

Generation 5



Handling Performance with no Compromises  
**Harbour Crane Model 7**

# Harbour Crane Model 7

## Outstanding Performance for Tough Applications

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.

In search of the best in terms of performance, function and costs, 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





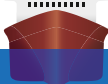

customer requirements in terms of maximum lifting capacity, lifting capacity curve, hoisting speed, drive performance and handling rates.

### Harbour Crane Model 7

Designed to be extremely robust, Model 7 Harbour Cranes are intended for high-performance applications and, as a consequence, very high handling rates – assured by lifting capacities of up to 140 tonnes, working radii of up to 51 m and very high hoisting speeds of up to 120 m/min. Added to this are the usual high crane classifications, such as A7 for a 57-tonne grab curve or A8 for a 50-tonne grab curve.

This technological concept makes Model 7 cranes suitable not only for universal terminals of all sizes but also – and in particular – for special-purpose terminals frequented by Post-Panamax class container vessels

### Suitable for the Following Vessels

Container Vessel Size		Standard	Panamax	Post-Panamax
	Capacity [TEU]	1,000 – 2,500	3,000 – 4,500	6,000 – 9,600
	No. of rows	≤ 10	≤ 13	≤ 17
	Beam [m]	~ 24	~ 32	~ 43
				
Bulk Carrier Size		Handymax	Panamax	Capesize Bulker
	Capacity [DWT]	≤ 50,000	≤ 80,000	≤ 170,000
	Beam [m]	22 – 32	~ 32	38 – 65
				



Model 7 cranes stand out as high-performance, high-functionality machines – universally applicable tools benefitting terminal operators as realistic alternatives to custom-built machinery

and bulk carriers up to Capesize where high annual working volumes are achieved. Harbour Cranes such as the Model 7 series – uncompromising high-performance machines with long service lifetimes and universal characteristics – give a considerable boost to the machinery capabilities of such terminals.

Their application range includes, in particular:

- intensive, fast container handling, including Twinlift operation
- long-term, fast bulk handling with a 4-rope grab
- efficient handling of heavy project cargoes.

#### Allrounder for Particularly High Demands

Model 7 cranes are universally applicable high-performance machines for very high demands and handling volumes in multipurpose and specialised terminals.

In this context, it is an advantageous alternative to special-purpose handling machines. Depending on the variant, it can have a lifting capacity of up to 140 t at up to 20 m radius and 100 t at up to 27 m radius and features very high hoisting speeds.

# A Clean Machine – Not Only for the Environment

## Harbour Crane Model 7

Model 7 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 7 is cost-effective, energy saving and efficient. High-performance diesel-generator sets with capacities of up to 1,112 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 7, 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.





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

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

Model 7 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 optical 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 7 is based on a modular production principle and boasts several versatile variants, including a variant for professional bulk handling.

Also, Model 7 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.



### The Types and Versatile Variants of Harbour Crane Model 7

Crane type	Variant	Max. lifting capacities [t]				Max. hoisting speeds [m/min]					Max. radii [m]
		74	100	140	100* 57**	75	90	100	110	120	
G HMK (G HSK) (G HPK)	7308	●				●					●
	7408		●				●			●	●
	7608			●				●			●
	7408 B				●				●		●

\* Heavy-load operation (top), 4-rope grab operation (bottom)  
 \*\* A7 classification, 50-tonne grab curve A8 classification

Please see the technical data sheet for complete data

# With the Benefits Typical of Generation 5

## Harbour Crane Model 7

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

Permanently play-free flange connection enhances rigidity and accurate crane motions.



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.

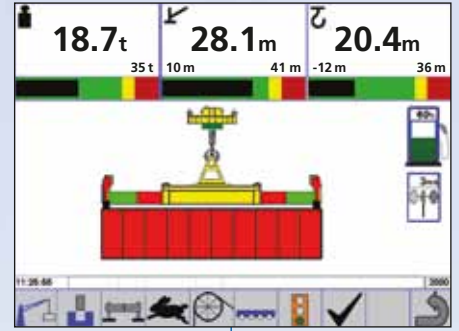
Maintenance-free equaliser beams with vertical compensation of up to 500 mm ensure that the axle load is always evenly distributed, even on quays with uneven terrain.

The driver's cab on the chassis is fitted as standard on Model 7 cranes.





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 chosen for the particular conditions of the quay.

Interlocking stabiliser beams for reduced passage width.



