



Cranes and Crane Kits

Sophisticated Hoisting Technology since 1961



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Notes

Made in Germany since 1961

- We project, develop and manufacture cranes out of pure passion since KÜHNEZUG's foundation in 1961 by Manfred Böttcher.
- Since then, we have always been working on improving our products, developing new technologies and finding solutions for your challenges.
- After 55 years KÜHNEZUG is still 100 % owned by the Böttcher Family. Thus, KÜHNEZUG is independent from corporations and investors.
- The general manager Jan Böttcher continues to pursue and broaden KÜHNEZUG's philosophy in second generation.



KÜHNEZUG Philosophy

Your task is our working base - custom made solutions by use of standardized components
We provide you the ideal hoisting solution to cover your requirements over years.

- Every project is different and a new challenge that we passionately attend to
- A close collaboration with you is the key to specify your exact requirements and suitable solutions
- For the ideal hoisting solution, our products combine modular block system with custom made engineering
- Besides standard applications, KÜHNEZUG products cover almost every special task with a vast portfolio of state of the art technology
- KÜHNEZUG offers solutions where others can't
- We have been pursuing this ideal for many years with our suppliers and especially with our esteemed clients establishing long term business relationships





Product Portfolio

Cranes and Components MADE IN GERMANY with state of the art technology adapted to your requirements.

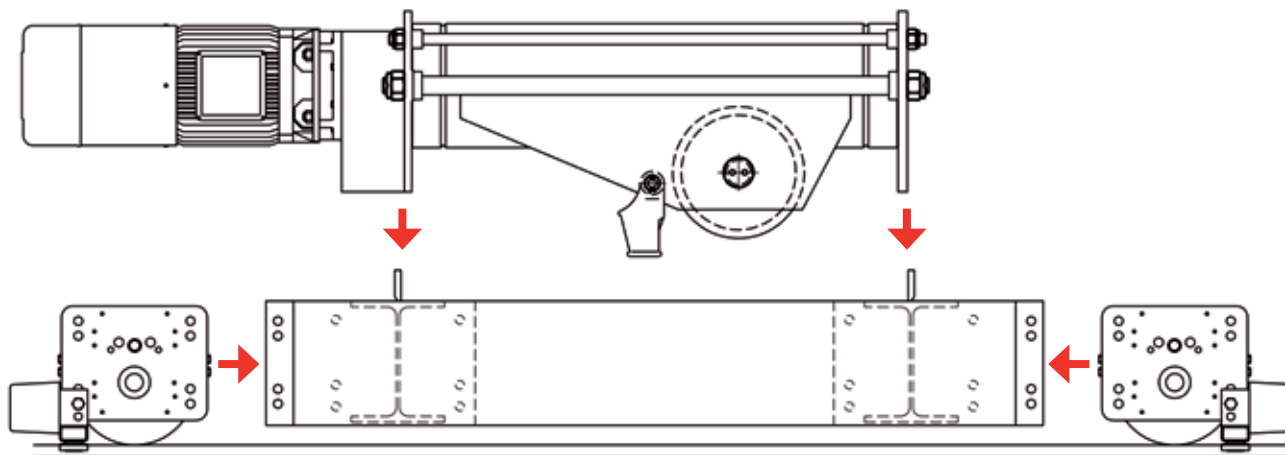
- Hoists, trolleys, crane drive units, crane kits and cranes with a huge variety of accessories
- Hoists with capacities from 630 kg to 630 t
- Cranes and trolleys with travel speeds from 1 to 120 m/min
- Availability of standard up to heavy duty components
- Availability of all duty classes up to FEM 5m (ISO M8)
- Smart modular block design for flexible configurations
- Standardized constructions which can be individually customized
- Nearly all components are also available in explosion-proof version
- Main components MADE IN GERMANY



Modular Block System

Our standardized components use screwed connection for product customization and flexible interchange in case of maintenance or component upgrades.

- Intuitive assembly, disassembly and maintenance for high availability of your crane system
- Standard connections which neither require special tools nor special knowledge
- Single spare parts usable for multiple installations causing a low stock, e.g. ROLLCOMPACT Drive Units for crane and trolley drive
- The modularity allows an adaption of your crane in case of changed requirements
- Even new developed or enhanced products can be integrated into your existing crane system

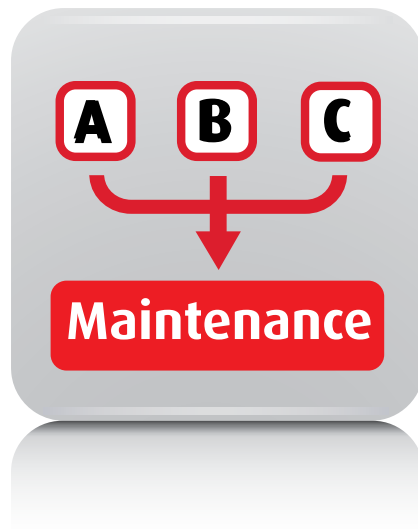


Maintenance Concept



With cranes and components from KÜHNEZUG you decide on products that sustain your investment in the long run. Due to our modular block system you can choose the maintenance concept according to your required crane application and availability.

Our system is your flexibility.

