KONECRANES®
Lifting Businesses™

SMARTER WHERE IT MATTERS

IN THE STEEL INDUSTRY

Watch the Greetings from Panu Routila, Konecranes President and CEO

SMARTER WHERE IT MATTERS

A guide to the world’s leading steel-handling equipment and service

SMARTER WHERE IT MATTERS IN STEEL

konecranes.com

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EXPLORE THE KONECRANES VIDEO LIBRARY

Americas HQ
Springfield, Ohio

NOT JUST LIFTING THINGS, BUT ENTIRE BUSINESSES

Konecranes is an industry-leading group of lifting businesses, with offices and factories around the globe. Everything we do is targeted at one goal: improving the performance of our customers' businesses.

LIFTING AROUND THE CLOBE

We believe that corporate responsibility is an essential part of sustainable growth. We respect our personnel, the environment, and the societies in which we operate. Continuous improvement directs everything we do. Our commitment can be seen in our values, policies, and Code of Conduct.

From the moment we start the design process, we always consider usability, eco-efficiency and safety as guiding principles across the full product life cycle of every crane. Operational efficiency, including minimizing the use of energy, raw materials and chemicals, is essential to Konecranes.

Learn more about corporate responsibility in industrial cranes

THE STRENGTH OF EXPERIENCE

When you choose Konecranes, you acquire a trusted source of global experience and knowledge combined with local know-how to empower your lifting operations and increase your safety and productivity. Konecranes began manufacturing overhead cranes in the 1930s and has since acquired other companies with experience dating back to 1884.

Get connected

OUR KNOWLEDGE AND ABILITY AT YOUR SERVICE

By choosing Konecranes, you can apply our extensive knowledge to improve your productivity and lift not only your steel, but your entire business as well.

LIFTING THROUGH EVERY PROCESS IN THE MILL

We work with you to lift heavy and dangerous items throughout your operation, from moving iron ore and recycled steel to **pouring hot metal** and shaping products in the rolling mill.

IN-HOUSE ANALYSIS AND ENGINEERING

Our own expertise and experience are available to you. We do not outsource our skill. Many of our engineers have worked in steel production. They know how steel is made, from raw material to the finished product and beyond.

USING THE LATEST TECHNOLOGY

Konecranes is known worldwide for creating and advancing new lifting technology. **Smart Features** such as Load Control, Sway Control, Target Positioning and Protected Areas, help reduce operator error. Our unique energy-saving technology uses regenerative network braking to reduce electricity costs and environmental impact.

KEEPING YOUR CRANE RUNNING

We train your people to operate and take care of your crane. Specialized maintenance services applied to your equipment are recommended throughout its lifetime. Maintenance done properly is an investment, not a cost.

Working together, our goal is to keep your steel-making lifting equipment working safely and efficiently for a long time to come.

WE KNOW STEEL-MAKING PROCESSES

OVER 600 SERVICE LOCATIONS WORLDWIDE

OVER 150 SERVICE AGREEMENTS WITH STEEL CUSTOMERS

OVER 500 HEAVY-DUTY PROCESS CRANE INSTALLATIONS

ACTIVE IN ALMOST 50 COUNTRIES

THE RESOURCES TO DELIVER, INSTALL AND MAINTAIN CRANES ON EVERY CONTINENT

SAFETY FIRST, LAST AND EVERYWHERE

At Konecranes, there is no job so important and no service so urgent that we cannot take the time to perform our work safely and correctly.

SAFETY IN A STEEL WORKS

Open flame, molten steel, severe heat, dust, continuous production, huge and potentially dangerous loads. Scrapyard, melt shop, rolling mill, storage areas. In each environment and every process, safety must be built into the design, operation, and maintenance of your cranes.

SAFETY IN DESIGN

Does your crane provider adhere to the international and local standards applicable in your jurisdiction? What about design for complex processes, environmental risks, human error, component failure, maintenance, and ergonomics? Our long experience in the steel industry equips us to know what works and what doesn't.

SAFETY IN OPERATION

A safe crane is the product of a good design, regular maintenance and safe use. Take advantage of our expert training, so that your operators work with skill and confidence. Features such as Overload Protection, Sway Control, Target Positioning, and Protected Areas can make valuable contributions to safety when used correctly.

SAFETY IN MAINTENANCE

The better a crane is maintained, the safer it will be. We prefer to take care of your cranes across their entire working lives and will recommend a Konecranes service contract as an investment in the continuous productive and safe use of your cranes.


Nucor Steel, Texas, United States
A SAFE CRANE IS THE PRODUCT OF A GOOD DESIGN, REGULAR MAINTENANCE AND SAFE USE

LIFTING STEEL

From the fires of production, a slab of yellow hot steel arrives safely and on schedule, cooling before it is lifted to the next step – the rolling mill.

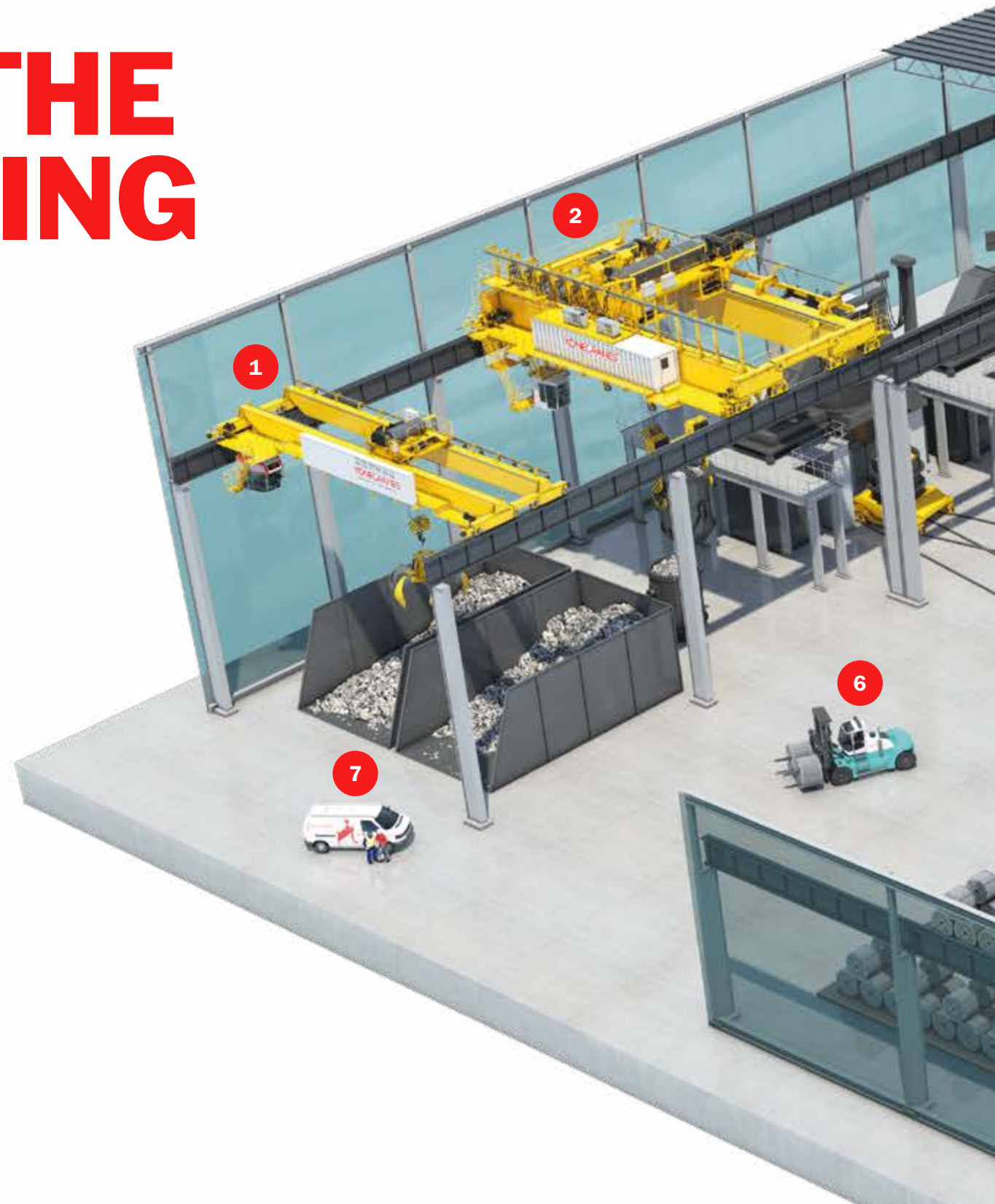
KONECRANES HOT METAL CRANES CARRY MOLTEN STEEL AS HOT AS

1400 °C

WE ADD VALUE AT EVERY STAGE OF STEEL PRODUCTION

WE KNOW THE STEEL-MAKING PROCESS

In the pages that follow, you will see Konecranes at work through the various stages of the steel-making process. Let the journey begin.



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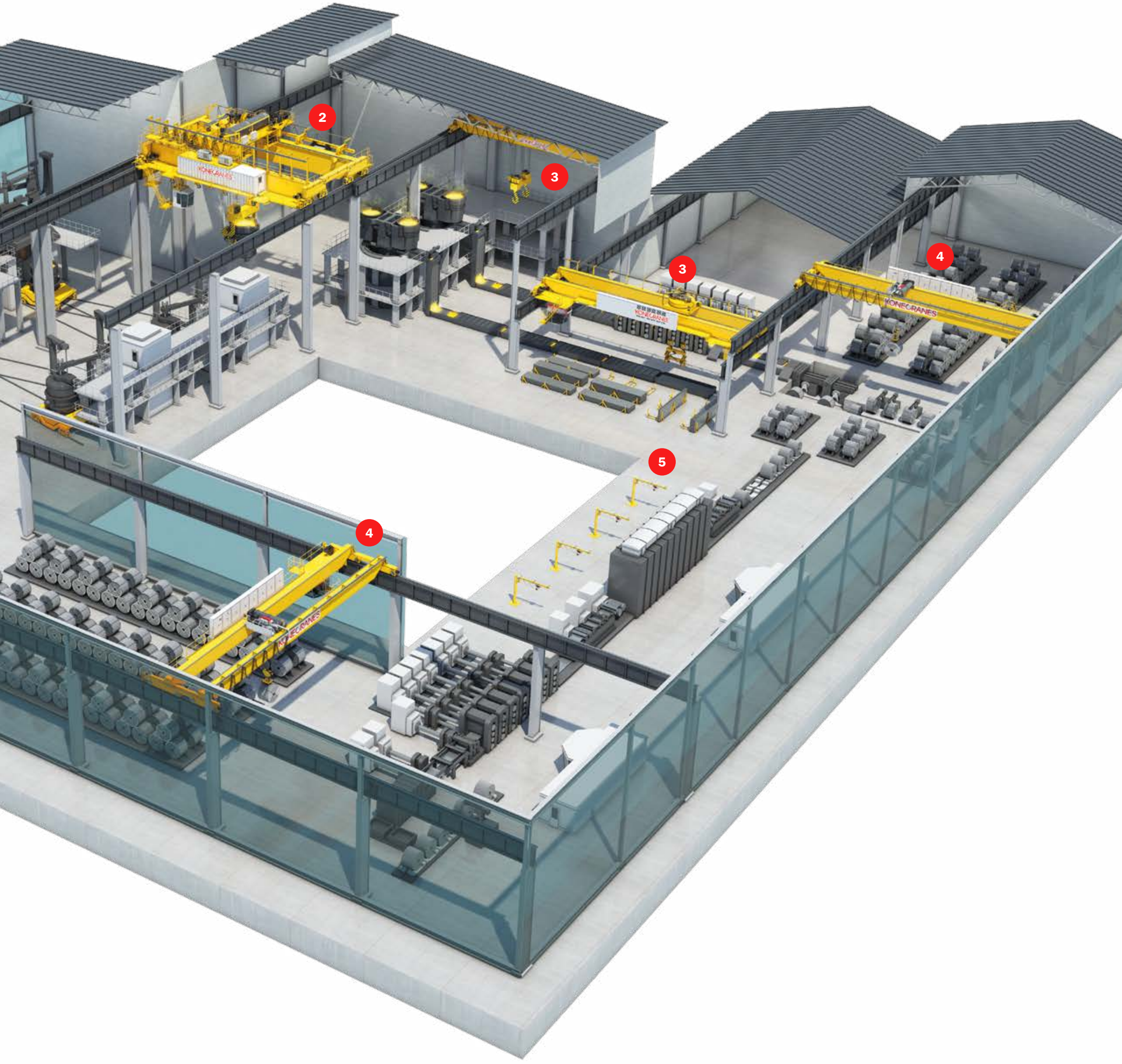
Get connected



TRASH AND TREASURE

The scrapyard

Scrap metal can arrive at a steel mill by sea, rail or road. A crane is needed that can reach into the delivery vehicle and unload it. Speed is vital: the faster the vehicle is unloaded, the sooner it can depart.

