

Generation 5



Compact, Functional and High-Performance  
**Harbour Crane Model 4**

# Harbour Crane Model 4

As Versatile as Possible, No Larger than Necessary

At special transshipment sites and in multipurpose terminals, the demands placed upon efficient cargo-handling equipment are increasing. The equipment used should be high-performance, reliable, profitable and environmentally friendly.

On the look-out for the best in terms of performance, function and costs of the crane and the quay infrastructure, many terminal operators prefer the greatest possible versatility of handling equipment to specific specialisation.

## Gottwald Mobile Harbour Cranes

As all-purpose, high-performance cargo-handling machines for a broad range of applications, diesel-electric Mobile Harbour Cranes made by Gottwald feature:

- mobility
- versatility
- flexibility
- economy.

In addition, Gottwald Mobile Harbour Cranes boast a comparatively low capital outlay and short delivery lead-times compared to custom-made cargo-handling equipment and offer economical solutions for handling cargoes such as:

- containers
- bulk materials
- general cargo
- project cargoes.

## The Harbour Crane Generation 5

The outstanding features of Gottwald's current Harbour Crane Generation 5 apply equally to Mobile Harbour Cranes, rail-mounted Portal Harbour Cranes and barge-mounted Floating Cranes.

This crane generation, according to Gottwald's philosophy "You Name it, We Crane it", is based on a pioneering modular design principle and thus purposefully meets individual customer requirements in terms of maximum lifting capacity, lifting capacity curve, hoisting speed, drive performance and handling rates.






## Harbour Crane Model 4

Designed in a compact and functional manner, the Harbour Crane Model 4 extends the existing model range of the Generation 5 in the 100-tonne segment downward. The crane has a maximum lifting capacity of 100 tonnes, a working radius of up to 46 m and the usual high crane classifications such as A7 for a 40-tonne grab curve or A8 for a 34-tonne grab curve.

The crane thus meets the requirements of universal and special terminals and can serve ships up to the Panamax class. At the same time, Model 4 is attractive for terminals that, on account of their size and development potential, are already anticipating larger cargo-handling volumes and increasing annual operating hours for discharging equipment.

With the Model 4, Gottwald is presenting cargo-handling equipment that ranks eminently among the range of models in Generation 5, and in addition to its compact overall design, offers many versatile benefits in its application: as versatile as possible, no larger than necessary.

## Suitable for the Following Vessels

		Feeder	Standard	Panamax
Container Vessel Size	Capacity [TEU]	300 – 1,200	1,000 – 2,500	3,000 – 4,500
	No. of rows	≤ 8	≤ 10	≤ 13
	Beam [m]	~ 18	~ 24	~ 32
				
Bulk Carrier Size	Capacity [DWT]	≤ 30,000	≤ 50,000	≤ 80,000
	Beam [m]	18 – 28	22 – 32	~ 32
				





### **Entry Model for the 100-Tonne Segment**

With its broad range of 100-tonne Harbour Cranes, Gottwald meets the requirements of all types of vessels, terminals and cargo handling. Model 4, with a lifting capacity of 100 tonnes at a radius of up to 22 m, serves as an entry model for the 100-tonne segment.

Model 4 is characterised by its compact construction, top-of-the-line functionality and high-level performance – like all Gottwald Harbour Cranes, it ensures the lowest operating costs and, at the same time, the highest degree of reliability

# A Clean Machine – Not Only for the Environment

## Harbour Crane Model 4

Model 4 stands in the proud tradition of Mobile Harbour Crane technology proven more than a thousand times over. The field-tested aspects include DC-powered hoists and slewing gear drive units for smooth acceleration and deceleration of main crane movements, the proven chassis with H-shaped stabiliser arrangement, large tyres and maintenance-free equaliser beams for large vertical compensation.

Gottwald has enhanced all this with innovative features such as crab steering for ideal manoeuvrability and automation of frequently repeated crane movements such as propping.

### **Electric Drives: Economical and Environmentally Friendly**

Model 4 is cost-effective, energy saving and efficient. High-performance diesel-generator sets with capacities of up to 895 kW develop the

dynamics that ensure high working speeds for high handling capacities. The excellent degree of efficiency and long maintenance intervals minimise operating costs. Ports and the environment profit twofold from low exhaust and sound emissions. With Model 4, Gottwald also meets the strict requirements of Directive 2000/14/EC to further reduce noise levels.

