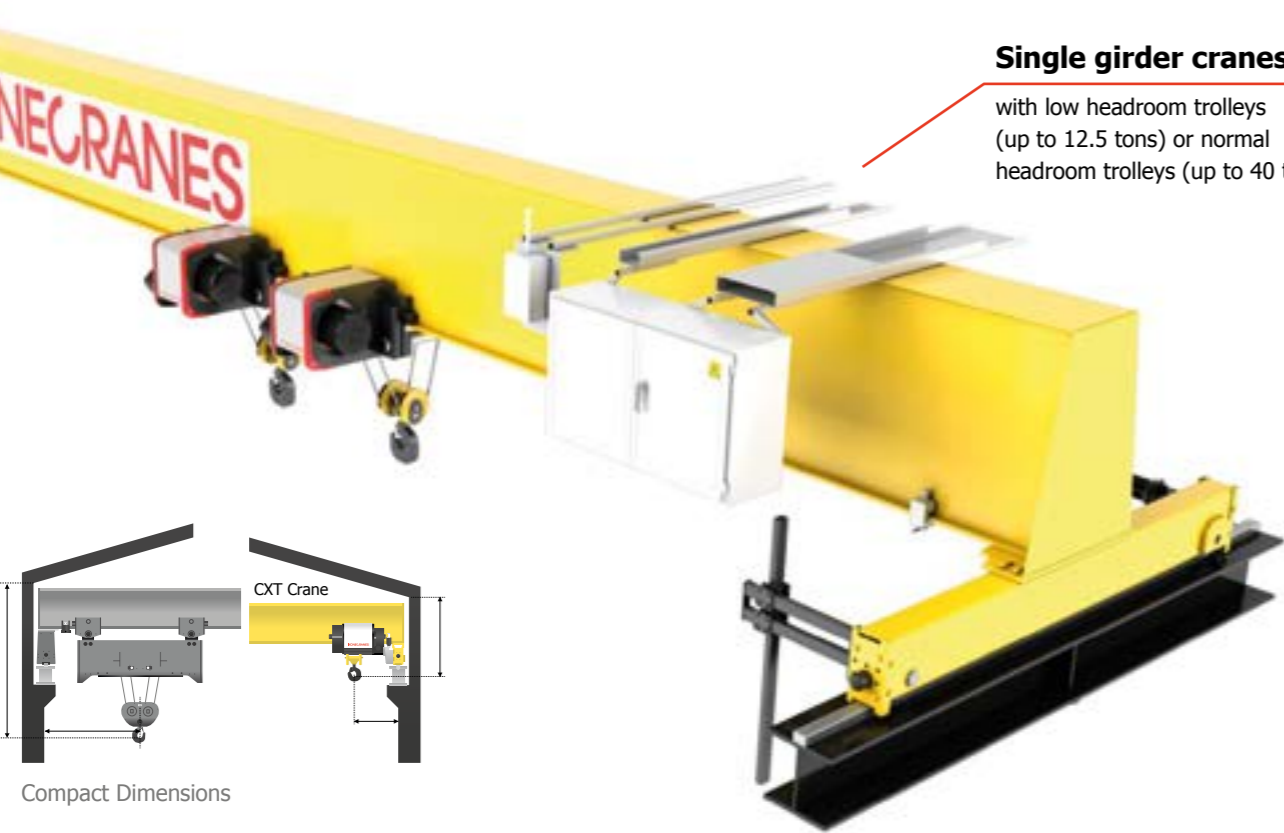
Load	Duty		Lifting	Falls	Hoist Type
Ton / Kg	ISO rating	FEM	m / min	fpm	
1 / 1000	M5	2m	4 / 1.3	16 / 5	1 CLX10 04 1 100 5
	M5	2m	8 / 1.3	32 / 5	1 CLX10 08 1 100 5
	M4	1Am	10 / 1.6	16 / 3	1 CLX10 10 1 100 4
	M6	3m	12.5 / 2	16 / 3	1 CLX16 12 1 100 6
	M6	3m	16 / 2.6	16 / 0.8	1 CLX25 16 1 100 6
	M6	3m	20 / 3.3	16 / 0.8	1 CLX25 20 1 100 6
1.25 / 1250	M6	3m	4 / 0.7	32 / 1.7	2 CLX10 10 2 100 6
	M4	1Am	4 / 1.3	16 / 5	1 CLX10 04 1 125 4
	M4	1Am	8 / 1.3	32 / 5	1 CLX10 08 1 125 4
	M6	3m	8 / 1.3	32 / 5	1 CLX16 08 1 125 6
1.6 / 1600	M5	2m	4 / 0.7	32 / 1.7	2 CLX10 04 2 160 5
	M5	2m	5 / 0.8	16 / 0.8	2 CLX10 05 2 160 5
	M5	2m	8 / 1.3	32 / 5	1 CLX16 08 1 160 5
	M6	3m	12.5 / 2	16 / 3	1 CLX25 12 1 160 6
2 / 2000	M5	2m	4 / 0.7	32 / 1.7	2 CLX10 04 2 200 5
	M4	1Am	5 / 0.8	16 / 0.8	2 CLX10 05 2 200 4
	M6	3m	6.3 / 1	32 / 1.5	2 CLX16 06 2 200 6
	M6	3m	8 / 1.3	32 / 5	1 CLX25 08 1 200 6
2.5 / 2500	M4	1Am	4 / 0.7	32 / 1.7	2 CLX10 04 2 250 4
	M6	1Am	4 / 0.7	32 / 1.7	2 CLX16 04 2 250 6
	M5	2m	8 / 1.3	32 / 5	1 CLX25 08 1 250 5
3.2 / 3200	M5	2m	4 / 0.7	32 / 1.7	2 CLX16 04 2 320 5
	M6	3m	6.3 / 1	32 / 1.5	2 CLX25 06 2 320 6
4 / 4000	M6	3m	4 / 0.7	32 / 1.7	2 CLX25 04 2 400 6
5 / 5000	M5	2m	4 / 0.7	32 / 1.7	2 CLX25 04 2 500 5

Standard Applications

CXT wire rope hoist cranes

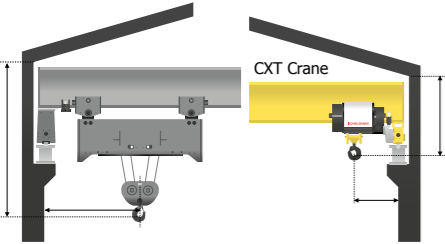
Technology that is tried, tested and true

CXT wire rope hoist cranes are medium-heavy indoor cranes with lifting capacity up to 80 tons; cranes that are indispensable in your assembly workshop or industrial plant. CXT wire rope hoist cranes are available in single or double-girder construction, with a profile or box girder design.



Single girder cranes

with low headroom trolleys (up to 12.5 tons) or normal headroom trolleys (up to 40 tons).