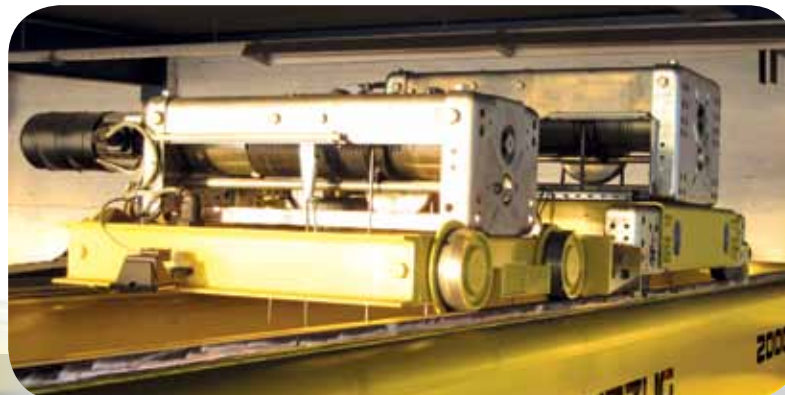
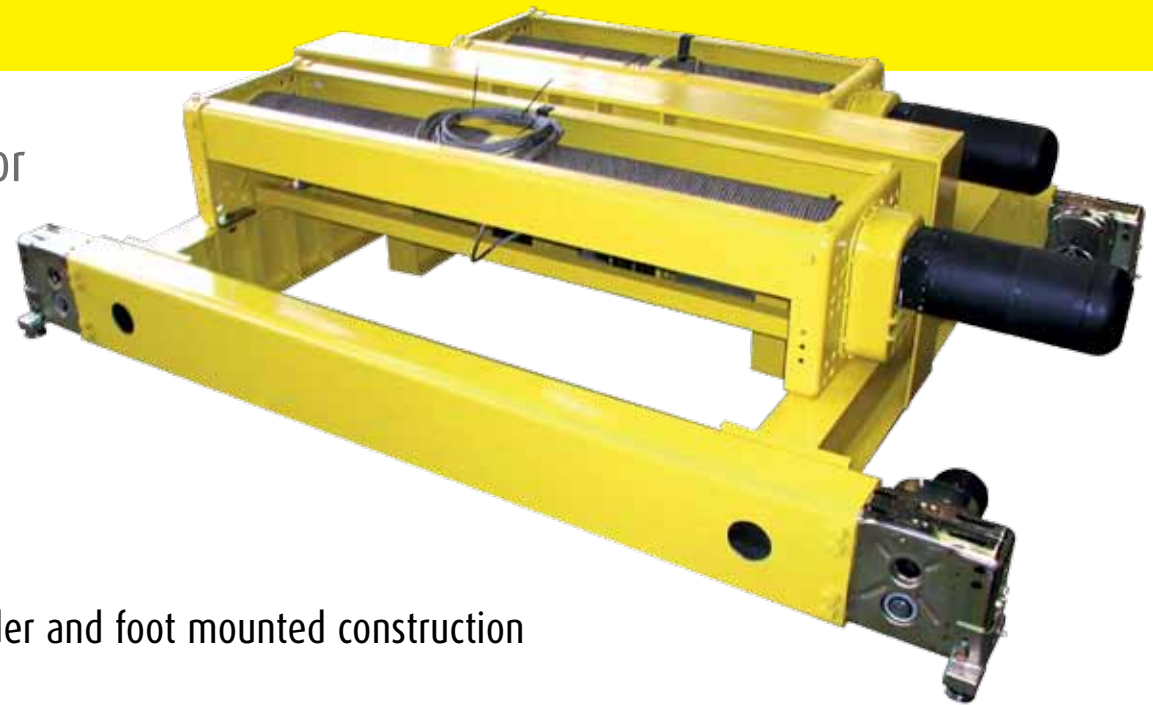


- **Option A:** Permanent functional capability of your crane system is of outstanding importance for a controlled and continuous workflow. For this, our customers can keep spare parts in their own stock. In the unlikely case of dire emergency the standardized connections of modular blocks allow our end customers to replace a broken part immediately.
- **Option B:** Experienced and well trained agents are available for maintenance, repairs and root cause analysis all over the world.
- **Option C:** Alternatively, parts and components can always be sent from Germany as well as our experienced engineers to fix any problems.

Hoists D-Series

Compact, modular and well-proven hoists for standard applications.

- Capacities from 630 kg to 30 t
- Lifting speeds of up to 55 m/min
- Lifting heights of up to 100 m
- Very durable due to gold galvanized parts
- Compact dimensions available as single, double girder and foot mounted construction
- Easy and quick replacement of modular blocks
- Two speed control for trolley by inverter, for hoist by contactor or inverter
- A variety of options such as stepless speeds, load measuring system or hourmeter to upgrade your hoist



Hoists K-Series

Powerful and robust hoists for heavy industrial applications.

- Capacities from 630 kg to 630 t
- Lifting speeds from 0 to 190 m/min
- Lifting heights of up to 1.000 m
- Heavy duty gearboxes made of cast iron
- Less abrasion and high precision by frequency inverter control for all motions
- A variety of special options such as true vertical lift, load measuring system or power feedback unit to upgrade your hoist completely customized



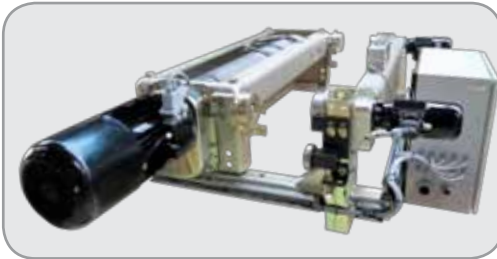
Trolleys

Depending on the requirements we offer different models in standard or custom-built configuration.

