

RIGHT ON TRACK

# Konecranes Gottwald Portal Harbor Cranes



## PROVEN MOBILE HARBOR CRANE TECHNOLOGY ON TRACK FOR YOU

**Konecranes is a pioneer in cranes for professional cargo handling in ports and terminals. Based on Konecranes Gottwald innovative mobile harbor crane technology, we are consistently developing new crane types:**

- portal harbor cranes for rail-mounted applications,
- rubber-tired portal harbor cranes for particularly narrow quays without rails,
- portal harbor cranes on barges.

### SOPHISTICATED CONCEPT

If you rely on proven and flexible mobile harbor crane technology for your terminal served by rail-mounted equipment, our portal harbor cranes are the solution. With these cranes you benefit from our modular system:

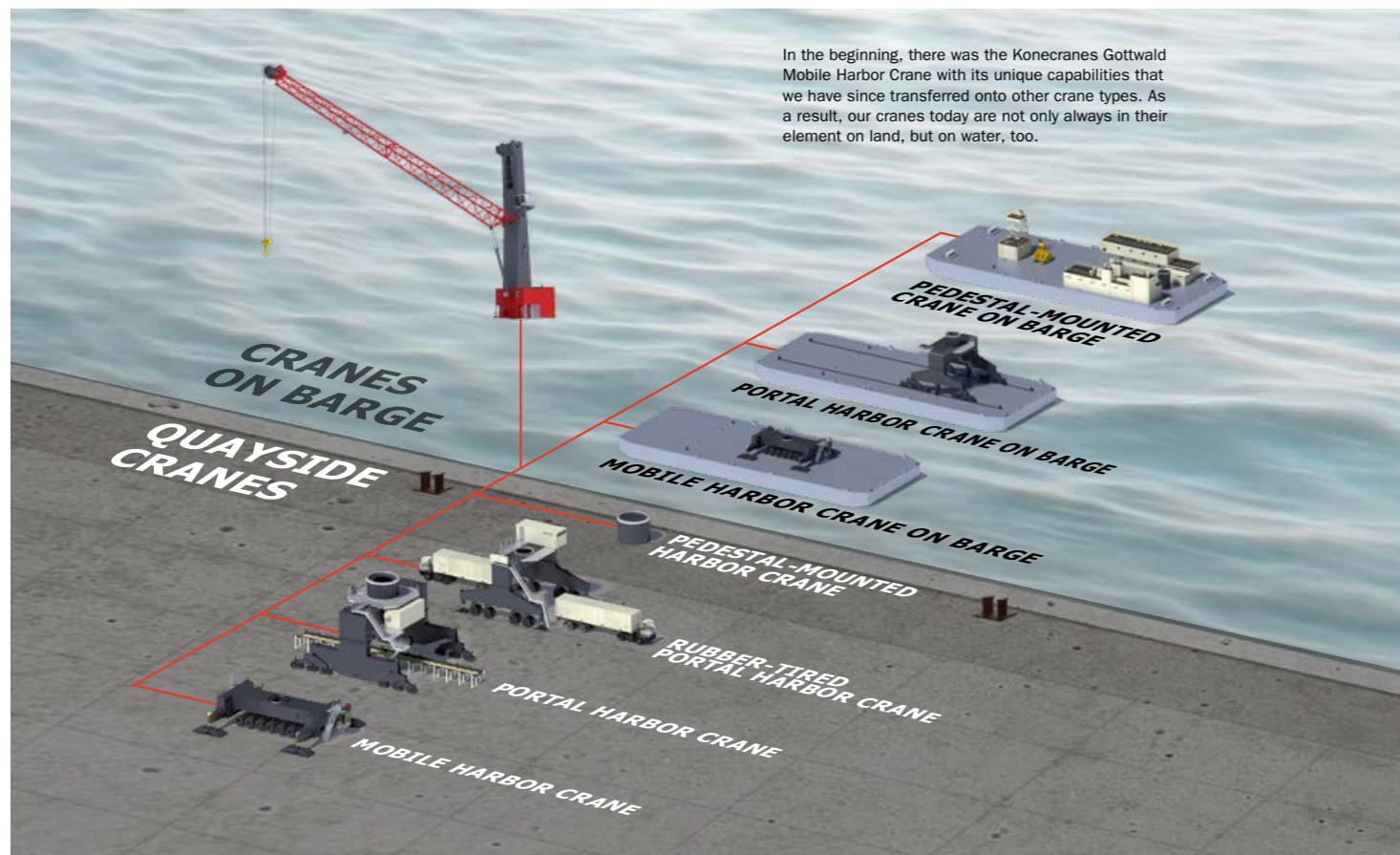
- above the slew ring they have series components,
- below the slew ring they have a portal adapted to your requirements.