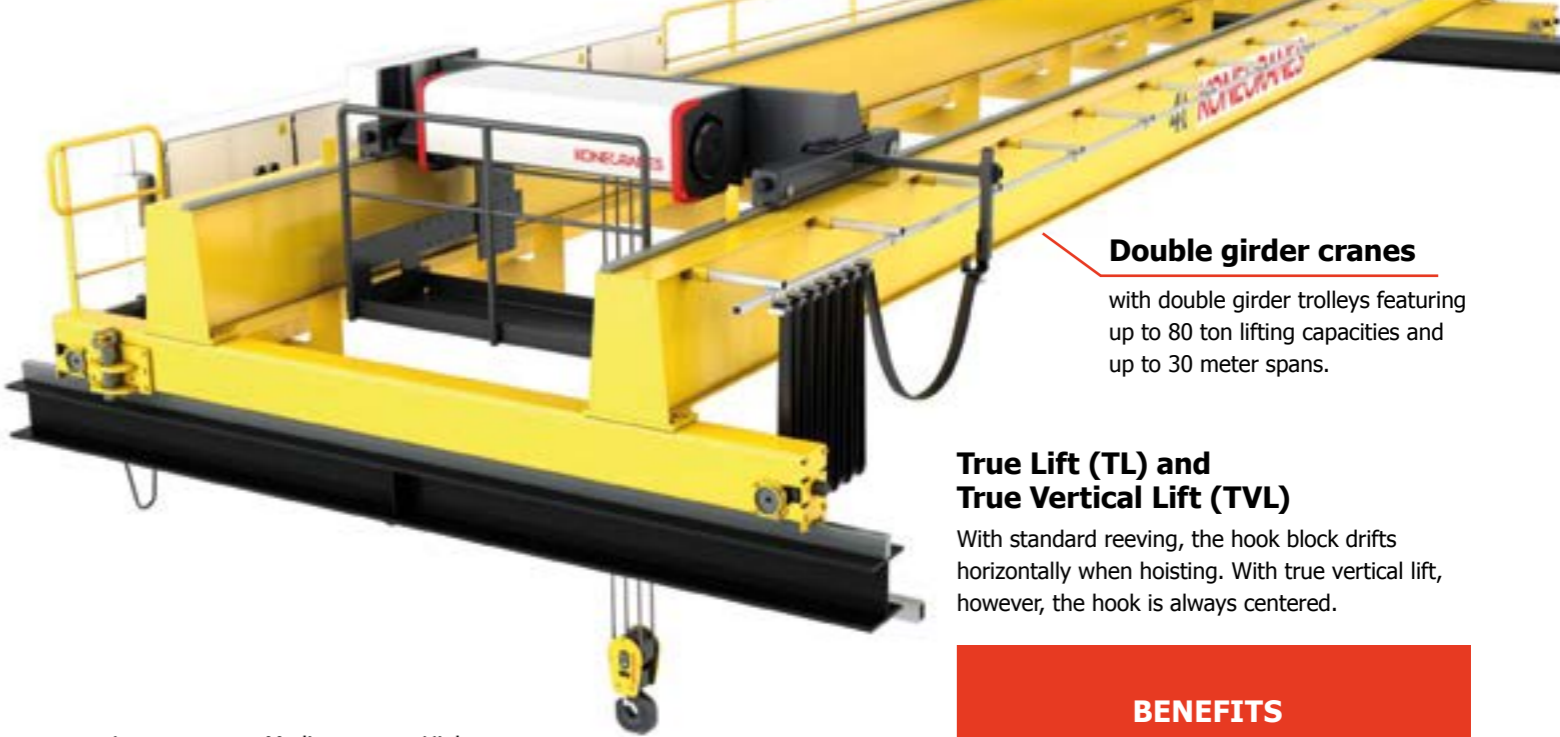
Compact Dimensions

Product range up to 10 tons

Frame Size	Rope Reeving		Capacity [Metric tons]							Configuration				Lifting Speed [m/min @50 Hz]		Max. Lifting height	
	TL1		1	2	3,2	5	6,3	8	10	Fixed	N	L	M	Standard		[m]	
CXT 2	21	M5								✓	✓	✓	✓	10/1.7		19	
	41	M6	M5							✓	✓	✓	✓	5/0,8		9.5	
CXT 3	21	M6								✓	✓	✓	✓	10/1.7		19	
	41		M6	M6						✓	✓	✓	✓	5/0,8		9.5	
CXT 4	21		M6	M4						✓	✓	✓	✓	10/1.7	30	L – possible for HO L up to 24 m	
	41				M5	M4				✓	✓	✓	✓	5/0,8	15	L – possible for HO L up to 12 m	
CXT 5	21				M5					✓	✓	✓	✓	10/1.7	40	L – possible for HO L up to 32 m	
	41				M6	M6	M5	M5		✓	✓	✓	✓	5/0,8	20	L – possible for HO L up to 16 m	

TL: True Lift TVL: True Vertical Lift

N: Normal Headroom L: Low Headroom M: Medium Connection Double Girder



Double girder cranes

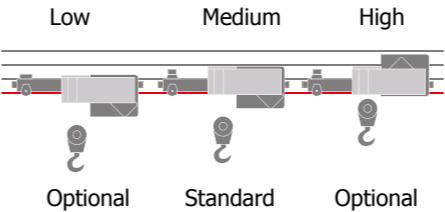
with double girder trolleys featuring up to 80 ton lifting capacities and up to 30 meter spans.

True Lift (TL) and True Vertical Lift (TVL)

With standard reeving, the hook block drifts horizontally when hoisting. With true vertical lift, however, the hook is always centered.

BENEFITS

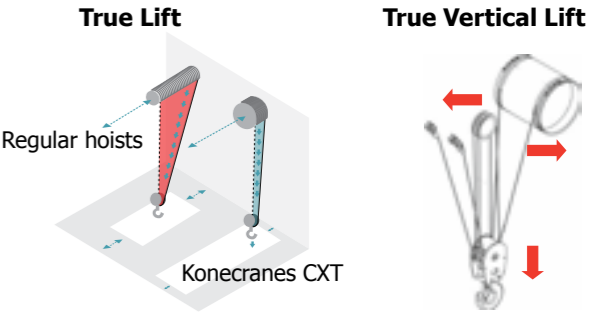
- Larger drum diameter results in a small lateral hook drift, with better hook approach that helps conserve space
- Short drum configuration causes less rope and sheave wear, as the rope enters the drum and sheaves at a small angle



With different trolley configurations, CXT electric wire rope hoists maximize the lifting height.

Trolleys

- |                          |                 |
|--------------------------|-----------------|
| Five frame sizes         | up to 80 tons   |
| Low headroom trolleys    | up to 12.5 tons |
| Normal headroom trolleys | up to 40 tons   |
| Swivel trolleys          | up to 40 tons   |
| Fixed hoists             | up to 80 tons   |
| Double girder trolleys   | up to 80 tons   |



Product range 10 tons and over

Frame Size	Rope Reeving		Capacity [Metric tons]										Configuration				Lifting Speed [m/min @50 Hz]		Max. Lifting height [m]	
	TL	TVL	10	13	16	20	25	32	40	50	63	80	Fixed	N	L	M	Standard		TL	TVL
CXT 5	41	42	M5										✓	✓	✓*	✓	5/0.82		02	3
	61	62	M6										✓	✓	X	✓	3.2/0.51		31	1
	81	82			M5	M4							✓	✓	X	✓	2.5/0.41		01	1.5
CXT 6	21	22	M4										✓	✓	X	✓	8/1.39		79	8
	41	42		M6	M5	M4							✓	✓	X	✓	4/0.7	48.54		9
	61	62				M6	M5						✓	✓	X	✓	2.5/0.43		2	32.5
CXT 7	81	82						M5	M4				✓	✓**	X	✓	2.0/0.32		4	24.5
	X	22			M5	M4							✓	X	X	✓	8/1.37			1
	X	42					M6	M5	M4				✓	X	X	✓	4/0.7			35.5
	X	62							M6	M5			✓	X	X	✓	2.5/0.4			23.5
	X	82									M5	M4	✓	X	X	✓	2.0/0.4			17.5

\*L possible up to 16 m HOL \*\*N possible only for TVL

TL: True Lift TVL: True Vertical Lift

N: Normal Headroom L: Low Headroom M: Medium Connection Double Girder

Standard Applications

CXT hoist

The heart of every CXT Crane

In the core of every CXT Crane is the CXT Hoist, one of the most popular hoists on the market. It has all the key features to lift efficiently, reliably and safely, regardless of operating conditions. With multiple trolley configurations, CXT electric wire rope hoists maximize lifting height and are easily fitted to many kinds of building environments.



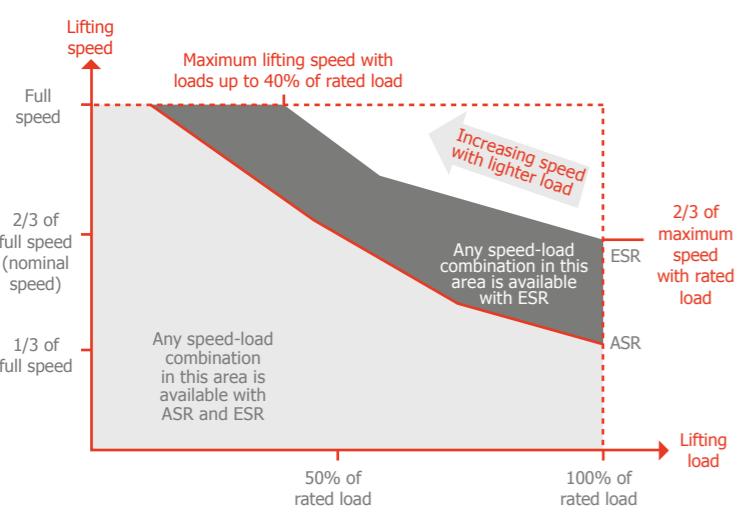
Basic Information	
Capacity	up to 80 tons
Spans	up to 30 meters
Crane configuration	
Top running	/
Under running	/
Girder	
Single girder	/
Double girder	/
Hoisting motors	
2-speed hoisting motors	/
Inverter hoisting motors	O
Trolley traveling motors	
2-speed contactor control	X
Inverter control	/
Markings	/ Standard O Option X Not available

Bridge travelling motors	
2-speed contactor control	O
Inverter control	/
Control system	
Pendant	/
Radio	O
Hoist power supply	
C-track festooning	/
Energy Chain	O
Safety	
Overload protector	/
Thermal protection for all motors	/
Hoisting limit switch	/
2-step limit switch for bridge traveling	/
2-step limit switch for trolley traveling	/
Hook-operated limit switch	O

CXT hoist components



Variable hoisting speed technology



Adaptive Speed Range (ASR) and Extended Speed Range (ESR)

give you the opportunity to optimize the speed of your crane. Variable hoisting speeds provide accuracy during slow speed operation and shorter load cycle times during faster operation.

