



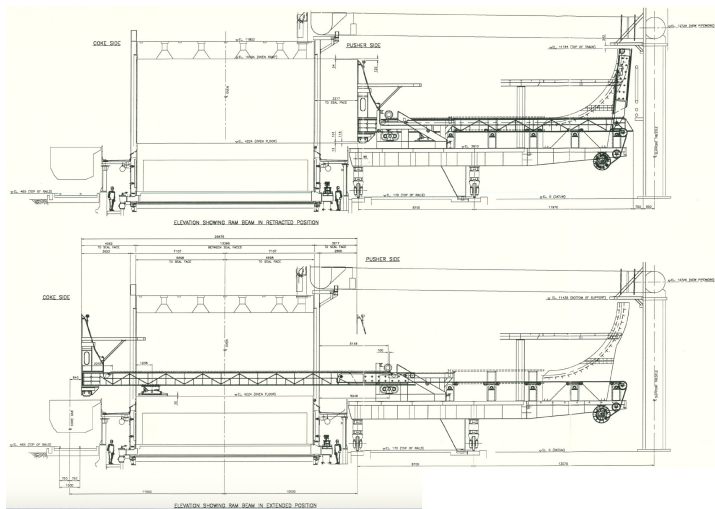
# SEA BOATS

MARINE BROKERS WITH A GLOBAL APPROACH

AUSTRALIA - BULGARIA - INDIA - INDONESIA - ITALY - MALAYSIA - NEW ZEALAND - PANAMA - PHILIPPINES - SINGAPORE - SPAIN - UK - USA - VENEZUELA - VIETNAM

[sales@seaboats.net](mailto:sales@seaboats.net) - [www.seaboats.net](http://www.seaboats.net)

## Kocks Goliath Crane



**Listing ID - 1473**

**Description** Crane

**Product type** Heavy Equipment

**Usage** Varied

The following unloading equipment comprises one bridge type ship unloader working with a self propelled grab trolley with grab slewing device.

The unloader will be able to charge the unloaded material onto the pier-conveyor. The unloader will be electrically driven on a rail system. The maximum wheel load will not exceed 627.85kN, spaced 1100/1650 mm during operating conditions

### Handled Material

Material / Bulk Density

Iron Ore Pellets: 1.9 – 2.2 t/m<sup>3</sup>

Coal: 0.8 – 0.9 t/m<sup>3</sup>

Coal Coke: 0.5 – 0.65 t/m<sup>3</sup>

I.O. Additives: 2.0 – 2.6 t/m<sup>3</sup>

### Ships to be unloaded

Following data are showing the different sea-going ships which the unloader will be able to serve

Ship Type (dwt) 72,000

Length: 245m

Width: 32.2m

Depth: 19.6m

Max Draft: 14.0m

Max Draft (lightered)

Draft Unloaded: 4.6m

Holds Nos.: 7

Length: 19m

Width: 15.5m

Ship Type (dwt) 130,000

Length: 280m

Width: 42m

Depth: 22.2m

Max Draft: 17.2m

Max Draft (lightered): 12.5m

Draft Unloaded: 5m

Holds Nos.: 9

Length: 14.4m

Width: 17.6m

Ship Type (dwt) 115,000

Length: 270m

Width: 43m

Depth: 20.2m

Max Draft: 14.5m

Max Draft (lightered): 12.5m

Draft Unloaded: 4.6m

Holds Nos.: 8

Length: 20m

Width: 21m

### **Local Situation**

The shipunloader will be installed at the bulk terminal of Lucchini Steel at Piombino Italy

### **Levels and Tides**

Essential data for the unloaders outlay and the evaluation of its unloading capacity are the levels of pier and conveyors as well as the water level and its variations. All levels are measured against a calculative zero.

Mean Water Level: +0.00m

Railhead Level: +4.81m

Conveyor Level: +6.00m

### **Climatic Data**

According to the situation of the pier the unloader has to work all over the year in a wet atmosphere together with a certain portion of salt to be considered due to the near of the ocean

The prevailing wind direction is assumed to be mainly in direction parallel to the crane rails.