Taken together, these provide mature solutions that customize existing technology to your individual requirements – in terms of clearance height, track gauge, cargo types and handling rates.

### INTEGRATED SOLUTIONS

Our portal harbor cranes can be integrated into many terminal infrastructures. They are ideally suited for:

- handling bulk, general and project cargo in addition to containers,
- new and existing installations and their expansions,
- new or replacement investments.



In the beginning, there was the Konecranes Gottwald Mobile Harbor Crane with its unique capabilities that we have since transferred onto other crane types. As a result, our cranes today are not only always in their element on land, but on water, too.

## PROFIT FROM YOUR PORTAL HARBOR CRANE

- Low specific investment costs for the crane and the quay infrastructure
- Cost effective efficient electric drive systems
- Short delivery lead times thanks to our advance-order program
- Fast spare parts supply through use of series components
- Terminal vehicles and conveyor belts can be operated below the portal



Konecranes Gottwald Portal Harbor Cranes successfully combine innovative mobile harbor crane technology with customer-specific portals

## CRANES BUILT TO MEET YOUR NEEDS

# CHOOSE A CUSTOMIZED SOLUTION

**As a terminal operator, you must respond quickly to changes. Increasing cargo volumes and different types of cargo present challenges.**

- Existing terminals and quays must be:
  - modernized to achieve greater efficiency or
  - extended to handle growing cargo flows.
- New terminals must be built to supply downstream facilities.

## AN EXCELLENT COST-EFFECTIVE ALTERNATIVE

Konecranes Gottwald Portal Harbor Cranes represent a cost-effective and fast alternative to cranes built for a specific application only. Our cranes are:

- efficient: handle up to 1,850 tph of bulk cargo, depending on crane variant and environment,
- powerful: lifting capacities of up to 200 t,
- available fast: thanks to series components combined with the individualized portal, they can be delivered quickly,
- flexible: adaptable to different terminal structures at low specific investment costs.

Konecranes Gottwald Portal Harbor Cranes on this newly built finger pier are part of a logistics chain for a power plant.



Where there are no quays, for example on rivers, portal harbor cranes on barges are used and connected to landside peripheral equipment.



In shallow waters, the offshore quays with portal harbor cranes provide an efficient complete solution.



High-performance Konecranes Gottwald Portal Harbor Cranes use the rails on existing quays.



When extending existing quays, portal harbor cranes provide a fast and cost-effective alternative to cranes built for a specific application only.

KEEP EVERYTHING AROUND YOUR PORTAL MOVING

# STAY FLEXIBLE IN ALL DIRECTIONS

Konecranes Gottwald Portal Harbor Cranes stand for high flexibility. This is thanks to the portal, which we design to suit the conditions in your terminal. So vehicles can move under the crane, for example. The decisive factor here is individual customization:

- gauge width of existing tracks, and adaptation of the portal to match the height of the quay/water level,
- to match the size and loading height of the vessels to be unloaded,
- to meet rail load specifications.