ASR automatically varies the speed of the hoist according to the load. For full capacity loads, ASR forces a slower, more deliberate speed to enhance safe lifting. Moderate loads can be moved with additional speed, while light loads are afforded even more speed. It also has the ability to lift up to 50% faster than traditional hoisting control.

ESR uses inverter technology to allow increased hoist speed for light loads. The faster hoist speed enables operators to return empty hooks to position or move smaller loads with greater speed and efficiency.

Radio control

A crane is typically controlled from a distance. The usual method of controlling a regular assembly workshop crane is by using a pendant controller hanging from the crane, or wirelessly via radio control.

In some special applications and full automation cranes, the control method can be a cabin, separate control room, or even a sophisticated ERP system.



REMOX radio control increases efficiency and reduces operating risks. It allows an operator to monitor the load on the hook and manually assist it, if necessary. A crane equipped with Smart Features, together with an intelligent HIM transmitter, is a serious tool for even the most demanding applications.

Konecranes radio is lightweight and easy to use, and takes the ergonomics of controlling cranes beyond expectations. Radio control allows the operator to control the load with a single grip, so their concentration is more fully on the load.

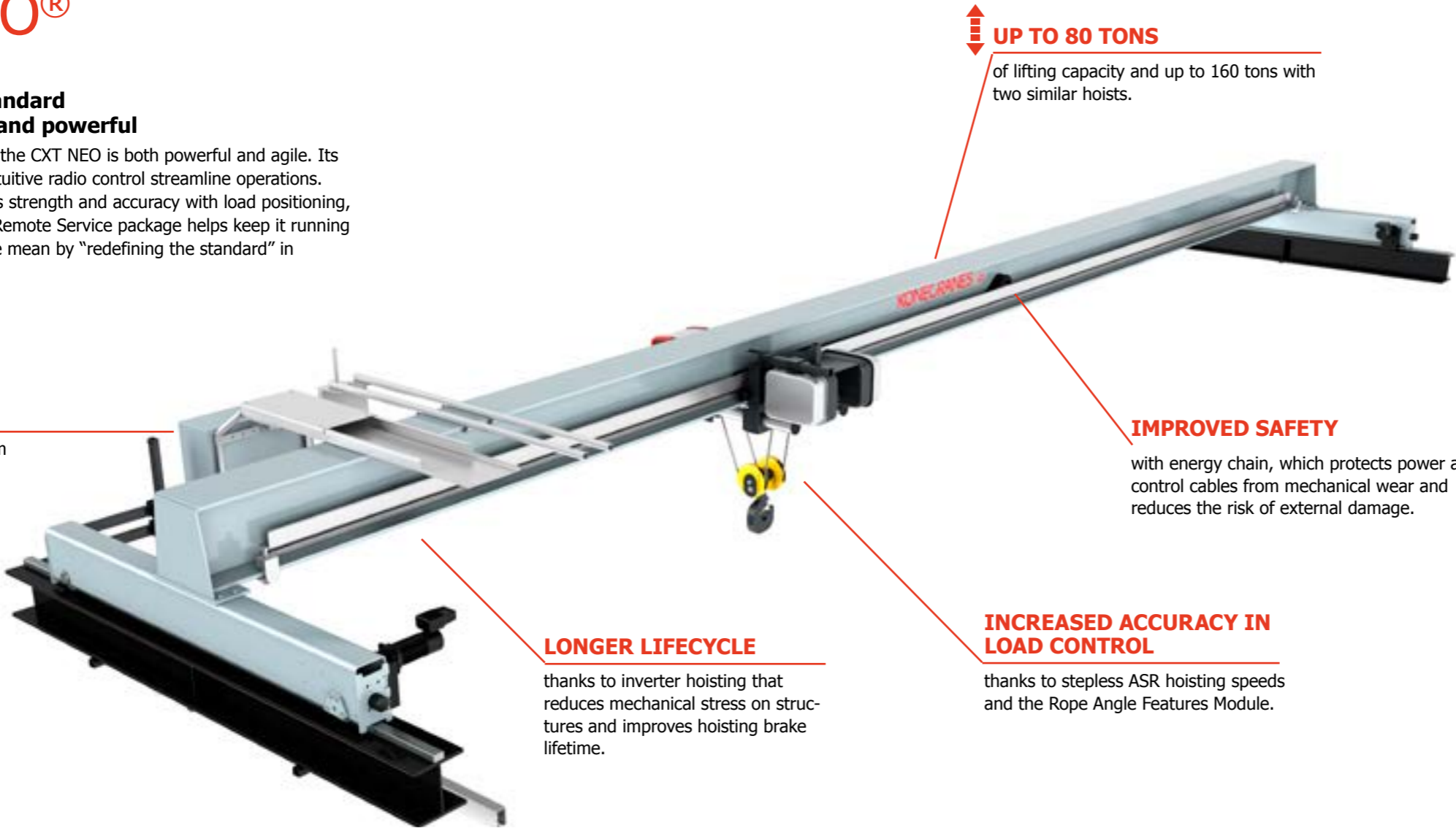
# CXT NEO®

## Redefining the standard Flexible, variable and powerful

When it comes to lifting, the CXT NEO is both powerful and agile. Its ergonomic design and intuitive radio control streamline operations. Inverter hoisting provides strength and accuracy with load positioning, and the TRUCONNECT® Remote Service package helps keep it running smoothly. That’s what we mean by “redefining the standard” in general lifting.

### OPTIMIZED MAINTENANCE ACTIVITIES

using insights drawn from TRUCONNECT Remote Monitoring data.



UP TO 80 TONS

of lifting capacity and up to 160 tons with two similar hoists.

### IMPROVED SAFETY

with energy chain, which protects power and control cables from mechanical wear and reduces the risk of external damage.

### INCREASED ACCURACY IN LOAD CONTROL

thanks to stepless ASR hoisting speeds and the Rope Angle Features Module.

### LONGER LIFECYCLE

thanks to inverter hoisting that reduces mechanical stress on structures and improves hoisting brake lifetime.

### Rope Angle Features Modul:



**HOOK CENTERING** is designed to eliminate side pull during lifting by positioning the bridge and trolley automatically directly over the load. This feature means less wear and tear on your crane’s components, faster load cycle times and ease of operation.



**SNAG PREVENTION** is designed to stop all crane movement if the hook, sling or load accidentally gets caught on something. This safety function reduces the risk of hazardous situations while moving loads and helps to prevent damage to the load, crane and surrounding area.



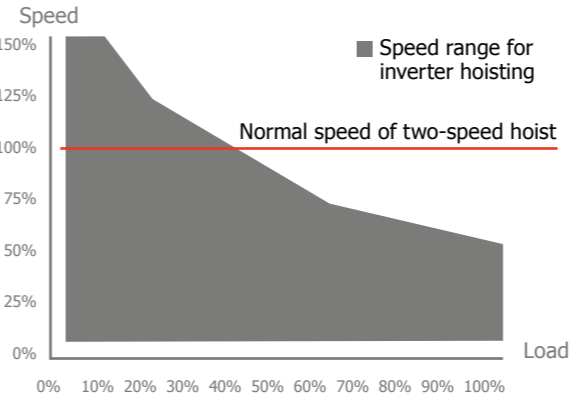
**FOLLOW ME(\*)** makes lifting operations much faster because the crane can be moved above the load by simply guiding the hook by hand. This feature reduces load cycle times by making it much easier and faster to load and unload the crane.