When your crane fits the size of the vehicles that supply your scrapyard, efficiency can be maximized. Unloading is then continuous, with little sway and side movement, keeping each duty cycle short. Scrap is a difficult material, with no defined shape for a hook or tong to fit onto. A claw grab picks up anything it can work its teeth around. A magnet pulls complete pieces of metal onto its surface. We recommend unloading attachments that can be changed easily. The choice of attachment will be determined by what is being moved: a claw grab is needed for non-magnetic materials.

Sometimes more scrap is received than can be processed immediately. And it will often be mixed, needing to be sorted before smelting. You might have a large storage area, and your crane must be able to reach all parts of this area to access the right materials quickly. Delays are costly: a fast, reliable crane will deliver the right metal to the smelter on time.

A **scrap unloading crane** for ships is built on the basic design of a **ship-to-shore (STS) crane**. Once onshore, a scrap crane is usually an **overhead traveling crane** for unloading a train or road vehicle, sorting the material, and loading the scrap bucket in readiness for the furnace.

Both crane types can be adapted for your load types and site conditions, and equipped with a level of automation that fulfills your requirements.

Learn more on page 56

THE CRANE MUST BE ABLE TO REACH EVERY PART OF THE YARD SO IT CAN GET THE RIGHT MATERIALS QUICKLY

SOME LIKE IT HOT

The melt shop

Steel-making is a continuous process. The melt shop is a hazardous environment of extreme heat, choking dust, hot metal, and naked flame. Melt shop cranes must be able to lift and carry buckets of liquid metal safely.

The ingredients for steel come from two main sources: raw materials and scrap. Because they are different substances, they are treated separately. Iron ore and coking coal are combined in a direct reduction process to produce solid metallic iron. **A ladle crane** lifts the melted iron for mixing with scrap to create molten steel.

The scrap coming from the scrapyard is loaded in the furnace with an **overhead charging crane**. The main hoisting machinery lifts the bucket to the furnace for melting. An **auxiliary hoist** on the crane opens and closes the bucket during loading. Depending on the facilities, a basic oxygen furnace or an electric arc furnace could be used. In a full-size mill, the scrap is added to iron, but in a mini-mill, the scrap might be the only raw source of liquid metal.

From the initial furnace blast in the steel creation process, a **teeming crane** helps mix the molten metal in the right proportions. Once the mix is right, liquid steel is then cast into shape, with continuous casting machines for example. **Tundish cranes** are typically utilized in tundish maintenance and handling.

The charging crane, ladle crane, teeming crane, and tundish crane are all quite similar and can be defined by their location and function in the plant. They are usually **overhead traveling cranes** that are fitted with special attachments to lift the giant ladles that contain liquid metal. They often perform more than one function and are used as backup for each other. Auxiliary hoists can be attached for scrap charging and maintenance functions, such as cleaning the empty ladles or lifting the furnace shell.

Every Konecranes hot metal crane is designed specifically for the unique challenges of this environment. Increased working coefficients, a differential gear reducer, redundancy in all critical systems, a backup brake on the rope drum, and motion limiters are just some of the technologies we employ to ensure our cranes for this application are reliable. Automation of repetitive movements and an air-conditioned, ergonomic cabin keep the driver comfortable and able to concentrate on the task at hand.

To help the cranes last, exposed areas are protected against heat and dust. Our cranes can be fitted with remote monitoring so you can follow the operating statistics of the crane throughout its lifecycle. Routine maintenance helps to prevent unexpected faults, minimize downtime, and maximize the productivity of the crane.

Learn more on pages 58–61

EVERY KONECRANES HOT METAL CRANE IS DESIGNED SPECIFICALLY FOR THE UNIQUE CHALLENGES OF THIS ENVIRONMENT

KEEP ON ROLLING

Rolling area

The slabs and billets that come out of the melt shop are white-hot and malleable. They can be put through rolling presses and turned into any shape required. Sometimes this is done immediately. Sometimes they are placed in a storage area to be processed later. Because the melt shop environment is so hazardous, the presses are usually some distance away from it. Cranes are needed to move the cooling, yet still hot, malleable shapes from casting to the rolling mill.

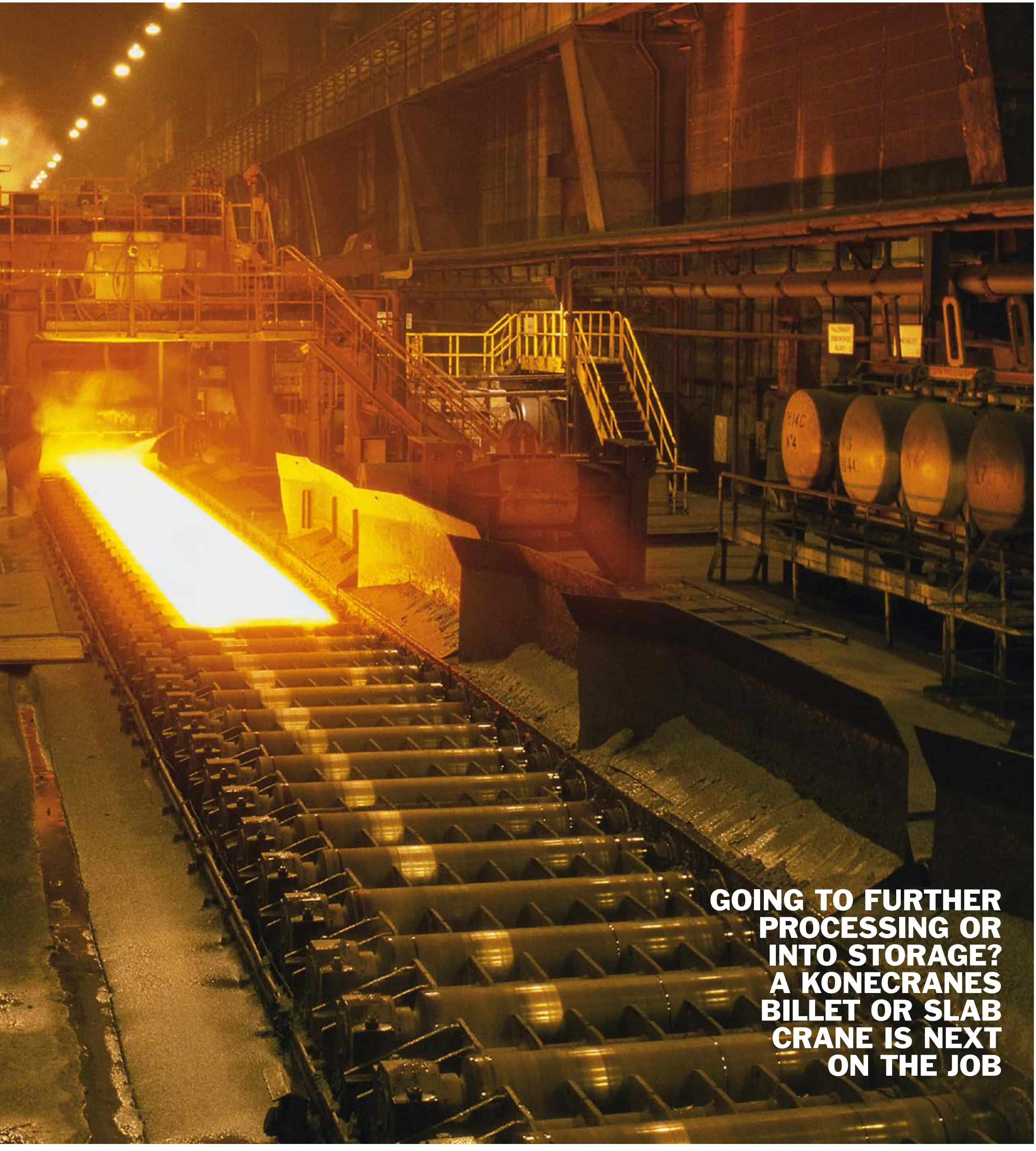
A billet or slab crane is usually an Electric Overhead Traveling (EOT) crane that is very maneuverable. It needs to travel the long distance between the melt shop and the rolling area. It can move the hot, soft metal from the casting area into storage if needed. It should be able to feed the billets or slabs into the rollers when required. Perhaps the steel needs to be reheated in another furnace before shaping continues. The same crane can move the steel that has been shaped to another conveyor for further processing, or take it to a storage area.

The wide variety of products and shapes that come off the rollers means that the cranes need **special load handling devices**. Mechanical or hydraulic tongs can pick up slabs, magnets can take slabs, billets or coils, and c-hooks can lift coils and smaller billets. Because the steel needs to be warm for shaping, there is some radiated heat, and the grabs need heat protection.

Every factory has a limited amount of floor space. A rotating trolley or lifting beam helps operators position steel more accurately onto the conveyors that feed the rollers or storage areas. Auxiliary hoists assist in positioning longer objects and in maintenance tasks.

Konecranes slab or billet cranes are typically equipped with a number of Smart Features such as Sway Control, Slack Rope Prevention, Soft Touchdown and Load Positioning. These Smart Features reduce the wear on your crane, extending its lifetime and lowering repair and maintenance costs**.** They also help drivers complete difficult tasks easily, so the crane performs better. These cranes can even be fully automated, taking your factory that one critical step further.

Learn more on page 62



GOING TO FURTHER PROCESSING OR INTO STORAGE? A KONECRANES BILLET OR SLAB CRANE IS NEXT ON THE JOB

STAYING IN AND MOVING OUT

Storage area

When steel products come off the production line, some of them might be shipped immediately. Others must be taken to a storage facility.

Cranes in the warehouse are usually Electric Overhead Traveling (EOT) cranes, installed above the main storage areas. These areas are not very hot or dusty, but some heat protection is still required. A smaller facility, without the room for a gantry or bridge crane, might use wall console cranes instead. In a very big operation, these are also handy as auxiliary cranes. **Fork lift trucks** give the ability to move steel products anywhere a crane can't go. Reach stackers can reach higher than fork lifts, allowing you to build and use extra-high storage racks.

Nobody likes to wait: customers want their orders filled without delay. Operators need to quickly find the right products for the right customers in a big storage area. Some facilities run around the clock, and all the cranes must work continuously.

Konecranes makes the lifting equipment you need for reliable and efficient steel warehousing. Whether you are running a large steel warehouse alongside a steel mill, a small regional distribution office, or anything in between, we can help you make your warehousing operation more efficient.

Our EOT cranes can be equipped with a number of Smart Features. For example, Load Positioning, Sway Control, and Overload Protection not only shorten handling times, but also reduce wear and tear on the crane, extending its life. Automation eases the work of your crane operators while speeding up the work flow. The Konecranes Warehouse Management System helps organize your storage area and makes finding the right product for your customer a simple and straightforward process.

Konecranes provides attachments needed for easy handling of different loads of steel. Be it plates, tubes, rolls, coils, or any other product, we have all the specialized hook extensions you need, or we can design one just for you. Our lift trucks can be similarly equipped as needed.

Learn more on pages 64–73

Sapa Heat Transfer AB in Finspång, Sweden, operates a fleet of 10-ton Konecranes fork lift trucks in their warehouse and shipping operations. The trucks were designed specially to Sapa requirements.

Renault trusts Konecranes to move its steel coils safely and efficiently at its factory in Sandouville, France.

KONECRANES PROVIDES THE ATTACHMENTS NEEDED TO HANDLE DIFFERENT LOADS EASILY

Renault, France

CRANES

20.0T

SATISFIED CUSTOMERS

Here are some examples of how steelmakers around the world are using our lifting equipment in their own unique ways.

HEAVY HOT METAL

Nucor Steel, Jewett, Texas, United States

Its history goes back to 1905, but Nucor has focused entirely on steel from 1971. Since 2010, it has been one of the biggest steel producers in the United States, with a production capacity of 27 million tons per year and a workforce of over 20,000 people. The company produces a huge range of steel products, and is famous in the industry for its many mini-mills.

The short story

In an industry where backup cranes are standard, why did Nucor go with only one crane for each of four key processes? Could it be that Konecranes provided equipment so reliable that Nucor trusted in only one charge crane, one ladle crane, one billet crane, and one maintenance crane?

