











User Manual 08-2016

Translation from original document

-  HB500/760
-  HB500GKN
-  HB500GKFPro
-  HB500GS270FaPo
-  HB800GSFaPo
-  HB1000FaPo
-  HB1000GKN
-  HB1000GKFPro
-  HB2000FaPo
-  HB3000FaPo



Please not the serial number of your crane. The serial number can be found on the type plate and on the invoice.

Serial number: _____



Lesen Sie vor Inbetriebnahme unbedingt die Bedienungsanleitung!

Before using the machine read the instruction manual!

Lisez le manuel d'opération avant utiliser la machine!

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1 Delivery

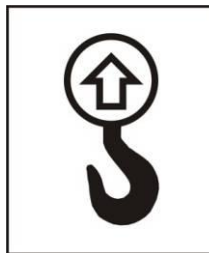
Your counterweight crane has been handed over to the carrier properly packed. The device is packed on an euro-pallet wrapped in shrinking foil. The centre of gravity is marked.

This symbol marks the point to fix the pallet with the forklift.



Remove the shrinking foil properly and dispose it according to the environmental standard valid in your country.

The crane itself is marked with suspension points:



Use the suspension points to lift the device.

- Only use ribbons and hoisting devices with sufficient lifting capacity.
- The weight of the crane is printed on the type plate.



WARNING!

Counterweight cranes must only be lifted without counterweigh. First, remove the counterweight(s) from the crane and lift them separately.

1.1 Transport Damages

Your counterweight crane has been handed over to the carrier properly packed.

- Remove the shrinking foil **in the presence of the carrier!**

If damage occurred during transportation please note the following instructions:

- The insurance covers visible, severe damages which affect the function of the device. Damage to paintwork, scratches, scrapes and similar minor damages are not covered by the insurance.
- Before receipting the shipment, let the carrier attest the damage on the bill of lading.
- Please inform the carrier within 24 hours and apply for a report of the carrier. For damages reported later, German Federal Railway or the respective carrier shall not be liable.
- For settling claims in case of transport damage, it is essential to inform Siegfried Frenzen GmbH – if we acted as insurance intermediary – as well as the respective carrier without any delay. Afterwards, please send us the report of the carrier and the bill of lading (as original or originally signed, respectively).
- After receiving the documents and after acknowledgement by the insurance company we will replace the damaged parts.



NOTE

Nobody will replace any damaged parts if the transport damage is reported improperly or delayed!

2 Safety Advice

This instruction manual is part of the device. The manufacturer reserves the right to amend performance data or specifications without notice. Keep the instruction manual for later use.

In this manual, the following symbols and signal words are used:



Warning against an unspecific hazard



Warning against suspended load



Note, helpful information

WARNING!

is used if a hazard may result in severe injuries or death.

CAUTION!

is used if a hazard may result in property damage.

NOTE!

is used for helpful hints and information.

2.1 General Safety Advice

Industrial cranes are industrial trucks for workshops of manufacturing industries and repair workshops. They apply to the relevant prescriptions (Machinery Directive, Accident Prevention Rules, etc.). The counterweight crane is manufactured according to the state-of-the-art. Before it was shipped, it had been checked and tested at the factory. Nevertheless, there is a residual risk when using the crane. To minimize the risk, **please observe the following safety advices.**

Observe the relevant accident prevention regulations valid in your country.

**WARNING!**

Risk of tipping in case of overload

Severe injuries (bone fracture, death) if persons are caught below the tipping crane or the load

- On each crane, the maximum load (lifting capacity) is applied permanently and easily identifiable. Furthermore, each delivery contains a diagram of the maximum lifting capacity. If this diagram gets lost, please request for a new diagram quoting the serial number of the crane!
- With adjustable jibs – which means in case of extending the jib with telescope bars – the maximum load is marked for each setting of the jib. **This value is valid only for the horizontal position and must not be extended if the jib is adjusted to an angle of incidence.**
- Pulling the load at an angle or swinging the load is prohibited.
- The steering gear must not be turned until the load is lowered down to the frame.
- The velocity of pedestrian propelled industrial trucks is limited to slow walking speed. For incident-free driving through curves a maximum speed of 0.5 km/s must not be exceeded.
- Watch the load and the route while driving the crane. The route must be sufficient in width and level and must be horizontal. Keep the route free from obstacles.
- Counterweight cranes must only be operated with filled counterweight box.

