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Operating Instructions

Translation of original operating instructions

Hydraulik Kerb Stone Laying Clamp

VZ-HS-50/150

1 Contents

2 Declaration of Conformity

Declaration of conformity

Description: Hydraulik Kerb Stone Laying Clamp
Type: VZ-HS-50/150
Order-Nr.: 5160.0014

Manufacturer:
Probst Greiftechnik◆Verlegesysteme GmbH
Gottlieb-Daimler-Strasse 6
D-71729 Erdmannhausen
info@probst.eu www.probst.eu

Complies with the following provisions applying to it

EC-machinery directive 2006/42/EG

Applied harmonized standards in particular

EN ISO 12100-1 **(ISO 12100-1)**

Safety of machinery; Basic concepts, general principles for design,

Part 1: Basic terminology, methodology

EN ISO 12100-2 **(ISO 12100-2)**

Safety of machinery; basic concepts, general principles for design;

Part 2: principles and specifications

DIN EN ISO 13857

Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs (ISO 13857:2008)

DIN EN 349 **(ISO 13854)**

Minimum distance to avoid squeezing any parts of the body

Authorized person for EC-dokumentation:

Name: J. Holderied
Address: Probst Greiftechnik◆Verlegesysteme GmbH; Gottlieb-Daimler-Str. 6; D-71729 Erdmannhausen

Signature, informations to the subscriber:
Erdmannhausen, 14.12.2010.....
(M. Probst, Managing director)

3 General

3.1 Authorized use

The device (VZ-HS) is only designed for the paving and transporting of one kerb stone (granite or concrete) in connection to a support frame such as a hydraulic excavator, wheel loader, rear digging attachment, truck loading crane and special machines. A hydraulic circuit of the carrying device is necessary for the operation of the device (VZ-HS).

Peculiarities of the VZ-HS:

- The gripping range of the VZ-HS is full hydraulical adjustable.
- Absolute synchronism of both gripping elements through rack gear compensation and 2-HD-cylinders.
- Low maintenance slide bearing (steel/Polyamide).
- Handles for the optimal guiding of the device (VZ-HS).
- Pressure control valve for overload protection of all components on this device.
- Norm flange plate for the fitting on any support frame.

It is not allowed to grip a kerb stone which is conical, only rectangular, because it could fall down!

- The device is only designed for the use specified in this documentation.
- Every other use is not authorized and is forbidden!
- All relevant safety regulations, corresponding legal regulations, especially regulations of the declaration of conformity, and additional local health and safety regulations have to be observed.

Prior to every operation the user must ensure that:

- the equipment is suited to the intended operation, the functioning and the working condition of the equipment is examined, and the loads are suitable to be handled.

Any doubts about instructions should be raised with the manufacturer prior to use.

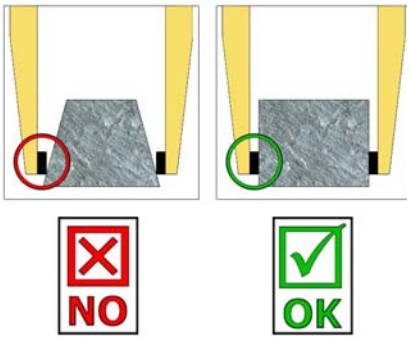
NOT ALLOWED AKTIVITIES:

Unauthorized alterations of the device and the use of any self-made additional equipment could cause danger and are therefore **forbidden**!!

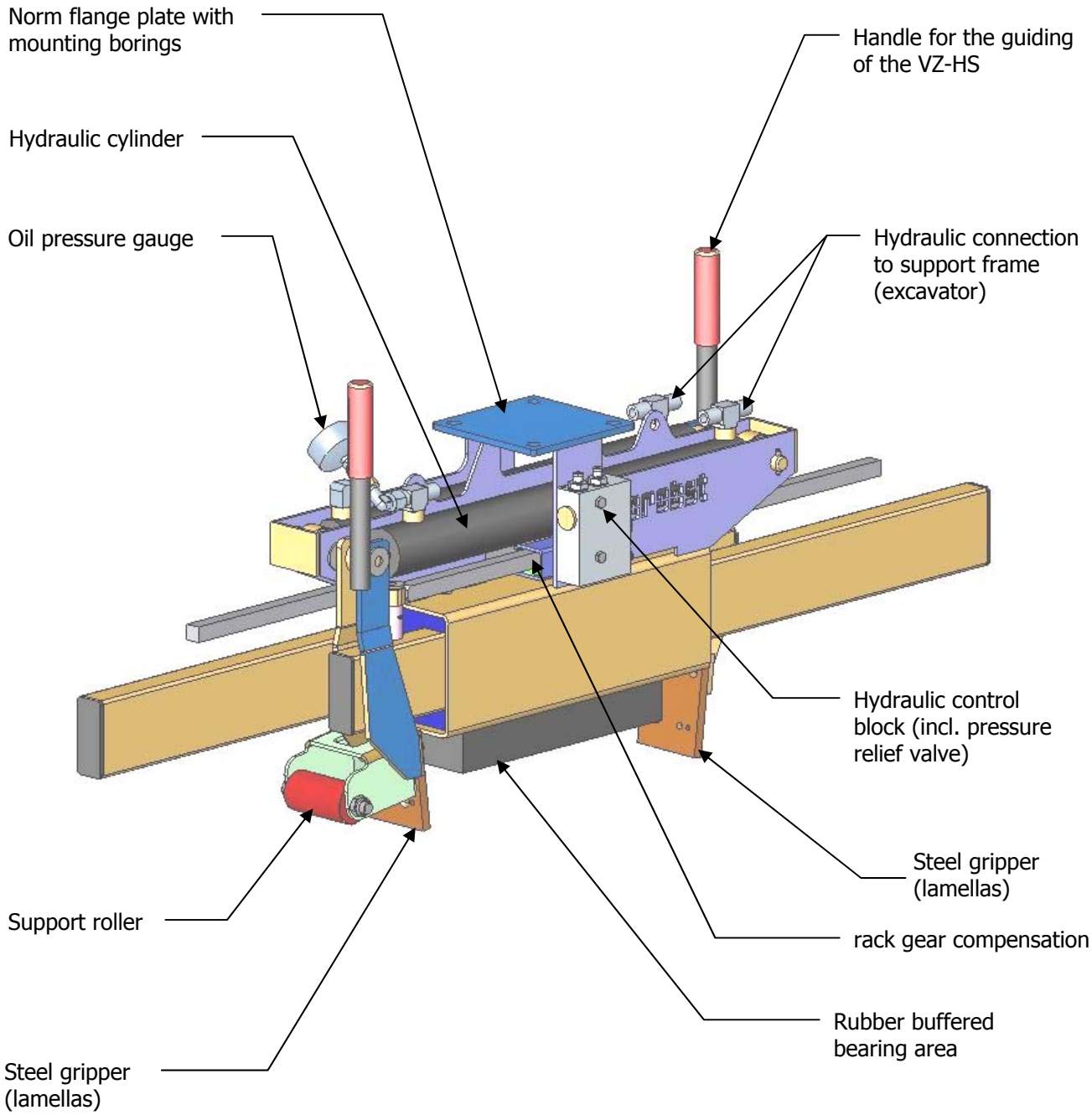
Never exceed the **carrying capacity** and the **nominal width/gripping range** of the device.