- Capacities from 630 kg to 630 t
- Trolley travel speeds available from 1 to 120 m/min
- Frequency inverter control with two speeds adjusted to your requirement with smooth and stepless acceleration ramps - stepless speeds optionally
- Compact installation dimensions and short hook approaches according to your priorities
- Available in fully customized single production with multiple trolley hoists and a large variety of accessories

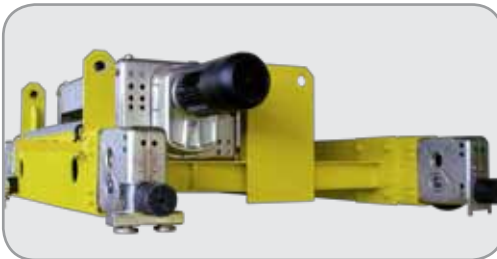


Trolley Design



EKB Trolley

- Standard single girder trolley with super low headroom



EZK Trolley

- Standard double girder trolley



ENC Trolley

- Underslung single girder trolley



WOP Trolley

- Standard single girder trolley for oval girders
- Optimal use of height of lift



ENK Trolley

- Underslung single girder trolley for curved runway



Twin Hoist Configuration

- Double girder trolley with twin hoists
- Two hoists lifting the same hook



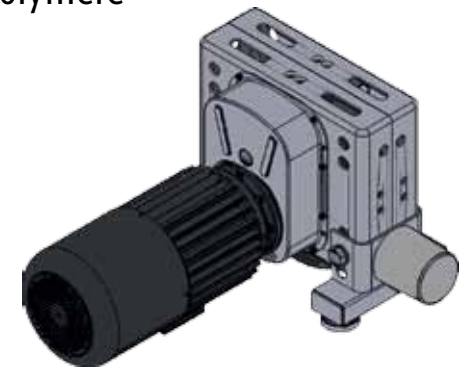
Main + Auxiliary Hoist

- Double girder trolley with main and auxiliary hoist
- Usually main hoist for heavy and auxiliary hoist for moderate operation

