

Floating Cranes



On a Wave of Success
Gottwald Floating Cranes

Waterway Cargo-Handling on the Move

Gottwald's Barge-Mounted Mobile Harbour Crane Technology

Today's cargo volumes are more than many ports can handle with their present infrastructure. In some cases, the quays are approaching their capacity limits and can barely cope with the ever increasing ship sizes.

However, for a number of terminal operators, the investment costs and the risks involved in expanding their present infrastructure are simply too high. A different solution is needed both to prevent cargo-handling bottlenecks and, at the same, provide a long-term flexible response to fluctuations in demand and longer-term market developments.

Gottwald Floating Cranes

This is where Floating Cranes from Gottwald Port Technology come in. Gottwald Floating Cranes offer many attractive benefits:

- autonomy
- mobility on water
- comparatively low specific investment cost and
- short delivery time.

And of course, with Floating Cranes, there is no need for the purchase of additional land or the construction of new quays, involving lengthy approval procedures and time-consuming construction work.

Gottwald's Floating Cranes benefit from the proven leading-edge technology used a thousand times over around the world in Gottwald Mobile Harbour Cranes and use the same assemblies from the slewing ring up





Gottwald Floating Cranes, available as Harbour Pontoon Cranes and Portal Harbour Cranes on barges, are used

- for ship-to-ship handling
- for ship-to-shore handling
- in ports and sheltered waters
- on rivers
- in coastal waters and on the open sea.

Having the same proven leading-edge technology incorporated in Gottwald Mobile Harbour Cranes, Gottwald Floating Cranes naturally offer all the same renowned strengths. Designed for all types of applications, Gottwald

Floating Cranes are obtainable in all the different Gottwald Harbour Crane variants.

The cranes' diesel-electric drives, flexible choice of lifting gear, high lifting capacities and working speeds, and service-friendly design – all this ensures top efficiency and economy and a broad range of applications.

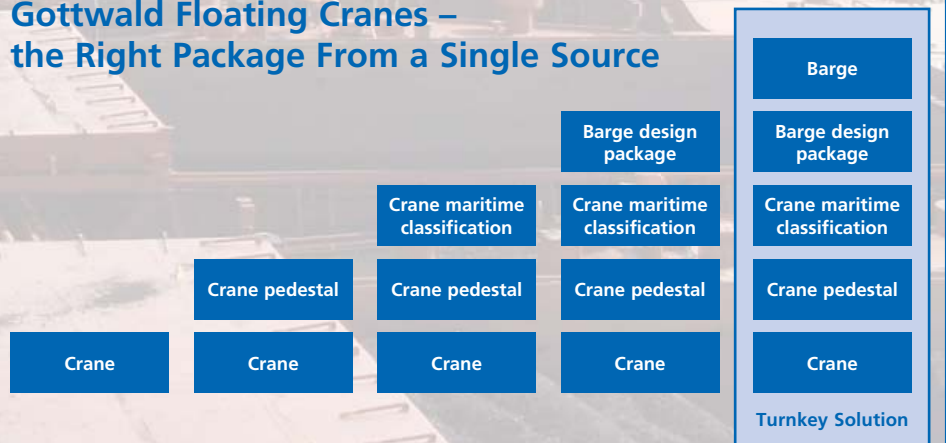


The Barge – the Basis of Every Floating Crane

In its Floating Cranes, Gottwald combines its crane know-how with the expertise of third-party barge manufacturers. The customer can

choose between a used barge, which can be modified if necessary, and a new one. And he can either order the barge himself or appoint Gottwald Port Technology to manage the whole project.

Gottwald Floating Cranes – the Right Package From a Single Source



Gottwald Floating Cranes are obtainable in all the different Gottwald Harbour Crane variants, so the concept is very flexible, covering all ship sizes, cargo types and handling rate requirements. Gottwald offers a wide range of possibilities: from the supply of a crane only up to complete turnkey floating crane projects.

Ship-to-Ship Handling

Gottwald Harbour Pontoon Cranes Boost Handling Rates

Gottwald Floating Cranes can be used on different types of waterways, including those having no or few quays. This is the case on the Mississippi in the USA, where, in the Port of South Louisiana, not far from New Orleans, several Gottwald Harbour Pontoon Cranes are employed in mid-stream operation.

