Operating Instructions

Translation of original operating instructions

Hydraulic Installation Clamp HVZ

HVZ-UNI-II-EK

Bitte beachten Sie, dass das Produkt ohne vorliegende Betriebsanleitung in Landessprache nicht eingesetzt / in Betrieb gesetzt werden darf. Sollten Sie mit der Lieferung des Produkts keine Betriebsanleitung in Ihrer Landessprache erhalten haben, kontaktieren Sie uns bitte. In Länder der EU / EFTA senden wir Ihnen diese kostenlos nach. Für Länder außerhalb der EU / EFTA erstellen wir Ihnen gerne ein Angebot für eine Betriebsanleitung in Landessprache, falls die Übersetzung nicht durch den Händler/Importeur organisiert werden kann.

Please note that the product may not be used / put into operation without these operating instructions in the national language. If you did not receive operating instructions in your national language with the delivery of the product, please contact us. In countries of the EU / EFTA we will send them to you free of charge. For countries outside the EU / EFTA, we will be pleased to provide you with an offer for an operating manual in the national language if the translation cannot be organised by the dealer/importer.

1 Contents

2 EC-Declaration of Conformity

Description:	Hydraulic Installation Clamp HVZ
Type:	HVZ-UNI-II-EK
Order-Nr.:	51400040-001
Manufacturer:	Probst GmbH Gottlieb-Daimler-Straße 6 71729 Erdmannhausen, Germany info@probst-handling.de www.probst-handling.de

CE

The machine described above complies with the relevant requirements of the following EU directives:

EC-machinery directive 2006/42/EC

The following standards and technical specifications were used:

DIN EN ISO 12100

Safety of machinery - General principles for design - Risk assessment and risk reduction (ISO 12100:2010)

DIN EN ISO 13857

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

Authorized person for EC-documentation:

Name: J. Holderied
Address: Probst GmbH; Gottlieb-Daimler-Str. 6; 71729 Erdmannhausen, Germany

Signature, informations to the subscriber:
Erdmannhausen, 04.10.2018.....
(M. Probst, Managing director)

EC-Declaration of Conformity / UKCA-Declaration of Conformity

Manufacturer: Probst GmbH
Gottlieb-Daimler-Straße 6
71729 Erdmannhausen, Germany
info@probst-handling.de
www.probst-handling.com

Importer: Probst Ltd
Unit 2 Fletcher House
Stafford Park 17
Telford Shropshire TF3 3DG, United Kingdom
www.probst-handling.co.uk
sales@probst-handling.co.uk

The machine described above complies with the relevant requirements of the following EU directives:
The object of the declaration described above is in conformity with the relevant UK-Regulations and UK-Guidelines:

EC-machinery directive 2006/42/EC *(Reference: OJ L 157, 09.06.2006)*

UK-Regulation: Supply of Machinery (Safety) Regulations 2008 (SI 2008 No. 1597)

The following standards and technical specifications were used:

DIN EN ISO 12100

Safety of machinery - General principles for design - Risk assessment and risk reduction

UK-Regulation: BS EN ISO 12100-1:2003+A1:2009

DIN EN ISO 13857

Safety of machinery - safety distances to prevent hazard zones being reached by upper and lower limbs.

UK-Regulation: BS EN ISO 13857:2019

Authorized person for EC-documentation:

Name: Jean Holderied
Address: Probst GmbH; Gottlieb-Daimler-Straße 6; 71729 Erdmannhausen, Germany

Authorized person for UK-documentation:

Name: Nigel Hughes
Address: Probst Ltd ; Unit 2 Fletcher House; Stafford Park 17; Telford Shropshire TF3 3DG, United Kingdom

Signature, information to the subscriber:

Erdmannhausen, 02.08.2021.....

(Eric Wilhelm, Managing director)

3 Safety

3.1 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

3.2 Explanation of basic concepts

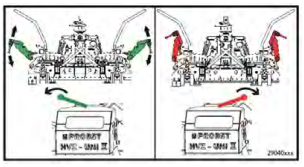
Gripping range:	• specify the minimum and maximum product measurements of the gripping good, which can be gripped with this device.
Gripping good (s):	• is the product, which will be gripped or transported.
Opening width:	• consists of the gripping range and the measure to drive over the gripping good. *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.
Carrying capacity/working load limit (WLL*):	• specify the maximum possible load capacity of the device (for lifting of gripping goods).

*= WLL → *(english:)* Working Load Limit

3.3 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.

3.4 Safety Marking

PROHIBITION SIGN			
Symbole	**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
	Caution! Danger of squeezing! Touch only at handles.	2904.0367	205x30 mm
WARNING SIGN			
Symbole	**Meaning**	Order-No	Size:
	Danger of squeezing the hands.	2904.0221 2904.0220 2904.0107	30 mm 50 mm 80 mm
REGULATORY SIGN			
Symbole	**Meaning**	Order-No	Size:
	Each operator must have read and understood the operating instructions (and all safety instructions).	2904.0665 2904.0666	30 mm 50 mm
OPERATING SIGNS			
Symbole	**Meaning**	Order-No	Size:
	Setting 170 bar for articulated shovels/roll mops Setting 200 bar for wheel loaders	29040775	29x33 mm
	Setting the side clamping/ main clamping Approx. 2 turns to the left to "+" = side clamping and main clamping, open simultaneously. Approx. 2 turns to the right to "-" = first the side clamping, opens and only then does the main clamping open.	29040774	30x45 mm
	Lever for activating/deactivating side clamping	2904.0773	46x87 mm

3.5 Personal safety requirements

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

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

3.6 Protective equipment

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

- Protective clothing
- Safety gloves
- Safety shoes

3.7 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.

3.8 Function Control

3.8.1 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 type plate of the machine.
- Unrecognisable information signs (such as regulatory or prohibition signs) must be replaced.

3.8.2 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 hook 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.

3.9 Safety procedures

3.9.1 Hydraulic excavator and other carrier

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

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

3.9.2 Safety at installation work

- The manual guiding of is only allowed for devices with handles!
- The load must always be in the range of vision of the operator, during the transporting and laying operation.

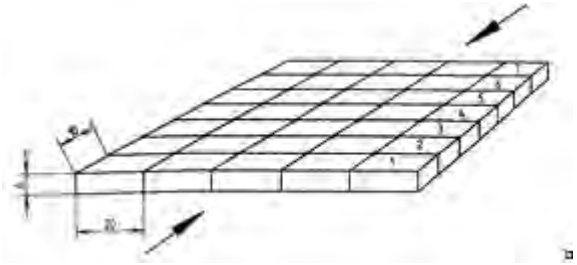
- Do not lift any components off-centre, because that could fall down.
- Set the stone layer carefully down.
- Safety before rapidity.

- 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 people heads!
- While using the device the stay of persons in the working area is 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 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 pull out stuck or tightened loads with the device.
- Do not replace the seal of the pressure relief valve to increase pressure without talking to the manufacturer!
- **Never** pull or drag loads sideways. Otherwise parts of the device could be damage
- **Never exceed the capacity and the nominal width the device.**

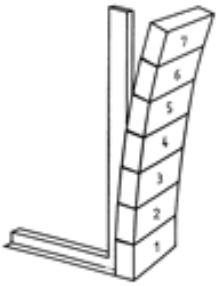
3.9.3 Check on the gripping quality of certain layers of paving stones

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

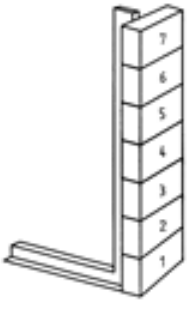
Take the number of blocks you want to grip, the blocks in main gripper direction have to face the ground.



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.

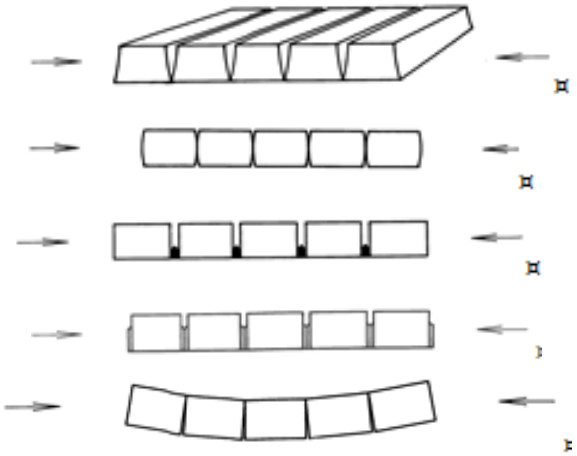


Blocks have "feet" (for instance by torn paver moulds)

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

4 General

4.1 Authorized use

- This Hydraulic Installation Clamp ***HVZ-UNI-II-EK*** 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 ***HVZ-UNI-II-EK*** may be used in connection with any carrier (mini-excavator, hydraulic excavator, wheel loader, forklift truck ….) with a minimum dead weight of 1,500 kg (3,300 lbs).
- To operate the hydraulic installation clamp 2 separate hydraulic circuits are required on the carrier (excavator).
- With the device (***HVZ-UNI-II-EK***) it is possible to handle one layer of pavers. Do not exceed the and the maximum width of the device ***HVZ-UNI-II-EK*** .
- 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.
- Three operating handles for optimal guiding of the clamp.
- Height adjustable support for a variable gripping depth.
- Oil pressure gauge.
- With pressure control valve to avoid overload.
- With spring-mounted steel-lamellas for gripping.
- universal excavator suspension (UBA) with hydraulic rotating motor (360°).

Requirements for hydraulic operation (Operating hydraulics of the carrier)

HVZ-*UNI-II-EK*:

– Volumetric flow (l/min), usable min. 25, optimal 35 – 40, max. 80

– Working pressure (bar), usable min. 180, optimal 200, max. 320

– Backflow pressure: max. 20 bar

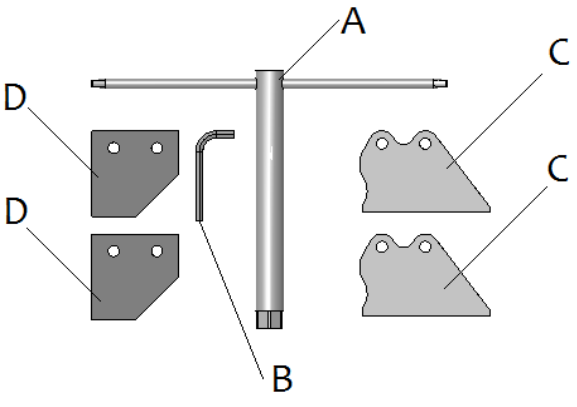
Minimum excavator operating weight:

– HVZ-UNI-II-EK from approx. 2 t

(Operating weight may vary depending on excavator type and form. No binding specifications: must be co-ordinated in the individual case.)

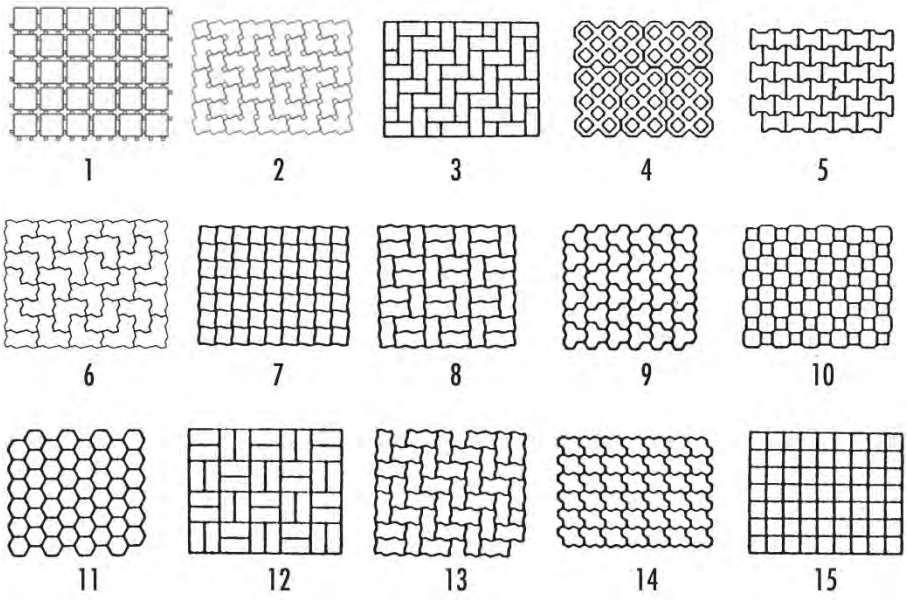
ACCESSORIES SET:

A	Tubular box spanner for adjusting the side clamping (7063.0001)
B	Allen key No. 08 to shift the position adapter rail (7063.0001)
C	Feather steel lamellas to extend the gripper length at the main clamping (34010100)
D	Feather steel lamellas to reduce the gripper length at the main clamping (34010016)

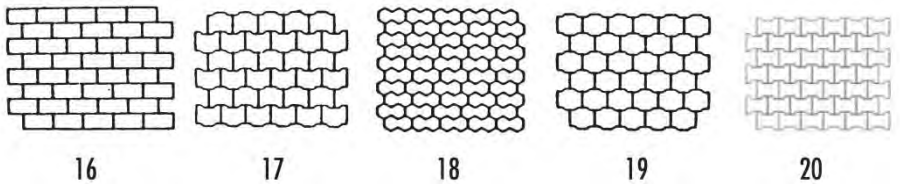


4.2 Stone formations

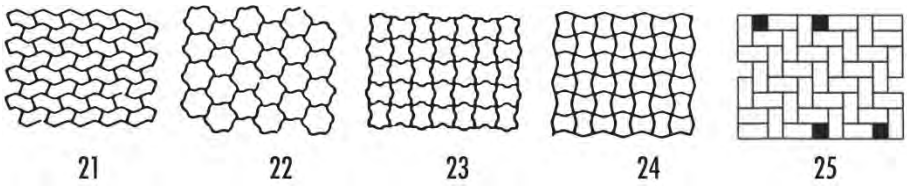
1.) The stone formations 1 – 20 shown below are suitable among others for mechanical installation. Other stone formations can also be laid by machines as long as the stones are packed in the correct formation ready for the machine to lay them.



2.) The stone formations 16 – 20 are suitable for mechanical installation by the shifting adapter PA (4140.0003).



3.) The stone formations 21 – 25 are suitable for mechanical installation by special adapter.



Special adapters SA for installation units 21–24 or similar are available on request (indicate stone formation).

- 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.

ATTENTION: The use of this device is only permitted in proximity to the ground.

Only stone elements with parallel and plane surface are allowed to be picked-up and handled.
Because the gripping good could **fall down**.

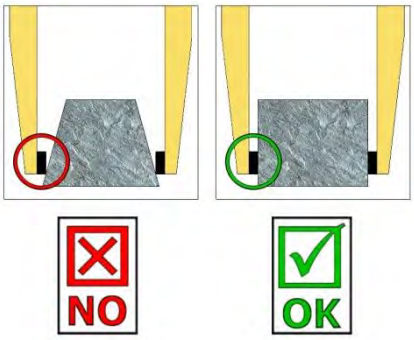
NOT ALLOWED AKTIVITIES:

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

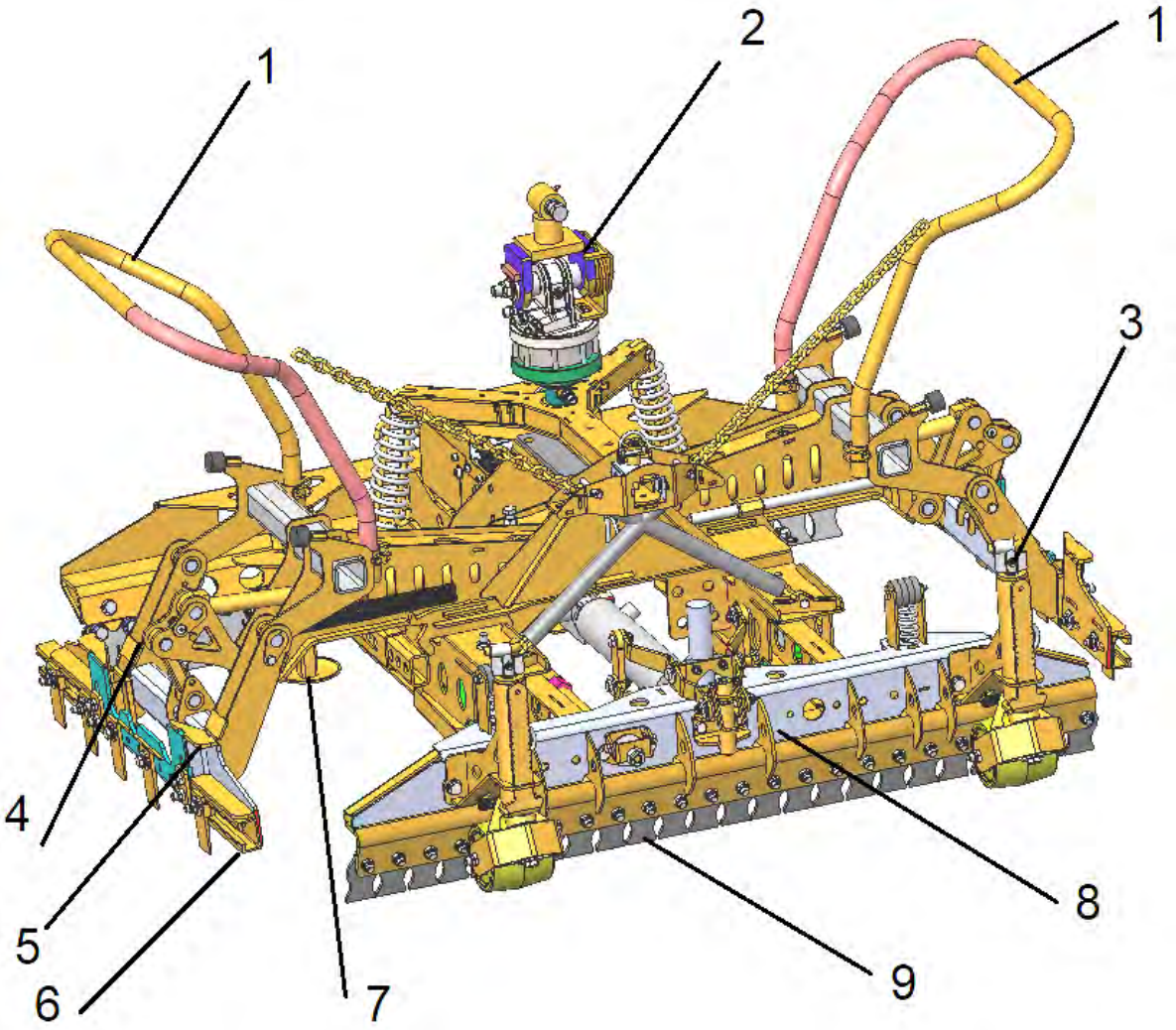
Never exceed the **carrying capacity/working load limit (WLL)** and the **nominal width/gripping range** of the device.

All unauthorized transportations with the device are not allowed:

- 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".



4.3 Survey and construction



1	Operating handle	6	Halfen rail
2	Rotating head (360°)	7	Adjustment of gripping depth
3	Height adjustment of the rollers	8	Main clamping (facing bedding sand/planum)
4	Main clamping (machine side)	9	Steel lamellas
5	Side clamping		

4.1 Technical data

Type	Main gripping width	Gripping depth	Side gripping width	Gripper length L	Carrying capacity/working load limit (WLL)	Dead weight
HVZ-UNI-II-EK	580 – 1,260 mm * (22¾ – 49¾") * 600 – 1,200 ** (23½"--55") **	50-140 mm (2 – 5 1/2")	960 - 1,440 mm * (37¾ – 56¾") * 900 - 1,400 ** (35½"-55") **	1,200 mm (47")	400 kg (880 lbs)	ca. 258kg (approx. 567 lbs)

* = Opening width of the *Installation Clamp* ** = Gripping range (for stone layer dimensions)

5 Installation

5.1 Mechanical connection

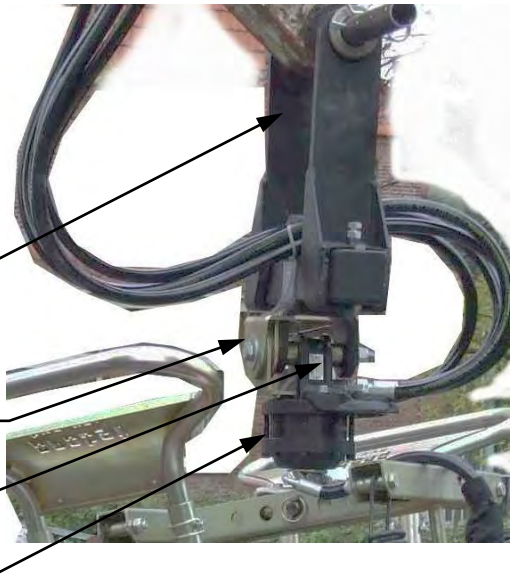
The mechanical connection of the ***HVZ*** at the carrier (excavator) takes place with the universal-excavator-suspension (UBA or Lehnhofadapter).

Excavator-suspension - Lehnhofadapter

Make a secure connection (bolt with locking ring) between the rotating head and the excavator-suspension.

Excavator-suspension - UBA

Make a secure connection (locking bolt with nut and a addition lock nut) between the rotating head and the excavator-suspension.

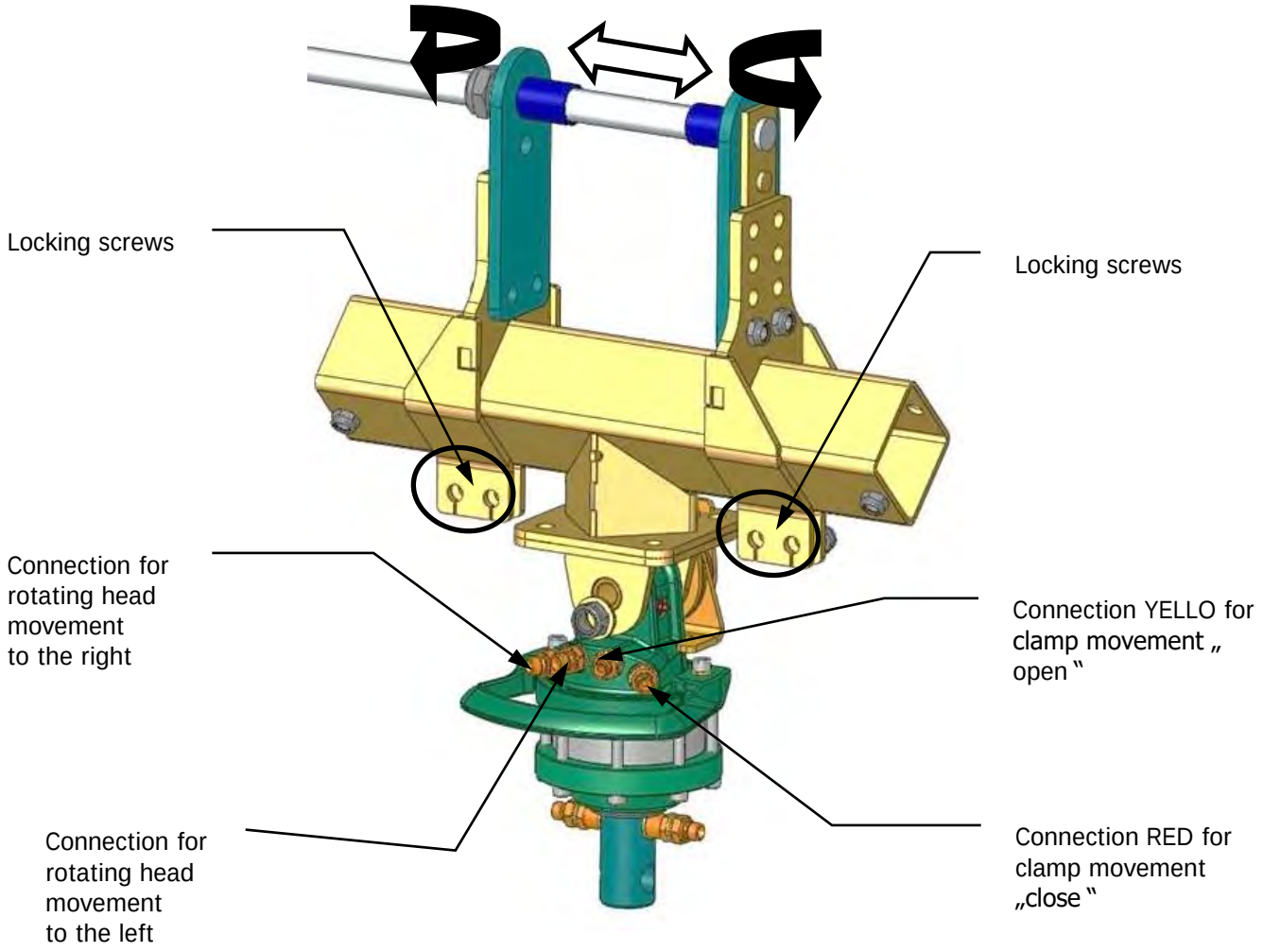


✳ the adjustment of the nut with locknut takes effect of the speed movement of the grab swing brake.

5.2 Hydraulical connection

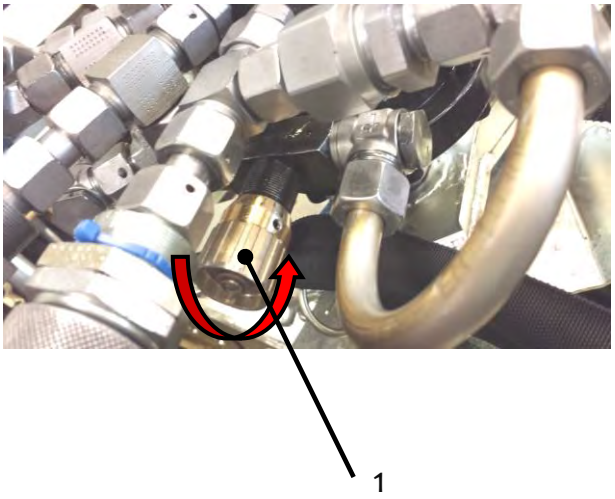
Two separate hydraulic circuit are required to connect the ***HVZ*** to the carrier
The connection of the hydraulic hoses takes place on the hydraulic rotator.

The opening width between the bolt sockets can be adjusted (⇔) by loosening of the locking screws. Remove both bolt sockets and rotate them at 180° (see arrows). Insert the two bolt sockets again and secure them with locking screws.