The long story

At its mini-mill in Jewett, Nucor replaced three 50-ton electric arc furnaces with a single, 90-ton furnace, a twin station ladle furnace, and a four/five strand billet caster. The upgrade was to increase production from 850,000 to 1.2 million tons of structural steel per year. For the new volume, they needed a full complement of new cranes to take heavier loads.

Nucor bought only four cranes – one charging crane, one ladle crane, one billet crane, and one maintenance crane. This was a radical new idea for Nucor, who previously always had extra cranes on standby, following standard industry practice. Instead, each crane is now equipped with redundant key systems: e.g. four to eight drive motors and “hot spare” inverters. This means that half of the drives can be out of action, and the trolley or bridge will still function.

Opened in 2004, the new melt shop has built a reputation as one of the most compact and efficient in the United States. With only one furnace and one crane for each function, Nucor saved the cost of four backup cranes as well as the associated building space.

Epilogue

Nucor has only four process cranes in this facility. They have achieved zero unplanned crane downtime and have exceptional control over their production.

On crane reliability:
“We are very happy with the reliability of the one-crane solution. The cranes have not caused any significant downtime. We attribute that to two factors: first, the design and quality of the crane, and second, the preventive maintenance practices we’ve established around a single-crane solution.”

On safety:
“The greatest contribution to safety is that the cranes are reliable. With the reliability of the cranes being so high, we’re not on the cranes nearly as much. Also, the design of the controls with all of the interlocks and safety features that are built into the operating system has had a significant impact on reducing the amount of operational errors that can damage the crane.”

Tommy Massey, Maintenance Manager, Nucor Steel

STEEL FROM THE FAR NORTH

Rautaruukki Corporation in Raahe, Finland

Rautaruukki Corporation is a metal component and system provider for steel construction and engineering businesses. With almost 12,000 employees in 27 countries and an annual turnover exceeding 2 billion euros, Rautaruukki is a significant operator in the Nordic countries, Eastern Europe, and Russia. The Raahe steel works produces 2.8 million metric tons of hot rolled steel and special steel products per year.

1975

- The Helsinki Accords are signed.
- The Vietnam War ends.
- Oil goes over $13.00 per barrel.
- The name “Micro-soft” is used by Bill Gates for the first time.
- Bohemian Rhapsody by Freddie Mercury’s Queen goes to number one in the UK.
- Rautaruukki Corporation buys a Konecranes crane for their Raahe steel plant in northern Finland.

2010

Nothing lasts forever. With increased production demands, the Raahe steel works needed a new hot metal crane to replace the one installed in 1975. A next-generation degree of safety, ease of use and ease of maintenance were key criteria.

Konecranes and Rautaruukki worked together to design the new crane, fitting it with Smart Features, such as Sway Control and Target Positioning, making the crane easier and safer to use, even at high speeds. The addition of the Konecranes Crane Monitoring System allowed for improved maintenance planning by giving visibility to the crane’s operating conditions.

The cooperation between Rautaruukki and Konecranes was based on mutual understanding of steel production processes. As a result, the new crane allows the mill to meet its increased production demands while maintaining safety, with high reliability and ease of maintenance, exactly as planned.

Watch why Rautaruukki trusts Konecranes.

“WHEN YOU HAVE PEOPLE WITH EXPERIENCE FROM A SIMILAR PROJECT, YOU DON’T NEED TO EXPLAIN THE PROCESS TO THEM. THEY KNOW.”

Esa Prokkola, Project Manager, Rautaruukki Corporation

WONDER DOWN UNDER

Bluescope Steel, Australia

With roots going back to 1885, Bluescope Steel is today the leading steel company in Australia and New Zealand. They have operations in 17 countries, almost 17,000 employees, and 100 manufacturing facilities around the globe. Bluescope has a growing international reputation as a producer of flat steel and steel building products.

Collaborative design between Konecranes and Bluescope

Bluescope Steel contacted Konecranes in 2009 when one of the cranes at their Wingfield distribution center needed replacement. Operating in the coil storage area, the entire production line would grind to a halt if the crane stopped operating. It was crucial to cold steel processing.

Engineers and management collaborated on the design and utilization of the crane based on current and future needs of the plant. Konecranes talked directly with Bluescope crane drivers to design the crane's ergonomic layout and enhance driver performance. Results of a Konecranes RailQ analysis were used to adjust the runway for an optimum fit. Bluescope was able to visit the Konecranes Sydney workshop before delivery to check details and request final adjustments.

Increased efficiency, optimized maintenance

The project increased mechanical and ergonomic efficiency. It was completed over a twelve-month period, with minimum disturbances to production. The new SMARTON crane continuously reports its hoist operating statistics using a remote monitoring system, providing visibility so that maintenance can be optimized. The crane has been carefully designed to accommodate future adjustments and upgrades as production demands continue to evolve.

“I AM TRULY HAPPY ABOUT THE PRODUCT, SERVICE AND EXPERTISE PROVIDED. THE CRANE IS SO SMART. IT IS BEYOND OUR DREAMS.”

Peter Terrison, Maintenance Supervisor, Bluescope Steel

A STEEL PRODUCTION TIGER

Siam Yamato, Thailand

Siam Yamato Steel has produced hot-rolled steel in Thailand since 1992. Leading Asian steel into the twenty-first century, the company opened one of the world's most advanced steel recycling mini-mills at Rayong in 2009. Siam Yamato had already been working with Konecranes for over 15 years. Happy with Konecranes lifting equipment and service, when they wanted cranes for their new mini-mill, Konecranes was an obvious choice.

Efficient, reliable and safe

The mini-mill had to be operationally efficient as well as eco-efficient, and deliver product reliably to demanding customers, while keeping its workers safe throughout the production process.

Eco-efficient and ergonomic

Konecranes provided ten cranes for the mini-mill: a 220-ton charging crane, a 220-ton ladle crane, an 80-ton casting crane, two 35-ton bloom handling cranes, a 25-ton machinery crane, and four CXT service cranes.

To be more eco-efficient, the largest cranes use the latest energy regenerating technology, which feeds clean energy back into the power supply. All of the new cranes feature built-in redundancy for critical functions. The redundancy contributes to safety and maximizes reliability, keeping the cranes operational especially during peak operating periods.

Workers who feel safe and comfortable tend to be more efficient. The crane cabins are designed to be comfortable and easy to maintain.

Technical support and service

Siam Yamato is very pleased with their Konecranes equipment. They also appreciate the strong after-sales technical support, which ensures the mini-mill stays online with a minimum of downtime.

"They are very responsive when we need assistance," says Piya Chairat, Chief Engineer. "This is important when you are dealing with safety and reliability – and when you are sending orders out to competitive markets."

In addition, the local Konecranes office provides service in the local language with local knowledge: Konecranes can provide global expertise with local flavor.

“KONECRANES TECHNOLOGY IS VERY GOOD FOR SAFETY, RELIABILITY AND THE ENVIRONMENT, BUT WHAT IS ALSO IMPORTANT TO US ALSO IS THEIR LOCAL TEAM BEHIND THE TECHNOLOGY.”

Piya Chairat, Chief Engineer and Assistant Project Manager, Siam Yamato Steel

MODERN, STABLE AND PRECISE

Surahammars Bruk AB (Tata Steel), Surahammar, Sweden

The history of Surahammars Bruk AB, the sole producer of special steel for electrical machinery in Scandinavia, goes all the way back to the 16th century. Today, with nearly 200 employees, it is part of the Tata Group, the second-largest steel producer in Europe. Surahammars Bruk produces 80,000 tons of electrical steel per year and exports 85% of its output, used mainly for electrical motors and generators.

1960s-era crane at the end of its lifecycle

Surahammars Bruk has seven overhead cranes, which are critical at every step of its steel production process. The cranes were installed the 1960s, and one of them was approaching the end of its lifecycle. This particular crane weighed both the raw material and the finished steel coils, and also moved coils to different production lines. With an increasing incidence of load drops and inaccurate load weight measurement, it was clear this crane needed to be modernized or replaced.

Modernization made more sense than a new crane

Modernization was considered the best option in this case. The project had a very tight deadline: in order to minimize downtime, it had to be done at the same time as a new furnace installation. The modernization team included maintenance people from Surahammars Bruk and crane specialists, component developers, and modernization experts from Konecranes.

Modernizations must be carefully tailored for every crane. In this case, the crane received a new twin-hoist trolley with double frame and Konecranes SMARTON machinery, including electrical cabinets and inverters. The process hoist had a lifting capacity of 25 tons, and the auxiliary hoist a lifting capacity of 60 tons. The crane cabin was equipped with modern air conditioning and a new chair.

A modern and stable crane

The team worked hard and completed the project successfully, meeting the deadline in August 2012. The new SMARTON trolley makes lifting more accurate and reduces errors. The dual hoist protects against mechanical failure and makes maintenance easier, and the new ergonomic cabin helps operators focus on the task at hand.

“We really appreciate the project team’s effort and real service attitude to meet the tight schedule,” says Nils-Erik Lundh, Technical Services Manager at Surahammar. “As a result, we have a modern and stable crane, with 50 kg accuracy and thus better control over the hot rolling of steel. This helps us optimize our production.”

“AS A RESULT, WE HAVE A MODERN AND STABLE CRANE, A SCALE SYSTEM WITH 50 KG ACCURACY AND THUS BETTER CONTROL OVER THE HOT ROLLING OF STEEL. THIS HELPS US OPTIMIZE OUR PRODUCTION.”

Nils-Erik Lundh, Technical Services Manager,
Surahammars Bruk AB

BACK TO THE FUTURE

Sandvik Steel, Sweden

Founded as a steel-making company in 1862, Sandvik has a long tradition of using the latest technology available to produce high-quality metals. Today, with operations in 130 countries and 50,000 employees, it is known worldwide as a high-technology engineering group. The company provides equipment for mining, construction, and manufacturing, and the manufacturing of special metal alloys and metal products.

From modernization to overhaul

Sandvik had a 110T / 32T ladle crane dating from 1972. In 1985, they decided it was time to modernize it, and they chose Konecranes to do the job. A new trolley was delivered, and capacity was raised from 110 tons to 130 tons. By 2002, welds between the side plate and the top plate under the rail were starting to crack. Aging electrical equipment was causing too much downtime. It was time for a complete overhaul.

Most of the 30-year-old crane was replaced. It received new main girders, end carriages, longer traveling machinery, new gearboxes and brakes for the 130-ton hoist and trolley, a new set of electrical equipment, and new cables connecting the trolley to the main girders.

Konecranes manufactured a completely new crane steel structure. Some parts could still be used: the existing trolley was modified and erected on the new crane bridge, and the existing crane cabin was kept. New electrical and motor control equipment was installed in air-conditioned cabinets. Before it was brought to the Sandvik site, the whole control house was assembled and tested.

What was old is new again

The project took six months to complete. Konecranes worked carefully with Sandvik in project and design meetings and inspections. The newly overhauled crane was reinstalled during the summer break, when production slowed, so downtime was kept to a minimum. Retaining the best parts of the old machinery, the crane was now completely updated with a new steel structure and the latest in crane technology.

PREVENTION IS BETTER THAN A CURE

EMJ Metals, Houston, Texas, United States

Since 1923, EMJ has been a leading supplier of steel and aluminum bar, tubing, and plate to manufacturing companies in North America. They are well-known for their use of up-to-date technology, their large product range, and their good customer service.

Proactive maintenance trumps low-cost approach

In 2008, a new management team at EMJ was looking for a better crane service provider. Their previous crane service company had taken a “lowest possible cost” approach and this had resulted in poor repairs and incorrect parts, causing breakdowns and too much downtime. Konecranes assured the management team that proactive, preventive maintenance would save money in the long run.

Konecranes carried out repairs on EMJ’s 10 overhead, gantry and jib cranes, using the correct parts and procedures. Good communication between the companies assured EMJ that the repairs Konecranes recommended were justified. When EMJ needed a new 15-ton crane and a long runway extension for a factory expansion, Konecranes won the order, installing 240 feet of runway and an advanced Konecranes CXT crane.

Maintenance UP, problems DOWN

From 2008 to 2010, Konecranes responded to 45 emergency service calls at EMJ consisting of suspended loads or problems picking up a load. After 18 months of inspections, repairs, and preventive maintenance with the Konecranes MAINMAN® program, the number of breakdowns was cut in half. In addition, EMJ now uses the Konecranes Annual Business Review to plan its maintenance budget for the upcoming year, and has scheduled two older cranes for replacement with Konecranes CXT models.