The unloader is prepared for operating during wind velocities up to 20m/s. Max Wind Speed for Crane travelling to locking point up to 27 m/s. The max wind speed for the design of the rail clamps will be 35.8m/s. Maximum design wind is 42 m/s

All equipment of the unloader will be able to withstand temperatures in between -5 degree Celsius and 40 degrees Celsius as well as relative humidity up to 100%

### **Layout and Dimensioning**

Taking into consideration all the above given data the shipunloader is designed for the calculative free digging capacity 1,800 t/h according to the following prescriptions:

Specific Gravity: (see cycle diagram)

Grabbing Point: at mean water level and centerline of ship

Discharge Point: One meter above hopper on its centerline

Ship Type: 72,000 DWT

Berthing Side: Sea side

Ship's Draught: Half Filled at mean water level

### **Base for Design and Calculation (Krane and Hebezeuge)**

#### **For the steel structure**

FEM 1.001, 1987, group U9-Q4 = A8 considering chapter 2.1.4

FEM "Guidelines for the Choice of Steel Qualities", edition of October 1974

DAST-Guideline 012: Buckling Resistance Analyses for Plates

An unobjectionable runway in accordance with the FEM code "Tolerances of Cranes and Runways" is prerequisite.

Intolerable deviations will originate special actions

#### **For the mechanical equipment (excluding wire ropes)**

FEM 1.001, 1987 and the most up-to-date knowledge the field of mechanical engineering

Classification

Hoisting Gear: T9 – L4 = M8

Closing Gear: T9 – L4 = M8

Trolley Travel Gear: T9 – L4 = M8

Boom Hoist Gear: T4 – L3 = M5

Crane Travel Gear: T8 – L3 = M8

Conveyor: T8 – L3 = M8

#### **For Ropes**

Safety factor against minimum breaking load will be at least

- 4.5 for boom hoisting
- 7 for grab operations

#### **For accidental prevention**

The applicable local regulations

### **Technical Design Data of Structural and Mechanical Equipment**

#### **Unloading Capacity**

Lifting Capacity on the ropes: 45t

Maximum Capacity (Cream Digging or Peak Digging): 2,000 t/h  
Rated Capacity (Free Digging): 1,800 t/h  
Practical Average Capacity: 1,200 t/h

For reference weight of bulk material as per specification  
Iron Ore Pellets: 2.05 t/m<sup>3</sup>  
Coal: 0.85 t/m<sup>3</sup>

### **Dimensions**

Gauge (distance between rail centres): 18.5m  
Length over buffers: 30m  
Max outreach from Waterside rail: 34m  
Max outreach from landside rail: -2.0m  
Lifting Height above rail: 21m  
Lifting Height below rail: 19m  
Total Lifting Range max: 40m  
Total Practical Runway: approx. 350m

### **Wire Ropes**

Grab operating rope diameter: 38mm  
Boom Hoist Diameter: 38mm

Rails, Wheels, Corner Loads:  
Rail Waterside: A 100  
Rail Landside: A 100  
Headwidth of Rail: 100 mm  
Wheels (double flanged) waterside: 2x 10  
Wheels (double flanged) landside: 2x6  
Wheel Diameter: 900mm  
Drives 2x 5 at waterside on 2x5 wheels  
Drives 2x 3 at landside on 2x3 wheels

Max Corner Loads  
In operation with wind 21.9m/s on broadside, boom down grab max outreach  
On landside: approx. 242t  
On Waterside: approx. 414t

### **Rail Brakes**

Automatic Rail Brakes (push down type)  
Holding Force Waterside approx.: 4 pcs, 130 kN each  
Holding Force Landside approx.: 2 pcs, 130 kN each

### **Receiving Hopper**

Extract Conveyor: apron feeder  
Variable output: 300 to 2500 t/h  
Hopper opening level above top of rail approx.: 12m  
Struck Hopper Volume approx.: 110 m<sup>3</sup>  
Hopper Opening approx.: 9x9m  
Limited Hopper Contents approx. 180t  
Environmental Protection

Max Noise emission in 100m distance approx. 75 dB(A)