5.2.1 Adjustment of the hydraulic control

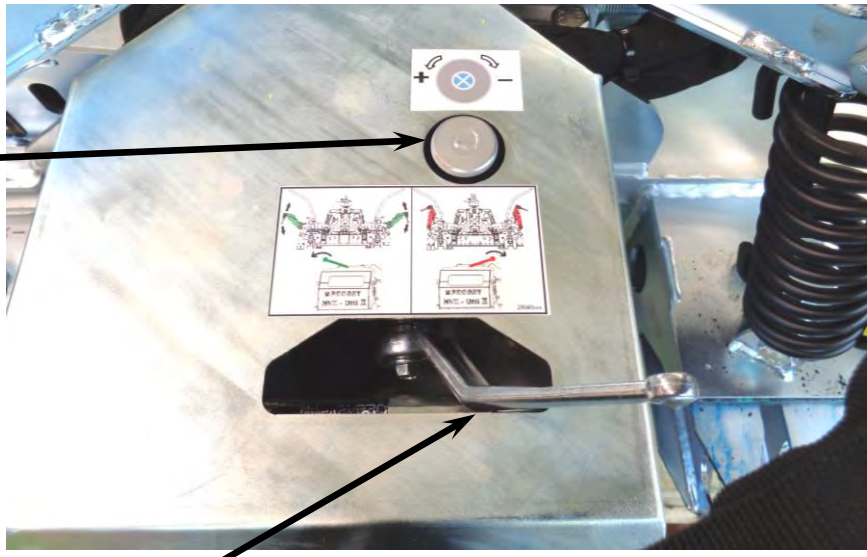
- The hydraulic control is adjusted for an operating pressure (operating pressure of the carrier – e.g. excavator) of about 200 bar.
- Should the HVZ are mounted to a carrier with a higher operating pressure (e.g. 200 bar or higher) must first be checked, if the complete sequence (close and reopen) works without problems.
- If the case occurs, that the main clamping (HSP) is already opened, when the side clamping (SSP) is opening, the bypass valve (1) needs to be open slightly.

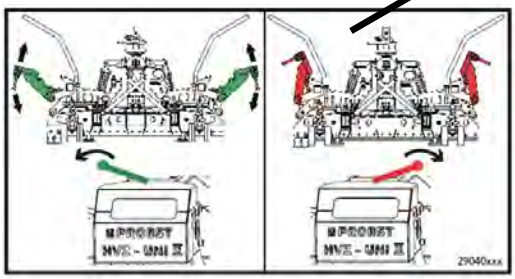


5.3 Setting 170 bar and 200 bar

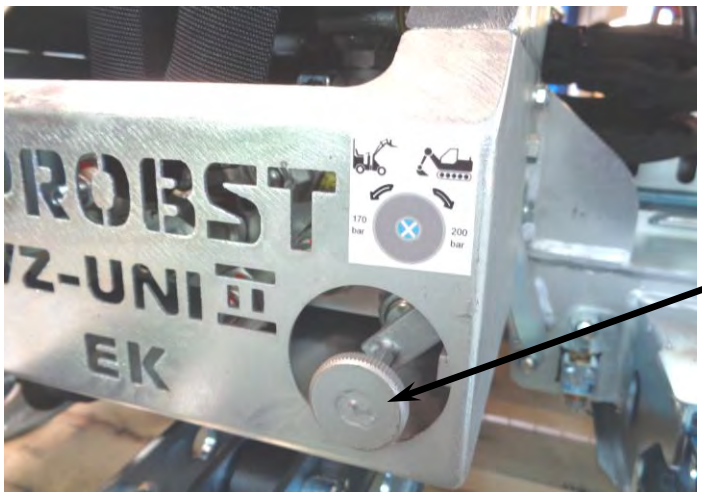
The bypass valve (see ⇗) integrated in the control unit allows the hydraulic control to be adapted to carrier machines (crane) with various oil flow rates. For loaders with large oil capacities, the bypass valve is opened even wider (200 bar). On carrier machines with small oil capacities, the bypass valve is closed (170 bar).

Setting the side clamping / main clamping
Approx. 2 turns to the left to "+" = side clamping and main clamping open simultaneously.
Approx. 2 turns to the right to "-" = first the side clamping opens and only then does the main clamping open.





→ Lever for activating/deactivating side clamping



Setting 170 bar for articulated shovels/roll mops

Setting 200 bar for wheel loaders

5.4 Adjustment „Bypass valve“ (valve block at HVZ)

The integrated bypass valve in the control block (see ⇗) allows an adjustment of the hydraulic control to the carriers (excavators) with different oil flow volumes.
Carriers with large oil flows, the bypass valve is further turned up (rotation anti-clockwise).
Carriers with small amounts of oil flow, the bypass valve is further turned off (clockwise rotation).

Thereafter, secure the bypass valve again with the knurled nut.

5.5 Adjustment additional „Bypass-Valve“ (hydraulic rotator/rotating head)

If the bypass function (of the above-described bypass valve) is not sufficient, for carriers with a larger oil flow volumes (about 60 to 80 l / min) , to ensure a trouble-free sequence of the HVZ, there is the possibility to assemble an additional bypass valve (see ⇗) at the hydraulic rotating head.

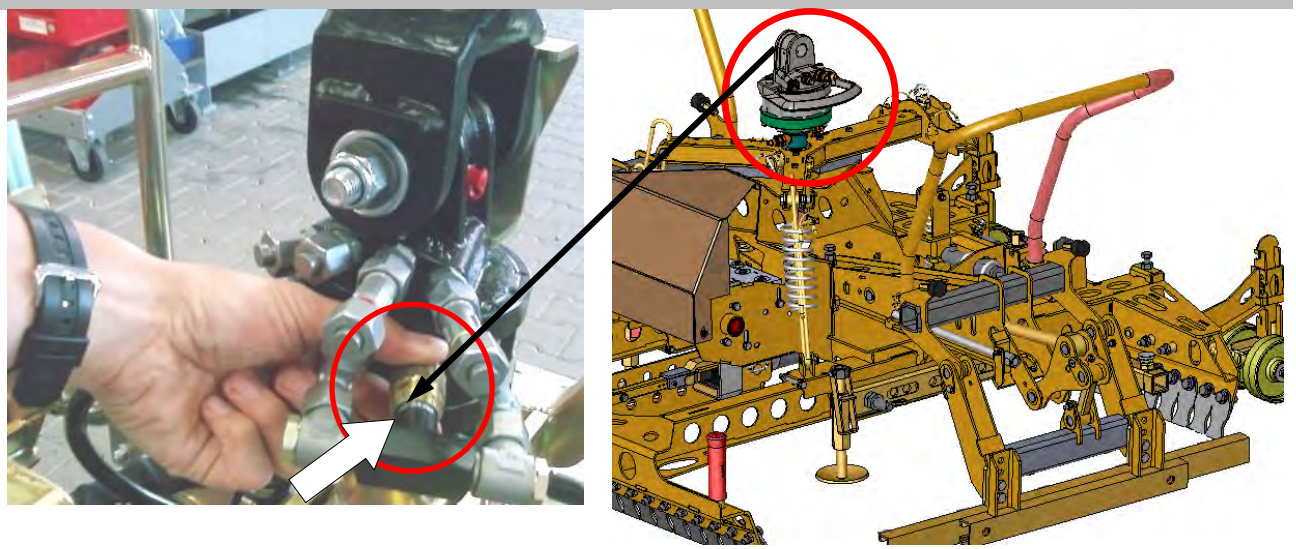
The bypass valve in the control block (see ⇗) allows an adjustment of the hydraulic control to the carriers (excavators) with different oil flow volumes.
Carriers with large oil flows, the bypass valve is further turned up (rotation anti-clockwise).
Carriers with small amounts of oil flow, the bypass valve is further turned off (clockwise rotation).

WARNING:

If the shifting force of the side grippers is too low, the bypass valve most likely is opened too far! In this case the bypass valve has to be tighten up slightly (so the volume flow rate of the oil to the installation clamp is reduced).

For support devices with volume flow rate ≤ 40 l/min the bypass valve remain completely closed!

To support appliances with hydraulic oil flow ≤ 40 l/min, the bypass valve is completely closed!



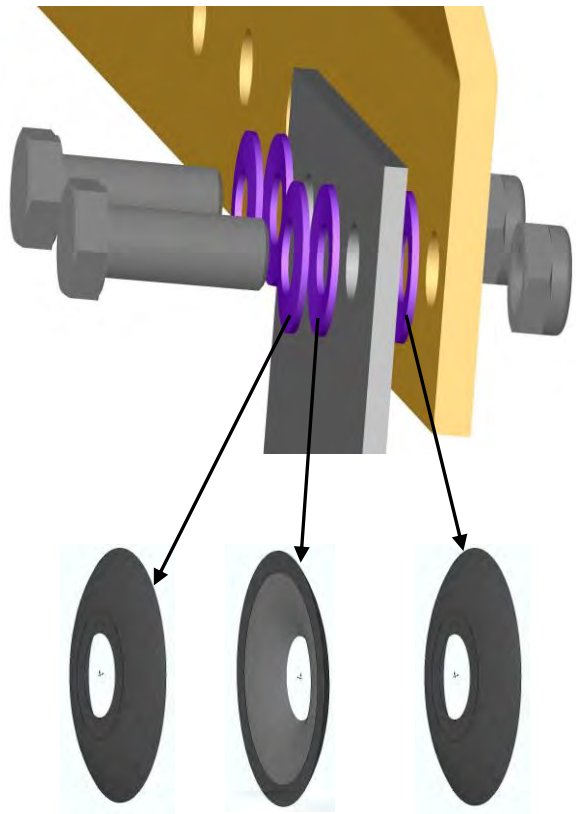
6 Adjustments

6.1 General

For all operations you have to make sure, that the device will not close unintended. Danger of injury!!!

Caution with all adjustments exists danger of injury the hands!

6.2 Adjustments of the feather-steel-lamellas



- The feather-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 feather-steel-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 feather-steel-lamellas a higher flexibility and therefore a good, secure and gentle grip to the pavers.

6.3 Adjusting the gripping depth

6.3.1 Facing bedding sand (planum)

For all adjustments the device must be completely shut down!
Caution with all adjustments exists danger of injury the hands!

Adjust the gripping depth (laying side) so, that the steel-lamellas are gripping in the lower ⅓ of the stone layer (see fig. 2).

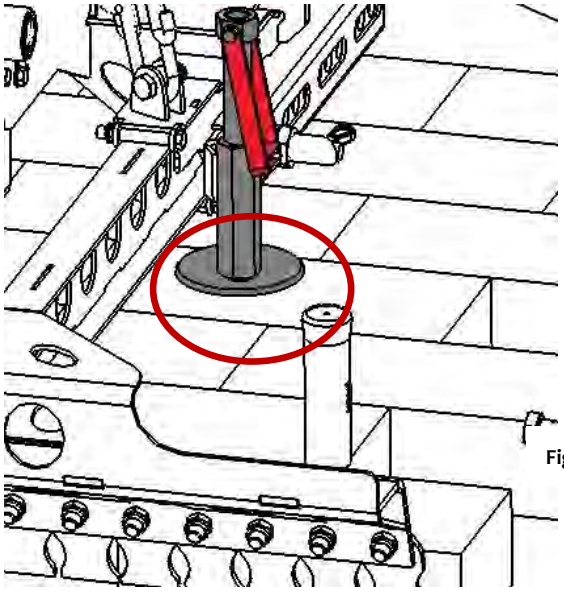


Fig. 1

With extremely large stone layers it recommends to adjust the gripping depth a little lower, so that the steel-lamellas grip in the lowest range of the stone layer. Otherwise it exist the danger that the stone layer breaks out.

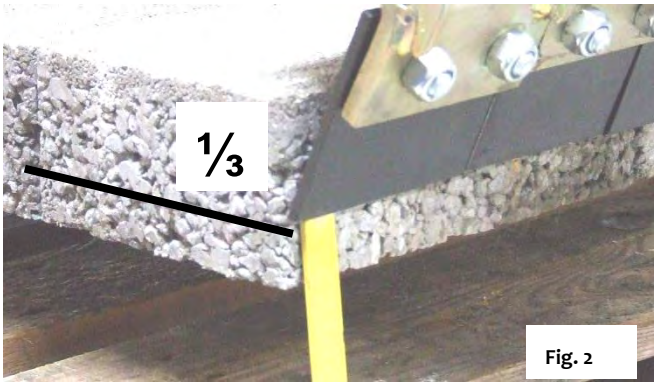


Fig. 2

Swing crank upwards to adjust the gripping depth.

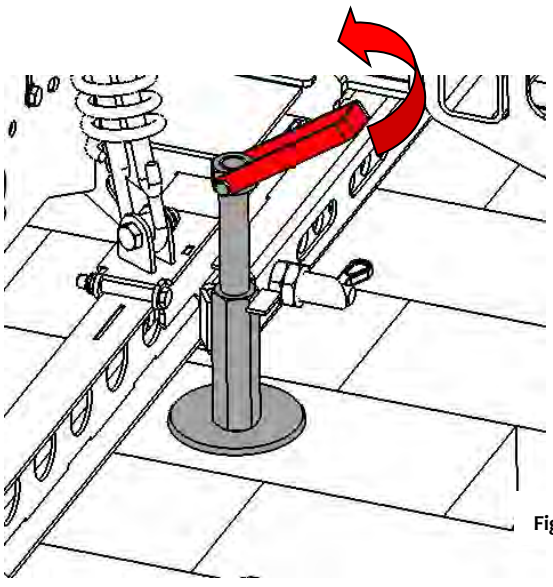


Fig. 3

Adjust the gripping depth identical on both sides of the device (↘↗)).

Swing crank downwards and secure it in the same position.

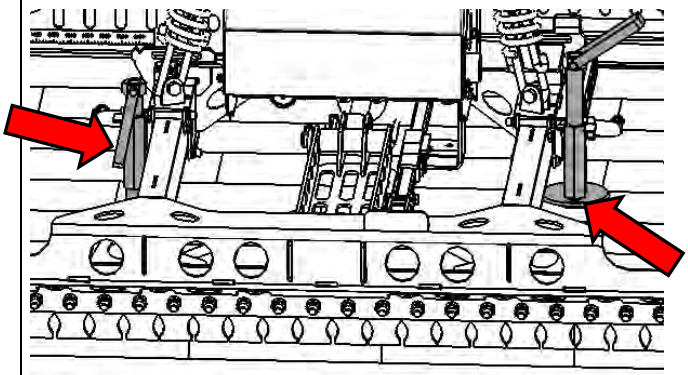


Fig. 4

Pull the spring bolt upwards, rotate around 180° and lock in position (in nick).

Adjust gripping depth and rotate the spring bolt again around 180°.

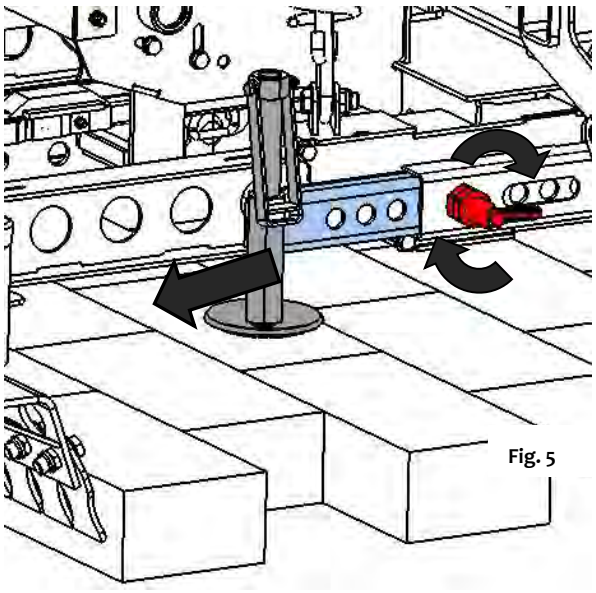


Fig. 5

Adjust the gripping depth distance approx. on 100mm - 150 mm from the middle of the gripping depth to the outside edge of the stone layer (see stickers at the device).

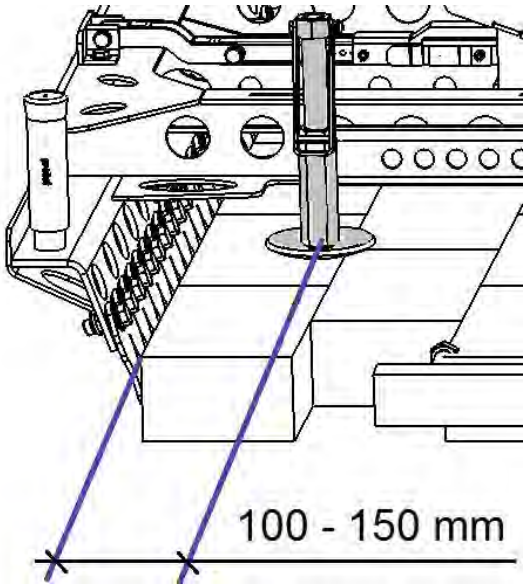


Fig. 6

6.3.2 Machine Side

Adjust the gripping depth (machine side) so, that the steel-lamellas are gripping in the ½ of the stone layer (see fig. 8).

Example: with stone layer breadth of 800 mm
→ 170 mm

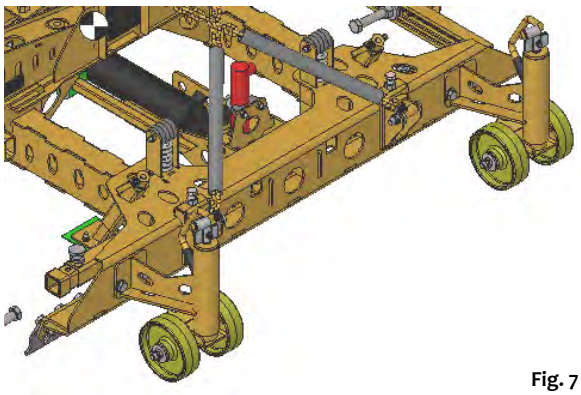


Fig. 7

With extremely large stone layers it recommends to adjust the gripping depth a little lower, so that the steel-lamellas grip in the lowest range of the stone layer. Otherwise it exist the danger that the stone layer breaks out.

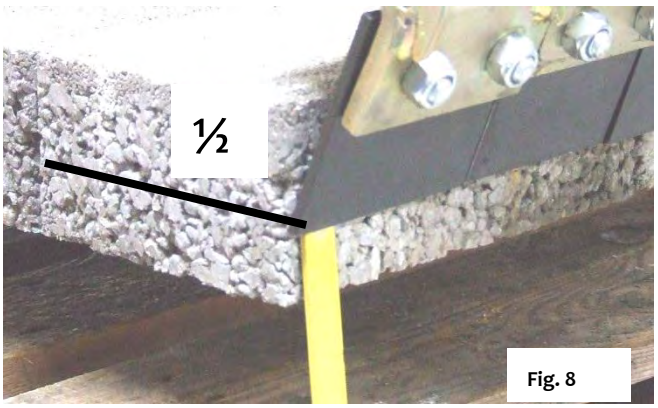


Fig. 8

Swing crank (1) upwards.

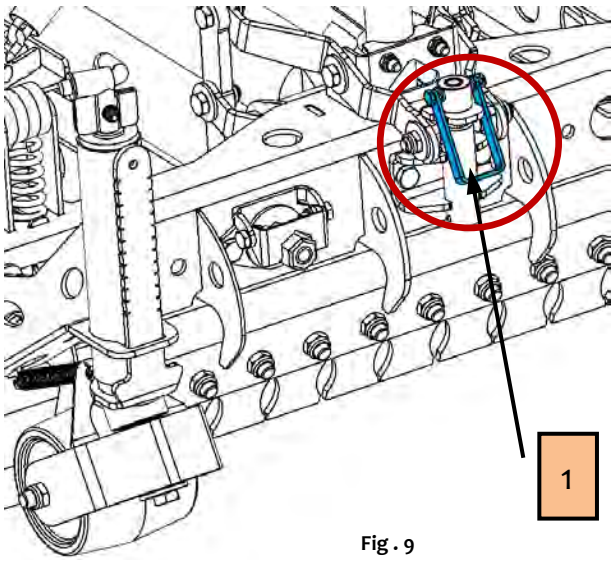


Fig . 9

Adjust the gripping depth on both sides, right and left.
Then push lever (1) down again and lock.

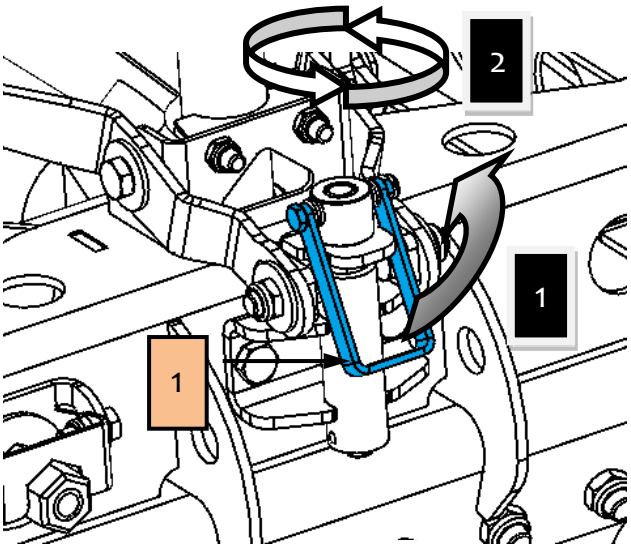


Fig.. 10

6.4 Height adjustment of the rollers

Swing crank (1) upwards to adjust the height of the rollers (2).

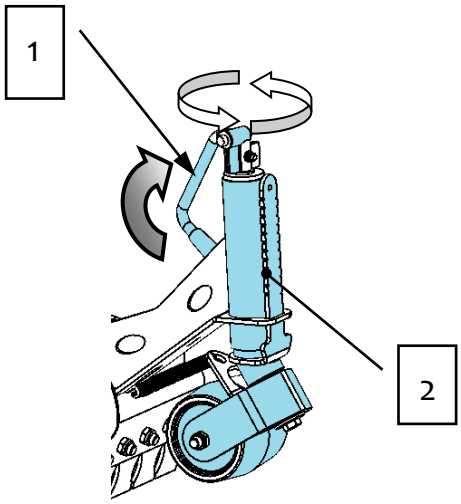


Fig. 11

By Rotating at the crank (1) change the height of the height adjustable rollers (2).
Distance between the steel lamellas to the lower edge of the stone layer ~ 50 mm (see picture A)

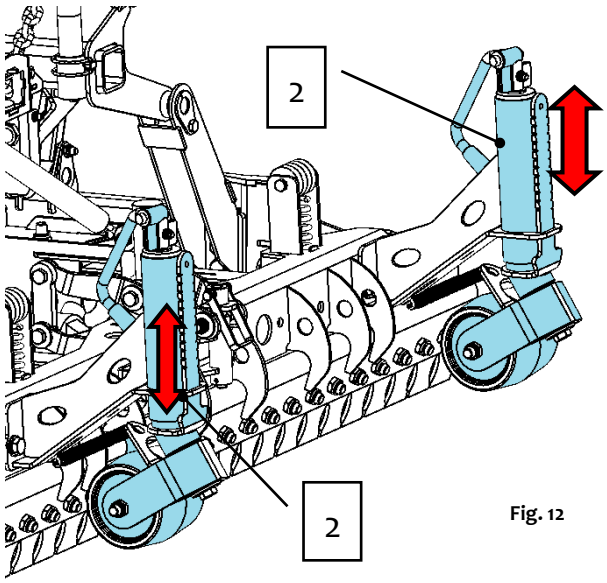


Fig. 12

Swing crank (1) downwards and secure it.

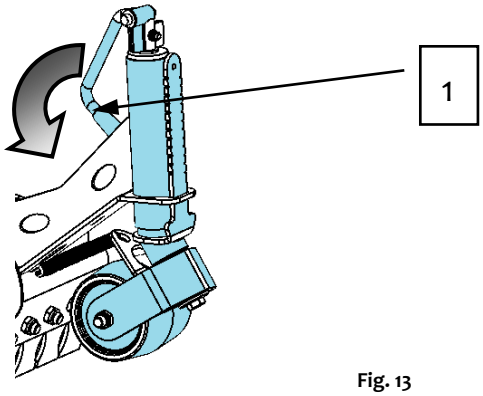


Fig. 13

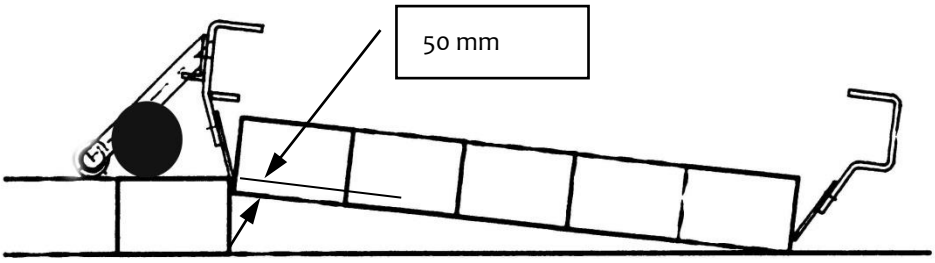


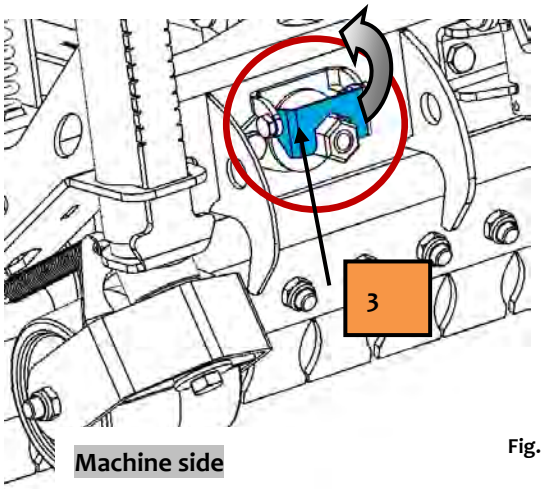
Fig. A

6.5 Adjustment of the main clamping

6.5.1 Machine Side

Adjust adjusting „**C**“ at the main gripping corresponding to the length of the stone layer → see sticker at the device (machine side).

Pull the spring bolts (3)↘ on both sides upwards, rotate around 180° and lock in position (in nick) → Fig. 14.



Machine side **Fig. 14**

Pull main gripping in the corresponding position (↘↘).

Rotate the spring bolt (3) again around 180° and lock in position.

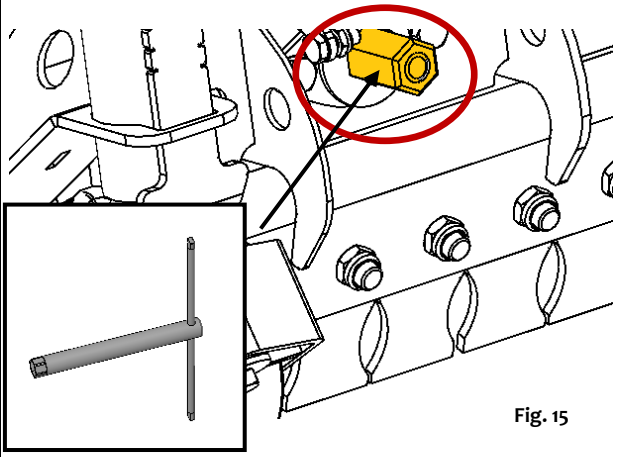


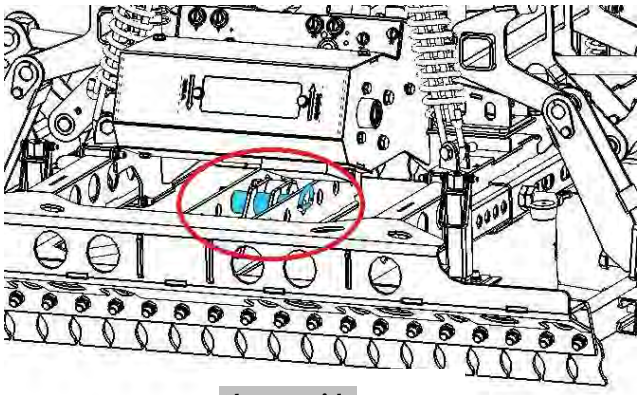
Fig. 15

= Extension of the side clamping

= Reducing of the side clamping

6.5.2 Facing bedding sand (Planum)

Adjust the adjusting **„A“** und **„D“** at the main gripping corresponding to the length of the stone layer → see adjustment sticker at the device (laying side).



