

Generation 5



The entry model for the 100-tonne segment
Model 3 Harbour Crane

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Model 3 Harbour Crane

Faster Working Speeds, Greater Radii and Efficiency

In maritime ports it is reliable, economical and environmentally compatible handling machines that are in demand. More specifically, terminal operators prefer versatile handling machines to single-purpose, custom-built ones.

Gottwald Mobile Harbour Cranes

As electrically powered, universally applicable cargo-handling machines, Gottwald Mobile Harbour Cranes provide the ideal solution thanks to their broad range of uses while, at the same time, offering high handling performance with:

- containers
- bulk materials
- general cargo and
- heavy project loads.

As well as their key characteristics

- mobility
 - versatility
 - economic efficiency and
 - environmental friendliness,
- these machines offer short delivery lead-times and low specific investment costs for the machine itself and the quay infrastructure.

Wide Range of Harbour Cranes

The current crane Generation 5, according to Gottwald's philosophy "You Name it, We Crane it", is based on a pioneering modular design principle which fully meets individual customer requirements for all the Harbour Cranes made by Gottwald:

- Mobile Harbour Cranes
- Portal and Pedestal Cranes
- Floating Cranes on Barges.

Model 3 Harbour Crane

As the successor to the Generation 4, HMK 260, the new Model 3 is the youngest addition to Gottwald's medium-sized crane family, which is characterised by its compact, functional construction and fast, easy access routes for crane personnel.

Ideal for Handling Containers and General Cargoes

With the focus on fast container and general cargo handling alongside vessels up to standard class, Model 3 is the entry model in the 100-tonne segment of Generation 5. When handling bulk materials, the crane has a 34-tonne or 28-tonne motor grab curve and is classified as A7 or A8 respectively.

With its radius of 46 m, an installed maximum output of 895 kW and hoisting speeds of up to 120 m/min, Model 3 demonstrates a greater radius than its predecessor and significantly increased working speeds to enable improved productivity.

Suitable for the Following Vessels

Container Vessel Size	Barge/Coaster	Feeder	Standard
	Capacity [TEU]	80 – 500	300 – 1,200
No. of rows	≤ 6	≤ 8	≤ 10
Beam [m]	~ 17	~ 18	~ 24
			
Bulk Carrier Size	Barge/Coaster	Handysize	Handymax
	Capacity [DWT]	≤ 5,000	≤ 30,000
Beam [m]	5 – 17	18 – 28	22 – 32
			



The Types and Versatile Variants of Model 3 Harbour Cranes

Crane type	Variant	Max. lifting capacities [t]		Max. hoisting speeds [m/min]			Max. radii [m]
		80	100	97	100	120	
G HMK (G HSK) (G HPK)	3305	●		●			●
	3405		●		●	●	●

Please see the technical data sheet for complete data

For High Handling Rates

Model 3 blends Mobile Harbour Crane technology that has proven its worth a thousand times over with new, innovative features to provide safe, ergonomic, economical and environmentally compatible crane operation. This is demonstrated by these features, amongst others:

- individually steered axles, tight turning circles and crab steering to enable extremely accurate positioning
- automation of many repetitive motions
- load guidance system with linear load motion, load antisway, point-to-point handling mode and hoisting height limiting to assist the crane driver in achieving high handling rates.

Sustainable Technology

Additional improvements in the construction and drive technology, such as 3-phase-powered hoist and slewing gear units and an energy-efficient hybrid drive, make Model 3 a crane in which high handling rates and high efficiency are combined to form a holistic unit.

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 3, with a maximum lifting capacity of 100 tonnes at a radius of up to 20 m, serves as an entry model for the 100-tonne segment.

Model 3 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

Electric Drive Technology for Harbour Cranes

Economical & Environmentally Compatible

Gottwald Harbour Cranes use electrical drive technology, the energy source most commonly found in ports, which means they are economical and ecologically compatible. Power is generated by an efficient, on-board diesel-powered generator with low fuel consumption, minimum exhaust and noise emissions, which complies with the requirements of EU Directive 2000/14/EC.

Use of External Power Supplies

The efficiency of Gottwald drive systems increases still further if the diesel generator is bypassed and the crane drives are powered directly with electricity from the harbour mains. Crane owners benefit both from the energy recovered from the crane's lowering and braking motions and

from the fact that exhaust gas emissions are zero and noise emissions in the terminal are also reduced.