It is also possible to make use of an external power source since Gottwald cranes already use electrical drive technology and the drive units can also be operated directly with power from the on-shore power supply. No wonder that this environmentally-friendly drive system most commonly used in ports brings to the fore its advantages over other systems.



## The Types and Versatile Variants of Harbour Crane Model 4

Crane type	Variant	Max. lifting capacities [t]			Max. hoisting speeds [m/min]				Max. radii [m]
		74	100	80* 40**	70	75	90	100	
G HMK (G HSK) (G HPK)	4306	●				●			●
	4406		●		●		●		●
	4306 B			●				●	●

\* Heavy-load operation (top), 4-rope grab operation (bottom)

\*\* A7 classification, 34-tonne grab curve in A8 classification

Please see the technical data sheet for complete data

### Quick, Safe and Easy – for High Handling Rates

Model 4 represents a perfect alliance of performance, safety and ergonomics. The intuitive, easy operation complemented by high working speeds permits the crane operator to achieve high handling rates.

The load guidance system, available as an option, ensures even safer and

more convenient operation with such features as:

- linear load motion
- load antisway
- point-to-point handling mode and
- hoisting height limiting system.

Acoustic and visual warning signals and redundant computer systems for hoist switch-off, for example, are representative of the high safety standard of Gottwald products.

### On Tyres, Portals or Barges

The Harbour Crane Model 4 is based on a modular production principle and boasts several versatile variants, including a variant for professional bulk handling.

Also, Model 4 can be supplied on a tyre-mounted chassis, or a rail-mounted portal or a barge. It is also available as a combination of Portal Harbour and Floating Crane, i.e. a rail-mounted Harbour Crane on a barge. The corresponding variants are offered for each of the above four Harbour Crane types.

In simple terms: taking the lead through technology unrivalled world-wide thanks to the wealth of crane types and versatile variants it provides.