All unauthorized transportations with the device <u>are not allowed</u>:

- Transportation of people and animals.
- Transportation of other loads and materials than described in this manual.
- Never suspend any goods with ropes, chains or similar at the device.
- Transportation of **non rectangular** and **round** gripping goods, because they could fall down. (see figure to the right).
- Gripping of gripping goods with **packaging foil**, because they could fall down.
- Transportation of material with "feet", "bellies" and "blind spacers".



3.2 Survey and construction



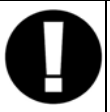
3.3 Technical data

The exact technical data (carrying capacity, dead weight, etc.) is specificated in the attached technical data sheet.

1 Safety

1.1 Explanation of basic concepts

1.2 Safety symbols

	**Danger to life!** Identifies imminent hazard. If you do not avoid the hazard, death or severe injury will result.
	**Hazardous situation!** Identifies a potentially hazardous situation. If you do not avoid the situation, injury or damage to property can result.
	**Prohibition!** Identifies imminent a prohibition. If you do not avoid the prohibition, death and severe injury, or damage to property will result.

1.3 Explanation of basic concepts

Gripping range:	• specify the minimum and maximum product measurements of the gripping good, which can be gripped with this device.
Gripping good (s):	• is the product, which will be gripped or transported.
Opening width:	• consists of the gripping range and the measure to drive over the gripping good. *gripping range + measure to drive over the gripping good = opening width*
Immersion depth:	• is the maximum gripping height of gripping goods, conditional of the height of the gripping arms of the device.
Device:	• is the description for the gripping device.
Product dimensions:	• Are the dimensions of the gripping good (e.g. length, breadth, height of the product).
Dead weight:	• is the own weight (without gripping good) of the device.
Load capacity:	• specify the maximum possible load of the device (lifting of gripping goods).

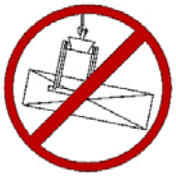
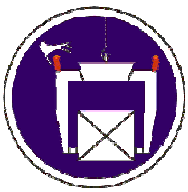
1.4 Definition skilled worker / specialist

Only skilled workers or specialists is it allowed to carry out the installation,- maintenance, - and repair work on these device!

Skilled workers or specialists must have for the following points (if it applies for these device), the necessary professional knowledge.

- for mechanic
- for hydraulics
- for pneumatics
- for electrics

1.5 Safety Marking

PROHIBITION SIGN			
Symbol	**Meaning**	**Order-No.:**	**Size:**
	The transportation of non rectangular goods is not allowed!	2904.0213 2904.0212 2904.0211	30 mm 50 mm 80 mm
	It is not allowed to be under hanging loads. **Danger to life!**	2904.0210 2904.0209 2904.0204	30 mm 50 mm 80 mm
	Do not lift any components off-centre.	2904.0216 2904.0215 2904.0214	30 mm 50 mm 80 mm
WARNING SIGN			
Symbol	**Meaning**	**Order-No.:**	**Size:**
	Danger of squeezing the hands.	2904.0221 2904.0220 2904.0107	30 mm 50 mm 80 mm
REGULATORY SIGN			
Symbol	**Meaning**	**Order-No.:**	**Size:**
	Manual guiding is only allowed for machines with handles.	2904.0227 2904.0226 2904.0225	30 mm 50 mm 80 mm
	Read operating instructions before operating.	2904.0366 2904.0365	30x57 mm 50x95 mm

1.6 Personal safety requirements

- Each operator must have read and understood the operating instructions.
- Only qualified, authorized certificated personal is allowed to operate the device and all devices which are connected (lifting equipment).

- The manual guiding is only allowed for machines with handles.

1.7 Protective equipment

The protective equipment must consist, according to the safety regulations of the following parts:

- Protective clothing
- Safety gloves
- Safety shoes

1.8 Accident prevention

- The workplace has to be covered for unauthorized persons, especially children.
- Take care in case of thunderstorm!

- The workplace has to be sufficiently illuminated.
- Take care with handling wet, dirty and not solidified components.

- The working with the device in case of atmospheric editions under 3° C (37,5° F) is forbidden! Because the goods could be fall down caused by dampness or freezing.

1.9 Function Control

1.9.1 General

- Before using the device check the functions and the working condition.
- Maintenance and lubrication are only permitted when device is shut down!