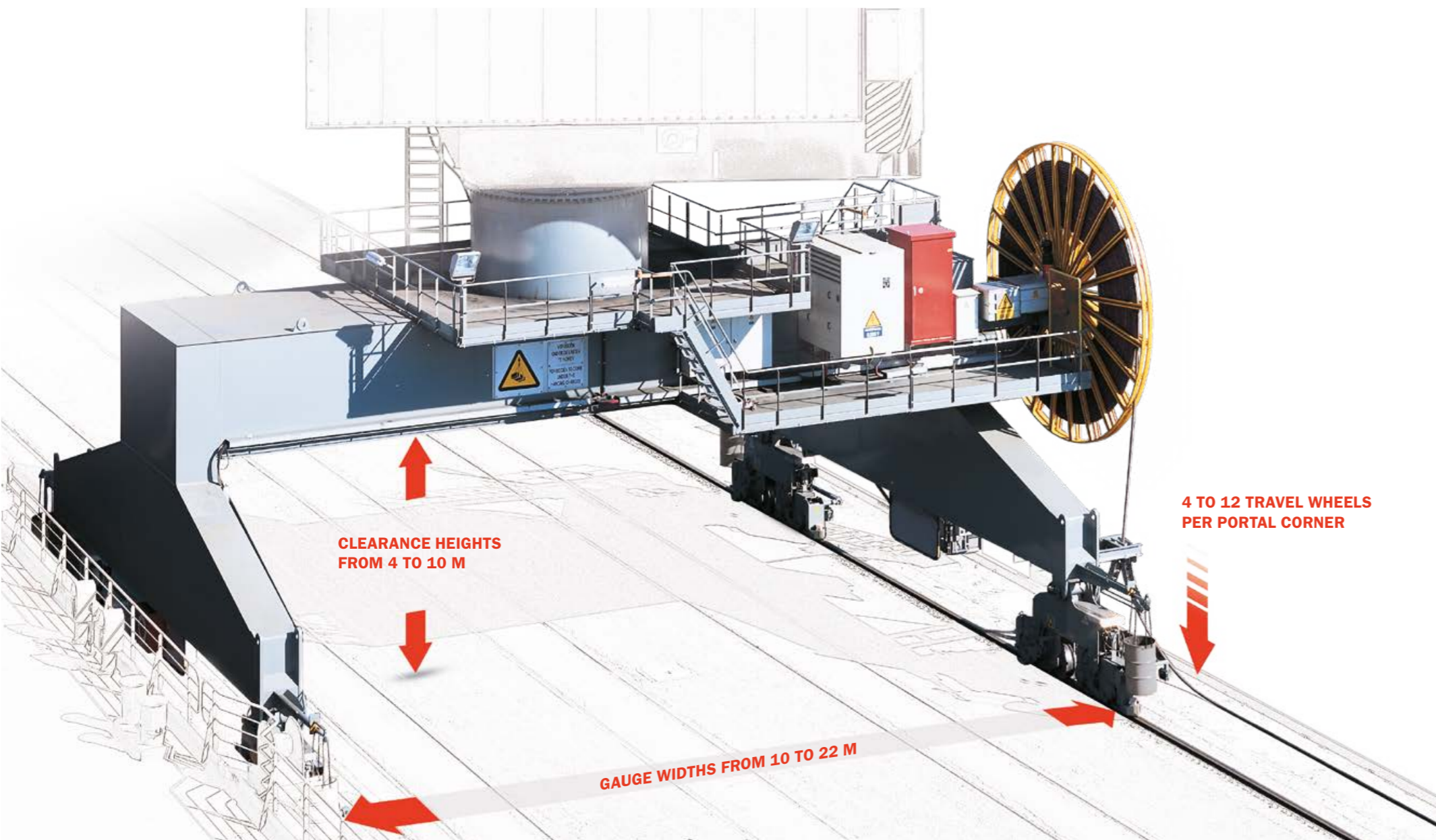
Traffic must also flow on narrow quays. The portal is built high enough to enable vehicles of all types to pass underneath it.



Efficient use of space permits excellent maneuverability of the hopper under the portal on narrow and quays off the shore.



Conveyor belts running under the portal.



## PORTALS INDIVIDUALLY ADAPTED TO YOUR TERMINAL

# A DESIGN YOU CAN TRUST

We have built portal harbor cranes for many years and have remained faithful to our design principle. And to the principle of flexibility, too. That's why the individual components of the portal are adapted to on-site conditions.

### STAIRWAYS AND PLATFORMS

- Depending on the terminal layout, the stairway is mounted on the inside or outside of the portal – the design is ergonomic with a 50° stair angle.
- Access to the crane is either:
  - via the portal with the corresponding safety rail or
  - via the portal and the pedestal.
- Emergency descent stairways are normally located on both sides of the portal.



