



Hydraulic Installation Clamp HVZ-uni

V7

Order-No.:
51400017

Serial-No.:

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2 Declaration of Conformity

**Konformitätserklärung; Declaration of conformity ; Déclaration de Conformité;
Certificato di conformità norme CE; Declaración de conformidad**

DESCRIPTION: Hydraulic Installation Clamp
HVZ-uni

Hersteller: **PROBST GREIFTECHNIK VERLEGESYSTEME**

Manufacturer: Gottlieb-Daimlerstraße 6

Fabricant: 71729 Erdmannhausen

Costruttore: Probst Greiftechnik Verlegesysteme GmbH

Fabricante: info@probst-gmbh.de www.probst-gmbh.de

Einschlägige Bestimmungen, denen die Maschine entspricht:

Complies with the following provisions applying to it:

Spécifications respectives qui sont conformes à la machine:

Definizione che sono conformi alla macchina:

Cumple con las siguientes provisiones aplicables a:

2006/42/EG (Maschinenrichtlinie)

EC-machinery directive 2006/42/EG

Idée directrice ECdokumne 2006/42/EG

EG-linea di Guida CE 2006/42/EG

Directrices de la CE 2006/42/EG

Fundstellen der harmonisierten Normen:

Applied harmonized standards in particular:

Lieux de découverte des normes harmonisées:

Luogo di accertamento delle norme armonizzate

Aplicados en particular los siguientes estándares

EN ISO 12100-1 **2003**
(ISO 12100-1)

Sicherheit von Maschinen, Grundbegriffe, allgemeine Gestaltungsleitsätze, Teil 1: Grundsätzliche Terminologie, Methodik.

Safety of machinery; Basic concepts, general principles for design,
Part 1: Basic terminology, methodology.

Sécurité des machines; notions fondamentales, principes
généraux de conception, Partie 1: terminologie de base,
méthodologie.

Sicurezza della macchina, nozioni fondamentali, verifica della
struttura generale, Parte 1: terminologia di base, metodologia.

Seguridad de la maquinaria; conceptos básicos, principios
generales de diseño, parte 1: terminología básica, metodología.

EN ISO 12100-2 2003
(ISO 12100-2)

**Sicherheit von Maschinen, Grundbegriffe, allgemeine
Gestaltungsleitsätze, Teil 2: Technische Leitsätze und
Spezifikationen.**

Safety of machinery; basic concepts, general principles for design;
Part 2: principles and specifications.

Sécurité des machines; notions fondamentales, principes
généraux de conception; Partie 2: Principes et spécifications
techniques.

Sicurezza della macchina, nozioni fondamentali, verifica della
struttura generale; Parte 2: principi e specifiche tecniche.

Seguridad de la maquinaria; conceptos básicos, principios
generales de diseño, parte 2: principios y especificaciones.

DIN EN ISO 13852 2008

**Sicherheit von Maschinen - Sicherheitsabstände gegen das
Erreichen von Gefährdungsbereichen mit den oberen u.
unteren Gliedmaßen.**

Safety of machinery — Safety distances to prevent hazard zones
being reached by upper and lower limbs

Sécurité des machines — Distances de sécurité empêchant les
membres supérieurs et inférieurs d'atteindre les zones dangereuses.

Sicurezza della macchina — Distanza di sicurezza al fine di evitare
pericolo di passaggio sotto e basso carichi sospesi.

Seguridad de la maquinaria — Distancia de seguridad con el fin de
evitar que las extremidades superiores y inferior del cuerpo alcancen
las zonas de peligro.

DIN EN 349 1993
(ISO 13854) 1996

**Mindestabstände zur Vermeidung des Quetschens von
Körperteilen.**

Minimum distance to avoid squeezing any parts of the body.

Distances minimum afin d'éviter une contusion des parties du corps.

Distanza minima al fine di evitare contusioni di parti del corpo.

Distancia mínima con el fin de evitar contusiones en cualquier parte
del cuerpo.

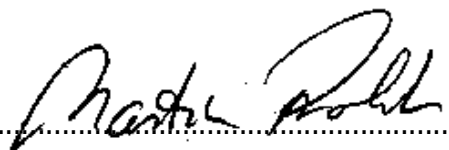
Authorized person for EC-dokumentation:

Name: J. Holderied

Address: Probst Greiftechnik • Verlegesysteme GmbH; Gottlieb-Daimler-Str. 6; D-71729 Erdmannhausen

Signature:

Erdmannhausen, 18.06.2012.....
(M. Probst, Managing director)



3 General

3.1 Authorized use

- This clamp was developed to meet the need of builders for a device to mechanically install a wide range of pavers which are delivered to the site in ready-to-install formation. The hydraulic installation clamp may be used in connection with any carrier, such as wheel-loaders, compact loaders, excavators, mobile excavators, truck-mounted crane special machines (VM203/204).
- To operate the hydraulic installation clamp 2 separate hydraulic circuits are required on the carrier.
- With the device (HVZ-uni) it is possible to handle one layer of pavers. Do not exceed the carrying capacity and the max. width of the device HVZ-uni.
- Only pavers in good quality are allowed for laying. Pavers with „feet, bellies and blind spacers“ are not allowed, because the complete bricklayer could fall out of the device.

The device is equipped with:

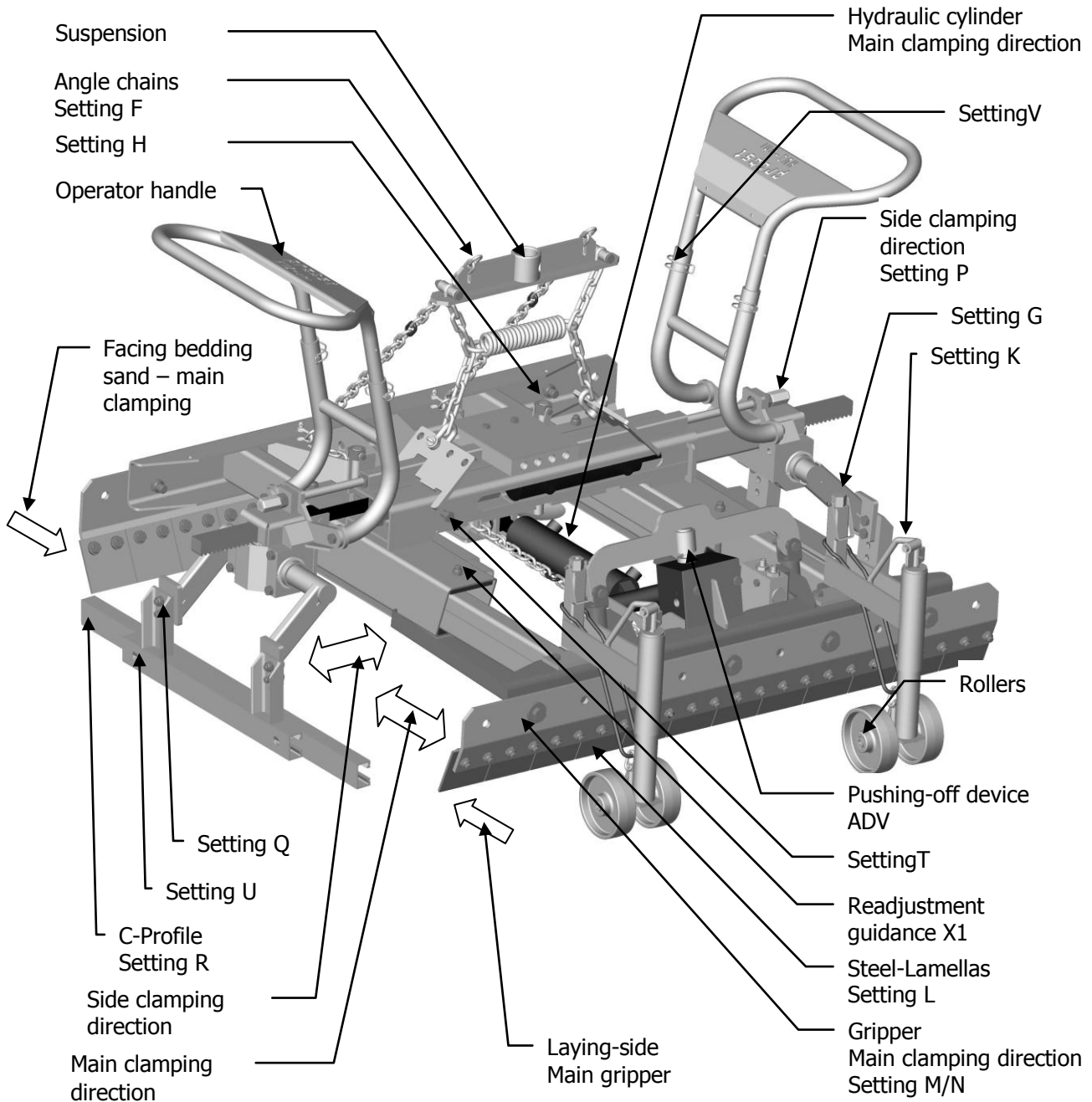
- Adjustable main tension, movable on low-maintenance steel-polyamid sliders.
- Adjustable side gripping direction for accurate positioning of the laying formation.
- Two operating handles for optimal guiding of the clamp.
- An height adjustable support for a variable gripping depth.
- An oil pressure gauge.
- With pressure control valve to avoid overload.
- With spring-mounted steel-lamellas for gripping.



Prohibition

- 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, especially regulations of the declaration of conformity, and additional local health and safety regulations have to be observed.

3.2 Survey and construction



3.3 Technical data

Type	Main gripping width [mm]	Gripping depth [mm]	Side gripping width [mm]	Carrying capacity [kg]	Deadweight [kg]
HVZ-uni	575 – 1.245	85	990 – 1.480	400	210

3.4 Safety symbols

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

3.5 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

3.1 Safety Marking

WARNING SIGN			
Symbol	Meaning	Order-No.:	Size:
	It is not allowed to be under hanging loads. Danger to life!	2904.0210 2904.0209 2904.0204	30 mm 50 mm 80 mm
WARNING SIGN			
Symbol	Meaning	Order-No.:	Size:
	Danger of pinching the hands.	2904.0221 2904.0220 2904.0107	30 mm 50 mm 80 mm

4 Safety

4.1 Personal safety requirements

- Only qualified, authorized certificated personal is allowed to operate the device and all devices which are connected (lifting equipment).



- Each operator must have read and understood the operating instructions.
- The manual guiding is only allowed for machines with handles.



4.2 Protective equipment

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

- Protective clothing
- Safety gloves
- Safety shoes

4.3 Accident prevention



- The operating range have to be covered for unauthorized persons, especially children.
- The workplace have to be sufficiently illuminated.



- Take care handling wet, dirty and not solidified components.



- Take care in case of thunderstorm!



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

4.4 Function Control

4.4.1 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 splits at carrying 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 data-plates must be replaced.

4.4.2 Hydraulic

- Check all hydraulic hoses and connection for tightness. Only experts are allowed to replace faulty parts (depressurized)
- The hydraulic hoses must be free of breaks and abrasion. Take care that there are no outstanding edges, where the hoses could hook in.
- Ensure a clean working environment before opening the hydraulic connection.

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.

4.5 Safety procedures

4.5.1 Hydraulic excavator and other lifting equipment

- Hydraulic excavator and other lifting equipment has to be in good, safe working condition.
- Only authorized, certificated and qualified personnel is allowed to operate the lifting equipment / fork lift.
- **Take care that the maximum capacity of the hydraulic excavator and other lifting equipment is not exceeded.**
- The operator staff must have all the necessary qualifications.

4.5.2 Safety at installation work

- The manual guiding of is only allowed for devices with handles.
- While using the device be sure that there are no persons in the working area. **Life danger!!**
- The use of the device is only permitted in proximity to the ground. Do not swing it over peoples heads.
- 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.
- 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.
- The load must always be in the range of vision of the operator, during the transporting and laying operation
- 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)!
- Do not use the device to jerk seized set down load.
- Do not replace the seal of the pressure relief valve to increase pressure without talking to the manufacturer!
- Do not lift any components off-centre, because that could fall down.
- Set the stonepacks carefully down.
- Safety before rapidity.
- The capacity and the nominal width the device are not allowed to cross over.



Prohibition



Danger



Prohibition



Prohibition



Prohibition

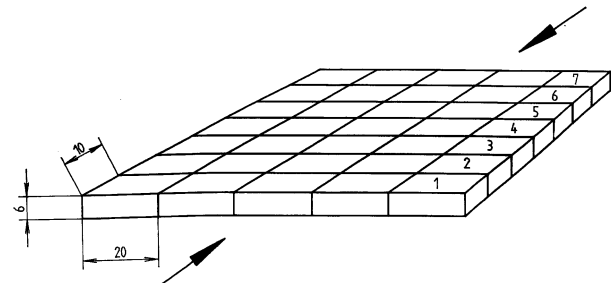


Prohibition

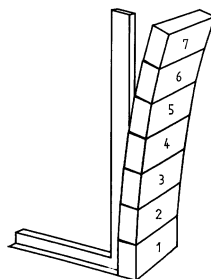
4.5.3 Check on the gripping quality of certain layers of paving stones

For the secure function of the device the gripping quality of certain layers of paving stones has to be checked as follows:

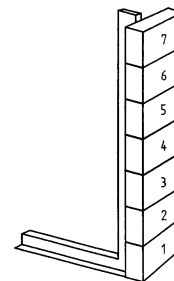
Take the number of blocks you want to grip, the blocks in main gripper direction have to face the ground.