# A Closer Look at State-Of-The-Art Technology

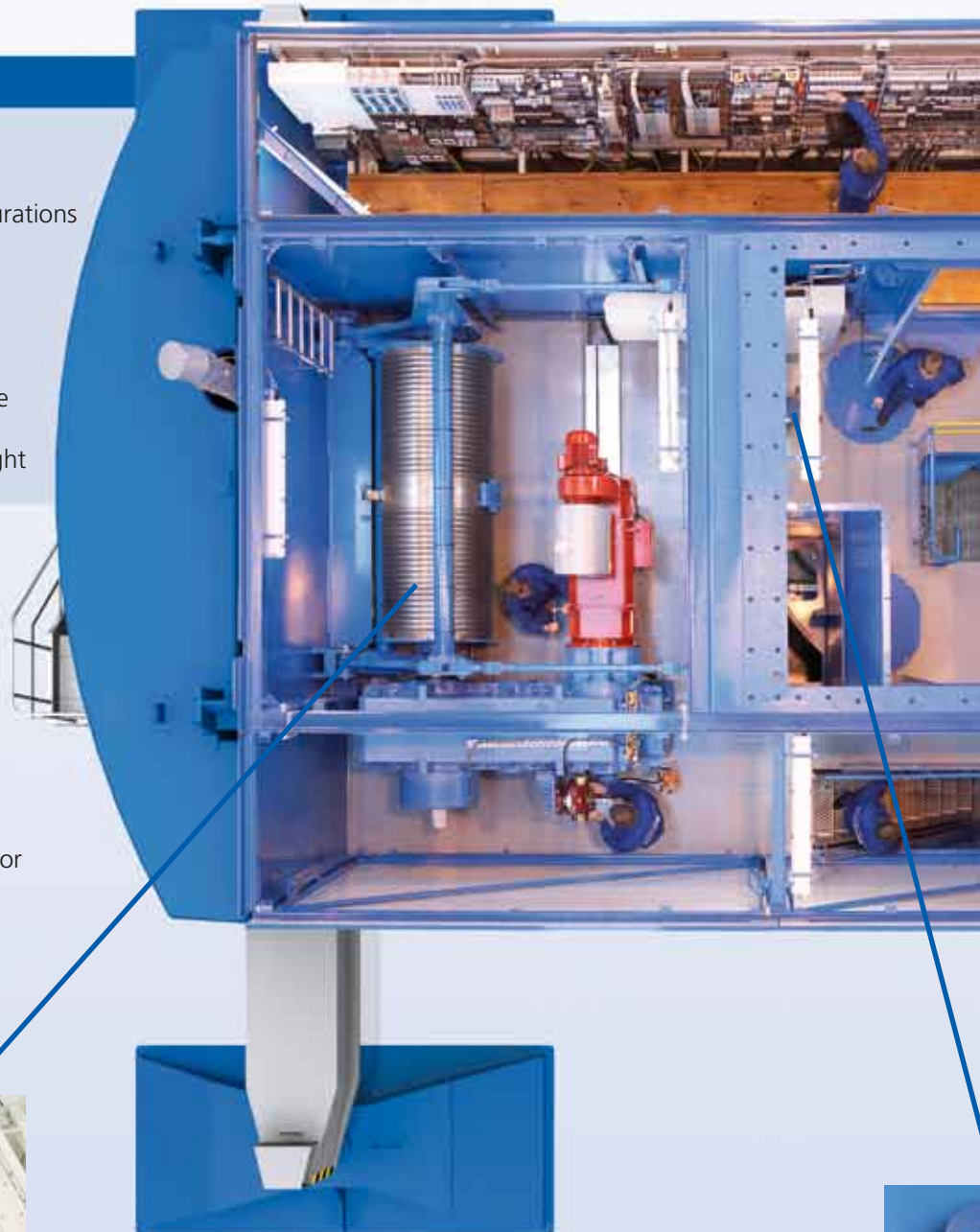
## Harbour Crane Model 7

### Top Floor

- 2.5 m clear headroom
- Separate, large rooms for:
  - up to 2 hoists in various configurations
  - hydraulic unit including tank
  - electrical equipment
- Spacious stairway to the tower
- Hoist located at the rear of the superstructure:
  - to provide the best possible rope guidance beyond the tower
  - to reduce the overall crane weight

### Hoists

- Modular design
- Arranged in a U-shape for easy accessibility and heat removal
- Available in the configurations 1 x 2, 1 x 4 or 2 x 2 as required for the crane variant and application
- Single-layer rope coiling for minimum rope wear
- DC drive for smooth acceleration and deceleration of the hoisting motion