2.2 Qualification of the Personnel

Driving and maintaining the crane is allowed only if the person

- is able to do so (mentally and physically),
- is advised to drive and maintain the crane and has proven his qualification to his superior or the operating company,
- is assumed to carry out his work reliably,
- wears personal protection equipment like safety shoes, safety gloves, and helmet.

In Germany, advising the personnel by handing out the instruction manual and reporting is mandatory according to UVV BGV A 1. In the appendix, a form is attached to report the training. The training must be repeated in annual intervals.

2.3 Testing

Together with the final testing prior to delivery, the initial acceptance test according to German accident prevention rules is established. Please regard National regulations for regular acceptance procedures by authorized persons.

For Germany:

According to BetrSichV § 14 and DGUV, each crane must be tested annually and after each repair by a qualified person. On demand of the Institution for Statutory Accident Insurance and Prevention, the test result must be reported.

On request, we offer a maintenance contract (Germany only). The respective form is attached to this manual.

The operating company is responsible to determine and observe the National rules and regulations!

2.4 Notes attached to the Device

The following labels are attached to the device:



Read instructions before operation



Suspension point for lifting aids

Use crane only on levelled ground
Always plug in safety plug
No swinging load

Information for use



Original Hydrobull product

Manufacturer
Type
Serial No.
Year of constr.
Weight

Type plate

The load diagram on the jib informs about the maximum load for the selected position. The jib extensions are marked with the numbers.

2.5 Range of Use – Intended Use

Industrial cranes are industrial trucks for workshops of manufacturing industries and repair workshops. They are intended for lifting and transporting loads. They are designed for intra-plant transport of goods and for loading and unloading loads from and to machinery of vehicles. The maximum load must not be exceeded.

The crane must be operated by qualified personnel only (see chapter “Qualification of the Personnel”)

Any use beyond the specifications is not allowed.

- ✦ Never use the crane beyond its maximum load capacity. The maximum load as specified in the load diagram must not be exceeded.
- ✦ Never transport persons on the crane.
- ✦ Never lift persons with the crane.
- ✦ The crane must not be parked outside.
- ✦ The crane must not be used on unmade ground.



Only use the crane according to the intended use. Using the crane in other situations or beyond these specifications is not allowed. The manufacturer cannot be held responsible for damage resulting from unintended use. Please contact the manufacturer in case of any doubt.

3 What you should consider

3.1 Warranty / Guarantee

Each crane and its parts are carefully tested according to a ten-point checklist prior to delivery. Nevertheless, if despite every care you identify a defect, we need your help.

- Locate the malfunction as precisely as possible (e.g. hydraulic pump, hydraulic cylinder, oil loss, etc.), see chapter “Troubleshooting” as well.
- Please contact our service department.

Re-fixing screws and screwed connections is part of the regular maintenance work carried out by the customer (see chapter “Maintenance”). This is not part of our guarantee, not even during guarantee period.

The legal warranty period is 24 months. Because this is only valid for demonstrably faults present at delivery, we offer guarantee to all parts within Germany for 6 months, starting from the invoice date (identical to the date of delivery). Warranty repairs neither expand the warranty period nor do they establish a new warranty period. The warranty period for replaced spare parts ends with the warranty period of the complete device.

4 Commissioning

Depending on the type, the order and requirements, the crane is packed and provided with different transportation locks.

Unpack the device carefully and dispose the packing material according to environmental regulations.

Observe the hints given on the device itself!

4.1 Counterweight Cranes of Series GK

These cranes can be ordered with and without filling of the counterweight box. The crane must not be used until the correct counterweight is filled up.



WARNING!

Without the correct counterweight the crane will tip.

Hazard of severe injuries if persons get caught below the crane or the load.

- Start the crane only after filling the counterweight.
- If the crane is ordered without counterweight, the operator is responsible to fill up the counterweight box with the correct weight.

The counterweight box is marked with the required weight for the filling. The filling must consist of steel scrap with a specific weight of at least 4.

The following counterweights must be reached:

Type	No. of boxes	Total weight
HB500GKN	1	1000 kg
HB500GKFaPo	1	1000 kg
HB1000GKN	1	1000 kg
HB1000GKNFaPo	1	1000 kg
HB2000GKFaPo HB2000GKBRP11	2	2000 kg

The counterweight box must be placed on the end of the frame between the two brackets.

If the crane is ordered with counterweight, crane and counterweight are delivered packed separately. The counterweight must then be placed onto the crane using a lifting aid with sufficient load.