If the tower is falling, the blocks can fall out of the cube moving grab STAZ.



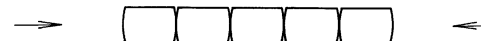
If the tower is standing, the gripping quality is OK.



Blocks have "feet" (for instance by torn paver moulds)



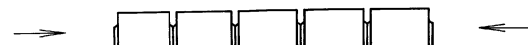
Blocks have "bellies" (for instance by wet mixture)



The sand in the gabs of the lowest layer enforces "bridges" (just with multi layer production)



Spacers do not reach the top ("blind Spacers")



Conclusion: Layer of blocks falls down and tears apart

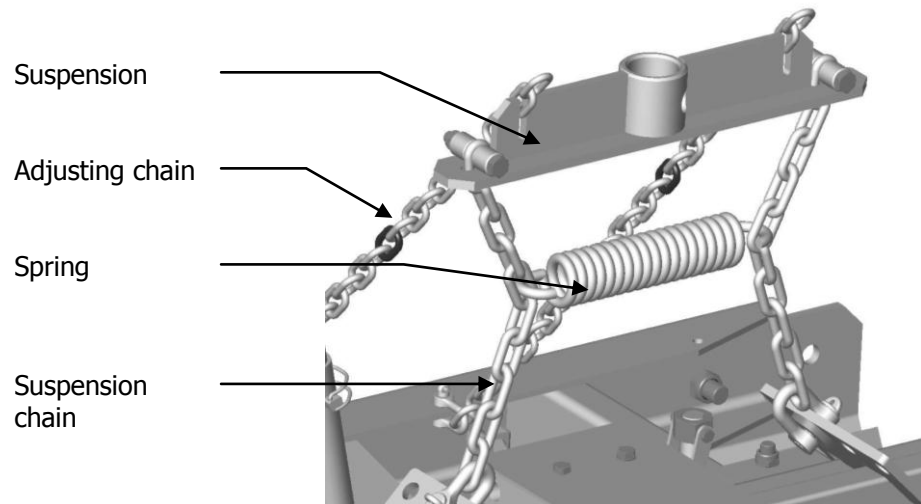


5 Installation

5.1 Mechanical connection

There is a suspension to connect the hydraulic installation clamp mechanically to the lifting device/support frame.

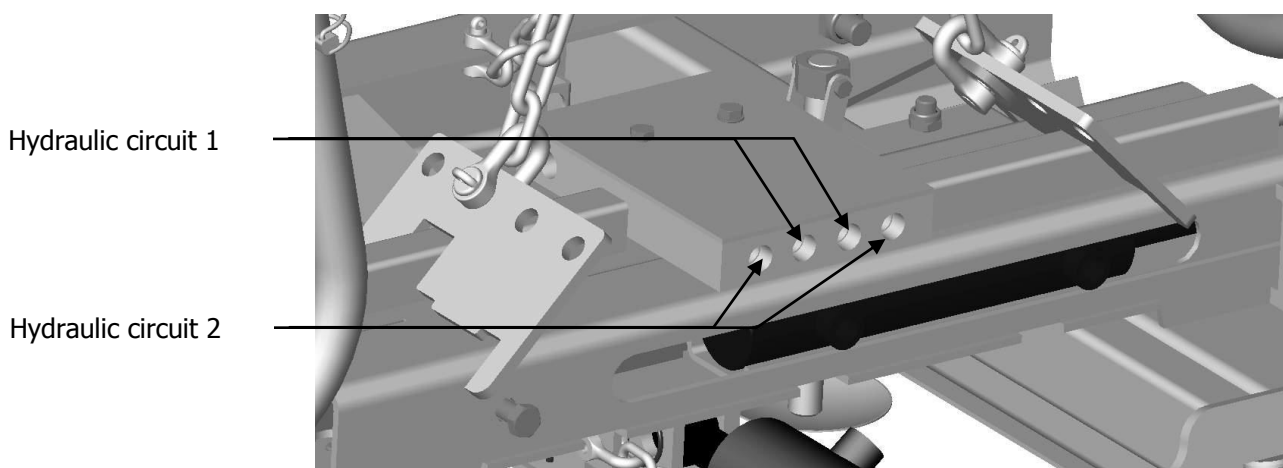
The 2 point suspension is equipped with a spring for vibration damping.



5.2 Hydraulical connection

Two separate hydraulic circuit are required to connect the HVZ-uni to the equipment used to operate the HVZ-uni (excavator, wheelloader, eg).

The hydraulic tubes are connected to the valve block.
The max. pressure for both hydraulic circuits is 200 bar.



The connections are related to the following functions:

- | | |
|---------------------|--|
| Hydraulic circuit 1 | • OPEN and CLOSE main gripping direction |
| Hydraulic circuit 2 | • OPEN and CLOSE side gripping direction |

6 Adjustments

6.1 General

- Optimal efficiency is achieved only when the operator understands and follows the necessary easy adjustments required for various types of pavers to be installed. Therefore, it is very important for the operator to read carefully the following points of explanation and instruction in order to get the maximum benefit from this very versatile device.

Attention:

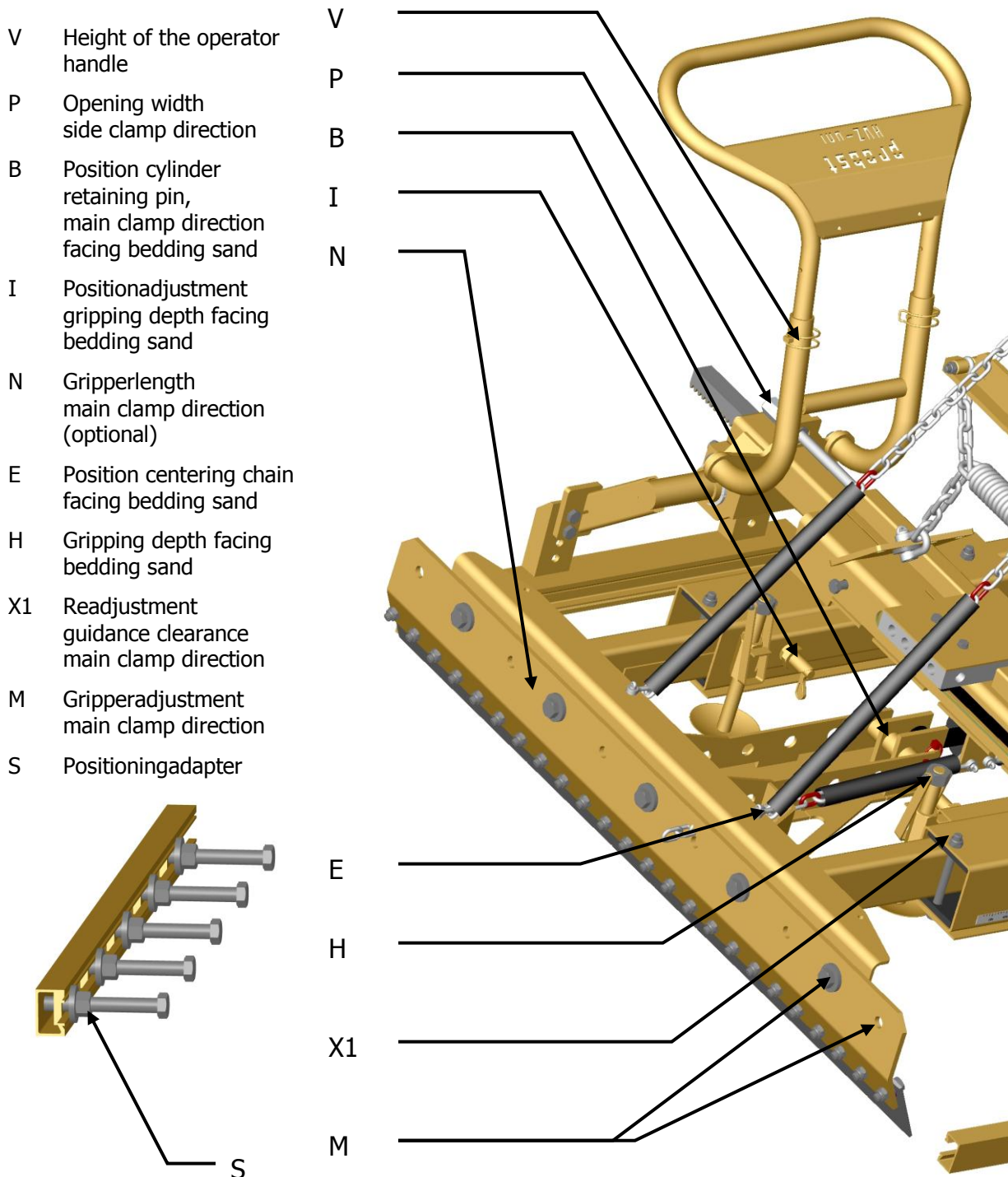
- Take care that nobody is in the operating area of the HVZ-uni during operations of the hydraulic functions. It is not allowed to do adjustments while there are hydraulic activities. Move the hydraulics slowly and carefully during the set up to avoid damages.

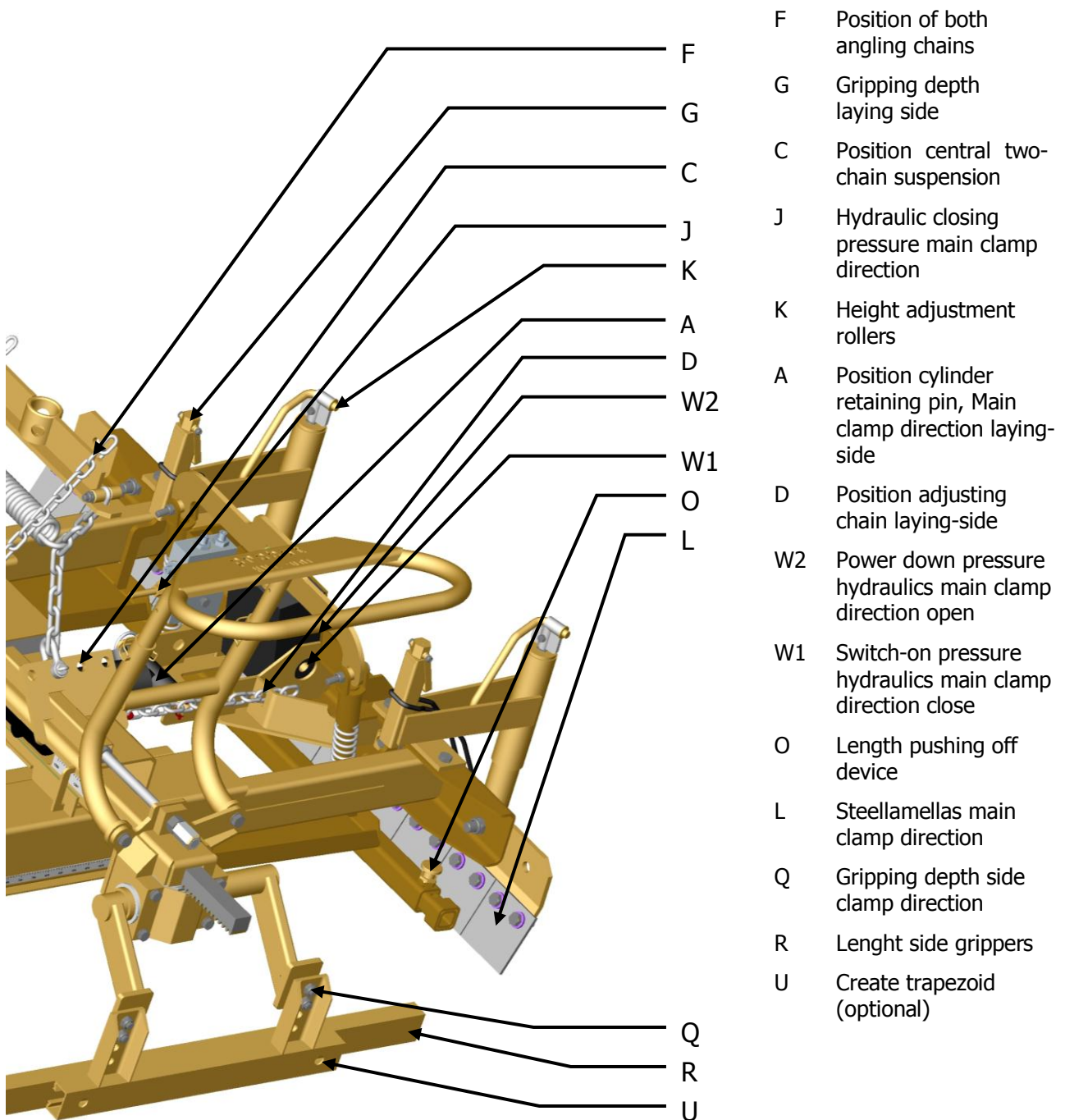


Danger of injury!