MATALCO
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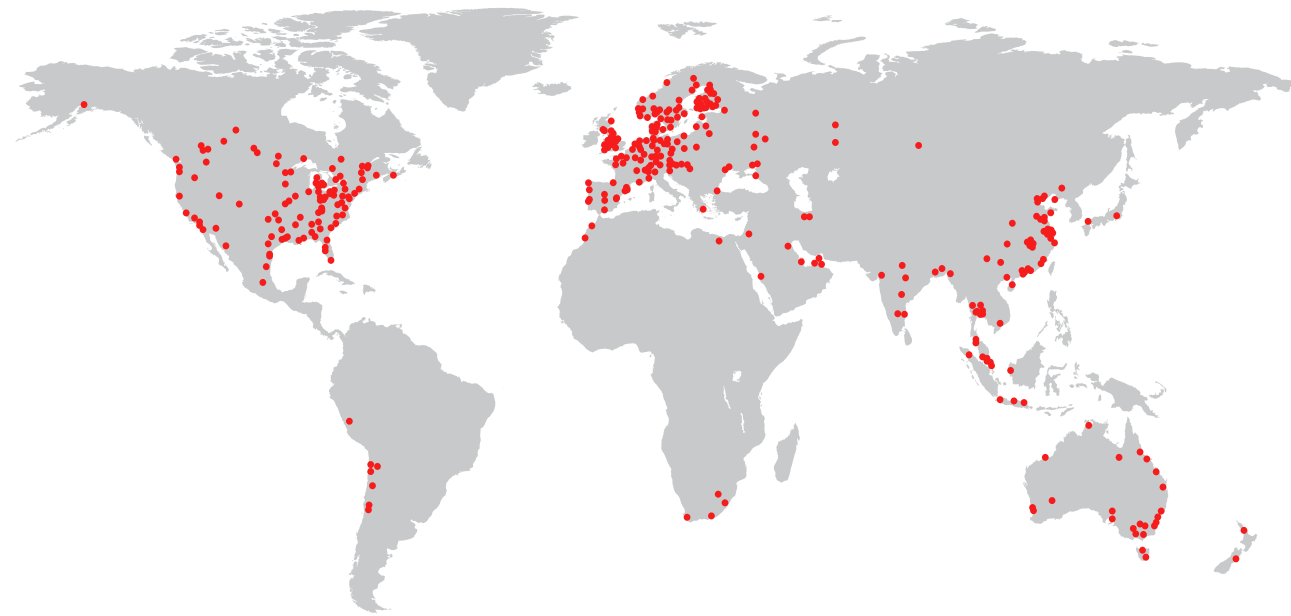
252KG
MATALCO

AT YOUR SERVICE

Regular inspections and maintenance are essential in keeping a crane running efficiently and extending its operating lifetime.

EXPERT SERVICE CLOSE TO YOU



Through a network of more than 600 service locations in almost 50 countries, Konecranes brings you highly skilled and localized service wherever your steel facility is located.

And the cost?

By investing in regular inspections, routine maintenance and timely repairs, you should save money in the long run. Well-maintained equipment breaks down less frequently and produces more steel.

What does an inspection entail?

Periodic inspections, from condition checks to lifetime inspections, follow standardized procedures right down to the component level. Comprehensive reports identify the inspection findings so that actions can be taken and decisions made.

After the inspection, what happens next?

Our full range of services includes preventive maintenance, modernizations, repairs, planning, mechanical and electrical system upgrades, testing and commissioning, working independently or alongside your own maintenance crew.

What if my crane is not from Konecranes?

Konecranes Service is not limited to the Konecranes brand. We can service any make, model and design across the industry. Globally, hundreds of thousands of cranes of other brands are enjoying the benefit of Konecranes Service.

Spare parts?

From cranes, hoists and lift trucks, we provide a vast range of consumable, commodity and custom-manufactured parts. Through our global network of distribution centers, we offer quick shipment, 24/7 ordering and expedited delivery options.

Consider a Konecranes service contract for some or all of your lifting equipment. It’s an investment in improved productivity, increased safety and reduced total cost of ownership.

SERVICE DONE PROPERLY IS NOT AN EXPENSE, BUT AN INVESTMENT

Get connected

PLAN FUTURE ACTIONS WITH BETTER INFORMATION

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

IMPROVED SAFETY AND OPTIMIZED CRANE MAINTENANCE

TRUCONNECT Remote Monitoring uses sensors to collect data – such as running time, motor starts, work cycles and emergency stops. Brake and inverter monitoring is also available. This data and other crane usage information is visible on the yourKONECRANES.com customer portal.

Remote Monitoring provides asset usage and operating information that is used to assess crane condition. Notification of hoist overloads, emergency stops and over-temperature occurrences are sent through text or email alerts, allowing for prompt response.

Remote Monitoring also gives you an estimation of the remaining design working period (DWP) of selected components, such as hoist brakes and structures.

GLOBAL NETWORK OF CRANE KNOW-HOW

TRUCONNECT Remote Support provides 24/7 access to a global network of crane experts and specialists, offering problem solving and troubleshooting to help reduce unplanned downtime. In controlled circumstances, two-way communication with the machines and their operators can be established in order to expedite corrective action.

yourKONECRANES

Konecranes Remote Data Center

Diagnostic unit

Cranes

Lift trucks

Get connected

EASY-TO-INTERPRET REPORTS ARE AVAILABLE ON YOURKONECRANES.COM

DO YOU KNOW YOUR CRANE INSIDE AND OUT?

In addition to inspections and preventive maintenance, Konecranes offers consultation and advanced diagnostic services, including the Crane Reliability Study, RailQ Runway Survey assessment and RopeQ Magnetic Rope Inspection wire rope analysis. These services provide information that is invaluable when planning future maintenance activities.

Crane Reliability Study

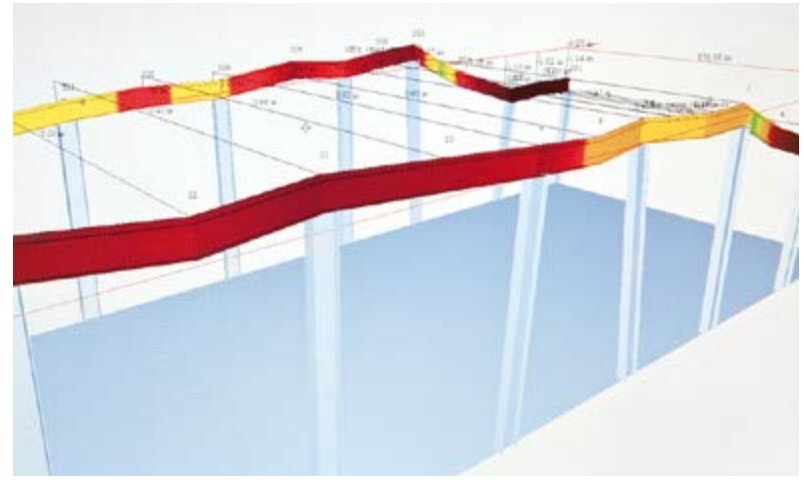
The Crane Reliability Study (CRS) is an engineering assessment that studies the current condition of your crane and provides a theoretical estimate of its remaining design life. The study looks at structures, mechanical components and electrical systems, and highlights possible maintenance and modernization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

RailQ Runway Survey

RailQ is an industry-leading rail analysis. It delivers accurate alignment information of your rail and expert recommendations for corrective action. RailQ 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. RailQ measurements include span, straightness, elevation and rail-to-rail elevation.

RopeQ Magnetic Rope Inspection

During a typical inspection, only the outer wires and strands of the wire rope can be visually inspected. Konecranes RopeQ technology and non-destructive testing methodology analyzes the condition of the internal wires, strands and wire rope core that are not typically visible. Recommended for process cranes in steel mills, steel service centers, and foundries, and for cranes with long wire ropes, or with ropes that are known to have an increased risk of inner core damage.



The results of the RailQ analysis are depicted in clear and understandable tables, graphs and 3D images.

RailQ reduces runway surveying time from days to hours.

RopeQ detects internal broken wires that are not visible to the eye and would be missed by traditional inspection methods.

Crane Reliability Study studies, in detail, the current condition of the crane.

KONECRANES CONSULTATION SERVICES AND ADVANCED DIAGNOSTICS, FOR DEEP ANALYSIS AND ASSESSMENT OF THE CRANE, RUNWAY, WIRE ROPES AND OTHER CRITICAL COMPONENTS


KONECRANES

THE CRANES

Choosing the right lifting equipment for your steel mill starts with an understanding of your operational requirements today, and how they are likely to change in the future. As your business grows, we work closely with you to meet your growing needs. Whether you are unloading scrap and moving it into your furnace, pouring molten steel into molds, rolling the hot steel into shape, or putting it in storage – Konecranes makes the right lifting equipment for the task, and we will tailor it for your mill.

SMARTER, ANY WAY YOU LOOK AT IT

We build reliability, safety, and ease of maintenance into all of our cranes. The different types of cranes needed in a steel mill have certain things in common. Here are some of the features that are standard on all of our steel handling cranes.

We understand the harsh environment of the steel-making process, so we engineer our lifting and control equipment to endure naked flame, dust, and high heat. Konecranes lifting equipment can withstand tough operating conditions in hot, corrosive, or otherwise hazardous environments. Key components, electronic parts, and other sensitive parts of the crane are fully shielded.

Crane operators need to be protected from the dangers of the working environment. With noise reduction, heat protection, full air conditioning, and ergonomic controls, we want to make the operator feel safe and comfortable in the cabin. Smart Features make operating the crane more precise, minimizing errors and allowing total concentration on the task at hand.

The safety of your people is paramount. We build redundancy into the brakes and rope suspension of our cranes. Additionally, Konecranes Smart Features, such as Overload Protection, Sway Control, Hook Monitoring, Load Positioning, and Protected Areas combine to make the crane safer to use and operate.

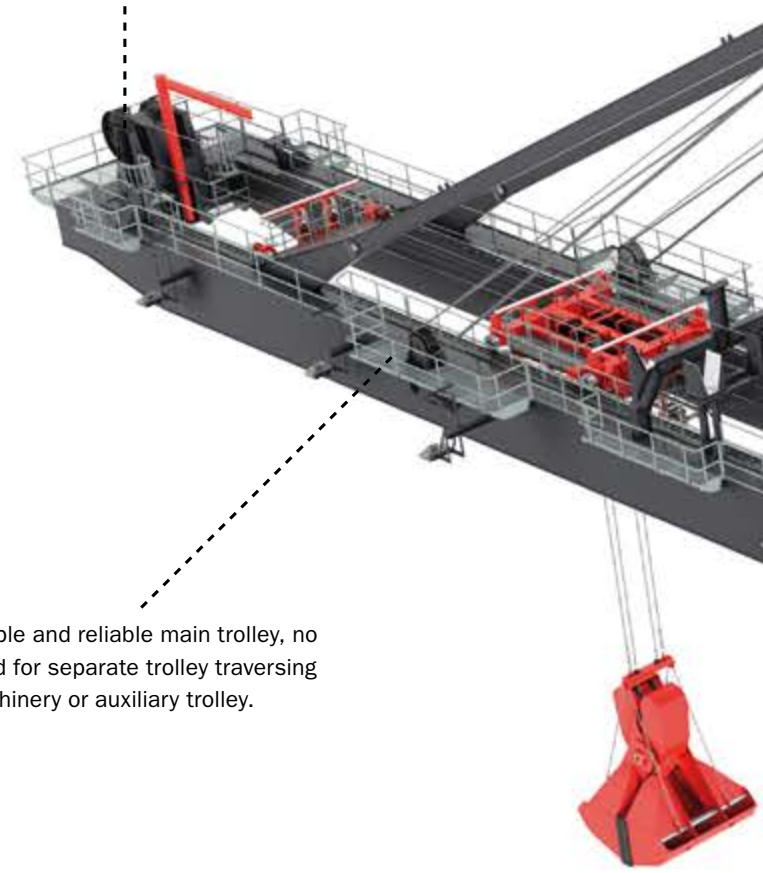
Our cranes are made for easy maintenance. The key systems of the crane are located at points of easy access. The crane operator can view the crane diagnostics in the cabin. The Crane Monitoring System can be linked remotely to Konecranes, so you know the operating status of your cranes on demand.

WE BUILD RELIABILITY, SAFETY, AND EASE OF MAINTENANCE INTO ALL OF OUR CRANES

AGD GRAB UNLOADER

The Konecranes Grab Unloader with Advanced Grab Drive (AGD) transfers solid bulk cargoes from the ship's hold to the material handling system on the jetty or wharf. The cargo is unloaded with a mechanical grab, which operated by four wire ropes. The Advanced Grab Drive (AGD) system uses four separate but identical winches for the grab ropes. Thanks to a free running trolley and a simple reeving arrangement of the grab ropes, the Konecranes AGD Grab Unloader does not require separate trolley traversing machinery, traversing ropes or a compensating trolley.