Planum side

Fig. 16

Remove safety clip at the bolt (see Fig. 16+17).

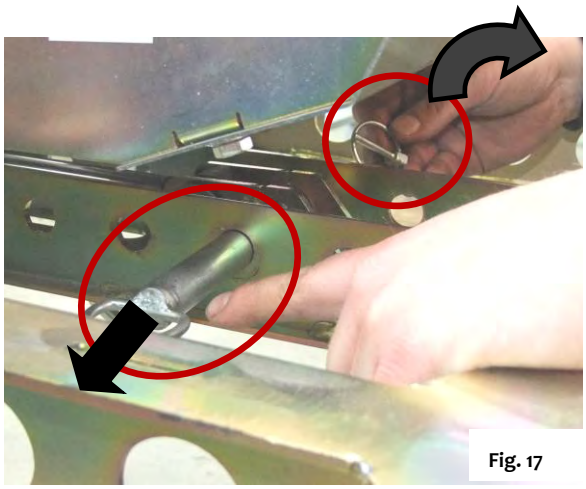
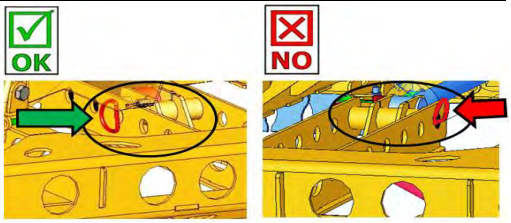


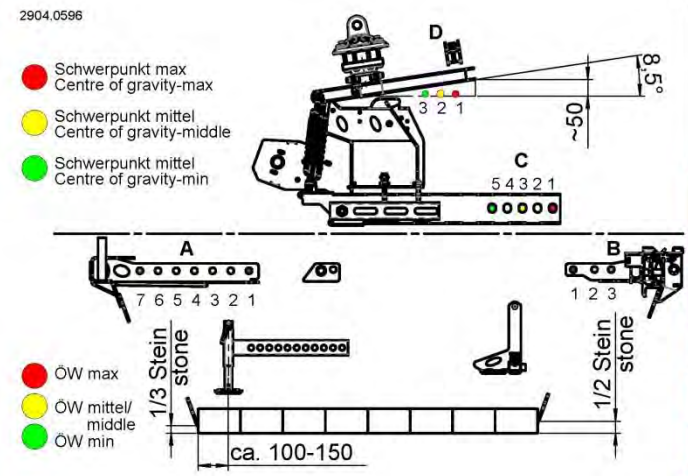
Fig. 17

Insert socket pin (bolt) only from the left (at facing bedding sand).

When inserting this socket pin (bolt) from the right side, this can cause damage to the main clamping.



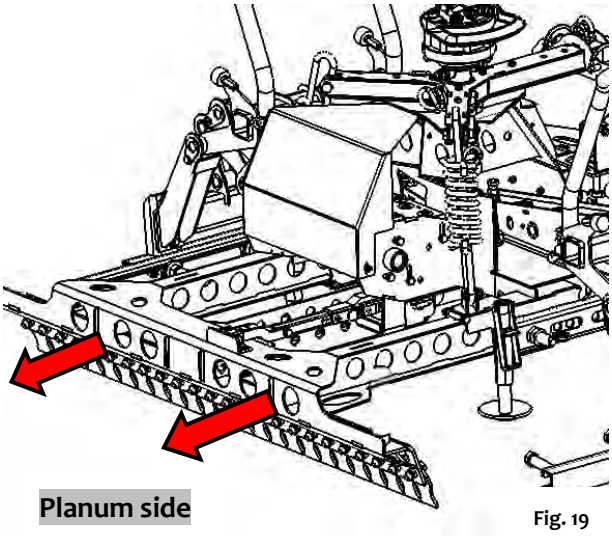
Adjustment sticker



Steinlage Stone layer in mm	Einstellungen Adjustments				ÖW min in mm	ÖW max in mm
	A	B	C	D		
600 - 700	7	3	5	3	580	780
700 - 800	6	2	4	3	690	890
850 - 950	4	2	3	2	810	1010
900 - 1000	3	2	2	2	870	1070
1000 - 1100	1	2	1	1	990	1190
1100 - 1200	1	1	1	1	1060	1260

Fig. 18

Pull main gripping in the corresponding borehole position (Fig. 19) and insert bolt again (see fig. 17). Secure bolt with safety clip (as shown in fig.17) again. Rotate the spring bolt again around 180° (as shown in fig.14) and lock in position (see adjustment sticker at the device).



Planum side

Fig. 19

The device (HVZ) is optimally adjusted, if during the gripping procedure with opened device the steel lamellas (machine side) contact directly on the stone layer and when the steel lamellas (laying side) have distance to the stone layer of 100 -150 mm. (Fig. 20).

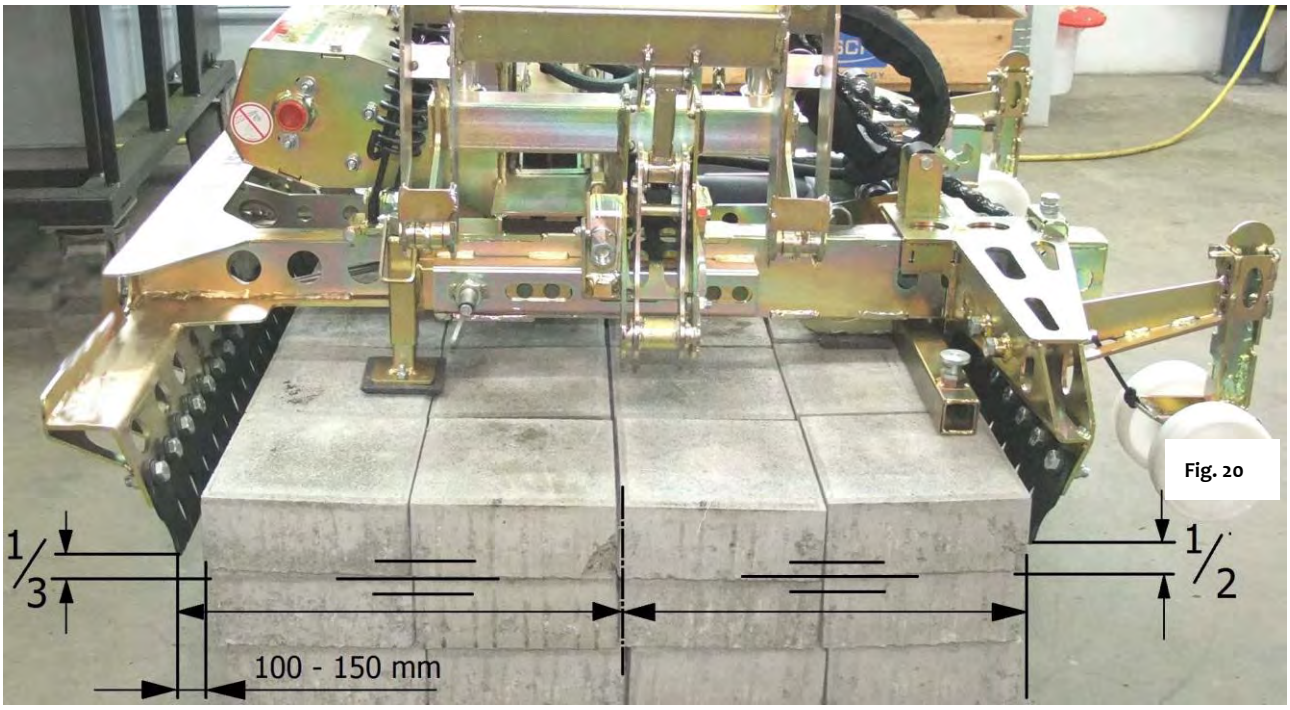


Fig. 20

6.5.3 Pushing-off bar

With a stone layer breadth over 1000 mm the adjustable pushing-off bar (max. 1200 mm) should be extended.

Pull out the spring plug and rotate it a little at the same time. Then let spring plug go.

Then move the spring plug corresponding to the stone layer breadth.
Pull out the spring plug and rotate it a little at the same time and lock it in the borehole again.

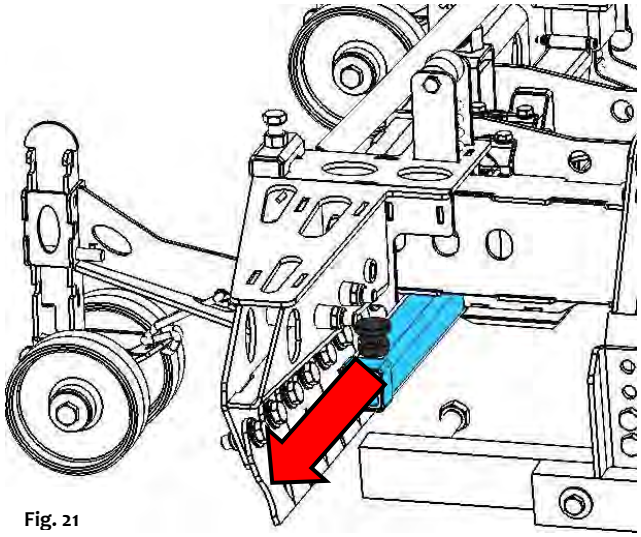


Fig. 21

6.5.4 Extension of the gripper width

For optimum gripping of the stone layers, it is possible to change the gripper width (of the main clamping)

Reason: because often the outer feather-steel-lamellas (Fig 21.1) overlaps outside of the stone layer during the gripping process and thus complicate the direct positioning to an already laid stone layer eventually.

For this purpose, in each case the two outer feather-steel-lamellas are depending on each situation (at the planum/facing bedding sand and both on the machine side of the main clamping) by replacing the appropriate accessories "feather-steel-lamellas" (Figure 21.2).

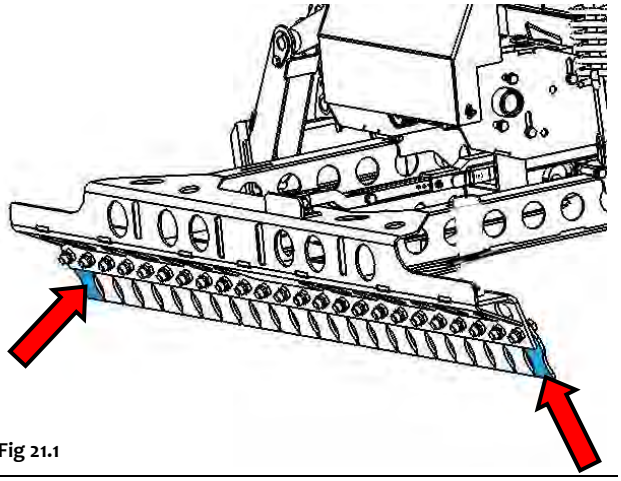


Fig 21.1

C	Feather steel lamellas to extend the gripper length at the main clamping (34010100)
D	Feather steel lamellas to reduce the gripper length at the main clamping (34010016)

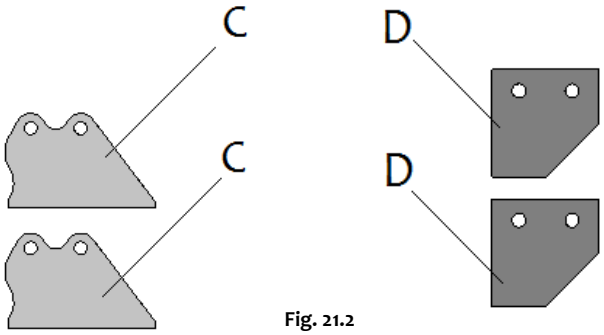


Fig. 21.2

6.5.5 Adjustment – gripping depth (side clamping)

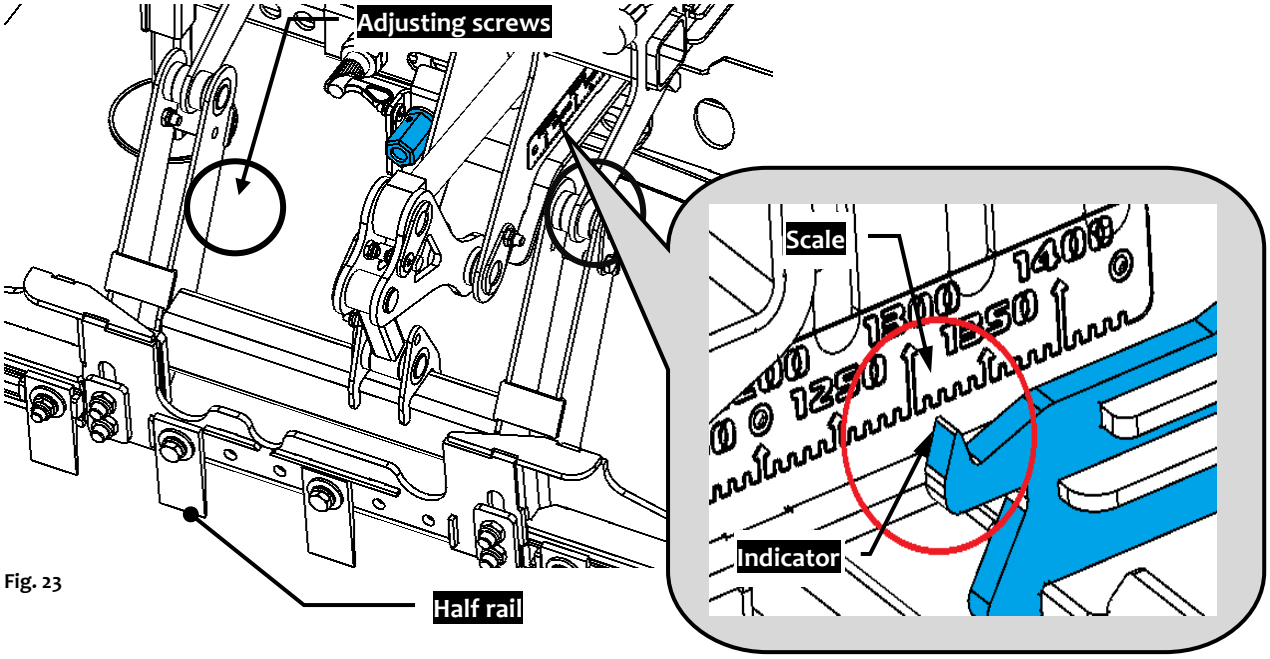


Fig. 23

- Open the main clamping completely (by the hydraulic), which is already adjusted, then position the HVZ on the stone layer packet, so the HVZ hangs freely.
- Close the side clamping completely.
- Rough adjusting of both parts of the main clamping by the adjusting screw (Fig. 25), so that the previously adjusted distance of the stone layer packet is displayed on the scale (Figure 23, 24 u. 25).
- Measure distance between the two Halfen rails, then make fine adjustment on the adjusting screw. So that the measured distance is ca. 3 to 4 mm larger than the width dimension of the packet.
- (This ensures that the individual paving stones (after putting down in the planum) not crunching but even conforming to standards with a distance of 3 - lie 4 mm.
- This requires that the individual paving stones formed distance aids with at least 2.5 mm thickness.)
- Open side clamping completely.

6.5.6 Adjustment of the gripper width

Adjust side clamping (see on the left and on the right at the side gripping side of the device ↗) with the adjusting screws.

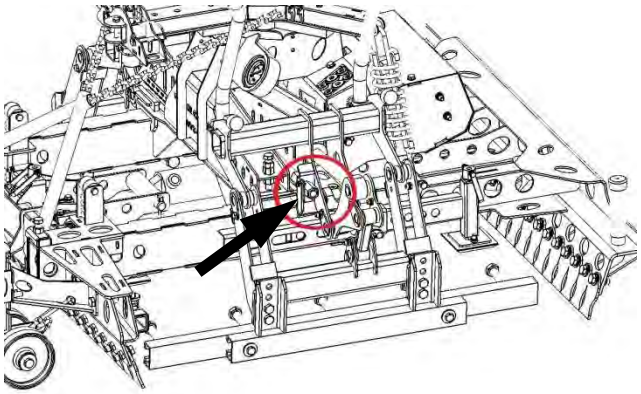


Fig. 24

Move the rotary protection upwards (see Fig. 25) before adjusting the adjusting screw.

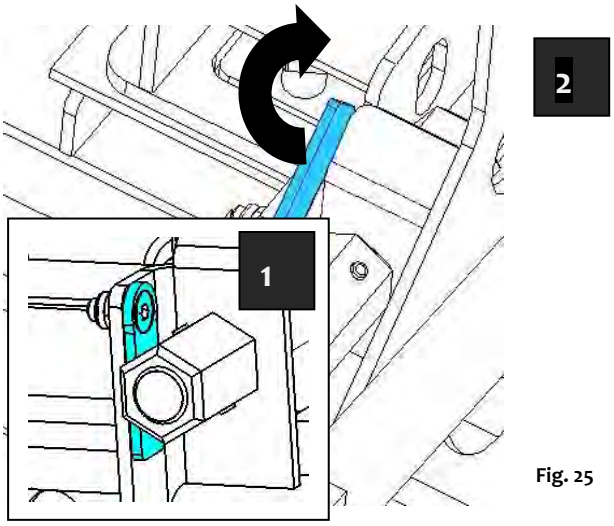


Fig. 25

Adjusting the side clamping corresponding to the stone layer breadth with the tubular box spanner → Fig 27.

The adjusting must have the same value at the left and right side (orientation on adjusting scale →Fig. 23 or Fig 26).

Then move the rotary protection downwards to secure the side clamping (see Fig. 25).

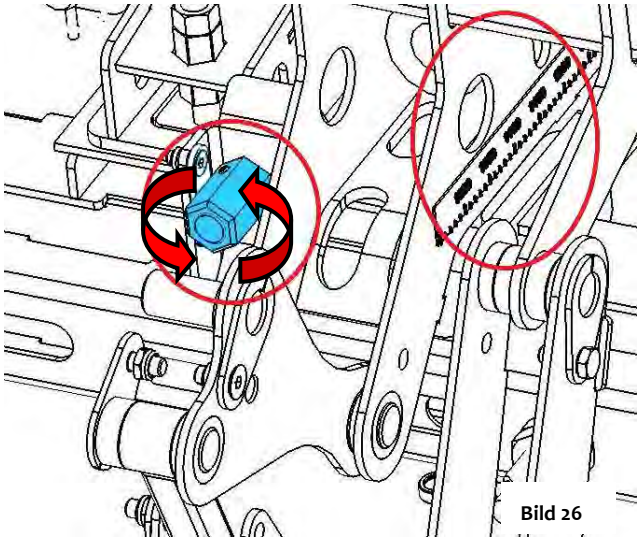


Bild 26

= Enlargement of the side clamping

= Reduction of the side clamping

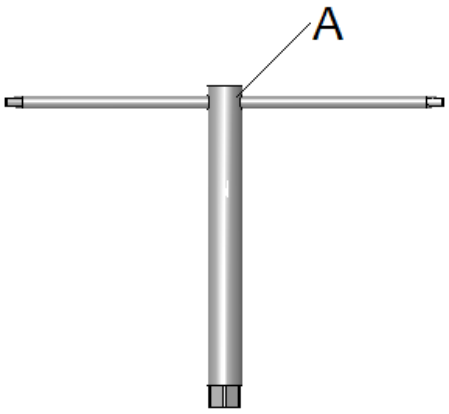


Fig. 27

A → Tubular box spanner for adjusting the side clamping (7063.0001)

6.5.7 Gripper depth side clamping direction

- 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

6.6 Adjustment weight balance

When the adjusting of the main- and side clamping is finished, mind, that the device (HVZ) hangs horizontal to the working area. If required a little tilled to the machine side (rollers).

Remove the linchpin (C) at the chain suspension (A), then adjust both adjusting chains (B) to the same length (see Fig. 30).

Secure the adjusting chains (B) again with linchpin (C) → see ´Fig. 32

Additional the position of the chain suspension (A) can be changed by using a other hole (see ↙ in Fig. 31)

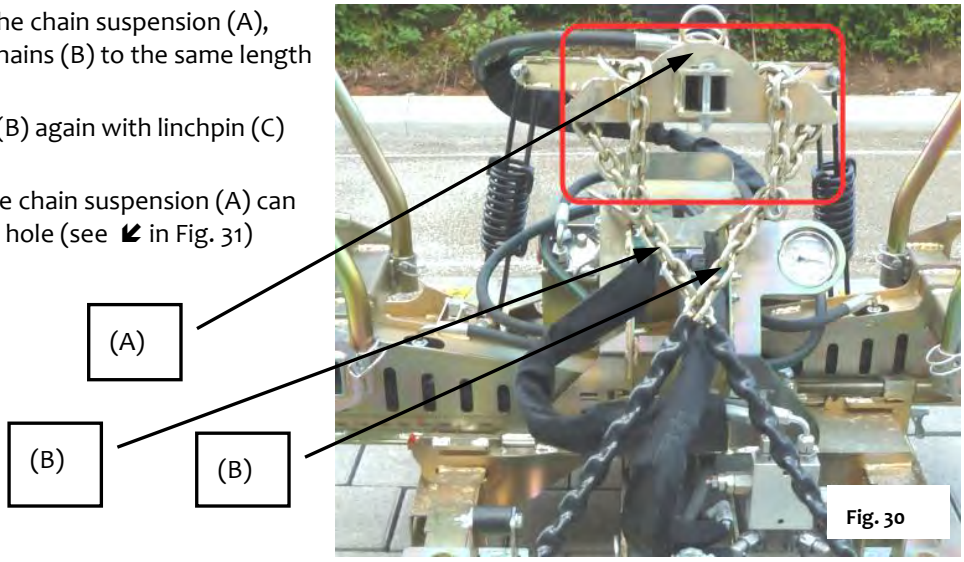
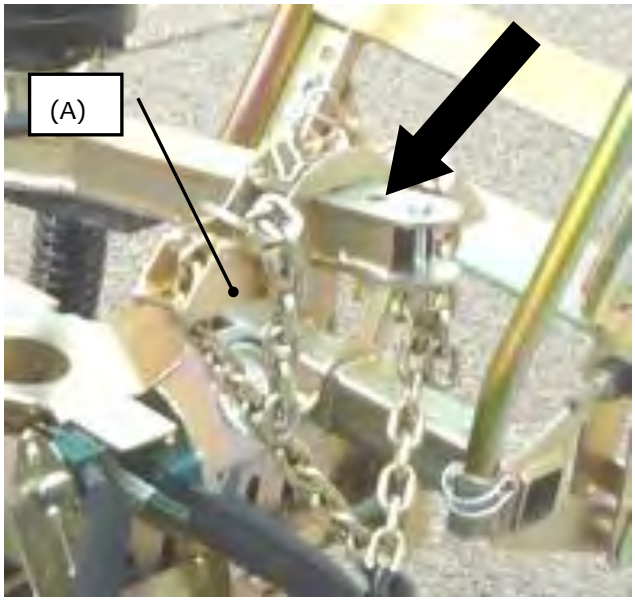
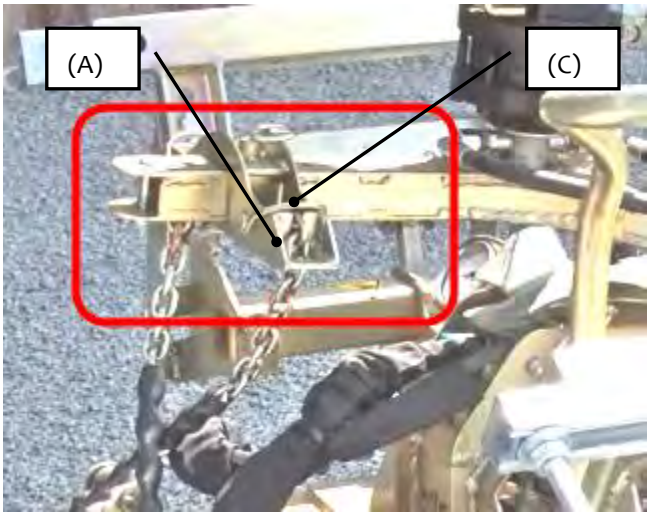


Fig. 30





Danger of injuring the hands!

7 Operation

7.1 General

If the arm of the carrier (excavator) is moved (with a gripped stone layer) too far to the outside, a risk of tipping of the carrier (excavator) - due to the weight of the installation clamp and the weight of the stone layer. Therefore note the tipping stability of the carrier (excavator).

Attention!

- **Before using the device check the functions.**
- **Adjust HVZ as shown in chapter "Adjustments".**

The operating of the HVZ makes use of modern drum control.

The advantage of such technics is, that according to the job specification, the different motion sequence can be activated via a selector switch.

Never close the main clamping without an existing stone layer and already closed side clamping. Otherwise it could happens, that the main clamping grippers are pressing against the Half rails and thereby the gripping of the side clamping can be bent.

- With the careful handling, the HVZ can also be used to gets empty pallets out of the way - to pile up (for the lately) rational transportation. However, it must be strictly ensured, that the pallets are not gripped with the full clamping pressure of the main clamping.
  With the careful handling, the HVZ can also be used to gets empty pallets out of the way - to pile up (for the lately) rational transportation. However, it must be strictly ensured, that the pallets are not gripped with the full clamping pressure of the main clamping.
- When gripping with the fully clamp pressure, firstly the pallets are mostly damaged and secondly, due to the extremely high clamp pressure to individual feather-steel-lamellas could be bent, or the complete main clamping.
  In such cases, always close the main clamping just enough, so that pallets just keep!

- Operating the HVZ with an excavator:
  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!
  Activate the control lever as possible at idling speed of the carrier .
- Move the operating lever almost at idling speed, because the great hydraulic flows of big excavators can cause malfunctions or even damages of the HVZ.

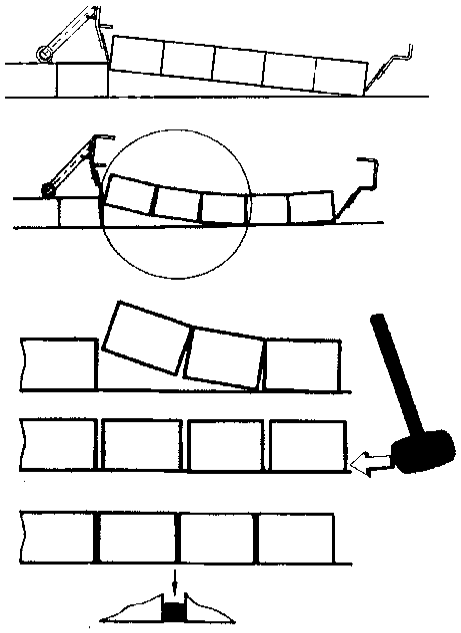
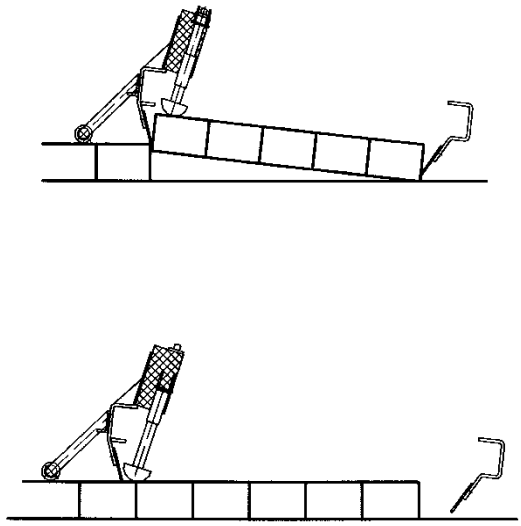
7.1.1 Programms

In this program version the following programs are stored:

- **Program 1**: „Standard program", for the laying of stone layers, which were be displaced from a so-called „cross joint pattern" in a running bond, as soon as layers of stones, which shall be compressed and layed from 4 sides.