5 Operation

5.1 Lifting



WARNING!

Risk of tipping in case of overload

Severe injuries (bone fracture, death) if persons are caught below the tipping crane or the load

- The load to lift must not exceed the maximum load.
- If the steering wheel begins to lift off the ground, interrupt the operation **immediately!**
- If you lifted a too heavy load with angled jib, use another lifting aid with sufficient lifting capacity to get the load off the hook of the crane. **Do not lower the load further!**



WARNING!

Suspended loads

Hazard of severe injuries

- Persons must not walk under suspended loads.
- Always wear protection clothes like safety shoes, helmet, and safety gloves!
- Used lifting accessories must be specified and tested according to valid standards and regulations. After hooking the load the safety lug must close tightly.

5.1.1 Lifting Operation

- Before hooking the load please refer to chapter 5.1.2 for adjusting the jib.
- The pump lever has four holes on each side, each of which enables a different pumping speed. The correct position into which you should insert the locking pin depends on the position of the arm and on the load to be lifted. With heavier loads or maximum loading use the innermost locking-pin position, with smaller loads or no load operation use the outermost position. The locking pin should be inserted into the hole with slight pressure and can be adjusted using the threaded pin M8 x 8
- Connect the lever extension to the pump lever
- The release valve is automatically closed by the spring-loaded valve lever. If the spring is damaged please exchange immediately. Danger of lowering of the load
- You can now lift the load pumping with an up and down action. Always apply a slight pressure in the direction of the load. Never pull on the pump-lever extension. If the pump lever is too difficult to move or if the crane is lifted from the floor at the control side, set the next highest carrying force on the arm extension. Never add extra extensions to the pump lever and never pump with two persons as this will cause dangerous overloading of the loadbearing elements.
- After each lifting operation the pump lever extension should be detached and replaced on the locking pin provided for it on the base frame.



WARNING!

Suspended load

Hazard of severe injuries

- ✦ Persons must not walk under suspended loads.
- ✦ Always wear protection clothes like safety shoes, helmet, and safety gloves!

- ✦ If the piston has reached the highest position, it runs against a stop. This makes a clearly audible noise. The user must stop the lifting operation immediately.
- ✦ Make sure that you never try to lift the load further. Otherwise dangerous overload of the jib and damage to the hydraulic unit may result.

5.1.2 Extending the Jib

To lift the load, carry out the following steps:

- ✦ First, select the appropriate position of the jib according to the load and the distance. Observe the load diagram at the jib and the technical data.
- ✦ Turn the jib to a position slightly below horizontal position, so that it points slightly down.
- ✦ Now pull out the bolt which secures the extension.
- ✦ Pull out the extension as far as allowed by the marked load capacity. Due to the size of the crane, this needs some effort.

If the crane is equipped with a doubled jib extension, always pull out the larger extension (gold-coloured) completely. This allows lifting capacity for position 2 to 7. Afterwards pull out the smaller jib extension (silver-coloured) for position 8 to 13.

The allowed lifting capacities are given in the appendix "Technical Data". The further the jib is extended the lower the load must be.

- ✦ Now secure the jib with the safety bolt.
- ✦ The crane is adjusted to only lift loads up to the maximum load.
- ✦ If you try to lift a higher load than allowed for this jib extension, the crane will not lift it.
- ✦ Select a smaller extension position and try to lift the load again.
- ✦ If the jib is in a straight position and you try to lift a load exceeding the maximum load (the lifting force is smaller if the jib has an angle pointing steeply upwards) the steering wheel may lift from the ground. If this happens, stop the lowering process immediately and remove the load from the hook using another lifting aid with sufficient lifting capacity.
- ✦ For ensuring this overload in all position, the load is divided to half by a second valve. The close micro switch at the jib extension ensured, that the pressure is NOT divided in half for position 1 to 7.

5.2 Lowering



WARNING!

Suspended loads

Hazard of severe injuries

- ✦ Persons must not walk under suspended loads.
 - ✦ Always wear protection clothes like safety shoes, helmet, and safety gloves!
 - ✦ Make sure that the load does not swing during lifting or lowering. Disrupt the lifting, lowering or driving process immediately until the load comes to a rest and does not swing any longer.
-
- ✦ Carefully watch the lowering load to make sure that the load does not hit any obstacles and that no persons walk under the suspended load.



NOTE!

If the jib should be lowered from full height and without load, it may take some time until the valve opens and the jib begins to lower down. For the first few centimetres, the jib is lowered down so slowly that it is nearly invisible. Please be patient.