Innovative Hybrid Drive

If the local quay infrastructure does not allow the crane to be connected to the harbour mains, the new Gottwald hybrid drive, made up of these units,

- on-board diesel-powered generator
- electrostatic short-term storage medium

significantly improves the efficiency of Gottwald Harbour Cranes. The energy recovered during the crane's lowering and braking actions is stored and then made available to the crane's power system for the next work cycle.

Gottwald's Green Range – Future-Orientated, Innovative, Sustainable

The energy efficiency of electrical drive technology is unsurpassed. Apart from state-of-the-art diesel generators it is, in particular, the use of external power and hybrid drives that offers the highest potential for sustainable environmental protection and reduced overheads



Connecting cranes directly to the terminal's low or medium-voltage power supply provides these benefits:

- improved efficiency
- reductions in overheads such as power and maintenance
- zero exhaust emissions in the terminal from these machines
- minimised noise pollution.

Where there is no external power supply on the quay, Gottwald's hybrid drive is the answer:

- improved efficiency
- reduction in fuel consumption in the double-digit percentage range
- reduced exhaust emissions
- lower noise emissions as the diesel engine has quieter running characteristics.

With its products and drive concepts, Gottwald is setting standards in terms of environmental sustainability.



Energy from Storage Media

The short-term storage medium uses electrostatic wear and friction free double-layer capacitors (ultracaps), which

- store the energy as electricity so it does not have to be converted and have a high efficiency rating
- have a high power density and cycle rate
- are ideally suited to the tough conditions of professional crane operation.

Dynamic Brake Resistors

When the on-board diesel generator is used, fuel consumption is significantly improved and energy management enhanced by the use of dynamic brake resistors.

Model 3 – Applying Innovations in Electric Drives

As the technological pacesetter in Mobile Harbour Cranes and their drive technology, Gottwald has for years been using reliable DC drives for its hoists and slewing gear units in cranes of all sizes.

Three-Phase Power First

With Model 3, the new 100-tonne Mobile Harbour Crane for the medium segment, Gottwald has expanded its electric drives concept and taken full advantage of technical progress and economic efficiency in 3-phase technology for drive motors of a size suitable for these applications.

The advantages of this electric drive variant include these:

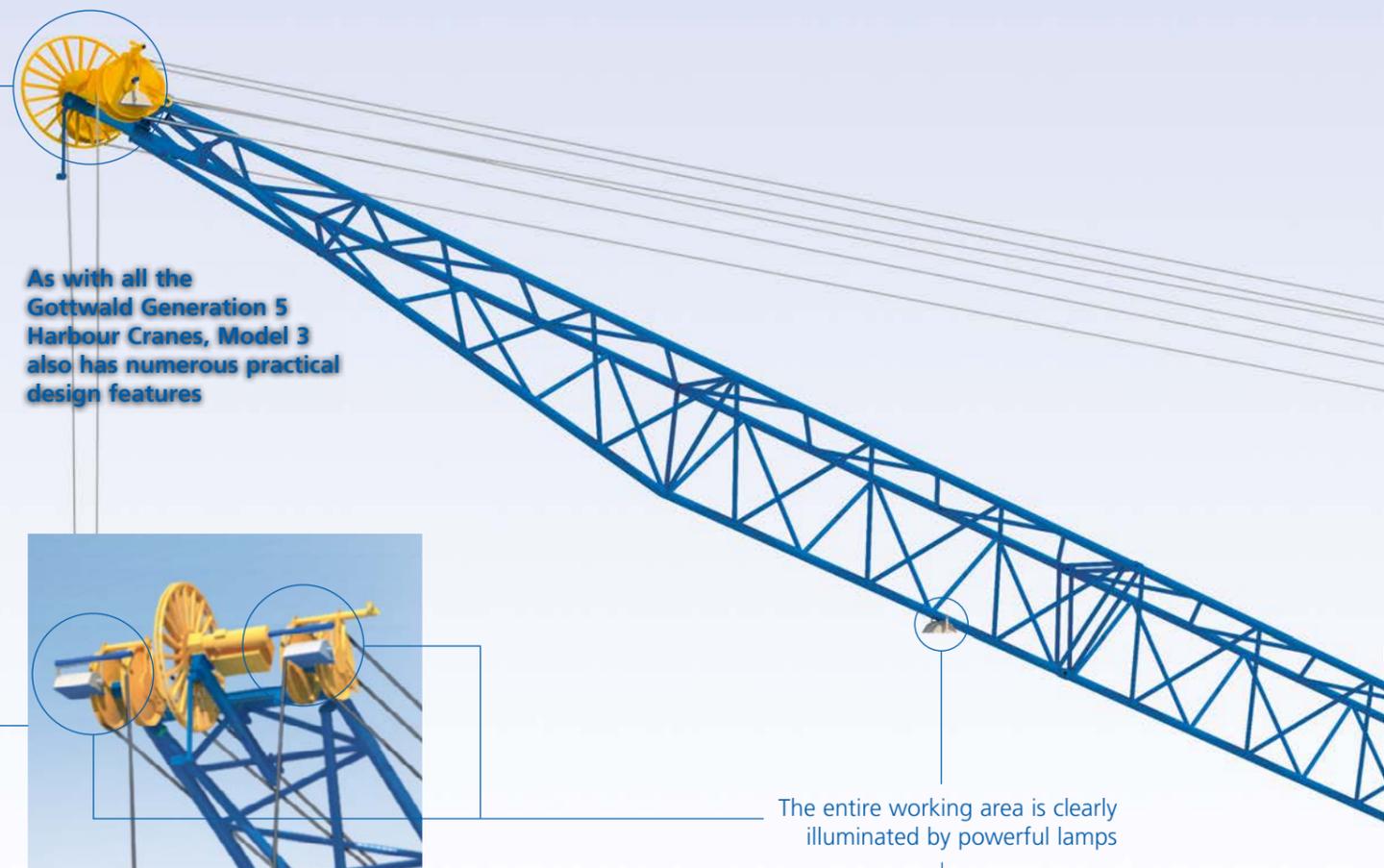
- regular maintenance of carbon brushes no longer required
- gentle, power-dependent starts mean reduced power surges for the generator
- easier application of energy-saving technologies because certain equipment is present from the start, e.g. for fitting ultracaps
- mitigated line-side harmonics in power supplies.

By employing a 3-phase drive variant, Gottwald has integrated technology that has proved itself in numerous industrial applications and in mobile handling machines of comparable sizes.



With the Benefits Typical of Generation 5

Harbour Crane Model 3



As with all the Gottwald Generation 5 Harbour Cranes, Model 3 also has numerous practical design features

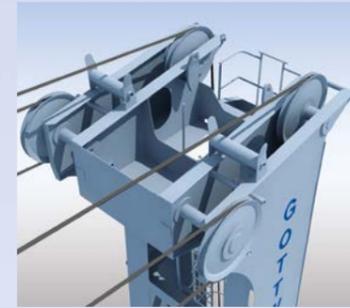


Optimum power-cable feed, minimum cable loading, and long cable service life due to the torque-controlled cable reel

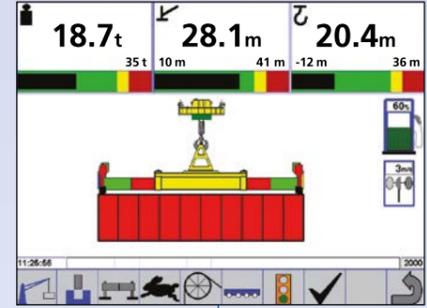
The entire working area is clearly illuminated by powerful lamps

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 driver 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



Excellent view of the job site thanks to the high tower cab position. 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