(\*Follow Me is recommended for up to 10t cranes)

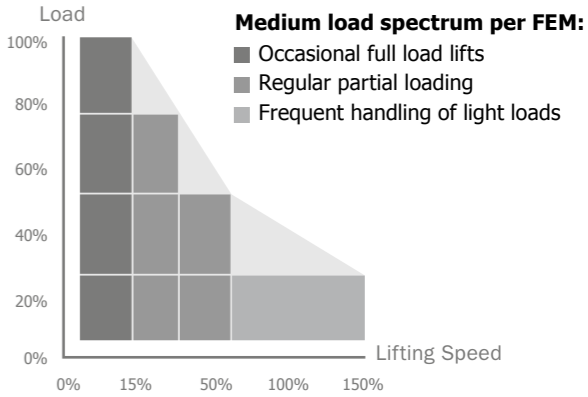
## CXT® NEO crane – Facts at a glance

	SINGLE-GIRDER		UNDER-RUNNING		DOUBLE-GIRDER
HEADROOM	Low	Normal	Low	Normal	
FEATURES					
ASR inverter hoisting	STANDARD	STANDARD	STANDARD	STANDARD	STANDARD
Radio	STANDARD	STANDARD	STANDARD	STANDARD	STANDARD
Energy chain power feeding for trolley	STANDARD	STANDARD	STANDARD	STANDARD	STANDARD
TRUCONNECT Remote Monitoring	STANDARD	STANDARD	STANDARD	STANDARD	STANDARD
Extended warranty	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL
Rope Angle Features Module	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL
RAL7035 grey color	STANDARD	STANDARD	STANDARD	STANDARD	STANDARD
RAL1028 yellow color	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL

### INVERTER HOISTING (ASR) TECHNOLOGY LOAD SPECTRUM & SPEEDS



ASR = Adaptive Speed Range



### Inverter hoisting (ASR) motor characteristics:

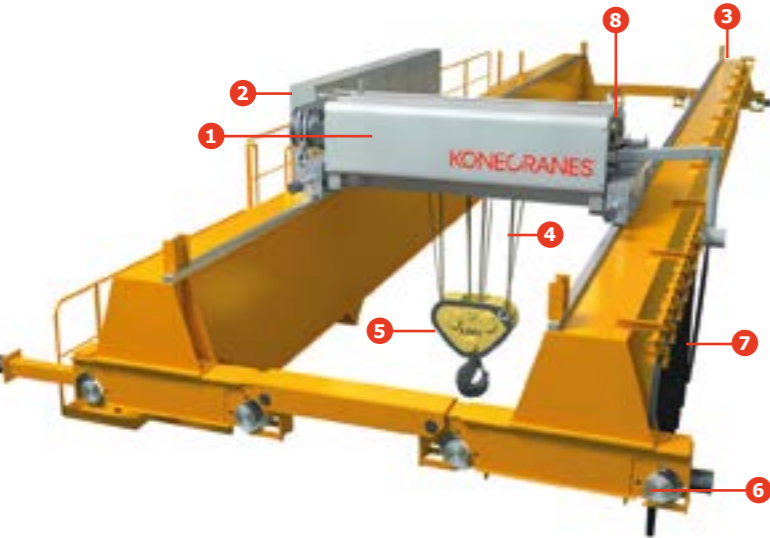
Fast speed for light loads  
Medium speed for partial loading  
Safety speed for heavy loads

Special Applications

# SMARTON

## Intelligent lifting for heavy-duty purposes

When your lifting processes require a heavy-duty crane, SMARTON is for you. It has a lifting capacity of up to 250 tons with one trolley and up to 500 tons with two trolleys. SMARTON comes with many advanced features that will improve the efficiency and safety of your production process. There are also several optional features that you can add to your crane at any point in the future, as it evolves to meet your needs.



SMARTON TECHNOLOGY HIGHLIGHTS

1. Konecranes 'Core of lifting' is the electro-mechanical heart of SMARTON, consisting of motor, gearbox and control unit. It has very compact dimensions and is perfectly integrated for lifting.

2. **Electrical cabinets** house control functions and lifting intelligence.

3. **Steel structure** features a box construction that gives much better torsion resistance than open-section designs.

4. **True vertical lift** is provided by a twin-rope configuration to minimize horizontal movement when the load is lifted or lowered.

5. **Hook block** has a rope reeving configuration to eliminate the reverse bending that causes rope fatigue and premature failure.

6. **The traveling wheels** of the crane are easily re-aligned with the runway rails if misalignment should occur.

7. **Power and signal cables** are attached to the crane girder as a festoon system that moves alongside the trolley.

8. **Two-point drum suspension** allows the gearbox to articulate when the rope drum and trolley structure bends under a load, and extends the lifetime of the gearbox.

9. **Service platform** and hand crank for opening and closing it. When closed, the platform protects the machinery when the crane is in use.

### SMARTON APPLICATIONS

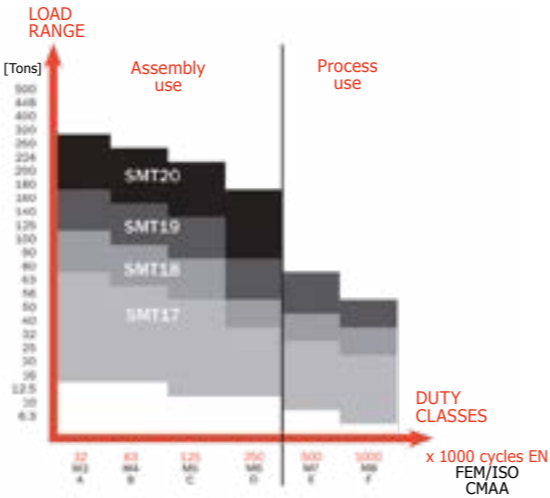
#### Especially for assembly duty applications

- Pulp & paper
- Power plants
- Automotive
- General manufacturing

Advanced SMART features are available.



### Trolley & load range



### User experience taken to the next level

**SMARTON tablet** and **Radio Controller** make SMARTON easy to operate and maintain. A tablet interface is connected wirelessly to the crane control system, and can be mounted to the radio controller or in the operator's cabin. The tablet and radio controller provide crane and process data to aid in troubleshooting and preventive maintenance.

# CXT Explorer

## Lift anywhere

The Konecranes CXT Explorer is an affordable, strong and portable solution for all kinds of lifting needs. This crane follows you practically wherever you need to lift up to 6.3 tons. We have put standard lifting equipment into one ISO shipping container to bring you a predesigned package with a carefully-selected range of standard functions and optional extras.

### Mobile

You can easily transport the CXT Explorer inside or outside. It only takes a few hours to set up or dismantle the crane.

### Complete

The CXT Explorer is sold and delivered as a predesigned package, so the delivery process is fast. All of the crane components arrive at your site in one standard ISO shipping container.

### FACTS AT GLANCE

- Lifting capacity 6.3 tons (13900 lbs)
- Span 5m (16.5ft)
- Height of lift 5m (16.5ft)
- Runway length 6m (20ft)
- 6m (20ft) standard ISO shipping container



### Safe

A stable and reliable crane you can operate from the ground makes field lifting safer and more accurate, and lowers the risk of damage or collision.

### Service

Comprehensive service programs, spare parts and fast service response save you time and money.

### Primary applications

- Working with large or heavy materials
- Maintaining heavy machinery or equipment
- Loading and unloading tasks
- Moving industrial equipment, vehicles and other items

### Customer areas

- Construction
- Mining
- Vehicle maintenance
- Agriculture
- Natural gas compressor stations
- Oil exploration, onshore and offshore drilling

OVERHEAD CRANE

- CXT electric overhead crane (1, total weight approx. 1250 kg)
- Equipped with electric hoist
- 2 speed contactor controlled lifting
- 1 speed contactor controlled travelling movements

STEEL STRUCTURE

Total weight approx. 1800 kg / 3970 lbs

6M (20FT) STANDARD ISO SHIPPING CONTAINER

On any solid surface and in any location, the crane is reliably supported by two sturdy shipping containers.

# Make the most of your working area

When you don't have room for a standard elevated runway, choose the CXT gantry crane. With the CXT gantry crane you can build your production in multiple layers. It maximizes your operating area and uses our well-known CXT hoist, built to last with specialized Konecranes components, for all of your lifting needs.

With specially-designed steel structures, the CXT gantry crane can fit into different kinds of buildings and areas, indoor or outdoor. It is available in several different girder designs and trolley configurations.