### Operating Speeds

Lifting / Lowering: 120 / 150 m/min

Closing / Opening: 100 / 150 m/min

Trolley Travelling: 180 m/min

Crane Travelling: 25 m/min

Boom Hoisting / Lowering (in approx.): 7 min each direction

Cab Travelling: 20 m/min

Grab Slewing (90 degrees): 20 sec

### Accelerations

Hoisting / Lowering Full Grab approx.: 2.5 s

Closing approx.: 2.1 s

Hoisting / Lowering empty grab approx.: 3.2 s

Opening approx.: 3.2 s

Trolley Travelling approx.: 6.0 s

Gantry Travel Against 50% OWL approx.: 3.0 s

Gantry Travel against 100% OWL: approx. 4.2 s

### Total Weight

Ship unloader including counter weight and grab, excluding loads approx.. 1040t

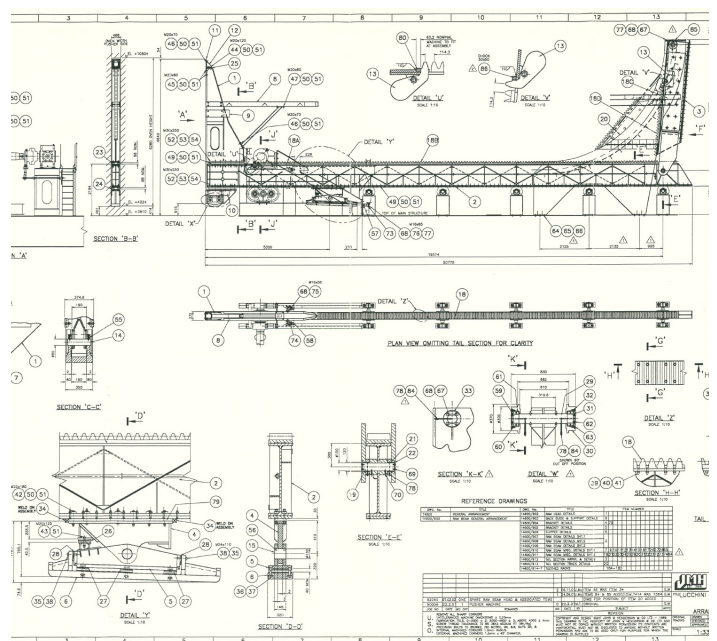
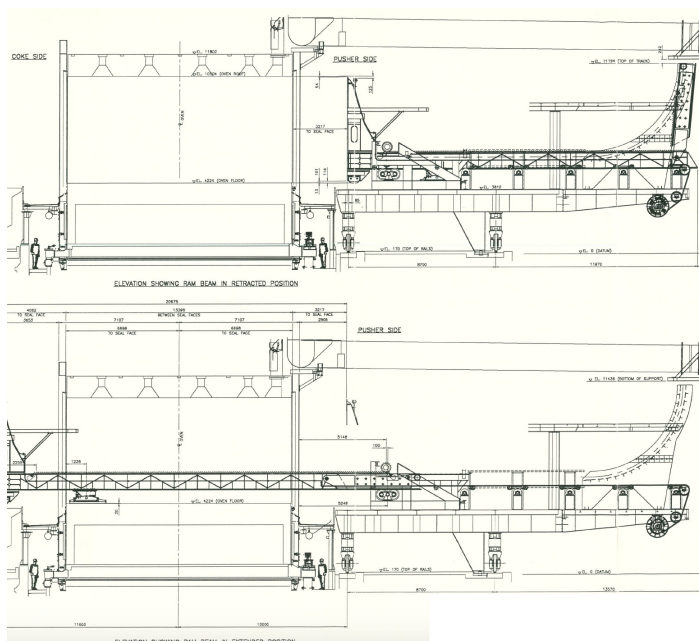
### Remark