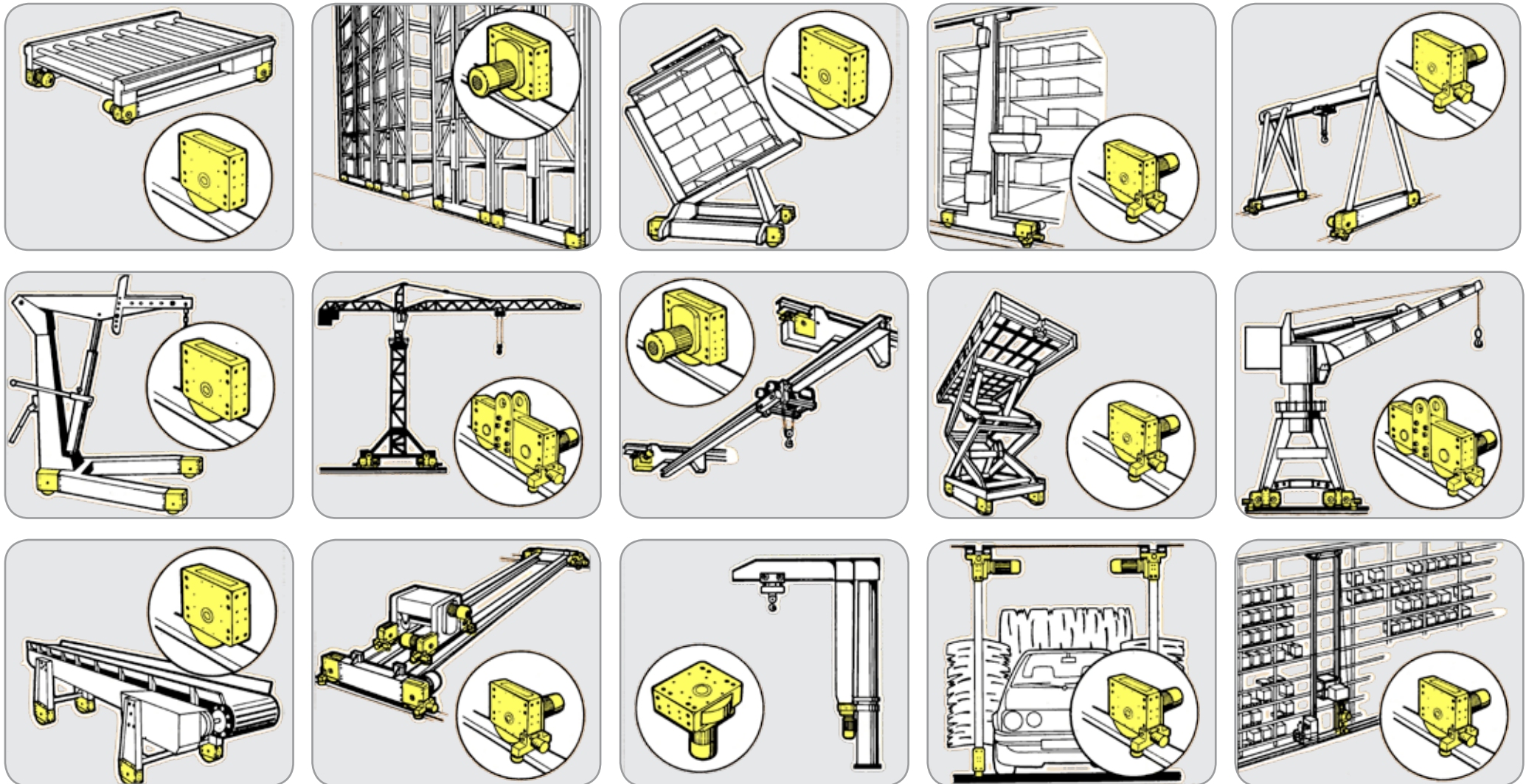
ROLLCOMPACT Drive Units

Our ROLLCOMPACT is a compact drive unit consisting of the wheel, gearbox, motor, brake and housing. By using deep-drawn components and wheels of a special high-strength polymere, our drive units are very light and efficient ... **Enjoy the silence ...**

- Operation without crane runway rails possible – expenses for material and time-consuming welding can be saved
- Low abrasion of the runway rails and wheels due the use of a special high-strength polymere
- Crane travel speeds available from 1 to 120 m/min
- Suitable for maximum wheel pressure from 16 kN to 500 kN per wheel
- Standard gold-galvanization of the ROLLCOMPACT housing
- Lateral guide rollers as standard instead of wheel flanges reduce abrasion of the rails and the wheel and provide very silent running characteristics
- Various applications of use, also apart from crane constructions



ROLLCOMPACT Diversity

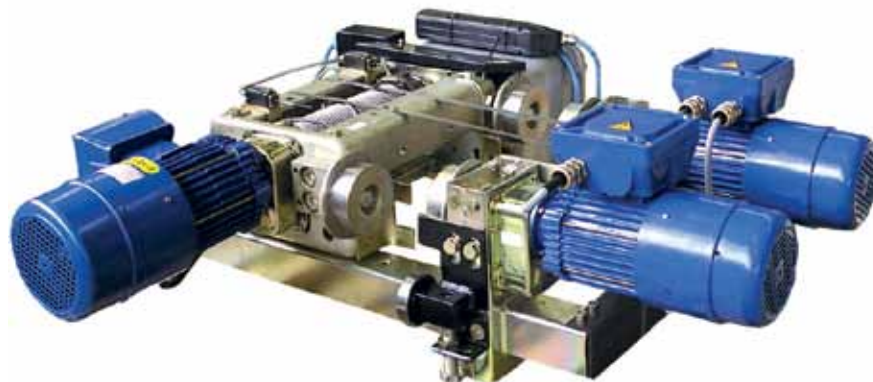


Explosion-Proof



KÜHNEZUG cranes and components for hazardous environment in explosion proof design up to 250 t.

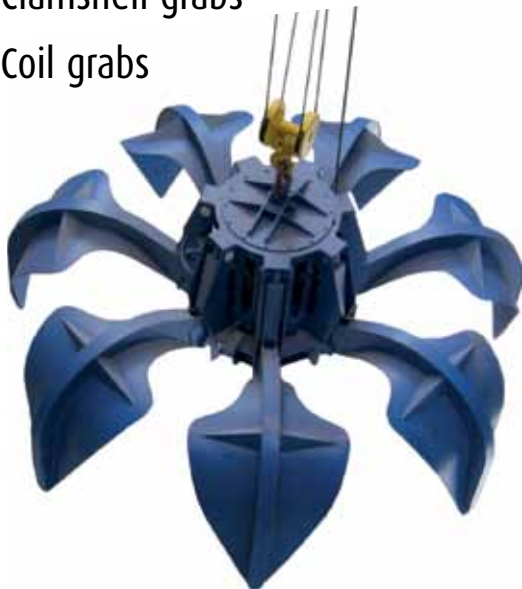
- Protected against highly flammable dust and explosive gases
- Zones **1, 2, 21 or 22**
- Equipment group **II**
- Category group **2G, 3G, 2D or 3D**
- Explosion sub-groups and temperature classes **IIB T3, IIB T4, IIC T3, IIC T4**
- Used on oil platforms, sawmills, chemical plants and in every application area with explosive atmospheres
- Inverter control for travelling motors possible



Grabs & Traverses

We offer a standardized and customized range of implemented or suspended grabs and traverses according to your requirements.

- Adjustable and fixed traverses to handle large objects safer and easier
- Highly durable rope grabs for most demanding handling applications like coal, copper or waste
- Motor grabs and hydraulic grabs mainly for dry material handling
- Multi-tine grabs (orange peel type)
- Clamshell grabs
- Coil grabs



10 t multi-tine grab for waste area



10 t clamshell rope grab for coal handling



35 t coil grab with rotation limit switch

Variety of Accessories

Benefit from state of the art technology for configuration of your components.
 Take your advantages out of the following options:

- Frequency inverter controlled motors for precise and soft positioning of loads
- Safety equipment such as: overload protection, load collective memory, hour meter, one- or two-step limit switches for all movements, distance control, temperature sensors, wind sensors, sound and light signals, second load brake for hoisting, rail clamps etc.
- Increased surface protection for crane operation in corrosive atmospheres
- Increased electrical enclosure (IP Code) for crane operation industry or humid atmospheres
- Enhanced cooling equipment such as: independent fans for hoisting motors, standard air conditions for clean atmospheres at max. 60°C, heavy duty air conditions for polluted atmospheres with up to 90 °C ambient temperature
- Various options for the control system such as: mobile pendant, radio remote control, cabin control, full implementation of tandem control
- Crane and trolley power supply via power conductor rail, festoon cable, energy chain or cable drum



Power Feedback Unit

KÜHNEZUG - known for innovative technology. The electrical energy which is produced during the lowering of the load is wasted by conventional hoists and remains unused.