An even better fit



## FACTS AT GLANCE

- capacity: up to 30t\* in total with 1-2 hoists
- lifting heights: up to 12m\*
- span: up to 25m\*
- runway: up to 120m\*

\*By request capacity up to 80t, lifting height up to 10-15m, span up to 30-40m, runway up to 240m

Flexible structure guarantees, that crane doesn't get stuck during the traveling movement

Safety loops to help avoid collisions

Rail cleaners to ensure smooth crane movement

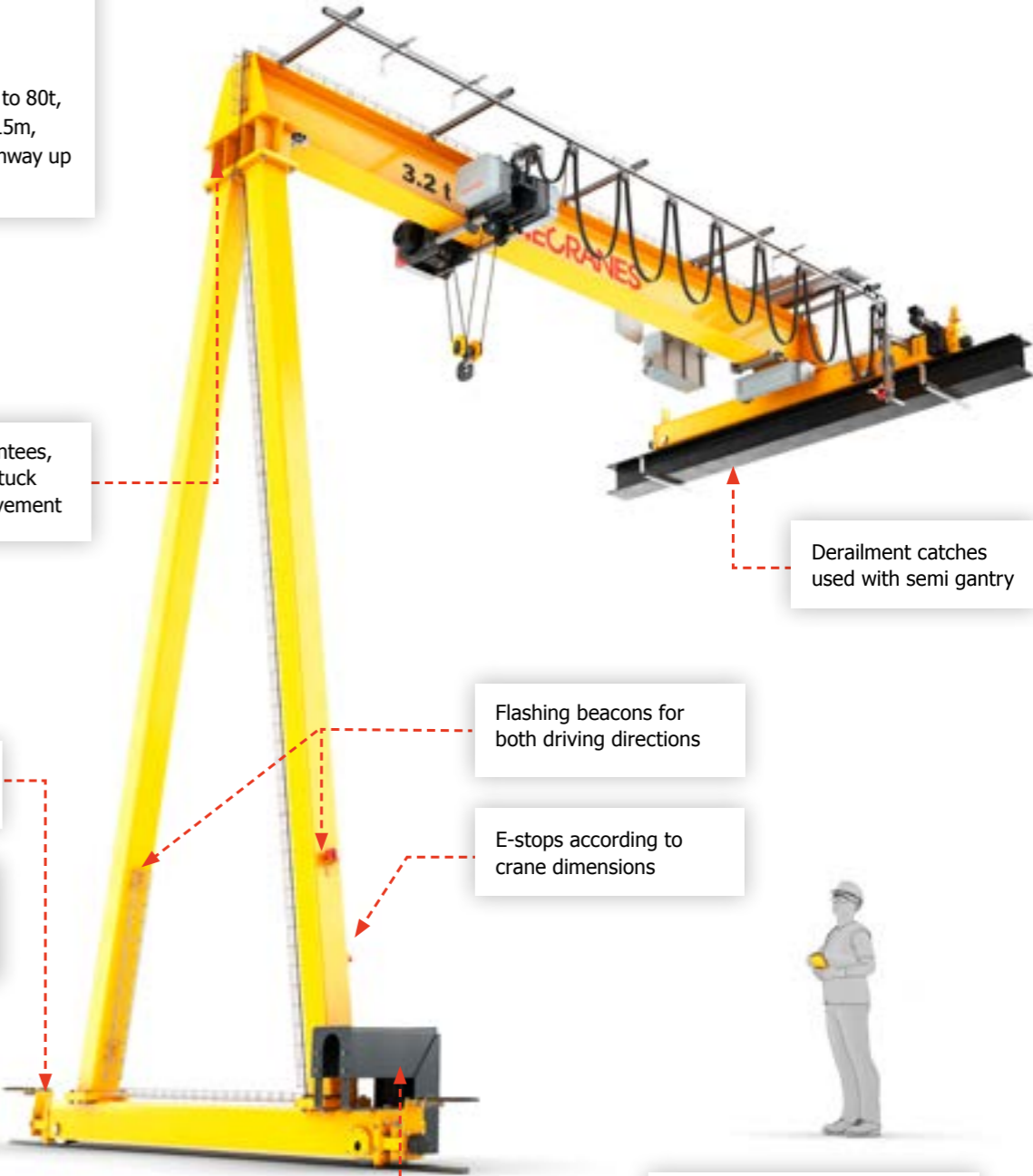
Flashing beacons for both driving directions

E-stops according to crane dimensions

Derailment catches used with semi gantry

Optional compact gantry gear with cover to save space

Single girder semi gantry



Special Applications

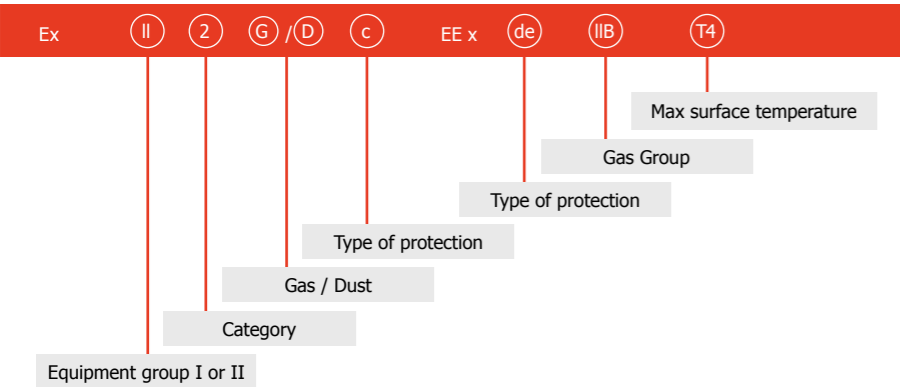
# Cranes and hoists for Hazardous environments



### Ex optimized and tailored applications with the highest level of safety

We offer a wide range of products for hazardous environments such as chemical and petrochemical plants, oil refineries, gas power plants, waste water treatment plants and paint shops. Wire rope hoists, chain hoists, air balancers, traveling machinery, end carriages, crane controls and other strategic components are designed and manufactured to meet the highest safety level required in hazardous environments.

### Product EX marking according to ATEX



### Coker cranes

Konecranes Coker cranes are process-critical equipment in the petrochemical refining process. They handle coke from the point of discharge at the coke drums to intermediate storage in the pit/ pad layout, and on to the crusher/ hopper in preparation for conveyance off-site.

Our Coker cranes are protected against corrosion, heat, dust and moisture. They are also equipped with chemical filters for protection.

<b>Overhead Coker (EOT) cranes:</b>	Spans up to 48 meters Lifting capacity 55 tons
<b>Semi-Gantry Coker (SLG) cranes:</b>	Spans up to 48 meters Lifting capacity 55 tons
<b>Semi-Gantry Coker (SLG) cranes with cantilever:</b>	Spans+cantilevers up to 50 meters. Lifting capacity 55 tons



**160 ton**

- EXSM Open Winches
- Tailored Cranes
- Coker Cranes



**80 ton**

- EXCXT Wire Rope Hoists
- EXECT Wire Rope Hoist Cranes



**20 ton**

EKM2 Manual products



**5 ton**

EX Jib Cranes



**5 ton**

- EXN Electric Chain Hoists
- EXN Chain hoist Cranes



**2 ton**

EXXA and EXXM Workstation Cranes

### Konecranes products for the following hazardous environments:

Suitability for gas / dust environment	Zone 2 / Zone 22	Zone 1 / Zone 21	Zone 0 / Zone 20
EXCXT wire rope hoist crane	✓	✓	✗
EXCXT wire rope hoist	✓	✓	✗
EXN electric chain hoist crane	✓	✓	✗
EXN electric chain hoist	✓	✓	✗
EXCLX electric chain hoist	Zone 22 only	✗	✗
EKM2 manual hoist	✓	✓	✗
EXXM and EXXA workstation cranes	✓	✓	✗
Ex jib crane	✓	✓	✗

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.

### 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.



Special Applications

# Tailored cranes

## Custom cranes for every lifting purpose



### Steel

Heavy-duty, engineered, tailored cranes for the steel industry are built to provide safe and productive lifting through every process in steel mills.

## Built for individual needs

When you need a tailored crane application, we can supply custom lifting equipment that is integrated into your processes. With regular maintenance and upgrades, we make sure the crane fits your long-term lifting requirements.



### Automotive

Tailored cranes are used in the stamping line and die handling, especially when four point suspension is required to keep asymmetrical loads horizontal.



### Power plants

In hydro power plants, our lifting equipment is used as intake and draft tube gantry cranes. If you need higher capacities, we can build tailored cranes for tandem use, using our standard trolleys.



### Pulp & paper

Konecranes supplies tailored cranes, with either vacuum lifters or mechanical roll grippers, for automatic paper roll storage systems.



### Waste-to-energy

Tailored cranes are used in waste-to-energy plants for stacking, mixing and feeding waste to combustion chambers.