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 last 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 sticked to during manual laying process.

Without pushing-off device (ADV)	With pushing-off device (ADV)
	

- 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.
  When the laying action has finished, in no case knock together (from the facing bedding sand) these slight additional joint space with a rubber hammer. These slight additional joint space is necessary to get a normal joint between 3 to 5 mm.
  When before beginning with a machined laying, a laying by hand is necessary, the structural modules of the laying unit must be observed.

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 carrier 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 using the carrier untill the clamp is hanging free.
- RESET procedure of the HVZ accomplish:

- Move hydraulic control lever (of the carrier → excavator) on "position 1" and hold it in this position until the springs of the ADV (ADV = pushing-off device) are visible (see ↑↑ in Fig. 1).

  Take care, that there is nobody in the danger zone, especially swing range of the side clamp arms.
  DANGER OF ACCIDENTS!

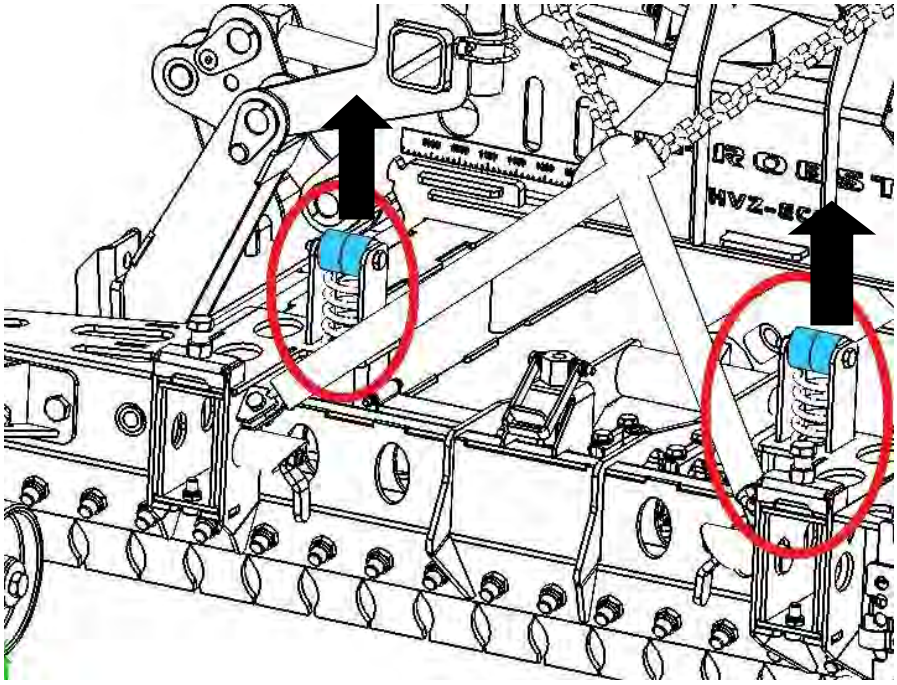
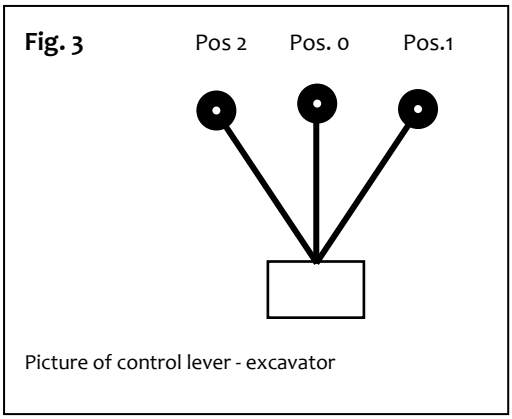


Fig. 1

- Position the HVZ over the stone layer, which shall be gripped.
- Turn the HVZ in such a way by means of the hydraulic rotator that it can be lowered over the stone layer which can be gripped.
- Swivel the HVZ in such a way, that the steel lamellas of the laying main clamping touch the stones. Swivel further in such a way that the HVZ is in approximately centrically aligned to the paving stone layer which can be gripped toward the side clamping.
- Lower the HVZ, until the supporting feet of the HVZ affect the stone surfaces. Do not continue to lower afterwards! The cross beam may not under any circumstances the HVZ essay be affected and thus pressure from above on the clip be exercised (by the boom of the carrier).
- Hydraulic control lever on " Position 1" operate, so for a long time on this position hold, until the following movements ran off:
  - main clamping closes
  - main clamping opens slightly
  - side clamping closes
  - side clamping closes
  - side clamping opens

Fig. 3



Picture of control lever - excavator

Explanation: Positions of the control lever

Pos.1 : gripping, laying, reset

Pos. 0: zero position

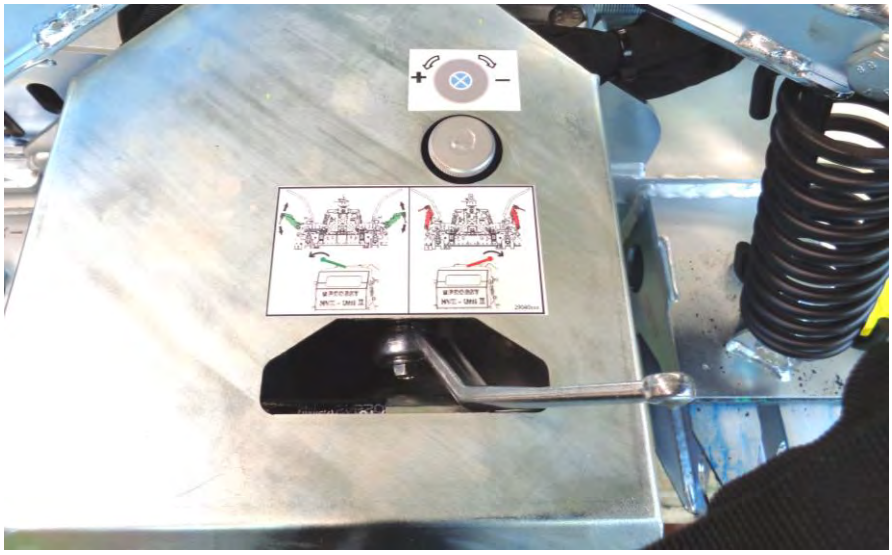
Pos.3: back movement (ex.: a bend of cycle)

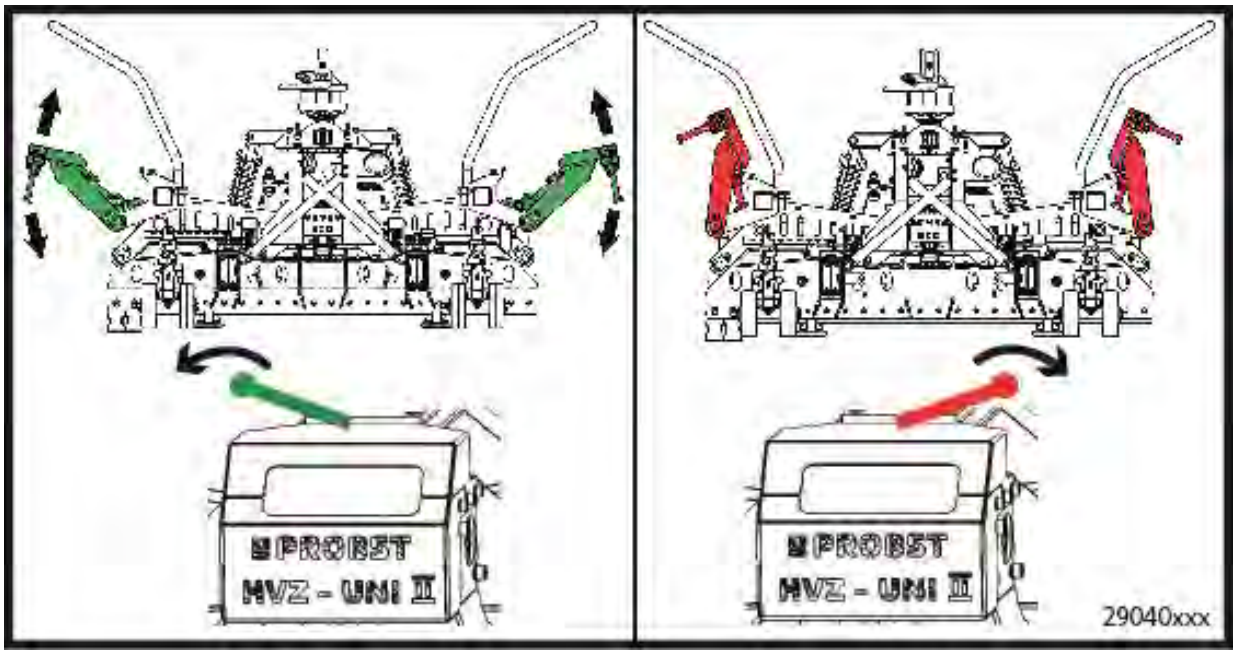
During appropriate use and attitude of positioning adapters the stone situation palletized on so-called "cross joint" is shifted by this course of motion automatically into the "running bond".

When releasing the hydraulic control lever and/or by leading back the control lever into the central position the gripping trial can be broken off at each time. By a new movement of the control lever on "close" the operating procedure will be continued at the stopped position. When moving control lever on "Position 1/open" the last movement will be reset.

- Lead back the hydraulic control lever after completely locked grab procedure (side clamping opens perfectly and swivels completely upward) into the central position.
- HVZ with the gripped layer of stones situation carefully raise and to the shifting place swivel.
- 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.
- ***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.
- By manipulation of the control lever on "open" and hold the control lever in this position few cm the main clamping opened, the stone layer are thus released, so that them are put down into the facing bedding sand.
- Move the control lever back into the central position.
- The HVZ lifts up.

- In freely hanging condition of the HVZ the control lever repeated on "open" operate and there so for a long time hold, until the main clamping is completely opened and was driven out the pushing-off cylinders.
  HINT: This manipulation can also take place, for saving time during the HVZ is moving back (in startposition) for a new gripping action of the next stone layer.
  Now the lying cycle is finished, the device is ready for the admission of the next stone layer which can be installed.





The laying cycle is finally finished, when the springs of the ADV (see ↑↑ in fig.1) are complete visible.

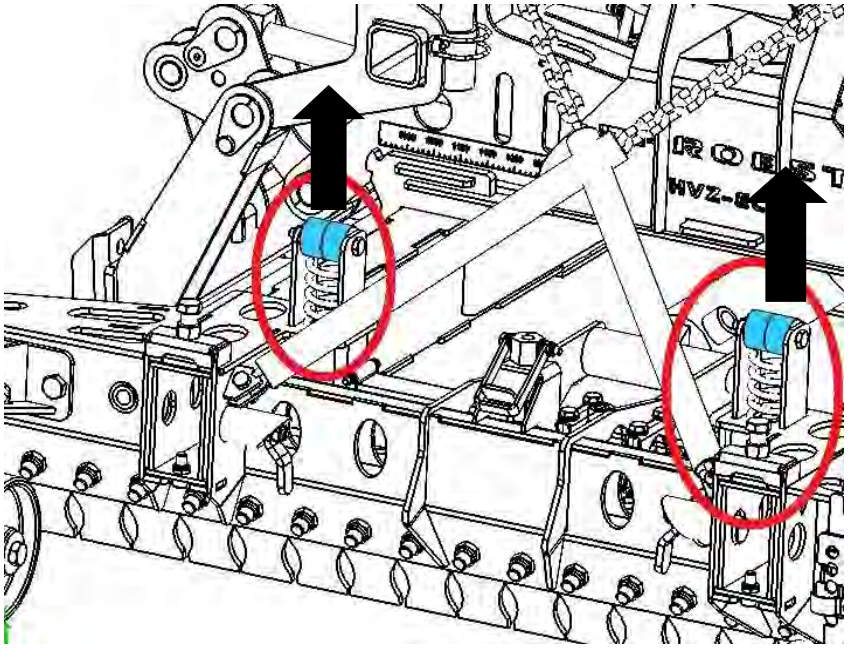


Fig. 1

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 t 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 excavator.
- 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 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 excavator.
- Some laying packages are asymmetric, take notice of a constant direction.
- Some laying sequences, e.g. herring-bone, have cascades 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 excavator.
- 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 excavator) and the manufacturer of the excavator. 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.

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!!!

8.2 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).
All 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 existing safety elements (such as linchpins) for perfect function and replace defective safety elements. • 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. • Grease all grease nipples (if available) with a grease gun.
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.

8.3 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).
All 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 46 according to DIN 51524 – 51535). • Check the hydraulic hoses for breaks and abrasion.
	Only specified types of oil may be used!

8.4 Trouble shooting

ERROR	CAUSE	REPAIR
Stone layer breaks out (downward)	• Main clamping is wrong adjusted (stroke 200 mm)	• Check the adjustments according to the adjustment sticker
	• Stone layer is too large	• Adjust the gripping depth a little lower, so that the steel lamellas grip in the lower range of the stone layer
	• Quality of the stones	• Check the quality of the stones
Single stones fall out of the stone layer	• Dimension of the stone layer deviate from each other too strongly	• Tighten the fixing bolts of the steel lamellas in the problem areas of the stone layer (thereby stronger clamping force)
Stones are not gripped, or fall out with gripping operation	• Stones are a little convex (conditional of manufacturing) • Spacer of the stones goes only to ¾ height of the stone height • Stone layer is gripped to far above • Oil pressure is too low • Stone layer does not stand even on the ground	• Grip tone layer as far as possible in the lower range • Grip tone layer as far as possible in the lower range • Grip tone layer as far as possible in the lower range • Asked the manufacturer for the necessary oil pressure • Set stone layer (palette) on even ground
Stones are not displaced, or not completely displaced via side clamping	• The spacer of the stones avoid the displacement • Toothing of the stones • The adjustment of the positioning adapter is not correct	• Displace the stones via the repeated opening and closing. • Stones with toothing cannot be displaced. • Adjust the positioning adapter correctly.

8.5 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.

8.6 Safety procedures

- It is the contractors 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

8.1 Hints to the type 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.

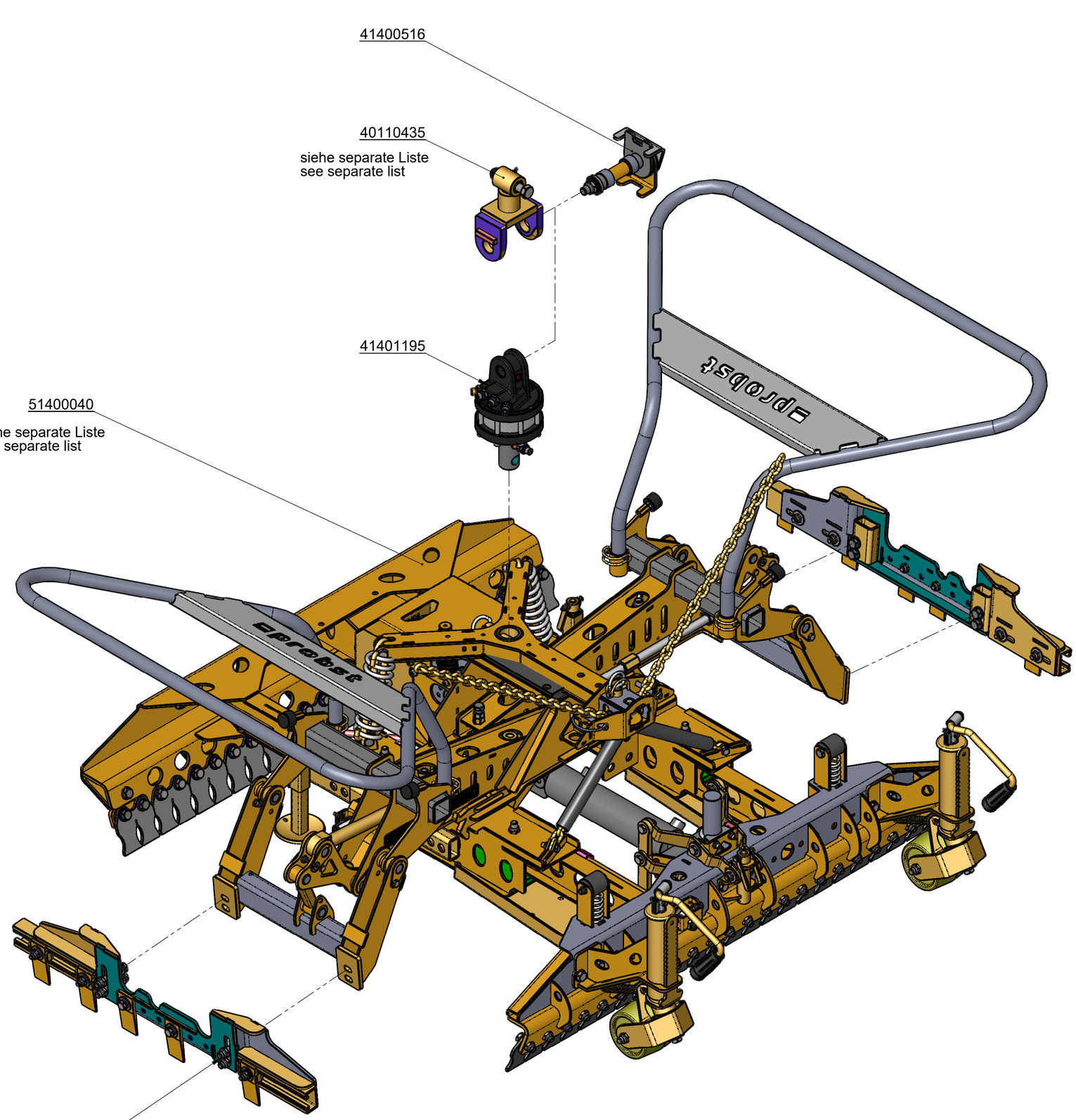
The maximum carrying capacity/working load limit (WLL) is the maximum load which can be handled with the device. Do not exceed this carrying capacity/working load limit (WLL) .

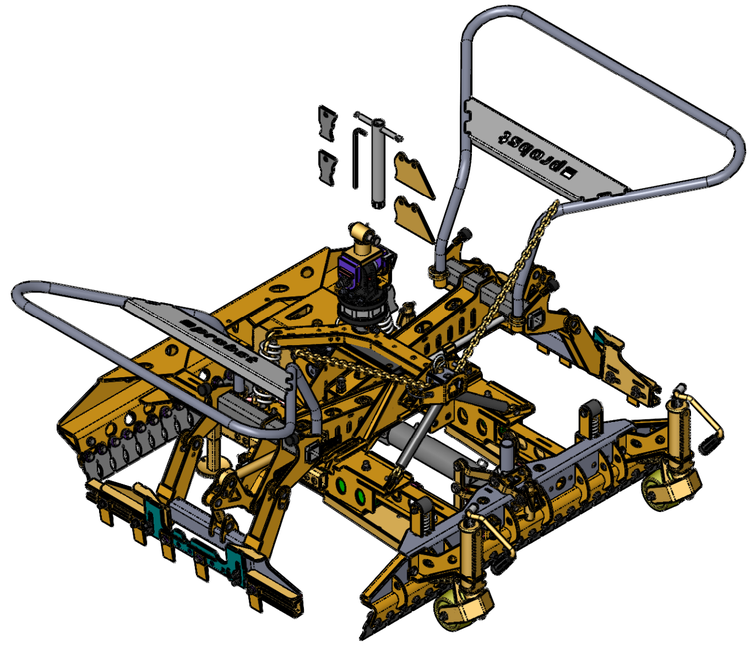
If you use the device in combination with other lifting equipment (Crane, chain hoist, forklift truck, excavator) consider the deadweight of the device.

Example:

8.2 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)!





Pos.	Stk.	Artikel Nr.	V.	Beschreibung	Länge	Breite	Gewicht	Material
1	1	51400040	1	Hydraulische Verlegezange HVZ - uni II-Einkreis			229,75 kg	
2	1	41400516	0	Pendelbremse für Baltrotors an HVZ-GENIUS			1,97 kg	
3	1	41401195	0	Drehkopf Ferrari FR 15 Anbausatz für HVZ-Durchführung			11,03 kg	
4	1	40110435	0	Kreuzgelenk zu VM 203/204/301 für Indexator ohne Bolzen / Schraube M16x90			2,84 kg	
5	1	41400557	0	Fischgrät-Adapter mit RE-Messer für HVZ-uni II			16,26 kg	

probst handling equipment

		Datum	Name
	Erst.	14.12.2017	R.Hoffmann
	Gepr.	27.1.2021	R.Hoffmann
1			

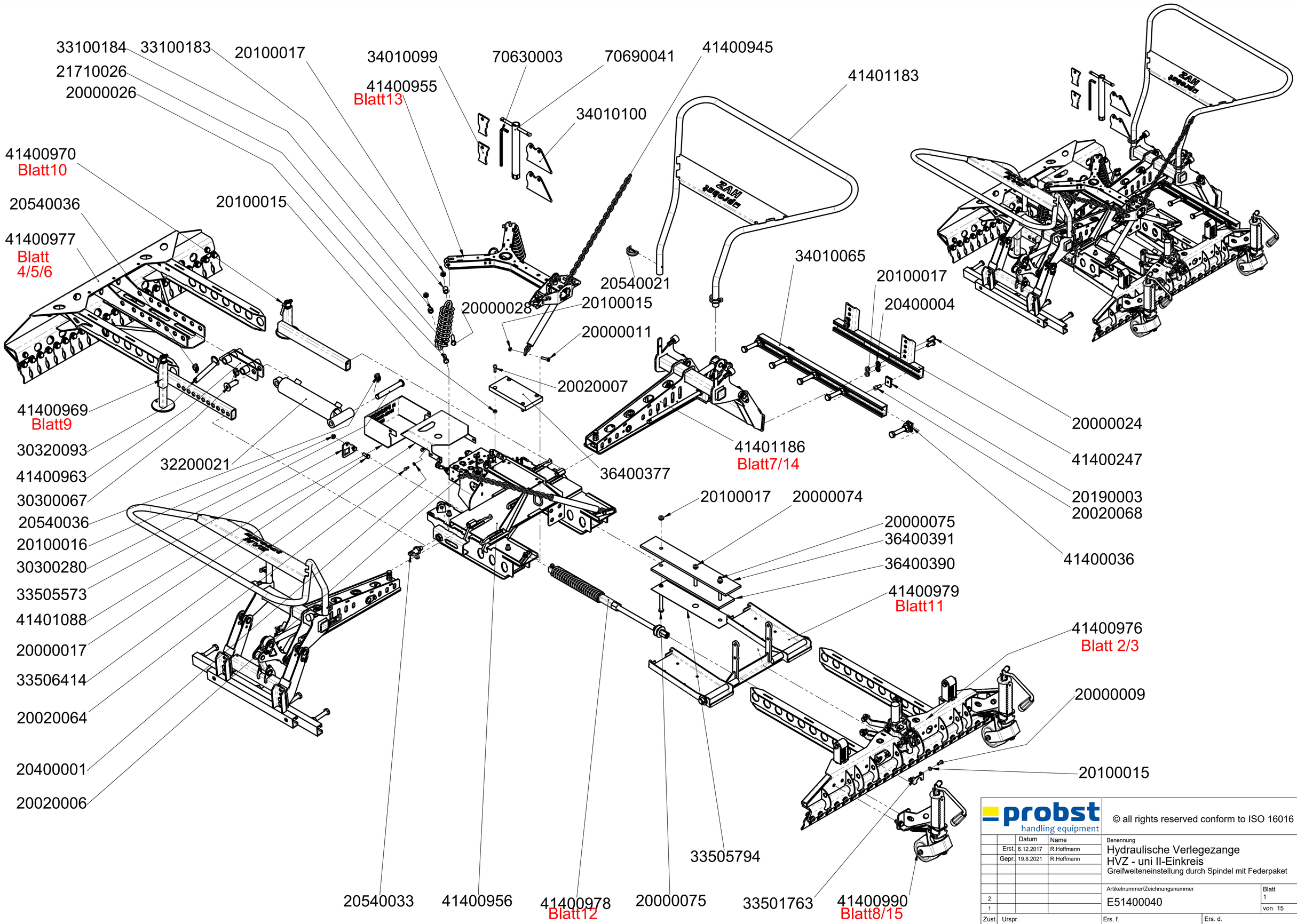
Benennung

Hydraulische Verlegezange
HVZ - uni II-Einkreis komplett
mit Dehkopf,Pendelbremse,Kreuzgelenk,FA-Adapter (RE)

Artikelnummer/Zeichnungsnummer: E51400040-001

Blatt 1 von 1

Zust. | Urspr. | Ers. f. | Ers. d.



probst handling equipment

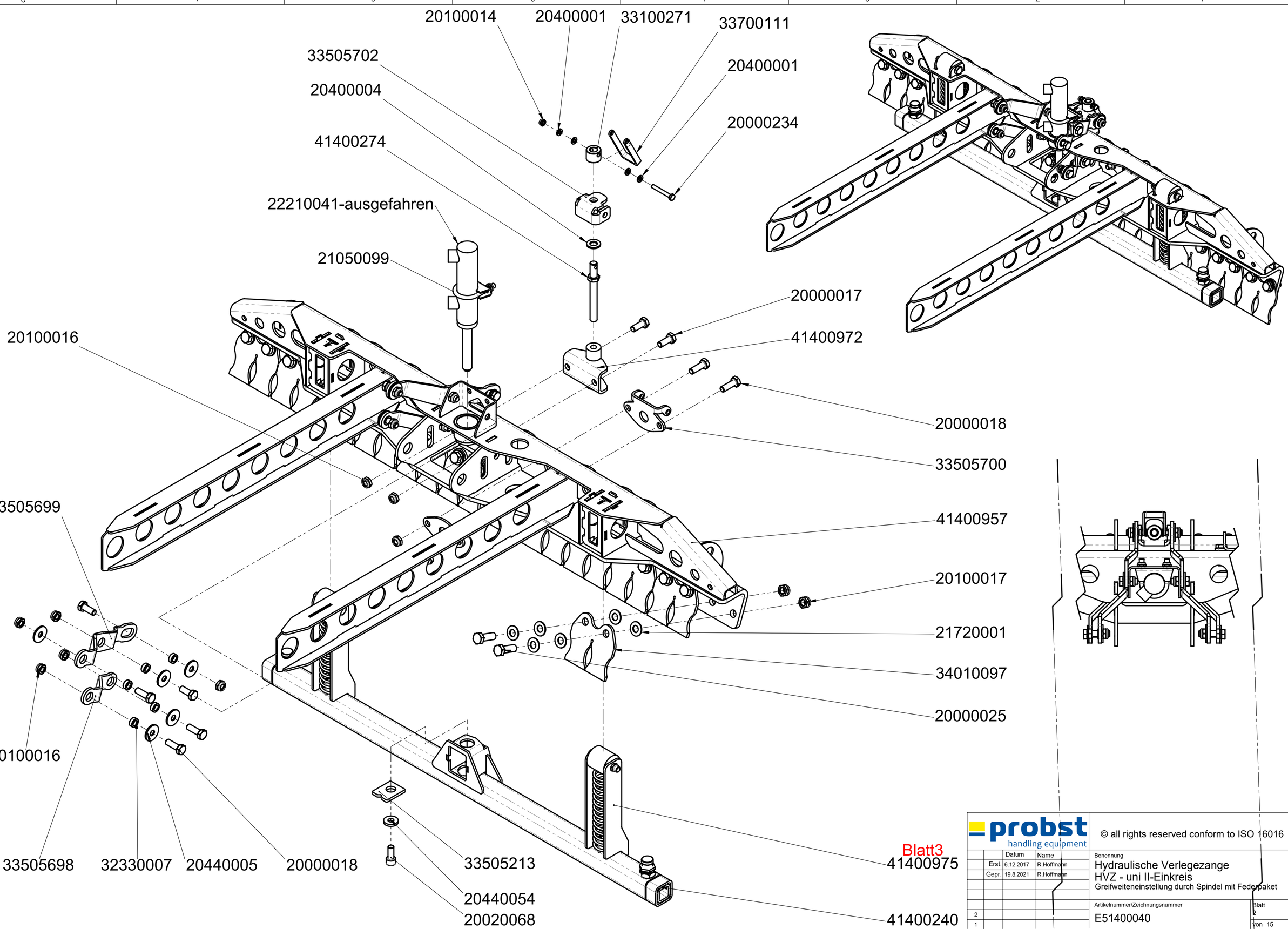
		Datum	Name
	Erst.	6.12.2017	R.Hoffmann
	Gepr.	19.8.2021	R.Hoffmann

Benennung
Hydraulische Verlegezange
HVZ - uni II-Einkreis
Greifweiteneinstellung durch Spindel mit Federpaket

Artikelnummer/Zeichnungsnummer: E51400040

Blatt 1 von 15

Zust. | Urspr. | Ers. f. | Ers. d.