Load cells on rope sheaves at boom and main girder. Full control of rope tension at all times.

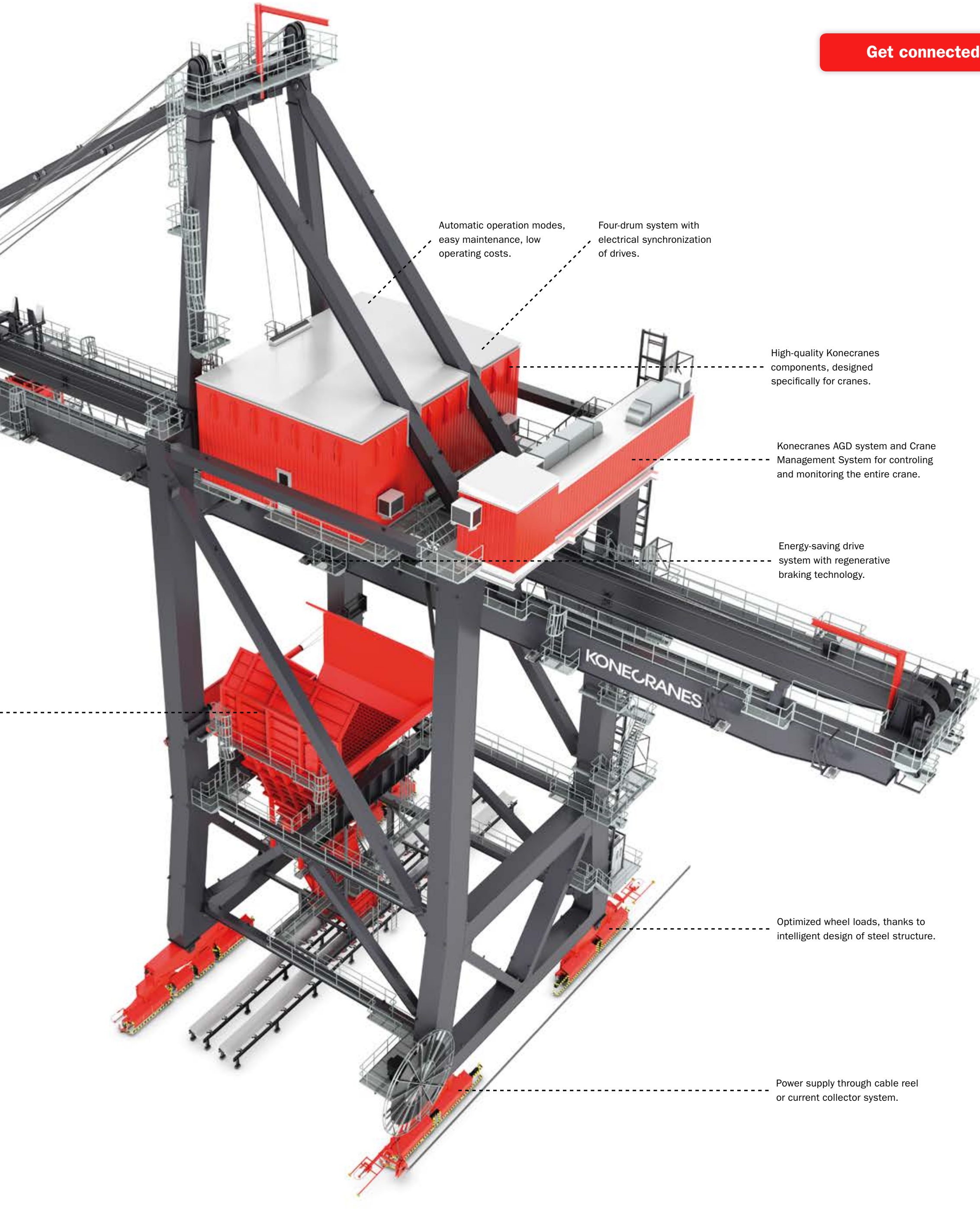


Simple and reliable main trolley, no need for separate trolley traversing machinery or auxiliary trolley.

Environmentally friendly material handling with dust prevention systems.

	Small	Medium	Large
Lifting capacity	Up to 80,000 dwt	Up to 160,000 dwt	Over 160,000 dwt
	20–35 tons	35–65 tons	50–90 tons
Unloading capacity			
	1000–1500 tph	1500–2800 tph	2000–3500 tph
	Unloading capacities are calculated based on actual vessel size and wharf/jetty conditions		
Dimensions			
Outreach	30–33 m	37–42 m	40–50 m
Rail span	11–20 m	16–30 m	16–30 m
Backreach	0–20 m	0–30 m	0–40 m
Speeds			
Gantry traveling	20–30 m/min	20–30 m/min	20–30 m/min
Hoisting	180 m/min	180 m/min	180 m/min
Closing	180 m/min	180 m/min	180 m/min
Trolley traversing	180 m/min	180 m/min	180 m/min
Boom hoisting	6–7 min	6–7 min	6–7 min
Power supply			
Cable reel power supply		50/60 Hz, 3.3–20 kV	
Current collector power supply		50/60 Hz, 3.3 kV	
Shore power supply		50/60 Hz, 400 V	
Drive system	Konecranes AC drives with regenerative braking		
Rope system			
	Four-drum system with electric synchronization		
Grab types			
	Four-rope grabs, clamshell/scissors		
Typical wheel loads			
	35–45 tons/wheel	45–60 tons/wheel	50–70 tons/wheel
	30–40 tons/m	35–50 tons/m	50–60 tons/m
	Wheel loads are calculated case-by-case, according to the dimensions of the crane and the local conditions		
Maintenance			
	Konecranes Crane Management System (CMS)		
	GPRS connection for remote diagnostics		

Get connected



Automatic operation modes, easy maintenance, low operating costs.

Four-drum system with electrical synchronization of drives.

High-quality Konecranes components, designed specifically for cranes.

Konecranes AGD system and Crane Management System for controling and monitoring the entire crane.

Energy-saving drive system with regenerative braking technology.

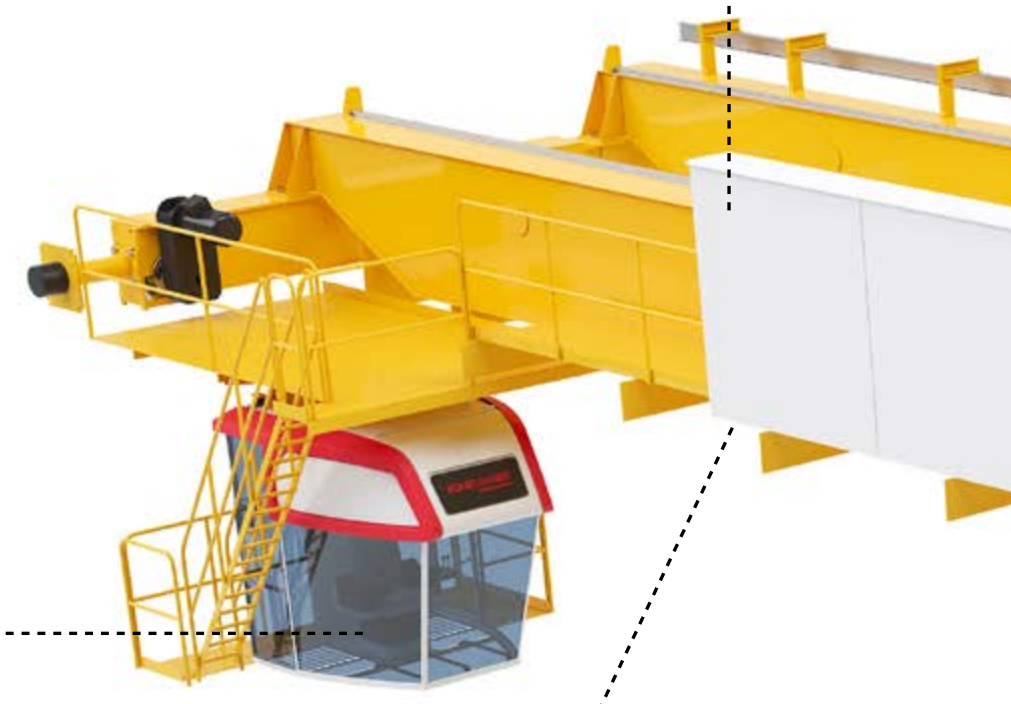
Optimized wheel loads, thanks to intelligent design of steel structure.

Power supply through cable reel or current collector system.

SCRAP HANDLING CRANES

Scrap handling cranes work in the scrap yard, loading scrap into buckets that are transported to the melt shop. These cranes are typically high-duty, high-speed cranes. Special attention is paid to the crane operator's environment because of the high dust, noise, and vibration levels that are typical in the scrap yard environment.

Electrical cabinets are provided with air conditioning when the working environment is demanding and/or when network braking is provided (optional).



Smarter cabin (optional) provides much improved visibility with a window area increase of 60% and improved ergonomics and comfort.

Provided optionally: wireless communication with factory control system. Reporting system has remote service capability, enabling fast problem solving and advance information for maintenance planning.

	Tailored heavy-duty crane	Typical
Classification		
Working cycles (EN13001-1)	Up to 8 million	1–2 million
Load spectrum (EN13001-1)	Up to Q5	Q4–Q5
FEM 1.001 3rd edition / year 1998	Up to M8	M7–M8
Trolley		
Type	Tailored open winch	Tailored open winch
Lifting devices		
Attached with hook	Grab/Magnet	Magnet
Attached with rope	Grab/Magnet	
Lifting capacity		
Maximum capacity	Tailored	12–40 tons
Main dimensions		
Span	Tailored	20–35 m
Lifting height	Tailored	8–20 m
Speeds		
Bridge travel speeds	Tailored	60–140 m/min
Trolley traversing speeds	Tailored	30–80 m/min
Hoisting speed with nominal load	Tailored	10–40 m/min
Electrical systems		
Bridge power supply	Conductors	Conductors
Trolley power supply	Festoon	Festoon
Motor control system	Konecranes Variable Frequency Drives (VFD)	Konecranes VFD
Electrical braking	Regenerative network braking units	Resistors
Control		
Manual	Cabin/Radio	Cabin
Automated		
Monitoring		
Event history recorder in Programmable Logic Controller (PLC)	Standard	Standard
Crane Monitoring System	Option	Option

ALTERNATIVE LIFTING DEVICES

Magnet

Fast swapping of lifting devices.

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Programmable Logic Controller (PLC) controls and monitors the crane and provides platform for Smart Features, such as Sway Control, Shock Load Prevention, and many more.

Special heavy-duty trolley, designed for easy maintenance.

Stiff box-type steel structure for bridge and trolley ensures minimal deflection and vibration.

Power and signal cables are attached to crane girder via festoon system that moves alongside the trolley. The power cables and signal cables are kept separate.

Grab

Heavy-duty hook block for safer, reliable attachment of lifting devices.

End-carriages/bogies are heavy duty, with surface-hardened wheels.

FOUR-GIRDER CHARGING CRANES

The charging crane transports scrap and liquid steel to the furnace. The same crane can work as backup to the ladle crane if needed. Konecranes charging cranes are well-protected from the flames and radiated heat, as well as the brief, intense heat of the charge itself. These cranes are a critical part of production and, since the load is molten steel, safety and reliability are the key words in the crane design.