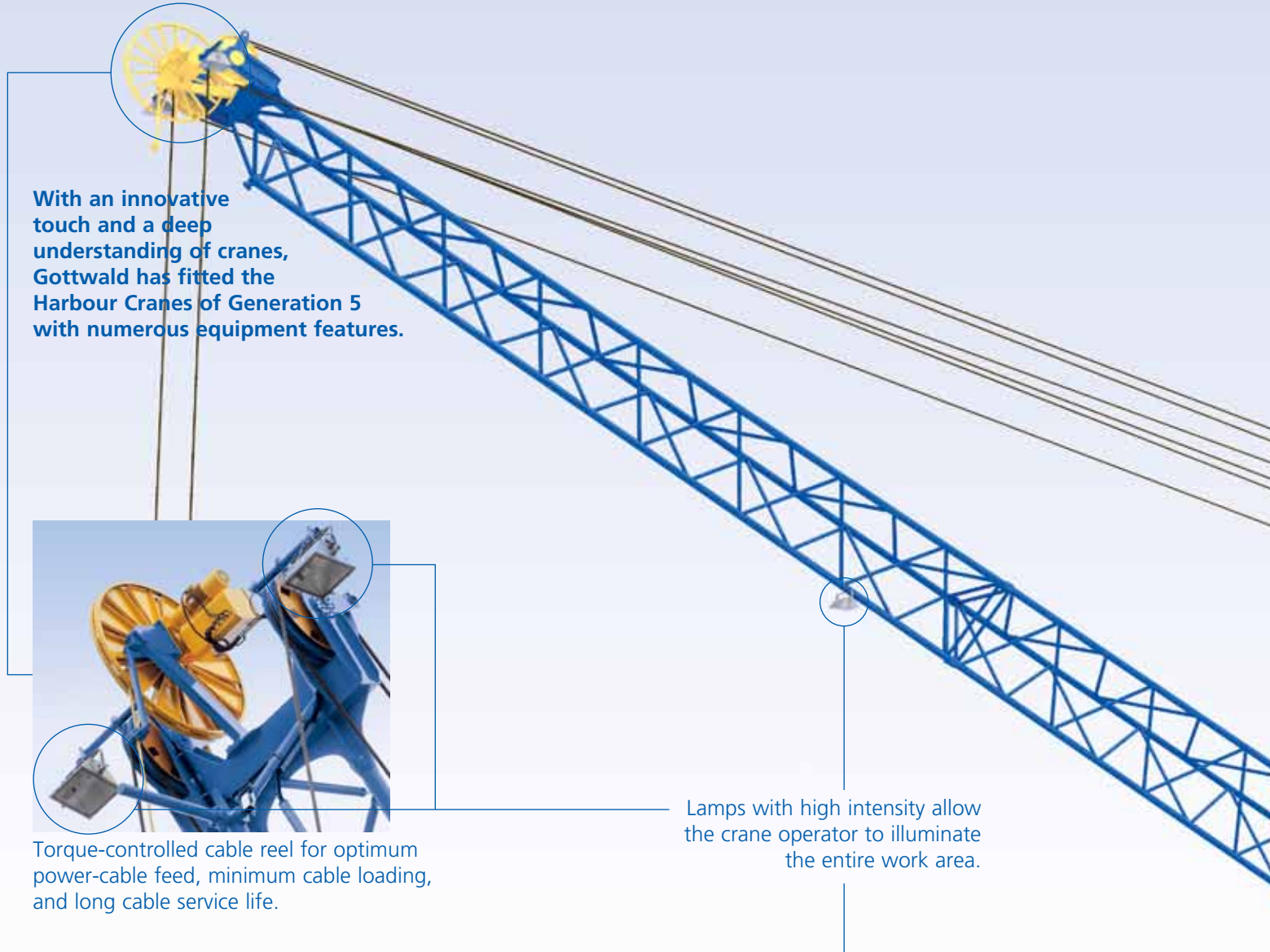


Operating Gottwald Harbour Cranes directly with power from the shore power supply offers:

- an increase in the degree of efficiency resulting in lower costs
- a significant reduction in exhaust gases and noise levels in the terminal

# With the Benefits Typical of Generation 5


## Harbour Crane Model 4



With an innovative touch and a deep understanding of cranes, Gottwald has fitted the Harbour Cranes of Generation 5 with numerous equipment features.



Torque-controlled cable reel for optimum power-cable feed, minimum cable loading, and long cable service life.



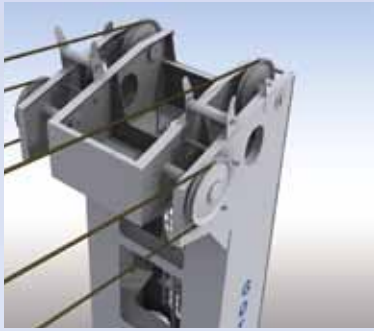
Lamps with high intensity allow the crane operator to illuminate the entire work area.

Small radii and crab steering ensure excellent manoeuvrability.

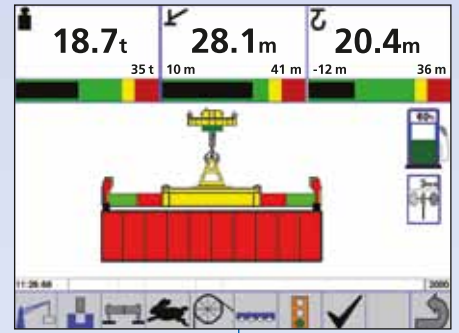
Maintenance-free equaliser beams with vertical compensation of up to 500 mm ensure that the axle load is always evenly distributed, even on quays with uneven terrain.

Optional cab on the chassis.





Ladders for safe ascent to the tower head. Extended platform for easy access to all rope pulleys for maintenance work.



Visumatic® is equipped with colour graphic symbols clearly represented on a screen that act as an intuitive operator guide.



Cab ergonomically designed affording the best possible comfort. High crane availability through enhanced diagnostic possibilities via the Visumatic® crane management system.



High tower cab position for an excellent view. Even better view of the vessel thanks to the forward-mounted cab (optional).



Proven H-type stabilisers – automatic propping system – stabiliser pads suitable for the particular conditions of the quay.