Blatt3

probst handling equipment

		Datum	Name
	Erst.	6.12.2017	R.Hoffmann
	Gepr.	19.8.2021	R.Hoffmann
2			
1			
Zust.	Urspr.		

Benennung
Hydraulische Verlegezange
HVZ - uni II-Einkreis
Greifweiteneinstellung durch Spindel mit Federpaket

Artikelnummer/Zeichnungsnummer
E51400040

Blatt 3 von 15

Ers. f.

Ers. d.

21070138

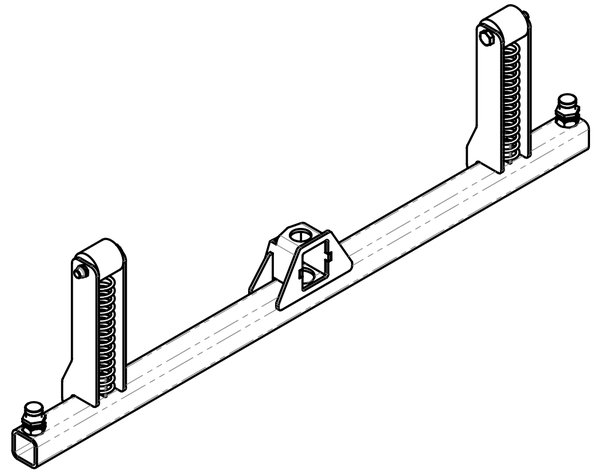
31000022

20000059

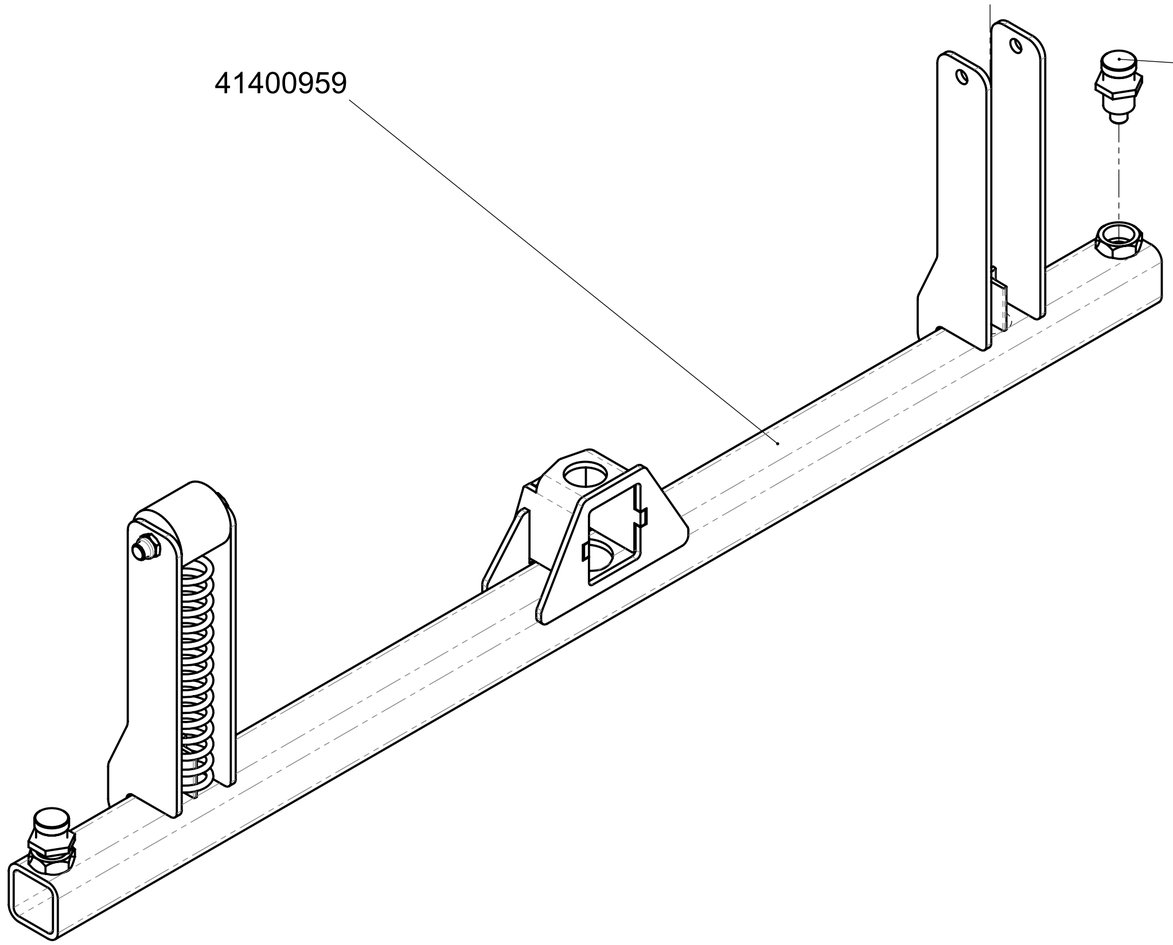
21700091

41400959

20100015



20540045



probst handling equipment

		Datum	Name
	Erst.	6.12.2017	R.Hoffmann
	Gepr.	19.8.2021	R.Hoffmann
2			
1			
Zust.	Urspr.		

Benennung

Hydraulische Verlegezange
HVZ - uni II-Einkreis
Greifweiteneinstellung durch Spindel mit Federpaket

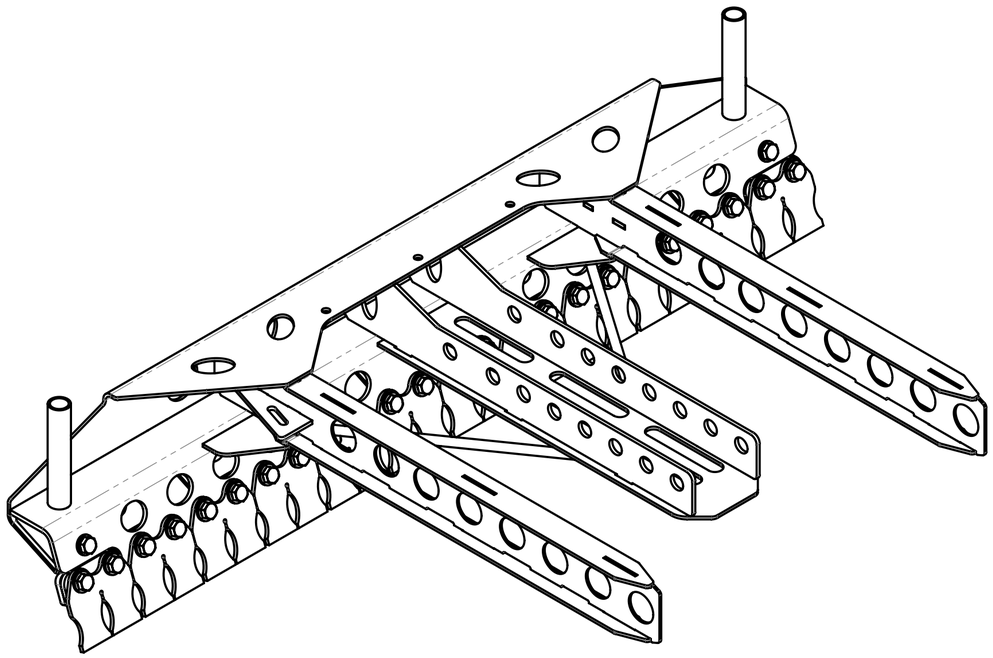
Artikelnummer/Zeichnungsnummer

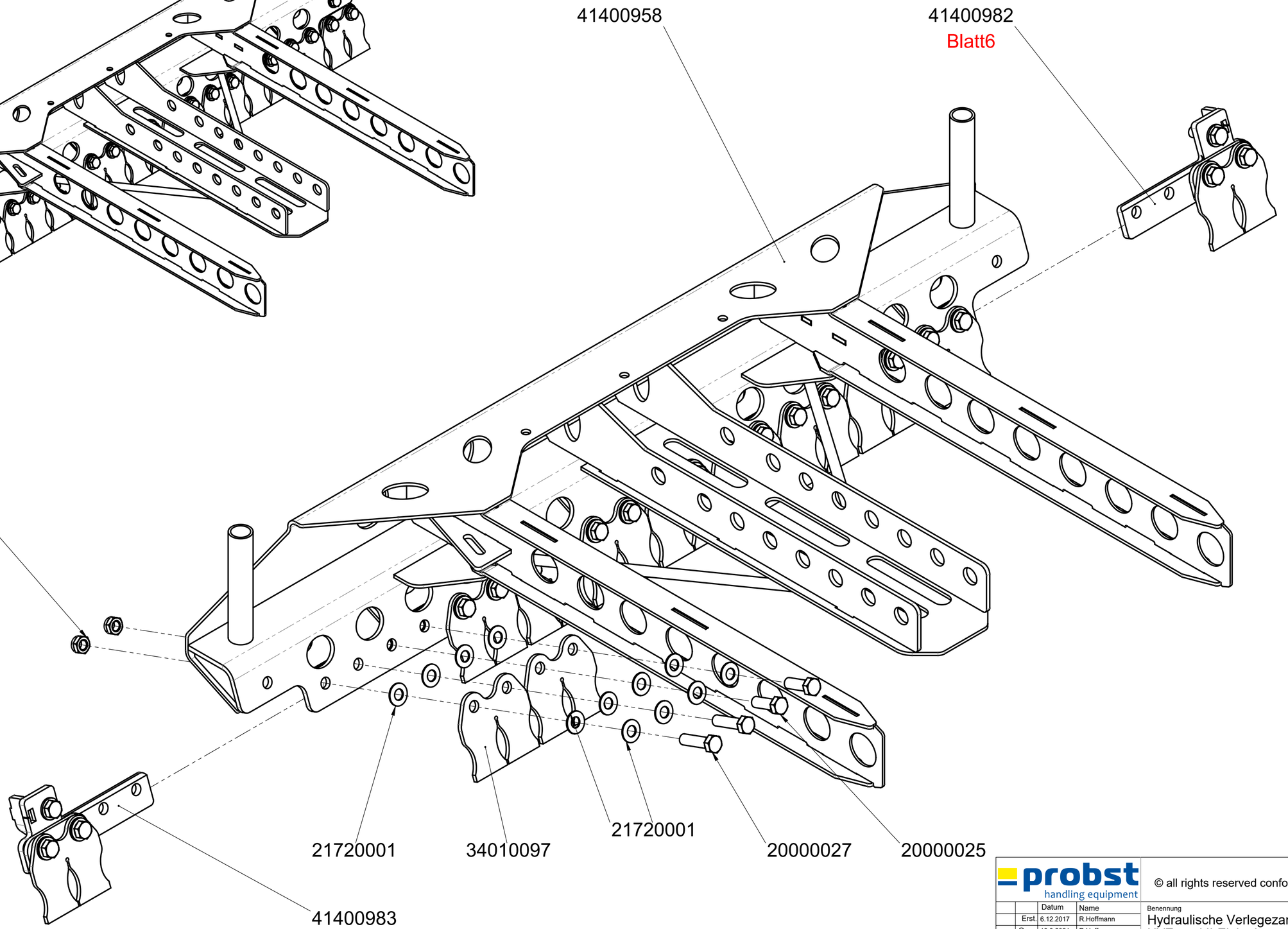
E51400040

Blatt 3 von 15

Ers. f.

Ers. d.





probst handling equipment

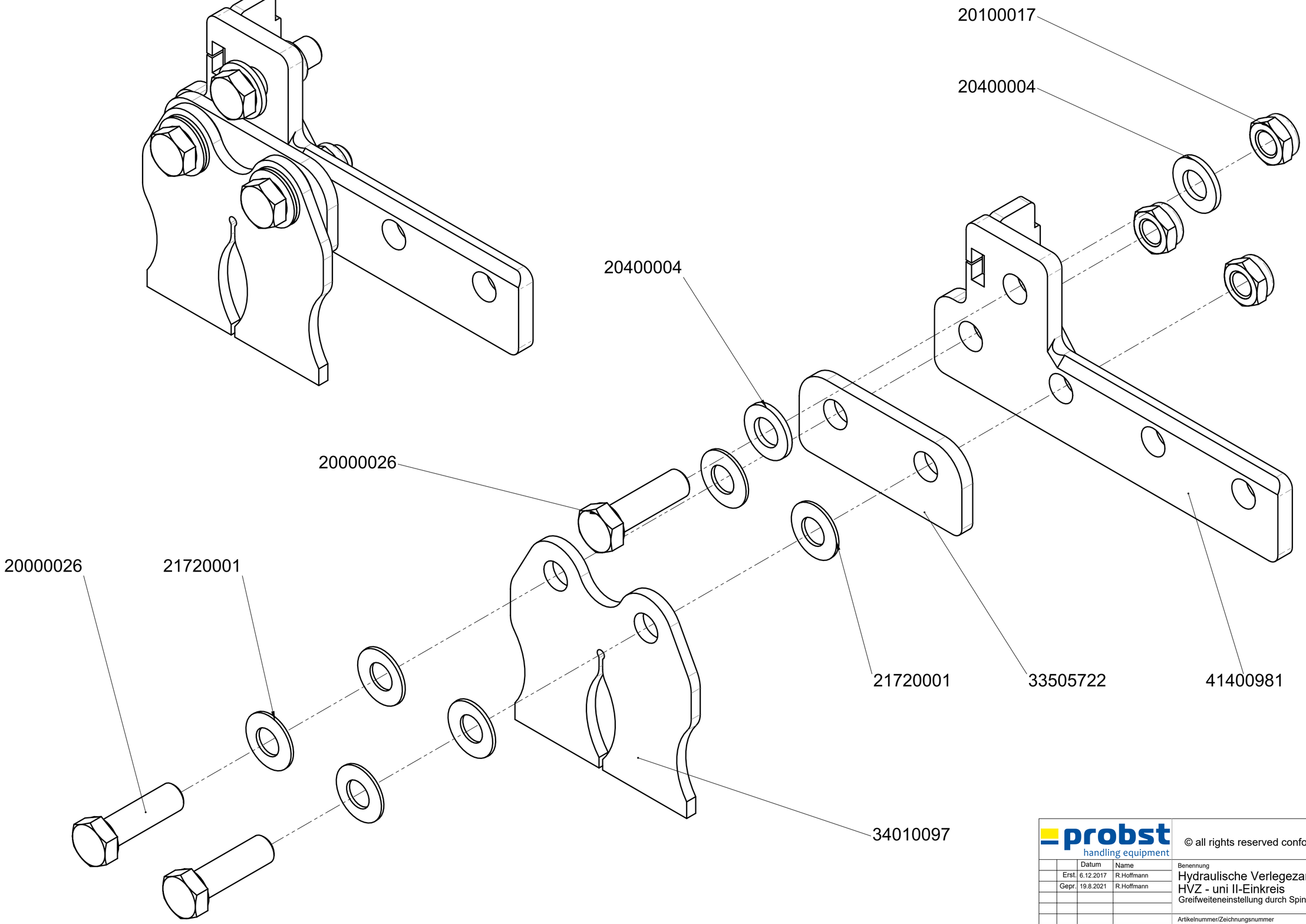
		Datum	Name
	Erst.	6.12.2017	R.Hoffmann
	Gepr.	19.8.2021	R.Hoffmann

Benennung
Hydraulische Verlegezange
HVZ - uni II-Einkreis
Greifweiteneinstellung durch Spindel mit Federpaket

Artikelnummer/Zeichnungsnummer
E51400040

Blatt 4
von 15

Zust.	Urspr.	Ers. f.	Ers. d.
2			
1			



probst handling equipment

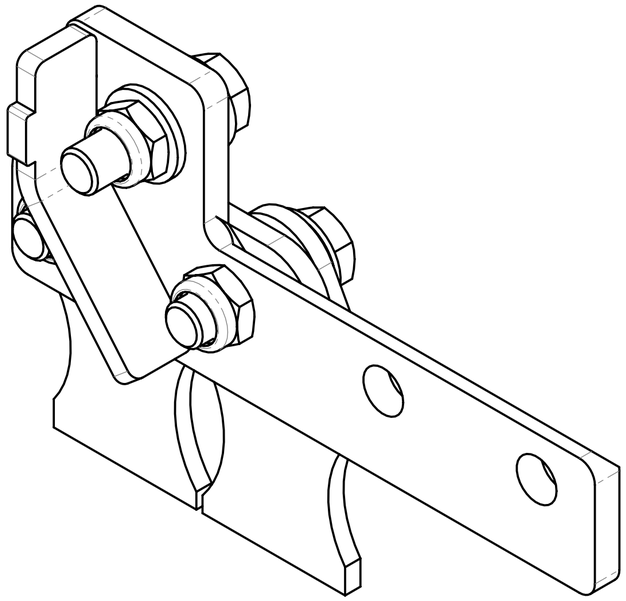
		Datum	Name
	Erst.	6.12.2017	R.Hoffmann
	Gepr.	19.8.2021	R.Hoffmann

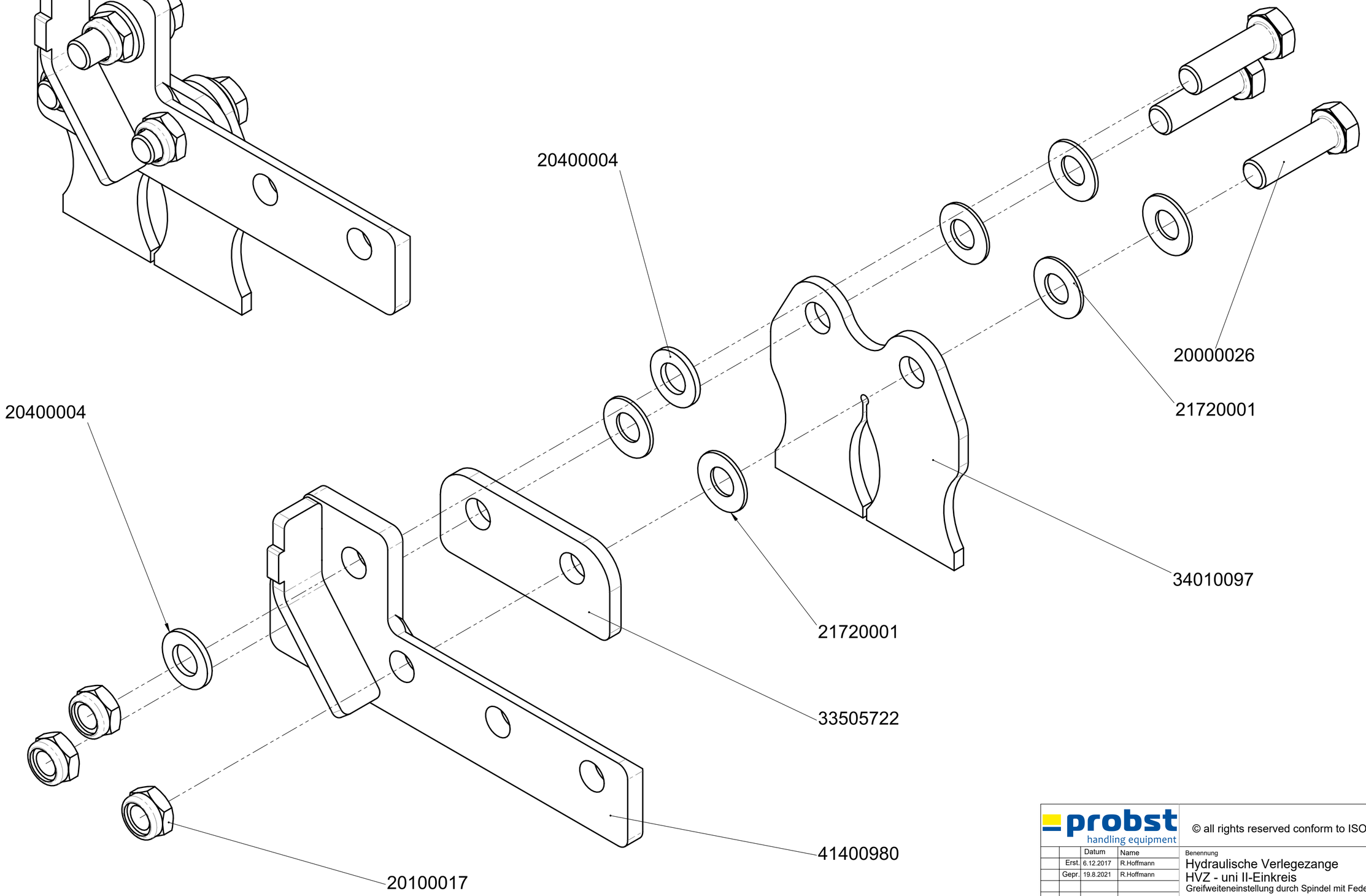
Benennung
Hydraulische Verlegezange
HVZ - uni II-Einkreis
Greifweiteneinstellung durch Spindel mit Federpaket

Artikelnummer/Zeichnungsnummer
E51400040

Blatt 5
von 15

Zust.	Ursprung	Ers. f.	Ers. d.
2			
1			





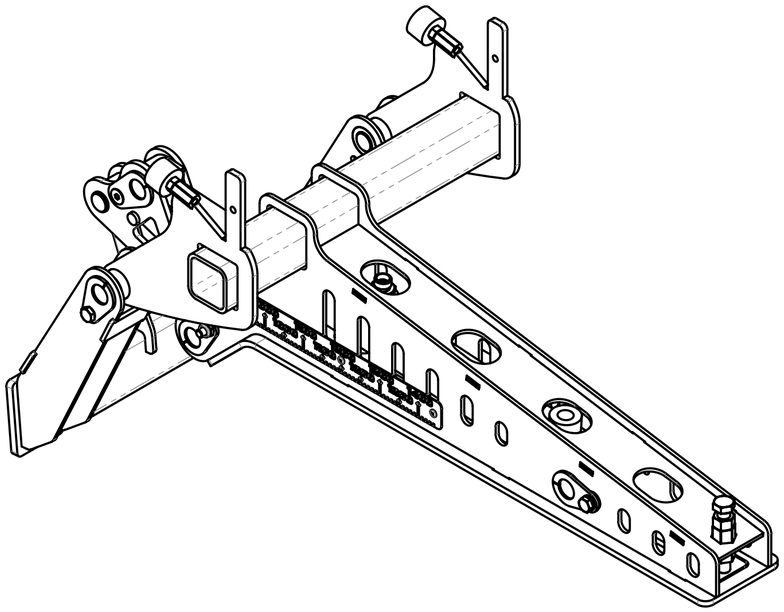
probst handling equipment

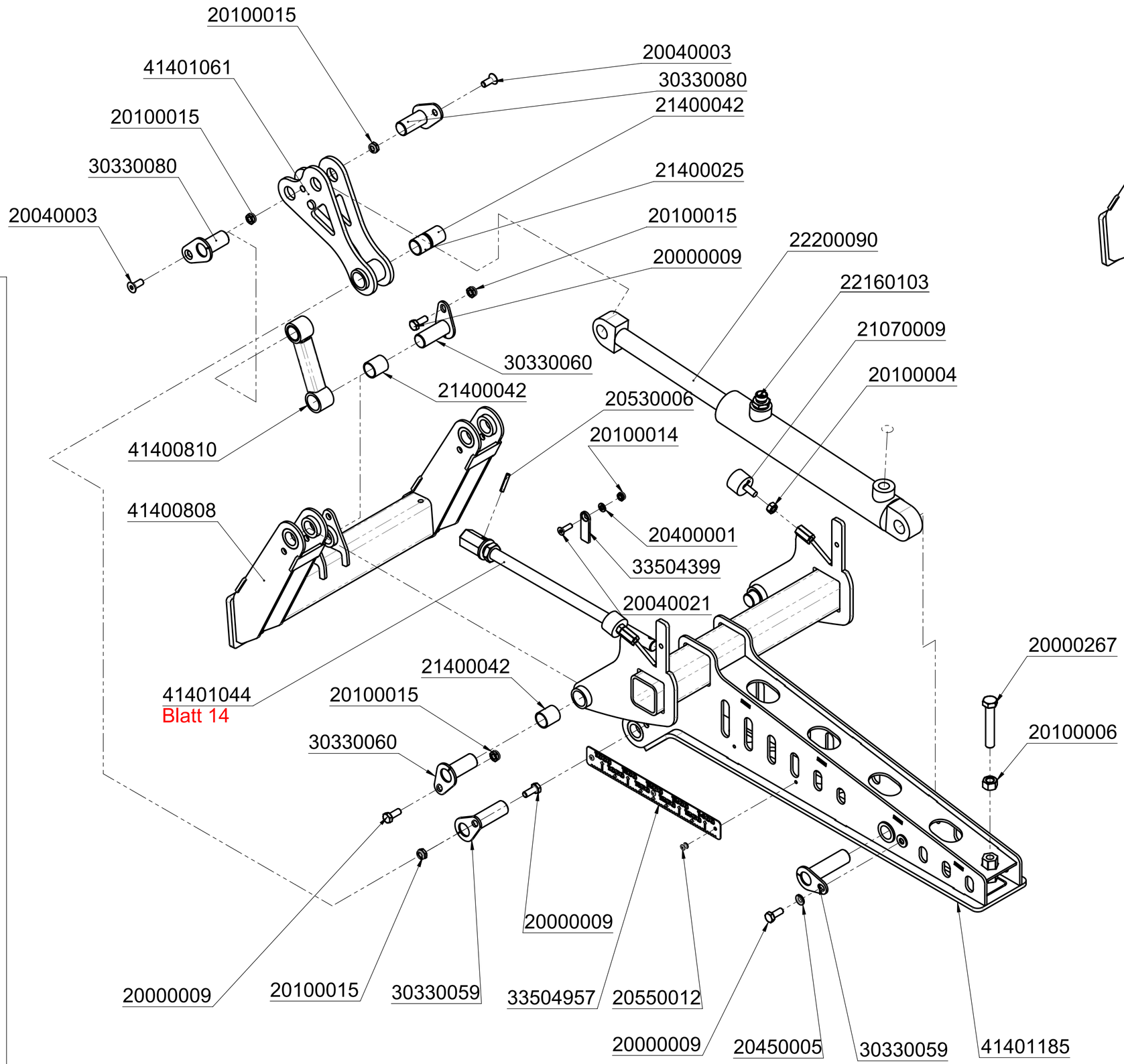
		Datum	Name
	Erst.	6.12.2017	R.Hoffmann
	Gepr.	19.8.2021	R.Hoffmann
2			
1			
Zust.	Urspr.	Ers. f.	Ers. d.