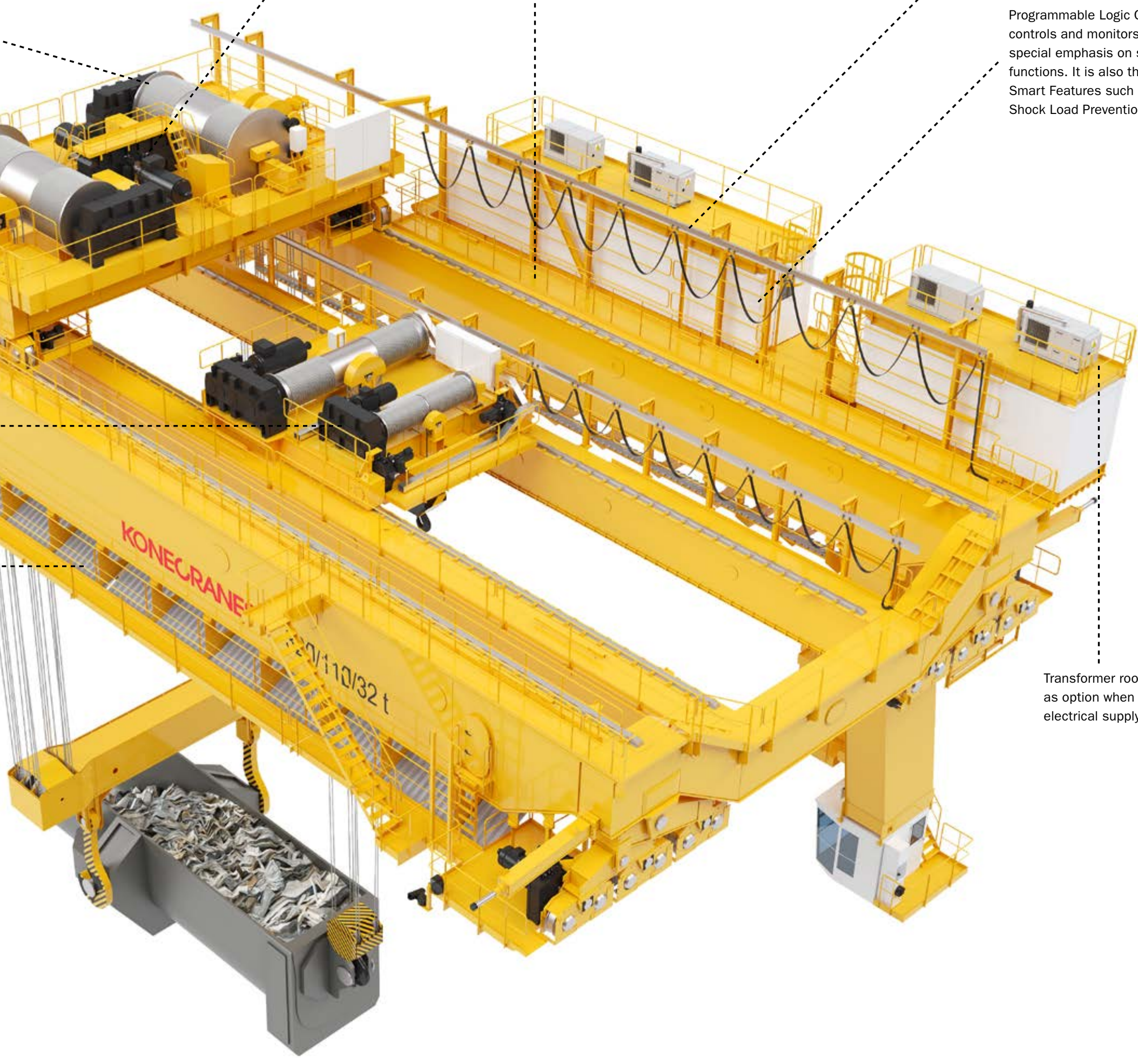
	Tailored heavy-duty crane	Single trolley crane	Double trolley crane
Classification			
Working cycles (EN13001-1)	Up to 8 million	1–2 million	1–2 million
Load spectrum (EN13001-1)	Up to Q5	Q4–Q5	Q4–Q5
FEM 1.001 3rd edition / year 1998	Up to M8	M7–M8	M7–M8
Trolley			
Main trolley	Tailored open winch	Tailored open winch	Tailored open winch
Auxiliary trolley	Tailored open winch		Tailored open winch
Main hoist lifting devices			
Attached with hook	Hook beam		
Attached with rope	Hook beam	Hook beam	Hook beam
Lifting capacity			
Main hoisting capacity	Tailored	40–340 tons	100–540 tons
Auxiliary hoisting capacity	Tailored	10–100 tons	40–140 tons
Main dimensions			
Span	Tailored	20–30 m	20–30 m
Lifting height	Tailored	10–30 m	10–30 m
Speeds			
Bridge travel speeds	Tailored	60–80 m/min	60–80 m/min
Trolley traversing speeds	Tailored	30–40 m/min	30–40 m/min
Hoisting speed with nominal load	Tailored	7–10 m/min	7–10 m/min
Electrical systems			
Bridge power supply	Conductors	Conductors	Conductors
Trolley power supply	Festoon	Festoon	Festoon
Motor control system	Konecranes Variable Frequency Drives (VFD)	Konecranes VFD	Konecranes VFD
Electrical braking	Regenerative network braking units/Resistors optional	Regenerative network braking units	Regenerative network braking units
Control			
Manual	Cabin/Radio	Cabin	Cabin
Automated	Option		
Monitoring			
Event history recorder in Programmable Logic Controller (PLC)	Standard	Standard	Standard
Crane Monitoring System	Option	Option	Option

Motors and differential gear reducer are located in the middle for easy maintenance.

Clamping allows rails to be renewed quickly if needed.

Electrical room is pressurized and air-conditioned for reliable operation in harsh environmental conditions. Backup A/C units ensure continued, reliable A/C operation even if a unit is down.

Programmable Logic Controller (PLC) controls and monitors the crane with special emphasis on safety-related functions. It is also the platform for Smart Features such as Sway Control, Shock Load Prevention and many more.



Transformer room is provided as option when high-voltage electrical supply is used.

Get connected

DOUBLE-GIRDER LADLE HANDLING CRANES

The ladle handling crane transports ladles filled with molten iron to the basic oxygen furnace (BOF), or molten steel from the BOF and electric arc furnace to the continuous casting machine. It can also be used for teeming and casting. As with the charging crane, safety and reliability come first with this crane since it is used to transport molten steel.

Provided optionally: wireless communication with factory control system. Crane Management System (CMS) has remote service capability, ensuring fast problem solving and advance information for maintenance planning.

Back-up brake on the rope drum prevents load drop if a component in the hoisting machinery breaks.

	Tailored heavy-duty crane	Single trolley crane	Double trolley crane
Classification			
Working cycles (EN13001-1)	Up to 8 million	1–2 million	1–2 million
Load spectrum (EN13001-1)	Up to Q5	Q4–Q5	Q4–Q5
FEM 1.001 3rd edition / year 1998	Up to M8	M7–M8	M7–M8
Trolley			
Main trolley	Tailored open winch	Tailored open winch	Tailored open winch
Auxiliary trolley	Tailored open winch		Tailored open winch
Main hoist lifting devices			
Attached with hook	Hook beam		
Attached with rope	Hook beam	Hook beam	Hook beam
Lifting capacity			
Main hoisting capacity	Tailored	40–340 tons	100–540 tons
Auxiliary hoisting capacity	Tailored	10–100 tons	40–140 tons
Main dimensions			
Span	Tailored	20–30 m	20–30 m
Lifting height	Tailored	10–30 m	10–30 m
Speeds			
Bridge travel speeds	Tailored	60–80 m/min	60–80 m/min
Trolley traversing speeds	Tailored	30–40 m/min	30–40 m/min
Hoisting speed with nominal load	Tailored	7–10 m/min	7–10 m/min
Electrical systems			
Bridge power supply	Conductors	Conductors	Conductors
Trolley power supply	Festoon	Festoon	Festoon
Motor control system	Konecranes Variable Frequency Drives (VFD)	Konecranes VFD	Konecranes VFD
Electrical braking	Regenerative network braking units/Resistors optional	Regenerative network braking units	Regenerative network braking units
Control			
Manual	Cabin/Radio	Cabin	Cabin
Automated	Option		
Monitoring			
Event history recorder in Programmable Logic Controller (PLC)	Standard	Standard	Standard
Crane Monitoring System	Option	Option	Option

Electrical room is pressurized and air-conditioned for reliable operation in harsh environmental conditions. Backup A/C units ensure continued, reliable A/C operation even if a unit is down.

Programmable Logic Controller (PLC) controls and monitors the crane with special emphasis on safety-related functions. It is also the platform for Smart Features such as Sway Control, Shock Load Prevention, and many more.

Get connected

Rope reeving system has redundancy to safeguard against load drop if a rope breaks.

Main hoist has two motors and two inverters. This arrangement allows full loads to be lifted with one motor, through a differential gear inverter, in emergency situations.

Traversing machinery is divided into two groups for redundancy; in an emergency situation, the crane can be driven with half of the motors.

Auxiliary hoist is standard duty, used for maintenance activities.

Bogies are heavy duty with surface-hardened wheels and rail cleaning brushes.

Auxiliary hook is heavy duty and specially designed for ladle pouring and opening scrap bucket bottoms. Can be moved horizontally (option).

Traveling machinery is divided into two groups for redundancy; in an emergency situation, the crane can be driven with half of the motors.

Lifting beam has heat shielding and laminated plate hooks.

SLAB AND BILLET HANDLING CRANES

These heavy-duty cranes take hot slabs, billets or blooms from the continuous casting machine conveyor, transport them to the storage area, or feed them to the rolling mill. They are high-speed production cranes designed with the same concern for safety and reliability as our charging and ladle cranes.

Smarter cabin (optional) provides much improved visibility with a window area increase of 60% and improved ergonomics and comfort.

	Tailored heavy-duty crane	Slab handling application	Billet handling application
Classification			
Working cycles (EN13001-1)	Up to 8 million	1–2 million	1–2 million
Load spectrum (EN13001-1)	Up to Q5	Q4–Q5	Q4–Q5
FEM 1.001 3rd edition / year 1998	Up to M8	M7–M8	M7–M8
Trolley			
Type	Tailored open winch with or without slewing	Non-slewing tailored open winch	Non-slewing tailored open winch
Lifting devices			
Attached with hook	Tong/Magnet/C-hook		
Attached with rope	Tong/Magnet/C-hook		Slewing magnet beam
Lifting capacity			
Maximum capacity	Tailored	40–120 tons	15–40 tons
Main dimensions			
Span	Tailored	20–40 m	20–40 m
Lifting height	Tailored	6–15 m	6–15 m
Speeds			
Bridge travel speeds	Tailored	60–150 m/min	60–150 m/min
Trolley traversing speeds	Tailored	20–60 m/min	20–60 m/min
Hoisting speed with nominal load	Tailored	8–20 m/min	8–20 m/min
Electrical systems			
Bridge power supply	Conductors	Conductors	Conductors
Trolley power supply	Festoon	Festoon	Festoon
Motor control system	Konecranes Variable Frequency Drives (VFD)	Konecranes VFD	Konecranes VFD
Electrical braking	Regenerative network braking units	Resistors	Resistors
Control			
Manual	Cabin/Radio	Cabin	Cabin
Automated	Option		
Monitoring			
Event history recorder in PLC	Standard	Standard	Standard
Crane Monitoring System	Option	Option	Option

Get connected

Programmable Logic Controller (PLC) controls and monitors the crane and provides platform for Smart Features, such as Sway Control, Shock Load Prevention, and many more.

Electrical cabinets are provided with air conditioning when the working environment is demanding and/or when network braking is provided (optional).

Special, tailored slewing trolley designed for heavy-duty use. Alternatively, slewing can be implemented in the lifting device. Four-point rope reeving is then needed.

Power and signal cables are attached to crane girder via festoon system that moves alongside the trolley. The power cables and signal cables are kept separate.

Fast swapping of lifting devices for different applications when attached with hooks. Alternatively, the bottom blocks are directly mounted on loading device.

Easy access for routine maintenance.

End carriages/bogies are heavy duty, with surface-hardened wheels.

Get connected

COIL AND PLATE HANDLING CRANES

These cranes are used to transport bars, plates, or coils in the rolling area. They are high-speed cranes that can be equipped with a variety of lifting devices depending on the material to be handled. They will often be equipped with Smart Features to make them more productive.

ALTERNATIVE LIFTING DEVICES

Coil magnet

Coil Grab

Wide range of lifting devices can be attached to the hooks: magnets, coil grabs, hydraulic tongs and many others. The slewing function can be provided with a lifting device.