Special Applications

# Port cranes

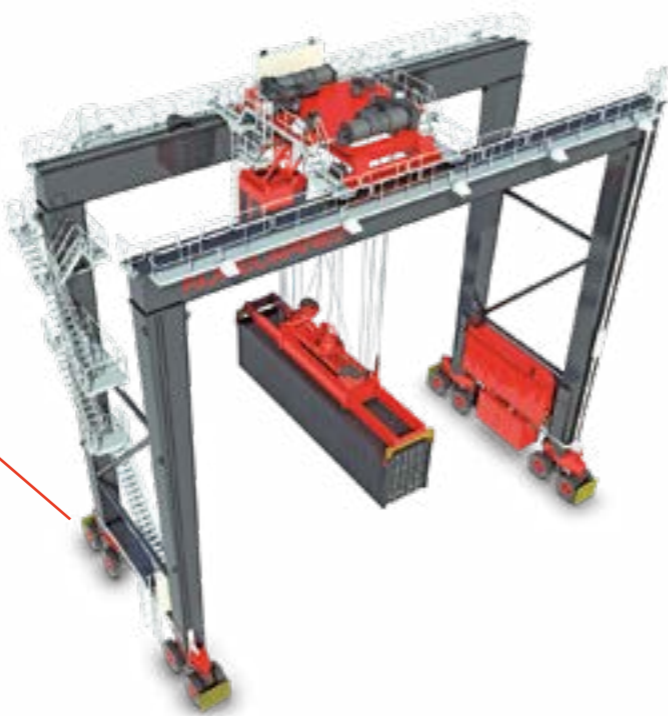
## Smarter where it matters

### Container handling cranes

#### Rubber-tired gantry cranes

Greater reliability, reduced downtime and lower maintenance costs with hydraulics-free engineering

- Unique ability to tolerate rough yard surfaces
- Intelligent steel structure and Active Load Control system
- Dimensions: max. 1 over 6 and max. 8+ truck lane.  
Available with 8 or 16 wheels



#### Automated stacking cranes

- Fast, accurate container stacking with light, intelligent structure, Active Load Control and integrated positioning
- Built to handle yard and rail configurations and work practices
  - Automated RMG (ARMG) system, field-proven and reliable
  - Automated RTG (ARTG) system, concept adapted from ARMG system



#### Ship-to-shore cranes

- Used for loading and unloading containers from ships
- Outreach of up to 70 m
  - Panamax Capacity: 40–50 t, lifting height: 28–32 m Post Panamax Capacity: 50–65 t, lifting height: 32–36 m
  - Super Post Panamax Capacity: 50–70 t, lifting height: 36–40 m



#### Rail-mounted gantry cranes

- High performance, reliability, easy and accurate steering, low costs and low energy consumption
- Tailored to specific operations and delivered in different sizes and configurations including zero outreach and outreach from both sides
  - Designed to lift all container and trailer types
  - Capacity: 50 t under spreader
  - Max lifting height: 1 over 6



#### Boxhunter

- The first RTG on the market which allows the operator to sit and work in an ergonomic heads-up position
- Allows the operator to work in a cabin at the truck lane, with direct line-of-sight to the main truck loading and unloading action
  - Dimensions: max. 1 over 5, max. 7+ truck lane
  - Available with 8 or 16 wheels



#### Straddle carriers

- Konecranes Noell Straddle Carriers are known for their excellent maneuverability, high speed and reliability. They do not need yard infrastructure, so initial investment costs are low. They are available in different sizes, stacking containers 1-over-2 or 1-over-3, ideally suited for step-by-step enlargement of container terminals as required. They are also now available as automated versions.

## Bulk handling and shipyard cranes



#### Plate unloading cranes

- Cranes that maximize unloading efficiency when you need to unload steel plates arriving by sea
- Flyweight Capacity 40 t, lifting height 14–19 m, outreach 20–25 m
  - Welterweight Capacity 57 t, lifting height 20–25 m, outreach 25–30 m
  - Heavyweight Capacity 75 t, lifting height up to 45 m, outreach up to 40 m



#### Block-handling cranes

- Block-handling cranes with bridge, semi-gantry and gantry designs that are built for reliability and accuracy
- CXT Cranes Capacity 1–16 t, lifting height up to 20 m, span 110 m
  - SMARTON Capacity 16–250 t, lifting height up to 30 m, span up to 60 m
  - Tailored Cranes Capacity 50–350 t, lifting height up to 40 m, span up to 80 m



#### Single-boom shipyard cranes

- Designed for general ship outfitting; small and large shipbuilding and repair
- Flyweight Capacity 22–50 t, lifting height up to 70 m, span down to 6 m
  - Welterweight Capacity 50–100 t, lifting height up to 120 m, span down to 8 m
  - Heavyweight Capacity 100–350 t, lifting height up to 120 m, span down to 10 m



#### Plate handling cranes

- Tailored to your shipyard for maximum efficiency and safety
- CXT Cranes Capacity 1–16 t, lifting height up to 20 m, span up to 40 m
  - Welterweight Capacity 25–80 t, lifting height up to 20 m, span up to 45 m
  - Heavyweight Capacity 10–30 t (under magnet), lifting height up to 15 m, span up to 50 m



#### Floating dock cranes

- A special type of single-boom crane for floating dock launches and repairs
- Standard Capacity 10–20 t with an outreach of 20–30 m. Lifting height 25–30 m above rail and 15–25 m below rail.
  - Tailored Capacity: up to 60 t with an outreach up to 40 m. Lifting height up to 45 m above rail and up to 30 m below rail.



#### Double-boom shipyard cranes

- Accurate, heavy-duty load handling cranes used in shipyards worldwide
- Flyweight Capacity 22–50 t, lifting height up to 70 m, span down to 6 m
  - Welterweight Capacity 50–100 t, lifting height up to 120 m, span down to 8 m
  - Heavyweight Capacity 100–250 t, lifting height up to 120 m, span down to 10 m

### Goliath gantry cranes

- For heavy-duty ship hull assembly at shipyards
- Flyweight Capacity 250–700 t, lifting height up to 90 m, span of 60–230 m
  - Welterweight Capacity 700–1200 t, lifting height up to 120 m, span of 50–230 m
  - Heavyweight Capacity 1200–2200 t, lifting height up to 120 m, span of 50–230 m



# Lift trucks

The strength, performance and reliability of every Konecranes lift truck is based on three core advantages of our technology:

### Strong box-type chassis

Four welded steel plates make our box-type chassis the strongest on the market. Compared to a conventional lift truck chassis, it features double torsional stiffness as well as greater strength and lifting capacity with no reductions at high lift heights.

### Efficient load-sensing hydraulics

The lift truck provides maximum power only when really needed, consuming less fuel while reducing emissions and noise. Service intervals are longer – from 4,000 hours to 12,000 hours. This contributes to reduced wear and tear on components and lower total cost of ownership.

### Intelligent electronic machine control (EMC master)

EMC Master monitors the lift truck’s vital components and functions, and can be linked with Konecranes TRUCONNECT remote data monitoring and reporting system. Its settings are programmable to adjust to your needs.

### Reach Stackers

10–80 tons

Technical data	Empty container stackers	Laden container stackers	Railroad/barge stackers	Industrial stackers
Lifting & handling	Empty containers	Laden containers	Containers, trailers & bulk	Industrial cargo
Stack density (TEU/hectare)	400–1600	250–750	250–750	
Main features	Versatile & fast	Versatile & fast	Versatile & fast	Versatile & fast
Investment & running costs	Low/low	Low/low	Low/low	Low/low
Lifting capacity min. (1-2-3 row)	10–8–5 tons	41–27–14 tons	41–23–9 tons	10–30 tons
Lifting capacity max. (1-2-3 row)	25–18–8 tons	45–45–45 tons	45–45–45 tons	30–80 tons
Container stacking	3–6 containers	5–6 containers	4–5 containers	8–16 meters




### Empty Container Lift Trucks


8–10 tons

Technical data	Small	Medium	Large
Lifting capacity	8 tons	9 tons	10 tons
Stacking height	3–6 containers	4–8 containers	4–8 containers


### Industry applications




Container Ports & Terminals




Wood, Pulp & Paper




Wind Power




Intermodal & Barge Handling




Steel, Aluminum & Mining




Concrete, Brick & Rock




Automotive




Heavy & General Industry




Oil & Gas



Nuclear Industry



Waste-to-Energy & Biomassy



Customized Solutions

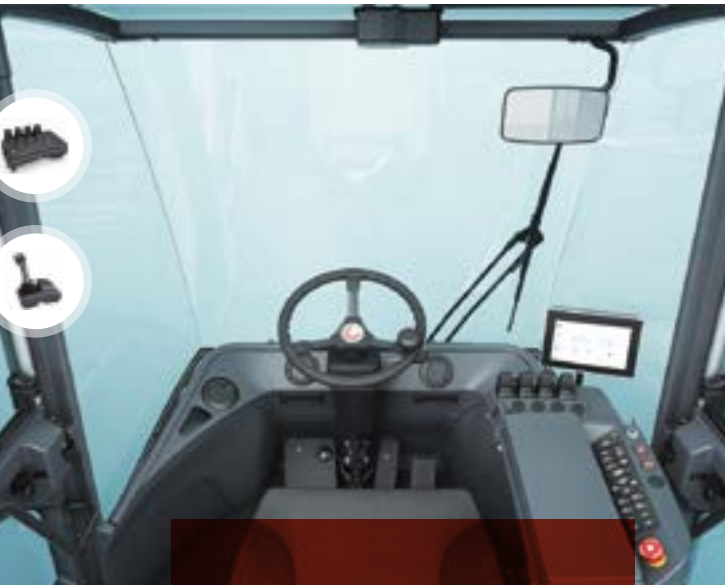
### Leaders in lifting

Our mission is to build the hardest-working, longest-lasting heavy-duty lift trucks in the world. To accomplish this, we pay close attention to quality in every phase of design, production and delivery. We continuously improve our trucks based on customer feedback – how do our customers use our trucks? What advances would improve the safety and productivity of their operations?