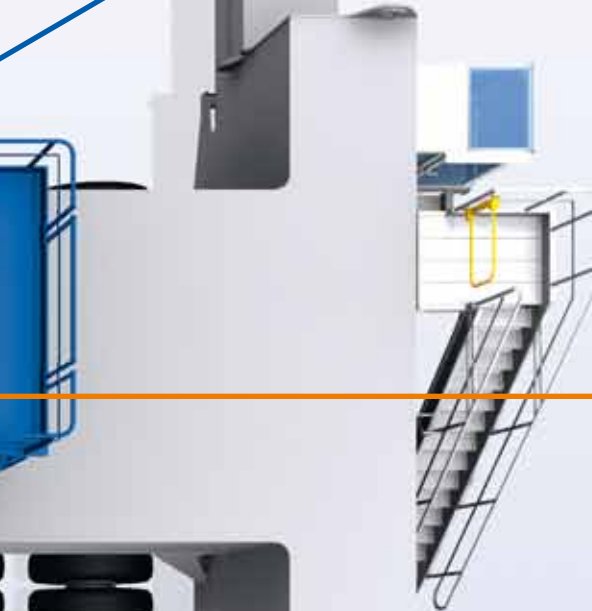


### Electrics Room

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

### Hydraulic Unit

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



### 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

- Mounted on slide
- Day tank located directly next to the set; automatic refilling from the main fuel tank in the chassis
- Sufficient power to permit all crane functions to be performed simultaneously and independently of each other
- Drive power based on crane variants and application

### Lower Floor

- 2.5 m clear headroom
- Separate, large rooms for:
  - diesel-generator set
  - up to 3 slewing gear drive units
- Spacious stairway to the upper floor
- Diesel-generator set located at the rear of the superstructure to reduce overall crane weight



### Stairways

- Easy access up the stairway to the chassis
- All stairways on the crane with 50° inclination