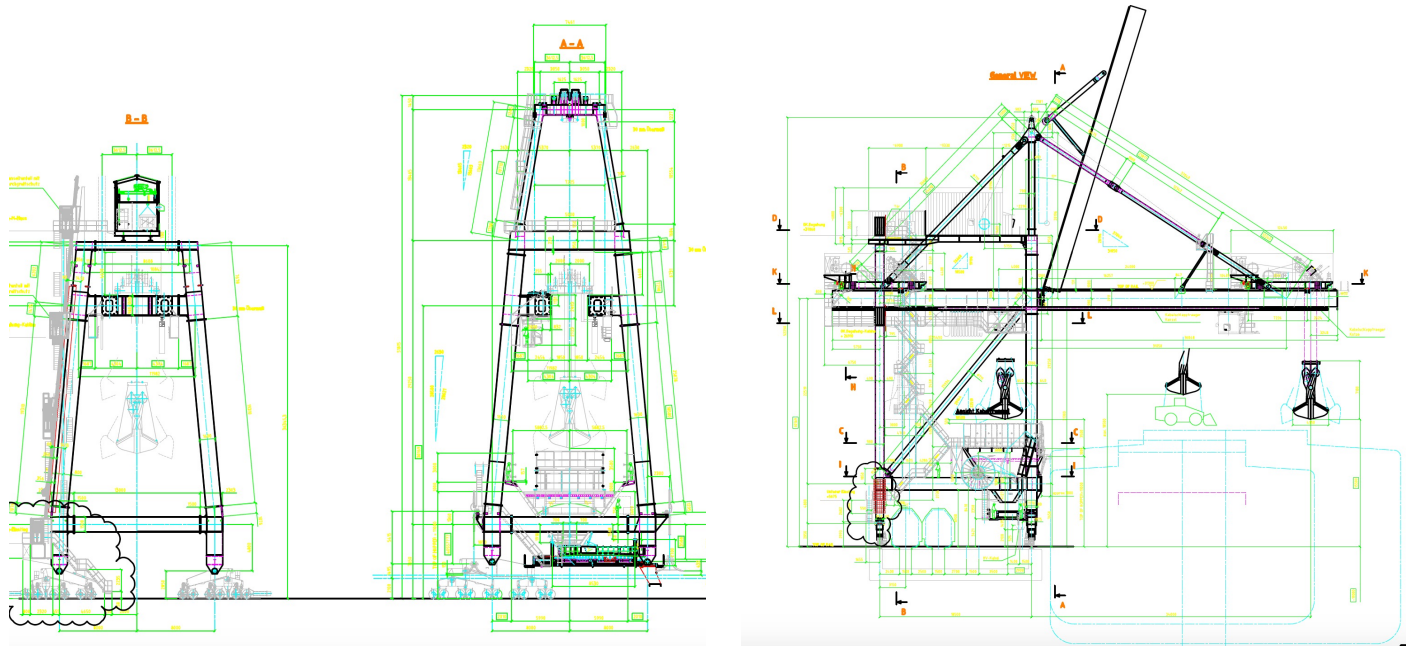
All technical design data not to be directly derived from the physical properties of the pier will be subject to final design

The supplier will optimize the speeds and dimensions of the unloader with respect their partition in the whole crane's function and in determining the unloading capacity.

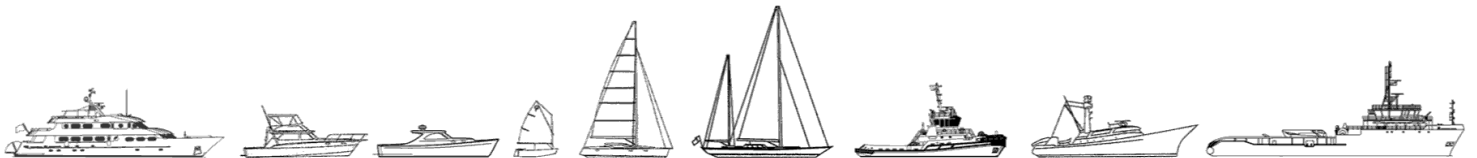
The same idea is followed in designing all components and the pertaining handling equipment

This allowance is based upon the understanding that the contracted free digging capacity itself will be guaranteed.





The details of all vessels are offered in good faith but we cannot guarantee or warrant the accuracy of this information nor warrant the condition of the vessel. Any buyer should instruct their agents, or their surveyors, to investigate such details as the buyer desires validated. This vessel is offered subject to sale, price change, location or withdrawal without notice.



AUSTRALIA - BULGARIA - INDIA - INDONESIA - ITALY - MALAYSIA - NEW ZEALAND - PANAMA - PHILIPPINES - SINGAPORE - SPAIN - UK - USA - VENEZUELA - VIETNAM