### Generation c cabin optima

An OPTIMA cabin is customizable for your exact operational needs. You can select mini-wheel steering or lever steering, change the driver’s seat type, and choose precisely the instrumentation you require.

A hydraulic sliding cabin (stroke 2900 mm), a vertically movable cabin RHS (stroke 2850 mm) and EMC remote control are also available.



### BENEFITS

- Remarkable visibility
- Full monitoring 7” touch screen
- Left armrest mini-steering options
- Ergonomic instrumentation
- Best possible comfort
- Joystick control



### Fork Lift Trucks

10–65 tons

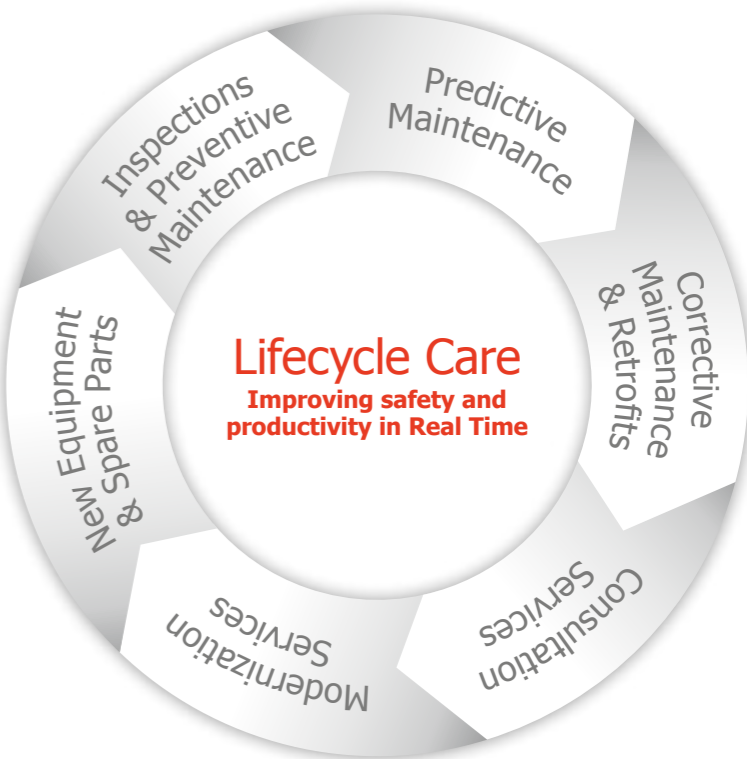
Technical data	Small	Medium	Large
Lifting capacity	10–18 tons	18–33 tons	37–65 tons
Lifting height	3–12 meters	3–15 meters	4–15 meters



# Our approach to maintenance

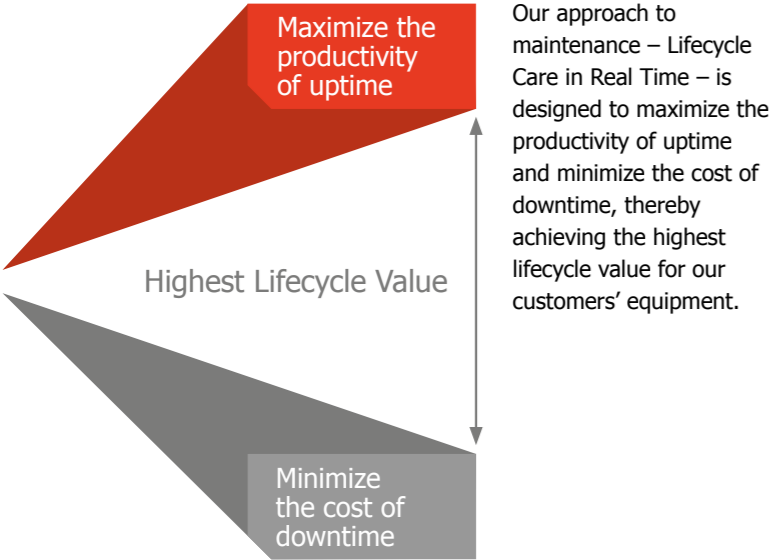
Lifecycle Care is our comprehensive and systematic approach to maintenance, supported by world-class digital tools and processes. We deliver Lifecycle Care in Real Time by connecting data, machines and people. We use real-time visibility of comprehensive maintenance and usage data combined with our knowledge and experience to deliver safety and productivity improvements to our customers.

Our crane experts apply a systematic Risk and Recommendation Method and a consultative, planning and review process to drive continuous improvement in safety and productivity.



## Konecranes Service

We provide specialized maintenance services and spare parts for all types and makes of industrial cranes and hoists – from a single piece of equipment to entire operations. Our objective is to improve the safety and productivity of your operations.



600 000  
Assets under service agreement

7 000  
Service employees

4 000  
Service technicians

20 000  
Remote connections

50  
Countries



- Lifecycle Care in Real Time**
  - Inspections and preventive maintenance** identify risks and improvement opportunities, and support compliance with regulations and standards.
  - Predictive maintenance** utilizes condition monitoring, advanced inspections and data analytics to predict component or equipment failure.
  - Corrective maintenance and retrofits** address safety and productivity issues and capitalize on improvement opportunities.
  - Consultation services** guide decision making and uncover critical issues, using advanced technology and trained specialists when a deeper look at a crane and its components is required.
  - Modernization services** prolong the economic service life of equipment and achieve increased capacity, speed, duty or load control.
  - New equipment & spare parts** range from simple chain hoists and light crane systems to industrial and process duty cranes plus spare and replacement parts.

# CARE Preventive Maintenance Program

The foundation of Lifecycle Care is our CARE Preventive Maintenance Program. This program has been designed to improve equipment safety and productivity through the systematic application of preventive maintenance inspections, compliance inspections where applicable, routine maintenance, and TRUCONNECT® Remote Monitoring.

## Service agreement tailored to your equipment and how you use it

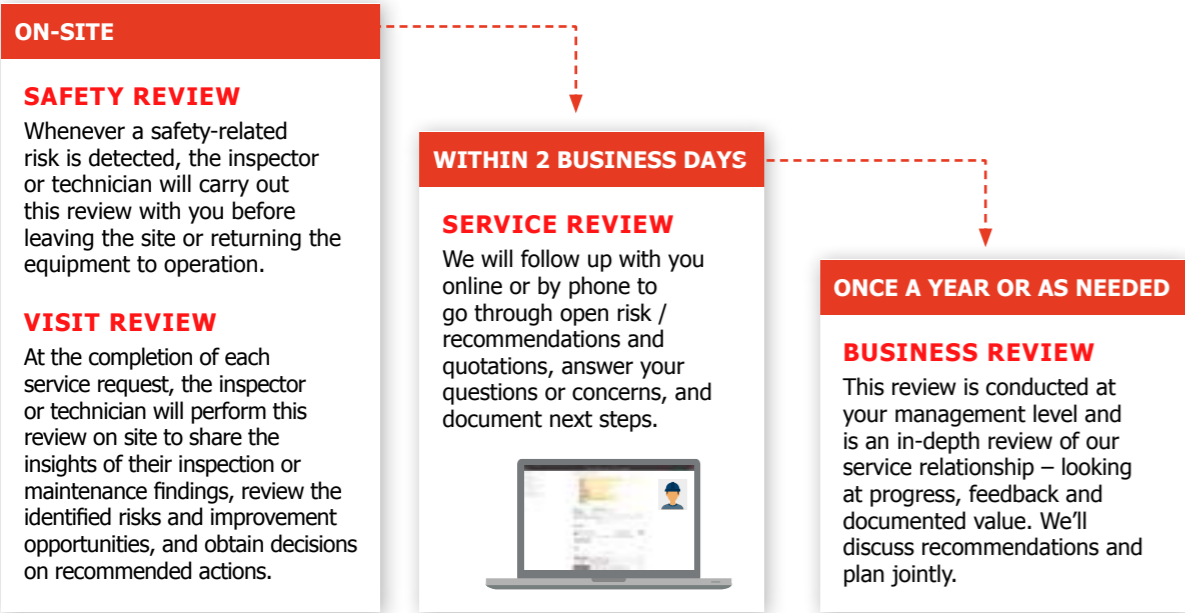
We tailor the service agreement to your operations taking into account the equipment, its usage, operating environment, duty class, service history, manufacturer's recommendations and statutory requirements.