The KÜHNEZUG feedback unit enables the transformation of this energy into useful electric energy which you can use directly in your facility or feed-back gainfully into the national grid.

Benefit from Green Energy.



- Standardized power feedback units for our frequency inverters
- Environmental friendly usage of energy
- Saving of energy costs due to the regenerative energy
- Significant reduction of heat compared to conventional braking resistors
- This also causes a reduction of your cooling costs
- Power Feedback Units are available for a small surcharge compared to conventional braking resistors and amortise quickly

Automated Control

With stepless crane motion and automated control, multiple semi- and fully-automated crane operations can be programmed according to your requirements.

- Semi-automated and fully-automated control
- Automated trolley movement to compensate horizontal hook movement caused by hoisting (vertical lift)
- Load positioning precision of up to ± 1 mm
- Load sharing between hoists for grab applications
- Connection to your existing IT-infrastructure possible



4 t / automated with grab / high speeds



40 t / automated steel mill crane



25 t / 190 m HOL / 100% true lift by
self adjusting automated trolley

Tandem Operation



For special applications and loads we install control systems for tandem arrangements. With these arrangements the handling of large objects is easier and safer.

- With the KÜHNEZUG tandem control two or more trolleys or cranes can be moved completely synchronized
- The closed loop control circuit provides you maximum precision and operational safety



2 x 125 t / full tandem / offshore wind turbine



2 x 120 t = 240 t / full tandem / submarine production

Crane Kits

In case you would like to procure and produce crane girders locally, we gladly supply you with state of the art Crane Kits adapted to your requirements. Potential savings of shipping and construction costs are your benefits. We guide you through the project and can support you with drawings for crane girder designs.

Please provide us your requirement.

Your Crane Kit may include:

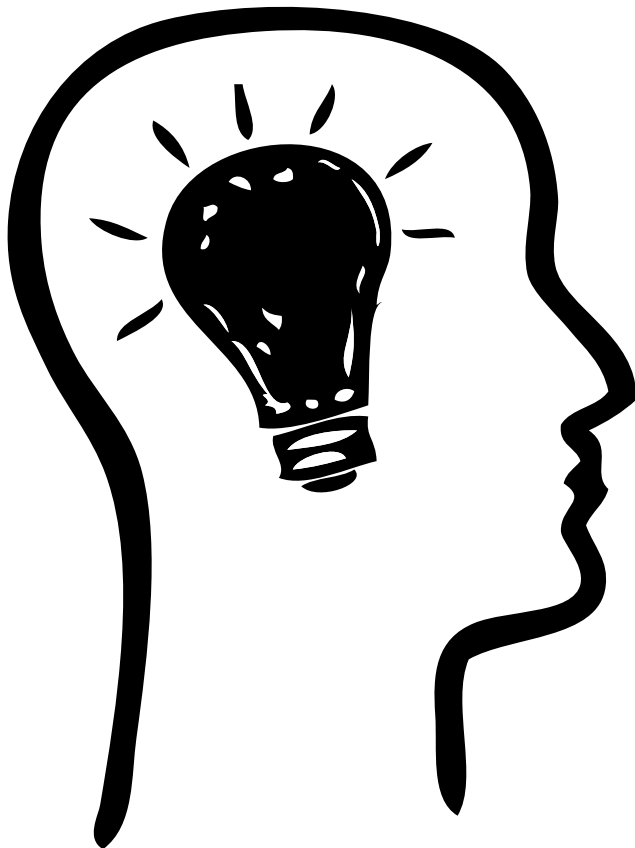
- Hoist with capacity from 630 kg up to 630 t
- Trolley and crane end carriages in modular block design for an easy installation
- Crane and trolley power supply system
- Control panels and crane operating device
- Further accessories according to your requirements



Special Constructions

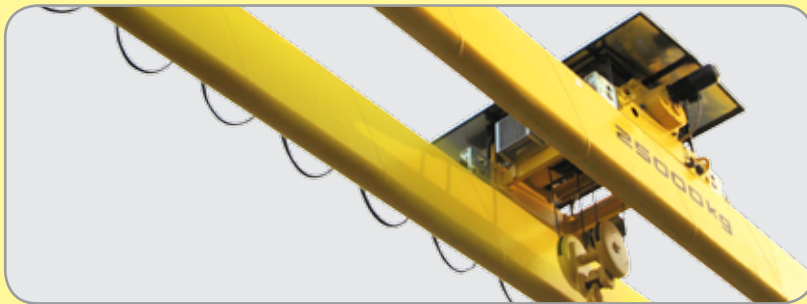


You still could not find a solution for your application? *Your idea - our solution.*
No problem, our passion is to develop custom-made solutions for almost any task.
We will solve your challenge with our know-how and expertise!