Benennung
Hydraulische Verlegezange
HVZ - uni II-Einkreis
Greifweiteneinstellung durch Spindel mit Federpaket

Artikelnummer/Zeichnungsnummer
E51400040

Blatt 6
von 15





probst handling equipment

		Datum	Name
	Erst.	6.12.2017	R.Hoffmann
	Gepr.	19.8.2021	R.Hoffmann

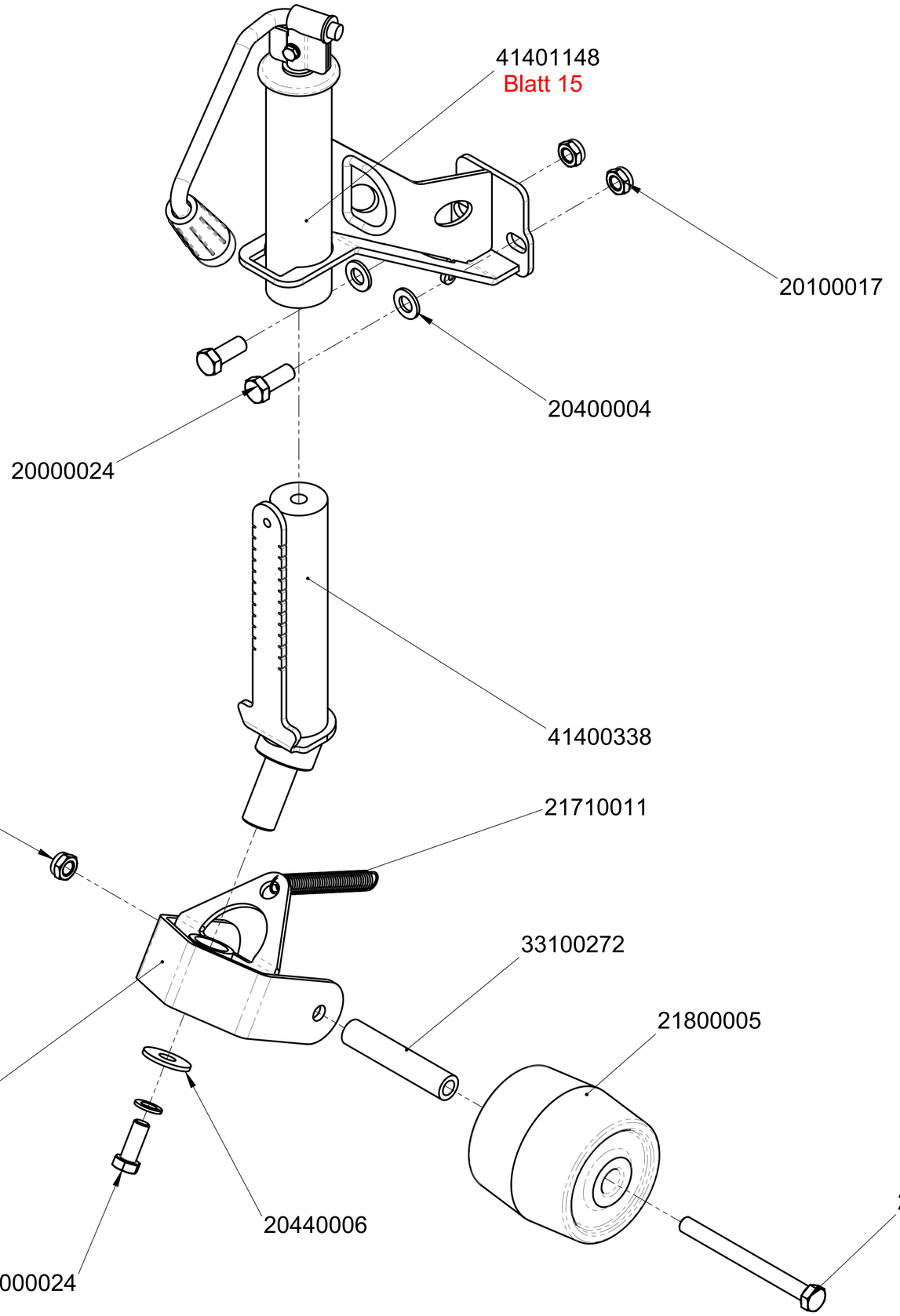
Benennung

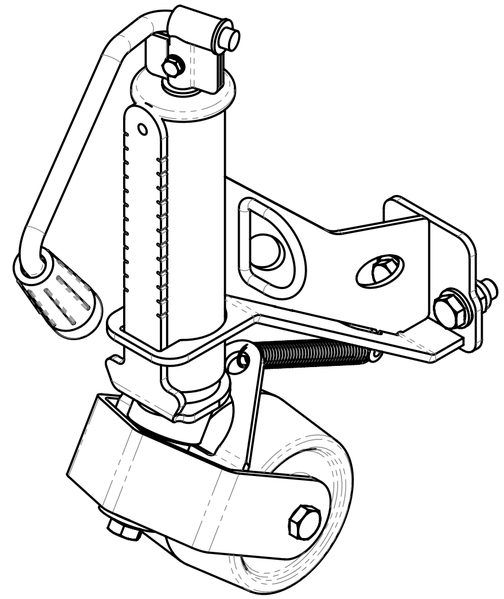
Hydraulische Verlegezange
HVZ - uni II-Einkreis
Greifweiteneinstellung durch Spindel mit Federpaket

Artikelnummer/Zeichnungsnummer: E51400040

Blatt 7 von 15

Zust.	Urspr.	Ers. f.	Ers. d.
2			
1			





probst handling equipment

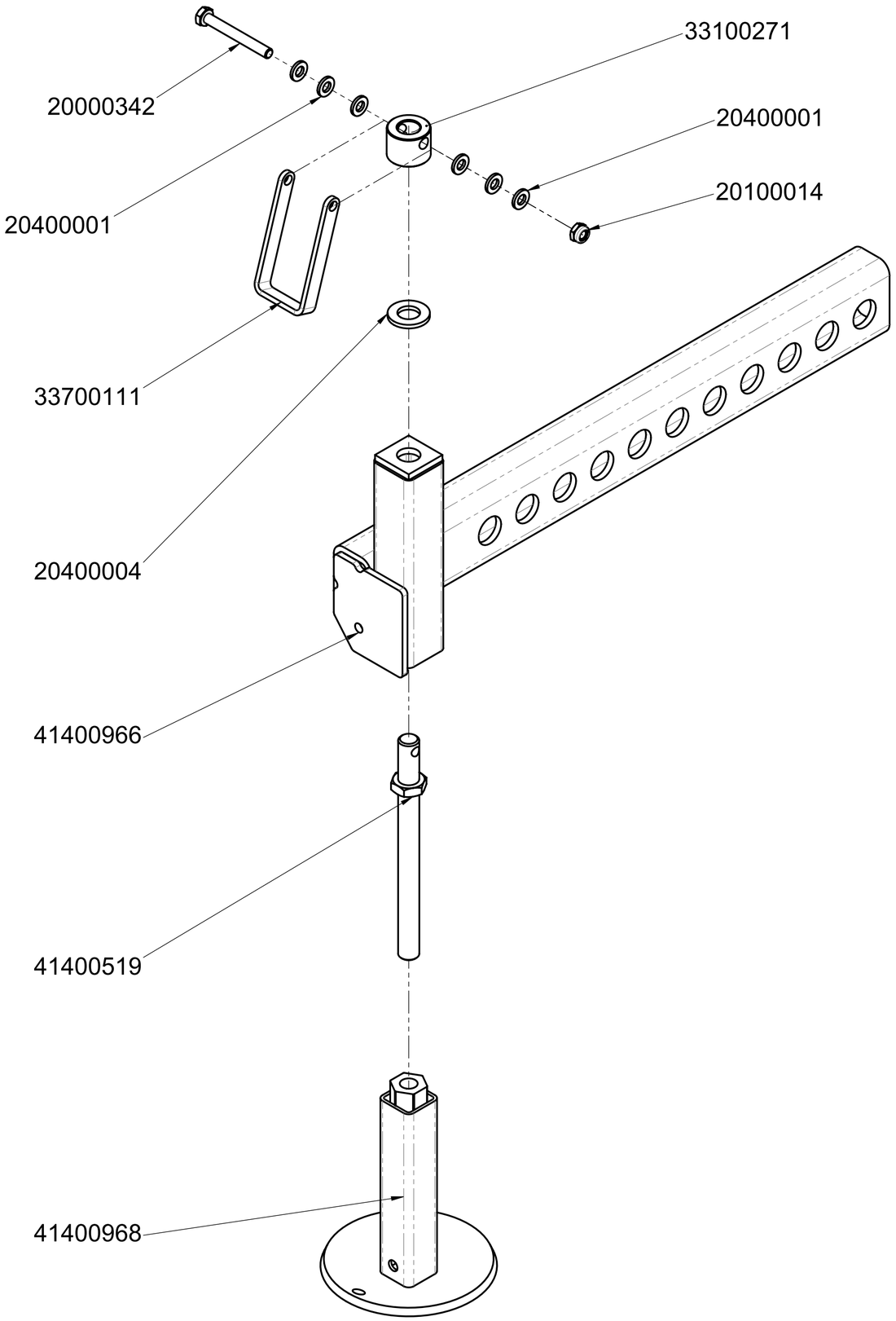
		Datum	Name
	Erst.	6.12.2017	R.Hoffmann
	Gepr.	19.8.2021	R.Hoffmann

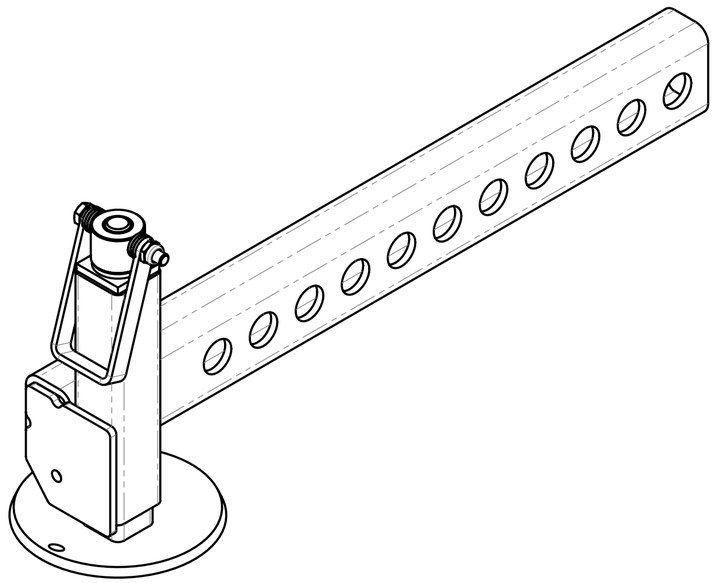
Benennung
Hydraulische Verlegezange
HVZ - uni II-Einkreis
Greifweiteneinstellung durch Spindel mit Federpaket

Artikelnummer/Zeichnungsnummer
E51400040

Blatt 8 von 15

Zust.	Ursprung	Ers. f.	Ers. d.
2			
1			





probst handling equipment

		Datum	Name
	Erst.	6.12.2017	R.Hoffmann
	Gepr.	19.8.2021	R.Hoffmann
2			
1			
Zust.	Urspr.	Ers. f.	Ers. d.

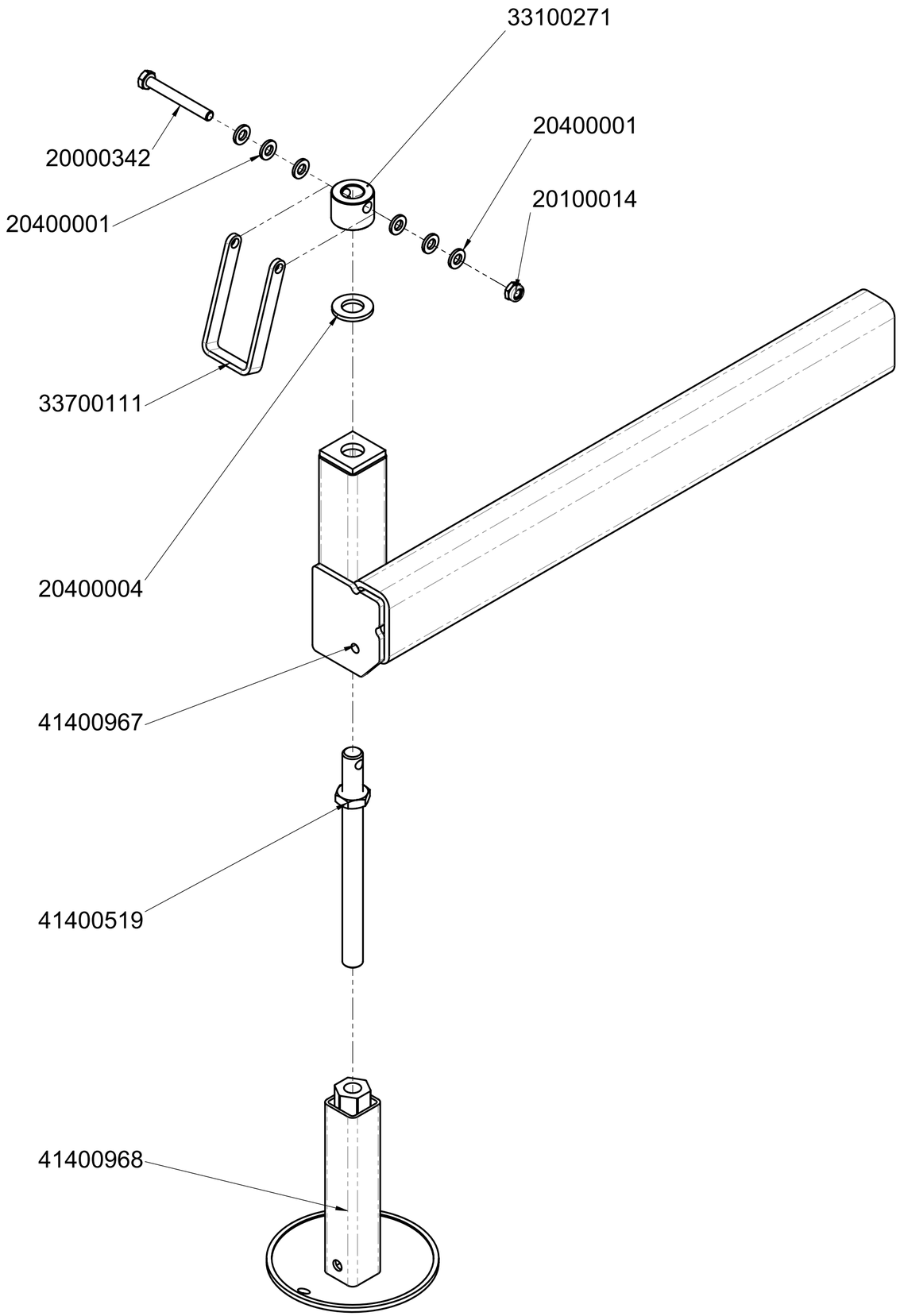
Benennung

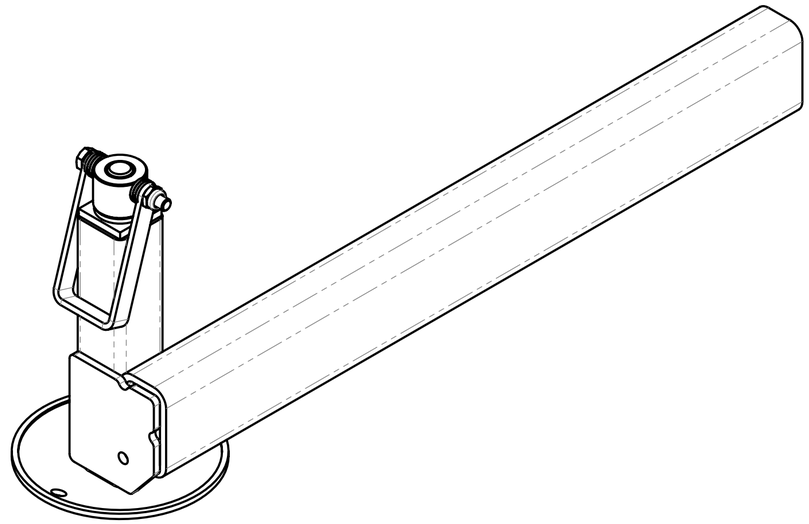
Hydraulische Verlegezange
HVZ - uni II-Einkreis
Greifweiteneinstellung durch Spindel mit Federpaket

Artikelnummer/Zeichnungsnummer

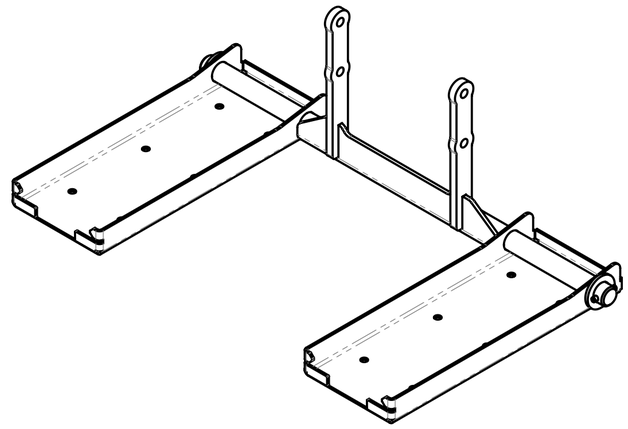
E51400040

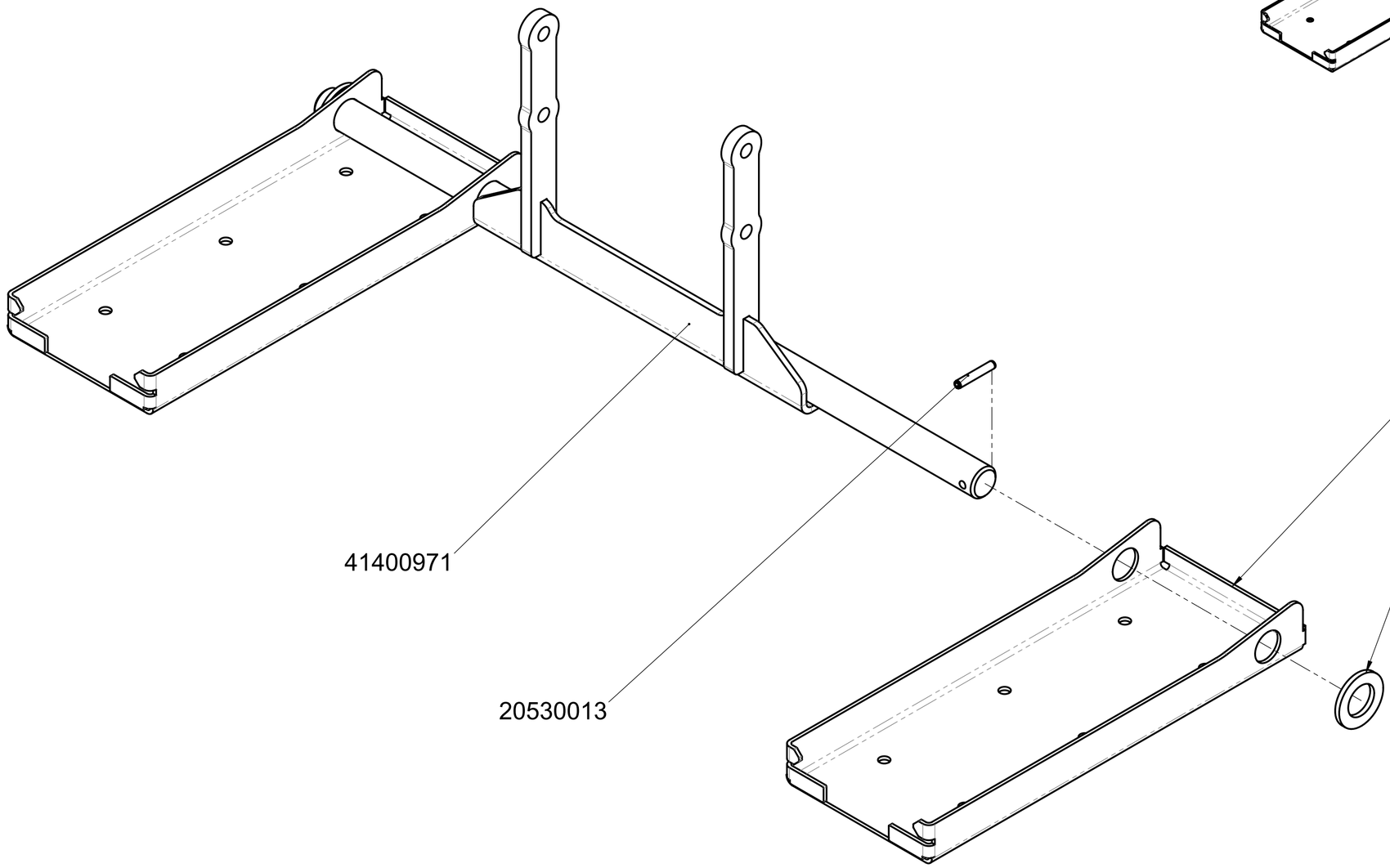
Blatt 9 von 15





probst handling equipment				© all rights reserved conform to ISO 16016
		Datum	Name	Benennung
	Erst.	6.12.2017	R.Hoffmann	Hydraulische Verlegezange
	Gepr.	19.8.2021	R.Hoffmann	HVZ - uni II-Einkreis
				Greifweiteneinstellung durch Spindel mit Federpaket
				Artikelnummer/Zeichnungsnummer: E51400040 — Blatt 10 — von 15
2				
1				
Zust.	Urspr.			Ers. f. — Ers. d.





probst handling equipment

		Datum	Name
	Erst.	6.12.2017	R.Hoffmann
	Gepr.	19.8.2021	R.Hoffmann
2			
1			
Zust.	Urspr.	Ers. f.	Ers. d.

Benennung

Hydraulische Verlegezange HVZ - uni II-Einkreis

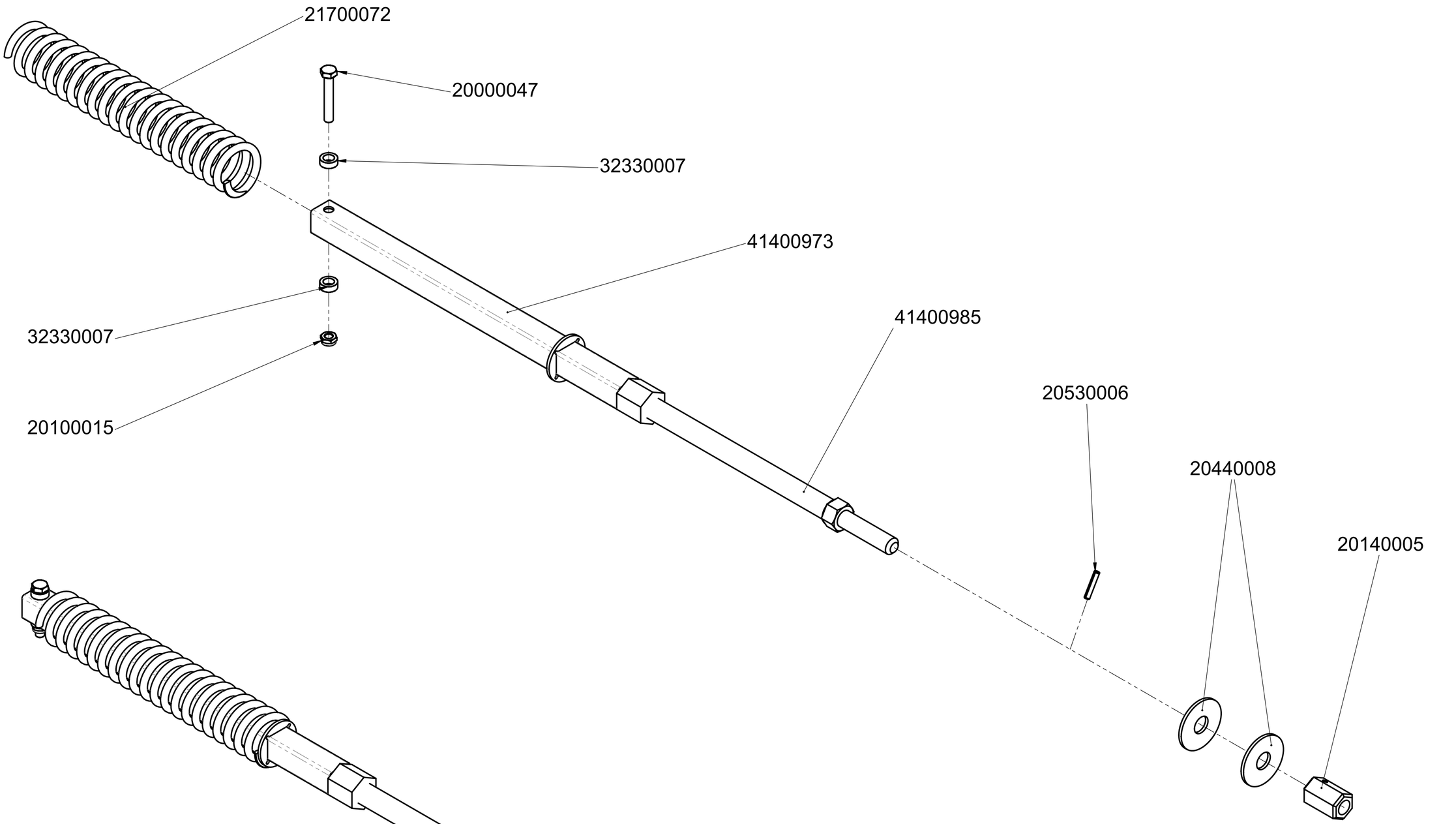
Greifweiteneinstellung durch Spindel mit Federpaket