# A Closer Look at Compact Technology

## Harbour Crane Model 4

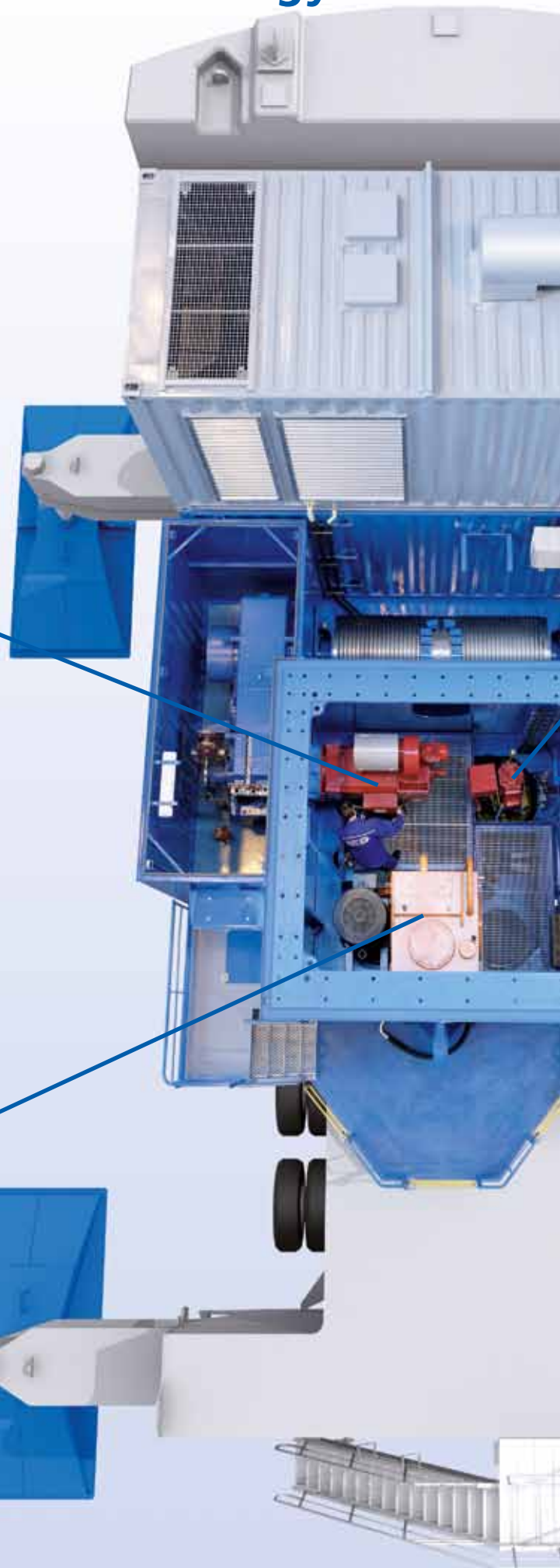


### Hoists

- Modular design
- Arranged in a U-shape for easy accessibility and heat removal
- Available in the configurations 1 x 2 or 2 x 2 as required for the crane variant and application
- Single-layer rope coiling for minimal rope wear
- DC drive for smooth acceleration and deceleration of the hoisting motion

### Hydraulic Unit

- 3-phase driven axial piston pump
- Supplies luffing cylinder, travel gear, stabilisers, steering and brake systems with hydraulic oil





### Slewing Gear Drive Units

- Identical slewing gear drive units designed as modules
- The number of units as required for the crane variant and application
- DC drive for smooth acceleration and deceleration of the slewing motion



### Central Lubrication Systems

- Ensure regular and proper lubrication of slew ring, boom root and luffing cylinder bearings
- Optionally extendable to include chassis and rope pulleys
- Pinion lubrication using special-purpose, high-performance grease via separate central lubrication system





## Diesel-Generator Set

- In weatherproof, soundproofed container
- Mounted on slide
- Drive power based on crane variants and application
- Sufficient power to permit all crane functions to be performed simultaneously and independently of each other

## Electrics Room

- In weatherproof, air-conditioned container
- Electrical equipment and control system
- Rectifier units for 3-phase to DC power conversion
- Clearly divided into function groups
- Diagnostics panel to facilitate troubleshooting



## Efficient Use of Energy – Cuts Costs and Protects the Environment

Gottwald cranes use electrical drive technology which means they use the energy source most commonly found in ports, are economical and ecologically compatible. The diesel-generators fitted on-board guarantee optimum efficiency, the lowest possible fuel consumption and minimum exhaust emissions.

Since they are already designed to be powered by electricity, Gottwald Harbour Cranes are perfectly suited to external power from the terminal's own mains supply. This improves the efficiency of the machines still more. In addition, this cuts exhaust gases from the cranes to zero and has the added advantage of considerably reducing noise levels, with the corresponding positive contribution to a terminal's ecology rating.

With its products, systems and drive technologies providing both improved economy and environmentally compatible operation, Gottwald is setting clear standards – handling equipment that reduces exhaust gas, noise, dust and light pollution and contributes to optimising the use of quay space



# Perfectly Conceived

By the World Market Leader in Mobile Harbour Cranes

The investment in Harbour Cranes is based upon numerous factors. They include infrastructure considerations such as admissible quayside loadings, track gauges and power supply equipment. In addition, the range of application, type of use, lifting capacity and number of annual crane operating hours must be included in the investment decision.