6.2 Settings of the HVZ uni

The HVZ-uni has the following basic settings:



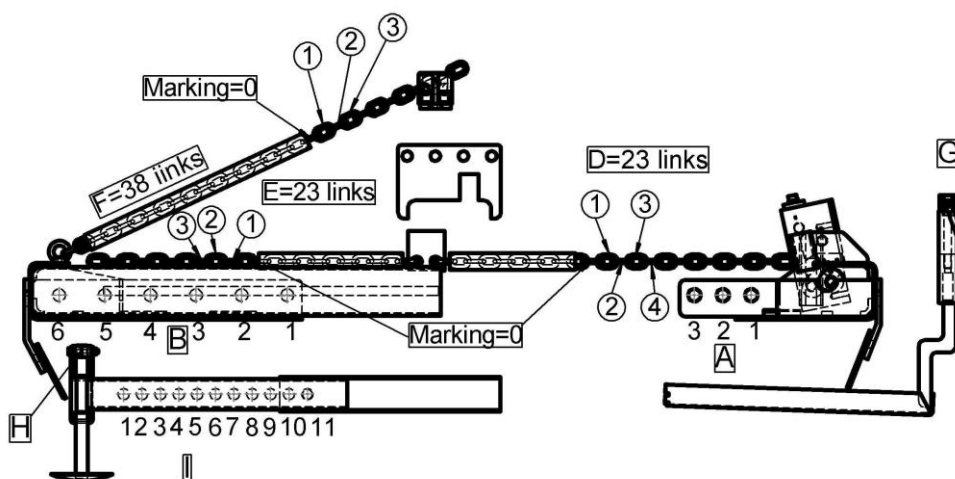


6.2.1 Settings of the main gripping direction

The gripping direction, activated from the single hydraulic cylinder, holding the paver layer with the steel lamellas is called main gripping direction.

The following diagram is attached to the HVZ-uni.

Opening width in mm	Adjustments						OW min in mm	OW max in mm
600	A1	B6	D0	E0	F4	I1	570	770
650	A1	B6	D0	E1	F4	I1	570	770
700	A1	B5	D1	E4	F6	I2	630	830
750	A2	B5	D2	E5	F7	I3	680	880
800	A3	B5	D3	E6	F7	I3	730	930
850	A3	B4	D6	E8	F9	I6	800	1000
900	A3	B4	D6	E7	F9	I5	800	1000
950	A3	B3	D6	E9	F10	I6	870	1070
1000	A3	B2	D6	E11	F12	I7	940	1140
1050	A3	B2	D8	E10	F11	I8	940	1140
1100	A3	B1	D9	E12	F12	I9	1010	1210
1150	A3	B1	D10	E11	F11	I10	1010	1210
1200	A3	B1						
1250	A3	B1						



Art-Nr: 2904.0291
HVZ-uni

Marking=0 from fixed point
D=10 links
E=10 links
F=18 links

picture 1

On the diagram the setup positions are marked as follows:

- Setting A: Position cylinder retaining pin, main gripping direction laying-side
- Setting B: Position cylinder retaining pin, main gripping direction planum-side
- Setting C: Position central two-chain suspension
- Setting D: Position of the centering chain laying side (pos. D 7 for example means that the 7th chain-link, counted from the mark on the chain in direction to the end of the chain, has to be inserted into the slot.)
- Setting E: Position of the centering chain facing bedding sand (pos. E 7 for example means that the 7th chain-link, counted from the mark on the chain in direction to the end of the chain, has to be inserted into the slot.)
- Setting F: Position of both working position chains (Pos. F 5 for example means that the 5th chain-link, measured from the mark on the chain to the end of the chain, has to be inserted into the slit of the hangers.)
- Setting G: Setting gripping depth laying-side
- Setting H: Setting gripping depth facing bedding sand
- Setting I: Position setting gripping depth facing bedding sand

Step by step:

Check the measurement of pack:

- The measurement of the pack in direction of the main gripper, usually the smaller dimension on a rectangular laying cluster has to be measured.

Setting I

- The gripping depth, planum side, has to be moved completely towards the centre of the clamp and locked with the spring loaded pin.

Setting A

- Unhook the chains D, E, F and hook them into the holder with the last chain link.
- Get the position for the cylinder retaining pin A from the setting diagram and lock the pin in the correct position.

Setting B

- Get the position for the cylinder retaining pin B from the setting diagram and lock the pin in the correct position.

Setting C

- Position the central two-chain-suspension in the relevant position (for special tasks, for example installation on a slope, other positions of this chain can be chosen)

Setting D

- Get the position of the chain D out of the diagram. It could be possible that you have to move the main gripper on the machine side in the polyamide slides, so that the centering chain can be locked in the right position.
- Open main clamping cylinder completely

Setting E

- Similar setting for the centering chain E (when the setting is done, both centering chains, D and E should be almost tight but still hanging through a little bit).
- Attention: If the centering chains are not set correctly, it can happen that the chains are overstressed when the main clamp is opened completely.

Setting F

Open the side clamping completely:

- Get the position of the chain F out of the diagram.
- Until the side clamping parts are completely in their open position, position the laying clamp on top of a layer, making sure that the laying side main gripper are touching the sides of the pavers with the steel-lamellas.
- Close the main gripping cylinder until the steel-lamellas are almost clamping the pavers, just having about 5 mm distance to them.

6.2.2 Adjusting the gripping depth

**Adjusting the gripping depth
laying-side G**

- Adjust the gripping depth on laying side by turning the handles G, so that the steel-lamellas are gripping the pavers in about the middle of the height of the paver.
- Secure the handle G by pushing it down in order to avoid any movement.

**Positionsetting gripping depth facing
bedding sand I**

- Release the spring loaded pin.
- Lift the HVZ-clamp up a little bit by hand or by using the carrying machine.
- Pull out both height supports towards the planum-side until the disk at the bottom is about 10 cm away from the edge of the laying cluster (You can do this adjustment also by using the diagram).
- Lock the spring loaded pin in the right hole.

**Adjusting the gripping depth
facing bedding sand H**

- Adjust the gripping depth by turning the handles until the steel-lamellas touch the pavers about 1/3 of the paver thickness up from the bottom.
- Secure the handle G by pushing it down in order to avoid any movement.

6.2.3 Gripper length main gripping direction

Setting of the steel-lamellas

- The steel-lamellas should not stitch out sideways over the contour of the laying cluster, because they could hit the already laid blocks when laying a new cluster into an edge.
- Depending on the length of a pack, the lamellas which are stitching over, should be replaced by the 1.5 lamella or the half lamella.
- When mounting the screws with the lamellas, pay attention to the configuration of the spring washers as shown on the drawing. Tighten the self-locking nuts tight and then loosen them again by 1/2 turn.
- In order to give the steel-lamellas a higher flexibility and therefore a good, secure and gentle grip to the pavers.

Recommendation

- If later on, when doing constant laying work, single pavers are falling out of the gripped cluster in always the same position: Get more gripping force into that row where the block always drops out by completely tightening the screws. Doing this, the gripping force in this row is getting higher than in the other rows.
- For special paver shapes it can be advantageous or even necessary (for example on hexagonal blocks) to use special lamellas. Contact the supplier of the laying clamp, giving him information about the laying cluster which has to be installed.

Settings of the gripper M

- The main gripper holders are 1200 mm long and they are mounted in the middle of the main gripping direction. If the length of a laying cluster is for example only 1 m long, also on this 1200 mm long main gripper holder the steel-lamellas can be fitted to not stitch over the pavers. However, the complete gripper holder is stitching over on a side and could interfere with kerbs or walls on the side.
- A temporary solution could be to mount the main gripper holder of centre which is possible by having a second set of holes in this main gripper holder.
- Then, on the one side, where the laying should be done against a kerb or a wall, is not stitching over any more, when fitting the steel-lamellas exactly up to the end.

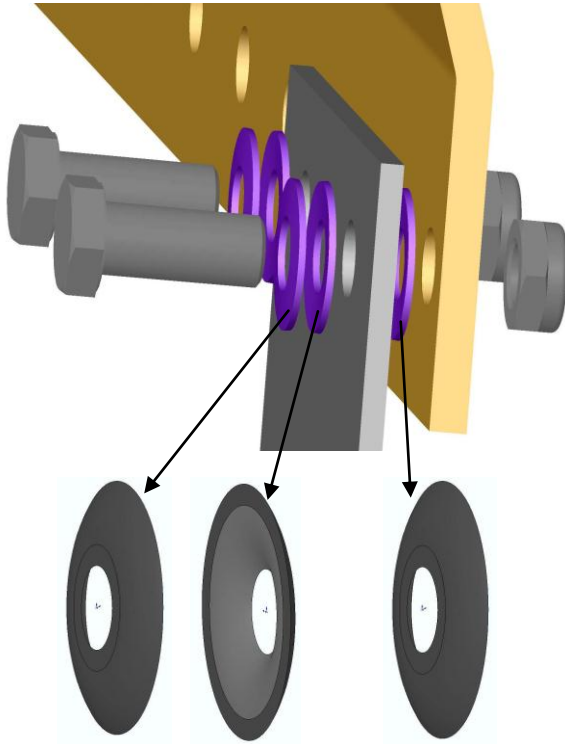
- **Special gripper holders N**

- It is recommended to have a second pair of main gripper holders, for example 1 m long, in order to be able to have an optimal setting of the laying clamp HVZ-uni.
- Also, if special laying clusters have to be laid time by time, which require use of special lamellas, it is recommended to buy a complete pair of main gripper holders and to mount the special steel lamellas constantly on this gripper holder.
- Then only the complete gripper holder has to be exchanged and not the complete setting of the steel-lamellas have to be done.

Length adjustment of the pushing off device O

- The length of the pushing of tube can be adjusted by releasing the spring loaded pin. Lock the spring loaded pin again when the tube extension is about 2 cm before the end of the layer of pavers.

Setting of the steel-lamellas L



- The steel-lamellas should not stitch out sideways over the contour of the laying cluster, because they could hit the already laid blocks when laying a new cluster into an edge.
- Depending on the length of a pack, the lamellas which are stitching over, should be replaced by the 1.5 lamella or the half lamella.
- When mounting the screws with the lamellas, pay attention to the configuration of the spring washers as shown on the drawing. Tighten the self-locking nuts tight and then loosen them again by 1/2 turn.
- In order to give the steel-lamellas a higher flexibility and therefore a good, secure and gentle grip to the pavers.

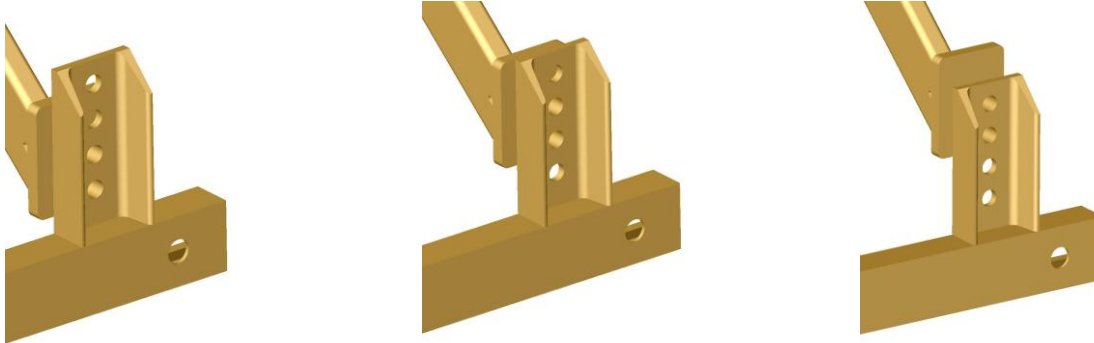
6.2.4 Adjustment side gripping direction

Gripper length side gripping direction R



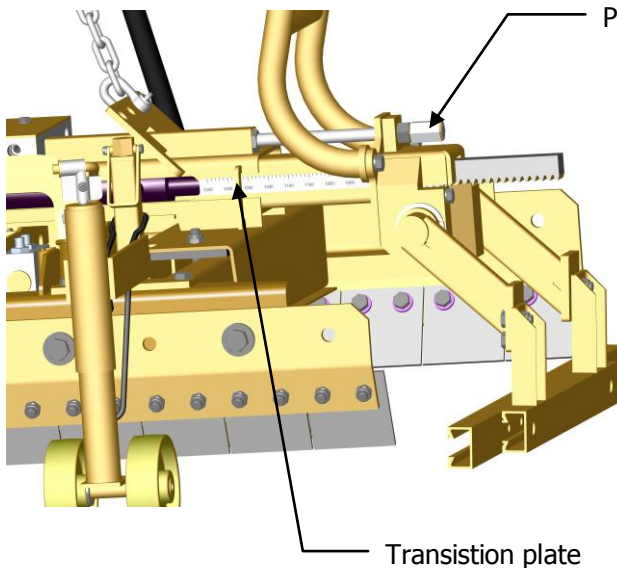
- Check the measurement of the depth of the laying cluster.
- Included in the delivery there are two C-profiles (standard length 850 mm)
- Shorten them to about 50 mm less than the depth of the laying cluster by cutting them or ordering them with the supplier.
- If the C-profiles have to be shortened, shorten them by the same amount on both sides in order to have the holes in the C-profiles still in the centre of the profiles.
- Fix the side gripper holder as shown. Do not tighten the screws completely.
- The position of the C-profiles on the side gripper holder has to be done exactly, as described in 5.3, only tighten the screws completely afterwards.