Cranes

We offer you a wide range of crane types which stand out due to the oval girder profile, low dead weight and high capacities. **Various innovations make our cranes even more advantageous.**



■ Double girder overhead cranes



■ Single girder overhead cranes



■ Underslung cranes



■ Double girder gantry cranes



■ Single girder gantry cranes



■ Semi-portal cranes



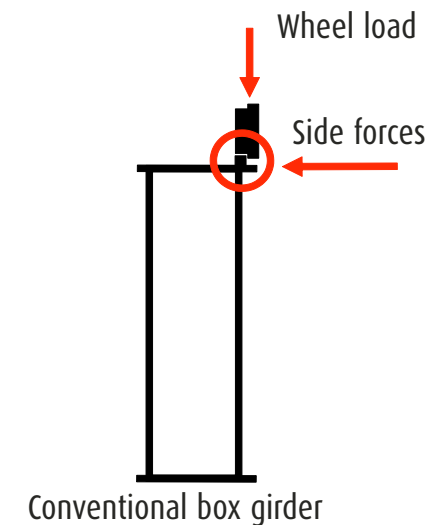
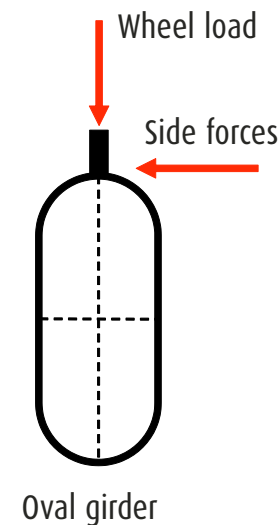
■ Jib cranes

Oval Girder Technology

The oval girder profile, developed in 1970, is unique and the patented major feature of the cranes manufactured by KÜHNEZUG. This girder profile provides you substantial economic benefits. It enables a reduction of the crane dead weight and reduced construction height.

Your advantages:

- Lower crane dead weight at the same capacity or higher capacity at the same crane dead weight
- Lower height of the building at the same height of lift or higher height of lift in the same building
- High stability by a centered force application
- Spans up to 50 m
- Higher fatigue strength due to fewer welding seams
- Because of the oval profile there is almost no dirt and water sedimentation on the girder



Double Girder Overhead Cranes

- Oval girder cranes save up to 30 % of dead weight
- Spans up to 50 m and capacities up to 350 t
- Reduction of building height by extra low headroom constructions
- Deployable for very heavy applications
- Plain girder constructions are available as well



2 x 70 t + 10 t / span 18,8 m / HOL 13,5 m / steam boiler



2 x 125 t = 250 t tandem function of two cranes / 30 t / 30 t / span 35 m /
HOL 15 m / offshore wind turbines



150 t / span 31 m / HOL 10 m / machine construction

Single Girder Overhead Cranes

- Spans up to 50 m and capacities up to 63 t
- Optimized lifting height
- High reliability and high overload reserves
- Environment-friendly and low energy consumption cranes
- Plain girder constructions are available as well



5 t / span 9,13 m / HOL 6 m / workshop



10 t / span 23,8 m / HOL 11 m / rotor blades for wind turbines



10 t / span 22,7 m / HOL 11 m /
machine construction

Gantry Cranes

- Available as single and double girder construction
- Due to our patented constructions only 2 instead of 4 pillars are necessary for the single girder gantry crane
- Higher stability than conventional box girder constructions
- Best suitable for outdoor application because of less contact surface for wind and almost no water and dirt sedimentation
- Also semi-gantry cranes available



12,5 t / jib 5,4 m / patented design



10 t / span 35,25 m / automated with grab



2,5 t single girder gantry crane



10 t semi-gantry crane

Jib Cranes

- Jibs up to 20 m
- Capacities up to 63 t
- Less contact surface for wind causes less stress for the slewing motor and brakes
- Best suitable for outdoor applications
- Resistant against weather and maritime climate conditions