5.3 Driving and Parking

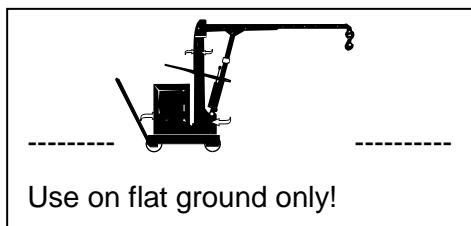


WARNING!

Risk of tipping

Severe injuries (bone fracture, death) if persons are caught below the tipping crane or the load

- ✦ Make sure that no persons walk on the drive way.
- ✦ The drive way must have flat surface. Never drive the crane perpendicular to an inclined surface or slope.



Right!



Wrong!



WARNING!

Damage to the device: broken wheels

- ✦ Make sure not to drive the crane against obstacles like doorsills, edges, rails, stones, etc.!
- ✦ The device is designed for flat ground. Even with slightly rough ground, the steering wheel may spin or lift from the ground.
- ✦ If you drive on, the crane may tip and may endanger persons or the load.



WARNING!

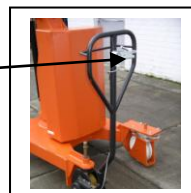
Crushing hazard
Crushing of feet

- Make sure that the shaft does not hit obstacles.
- Wear safety shoes.

The crane is moved and stopped manually and by help of Hydrobull mechanical driving impulsion

Moving, steering and stopping are carried out by hand. **Direction selector**

The drawbar is equipped with a mechanical starting aid, which makes starting off easier. It should not be used over longer distances. We offer an electric drive unit for that purpose.



The force needed to get the device moving is reduced by 500% !!!!!!!

In addition to which, the mechanical positioning device makes it possible to approach machines and loads with millimetre precision. The frequent and time-consuming movement of the machine back and forth until you have reached the right spot is a thing of the past, as is accidental damage resulting from the load or the machine being moved with too much momentum.



Select position



Depress the drawbar



Raise the drawbar

The selector switch for mechanical propulsion on the head of the drawbar has three positions.

Position 1: → The device moves forwards

Pull up and hold the lever in the drawbar handle



When you let go of the lever it automatically returns to the neutral centre position.

You either move millimetre by millimetre, exactly as much as the drive unit turns the wheel, or you exercise forward pressure at the same time and the device gets under way more easily.

When moving simply by means of the drawbar in the up position, it is possible to position the crane precisely in front of the load, machine etc., where otherwise the operator often has to push the crane back and forth because it never stops in the right position, or may even crash into valuable goods or machinery.

Position 2: NEUTRAL POSITION



The crane is operated as if there were no mechanical positioning device.

Position 3: → **The device moves backwards**



Move the lever down and you can drive backwards by moving the
It is essential to pre-select the direction of travel before moving.

The drive unit has a one-way free-wheel function. The device is propelled by moving the drawbar up and down, and can be moved around.

The **full stroke of the drawbar** should be utilised for this.

When the device is in motion the operator should push against the drawbar end stop, or pull on the drawbar when going backwards.

5.3.1.1 **WARNING**

5.3.2 When the direction of travel has been pre-selected, it is not possible to change direction until the selector lever has been repositioned.

5.3.2.1.1 **WARNING** **RISK OF BREAKAGE**

Do not move the selector lever while in motion !



WARNING!

Swinging load
Hazard of severe injuries

- The maximum driving speed is walking speed.
- Always wear protection clothes like safety shoes, helmet, and safety gloves!
- When driving, especially when cornering, make sure that the load does not start swinging. If this happens, stop the crane immediately until the load gets to a rest and does not swing any longer.

5.3. Parking

- The crane is moved and stopped by hand. When leaving the crane parked, it should be stabilised for safety.
- Turn the red lever to “Fest” then the brake is adjusted
- Turn the red lever back to “Lose” and you can drive



NOTE!

The brake is just a parking brake. It is not for slowing down the speed

6 Maintenance



WARNING!

Hazard due to defective device

- ✎ The crane must not be used if there is any visible damages, any leakage of if electrical switches do not work.
 - ✎ Replace damaged parts immediately.
-

- ✎ For ordering spare parts, please contact our service department quoting the serial number of the crane.

6.1 Piston

The piston must be protected against dirt, dust, humidity, colour depositions etc., as well as emissions from the production site. For this, grease, spray and clean the crane in regular intervals or provide mechanical aids or covers.