## Infrastructure

Harbour Cranes made by Gottwald can be integrated into a diverse range of infrastructures and adapted to meet individual requirements.

Possible adaptations and custom features range from individually designed stabiliser pads for quays with low admissible quay loadings to equipment for an external power supply and solutions for particularly tight clearances and individually designed portals and barges.

## Very Short Delivery Lead-Times

With its Advance Order Programme for Harbour Cranes that amply allows for individual customer requirements, Gottwald meets the demands of terminal operators for especially short delivery lead-times. At the same time, Gottwald Harbour Cranes are an attractive alternative to custom-made handling equipment with its very long delivery lead-times and considerably higher costs for both the machine and the quay infrastructure.

## Classification and Service Life

Gottwald has always presented data on classification and service life in a logical and clear fashion. Basically, on the one hand, it is a question of the intensity of crane operation combined with the degree of actual use. On the other hand, there is the loading capacity of a crane, which increases with greater wall thicknesses, of sheet metal and tubing for instance.

Put simply: the anticipated number of work cycles and, consequently, the service life of the crane are derived from the type of load and loading capacity and defined by the steel structure, mechanical design and construction of the crane. Customers should consult Gottwald so that the crane can be precisely configured to meet the respective requirements.



Gottwald Harbour Cranes, including Model 4, can quickly and efficiently handle all types of cargo with a broad range of lifting gear



# Reliable Service

Around the World, Around the Clock, All Around the Product

Service provided by Gottwald ensures that your Gottwald machines are maintained at the highest possible level of availability while securing the value of your investments. In its capacity as a reliable service partner, Gottwald stands for professional troubleshooting and has set up an efficient, two-step organisation:

## First Level Support

Gottwald presides over a global network of service organisations comprising representatives and affiliates within the Demag Cranes Group. When you purchase a Gottwald product, we name a contact responsible in your region. This overcomes language barriers and time zones and provides help quickly when needed.

## Second Level Support

Our representatives are supported globally by the Gottwald Service Competence Centre (SCC) in Düsseldorf, Germany. The SCC provides help, especially with complex questions. Modern eBusiness solutions allow fault diagnoses in realtime communication. In specific emergencies, the SCC can be reached on the global 24/7 hotline:

**+49 211 – 7102 3333**



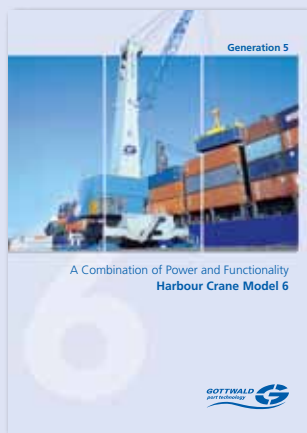
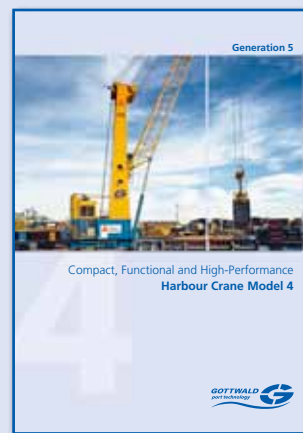
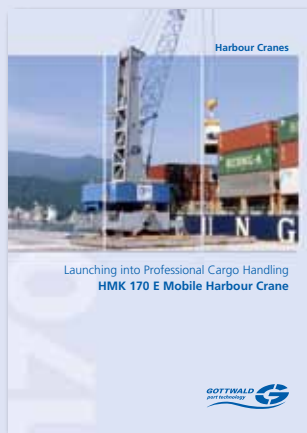
**Gottwald provides customer orientated service for all your new and existing Gottwald products for their entire service lifetimes**

Our aim is to provide holistic service solutions from a single source

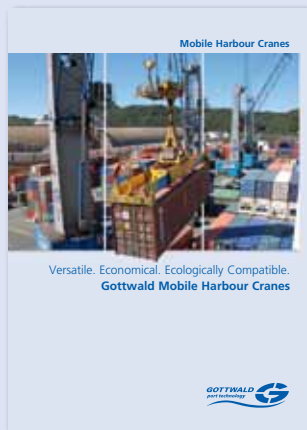




You can find the regularly updated contact details for the continuously expanding global service network in the "About us" section on the Gottwald website



**Gottwald Mobile Harbour Cranes – detailed product brochure for each model**



**Generic brochures for Mobile Harbour Cranes, Portal Harbour Cranes and Floating Cranes**

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