### DRIVES

- Normally mounted horizontally to save space.
- For bulk terminals with particularly high dust emissions, mounted vertically with housing (optional).



### BRAKING SYSTEM

- The crane travel drive is braked by means of an eddy-current brake.
- A parking brake provides additional safety.

### ELECTRICS CONTAINER

- Standard 20' or 30' containers for housing:
  - transformers for medium voltage supply,
  - frequency converters for the travel drives (optional).
- Individual designs, with optional switching cabinets.
- Mounted on or at the side of the bridge girder, depending on the space required.



### TRAVEL WHEELS

- Designed for local rail load requirements.
- Portal corners with 4, 6, 8 or 12 travel wheels.



### EXTERNAL POWER SUPPLY

- The cable reel is mounted either inside or outside of the portal.
- The cable guides are adapted to local requirements.

### BUFFER

- To intercept collisions with other rail-bound equipment.
- Designed to match the type of terminal and equipment used.



Use of external on-shore power supply with medium or low voltage is cost-effective and eco-friendly. Recovered energy can also be fed into the terminal's power supply system.

## BENEFIT FROM THE EFFICIENCY OF ELECTRIC DRIVES

# COST-EFFICIENT AND ECO-FRIENDLY

**Konecranes Gottwald Portal Harbor Cranes are electrically driven. They obtain their energy from:**

- the terminal's electrical system with medium or low voltage,
- on-board diesel generators,
- optionally from one or the other, if redundancy is required.

The use of the terminal's electrical system when operating Konecranes Gottwald Portal Harbor Cranes provides many benefits:

- reduced energy costs,
- lower maintenance costs,
- reduced noise emissions,
- crane operation with zero exhaust emissions in the terminal,
- potential for an uninterrupted green energy chain,
- feeding back energy recovered from the crane's lowering and braking motions into the terminal's onshore power supply.

Thanks to individual solutions for cable guidance, cable length and energy supply medium (e.g. via busbars), our portal harbor cranes can be integrated easily into all quay infrastructures.

## DESIGNED WITH ELECTRIC DRIVES RIGHT FROM THE START

Konecranes build cranes with an electrical drive system that allows terminal operators to connect easily to an on-shore power supply, without the crane having to be equipped with additional components for energy conversion.



The cable guide section helps everything to run smoothly, even when the direction of travel changes.



A cable guide alongside the conveyor belt also saves space.



High-level cable guide arrangement allows vehicles to travel under the supply cable.



Energy supplied via a busbar of a low-voltage electrical system is also possible.

# PORTAL HARBOR CRANES ON OR OFF RAILS AND ON BARGES WORK ON ALL TERRAINS

**Konecranes Gottwald Portal Harbor Cranes stand for high variability; they have the potential for you to use them on several quays – irrespective of whether your terminal:**

- has several quays served by rail-mounted equipment,
- is composed of quays served by equipment with and without rails.

### ALWAYS ON TRACK: WITH OR WITHOUT RAILS

In both cases, you can be helped by optional special travel equipment, which can be mounted on the crane portal as required. This equipment enables:

- a quick change of site,
- high maneuverability, such as 90-degree on-the-spot turning,
- operation on quays without rails, thanks to four stabilizer pads.

If your terminal does not have a quay infrastructure, we have a cost-effective solution for you with portal harbor cranes on barges. These can be moved along the specially designed barge to enable them to service a number of holds without having to warp the barge.



90-degree on-the-spot rotation provides good maneuverability for fast change of direction.

Portal harbor cranes fitted with travel equipment can quickly change location and can be used throughout the terminal.

## WHEN IT GETS REALLY TIGHT

Terminals without rails also benefit from the flexible portal of our cranes: Konecranes Gottwald Rubber-Tired Portal Harbor Cranes create space in small ports – for example, the portal of our Model 2 crane provides a clearance width of 9.5 m and a clearance height of 6 m.



Konecranes Gottwald Portal Harbor Cranes on barges are the cost-effective solution for terminals lacking a quay infrastructure.



Individually developed, e.g. for specially shaped rails or individual buffers on the rail ends. Konecranes helps you to develop the barge.