- Do not use the device, until all faults which can cause safety hazards are removed.
- If there are any cracks, splits or damaged parts on any parts of the device, **immediately** stop using it.

- The operating instructions must be available at the workplace every time.
- Do not remove the data-plates of the machine.
- Unrecognisable information signs must be replaced.

1.9.2 Hydraulic

- Check all hydraulic hoses and connection for tightness. Only experts are allowed to replace faulty parts (depressurized)
- Ensure a clean working environment before opening the hydraulic connection.

The hydraulic hoses must be free of breaks and abrasion. Take care that there are no outstanding edges, where the hoses could kook in.

The operator of the device is responsible for a constant line pressure, which is necessary for the working with this device.

Only under these conditions is a safety gripping, lifting and transporting of the gripping goods with this device ensured.

1.10 Safety procedures

1.10.1 General

- The use of the device is only permitted in proximity to the ground. Do not swing it over peoples heads.
- The manual guiding of is only allowed for devices with handles.
- The operator is not allowed to leave the control unit as long as the device loaded with load. The load must always be in the range of vision of the operator.

- While using the device is the stay of persons in the working area forbidden. Except it is indispensable. Caused of the way of using the device, e.g. if the device must be leaded by hand.
- While using the device be sure that there are no persons in the working area. ***Danger to Life!***
- The device must never be subjected to a force acting in a lateral direction due to diagonal pulling.
- Do not use the device to jerk seized products.
- Do not lift any components off-centre, because that ***could fall down***.
- The device should not be opened if the opening path of the gripping arm is blocked by a resistance (e.g. other concrete blocks or the like)!
- **Never exceed the carrying capacity and the nominal width of the device.**
- The jerky lifting and lowering of the device with and without load. e.g. caused through driving fast with the support frame/lifting device over uneven grounds is **forbidden**. Because the gripping good could ***fall down***. Unchecked movements of the device.

1.11 Safety in Hydraulic pressure mode

- The best gripping power will be achieved if the control lever is holding 2 more seconds after the gripping (closing action). Subsequent the control lever must be moved back in the neutral position.
- **This valve is adjusted and sealed by the manufacturer (for the maximum hydraulic pressure adjustment). Do not remove the sealing without contact to the manufacturer.**

1.12 Hydraulic excavator and other lifting equipments

- Hydraulic excavator and other lifting equipments have to be in good, safe working condition.
- Only authorized, certificated and qualified personnel is allowed to operate the excavator and other lifting equipments.
- The operator staff must have all the necessary qualifications.

- **Never exceed the maximum capacity of the hydraulic excavator and other lifting equipments.**

2 Installation

2.1 Mechanical connection

2.1.1 Standard flange plate

- The device is attached to the lifting equipment with a standard flange plate or a custom made flange plate connection.
- Attaching the device to the lifting equipment take care that all local safety regulations are observed.

- **It is not allowed to exceed the load capacity of the lifting equipment with the device and the maximum load.**

- Use the standard flange plate, which enables you to connect the device (VZ-HS) to the carrier using a rotating motor and / or a quick change device.
- **<u>Caution</u>: the suspension between the device (VZ-HS) and the support frame (e.g. wheel loader) must always be carried out above the rotation otherwise damage will occur!**

- The device (VZ-HS) can be mounted with chains onto the support frame (e.g. excavator).
- Use the holes at the device (VZ-HS) for chain suspension on the support frame.

2.1.2 Load hook and chains

- Fit suspension ring in the load hook of the lifting equipment.
- **Ensure that the single chains are not twisted and may be easily pulled through the jaws**

- Attaching the device to the lifting equipment take care that all local safety regulation is observed.

- **It is not allowed to exceed the carrying capacity of the lifting equipment with the device and the maximum load.**

2.2 Hydraulical connection

- The two hydraulic hoses on the carrier must be screwed onto the two hydraulic connections on the control panel of the kerb stone installation clamp VZ-HS.
  A second control circuit is necessary if a rotating motor is integrated.
- In accordance with the enclosed hydraulic wiring diagram a unblock able non-return valve is built into the "VZ-HS close" circuit to prevent the kerb stone slipping from the VZ-HS if the pressure should decrease or fail.
- When connecting the machine hydraulically, make sure that the connection hoses are not worn and that they do not protrude at the corners when lifting and lowering the kerb stones, so that they do not rip.
- Is there only one (two) hydraulic circuit on the lifting apparatus, you can split one of the circuits by using a electromagnetic valve ELMV.

A faultless and reliable in operation function of the device is ensured, if the following values are adjusted.

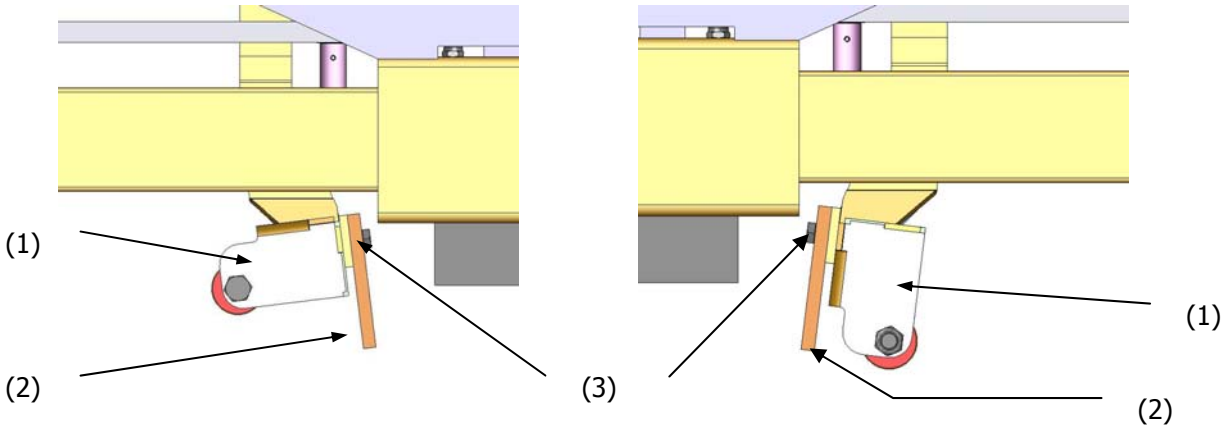
Installed load:	**optimal**	**minimal**	**maximal**
Conveying line Support frame:	25 in l/min	15 in l/min	75 in l/min
Line pressure Support frame:	200 bar	200 bar	250 bar
Back pressure in return flow:	0 bar	0 bar	5 bar

To avoid disorders and failed functions it is absolute necessary, for every commissioning of the device (*VZ-HS*), to check the correct connection of the hydraulic hoses!