These Harbour Pontoon Cranes, all of which are 4-rope grab variants, tranship a wide range of bulk materials between ocean-going vessels and river barges. In demanding continuous-duty operation, they achieve handling rates of up to 1,000 tonnes an hour.

For cargo-handling companies operating in the port, such as St. James Stevedoring Partners L.L.C. and Associated Terminals, Gottwald Harbour Pontoon Cranes are the ideal solution for replacing old, lower-performance equipment and for boosting mid-stream handling rates. Some major cargo handling companies have already modernised their fleets with Gottwald Floating Cranes and are now profiting from significant technological advances which translate into real business benefits.

Five Gottwald Harbour Pontoon Cranes, of which three HPK 330 EG machines and two G HPK 6400 B cranes, operated by St. James Stevedoring Partners L.L.C. handling coal and other bulk materials on the Mississippi

- Grab capacity: 50 tonnes at a radius of up to 31 m
Maximum radius:
 - HPK 330 EG: 50 m
 - G HPK 6400 B: 51 m
- A8 classification as per FEM 1.001 for long service life
- Used for loading and unloading Panamax ships
- Barge dimensions:
 - 65 m x 22 m x 4.6 m
 - 76 m x 22 m x 4.9 m (2x)
 - 76 m x 22 m x 3.7 m (2x)

All Gottwald Floating Cranes used on the Mississippi to date are based on specially adapted used barges



Ship-to-Shore Handling

Gottwald Harbour Pontoon Cranes Offer Unparalleled Flexibility

When space on the quay is limited, Gottwald Harbour Pontoon Cranes can transfer the cargo direct from ship to shore, making land-based cranes unnecessary. Cost-intensive modification of the infrastructure can thus be avoided.

Gottwald Harbour Pontoon Cranes can also be used alongside existing handling equipment in order to share the workload at times of peak demand. And if a ship is unable to moor directly alongside the quay because the water is too shallow, a Gottwald Harbour Pontoon Crane can be used to bridge the gap between ship and quay, making it unnecessary to invest in expensive quay walls and deep-draught berths.

A Gottwald Harbour Pontoon Crane is being put to very flexible use in the Port of Amsterdam. The G HPK 8200 B, owned by Rietlanden Stevedores, operates at the quayside, in mid-stream and in the waters beyond the locks. As a high-performance Generation 5 Gottwald Harbour Crane, it is used primarily for handling imported coal. The barge itself was ordered for the customer by Gottwald and built by a Dutch shipbuilding company.

- G HPK 8200 B (Generation 5)
- Grab capacity: 50 tonnes at a radius of up to 43 m, maximum radius: 50 m
- A8 classification as per FEM 1.001 for long service life
- Used for unloading Panamax and Capesize ships
- Barge dimensions: 50 m x 24.6 m x 4 m





The versatile Gottwald Harbour Pontoon Crane is towed quickly and safely to wherever it is needed

The slew ring of the crane is mounted on a cylindrical pedestal integrated in the barge



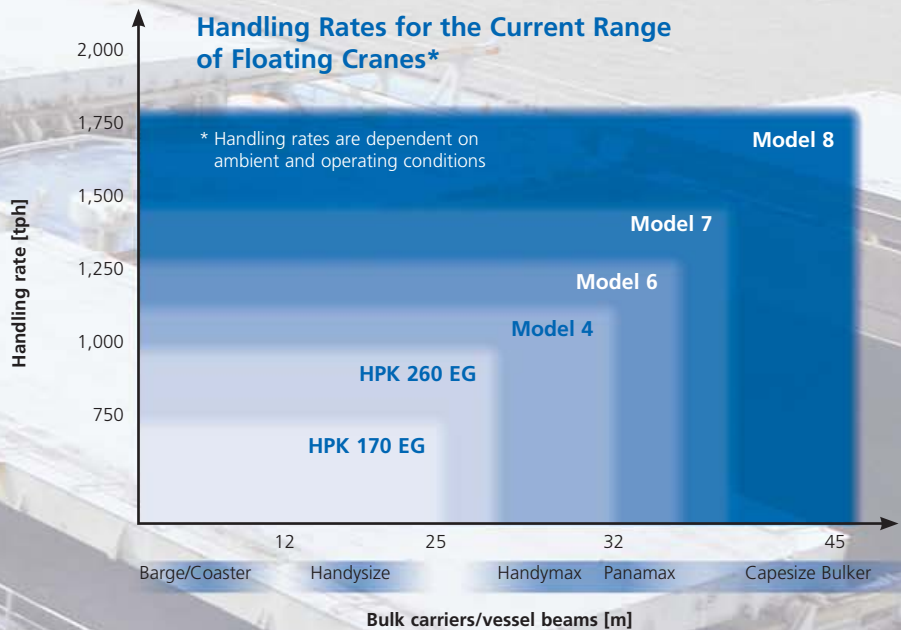
The barge has special mounts on which the hook rotator and grabs of various types and sizes can be set down