A Closer Look at Our Innovative Technology

Model 3 Harbour Crane

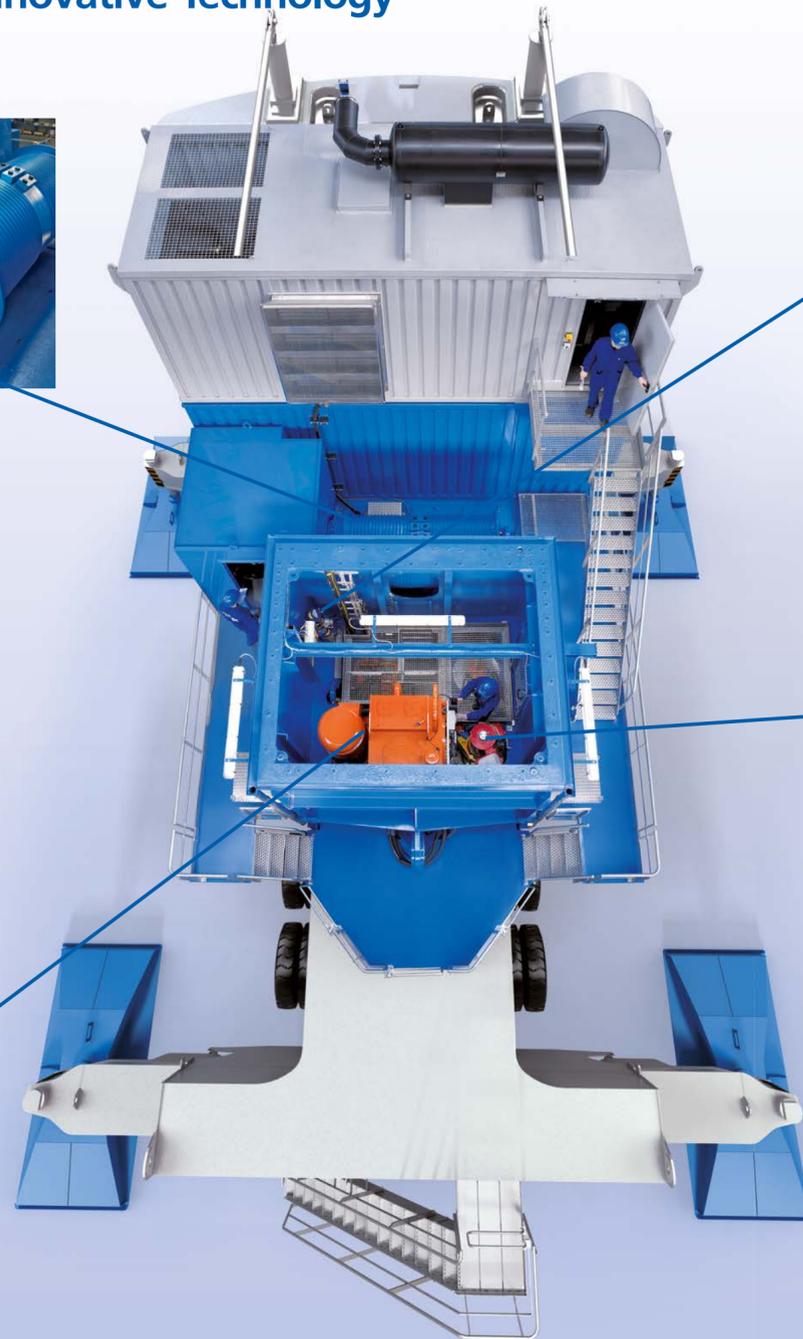


Hoist Design

- Very compact planetary gear
- Single-layer rope coiling for minimal rope wear
- Three-phase drive, smooth acceleration and deceleration of the hoisting motion

Hydraulic Unit

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



Central Lubrication System

- Ensures 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



Slewing Gear Units

- Identical slewing gear units designed as modular assemblies
- The number of units is as required for the crane variant and application
- Three-phase drive, smooth acceleration and deceleration of the slewing motion



Diesel Generator

- In weatherproof, soundproofed container
- Mounted on slide
- Drive power based on crane variant 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
- Clearly divided into function groups
- Diagnostics panel to facilitate troubleshooting



Perfectly Conceived

By the Technological Leader in Mobile Harbour Cranes

Investments in cargo-handling equipment are dependent on the quay infrastructure, which includes the permissible ground loadings, rail gauges, clearance heights and any existing power supply installations. Further key factors in the decision to purchase professional handling machines are the application profile, lifting capacity, annual operating hours and delivery lead-time.

Perfectly Integrated

To enable Harbour Cranes to be integrated into all manner of existing quay infrastructures, Gottwald can supply its machines with modified stabiliser pads for quays with reduced load-bearing capabilities and cranes with individually tailored portals and barges for use on narrow quays, special-purpose quays and for handling cargo where there is no suitable quay.