3 Operation

3.1 Device operation

- Connect the device (VZ-HS) through the mechanical and hydraulically components with the support frame (Installation Machine VM203/VM204).
- The functions „opening and closing " at the device (VZ-HS) will be operated with the valve gear lever of the support frame.
- The motion „opening and closing" is standing as long as the valve gear lever is activated.
- The optimal cohesion will be reached if the valve gear lever, after the closing of the device, will be hold approximate 2 seconds in the closed position.
- The cushioned valve gear lever must be lead back slowly in the starting-point. Never let go the valve gear lever spontaneous!
  Because of the occurrence of pressure surges in the forward- and return flow. These could lead to the bleeding of the tension force.
  - **Types of steel-grippers:**
    The device is standard modest equipped with 130 mm long steel-grippers (2) for immersions depth ET=60 mm (look technical data sheet).
  - To change steel-grippers unscrew the fixing screws (3), exchange the steel-grippers and tighten the fixing screws (3) again.
  - To change the support roller (1) from left to right side of the device or laying kerb stones with or without gap, loosen fixing screws (3). Positioning support roller (1) respective and tighten the fixing screws (3) again.



- Now open the device (VZ-HS) with the valve gear lever of the support frame.
- The device (VZ-HS) must be layed on always on in the middle the gripping good (kerb stone).
- Close the device (VZ-HS) with the valve gear lever of the support frame.
- Lift the gripping good and transport it carefully to the destination.
- Lay the gripping good carefully to the gripping good, which is already layed on the destination. Now open the device (VZ-HS) with the valve gear lever at the support frame and lower the gripping good.

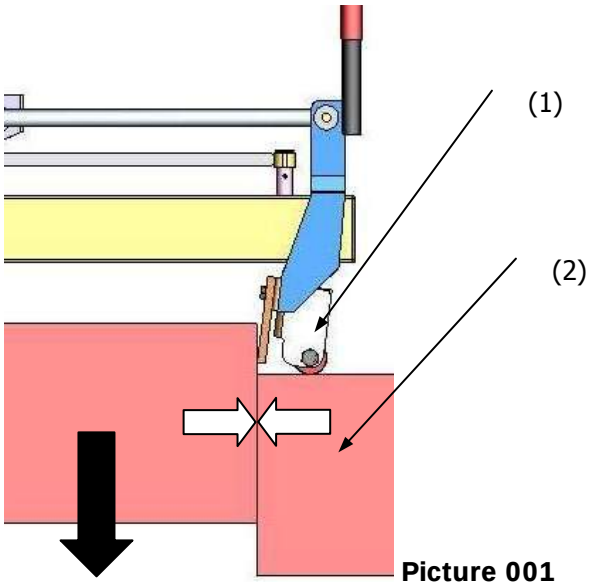
- **Attention while laying-off operation of the gripping good. There is a risk of squeezing the feet!!!**
- The device (VZ-HS) is now for the next working process ready.

3.1.1 Layingversions

Version A

To lay kerb stones without gap:

- Mount the support roller (1) as shown in **picture 001**.
- Position the device (VZ-HS) with a gripped kerb stone close on the already laid kerb stone (2) and place on the support roller (1).
- When opening the device (VZ-HS) the kerb stone slide downwards und lays without gap to the already laid kerb stone.

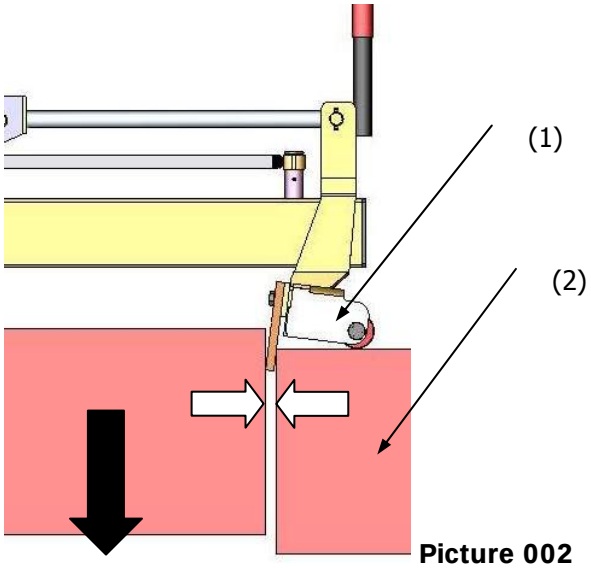


Picture 001

Version B

To lay kerb stones with a gap of approx. 20 mm:

- Mount the support roller (1) as shown in **picture 002.**
- Position the device (VZ-HS) with a gripped kerb stone close on the already laid kerb stone (2) and place on the support roller (1).
- To laying the kerb stone, open the device (VZ-HS) only a little, so that the lamella/steel-gripper between the kerb stones cannot move the kerb stones.
- Lift the device (VZ-HS) and thus the lamella causes a distance between the kerb stones.



Picture 002

4 Maintenance and care

4.1 Maintenance

To ensure the correct function, safety and service life of the device the following points must be executed in the maintenance interval.

Used **only original spare parts**, otherwise the warranty expires.