Gripper depth side gripping direction Q



- paver thickness 6 cm
depth-adjustment in position 1
- paver thickness 8 cm
depth-adjustment in position 2
- paver thickness 10 cm
depth-adjustment in position 3

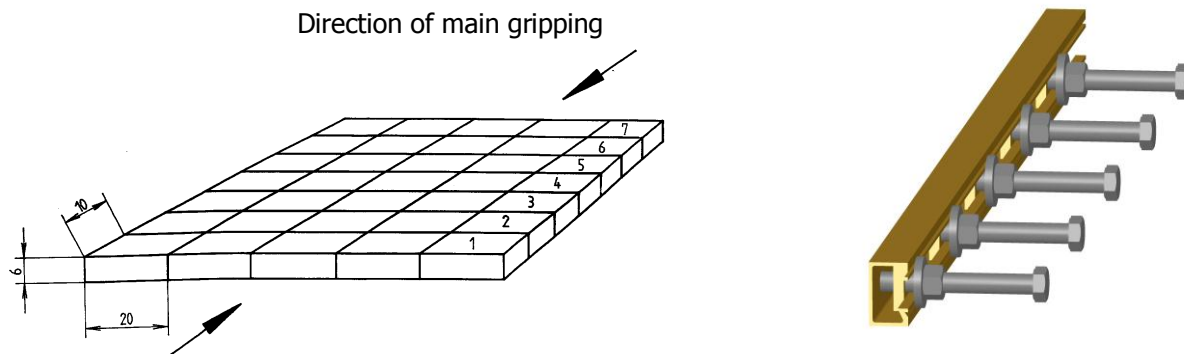
Opening width side gripping direction P (without shifting the pavers into running bond)



- Open the main gripping which has to be set already correctly and position the HVZ-uni over a layer of pavers.
- Lift the HVZ-uni slightly to have it hang freely.
- Close side clamping direction.
- For rough setting turn the screw P until the measurement of the side gripping width which has been checked before, shows underneath the scale.
- Measure the distance between the two C-profiles, do the fine tuning via screw P. So the measurement is about 3 – 4 mm larger than the actual length of the laying cluster.
- Doing this, you make sure that the single pavers are not compressed together completely but still have small joints between one another in the side clamping direction.
- This is necessary in order to get the joint width of about 2 ½ mm, as required by the specifications.
- Open side clamping completely.

Opening width side gripping direction P (with shifting of the laying cluster into running bond)

- The HVZ-uni with its powerful side clamping action, is capable to shift not dentated layers of pavers which are palletized in cross bond into the running bond.
- To do this special positioning adapters (special accessories) are fixed on the C-profiles of the side clamp. The number of positioning adapters, which are needed, is identical with the numbers of rows in main clamping direction (for example 7 adapters, as shown in this example, of the paver layer or 5 adapters as shown on the example, mounted on the C-profile)



Setting positioning adapter R

- The distance between the head of the adapter and the C-profile is usually half the length of one block, when half bond is required.
- In the example shown, length of the paver is 20 cm, divided by 2 = 10 cm.
- On the paver layer showed here as an example, on the right hand side adapters to touch row 1, 3, 5 and 7 should be mounted roughly in the right distance towards one another.
- On the C-profile on the left-hand side the adapters are mounted to touch row 2, 4 and 6.
- Hydraulically open the main clamp, which is already set correctly, completely, position it over the pack of pavers, clamp hanging freely.
- Close side clamp completely.
- Hanging height should be high enough, so the side clamp is not touching the pavers.
- Rough setting of both side clamping parts via screw P until the length of the layer + half length of one paver (in example shown $5 \times 20 + 10 = 110$ cm, is showing underneath the scale. See illustration)
- Measure the distance between the two C-profiles, do the fine tuning via screw P. So the measurement is about 3 – 4 mm larger than the actual length of the laying cluster.
- Doing this, you make sure that the single pavers are not compressed together completely but still have small joints between one another in the side clamping direction.
- This is necessary in order to get the joint width of about $2 \frac{1}{2}$ mm, as required by the specifications.
- Open side clamping completely.

6.3 First gripping trial

- Position the HVZ-uni with completely opened side and main clamp on top of the layer of pavers. The steel-lamellas on the laying side main gripper, should touch the pavers.
- Close side clamp slowly until the heads of the positioning adapters are about 1 cm away from touching the pavers sideways. The position of the C-profile has to be done, so the C-profile is positioned in about the middle of the paver layer.
- Tighten the screws to fix the C-profile on the side clamping arm.
- To do this, the side clamp has to be completely opened to get access to the screw inside the C-profile.
- Close the side clamping arms again until heads of the positioning adapters are about 1 cm away from the pavers.
- Adjust the positioning adapters so that the heads of the adapters are touching about 1 cm of the middle of the paver in direction to the laying side main gripper (the reason to do it like this: later on, on a constant laying process, it could happen that the steel lamellas on the laying side main gripper are not always touching the blocks exactly when the clamp is positioned over the layer to pick it up. For example, when there is a distance between the steel-lamellas and the pavers of about 1 cm, the heads of the positioning adapters will hit the pavers in the middle.)
- Tighten the screws of the positioning adapters in the right position. Make sure that the measurement between the head of the positioning adapter and the C-profile is exactly half of the length of the paver, when you want to do half bond.
- For pavers, which are wider than approx. 16 cm, it is recommended to use 2 positioning adapters per paver in order to not turn the pavers during the shifting process.

Without shifting into running bond:

- Close side arms completely. Due to the setting of the side clamp, the blocks are not completely pressed to one another in order to have a joint width according to the regulations.

With shifting into running bond:

- In order to avoid that the pavers can not be shifted into the running bond, because the edge of the one paver is hiding the edge of the next one, the layer has to be straightened out with the main clamping direction first.
- Close main clamp in order to align the rows of pavers.
- Open main clamp slightly to have a distance between the steel-lamellas and the pavers of about 1 cm.
- Just close the main clamp for a very short moment in order to push out the ADV hydraulic cylinder and pre-stress the springs of the ADV.
- Close side clamp completely.
- Each row of the layer is now shifted by the positioning adapter into the running bond.

- Close main clamp completely. Make sure, at least about 30 mm of cylinder lift is still available on the main clamping cylinder in order to exert real clamping pressure to the layer of paver with main clamp, even when there are slight tolerances in the pavers.

Recommendation:

- When having poor quality, packaging mostly caused by weak pallets. It can happen that pavers which are shifted into running bond directly on top of the pack, are falling down on the sides because they are not supported any more. In this case pick up layer without shifting them, position them on the ground and do the shifting on the ground.
- If necessary, for example when laying pressure-sensitive pavers, such as grit pavers, the hydraulic clamping pressure can be adjusted at the pressure relieve valve (setting J). Turning this valve anti-clockwise, the pressure can be reduced to about 80 bar. Pressure can be checked on the manometer.
- Open side clamp completely.

Recommendation:

- Having poor quality pavers in regard to the gripping security (layer tends to bend down in the middle when being gripped and sometimes the complete layer collapses) it is recommended to let the side clamping in the closed position and only open the side clamp just before laying the pavers down.
- Lift up HVZ-uni slowly.
- If the gripped layer bends down in the middle too much, stop the first gripping trial.
- Due to the poor quality in regard to the gripping security, the gripping depth has to be increased (see 5.2.2)
- Increase the gripping depth step by step until a secure gripping of the layer is possible (4.5.3). If required, the quality of the pavers in regard to the gripping quality can be checked by building up a tower as described in 4.5.2.
- When the tower tends to fall over, contact the maver manufacturer and supplier of the laying clamp.
- Simulate laying reality by abrupt lifting and lowering actions with a gripped layer of pavers. If the pavers fall out, increase the gripping depth again.
- Lift up HVZ-uni slowly.
- If the gripped layer bends down in the middle too much, stop the first gripping trial.
- Due to the poor quality in regard to the gripping security, the gripping depth has to be increased (see 5.2.2)
- Increase the gripping depth step by step until a secure gripping of the layer is possible (4.5.3). If required, the quality of the pavers in regard to the gripping quality can be checked by building up a tower as described in 4.5.2.
- When the tower tends to fall over, contact the maver manufacturer and supplier of the laying clamp.
- Simulate laying reality by abrupt lifting and lowering actions with a gripped layer of pavers. If the pavers fall out, increase the gripping depth again.

6.4 Height adjustment of the rollers (K)

- Drive with the gripped layer of pavers to the laying point and position the pavers next to the already installed ones.
- Adjust the height of the rollers K, so the bottom of the steel-lamellas are positioned about 5 mm above the surface of the already laid pavers.

Recommendation:

- When installing special ecological pavers with large blind spacer bars (they cause lower gripping security!) the height adjustment of the rollers can be done in a different way.
- In this case, the bottom of the steel-lamellas can be below the surface of the already installed pavers because they reach into the big void between the already laid pavers and the gripped pavers.
- Make sure that the steel lamellas never are squeezed in the joint between the already laid pavers and the gripped layer.

6.5 Annotations to the pushing of device

- The patented pushing off device avoids the cocking of the pavers and thus an uncontrollable drifting out of the pavers during the laying process.
- The operation of the pushing off device is automatically integrated in the hydraulic operation of the main clamp.
- When the lever of the hydraulic valve is positioned to "main clamp closing", automatically first the hydraulic cylinder of the pushing off device ADV is pushed out, the HVZ-uni is now ready to be positioned on top of a paver layer.
- When pushing the lever of the hydraulic valve into position "main clamp open", first the hydraulic cylinder of the ADV is going down, pressure from the top is exerted to the first row of pavers along the laying edge.
- Only when the cylinder of the ADV is completely in a down-position, the main clamp starts to open and releases the pavers which are pushed down to the screed simultaneously.

7 Operating

7.1 General

Attention!

Before using the device check the functions.

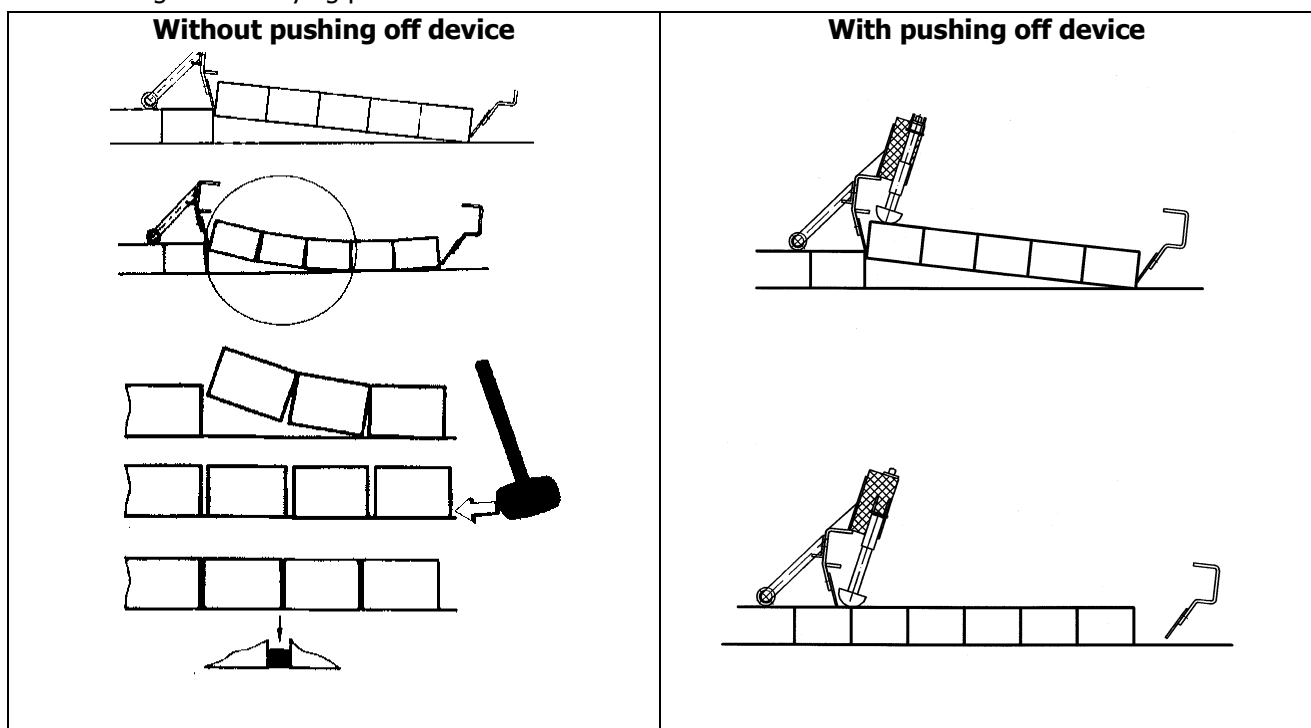
Adjust the HVZ-uni as shown in chapter "Adjustments".