6.2 Hydraulics



WARNING!

Parts under pressure

Hazard of injury due to uncontrollably flung out parts

- ✎ Before loosening or fitting any screwed connections, depressurise the hydraulic system.
 - ✎ Lower the load immediately if you recognize any leakage.
-

Clean the outer surface before loosening screwed connections, tubes etc.

6.3 Oil

- ✦ Normally, the hydraulic system is a closed circuit, so that refilling oil is not necessary.
- ✦ Only in case of leakage oil will be spilled.
- ✦ If this happens, please call the service department.



NOTE!

- ✦ Collect waste oil.
- ✦ Discharge waste oil according to the National environmental regulations.

Notes to hydraulic oils:

At the factory, the hydraulic system is filled with approx. 3 l high quality hydraulic oil with a viscosity of 22 cSt at 50 °C.

In case of oil change, only use high quality hydraulic oil which does not damage the gaskets. Do not mix different oils.

If the crane is used in harsh environments, oils with differing viscosity may be preferred. If so, please contact the manufacturer.

6.4 Fixing Elements

- ✦ Check screws and screws connections in regular intervals, at least every 6 months. If necessary, retighten them.
- ✦ Check hoses in regular intervals, at least every 2 months. Replace damaged hose immediately because they may cause damage and / or injuries. At the latest after 7 years (see punched date) replace all hoses, independently of the frequency of use.
- ✦ Keep the handles and buttons clean. Keep all labels and markings clearly visible.
- ✦ Keep the wheels of the crane clean. Replace damaged wheels immediately. Broken or scribed wheels bear a high risk of injuries.
- ✦ Keep the wheel studs clean and free of foreign particles.
- ✦ Check the swivel hook prior to each use. The safety latch and rings must not be damaged or missing. Otherwise replace the hook immediately.

6.5 Spare Parts

6.5.1 Jib

Designation	HB500	HB1000	HB2000	HB3000
Locking bolt	HB063	HB063	HB063	HB063
Jib	HB064.1N	HB064.2N	HB064.3N	HB064.4N
Jib extension	---	HB065.1N	HB065.3N	HB065.4N
Safety swivel hook	HB066.1	HB066.2	HB066.4	HB066.5
Bolt for swivel hook	HB067.1	HB067.2	HB067.3	HB067.4
Jib extension bearing bolt	HB075.1	HB075.2	HB075.3	HB075.4
Upper Bearing bolt	HB076.1	HB076.2	HB076.3	HB076.4
Adjustable hook fixture	HB 135	---	---	

6.5.2 Hydraulic Cylinder

If a worn gasket needs replacement, we recommend replacing all gaskets.

Designation	Type	Part No.
Gasket set cylinder up to 1000kg	HB500 HB1000/GK/GS	HB111.1D
Gasket set cylinder up to 2000kg	HB 2000/GK/GS	HB111.2B
Gasket set cylinder up to 3000kg	HB3000	HB111.3B

6.5.3 Wheels

Designation counterweight	HB500GKFAPo	HB1000GKFAPo	HB2000GKFAPo	
Load bearing wheel			HB069.6	
Steering wheel	Ask for individual construction quoting the serial number			

7 Troubleshooting

Please call our service department or your customer service.

8 Technical Data

 Separately attached

9 Annex

9.1 Service Contract

We hereby instruct you to carry out the annual safety inspections including maintenance for the following device:

Crane _____

Type declaration _____ Serial No. _____ Year of construction _____

Installation site
(Required) _____

Description of services:

1. Check of complete hydraulic system
2. Check of functional safety
3. Check of welded seams
4. Check of connection
5. Check of wheels
6. Overload check
7. Report for the Labour Inspectorate and the institution for statutory accident insurance and prevention

The bill of discharge is subject to the current prices. Not included are costs for spare parts, operating and auxiliary materials and labour costs for additional repairs. Chargeable repairs must be approved by the customer.

Unless this order is not revoked until the end of the year, it goes on for each of the next year.

Customer _____

Company _____

Address _____

Phone _____ Fax _____

E-Mail _____

Date _____ Signature _____

9.2 Safety Briefing

The user has been instructed about the safety advices, especially observing BetrSichV § 14 and DGUV.

The instruction manual has been read and understood.

The instructions must be repeated annually according to the accident prevention rules BGV A1.

Date	Instructor Name	User Name	Signature User