All operations may only be made in unpressurised, electro less and closed state of the device! For all operations you have to make sure, that the device will not close unintended. Danger of injury!!!

MECHNICAL

SERVICE INTERVAL	Maintenance work
First inspection after 25 operating hours	• Control and tighten all screws and connections. (The implementation is only allowed by an expert).
After 50 operating hours	• Tighten all screws and connections (take care that the tightening torques according to the property class of the screws are observed). • Check all joints, bolts, guidance's and gears for correct function, if necessary adjust or replace it. • Check all Grippers (if available) for signs of wear. • Grease all slidings (if available) when the device is in opened position with a spatula.
Minimum 1x per year (at rough conditions shorten the interval)	• Check of all the suspension parts, bolts and straps. Check for corrosion and safety by an expert.

HYDRAULIC

Service interval	Maintenance work
First inspection after 25 operating hours	• Control and tighten all hydraulic thread joints and connection. (The implementation is only allowed by an expert).
After 50 operating hours	• Tighten all hydraulic connections. • Check the hydraulic system for leaks. • Check the hydraulic oil filter, clean it if necessary (if available). • Check the hydraulic oil and replace it in accordance to the manufacturer information (recommended hydraulic oil: HLP 32-46 according to DIN 51524 – 51535). • Check the hydraulic hoses for breaks and abrasion.

4.2 Trouble shooting

ERROR	CAUSE	REPAIR
The clamping-power is not big enough, the load is slipping out		
(optional)	• The grippers are worn	• Replace the grippers
(optional)	• The maximum load is exceed	• Reduce the weight of. the load
(Adjustment of the opening width) (optional)	• The actual opening width is not correct	• Adjust the opening width according to the load you want to transport
(Pneumatics / Hydraulics) (optional)	• The working pressure is not big enough	• Adjust the working pressure (see technical data)
(Electrics) (optional)	• The electric motor is faulty.	• Check the electric motor
(Property of material)	• The surface of the material is dirty or the material is not suitable / allowed for this device.	• Check the surface of the material or ask the manufacturer, if you the material is allowed for this device.
The clamping-power is fading		
(Pneumatics / Hydraulics) (optional)	• The system is not tight	• Check all Connections , fittings, pipes and hoses.
	• The cylinder can not control the pressure.	• Check the seal kits of the cylinders
	• The valves are faulty.	• Check the valves
Unbalanced load		
	• The device is not loaded symmetrically	• Adjust the position of the load
(Adjustment of the gripping range) (optional)	• The adjustment of the gripping rangeh is not symmetrical.	• Correct the adjustment of the gripping range
The gripping arms are not working synchronous		
(Rack gear adjustment) (optional)	• The rack gear adjustment is faulty	• Check the rack gear adjustment and repair it
(Pneumatics / Hydraulics) (optional)	• The dividing valve is faulty	• Check the dividing valve

4.3 Repairs

- Only persons with the appropriate knowledge and ability are allowed to repair the device.
- Before the device is used again, it has to be checked by an expert.

4.4 Safety procedures

- It is the contructors responsibility to ensure that the device is checked by an expert in periods of max. 1 year and all recognized errors are removed (→ see BGR 500).
- The corresponding legal regulations and the regulations of the declaration of conformity have to be observed!
- We recommend, that after checking the device the badge „Safety checked" is put on the device. (Order-No.: 2904.0056+inspection sticker with date).
- You can receive these badges from us.

The check by an expert must be proved!

Device	Year	Date	Expert	Company

4.5 Hints to the identification plate

Type, serial-number and production year are very important for the identification of your device. If you need information to spare-parts, warranty or other specific details please refer to this information.

The maximum carrying capacity is the maximum load which can be handled with the device. Do not exceed this carrying capacity.

If you use the device in combination with other lifting equipment (Crane, chain hoist, forklift truck, excavator) consider the deadweight of the device.

Example:

4.6 Hints to the renting/leasing of PROBST devices

With every renting/leasing of PROBST devices the original operating instructions must be included unconditionally (in deviation of the users country's language, the respective translations of the original operating instructions must be delivered additionally)!

Proof of maintenance

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Warranty claim for this machine only apply for performance of the mandatory maintenance works (by an authorised specialist workshop)! After each completed performance of a maintenance interval the included form must be fill out, stamped, signed and send back to us immediately [1)].

1) via e-mail to service@probst.eu / via fax or post

Operator: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

Device type: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ **Article -No.:** _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

Device-No.: _ _ _ _ _ _ _ _ _ _ _ _ **Year of make:** _ _ _ _

First inspection after 25 operating hours

Date:	Maintenance work:	Inspection by company:
		Company stamp
		…… *Name* *Signature*

All 50 operating hours

Date:	Maintenance work:	Inspection by company:
		Company stamp
		…… *Name* *Signature*
		Company stamp
		…… *Name* *Signature*
		Company stamp
		…… *Name* *Signature*

Minimum 1x per year

Date:	Maintenance work:	Inspection by company:
		Company stamp
		…… *Name* *Signature*
		Company stamp
		…… *Name* *Signature*

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Geschäftsführer: Martin Probst
USt. IdNr. DE 146197555