Inspections and preventive maintenance make up the core of the CARE program, providing a baseline for maintenance planning, tracking, reporting and consultation. Incorporating predictive maintenance elements as part of a CARE Preventive Maintenance program can further optimize maintenance activities, reduce unplanned downtime and improve equipment safety, productivity and lifecycle value.

## Risk and Recommendation Method

Using this method, we assess and prioritize safety risks, production risks and identify undetermined conditions. We also look for improvement opportunities that are not associated with a particular fault. Recommendations are then provided to improve your safety and productivity via our consultative reviews.

## Consultative approach



## Other programs in addition to CARE

**JUST THE BASICS**

**CONTACT ON-DEMAND SERVICE**  
We can respond quickly when you CONTACT us for parts, breakdowns and other short-term needs.

**CONDITION INSPECTION PROGRAM**  
If you are not ready to outsource your preventive maintenance, our CONDITION inspection program can help you comply with your local statutory inspection requirements and/or support your own in-house maintenance actions.



**BEYOND PREVENTIVE MAINTENANCE**

**COMMITMENT MAINTENANCE PROGRAM**  
For customers that recognize the benefits of broad-scope maintenance outsourcing, our COMMITMENT maintenance program can be tailored to your requirements.

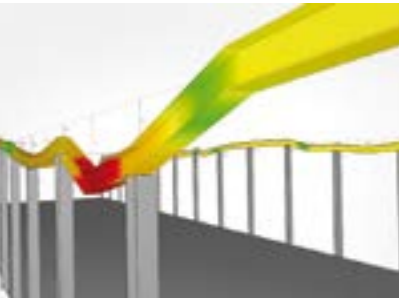
**COMPLETE MAINTENANCE & OPERATIONS PROGRAM**  
For customers that are looking to outsource their entire material handling process, including operations and maintenance, our COMPLETE maintenance & operations program may be the answer.

# Service products



## RailQ™ crane runway survey

Konecranes RailQ Runway Survey uses a remotely operated robot combined with a visual inspection to provide you with an in-depth view of the alignment and condition of your crane rail.



3D visualization of the condition of the rail



## CraneQ™ crane geometric survey

CraneQ is based on advanced and traditional measurement methods. Proprietary software and skilled survey technicians provide an extremely accurate geometric analysis of your crane.



## RopeQ™ magnetic rope inspection

Konecranes RopeQ technology uses non-destructive testing methods to analyze the condition of the internal wires, strands and wire rope core that are not typically visible.



## Critical components assessment

- Gear case inspection:**  
This is an assessment of the internal gear case components that are not typically evaluated during routine inspections.
- Coupling inspection:**  
The coupling is taken apart and cleaned of old grease. The surfaces are then visually inspected.
- Hook/Shank inspection:**  
This includes various proven non-destructive testing techniques such as dye penetrant, magnetic particles and magnetic rubber.
- Below-the-Hook inspection:**  
This is designed to inspect the removable devices attached to your crane hook during operation.



## Crane reliability study

The Crane Reliability Study (CRS) is an engineering assessment that studies the current condition of your crane and provides a theoretical estimate of its remaining design life.



## Crane operator training

This training is designed for crane operators and supervisory personnel responsible for the daily operation and safe performance of cranes. The training provides knowledge to assist in reducing operator errors that may lead to safety risks or unnecessary downtime.

## Oil Analysis

Assists in deciding the optimal oil change timing for hoisting, traveling and traversing gears. Can also provide useful information regarding the condition of internal gear components and trends in oil condition may reveal defects such as slowly accumulated fatigue on gear teeth.



# Spare parts

## It doesn't matter who made your crane

We are fluent in all crane brands, not just our own. With almost a century of experience working on all types and makes of cranes, we have become the leading overhead crane maintenance supplier in the world.

### Crane parts for all makes

As the largest industrial crane supplier in the market, we make it our business to provide parts, not only for our own equipment, but for all competing makes and models of hoists and cranes. It doesn't matter who made your crane – call us for your parts needs.

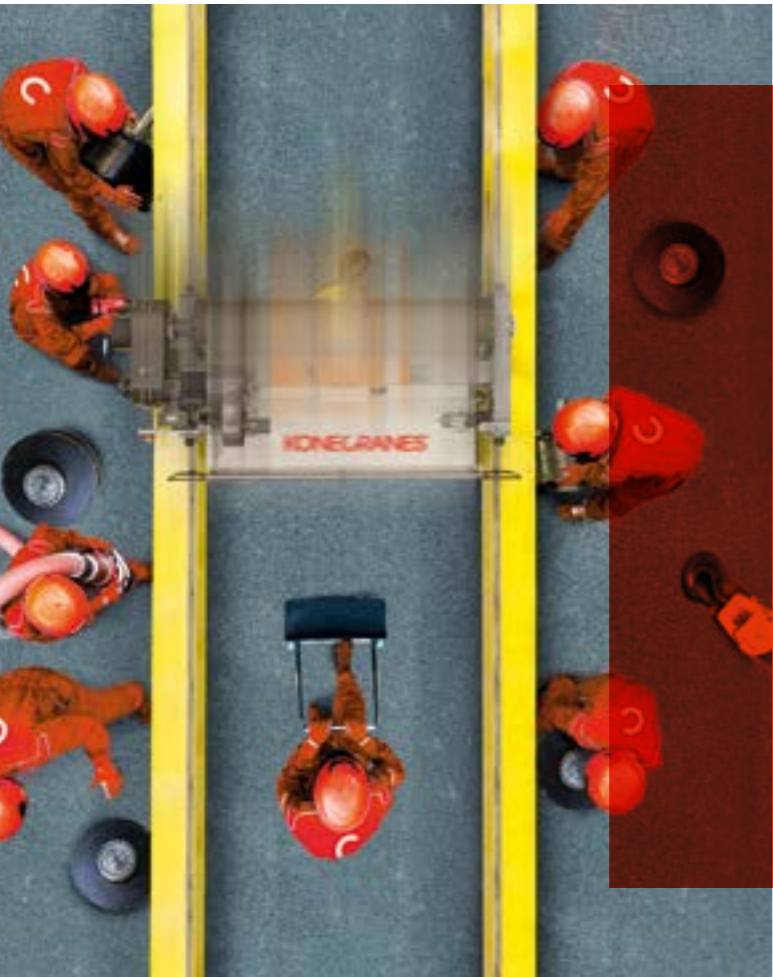
### Equivalent parts

Equivalent parts are functionally similar to the original parts yet competitively priced against the market. They may include manufactured, re-engineered or original parts, depending on the best arrangement for you and your crane.

### Out of stock doesn't Mean out of luck

Even if we don't have in stock what you need, we can design and manufacture a custom part just for your equipment. With countless OEM drawings in our parts library, we can even fabricate parts for equipment no longer being manufactured.

Engaging the reverse engineering process allows for enhancements to the material, design or manufacturing process that can improve performance and the overall life span of the part. Rebuilt parts offer an alternative that is both cost and time effective.



### Spare parts experts

Our experts are ready to research and analyze your requests quickly. Almost 90% of parts inquiries are responded to within 48 hours. For Spare Parts Inquiries:

#### Middle east

parts.me@konecranes.com  
Tel.: +971 4 815 6800

#### Kingdom of Saudi Arabia

Tel.: +966 13 341 0030  
Toll Free: 800 247 0133  
services.ksa@konecranes.com

#### United Arab Emirates

Tel.: +971 4 335 4909  
contact@cis.ae

### Middle east parts distribution centre

Konecranes Middle East has established a Parts Distribution Centre in Dubai, which services the complete Middle East Region. It provides full support to our customers with fast turnaround times for queries and orders. Our highly trained team offers assistance in identifying the right parts – not only for all models of Konecranes equipment, but also for crane parts of other makes.

We have a high availability of parts in stock and are also backed up by the Konecranes Central Global Distribution Center in Hyvinkää, Finland. The stock holding has resulted in a significant increase in optimized delivery punctuality. Our team aim to offer a turnaround time, wherever possible, of within 24 hrs, depending on the request.

### Minimize downtimes – let us install your spare parts

By choosing Konecranes professionals to do your installation work, you will know that installation is done properly, and your equipment is back in production without unnecessary downtime.

### Expedited delivery For all parts

Sometimes your situation might be so critical that you need the spare part faster than normal delivery times would allow. In such cases our VIP expedited delivery services are there to help you.



**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 over 16,000 employees at 600 locations in 50 countries. Konecranes shares are listed on the Nasdaq Helsinki (symbol: KCR).**

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