	Tailored heavy-duty crane	Heavy-duty SMARTON crane	Low and medium-duty standard crane	Typical performance in the application
Classification				
Working cycles (EN13001-1)	Up to 8 million	1–2 million	250 000–500 000	1–2 million
Load spectrum (EN13001-1)	Up to Q5	Q4–Q5	Q3–Q4	Q4–Q5
FEM 1.001 3rd edition / year 1998	Up to M8	M7–M8	M5–M6	M7–M8
Trolley				
Type	Tailored open winch with or without slewing	Standard open winch	Standard hoist	Non-slewing tailored open winch
Lifting devices				
Attached with hook	Magnet beam/Magnet beam with slewing/Single magnet/ Vacuum lifter/Tong/C-hook	Magnet beam/Magnet beam with slewing/Single magnet/ Vacuum lifter/Tong/C-hook	Magnet beam/Magnet beam with slewing/Single magnet/ Vacuum lifter/Tong/C-hook	
Attached with rope	Magnet beam/Magnet beam with slewing/Single magnet/ Vacuum lifter/Tong/C-hook			Non-slewing magnet beam
Lifting capacity				
Maximum capacity	Tailored	6.3–63 tons	0.4–80 tons	5–60 tons
Main dimensions				
Span	Tailored	Tailored	Tailored	15–40 m
Lifting height	Tailored	10–104 m	3–200 m	3–18 m
Speeds				
Bridge travel speeds	Tailored	20–150 m/min	20–40 m/min	50–150 m/min
Trolley traversing speeds	Tailored	16–50 m/min	20–32 m/min	30–60 m/min
Hoisting speed with nominal load	Tailored	1–50 m/min	1–25 m/min	6–20 m/min
Electrical systems				
Bridge power supply	Conductors	Conductors	Conductors	Conductors
Trolley power supply	Festoon	Festoon	Festoon	Festoon
Motor control system	Konecranes Variable Frequency Drives (VFD)	Konecranes VFD	Konecranes VFD	Konecranes VFD
Electrical braking	Regenerative network braking units	Resistors/Regen. network braking as an option	Resistors	Resistors
Control				
Manual	Cabin/Radio	Cabin/Radio	Cabin/Radio/Pendant	Cabin
Automated	Option			
Monitoring				
Event history recorder in Programmable Logic Controller (PLC)	Standard	Standard	Option	Standard
Crane Monitoring System	Option	Option	Option	Option

Service touch panel has a screen for process data, service, diagnostics and manual crane control. Crane monitors its own condition, recommends when maintenance should be done.

Electrical cabinets are provided with air conditioning when the working environment is demanding and/or when network braking is provided (optional).

Crane can be controlled with a radio remote controller or in a cabin. Manual, semi-automated and fully-automated functions can be provided.

Single or multi-trolley arrangement depending on application. In double-trolley arrangement, trolleys can be connected mechanically.

Programmable Logic Controller (PLC) controls and monitors the crane and provides a platform for Smart Features, such as Sway Control, Shock Load Prevention and many more.

GENERAL-PURPOSE AND MAINTENANCE CRANES

The Konecranes steel industry offering includes standard cranes and hoists that are suited for the lifting work you need to do in the steel mill and warehouse. Our field-proven designs are constantly updated with the latest lifting technology to provide devices that suit the task.

These two pages show just a small selection of the general-purpose and maintenance cranes available from Konecranes. They have been chosen as a representative sample of those most often used by our customers in steel production. A large selection of optional features provides the flexibility to tailor these cranes to your specific applications. Duty classification, speed, and control methods are just a few of the many parameters that can be selected for your particular operation.

Jib cranes

Konecranes jib cranes are very easy to install, use, and even relocate in your work environment. Their standard load capacity is up to 2 tons, so their application can adapt to your changing needs.

TRUCONNECT Remote Monitoring and Reporting provides you with actual usage data that enables you to optimize maintenance activities. The data gives you the confidence to plan your actions and make informed decisions regarding maintenance investments and productivity.

Chain hoists

Konecranes CLX chain hoists are flexible and durable in industrial applications. With variable speeds and a lifting capacity ranging from 60 kg to 5,000 kg, they are extremely versatile and long-lasting.

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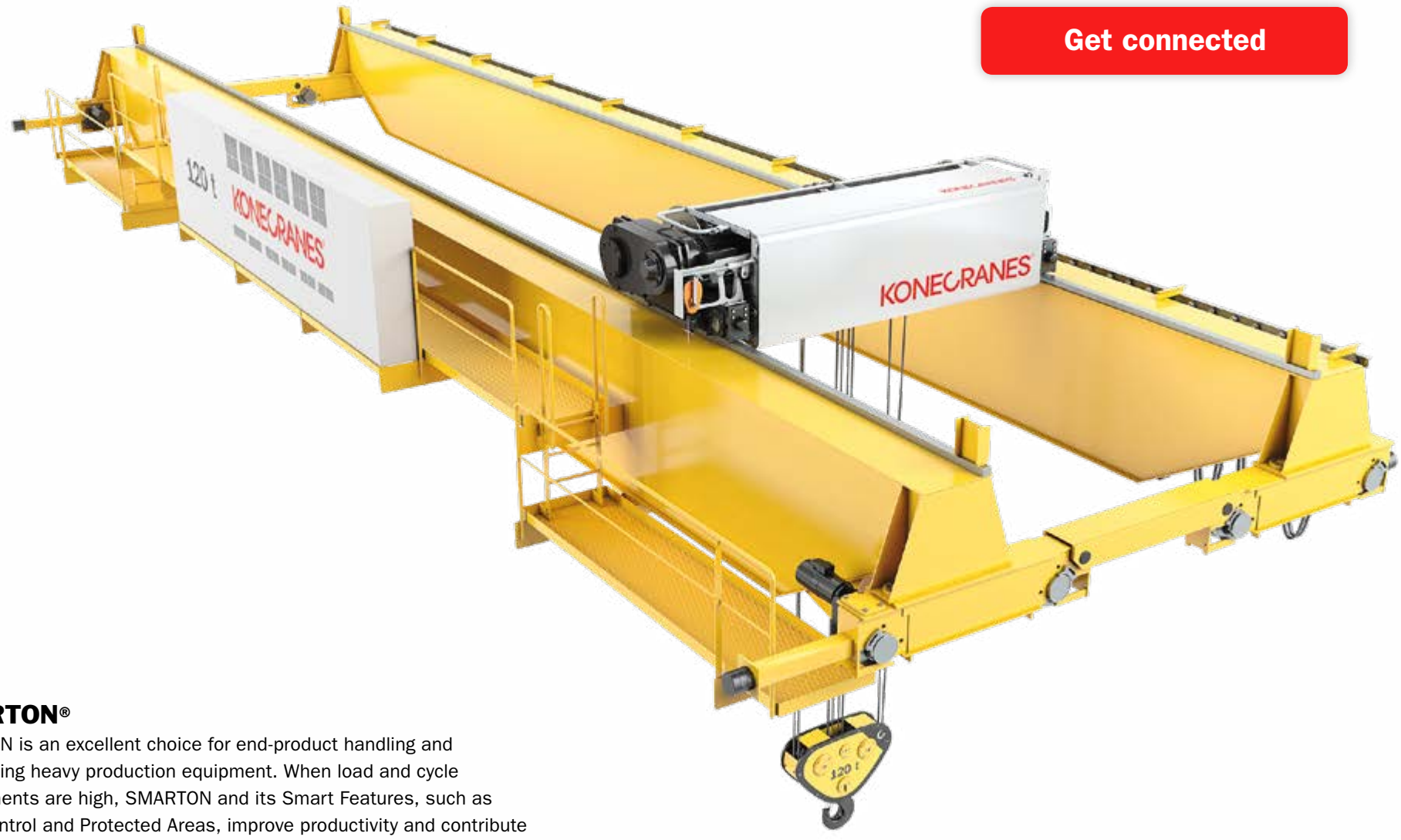
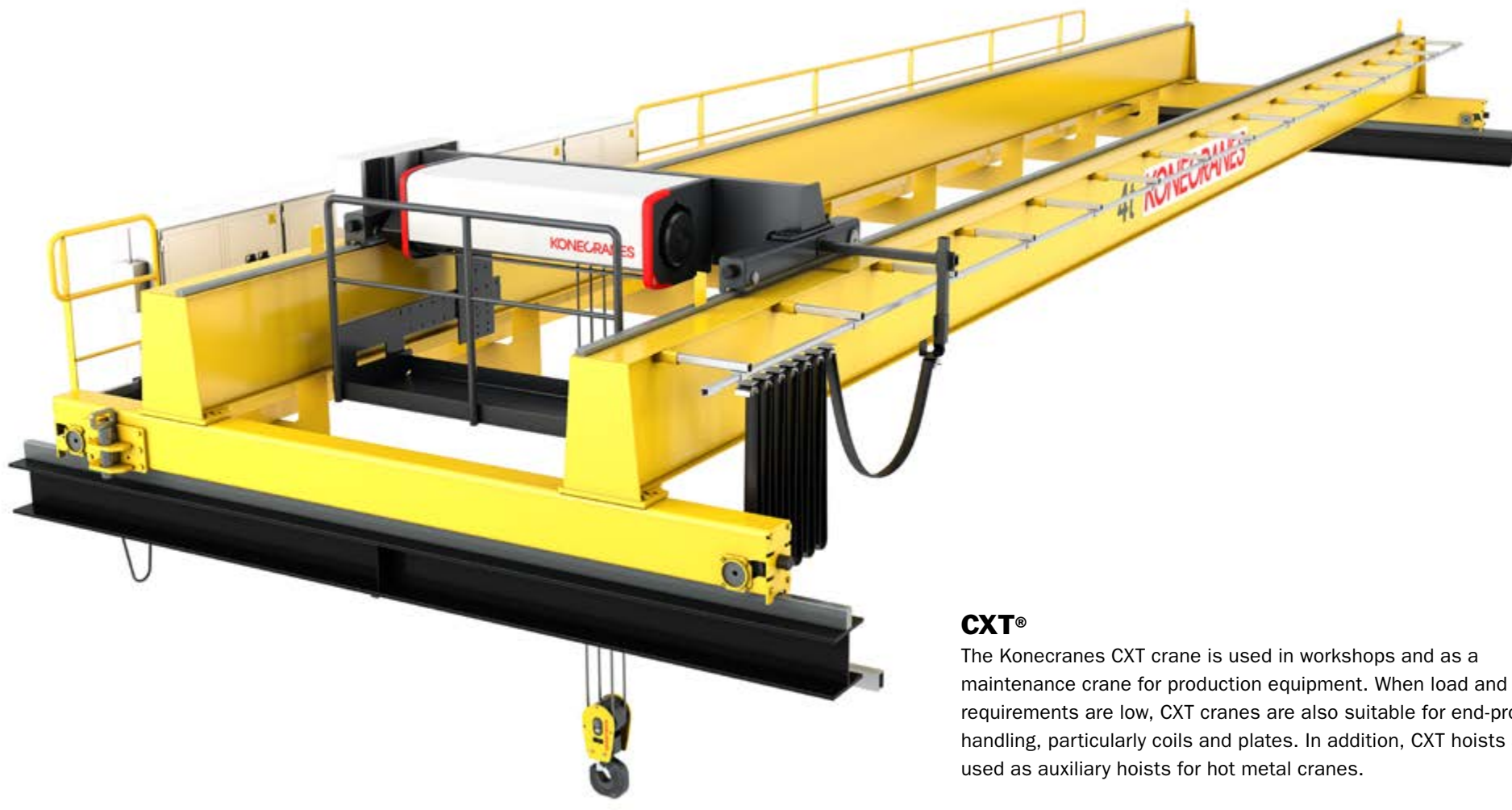


SMARTON®

SMARTON is an excellent choice for end-product handling and maintaining heavy production equipment. When load and cycle requirements are high, SMARTON and its Smart Features, such as Sway Control and Protected Areas, improve productivity and contribute to safety. Lifting capacity with a single trolley is 6.3–250 tons. Lifting capacity with two trolleys is 250–500 tons. Duty classes range from assembly use to the heaviest process use.



CXT®

The Konecranes CXT crane is used in workshops and as a maintenance crane for production equipment. When load and cycle requirements are low, CXT cranes are also suitable for end-product handling, particularly coils and plates. In addition, CXT hoists are often used as auxiliary hoists for hot metal cranes.

FORK LIFT TRUCKS

Konecranes forklifts are built for your world. With a tight turning radius and excellent maneuverability, our forklifts provide an efficient way to move your steel products around your warehouse and out to the customer. Combined with a strong lift mast and easily adaptable, heavy-duty forks, any material handling needs can be fulfilled. Konecranes fork lift trucks are currently available in a capacity range of 10 to 65 tons.

With our Smart Connected Lift Trucks, you are able to track the efficiency and needs of your reach stackers through a remote connection. Monitor the efficiency, increase the productivity and safety of your operation, and plan your maintenance based on facts instead of predefined intervals.

OPTIMA Cabin. All details carefully designed for comfort and safety. Controls displays, ventilation and seating work to boost driver productivity. Excellent visibility in all directions.

CanBus technology monitors engine and transmission for better reliability.

MASTS AND ATTACHMENTS FOR STEEL HANDLING

Duplex, 2-stage, no freelift

Duplex, 2-stage with freelift

Triplex, 3-stage with freelift

Single coil ram, hook type

Single coil ram, integral version

Double coil ram, hook type

Get connected

Large selection of lift masts makes optimization easy.