FOR ANY KIND OF CARGO

## HANDLE IT ALL

**Our portal harbor cranes handle all types of cargo. In bulk terminals they are used predominantly in the four-rope-grab variant, where:**

- they provide a cost-effective and fast alternative to cranes built for a specific application only and, have handling capacities of up to 1,850 tph, depending on crane variant and environment,
- they are part of a logistics chain, for which Konecranes also supplies the corresponding control and management software.



### SOLUTIONS FOR BULK TERMINALS

Konecranes Gottwald Portal Harbor Cranes are often part of complete logistics chains in professional bulk handling

### PART OF THE CHAIN: ALSO EFFICIENT FOR GENERAL CARGO AND CONTAINERS

Our portal harbor cranes with radii of up to 61 m and maximum lifting capacities of up to 200 t, also help with efficient handling of:

- general cargo,
- bulky or heavy project cargo,
- containers in all common sizes.



### SOLUTIONS FOR MULTI-PURPOSE TERMINALS

Portal harbor cranes are designed to handle general cargo like steel as well as bulky or heavy project cargo.

### SOLUTIONS FOR CONTAINER TERMINALS

We offer a comprehensive range of container handling equipment for the entire logistic chain.





**KONECRANES GOTTWALD PORTAL HARBOR CRANES**

# SMART AND THUS USER-FRIENDLY

**Konecranes Gottwald Portal Harbor Cranes are packed with smart technology. This is why terminal operators can significantly improve productivity and also safety for both the crane operator and the machine.**

**ERGONOMIC, TOP-OF-THE-RANGE EQUIPMENT**

Our portal harbor cranes include user-friendly equipment and functions:

- comfortable, air-conditioned tower cab, with optional air-suspension seat for safe, comfortable work
- Visumatic® crane management system with clearly arranged graphic symbols for intuitive operator guidance
- a camera on the boom head for a close-up view of the work site via the monitor screen in the cab.