The process of operating the HVZ-uni is the same whether is it attached to an excavator, wheel loader or other similar equipment or connected to the PPROBST Paver MAX 203 or 204.

- It is not allowed to close the main gripping direction without a layer of paving stones when the side gripping direction is closed, because the main gripper is pressed against the C-profile and will be damaged.
- If you operate the HVZ-uni very carefully it is possible to transport empty pallets. Take care that the hydraulic pressure is not at the maximum clamping the pallet.
If you use the maximum hydraulic pressure the pallets will be damaged or the steel-lamellas or the main gripper is damaged.
- Operating the HVZ-uni with an excavator, wheel loader or other similar equipment:
Make yourself familiar with the operating elements for the both hydraulic circuits (main / side gripping direction). Especially remind the function for opening the main gripping direction, that there is no accidental opening while the installation clamp is lifted up and the layer falls down.
DANGER OF ACCIDENTS!
Move the operating lever slowly and carefully, almost at idling speed, because the great hydraulic flows of big excavators can cause malfunctions or even damages of the hydraulic installation clamp. Be sure the hydraulic pressures correspond to the values in chapter 4.6
- **Operating the HVZ-uni with Paver Max 203**
Make yourself familiar with the functions of the cross-control lever (on the right hand-side at the drivers seat). Impress yourself, that the forward movement of the cross-control lever opens the main stress.
In order not to activate these function of the cross-control lever, while the HVZ-uni is lifted up with the gripped stone layer and so the layer falls down. **DANGER OF ACCIDENTS!**
- **Operating the HVZ-uni with Paver Max 204 ROBOGRIP:**
Make yourself familiar with the functions of the joystick (on the right hand-side at the drivers seat). Impress yourself, that the forward movement of the joystick opens the main stress.
In order not to activate these function of the joystick, while the HVZ-uni is lifted up with the gripped stone layer and so the layer falls down. **DANGER OF ACCIDENTS!**
- For the selection of the function "Automatic" in the SPS-control of the installation clamp VM 204 ROBOTECH, the single operating steps (of the duty cycles of the HVZ-uni) will be activated automatic one after the other (see operating manual VM 204 ROBOGRIP).

7.2 Indications for concrete paver installation, complying with the standards

- It is assumed that the concrete paving stone installation units (layers of pavers), which are to be laid, comply with the requirements allowing a uniform laying pattern, complying with the standards.
- It is assumed that the concrete paving stones, which are to be installed, will be furnished with the so-called spacer bars having a thickness of at least 2,5 mm.
- Optimum condition can be taken for granted due to the use of pushing-off device ADV. Individual pavers cannot cock during the installation process, they are laid exactly. When pushing-off layer after layer into the bedding sand an additional but slight joint space results between the individual pavers in gripping direction from propping at the upper edge of the pavers.
After the installation process these additional but slight joint space mustn't be hammered together with a rubber hammer in bedding sand direction not at all. After the installation process the individual pavers of the freshly laid paver layer unit have to be slightly dispersed, most suitable to be done with the shoes from the person who is doing the alignment.
Only that way a joint complying to the standards with a size of 3 - 5 mm can be achieved.
In case of some initial manual paver laying work might be necessary before actually starting with the mechanical laying area, the correct spacing of the paving stone installation unit has to be stuck to during manual laying process.



- Correct gripping range adjustment of the side gripping (adjustment P) guarantees that the individual pavers in gripping direction will not be firmly pressed together, but rather have a slight additional joint space in side gripping direction.

7.3 Operating procedure of laying cycle

General is it the drivers obligation (of the support vehicle) to have at every time the complete working area of the support frame and the attachment in his field of view.

He must ensure, that in the danger zone are either persons nor objects

- Lifting up the HVZ-uni by means of the support frame till the clamp is hanging free.
- Open the main clamp and the side clamp of the HVZ uni.
Take care, that there is nobody in the danger zone, especially swing range of the side clamp arms.
DANGER OF ACCIDENTS!
- The adjustment E (position of both positioning chain) ensures, that the side is hanging deeper than the main clamp arms.
- Close the main clamp (approx. 1 sec.).
By it the hydraulic cylinder of the pushing-off device (ADV) will extended and the jacking bar lifted.
(These function will be do automatically, if using the SPS automatic program on the installation machine VM 204 ROBOTEC, see operating manual VM 204 ROBOTEC.)

Operation without hydraulic rotator:

- If there is no rotator between the HVZ an the support vehicle it is possible to position the installation clamp without an additional operator by using this slope to align the steel-lamellas of the laying side clamps to the paving stone layer.
The aligned clamp will be dropped centrically onto the paving stone layer. If the clamp is set down the lamellas of laying side clamps must touch the side of the paving stones or have maximum 2 cm distance.

Operating when no re-formatting of the stone layer is necessary:

- Close the side clamp and the HVZ-uni adjust itself automatically centric on the laying unit (which shall be picked up).
If the clamp is placed on the layer off centre it is possible that height support of the HVZ uni will lose contact when the clamp is centred.

In this case:

- Open side clamp a little bit (HVZ uni will set down on the paving layer again with the height support)
- Close the main clamping
- Open the side clamping

Operation with hydraulic rotator:

- If there is an rotator between the HVZ and the support vehicle use the function of the rotator to adjust the clamp to the layer.
For the precise adjustment use the slope of the clamp to align the steel lamellas of the laying side clamps to the paving stone layer.
The aligned clamp will be dropped centrically onto the paving stone layer. If the clamp is set down the lamellas of laying side clamps must touch the side of the paving stone or have maximum 2 cm distance.

Operating when re-formatting of the stone layer is necessary:

- Close the main clamp to align the paving rows for a unimpeded sliding of the paving rows without touching the edges.
- Create a distance of 1 cm between the steel-lamellas of main clamp and the paving layer opening the main clamp a little bit.
- Close the side clamps and the HVZ-uni adjust itself automatically centric on the laying unit (which shall be picked up) and the positioning adapter will move the paving stone in the necessary direction.
If the clamp is placed on the layer off centre it is possible that height support of the HVZ uni will lose contact when the clamp is centred.

In this case:

- Open side clamp a little bit (HVZ uni will set down on the paving layer again with the height support)
- Close the main clamp
- Open the side clamp

HINT:	If the packages are bad or instable, usually caused by bad pallets, paving stones at the side rows could fall over or fall down while shifting the paving layer direct on the package. In this case lift the paving layer without shifting, set it down on a suitable ground and shift it there.
HINT:	If the gripping quality is not good enough (layer is tending to break or paving stones in side rows tend to fall over) keep the side clamp closed until you reach the laying position and open it a short time before you lay it down.
HINT:	Don not try to „tip“ the paving layers in side clamping direction with the already laid paving stones. This is not possible, because the paving layers in the clamp are compressed and the already laid paving stones are unconsolidated. It is better to either remove the “key-stones” before laying and later bring it back or lay additional paving stones after the complete laying process.

- Before lifting the paving layer with the support vehicle, move the support point 5-10 cm in direction of the laying side main gripper either using the boom (excavator) or driving the installation machine. Afterwards the paving layer can be lifted vertically.
- Transport the paving layer to the laying position swinging the boom (excavator) or driving the installation machine.
- Place the paving layer 5 cm in direction to the open laying ground until the rollers touch the already laid paving stones.
- Move the paving layer diagonally to the corner of the laying edge and take care of the correct connection to the already laid paving stones.
- Set the paving layer down until the support chains sag lightly.
- Open the main grippers for 2 seconds. At first the hydraulic cylinder of the pushing off device will retract and the first row of paving stones will obtain the accumulated elastic force. The opening sequence of the main clamp happens after the complete extension of the ADV cylinder and the paving layer is laid in the grade. The paving stones are pressed down from the ADV bar.
- Move the support point 5-10 cm in direction of the facing bedding sand side main clamp.
- When you lift the HVZ uni it will swing automatically in direction of the facing bedding sand (facing bedding sand side main clamp), away from the already laid paving stones. So it is possible to lift the HVZ uni without removing paving stones of the front row.
- Open the main clamp completely and close it immediately for 1 seconds while moving the installation machine to the next paving layer. The closing sequence of the main clamp causes the hydraulic cylinder of the ADV to extend and the spring pack is loaded.
- The installation clamp HVZ is ready for the next laying cycle.

7.4 General hints for laying according to standards

After the laying process is done it is necessary to move the new laid paving stones a little bit in direction of the facing bedding sand (the best way for the operating personal is to use his feet). This is the only way to achieve a standard joint (3 – 5 mm). If it is necessary to start with manual laying before you can use the installation clamp, take care that the grid system of the paving layers is correct. Do not manipulate the joints with the rubber hammer, because the result will be a non-standard paving area.

7.5 General laying-hints:

- To optimize the high degree of mechanization in the mechanical paver laying it is necessary to optimize the boundary conditions. Because the laying process consists in majority of transportation and the process of paving is the smaller part it is evident to optimize the transportation on the building ground.
- According to the paving configuration it could be necessary, to lay additional paving stones for the connection with the already laid paving stones or to change the location of paving stones.
- Place the paving packages near to the laying edge to avoid transportation and to have short driving distances and a good laying performance. Provide enough space for the manoeuvrability of the laying machine.
- It is the best to have a "just in time" delivery of the paving packages, so you can place the packages as near to the laying edge as possible.
- The distance of the packages on all sides must be big enough to set the installation clamp on it.
- Calculate the distance of the paving stone packages from the laying area and the square meter of the packages, especially on narrow laying areas, e.g. roads.
- Place the packages on a plane surface and take care that they are not twisted.
- Align the packages according to the optimum driving direction of the laying machine.
- Some laying packages are asymmetric, take notice of a constant direction.
- Some laying sequences, e.g. herring-bone, have cascade positions of the paving layers. Contact your paving stone supplier for laying information and do not waste time with experiments.
- If there is a separation between an old manual laying to the laying with the installation clamp it is the best to make a new start, because the joints are different.
- Check the orthogonality, the joint direction, the structural module. Adjustments at a later date could be impossible or are very time expensive.
- Avoid cutting and manual work by choosing a working width with a multiple width of the layer.
- Mix the paving layers from different packages in the laying sequence.
- Check the joint of course before compacting and filling with sand. Never compact nearer than approx. 30 meters to the open laying area.
- Packaging material, e.g. pallets must be stacked immediately and the stack should be moved outside the working area.
- Provide a transportable container for waste such as plastic sheet and straps.
- Cut the tightening straps on both sides, almost at the bottom of the package, to avoid accidental clipping of the straps using the laying installation clamp. If this happens the running bond is moved and must be corrected manually.
- Provide a transportable tipping container for damaged paving stones and stone waste, to avoid an expensive pick up later on and hindrance in the movement of the laying machine.
- A clean and tidy building ground saves time and money.
- If there are problems with the laying technique, there should be a direct phone contact between the personal (driver of the laying machine) and the manufacturer of the laying machine. So the consultant of the manufacturer is provided with all the information he needs to diagnose and help.

8 Maintenance and care

8.1 Maintenance

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



Take care that for all maintenance services the device is completely shut down!!

MECHANICAL

Service interval

**First inspection after
25 operating hours**

After 50 operating hours

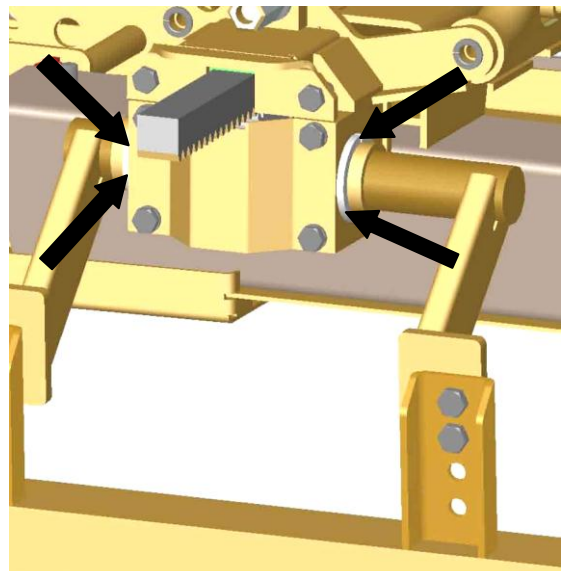
**Minimum 1x per year
(at rough conditions
shorten the interval)**

Maintenance work

- Control and tighten all screws and connection.
(The implementation is only allowed by an expert).
- Tighten all screws and connection (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.
- Check of all the suspension parts, bolts and straps. Check for corrosion and safety by an expert.

LUBRICATION SIDE CLAMPING

Grease the side clamping in the area of the plastic bushing if required with spray-lubrication (with PTFE)
→ see arrows.