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info@probst.eu

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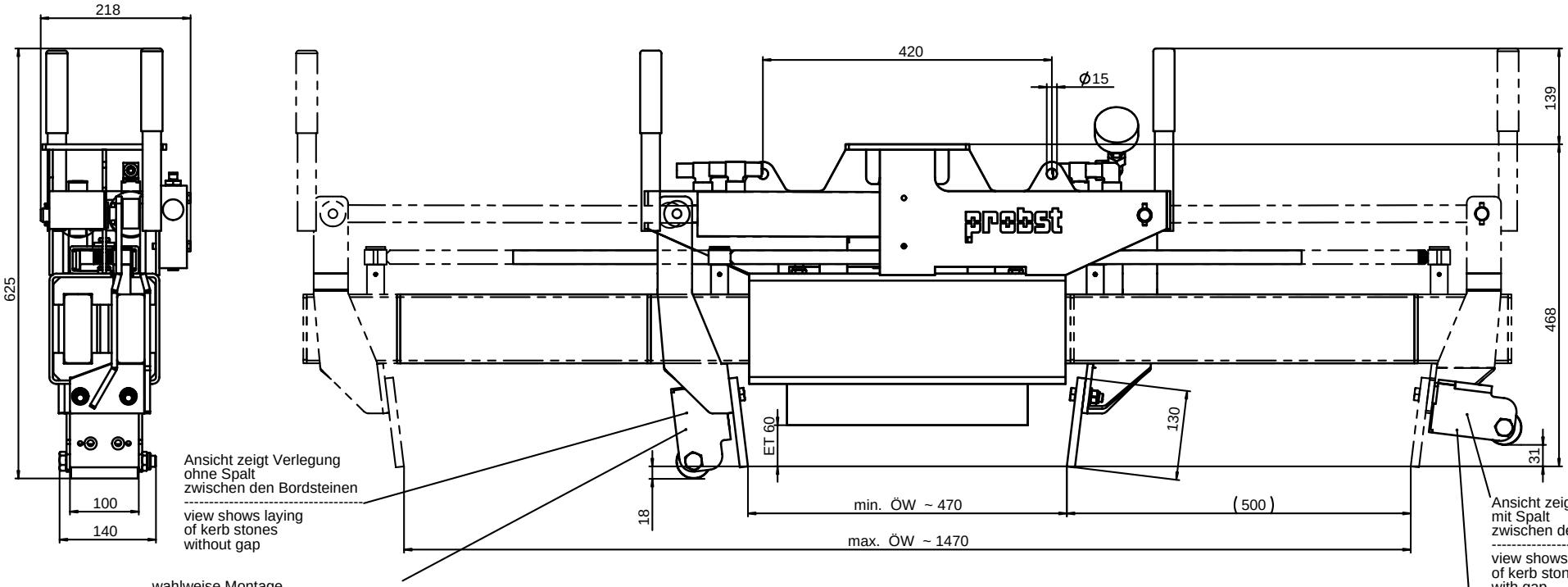
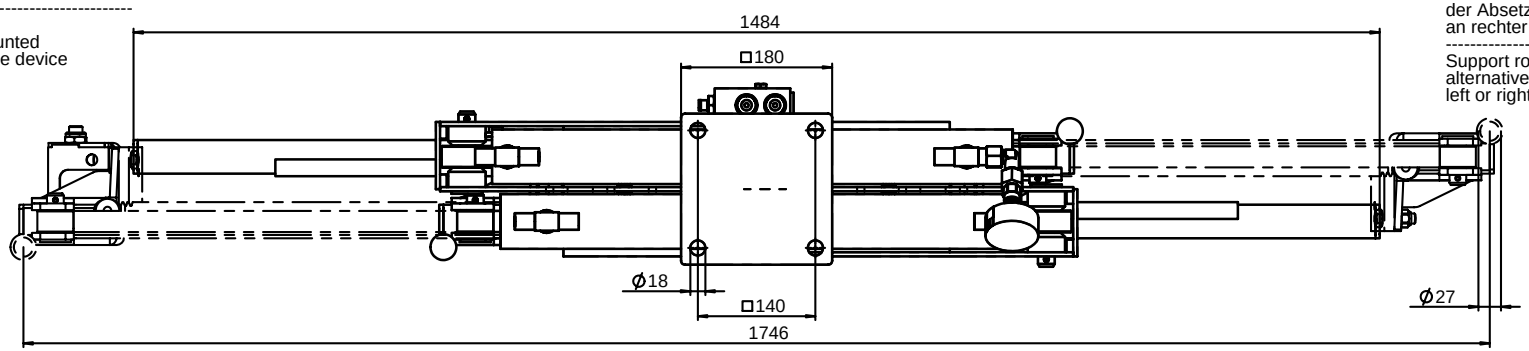
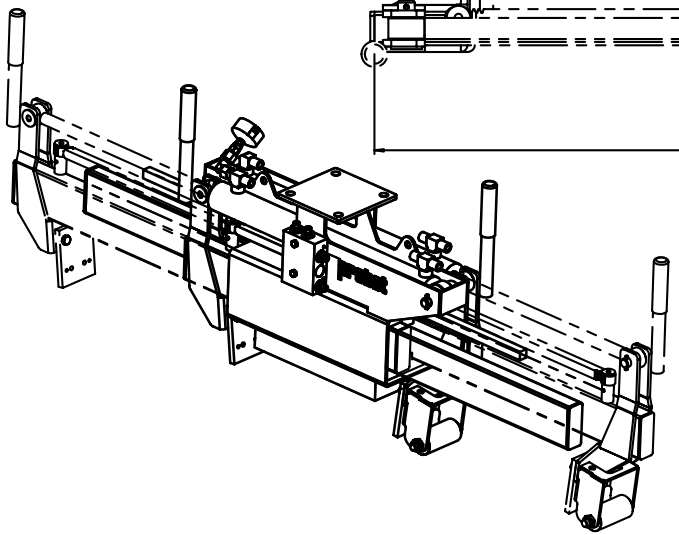
71729 Erdmannhausen, Germany

www.probst.eu Handling and Laying Systems







Tragfähigkeit: 400 kg

Carrying capacity 400 kg (880 lbs)

· Bei Änderungen Rücksprache TB !

Gewicht: 104,4 kg

	Datum	Name
Erst.	4.3.2002	Kirkamm
Gepr.		