Electronic Machine Control (EMC) gives the driver real-time information on key aspects of truck performance.

Load-sensing hydraulics maximize fuel efficiency and reduce emissions.

Quick-change system for forks and other attachments allows handling of huge range of materials.

Carriage with kissing forks

Fork lift trucks 10–65 tons

Technical data	Small	Medium	Large
Lifting capacity	10–18 tons	18–33 tons	37–65 tons
Lifting height	3–10 m	3–10 m	3–10 m
Lifting speed	0.29–0.5 m/s	0.25–0.32 m/s	0.13–0.26 m/s
Drive speed	30–30 km/h	22–29 km/h	22–24 km/h
Engine	EU stage 2, 3, 4 and US EPA Tier 2, 3, 4f (6-cylinder, turbo-charged, CanBus)		
Hydraulics	Load-sensing, low energy, low fuel consumption		
Lifting equipment	Forks, container spreaders, coil rams, paper clamps etc.		
Engine types	4-cylinder and 6-cylinder, turbo-charged, intercooler, electronic controls, CanBus		
Transmission	Fully automatic, electronic-hydraulic shift, reverse protection, CanBus		
Brake system	Maintenance-free wet-disc brakes on drive tires, continuous oil cooling		
Optional features	Error code data log, ECO-driving, multi-driver login, mini-steering, electronic weight scale, TRUCONNECT Remote Monitoring and Reporting for Lift Trucks		

REACH STACKERS

Konecranes reach stackers are built for your world. They are ideal for moving heavy steel products around storage areas where space is limited, or the weight exceeds what a forklift is designed to carry. Electronic overload protection increases the safety of your load, your storage facility and your drivers. Konecranes reach stackers for industrial handling have a lifting capacity ranging from 35–80 tons, and we offer a full range of industrial handling attachments.

With our Smart Connected Lift Trucks, you are able to track the efficiency and needs of your reach stackers through a remote connection. Monitor the efficiency, increase the productivity and safety of your operation, and plan your maintenance based on facts instead of predefined intervals.

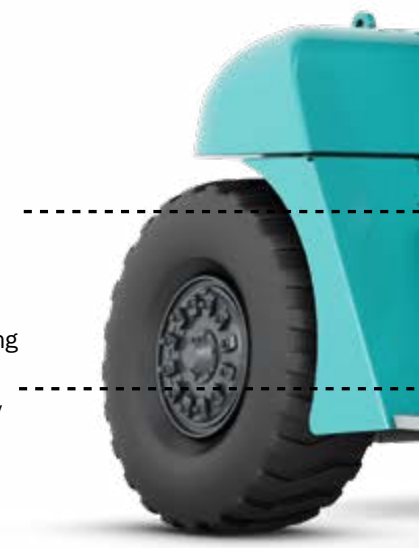
Reach stackers for industrial handling 10–80 tons

Technical data	Industrial stacker
Lifting & handling	Industrial cargo
Investment/running cost	Low/low
Min. lifting capacity*	10 tons
Max. lifting capacity*	80 tons
Container stacking	8–16 m
Stacking height	8–16 m
Drive speeds	24–30 km/h
Spreaders	Top lift 20–40 ft (45–53 ft in 40 ft castings), trailer lift (combi), over height spreader, specials or industrial (steel grab, magnet, C-hook, lift hook-beam, vacuum etc.)
Control system	Electronic overload, safety & monitoring system (EMC Master)
Engine approvals	EU stage 2, 3a, 4 and EPA Tier 2, 3, 4f
Engine types	6-cylinder, turbo-charged, intercooler, electronic controls, CanBus
Transmission	Fully automatic, electronic-hydraulic shift, reverse protection, CanBus
Brake system	Maintenance-free wet-disc brakes on drive wheels, continuous oil cooling
Hydraulics	Load-sensing, power-on-demand, low-energy, low fuel consumption
Optional features	Error code data log, ECO-driving, multi-driver login, mini-steering, electronic weight scale, TRUCONNECT Remote Monitoring and Reporting for Lift Trucks

* Note that min. and max. lifting capacity will depend on the reach stacker model you select.

OPTIMA Cabin. All details carefully designed for comfort and safety. Controls displays, ventilation and seating work to boost driver productivity. Excellent visibility in all directions.

Box-type chassis is strongest on the market. Provides high lifting capacity. Available in several different wheel bases, from 5 to 9 meters.



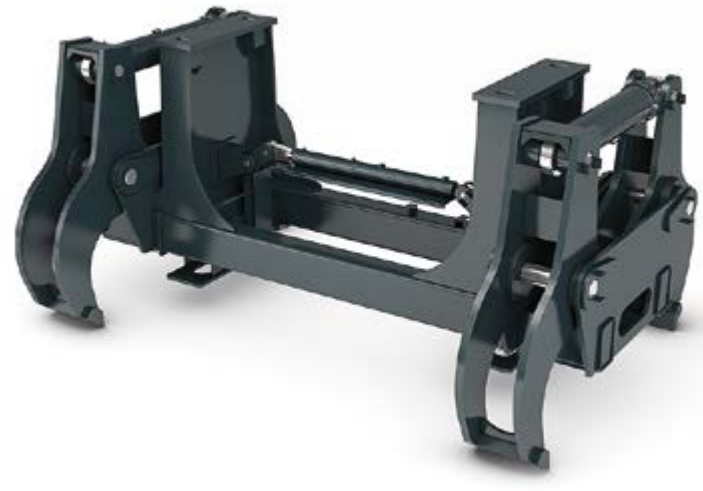
Powerful, low-emission engines provide high torque at low revs, low fuel consumption, comply with environmental regulations.

Electronically controlled monitoring of engine, transmission and spreader with CanBus technology providing increased reliability.

ATTACHMENTS FOR STEEL HANDLING

ELME industrial tool carrier system

ELME industrial tool carrier system (power pile slope)



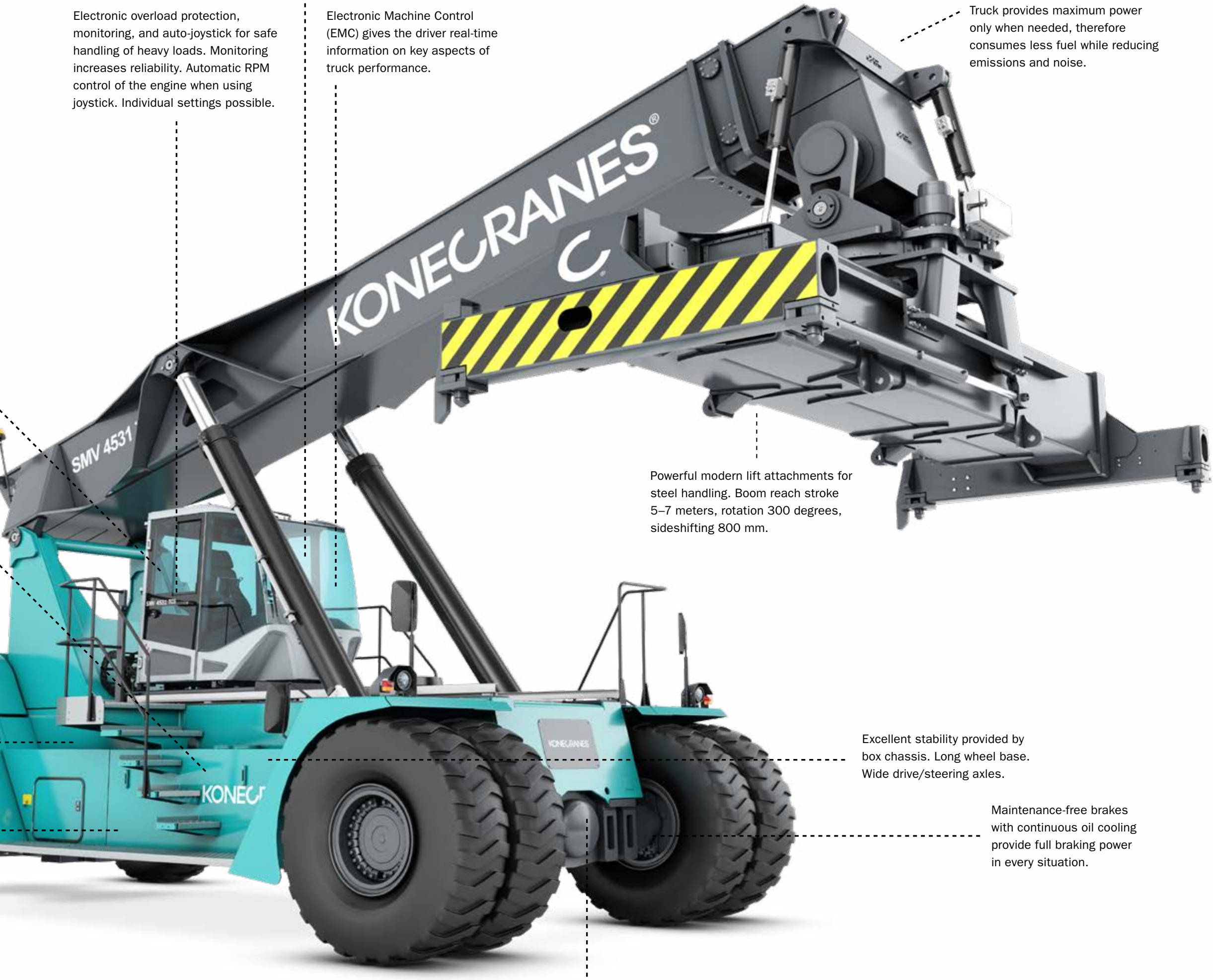
Hydraulic steel slab grab unit

Joystick is standard.

Electronic overload protection, monitoring, and auto-joystick for safe handling of heavy loads. Monitoring increases reliability. Automatic RPM control of the engine when using joystick. Individual settings possible.

Electronic Machine Control (EMC) gives the driver real-time information on key aspects of truck performance.

Equipped with load-sensing hydraulics, which adapt lifting power to the weight of the goods. Truck provides maximum power only when needed, therefore consumes less fuel while reducing emissions and noise.



Powerful modern lift attachments for steel handling. Boom reach stroke 5–7 meters, rotation 300 degrees, sideshifting 800 mm.

Excellent stability provided by box chassis. Long wheel base. Wide drive/steering axles.

Maintenance-free brakes with continuous oil cooling provide full braking power in every situation.

Reduced maintenance costs over lifetime of truck thanks to extended service intervals on engine (500 hrs), gearbox (1000 hrs) and hydraulics (2000/4000 hrs).

Lifting hook

WHY CHOOSE KONECRANES?

Technology
We understand how lifting technology is critical throughout the steel production process. Our long years of experience and continuous investments in R&D drive our innovation.

Expertise
Konecranes' technical and service teams are expert in every stage of steel manufacturing, constantly striving to help you produce more steel.

People
Our teams are strong because they are made of strong individuals; passionate, trained, motivated to serve customers and be the best in the business.

Safety
At Konecranes, no job is so important or service so urgent that we cannot take the time to do our work safely and correctly.

LEARN MORE ABOUT OUR OTHER INDUSTRY OFFERINGS


AUTOMOTIVE


CONTAINER HANDLING


POWER


SHIPYARDS


MINING


PETROLEUM AND GAS


GENERAL MANUFACTURING


PAPER AND FOREST


METALS PRODUCTION


WASTE TO ENERGY AND BIOMASS

LOOKING TO BUY A CRANE? TRY OUR NEW CRANE ADVISOR

Consult our Crane Advisor, an online tool that offers recommendations based on your specific lifting-application needs. The quick, four-step process will tell us what you need so that we can help match the right crane for you. Simply click and submit, and Crane Advisor will promptly provide you with a personalized online recommendation.

VISIT CRANE ADVISOR

SMARTER HOW?

Konecranes steel industry equipment and services are SMARTER WHERE IT MATTERS. We back up this claim with our long history in the lifting business and our deep knowledge of crane technology and steel handling. From over 600 locations worldwide, we supply and service lifting equipment needed for steel production and storage. Our customers know us as a partner with a clear vision that helps them succeed.

Our steel handling equipment helps you produce steel faster, from the moment scrap and iron ore arrive at your factory, to the melt shop, through casting and molding, and on to storage and shipping. Our technology contributes to a safer working environment and improves process efficiency. The formula for our long-term success is to deliver all of the above, with the lowest possible total cost of ownership.

Smarter where? On your bottom line.

konecranes.com