HYDRAULIC

Service interval

First inspection after 25 operating hours

After 50 operating hours

Maintenance work

- Control and tighten all hydraulic thread joints and connection.
(The implementation is only allowed by an expert).
- 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.
- Check the hydraulic hoses for breaks and abrasion.

8.2 Trouble shooting

8.2.1 Disturbing noise when opening and closing the main clamp

When opening the main clamp:

Adjustment with 2 (above)

1. Open lock nut (A) with fixed spanner.
2. Open Allen screw (B) with Allen key one ¼ turn counter-clockwise.
3. Close lock nut (A) with fixed spanner again.

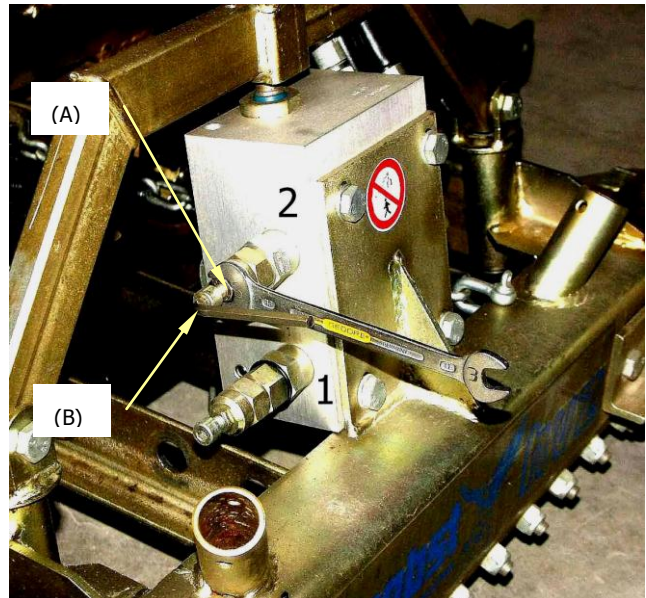
If disturbing noise is still audible, repeat point 1. to 3.

When closing the main clamp:

Adjustment with 1 (down)

1. Open lock nut (A) with fixed spanner.
2. Open Allen screw (B) with Allen key one ¼ turn counter-clockwise.
3. Close lock nut (A) with fixed spanner again.

If disturbing noise is still audible, repeat point 1. to 3.



8.3 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.



For all repairs the device must be completely shut down!

[illegible]

8.5 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 these information.

The max. 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

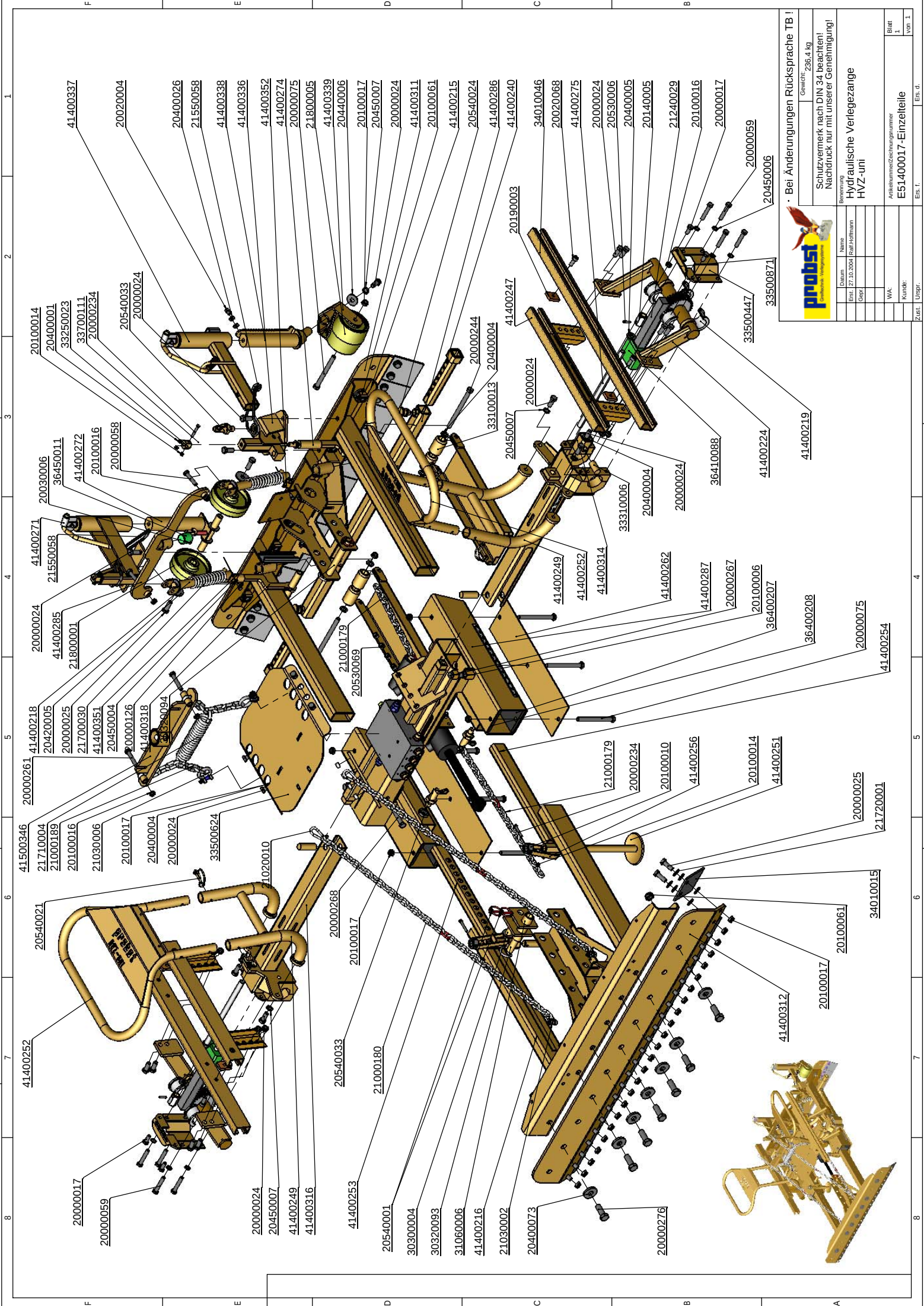


Example:

8.6 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)!





Bei Änderungen Rücksprache TB !

Gewicht: 236,4 kg

Schutzvermerk nach DIN 34 beachten!
Nachdruck nur mit unserer Genehmigung!

Hydraulische Verlegezange
HVZ-uni

Bezeichnung	Name	Datum	Erst	Gepr.	WA:	Kunde:	Zust.	Urspr.	Blatt	von
	Ralf Hoffmann	27.10.2004							1	1
									E51400017-Einzelteile	von 1
									Arbeitsnummer/Zachungsnummer	

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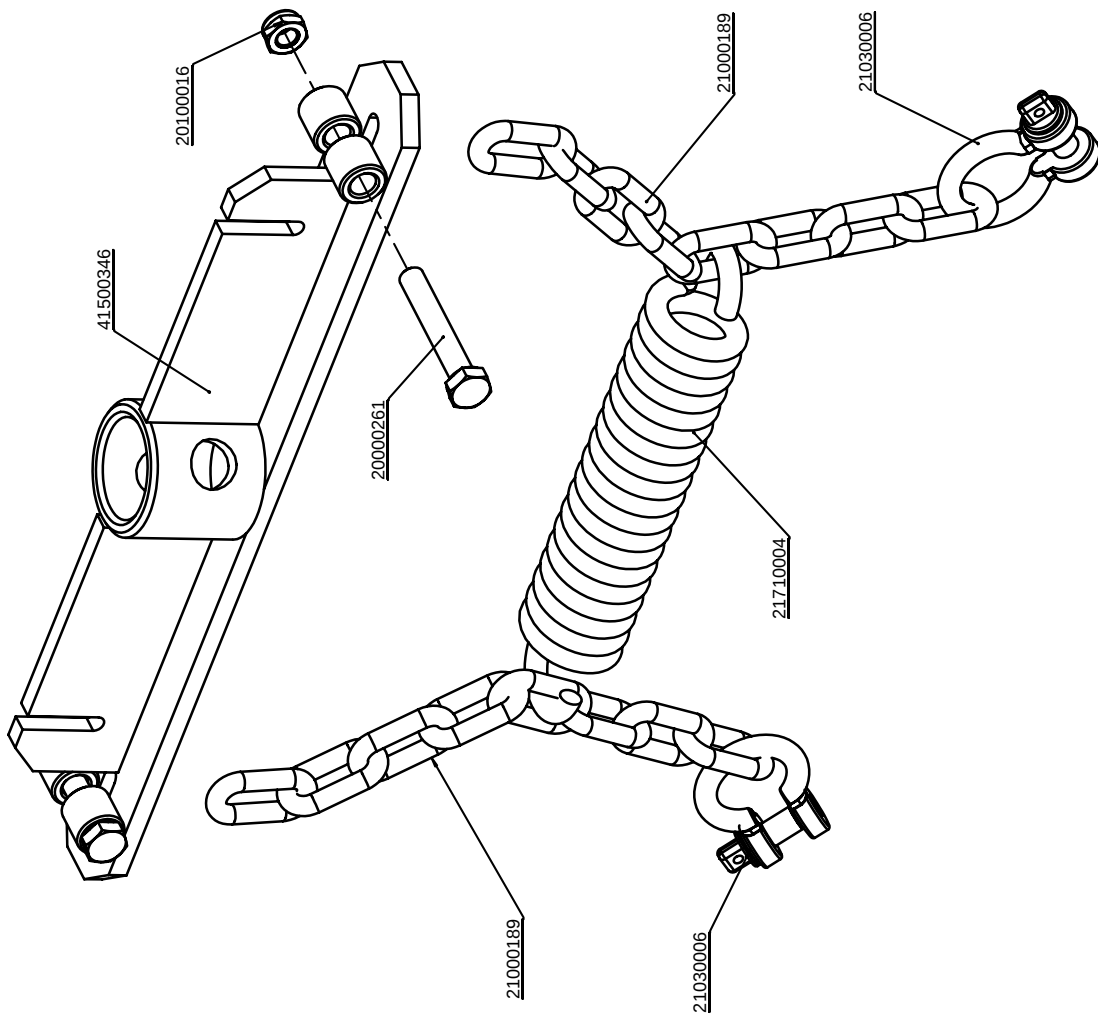
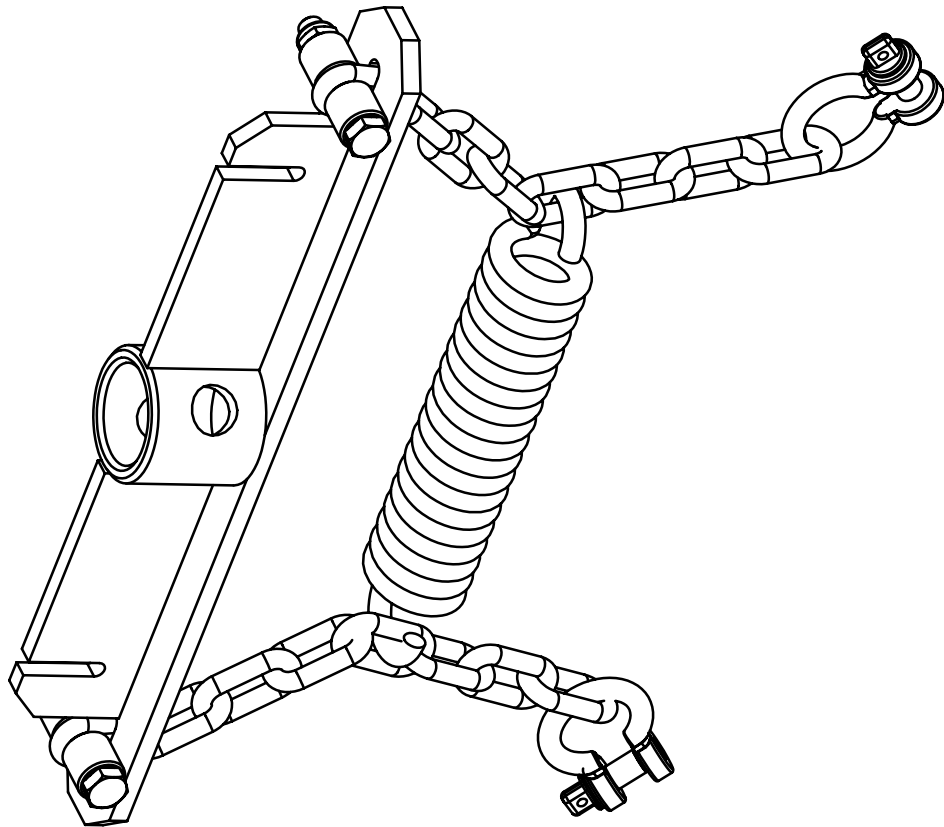
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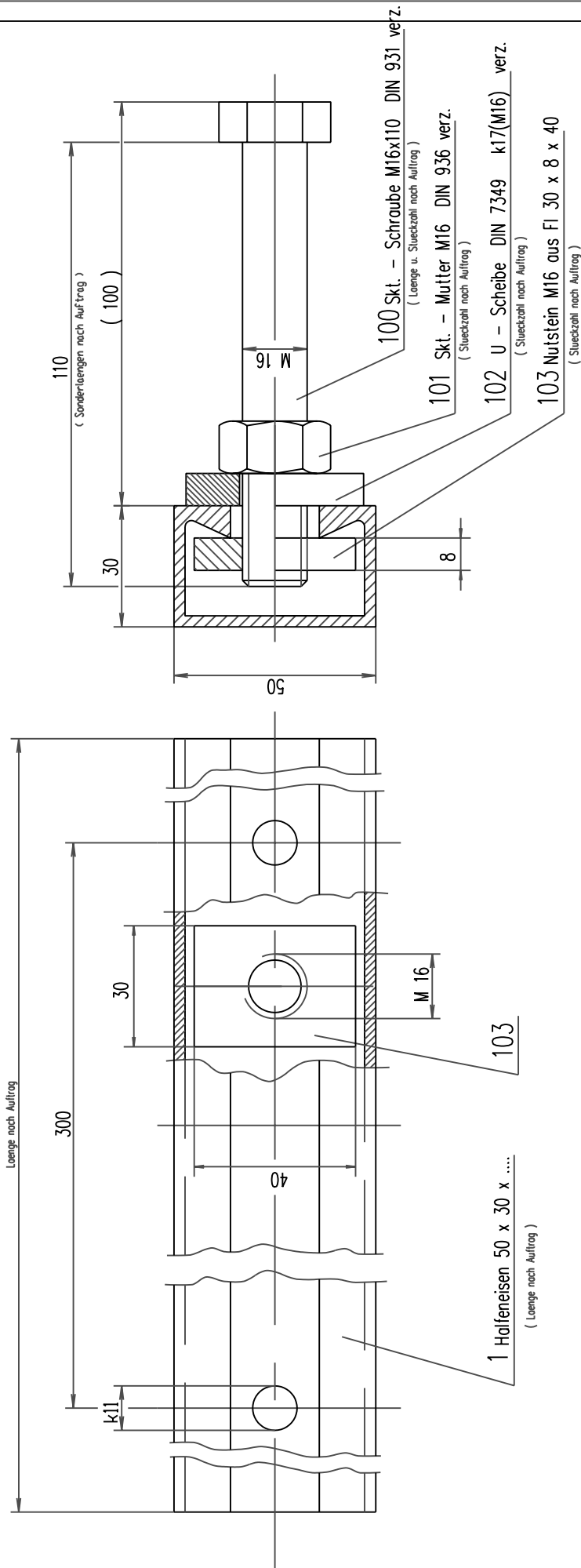
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		• Bei Änderungen Rücksprache TB !	
Schutzvermerk nach DIN 34 beachten! Nachdruck nur mit unserer Genehmigung!		Gewicht: 4,6 kg	
Bewerter: Aufhängung unter DK Bini zu HVZ-uni an VM (mit niedriger Einbauhöhe)		Blatt: 1	
Datum: Erst: 27.6.2009 Gepr.:		Name: Prof. Gutz	
WA:		Artikelnummer/Zachnungsnummer: E41500354	
Kunter:		Ers. d.:	
Zerst.		Urspr.	