Benennung: Hydraulische Bordsteinversetzzange

VZ-HS 50/150 ; ÖW 470-1470

WA:

Kunde:

Artikelnummer/Zeichnungsnummer: D51600014

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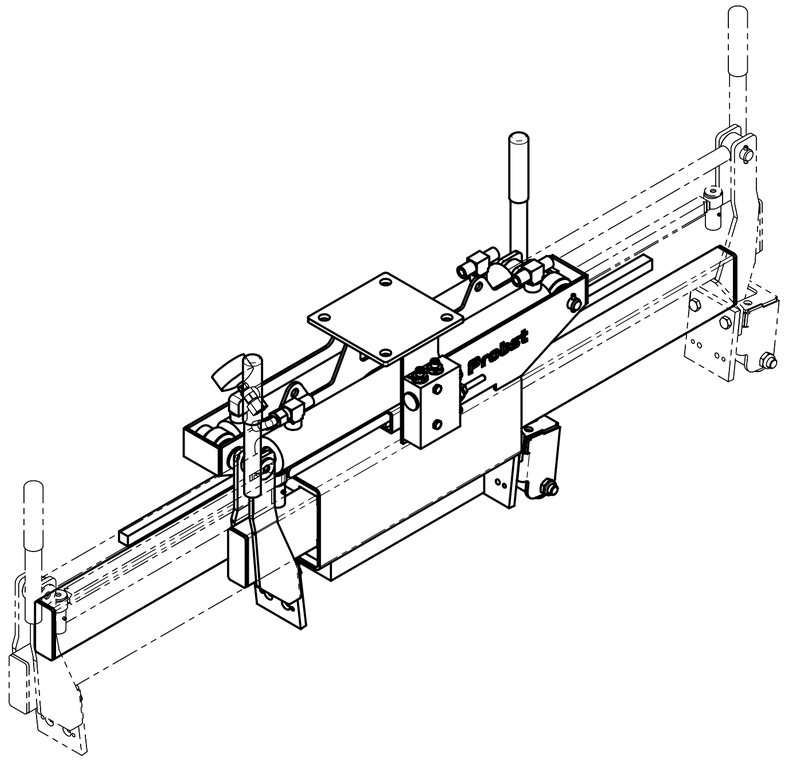
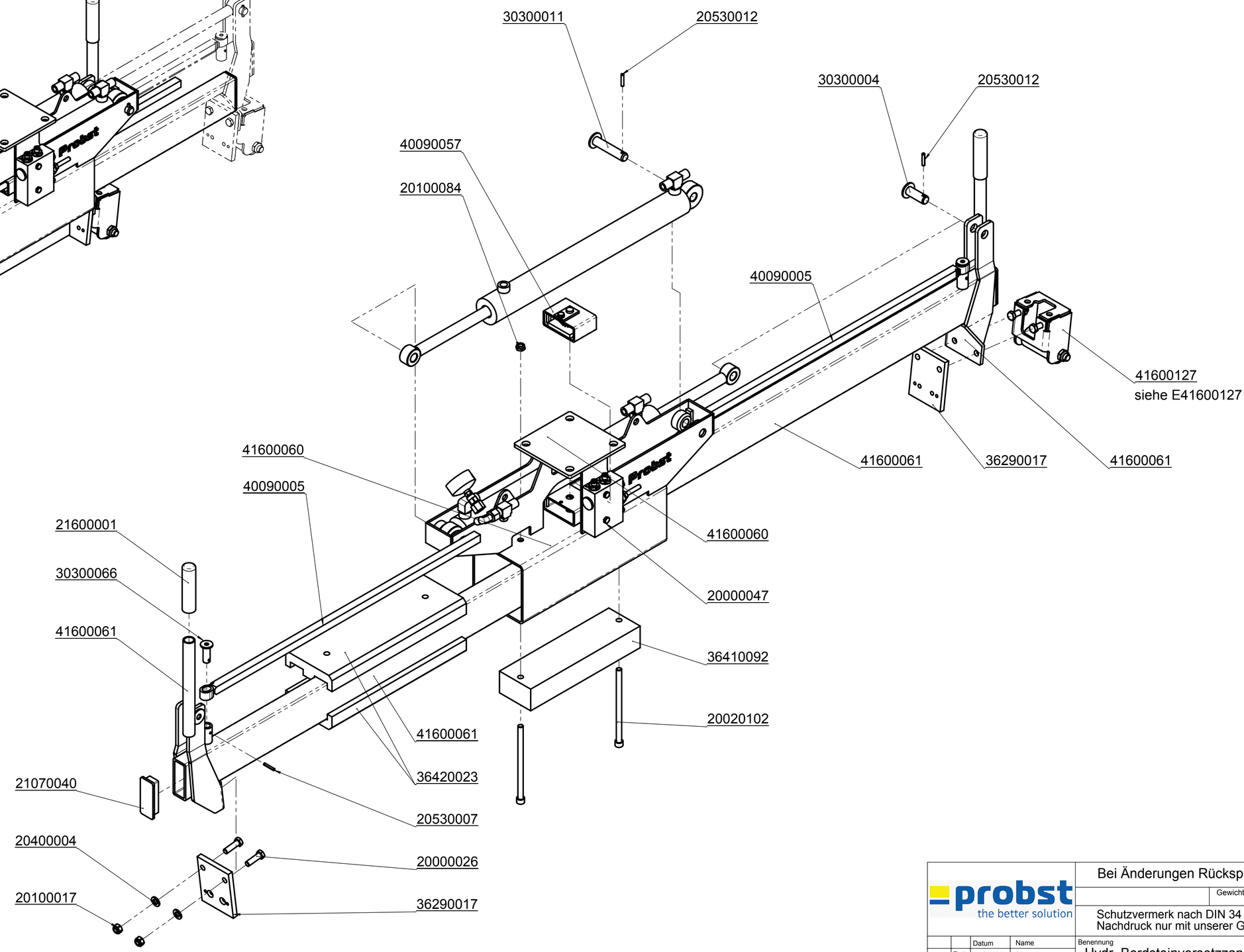
Zust. Urspr. N282-1Z001 Ers. f. Ers. d.