The crane's barge is also equipped with a number of winches used for warping the Floating Crane alongside sea-going vessels and for warping river vessels alongside the barge



Handling Rates for the Current Range of Floating Cranes*

* Handling rates are dependent on ambient and operating conditions





Outside the locks of the North Sea Canal, the G HPK 8200 B is used for lightering large ocean-going vessels that are unable to enter the canal and the Port of Amsterdam area fully laden. The Floating Crane tranships coal onto barges, which then transport it to power stations along the Rhine.

Moored at the quayside, the G HPK 8200 B tranships bulk cargo directly onto the quay. In mid-stream operation, it also transfers more coal from the still heavily laden ocean-going vessels to smaller barges.

A Combination of Efficiency and Functionality

Portal Harbour Cranes on Barge

Two HSK 330 EG Portal Harbour Cranes on barges transhipping coal at a pier in Charleston, SC, USA

- Track gauge: 13.4 m
- Grab capacity: 40 tonnes at a radius of up to 34 m, maximum radius: 50 m
- Used for unloading Panamax ships
- Barge dimensions: 72.5 m x 19.5 m x 3.6 m



Gottwald Floating Cranes are diesel-electrically driven. 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 this environmentally-friendly drive system most commonly used in ports brings to the fore its advantages over other systems and is completely state-of-the-art.

Gottwald Floating Cranes were launched onto the market in 2004. Since then, a number of units have been put into service, including several Portal Harbour Cranes on barges. These cranes combine Gottwald's well-known and highly

successful Portal Harbour Crane concept with a barge. Each barge is fitted with rails on which the crane's portal can travel. The crane can thus serve several ship holds, travelling between them on its rail-bound portal, making it unnecessary to warp the barge or the ship.