Turnkey Solutions

Where a turnkey handling solution is required, Gottwald's range of services includes:

- Planning and consulting including simulation for new terminals and terminal expansions
- Peripheral systems such as hoppers, conveyor belts and container handling equipment in the terminal
- Interfaces between peripheral systems and terminal operating systems
- Complete Floating Cranes including maritime classification.

Short Delivery Lead-Times

Thanks to consistent application of its Advance Order Programme for Harbour Cranes, which allows ample room for the inclusion of customer-specific wishes, Gottwald can adhere to short delivery lead-times. Together with the comparatively low specific investment costs for the crane and infrastructure, the rapid delivery is a considerable advantage over custom-built single-purpose machinery.

Long Service Life

The anticipated number of work cycles and, as a result, the expected service life of Harbour Cranes depend, amongst other things, on the intensity of crane operation, the type of loading and the way the crane is designed to deal with loads. To ensure that, right from the outset, an investment is made in the right crane with the required classification, Gottwald configures the crane jointly with the terminal operator in view of the intended application.

Gottwald Harbour Cranes, including Model 3, can quickly and efficiently handle all types of cargo with a broad range of lifting gear



On Tyres, Portals or Barges

The Model 3 Harbour Crane is a universally applicable cargo-handling machine which is based on a ground-breaking modular design principle and is available in a total of three variants.

It is available on a rubber-tyred chassis or on a rail-mounted portal. As a Floating Crane it is mounted either on a fixed pedestal or a travelling portal which allows it to traverse the length of the barge.



Reliable Service

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

A subsidiary of Demag Cranes AG, Gottwald can draw on worldwide service to secure the highest possible availability of your cargo handling cranes and the value of your investment. Integrated in reliable service networks, Gottwald can provide professional troubleshooting and has implemented an efficient, two-stage support structure:

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 real-time 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 its products for their entire service lifetimes

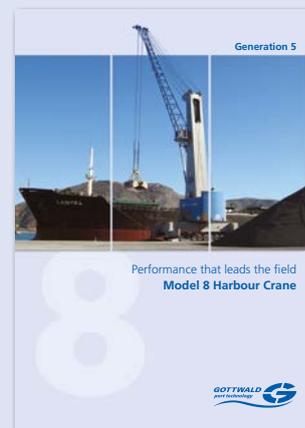
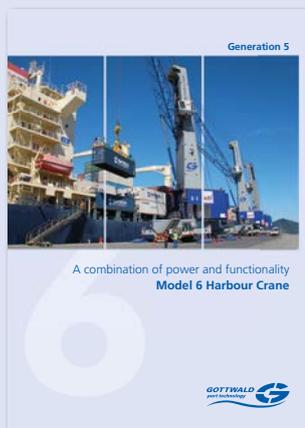
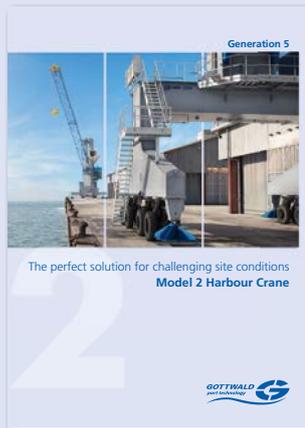
Our aim is to provide holistic service solutions from a single source



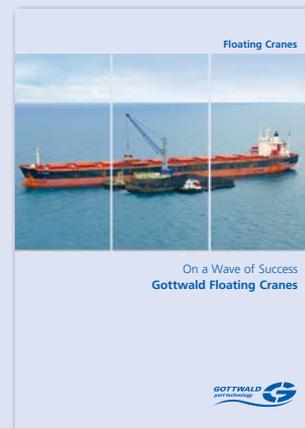
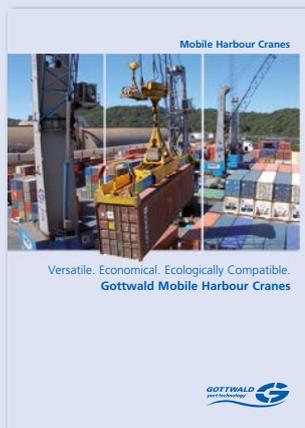
■ Headquarters ● Sales ● Service ● Sales and Service

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

www.gottwald.com



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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