2,5 t / jib 3,5 m / HOL 3,8 m / workshop



32 t / special jib traverse



1,6 t mast crane

RTG | RMG | STS – Container Handling Cranes



20 t / 40 m Span / RMG + boom



STS Container Cranes with capacities up to 65 t



RTG Container Handling Crane



hydraulic container spreader

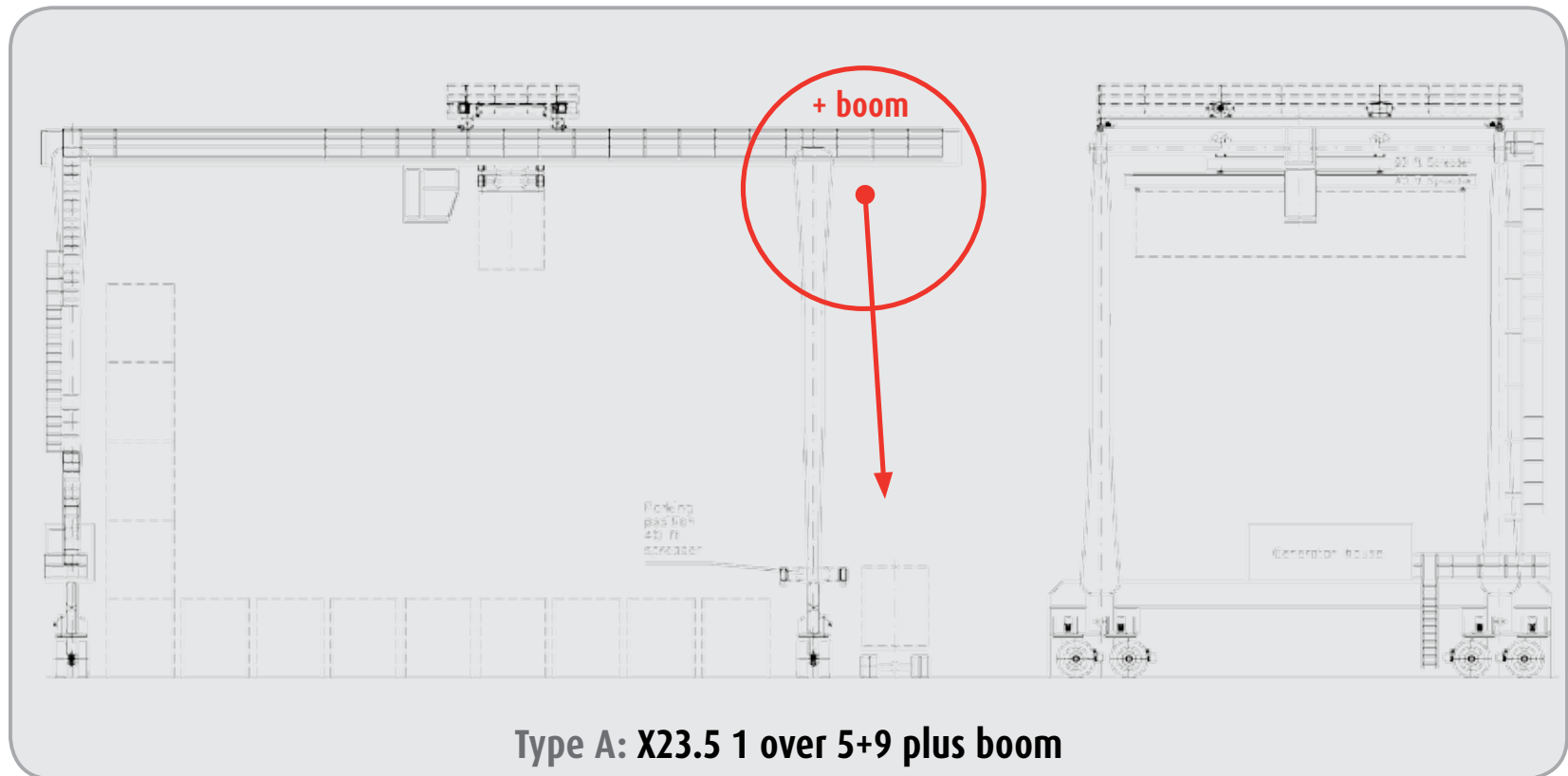
Rubber Tyred Gantry Crane

Type A: X23.5 1 over 5+9 plus boom

Type B (alternatively): X23.5 1 over 6+7 (9)

RTG + boom

- Rubber Tyred Gantry Crane **with boom** to take it easy with site line loading at road transport.
- You can store **10 containers more** at each truck loading position which is your benefit.



References

KÜHNEZUG is a globally operating company with business associates and customers all over the world. To demonstrate the capabilities of KÜHNEZUG products the following pages show reference projects which have been implemented by KÜHNEZUG.

The compilation has been chosen to demonstrate especially the following advantages of KÜHNEZUG cranes and crane components:

- High precision and comfortable positioning
- High performance
- High capacity
- Compact installation dimensions
- Close hook approaches



Most Comprehensive Crane Individualisation

Highly customized crane system for the world's most hightech testcenter.

- 2 x 50 t double girder overhead cranes
- Complete and very precise synchronisation of 2 trolleys up to 100 t capacity / 140 t in special operation
- Hoisting overspeed for up to 12 m/min lifting speed
- Accessories: true vertical lift, load measuring and displays, cameras, flood lights, control console, indicator lamps and 9 access platforms, maintenance jib crane, extra low-built trolley, rope angle detection
- 18,4 m span ■ 11,7 m height of lift
- 5 m/min standard lifting speed



250 t Tandem Operation

Full tandem controlled cranes with highest accuracy for wind turbine production.

- 2 x 125 t double girder overhead crane
- Complete and very precise synchronisation of 2 complete cranes up to 250 t capacity
- 35 m span
- 15 m height of lift
- 1,3 m/min lifting speed



240 t Operation with automated Load Balancing

Highly sophisticated crane system with precise synchronising options for submarine construction.

- 2 x 120 t double girder overhead cranes
- 3 hoists per trolley - 2 trolleys per crane
- Complete and very precise synchronisation of all 4 trolleys with automated load balancing up to 240 t capacity
- True Lift - hoists without horizontal hook movement
- 16,56 m span
- 17 m height of lift
- 8,3 m/min lifting speed



41 m Span over 3 Runways

Underslung hangar crane with large span for A380 aircraft maintenance repair and overhaul

- 5 t double girder underslung crane
- Encoder for crane drive units to ensure no tilting on 3 crane runways
- Underslung idling maintenance platforms
- 41 m span
- 16 m height of lift
- 5 m/min lifting speed



40 t Process Crane

Process crane with rotating grab for coil handling.

- 40 t double girder overhead crane
- 35 t coil grab with fast opening / closing mechanism
- Very high speeds for loading and unloading processes
- Stepless acceleration ramps minimize swinging of the load
- 15 m height of lift ■ 23,71 m span ■ 10 m/min lifting speed



60 t Tandem Operation with Earthquake Protection

High performance crane components for safe handling of transformers in earthquake zone.