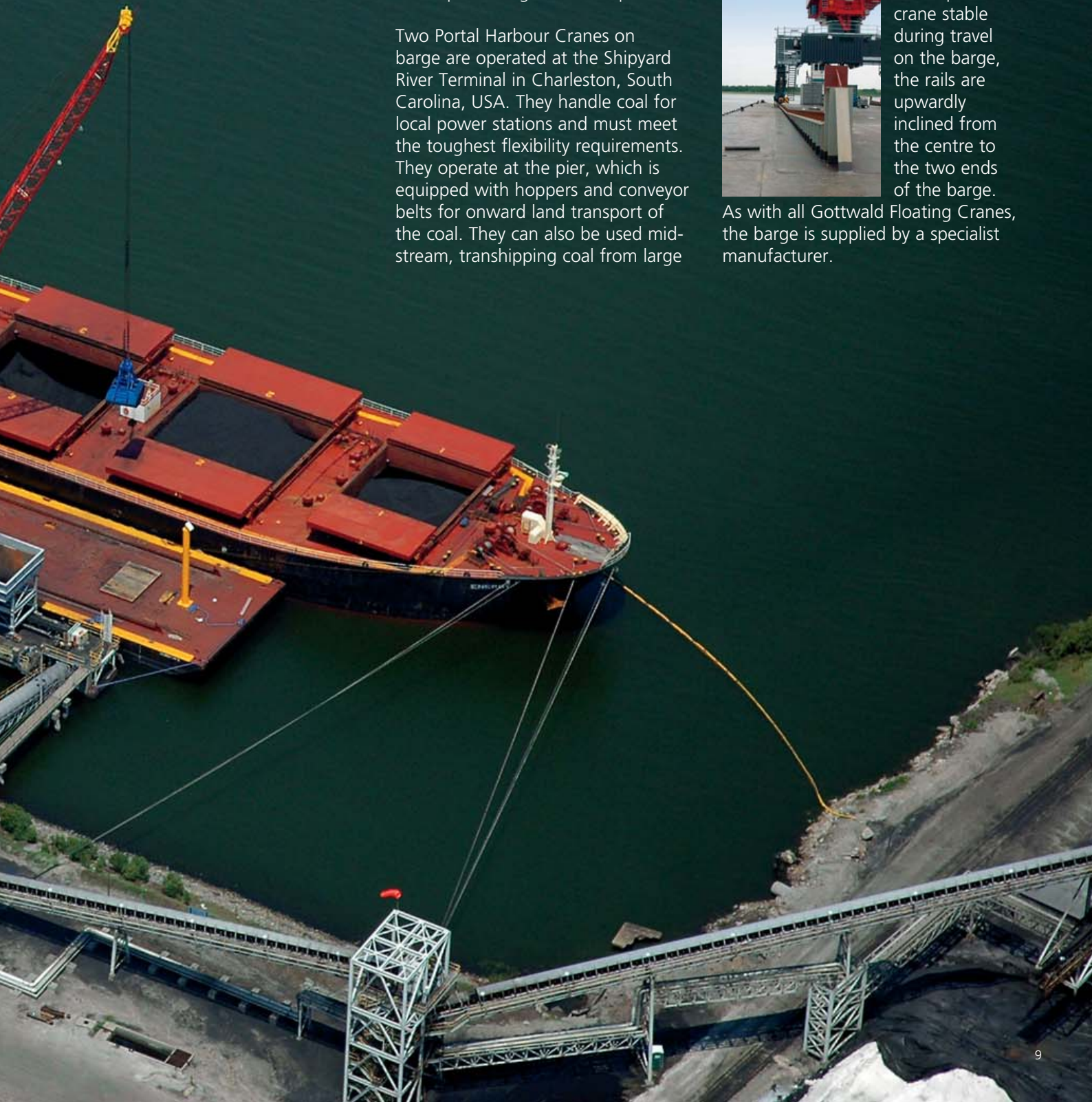
Two Portal Harbour Cranes on barge are operated at the Shipyard River Terminal in Charleston, South Carolina, USA. They handle coal for local power stations and must meet the toughest flexibility requirements. They operate at the pier, which is equipped with hoppers and conveyor belts for onward land transport of the coal. They can also be used mid-stream, transshipping coal from large

ships to smaller barges, which, in turn, transport it on to its destination. The barge-mounted Portal Harbour Cranes, which are of a 4-rope design, achieve handling rates of up to 1,100 tonnes an hour.



To keep the crane stable during travel on the barge, the rails are upwardly inclined from the centre to the two ends of the barge.

As with all Gottwald Floating Cranes, the barge is supplied by a specialist manufacturer.



Bulk Handling on the Open Sea

Gottwald Floating Cranes up to 35 km off the Coast

The Generation 5 Harbour Pontoon Cranes supplied to PT Puteri Borneo Company and PT Indo Straits are taking Gottwald's Floating Crane technology to new places.

In operation off the Indonesian coast, these Gottwald Floating Cranes are used for open-sea transshipment of export coal from barges to ocean-going vessels 35 km and 4 km off the coast respectively, demonstrating the suitability of Gottwald Floating Cranes for open-sea operation.

Such cranes can be operated in winds up to force 9 Bft and with waves up to 2.5 m high. The wind pressure and swell give rise to additional heeling moments along with increased motion of the crane. Gottwald accounted for these severe conditions by modifying the design of the Floating Crane – including a reinforced boom design and an increased number of slewing gear drive units.



One of two Generation 5 Model 8 Floating Cranes (G HPK 8200 B) designed for bulk handling on the open sea

- Grab capacity:
 - 63 tonnes at a radius of up to 34 m,
 - 50 tonnes at a radius of up to 43 m (both cranes)
- Used for transshipping coal from barges to vessels of sizes up to Capesize
- Barge dimensions:
 - 66.7 m x 24.5 m x 5.4 m
 - 75.7 m x 24.5 m x 5.4 m

Special Feature Class "LA"

The open-sea conditions under which the G HPK 8200 B Floating Cranes operate are particularly demanding on the steel structure and other structural elements. The entire crane construction was assessed by Lloyd's Register and assigned the special feature class notation "LA".



Available in a variety of designs, Gottwald Floating Cranes are made for a multitude of cargo-handling situations



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