WA:		Bei Änderungen Rücksprache TBI	
(P) probast Greiftechnik u. Verriegelungssysteme		Mussstab 1 : 1 (Gewicht)	
		Diese Zeichnung bleibt unser Eigentum. Sie darf weder teilweise noch vollständig vervielfältigt, verbreitet und zu Zwecken des Wettbewerbs unbefugt verwendet, oder an andere mitgeteilt werden	
Überflächen DIN ISO 1302 Masse ohne Toleranzangaben nach DIN 7168n		Positionierungsadapter zu H V Z – Nebenspannung	
Datum Name Bearb. 7.1.91 Wh. Bearb. 17.03.97 Go Bearb. 14.01.2000 Go Beib. 01.00 Go Teile Nummer:		Zeichn.-Nr. : EDV-Nr. : N230-326	
c Datenblatt N230-4D005 b Scheibe DIN 7349 k17 17.03.97 Go a Nutstein M16 17.03.97 Zust. Änderung		Ersatz durch:	
Datum Name		Bolt Boelter	

Adapter- und Schraubenlänge
nach Datenblatt N230-4D005
Positionierungsadapter
mit Nutstein zu HVZ

Anbauvarianten HVZ an Stapler und Kompaktlader

Ausleger AK-L
fuer Kompakt-Lader
Art.-Nr: 4140.0006

Einstecktaschen ET-L
fuer Stapler
Art.-Nr: 4140.0001

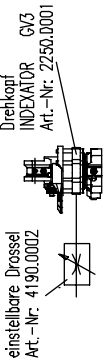
Aufhaengung zu HVZ
N230-227 / 90°
Art.-Nr: 4011.0080

Adapter
fuer Drehkopf
BINI
Art.-Nr: 4011.0122

Drehkopf
BINI
Typ T1 300°
Art.-Nr: 2250.0013

Aufhaengung N230-288
zu HVZ / VM 204
mit Drehkopf
Art.-Nr: 4160.0007

Zubehoer fuer INDEXATOR :



Anbauvarianten HVZ an Bagger

Universal-Baggeraufhaengung
Typ UBA 600
600kg Tragfaehigkeit
Art.-Nr: 4140.0002

> fuer Mini-Bagger <
Universal-Baggeraufhaengung
fuer VPM 2500
Typ UBA 3000
zu VZ-HS
Art.-Nr: 4140.0088

incl. Adapter
Art.-Nr: 4140.0136
fuer HVZ-Aufhaengung

incl. Adapter
Art.-Nr: 4011.0114
fuer HVZ-Aufhaengung

Drehkopf
INDEXATOR GV3
Art.-Nr: 2250.0001

Freilaufdrossel
mit Drehzahlblenden
Art.-Nr: 4190.0011

Schnellwechsel-
Vorrichtung SWV
unter Drehkopf
Art.-Nr: 4620.0001

Aufhaengung mit Normplatte
unter Drehkopf Indexator
Art.-Nr: 4140.0120

Aufhaengung zu HVZ
N230-227 / 90°
Art.-Nr: 4011.0080

Adapter
fuer Drehkopf
BINI
Art.-Nr: 4011.0122

Drehkopf
BINI
Typ T1 300°
Art.-Nr: 2250.0013

Aufhaengung N230-288
zu HVZ / VM 204
mit Drehkopf
Art.-Nr: 4160.0007

Anbauvarianten HVZ an VM

Auslegerarm
VM 203 / VM204

Kreuzgelenk
K39-38
Art.-Nr: 4011.0101

Drehkopf
BINI
Typ T1 300°
Art.-Nr: 2250.0013

Aufhaengung N230-288
zu HVZ / VM 204
mit Drehkopf
Art.-Nr: 4160.0007

Aufhaengung zu HVZ
N230-227 / 180°
Art.-Nr: 4011.0067

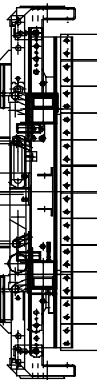
Freilaufdrossel
mit Drehzahlblenden
Art.-Nr: 4190.0011

Schnellwechsel-
Vorrichtung SWV
unter Drehkopf
Art.-Nr: 4620.0001

Aufhaengung mit Normplatte
unter Drehkopf Indexator
Art.-Nr: 4140.0120

Frankreich-Ausfuehrung

WA:



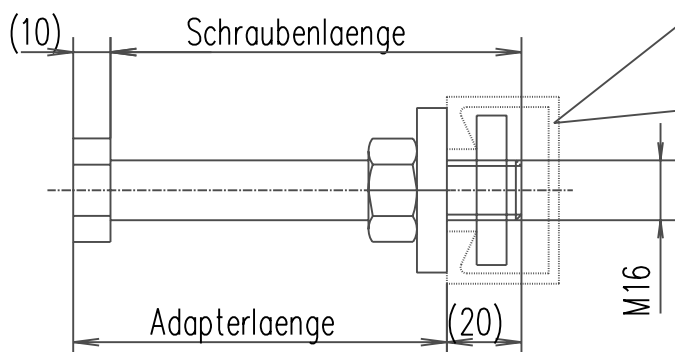
Bei Aenderungen Ruecksprache TB!

Massstab 1 : / (Gewicht)
Diese Zeichnung bleibt unser Eigentum. Sie darf weder teilweise noch vollständig
verfuehrt, verleiht und zu Zwecken des Maschinenbaus benutzt
werden, ohne das unsere schriftliche Genehmigung.

Anbau-Varianten
zu HVZ

Zeichn.-Nr. : EDV-Nr. :
N230-4D004 N230D004
Blatt
Ersatz fuer:

Oberflaechenbehandlung		Name	
Datum	Name	Datum	Name
Bearb. 10.01.2000	Ga	Bearb. 15.05.2000	Ga
Bearb. 15.05.2000	Ga	Bearb. 16.06.2000	Ga
Bearb.		Bearb.	
Artikel-Nummer: 51400001		15.05.08prüfung	
Datenblatt ueberarb.		Datum	
Zust.	Aenderung	Name	



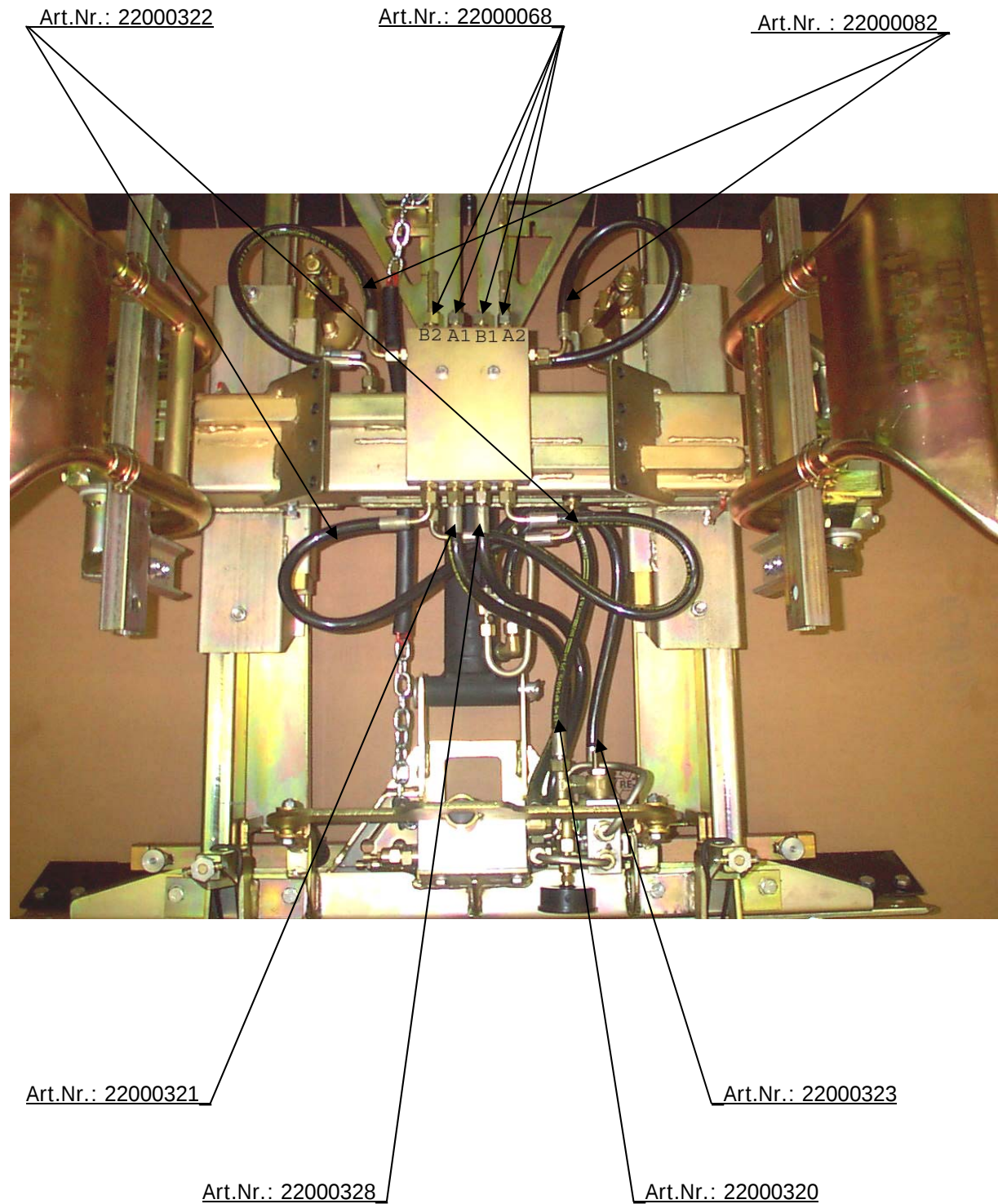
Halfeneisen 950mm
zu Seitenspannung HVZ
Art.-Nr.: 3401.0018