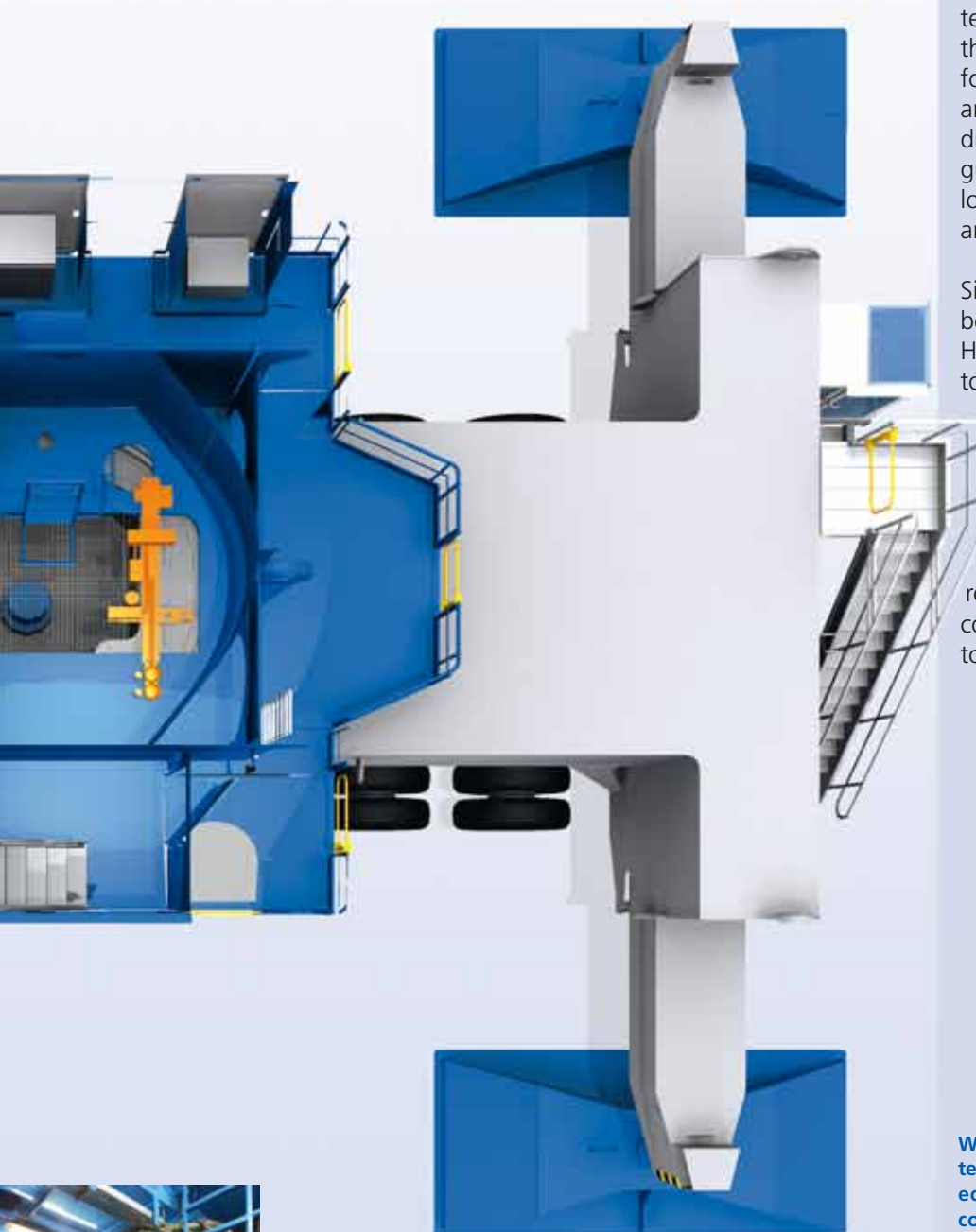


## Efficient Use of Energy – Cuts Costs and Protects the Environment

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



### Slewing Gear Drive Units

- Modular design
- The number of units as required for the crane variant and application
- DC drives for smooth acceleration and deceleration of the slewing motion





G HSK 7416 B Generation 5 crane (front) and two HSK 360 EG cranes (back) handling coal at ABP in Immingham, UK



# Perfectly Conceived

By the World Market Leader in Mobile Harbour Crane Technology

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 generously allows for individual customer requirements, Gottwald meets the demands of terminal operators for especially short delivery lead-times. At the same time, thanks to the advance order programme, Gottwald Harbour Cranes are an attractive alternative to custom-made handling equipment with its very long delivery lead-times.

## 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 defined by the steel structure and mechanical design, construction and condition 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 7, 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**

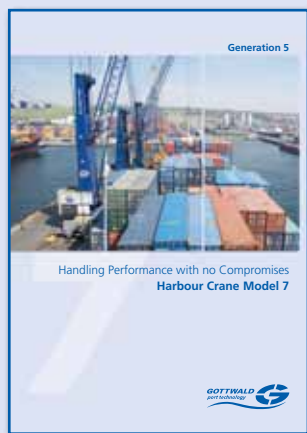
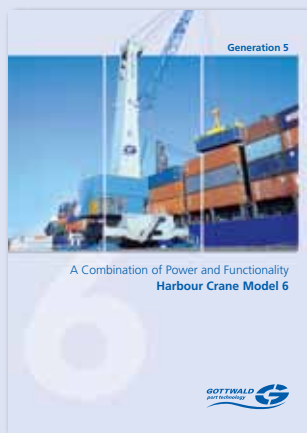
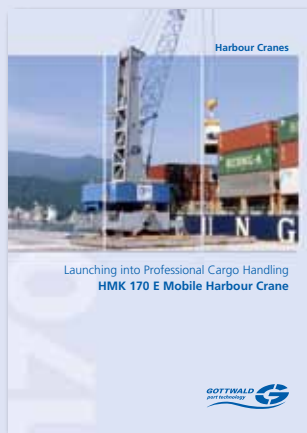
Our aim is to provide holistic service solutions from a single source



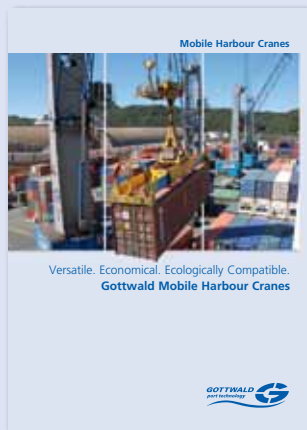


■ Headquarters   ● Sales   ● Service   ● Sales and Service

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**

**Gottwald Port Technology GmbH** • Postfach 18 03 43 • 40570 Düsseldorf, Germany  
 Phone: +49 211 7102-0 • Fax: +49 211 7102-3651 • info@gottwald.com • www.gottwald.com

Gottwald Port Technology GmbH – A subsidiary of Demag Cranes AG