Artikelnummer/Zeichnungsnummer

E51400040

Blatt 11

von 15



probst handling equipment

		Datum	Name
	Erst.	6.12.2017	R.Hoffmann
	Gepr.	19.8.2021	R.Hoffmann

Benennung

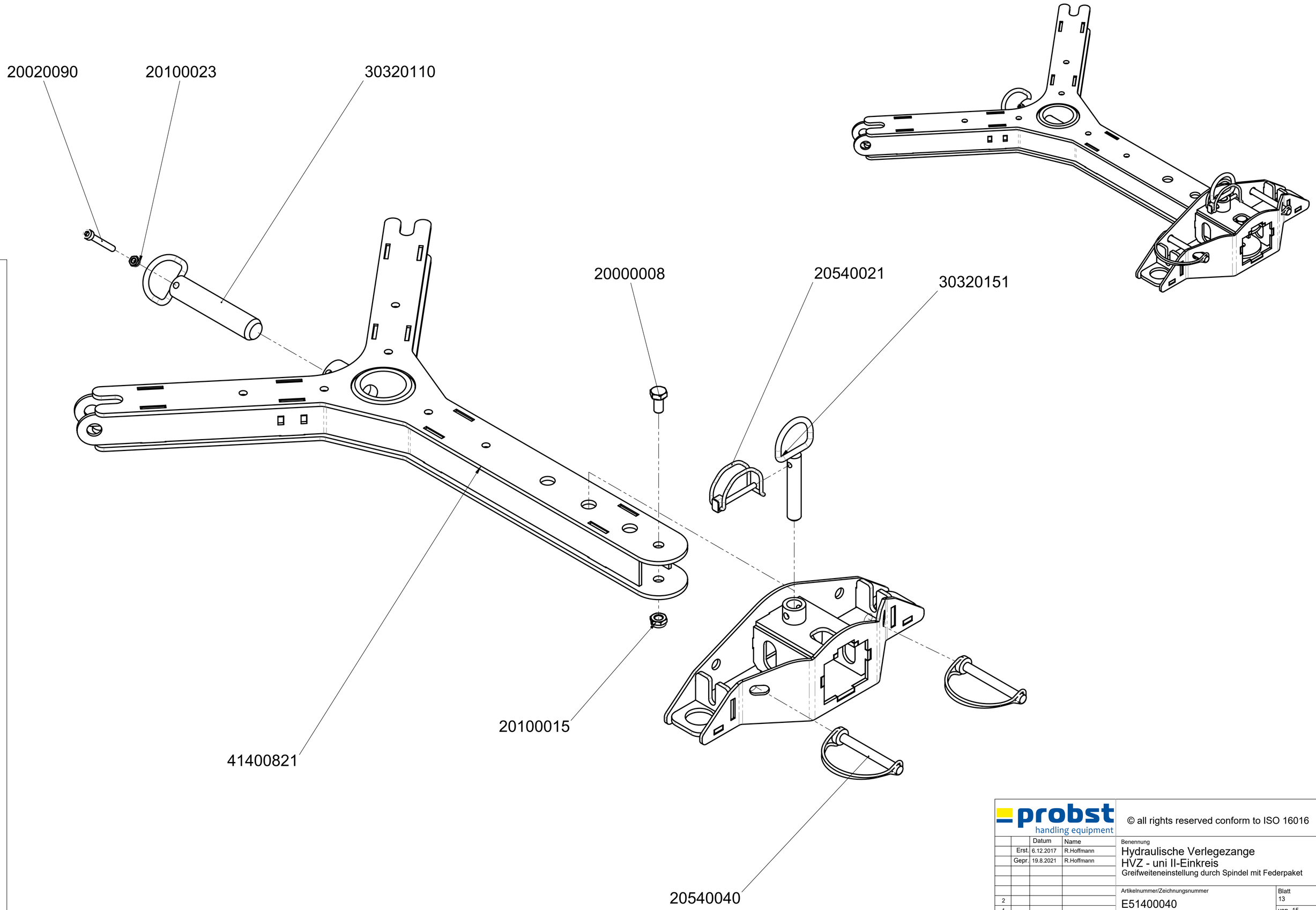
Hydraulische Verlegezange
HVZ - uni II-Einkreis
Greifweiteneinstellung durch Spindel mit Federpaket

Artikelnummer/Zeichnungsnummer

E51400040

Blatt 12 von 15

Zust.	Ursprung	Ers. f.	Ers. d.
2			
1			



probst handling equipment

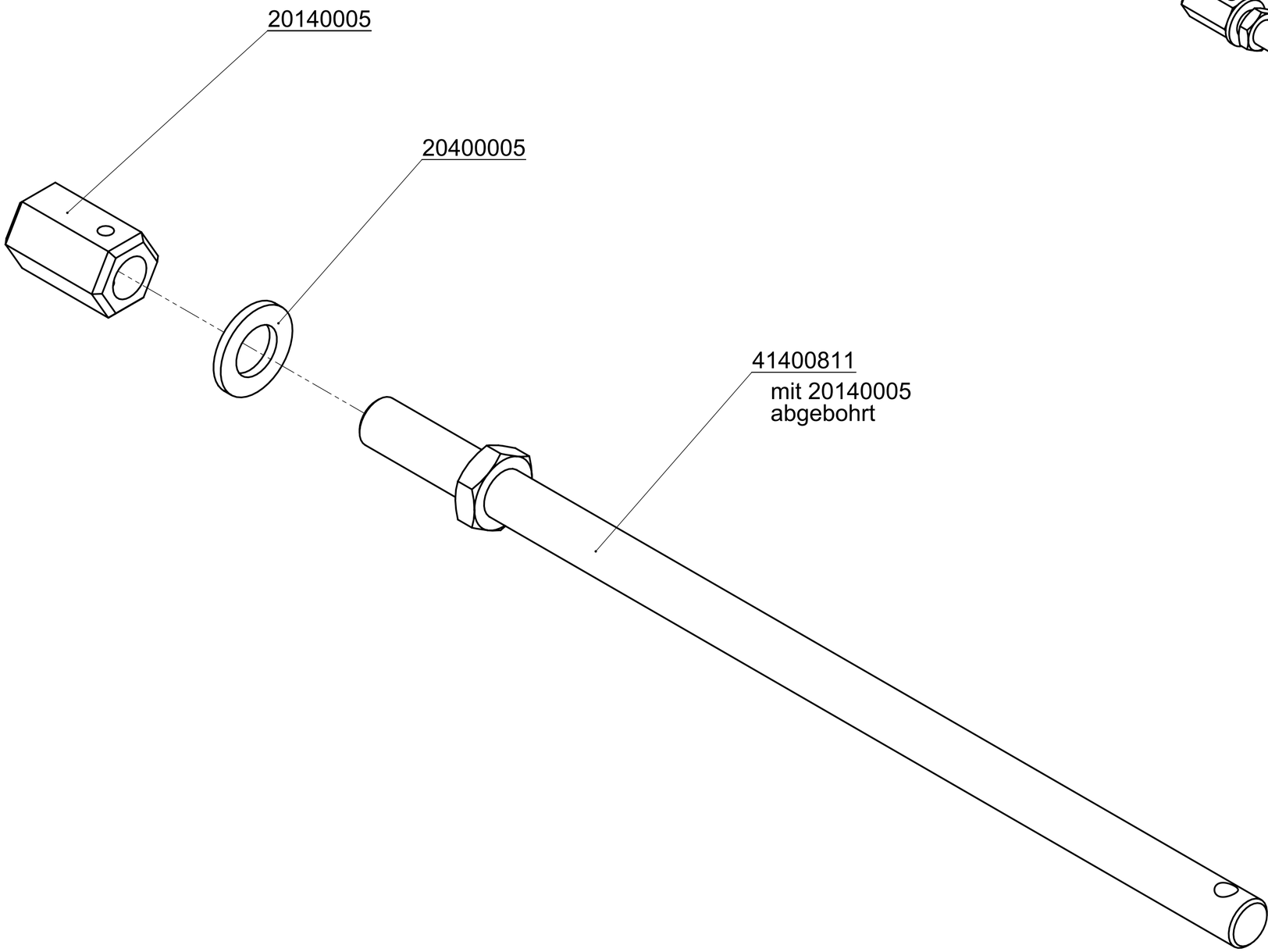
		Datum	Name
	Erst.	6.12.2017	R.Hoffmann
	Gepr.	19.8.2021	R.Hoffmann

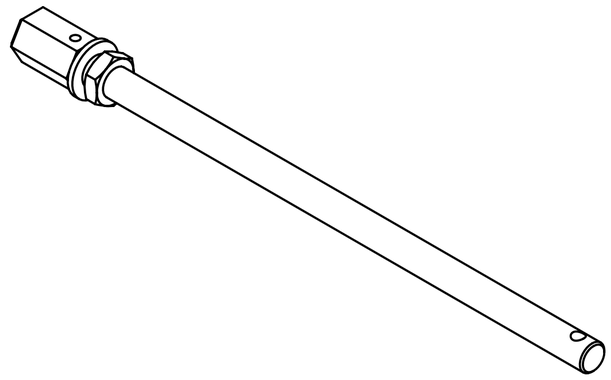
Benennung
Hydraulische Verlegezange
HVZ - uni II-Einkreis
Greifweiteneinstellung durch Spindel mit Federpaket

Artikelnummer/Zeichnungsnummer
E51400040

Blatt 13
von 15

Zust.	Ursprr.	Ers. f.	Ers. d.
2			
1			





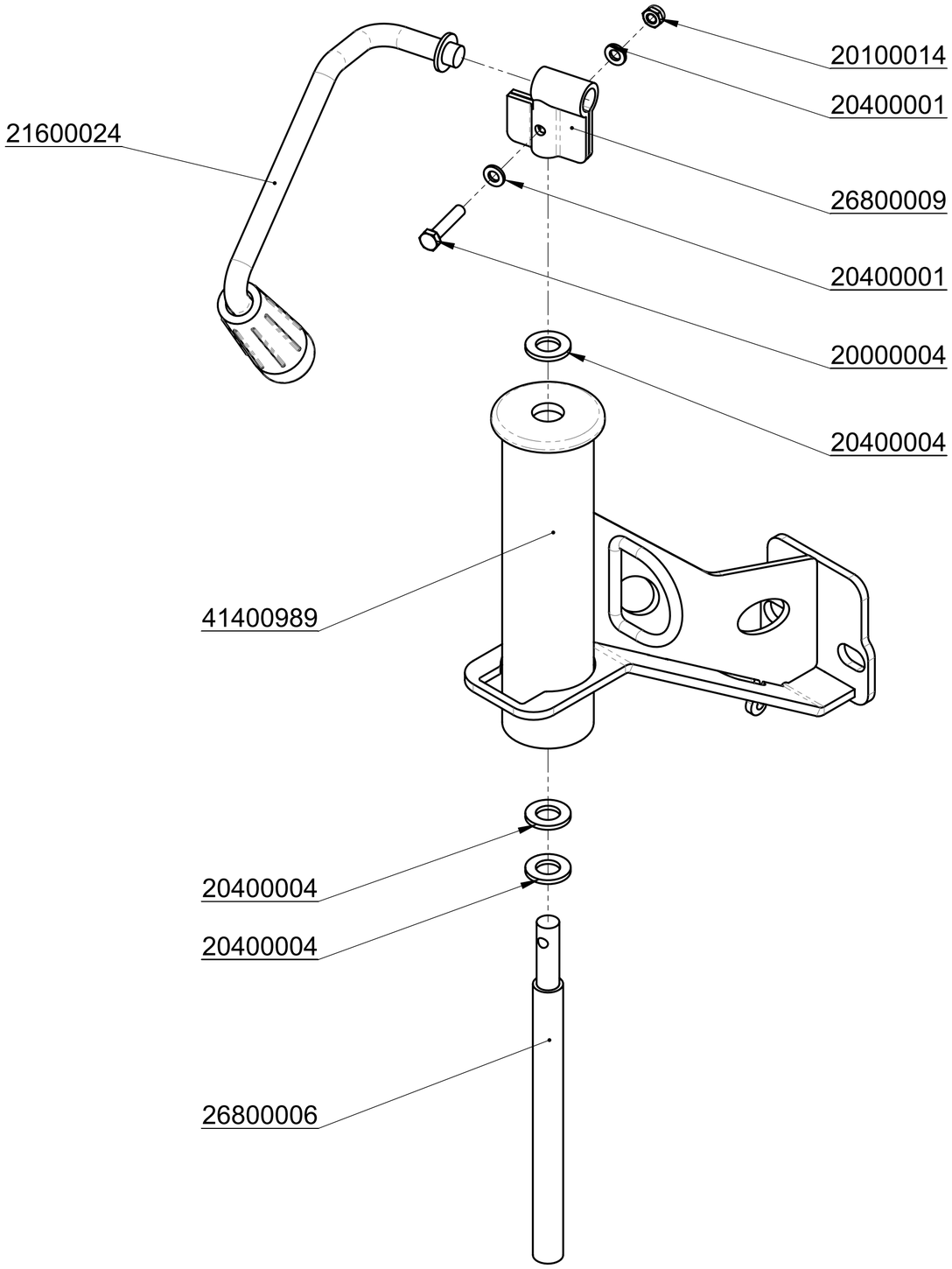
probst handling equipment

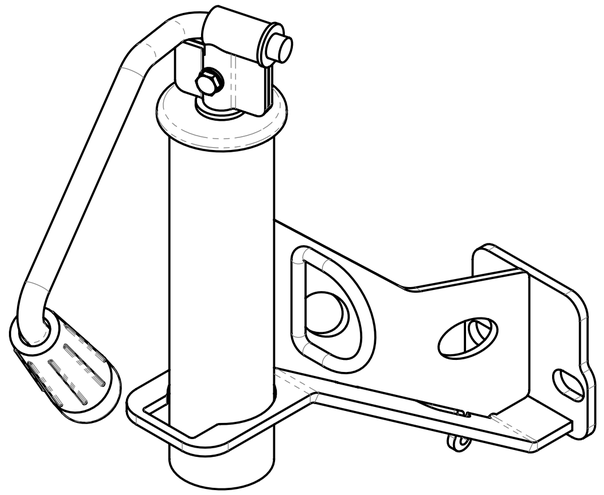
		Datum	Name
	Erst.	6.12.2017	R.Hoffmann
	Gepr.	19.8.2021	R.Hoffmann
2			
1			
Zust.	Urspr.	Ers. f.	Ers. d.

Benennung
Hydraulische Verlegezange
HVZ - uni II-Einkreis
Greifweiteneinstellung durch Spindel mit Federpaket

Artikelnummer/Zeichnungsnummer
E51400040

Blatt 14
von 15





probst handling equipment

		Datum	Name
	Erst.	6.12.2017	R.Hoffmann
	Gepr.	19.8.2021	R.Hoffmann
2			
1			
Zust.	Urspr.	Ers. f.	Ers. d.

Benennung

Hydraulische Verlegezange HVZ - uni II-Einkreis

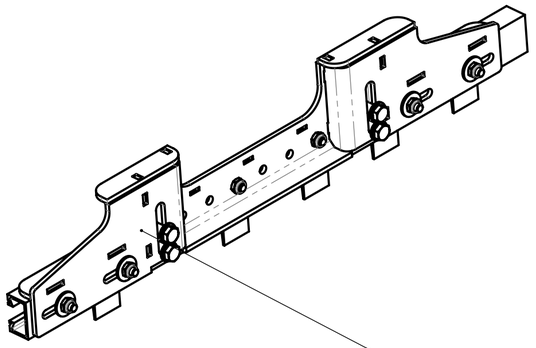
Greifweiteneinstellung durch Spindel mit Federpaket

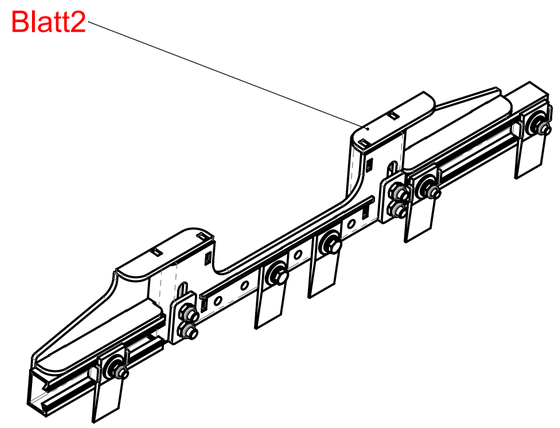
Artikelnummer/Zeichnungsnummer

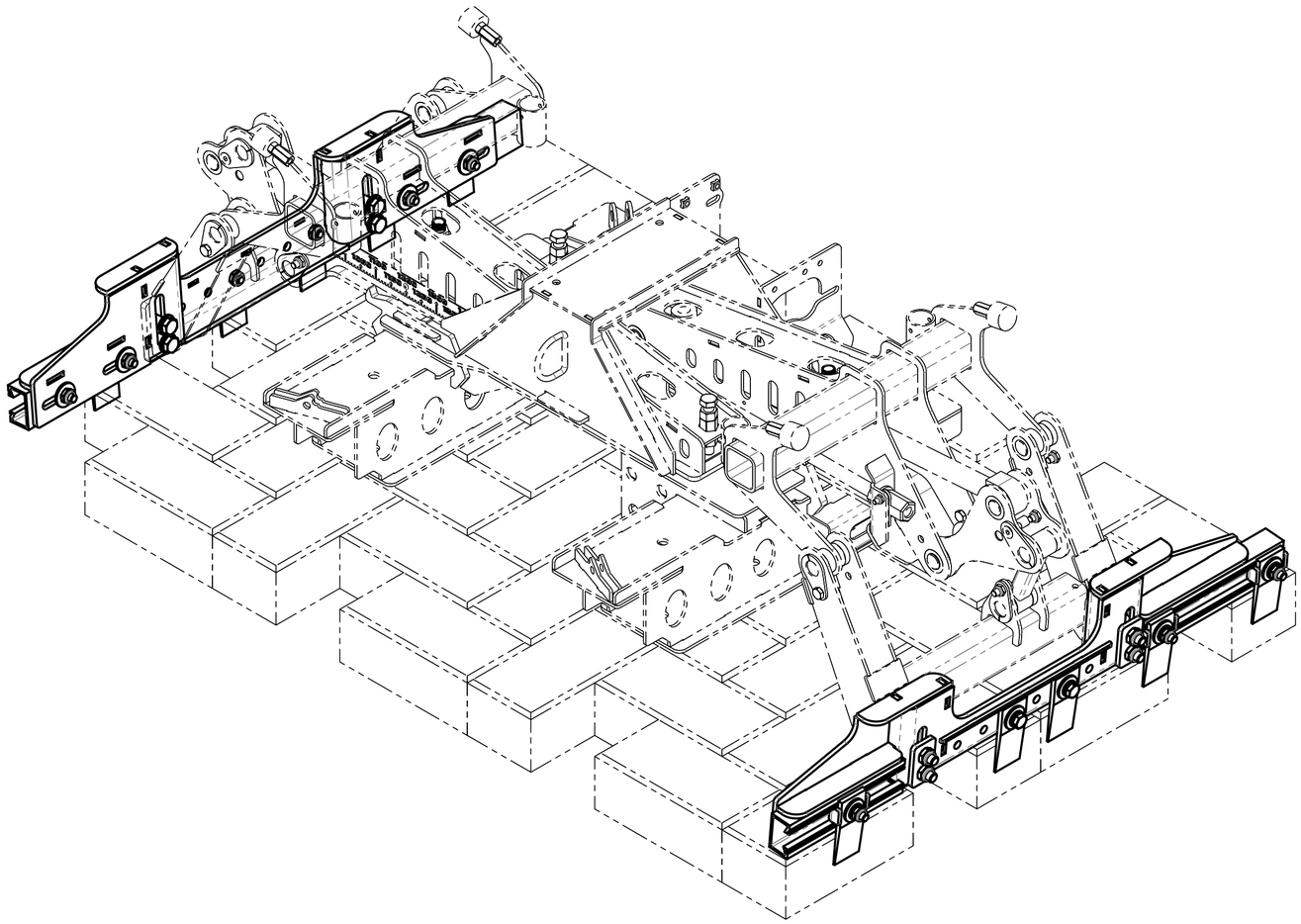
E51400040

Blatt 15

von 15







		Datum	Name
	Erst.	25.10.2016	R.Hoffmann
	Gepr.	7.3.2023	R.Hoffmann

Benennung
Fischgrät-Adapter mit RE-Messer für HVZ-uni II

Artikelnummer/Zeichnungsnummer
E41400557-009

Blatt 1 von 4

1 | Zust. | Ursp. | Ers. f. | Ers. d.

41401205

20000267

20400004

34010080

20100016

20100016

33502274

20100017

41400569

Blatt4

20020120

20440005

20000018

21720008

20440005

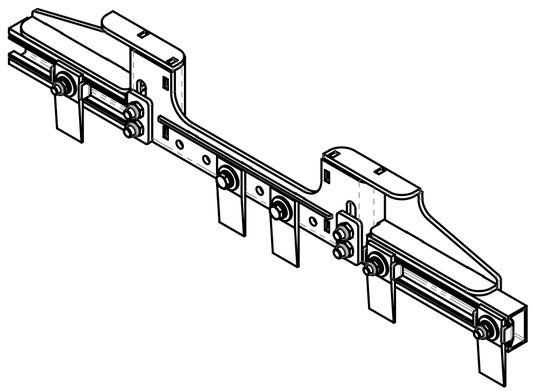
41800002

34010089

41400569

Blatt4

20020120



		Datum	Name
	Erst.	25.10.2016	R.Hoffmann
	Gepr.	7.3.2023	R.Hoffmann

Benennung

Fischgrät-Adapter mit RE-Messer für HVZ-uni II

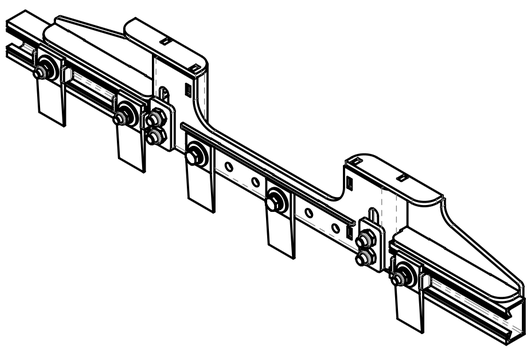
Artikelnummer/Zeichnungsnummer

E41400557-009

Blatt 2 von 4

Zust.	Urspr.	Ers. f.	Ers. d.
1			

34010089
41401205
20100016
20400004
20000267
33502274
20100016
20440005
21720008
41400569
Blatt4
20020120
20000018
41800002
20100017
41400569
Blatt4
20020120
34010080
20440005



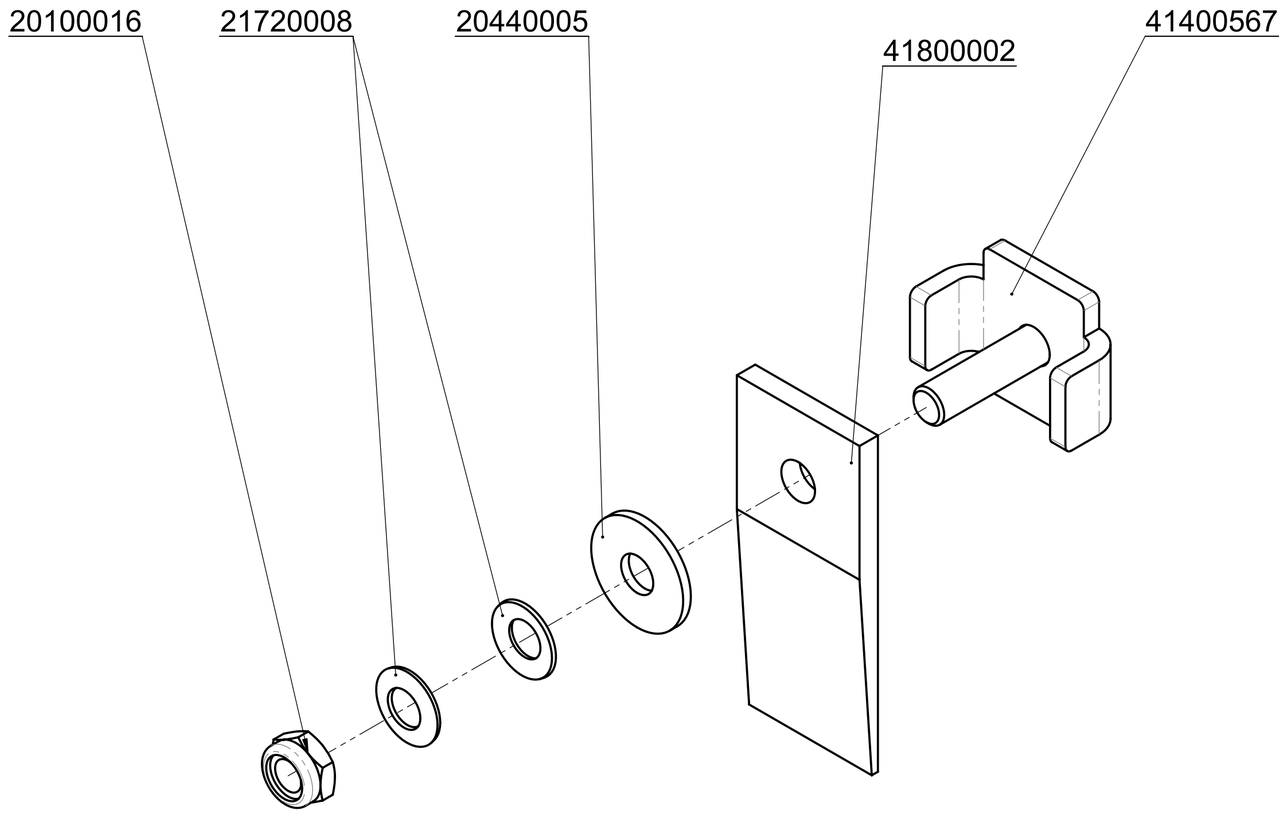
		Datum	Name
	Erst.	25.10.2016	R.Hoffmann
	Gepr.	7.3.2023	R.Hoffmann

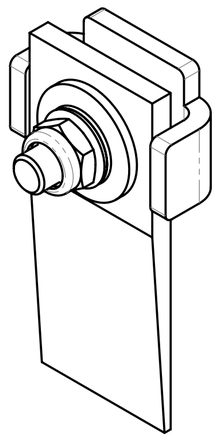
Benennung
Fischgrät-Adapter mit RE-Messer für HVZ-uni II

Artikelnummer/Zeichnungsnummer
E41400557-009

Blatt 3
von 4

Zust. | Urspr. | Ers. f. | Ers. d.