Hydraulik siehe HD-Schaltplan 41600031

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Bei Änderungen Rücksprache TB !

Gewicht: 105,4 kg

		Datum	Name
	Erst.	24.3.2003	Kirkamm
6	Gepr.		
5			
4			
3	WA:		
2			
1	Kunde:		
Zust.	Urspr. N282-1Z001		

Benennung
Hydr. Bordsteinversetzzange

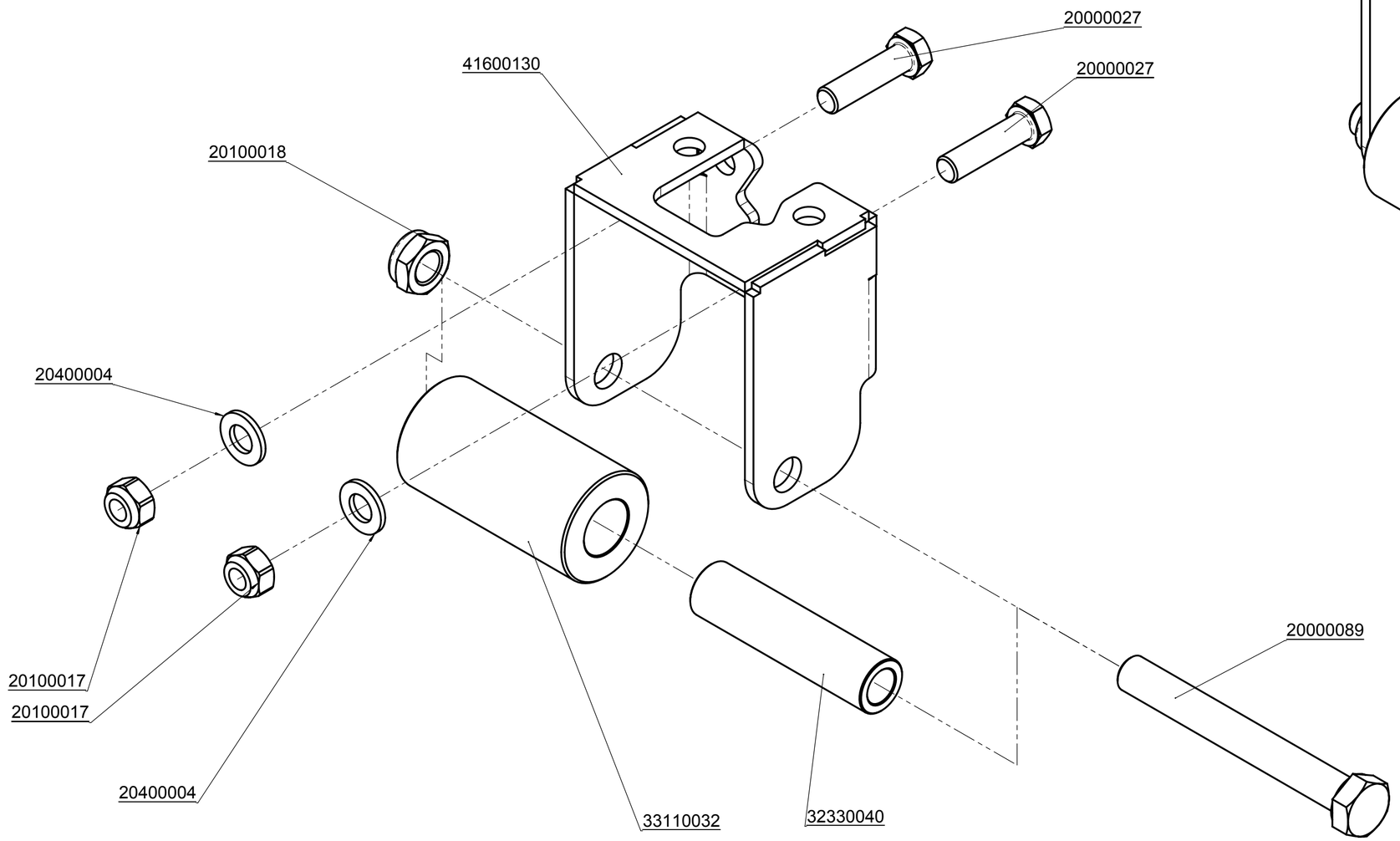
VZ-HS 50/150; ÖW 470-1470

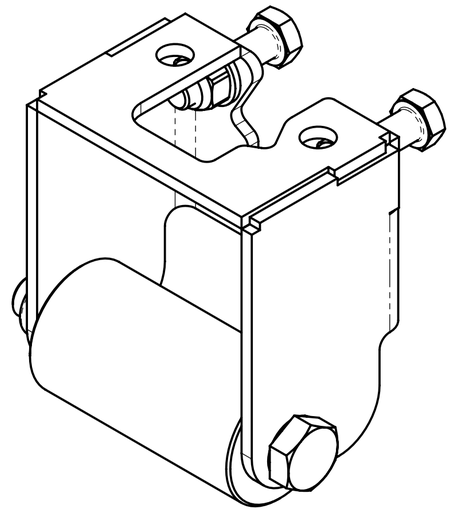
Artikelnummer/Zeichnungsnummer
E51600014

Blatt 1 von 1

Ers. f.

Ers. d.





* Bei Änderungen Rücksprache TB !

Gewicht: 2,7 kg

		Datum	Name
	Erst.	9.8.2006	Rolf.Ganitz
	Gepr.		

Benennung
Absetzrolle , kompl.,
für VZ-HS 50/150

WA:

Kunde:

Artikelnummer/Zeichnungsnummer
E41600127

Blatt 1 von 1

2 Zust. Ursprung | Ers. f. | Ers. d.

Hydraulik-Komponenten zur Hydr. Borsteinversetzzange VZ-HS