- 60 t double girder overhead cranes
- Complete and very precise synchronisation of 2 trolleys up to 60 t capacity
- Trolley design with super low headroom
- 12,76 m span
- 7,4 m height of lift
- 3,2 m/min lifting speed



300 t Tandem Operation with 2,5 m Built-in Hight

High performance crane system for heavy loads with extremely low headroom.

- 150 t double girder overhead crane
- complete and very precise synchronisation of 1 new and 2 old cranes up to 300 t capacity
- Special, lowered trolley for maximal lifting height
- Total height of trolley only 875 mm
- 30,1 m span
- 10 m height of lift
- 4 m/min lifting speed



8 x Cranes with 25 t in FEM 4m

Solid and reliable design for dusty environment in precast concrete industry.

- 25 t double girder overhead cranes
- Weather protection roofs for trolley and components for outdoor operation
- Including load measuring system
- 17 m span
- 10 m height of lift
- 6 m/min lifting speed



125 t at 95 m H_{OL}

Outstanding precision at enormous lifting height for maintenance of turbines in hydropower plant.

- 125 t double girder overhead crane
- Extremely high precision with super slow speeds
- Suitable for extremely cold ambient temperatures
- Additional chain hoist underneath one of the girders
- 12,50 m span
- 95 m height of lift
- 2 m/min lifting speed



Winch with 840 m lenght of Rope

High speed multi-layer winch used to built the tunnels for a pumped storage hydropower station.

- 20 t multi-layer winch
- Frequenzy inverter control for constant pulling speed in all hook positions
- 840 m lenght of rope
- 8 m/min lifting speed



120 t with high Precision

Outstanding precision for maintenance of turbines in thermal plant.

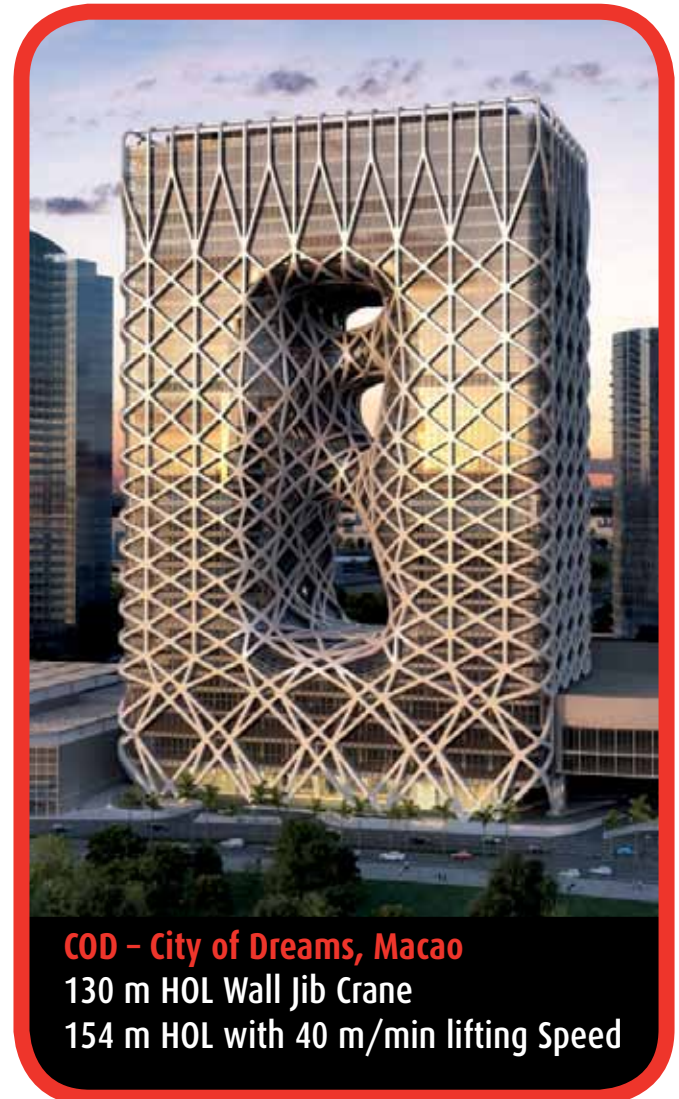
- 120 t + 20 t double girder overhead crane
- Extremely high precision with super slow speeds
- 24,6 m span
- 26 m height of lift
- 1,3 m/min lifting speed



130 m HOL Wall Jib Crane

Wall jib cranes inside a skyscraper for construction works on site.

- 4 t wall jib crane
- 7,5 m jib
- 130 m height of lift
- 20 m/min lifting speed



COD - City of Dreams, Macao
130 m HOL Wall Jib Crane
154 m HOL with 40 m/min lifting Speed

154 m HOL with 40 m/min Lifting Speed

2 x Double girder overhead cranes on top of a skyscraper which grow together with the building. They enable to place parts where the luffing jib cranes cannot reach.

- 2,5 t double girder overhead crane
- Oval girders as crane runway for column distance of 18,5 m
- Wind protection brackets for crane and to prevent components from lifting off by wind
- 7,3 m span
- 154 m height of lift ■ 40 m/min lifting speed





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We are looking forward to discussing the configuration
of your hoisting equipment with you individually.

We are always at your service.