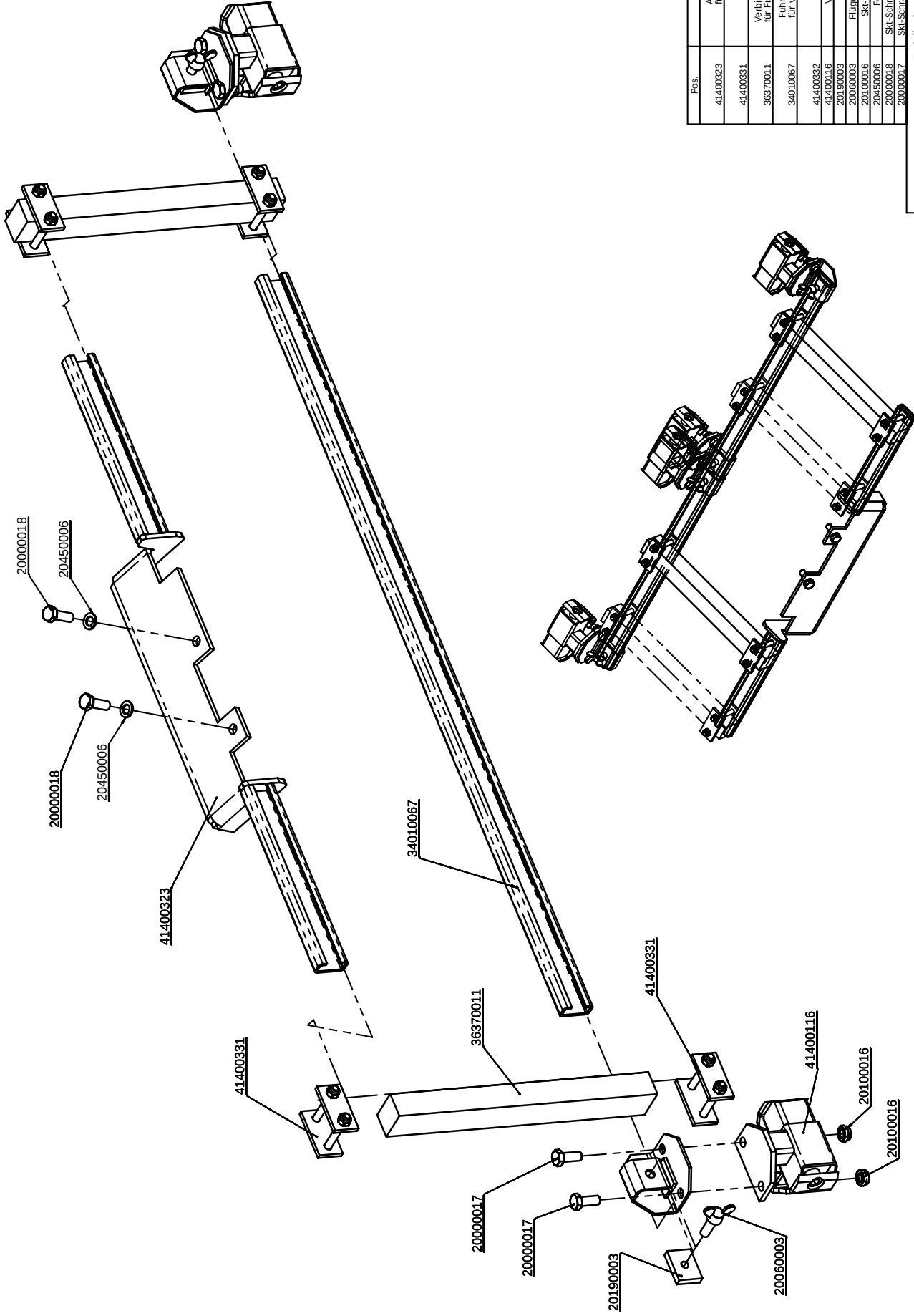
Halfeneisen 860mm
zu Seitenspannung HVZ
Art.-Nr.: 3401.0046

Adapterlaenge	Artikel-Nummer	Schraubenlaenge
40 mm	4140.0125	50 mm
50 mm	4140.0037	60 mm
60 mm	4140.0126	70 mm
65 mm	4140.0141	75 mm
70 mm	4140.0127	80 mm
80 mm	4140.0123	90 mm
90 mm	4140.0122	100 mm
100 mm	4140.0036	110 mm
110 mm	4140.0121	120 mm
120 mm	4140.0128	130 mm
130 mm	4140.0129	140 mm
140 mm	4140.0130	150 mm
150 mm	4140.0131	160 mm
160 mm	4140.0132	170 mm

WA:						Bei Aenderungen Ruecksprache TB!				
				Oberflaechenbehandlung		Massstab 1 :		(Gewicht)		
						Diese Zeichnung bleibt unser Eigentum. Sie darf weder teilweise noch vollstaendig vervielfoeltigt, verbreitet und zu Zwecken des Wettbewerbs unbefugt verwendet, oder an andere mitgeteilt werden				
				Datum	Name	Datenblatt Positionierungsadapter mit Nutstein zu HVZ				
				Bearb.	14.01.2000					Ga
				Bearb.						
				Bearb.						
				Bearb.						
				Artikel-Nummer:		Zeichn.-Nr. :		EDV-Nr. :		
						N230-4D005		N230D005		
				Ursprung N230-326		Ersatz fuer:		Ersatz durch:		
Zust.	Aenderung	Datum	Name							

Spare Parts Hydraulic Hoses
Hydraulic Installation Clamp HVZ-uni





isometrische Ansicht = Einbaulage an Seitenspannung , Fischgrätadapter nicht betätigt

Pos.	Beschreibung
41400323	Aufnahme an Seitenspannung für Fischgrätadapter
41400331	Halter für Gummileiste für Fischgrätadapter
36370011	Verbindungsleiste a. Profildrumm 40x30 für Fischgrät-Adapter
34010067	Führungsschiene (Halter HM 38x17) für verstellb. Fuß zu Fischgrätadapter
41400332	Halter zu verstellb. Fuß für Fischgrätadapter
41400116	Verstellbarer Fuß, OW 85-110.
20190003	Nutstein M10 - FI 40x30x8
20060003	Flügelsschraube DIN 316 verz. M10x30
20100016	SKt-Mutter ISO 10511-M10(DIN 985)
20450006	Federling DIN 127 - A10 - verz.
20000018	SKt-Schraube ISO 4017 - M10 x 30 (DIN 933)
20000017	SKt-Schraube DIN ISO 4017 - M10 x 25 - verz.

		Bei Änderungen Rücksprache TB !	
Bewertung		Gewicht:	
Name		Schutzvermerk nach DIN 34 beachten! Nachdruck nur mit unserer Genehmigung!	
End	18.7.2009	Fischgrätadapter für HVZ-uni / Robogrip	
Gepr.			
WA:			
Kunde:		Anleihekummer/Zachnungsaummer	
Zust.		E41400277	
Urspr.		Ers. f.	
1		Ers. d.	
		Blatt	
		1	
		von 1	

Teile-Nr./Bezeichnung

-Stücklisteninformationen-

41900071		HD-Schaltplan für HVZ- uni an VM203		Anlage: Ganitz		am: 17.11.2004	
(08/2004->___/___)				Geändert: Ganitz		am: 27.04.2005	
				Zeichnungsnummer: R231-3W024-b			
				Index-Nr: b			
Art	Pos.	Stück	Teile-Nr	Bezeichnung	E-Menge ME	Z-NR / Idx	Bemerkung/Blechabmaße
KK	1	1	22080033	Verteilerleiste für HVZ-uni (Alublock) mit DBV 30 auf Seitenspannung	1, St	3D-3 3	
KK	2	1	22230005	ADV-Einheit für HVZ/ HVZ-uni, Druckfolge-Ventil/Zylinderkombi nation, mit	1, St		
KK	3	1	22040015	Ventilblock, Typ: 26 1-0014.000, hydr. entsperbares Rücksc hlagventil mit DBV	1, St	22040015	
KC	5	6	22140081	Gerade Einschraubver schraubung 15-010/L10 RB G3/8, A3C	1, St		
KK	7	2	22000322	HD-Schlauch 2SC/Poly NW 08 x 640 ES DKOL 10L-90°/AS DKOL 10L-90°, S-Form	1, St		
KC	8	2	22140201	W-Schwenkverschrau bung 15-07/L10 R G3/8, A3C	1, St		
KC	13	2	22160056	Gerader Einschraubst utzen 15-010/L10 MB 18x1,5 , A3C	1, St		

Teile-Nr./Bezeichnung

-Stücklisteninformationen-

41900071		HVZ- uni an VM203		Anlage: Ganitz		am: 17.11.2004	
HD-Schaltplan für				Geändert: Ganitz		am: 27.04.2005	
(08/2004->___/___)				Zeichnungsnummer: R231-3W024-b			
				Index-Nr: b			
Art	Pos.	Stück	Teile-Nr	Bezeichnung	E-Menge ME	Z-NR / Idx	Bemerkung/Blechabmaße
KC	14	1	22140036	W-Schwenkverschraubung 15-07/L12 M, S01, M18 x 1,5, A3C o.m+d A3C	1, St		
KK	15	1	22160105	Einstellbarer T-Stutzen 15/2-290/ L12 A3C	1, St		
KC	16	1	22140085	Einstellbare L-Verschraubung 15/3-290/L12 V, A3C, ohne Mutter und Schneidring	1, St		
KC	17	1	22140028	Einstellbare Manometerverschraubung 15/2-23/L, 12 R, A3C	1, St		
KC	18	1	22160042	Einstellbarer W-Stutzen 15/1-290/L12 V/A3C	1, St		
KC	20	1	22130001	Manometer DR NG 63 R 0 bis 250 Bar, G 1/4 hinten	1, St		
KK	21	1	22000323	HD-Schlauch 2SC/Poly NW 08 x 620 ES DKOL 10L / AS DKOL 10L	1, St		

Teile-Nr./Bezeichnung

-Stücklisteninformationen-

41900071		HD-Schaltplan für HVZ- uni an VM203		Anlage: Ganitz		am: 17.11.2004	
(08/2004->___/___)				Geändert: Ganitz		am: 27.04.2005	
				Zeichnungsnummer: R231-3W024-b			
				Index-Nr: b			
Art	Pos.	Stück	Teile-Nr	Bezeichnung	E-Menge ME	Z-NR / Idx	Bemerkung/Blechabmaße
KK	22	1	22000320	HD-Schlauch 2SC/Poly NW 08 x 610 ES DKOL 12L / AS CEL 10L	1, St		
Fb	23	1	33170036	HD-Rohr am HD-Zylin der (HS) für HVZ-uni und Robogrip , verz,	1, St		
KK	24	1	32200021	HD-Zylinder-So 60/25 , 200 Hub, EBM 380, Zyl.-Auge 5 0 ° gedr.,	1, St		
KK	25	2	22210042	HD-Zyl. 40/25, 138 H EBM 332, R3/8", 250 bar, Querbohrungen 2	1, St		
KC	26	2	22160024	W-Einschraubstutzen 15-020/L10 MK, M18x1,5 A3C	1, St		
KC	27	3	22000082	HD-Schlauch 2SC/Poly DN 8x600 DK0 10L- 90 Gr./DK0 10L 90 Gr U-Form m. PU-ISO	1, St		
KC	30	1	22120003	Verschlussbutzen 15- 370/ L12 A3C	1, St		

Teile-Nr./Bezeichnung

-Stücklisteninformationen-

41900071				Anlage: Ganitz		am: 17.11.2004	
HD-Schaltplan für HVZ- uni an VM203				Geändert: Ganitz		am: 27.04.2005	
(08/2004->___/___)				Zeichnungsnummer: R231-3W024-b			
				Index-Nr: b			
Art	Pos.	Stück	Teile-Nr	Bezeichnung	E-Menge ME	Z-NR / Idx	Bemerkung/Blechabmaße
KC	31	1	22120007	Überwurfmutter 15-30 / L12 A3C	1, St		
KK	50	1	22000329	HD-Schlauch 2SC/Poly NW 08 x 640, DKOL 10-90°/DKOL 10-90°, 90° gedreht	1, St		
KK	51	1	33170049	HD-Rohr UN-P51 (D-B v. ADV-Einheit zu Ventilblock) für HVZ-uni , verz.	1, St		
KK	52	1	33170050	HD-Rohr UN-P52 (C-A v. ADV-Einheit zu Ventilblock) für HVZ-uni , verz.	1, St		
KK	53	1	22140321	W-Schwenkverschraubung 15-07/L10 , S01, M18x1,5 , A3C	1, St		

Proof of maintenance



The claim under guarantee for this device only exists and is subject to the proper execution of the mandatory maintenance works. (In case of warranty request please always attach a copy of the proof of maintenance)

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

After 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

Proof of maintenance



The claim under guarantee for this device only exists and is subject to the proper execution of the mandatory maintenance works. (In case of warranty request please always attach a copy of the proof of maintenance)

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

After 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

Proof of maintenance



The claim under guarantee for this device only exists and is subject to the proper execution of the mandatory maintenance works. (In case of warranty request please always attach a copy of the proof of maintenance)

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

After 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