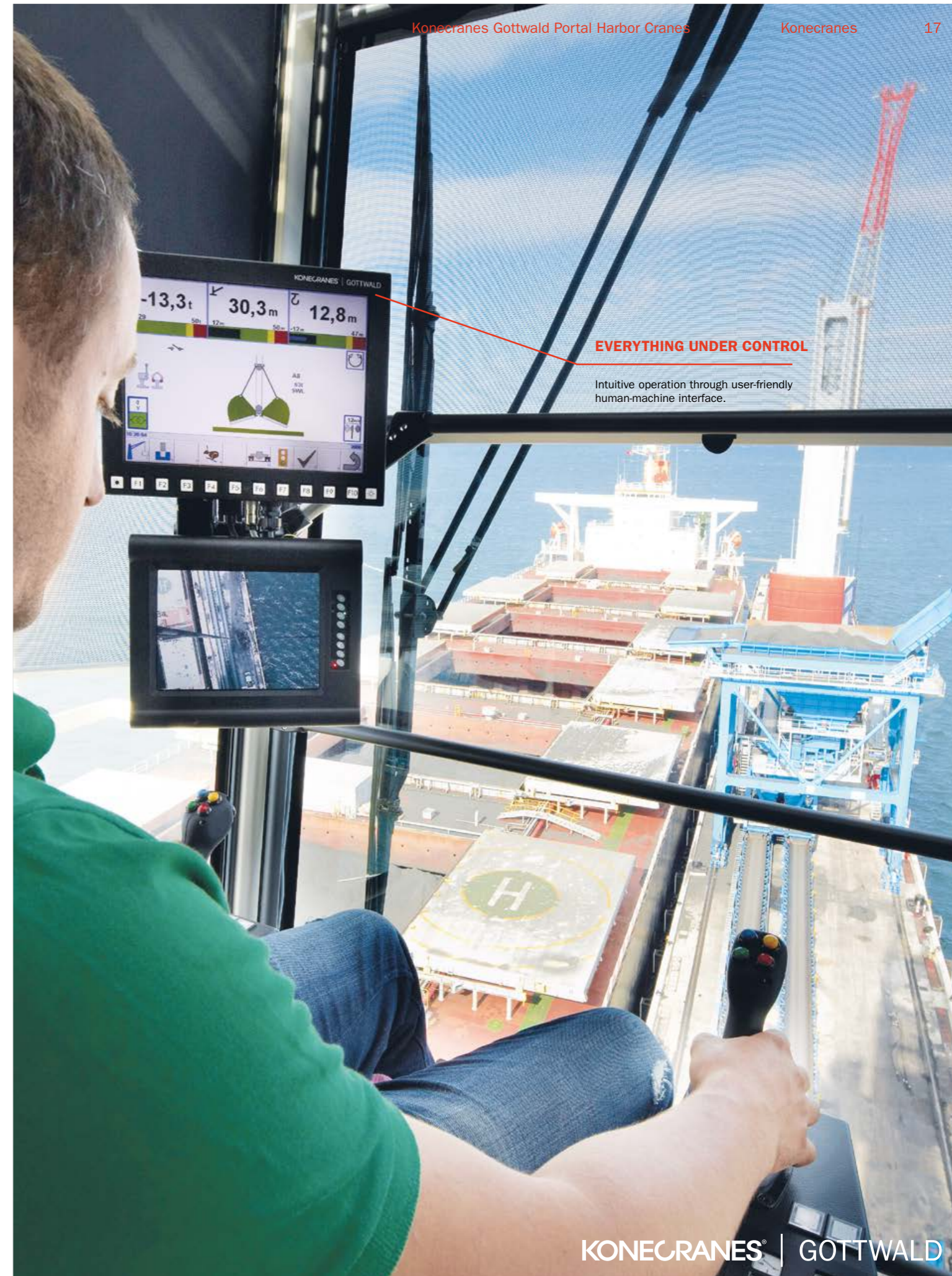
## MORE CONTROL – MORE EFFICIENCY

Many optional features enable operators to adapt their portal harbor cranes to the exact conditions of use. These features include:

- smart crane features to enhance productivity and safety
- web-based information and diagnostics system to record operating data and provide access to service data.

	Cargo			Benefits		
	Container	Bulk	General/ project cargo	Efficiency	Safety	Ergonomics
<b>Smart crane features</b>						
Load anti-sway	●	●	●	●	●	●
Semi-automatic point-to-point control	●	●	●	●	●	●
XY-path assistant	●	●	●	●	●	●
Hoisting-height assistant	●	●	●	●	●	●
Working-range assistants	●	●	●	●	●	●
Auto-adaptive grab control		●		●	●	
Cargo-hold totalizer		●		●	●	
Weighing system		●		●	●	
Web reporting	●	●	●	●	●	●
Remote desktop	●	●	●	●	●	●

For productive and safe cargo handling, Konecranes offers a variety of standard and optional smart crane features



**EVERYTHING UNDER CONTROL**

Intuitive operation through user-friendly human-machine interface.

## YOUR PORTAL HARBOR CRANE IS IN THE BEST HANDS WITH US

# COMPREHENSIVE SERVICE

**We have placed the highest value on ease of service and maintenance when engineering Konecranes Gottwald Portal Harbor Cranes for you. Thanks to easily accessible maintenance points, our robust cargo-handling equipment is user-friendly. Our expertise is complemented by the use of components from globally renowned manufacturers.**

### WE MAINTAIN AVAILABILITY

We help to ensure that the availability and productivity of Konecranes Gottwald Portal Harbor Cranes do not diminish. Our global service organization is close to customers in all time zones and language regions and offers maintenance and repair expertise combined with fast spare parts supply.

### WE PRESERVE YOUR CRANE'S VALUE OVER MANY YEARS

Because we build your Konecranes Gottwald Cranes on Barge and know them best, it goes without saying that we are the ideal partner for your crane throughout its entire life cycle. With our comprehensive Service portfolio, your crane remains state of the art, its service life increases and its value is preserved over many years and the crane.

### OUR OFFERING

- Life cycle support
- Global service organization
- Fast provision of spare parts
- Retrofits and upgrades
- Crane operator training, also using a simulator, training programs for service staff.



All machinery and components in Konecranes Gottwald Portal Harbor Cranes are easy to access



**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 2019, Group sales totaled EUR 3.33 billion. Including MHE-Demag, the Group has around 18,000 employees in 50 countries. Konecranes shares are listed on the Nasdaq Helsinki (symbol: KCR).**



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