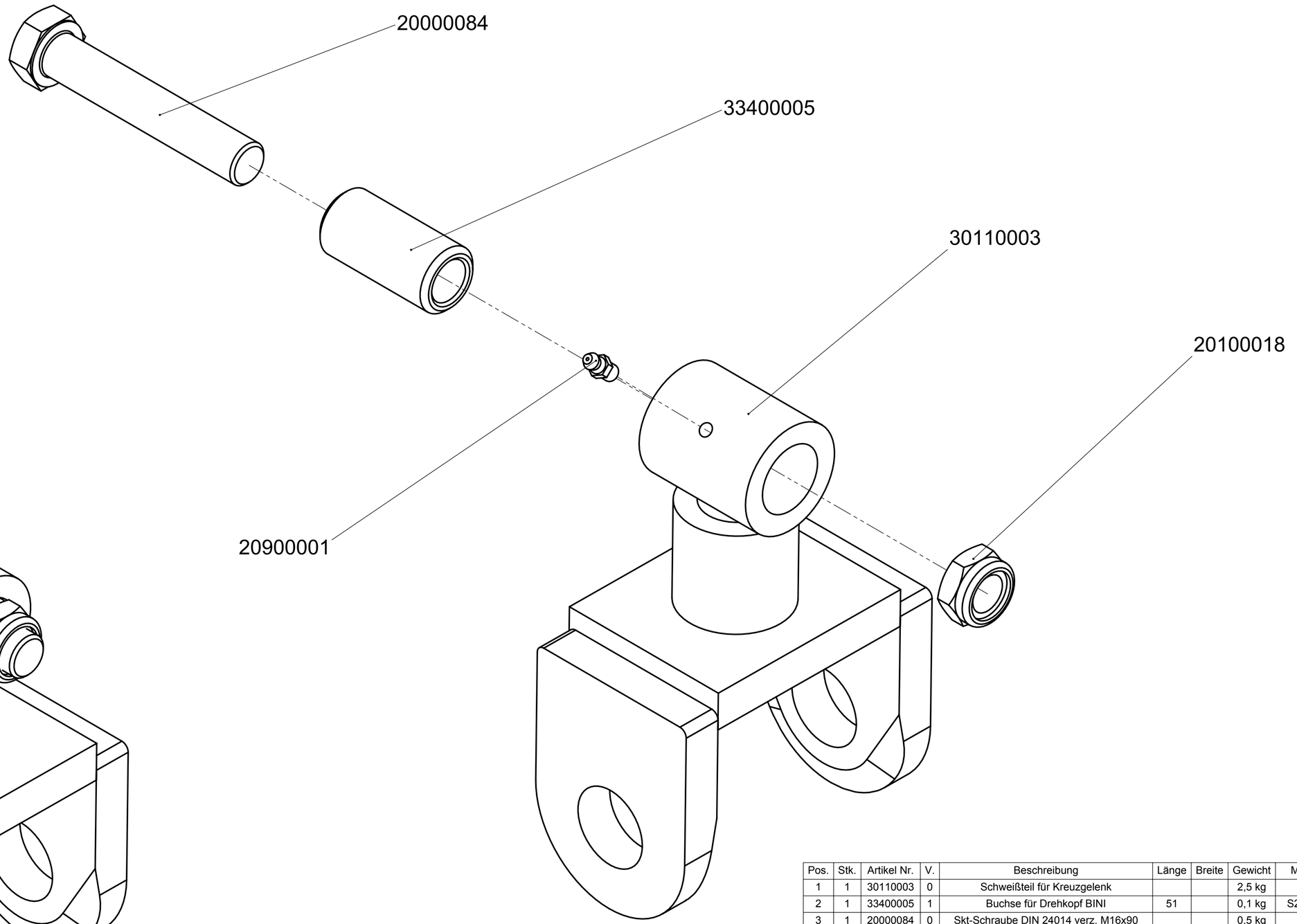
		Datum	Name
	Erst.	25.10.2016	R.Hoffmann
	Gepr.	7.3.2023	R.Hoffmann

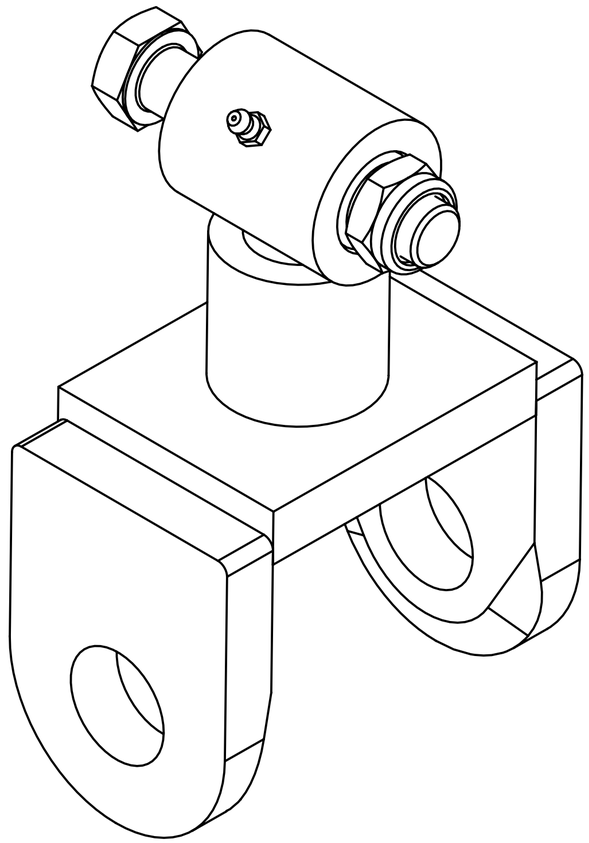
Benennung
Fischgrät-Adapter mit RE-Messer für HVZ-uni II

Artikelnummer/Zeichnungsnummer
E41400557-009

Blatt 4
von 4

Zust.	Urspr.	Ers. f.	Ers. d.
1			





Pos.	Stk.	Artikel Nr.	V.	Beschreibung	Länge	Breite	Gewicht	Material
1	1	30110003	0	Schweißteil für Kreuzgelenk			2,5 kg	
2	1	33400005	1	Buchse für Drehkopf BINI	51		0,1 kg	S235G2T
3	1	20000084	0	Skt-Schraube DIN 24014 verz. M16x90			0,5 kg	
4	1	20100018	0	Skt.-Mutter DIN EN ISO 10511 - M16			0,0 kg	
5	1	20900001	0	Schmiernippel Form A DIN 71412 M 6x1			0,0 kg	

probst handling equipment

		Datum	Name
	Erst.	17.5.2016	R.Hoffmann
	Gepr.	17.5.2016	R.Hoffmann

Benennung
Kreuzgelenk zu VM 203/204/301 für Indexator
ohne Bolzen / Schraube M16x90

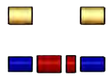
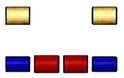
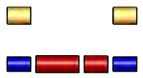
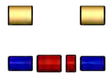
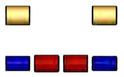
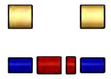
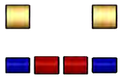
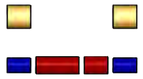
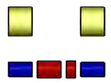
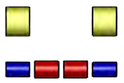
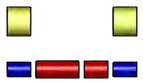
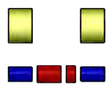
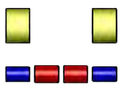
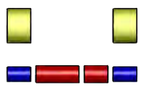
Artikelnummer/Zeichnungsnummer
E40110435

Blatt 1
von 1

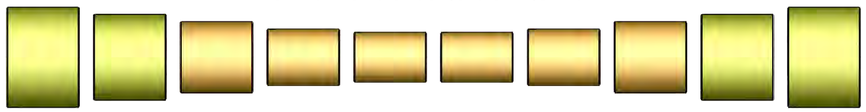
Zust. Urspr. K39-38 | Ers. f. | Ers. d.

Baggerarmbreite / excavator arm width "B"

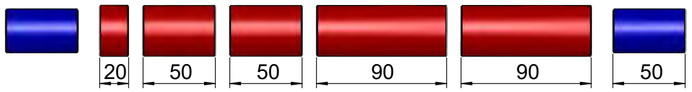
Bolzen-Ø / bolt-Ø "A"

	100	120	150	180	200	250	300	350	400
Ø30									
Ø35									
Ø40									
Ø50									
Ø60									
Ø70									

Bolzen / bolts Ø35 - Ø70 "A"



Distanzhülsen / spacers Ø35



Bolzen / bolts Ø30 "A"

Hülsensatz / sleeves set

Pos.	Stk./ Pc.	Artikel Nr./ part No.	V.	Beschreibung/description	Länge/length	Gewicht/weight	Material
1	1	33100075	0	Distanzbuchse Ø35x4,5x20 lang mit beids. Fase 0,5x45°	20.0	0,1 kg	S235JRG2
2	2	33100076	0	Distanzbuchse Ø35x4,5x50 lang mit beids. Fase 0,5x45°	50.0	0,2 kg	S235JRG2
3	2	33100077	0	Distanzbuchse Ø35x4,5x90 lang mit beids. Fase 0,5x45°	90.0	0,3 kg	S235JRG2
4	4	33100078	0	Distanzbuchse Ø30x2x50 lang mit beids. Fase 0,5x45°	50.0	0,1 kg	S235G2T
5	2	33100079	0	Distanzbuchse Ø35x2x50 lang mit beids. Fase 0,5x45°	50.0	0,1 kg	S235JRG2
6	2	33100080	0	Distanzbuchse Ø39,5xØ31x50 lang mit beids. Fase 0,5x45°	50.0	0,2 kg	S235JRG2
7	2	33100081	0	Distanzbuchse Ø49,5xØ31x50 lang mit beids. Fase 0,5x45°	50.0	0,5 kg	S235G2T
8	2	33100082	1	Distanzbuchse Ø59,5xØ31x50 lang mit beids. Fase 0,5x45°	50.0	0,79 kg	S235JRG2
9	2	33100083	0	Distanzbuchse Ø69,5xØ31x50 lang mit beids. Fase 0,5x45°	50.0	1,2 kg	S235JRG2
10	2	33100098	0	Distanzbuchse Ø30x2x90 lang mit beids. Fase 0,5x45°	90.0	0,1 kg	S235JRG2
11	1	33100099	0	Distanzbuchse Ø30x2x20 lang mit beids. Fase 0,5x45°	20.0	0,0 kg	S235JRG2

probst handling equipment

		Datum	Name
	Erst.	9.4.2019	R.Hoffmann
	Gepr.	9.4.2019	R.Hoffmann

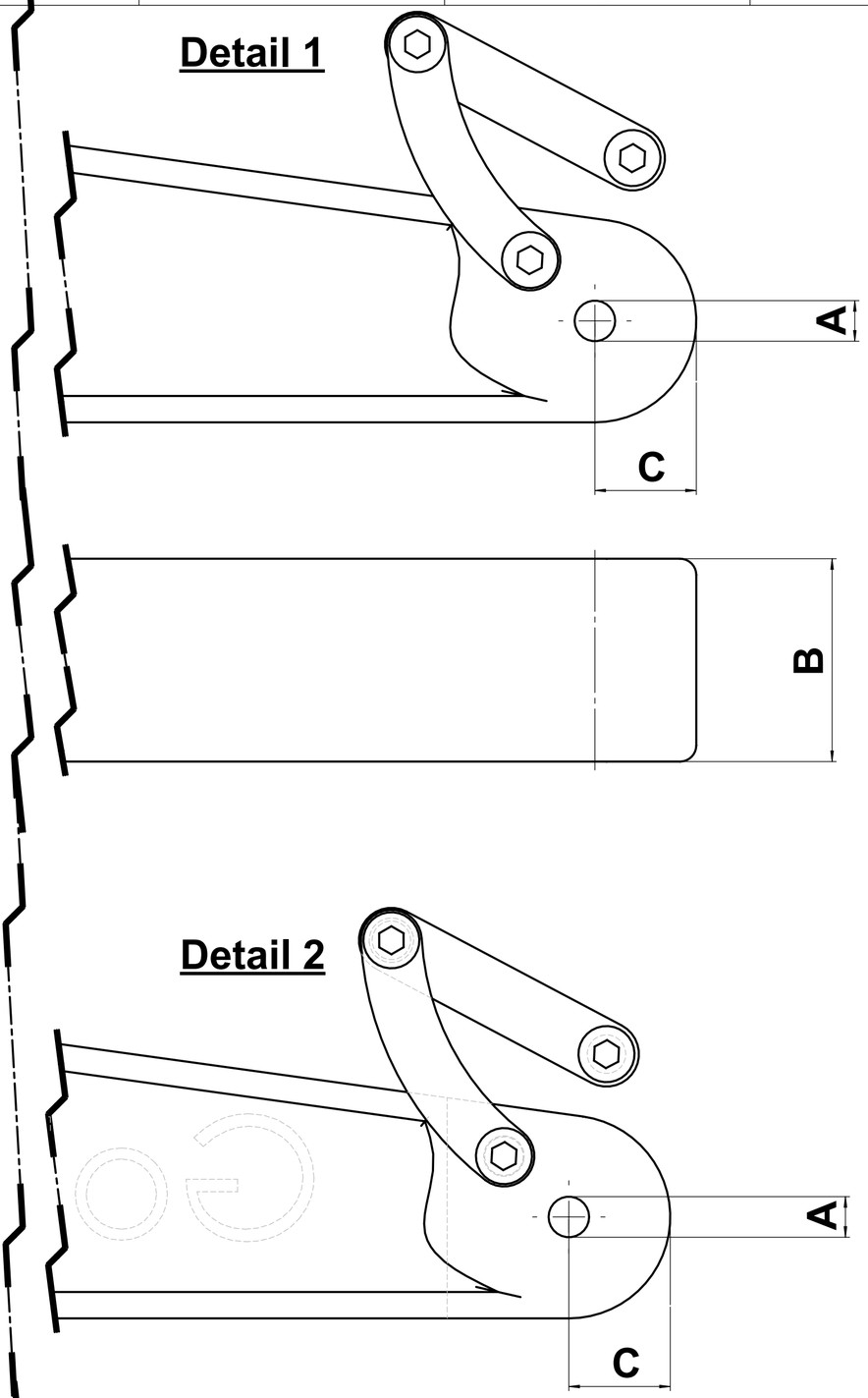
Benennung
Adaptersatz für UBA 1200
zur Aufnahme am Baggerarm
(Bohrung Ø30-Ø70/Distanzhülsen von 100-300 mm Breite)

Artikelnummer/Zeichnungsnummer
D41400683

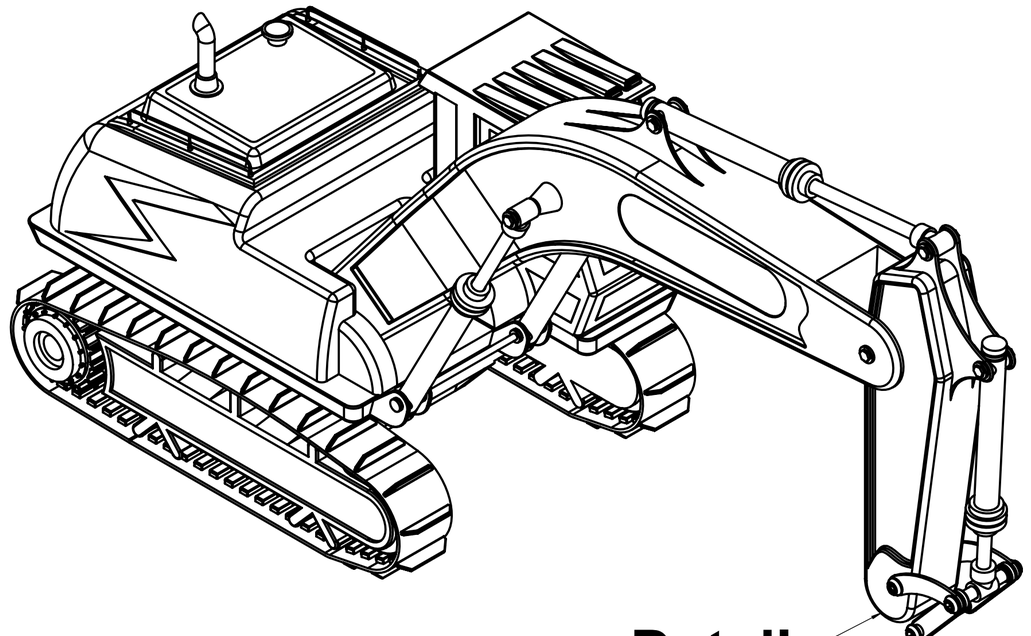
Blatt 1 von 2

Zust. | Urspr. | Ers. f. | Ers. d.

Detail 1



Detail 2



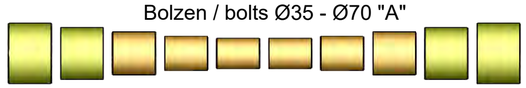
Detail

Baggerarmbreite / excavator arm width "B"

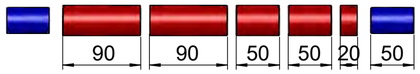
	100	120	150	180	200	250	300	350	400
Ø30									
Ø35									
Ø40									
Ø50									
Ø60									
Ø70									

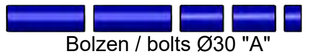
Bolzen-Ø / bolt-Ø "A"

Bolzen / bolts Ø35 - Ø70 "A"



Distanzhülsen / spacers





Bolzen / bolts Ø30 "A"

probst handling equipment

		Datum	Name
	Erst.	9.4.2019	R.Hoffmann
	Gepr.	9.4.2019	R.Hoffmann

Benennung
Adaptersatz für UBA 1200
zur Aufnahme am Baggerarm
(Bohrung Ø30-Ø70/Distanzhülsen von 100-300 mm Breite)

Artikelnummer/Zeichnungsnummer
D41400683

Blatt 2 von 2

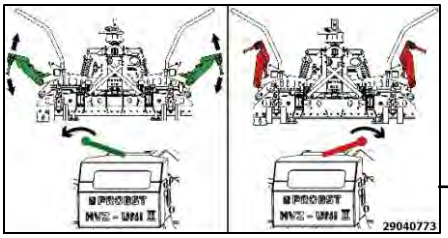
Zust. | Urspr. | Ers. f. | Ers. d.

A51400040
A51400040-001
A51400040-002

HVZ-UNI-II-EK

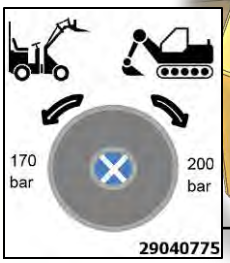
probst handling equipment

29040666



29040773

29040056



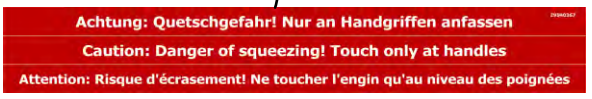
29040775

29040221

29040774

29040210

29040221



29040367

Einige der Abbildungen sind möglicherweise optionales Zubehör des Gerätes/Some of pictures may be optional equipment of the device.

Proof of maintenance

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-handling.de / 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

GB

Probst GmbH
Gottlieb-Daimler-Straße 6
71729 Erdmannhausen, Germany

Telefon +49 7144 3309-0
Fax +49 7144 3309-50

www.probst-handling.com
info@probst-handling.de

probst
handling equipment

OPERATION AND MAINTENANCE

22500038 FR 55
22500039 FR 15 FD 30

GB

CONTENTS

1. WARRANTY

The warranty may be considered valid in compliancewith the contractual and administrative provisions on the part of the purchaser, and in the installation and subsequent use of the machine in compliance with the instructions contained in this manual.
The manufacturer guarantees that the product was tested prior to delivery, and it is guaranteed for 12 months from the date of delivery, limited solely to manufacturing and assembly defects.
The warranty does not cover:

- Labour
- All parts that by their specific use are subject to wear and tear
- The costs of shipping, inspection, and labour when the defects found are not attributable to the manufacturer.

The manufacturer undertakes to repair or replace free of charge any parts that show to be defective at the outset. In this regard the judgement expressed by our Authorised Service technicians will be considered final.

For any dispute, the competent court shall be the court of Reggio Emilia.

2.GENERAL INSTRUCTIONS

Ferrari International S.p.A. - Via E.Tirelli, 26/a - 42122 – Reggio Emilia Italy
Tel: +39 0522 2387 - Fax +39 0522 238799 - www.ferrariinternational.com

2.2 Markings

The equipment has been constructed in compliance with the relevant EU Directives applicable at the moment of its release on the market since the equipment is compliant to the declaration in accordance with art. 2, letter a) second point, a specific self-certification of conformity CE Enc. II A is issued.

The plate applied must be similar to the one shown below and duly completed.

CE
Reggio Emilia (ITALY)
www.ferrariinternational.com

DESIGNAZIONE - TYPE	
MODELLO - MODEL	
MATRICOLA - P/N	
ANNO - YEAR	
MASSA - WEIGHT	kg
CAPACITÀ - CAPACITY	kg

It is prohibited for the user to remove, alter, or damage the identification plate.

2.3 Conformity declaration

Enclosed with the manual is the required conformity declaration similar to the one shown below and duly completed with the customer's specific data.

CE

Dichiarazione di conformità (All. II - P.1 Sez.A) / Declaration of conformità (All. II - P.1 Sez.A)
Erklarung von der Ubereinstimmung (All. II - P.1 Sez.A) / Declaration de conformité (All. II - P.1 Sez.A)
Declaraçion do conformidad (All. II - P.1 Sez.A)/Declaração do fabricantes (All. II - P.1 Sez.A)

XXXXX

Del / dated / du
vom / del / de
XX/XX/2019

La Ditta / The Company / La Societè / Die Firma / La Empresa
FERRARI INTERNATIONAL S.p.a.
VIA EMORE TIRELLI, 26/A - 42122 REGGIO EMILIA - ITALY

Dichiara che l'attrezzatura intercambiabile / declares that the interchangeable equipment
Déclare que les équipements interchangeables / Erklat dass auswechselbare Ausrüstungen
Declara que los equipos intercambiables/declara que os equipamentos
XXXXXXXXXX XXXXXXXXXX

MARCA / BRANDE NAME / MARQUE / MARKE/ MARCA	**FERRARI INTERNATIONAL**
MODELLO / MODEL / MODÈLE / MODELO...	**XXXX XXXXX XXXXXXX**
N° SERIE / SERIAL NR / N° DE SÈRIE / SERIALNUMMER / N° DE SÈRIE	**XX XXXX**
ANNO / YEAR / ANNÊE / JAHR / AÑO / ANO	**XXXX**

According with the Directive 2006/42 CEE
Conforme par la directive 2006/42 CEE
Konformitat mit der Maschinenrichtlinie 2006/42 CEE
Esta en conformidad con la Directiva Maquina 2006/42 CEE
Esta em conformidade con a Directiva de Maquinas 2006/42 CEE

XXXXXXXXXX XXXXXXXXXX

Fascicolo tecnico conservato c/o la Sede dell'azienda - Referente: Ferrari Orlando
Technical documentation kept at the headquarters - Contact: Ferrari Orlando
Documentation technique tenu au siegè de la société - Contact: Ferrari Orlando
Technische Dokumentation beider Firma gehalten Hauptquartier - Kontakt: Ferrari Orlando
Documentación técnica registrada en la sede central - Contacto: Ferrari Orlando
Documentação técnica registrada na sede central - Contacto: Ferrari Orlando

Amministratore Unico/ Menaging Director / Le Directeur General
Geschäftsführer / Administrator Unico / Exm Director /Administrador

Orlando Ferrari

Reggio Emilia, XX/XX/2019

Ferrari International SpA - Via Emore Tirelli, 26/A - 42122 - Reggio Emilia - Italia - Tel. + 39 05222387 r.a. - Fax +39 0522 238799
http://www.ferrariinternational.com - Export Department: salesinternational@ferrariinternational.com - Commerciale Italia: salesitalia@ferrariinternational.com

2.4 Warnings, prohibitions and instructions

Before using the equipment, verify the presence of the adhesive labels according to the diagram below.

SYMBOL	MEANING	POSITION
	Prohibited to clean, lubricate, adjust or repair with machine running	On the machine
	Danger of crushing	On the machine

It is prohibited for the user to remove the adhesive labels.

2.5 Introduction

FERRARI INTERNATIONAL S.p.A. would like to thank you for the confidence you have shown in us by choosing one of our products.

Continuous improvement and the search for the most qualified products are the basis of our work. We therefore reserve the right to make any modifications to our equipment that we consider opportune, also without prior notice, and without such modifications being applied to machines sold beforehand.

In the event that the equipment is to be used in particular conditions or for types of use different from those which we have stated, we recommend that you consult with our technical department.

The illustrations contained in this manual refer to the standard model. The models purchased may differ in certain particulars, mainly due to the need for adaptation on specific machinery and/or other equipment.

2.6 Norme di sicurezza

	It is strictly prohibited to pass within the range of action of the machine and the equipment.
	Danger of suspended loads
	Danger of crushing
	Danger of entanglement

It is strictly prohibited to use the equipment before having blocked access to the work area by persons and animals; for this purpose it is necessary to enclose the work area and to adopt any appropriate measures to make all the work operations safe.

All the safety rules prescribed for the machine are also valid for the equipment; if there is any discrepancy between the safety rules of the machine and those of the equipment, the most restrictive rules must be applied.

The equipment is suitable for lifting and moving materials; therefore, it is strictly prohibited to move the load above persons or work stations.

Compliance of the equipment with the machine directive is valid only if the machine on which it is installed also complies with this directive.

Any servicing on the equipment must be carried out with the machine stopped in a stable position.
The safety of the equipment is tied to the efficiency of the safety systems of the machine on which it is installed.

The machine must be equipped with visual and acoustic signalling devices to warn people when the machine and the equipment are going into operation.
The equipment may only be used by personnel

suitable to use the machine, who must be given proper instruction on the lifting capacities and limits of use, and who must also know and scrupulously follow the safety rules regarding lifting loads

2.7 Duties of the employer

The employer is responsible for providing this manual to all the personnel who will interact with the machine.

2.8 Duties of the machine operators

In addition to the duty to scrupulously follow all the instructions contained in this manual, the operators must notify their supervisors of any deficiency or potentially dangerous situation that may arise.

In the event of a malfunction of the equipment, verify the procedures described in the various chapters.

2.9 Decline of responsibility

The manufacturer declines any responsibility in the event that any of the following cases occur.

The manufacturer declines any responsibility in the event that any of the following cases occur.

- improper use of the equipment;
- use of the equipment by untrained personnel;
- serious negligence in the routine maintenance;
- use of non-original spare parts or parts not specific to the model;
- unauthorised modifications or repairs;
- failure to follow the instructions given in this manual;
- use contrary to the safety rules in effect in the work sites;
- use contrary to the national regulations applicable to the machine;
- exceptional events;
- use not within the terms established.

3. STRUCTURE AND USE OF THE MANUAL

Read this manual carefully beforeproceeding to put the equipment, i.e. the system, into service.

The purpose of this manual is to provide the user all the information necessary for proper usage of the equipment as well as to manage it in the safest and most autonomous way possible.

The manual in cludes information regarding the technical aspects, operation, machine stoppage, maintenance, spare parts and safety.

Before carrying out any operation on the equipment, operators and qualified technicians must carefully read the instructions contained in this manual.

In case of any doubts as to the correct interpretation of the instructions, please contact our office to obtain the necessary clarification.

This manual is an integral part of the equipment and must be properly preserved by the purchaser.

The manual must accompany the equipment in the event that it is sold to a new user.

The contents of this manual comply with the directive 2006/42/CE and it has been prepared following the guidelines of the UNI 10893-2000 standards.

This manual is composed of 80 pages, including the cover.

It is prohibited to divulge or modify the contents of the manual or to use it for one’s own purposes.

In preparing the manual, the choice was made to use a few clear pictograms for calling attention to make consultation simple and immediate.

Operations that represent a situation of potential danger to the operators are highlighted by this symbol.

These operations may cause serious injury.

Any information that requires particular attention is highlighted with this symbol.

Operations that require a careful reading of the instructions provided in the manual are highlighted with this symbol.

4. GENERAL DESCRIPTION

The FERRARI INTERNATIONAL S.p.A. hydraulic rotator is designed to be installed on the end of the crane boom and allows the connection and use of equipment such as buckets, polyp grabs, forks, and so on.

The rotator is equipped with hydraulic hoses that are connected following the instructions shown by the symbols situated on the head and on the shaft.

5. TECHNICAL CHARACTERISTICS

SHAFT VERSION

FR 15

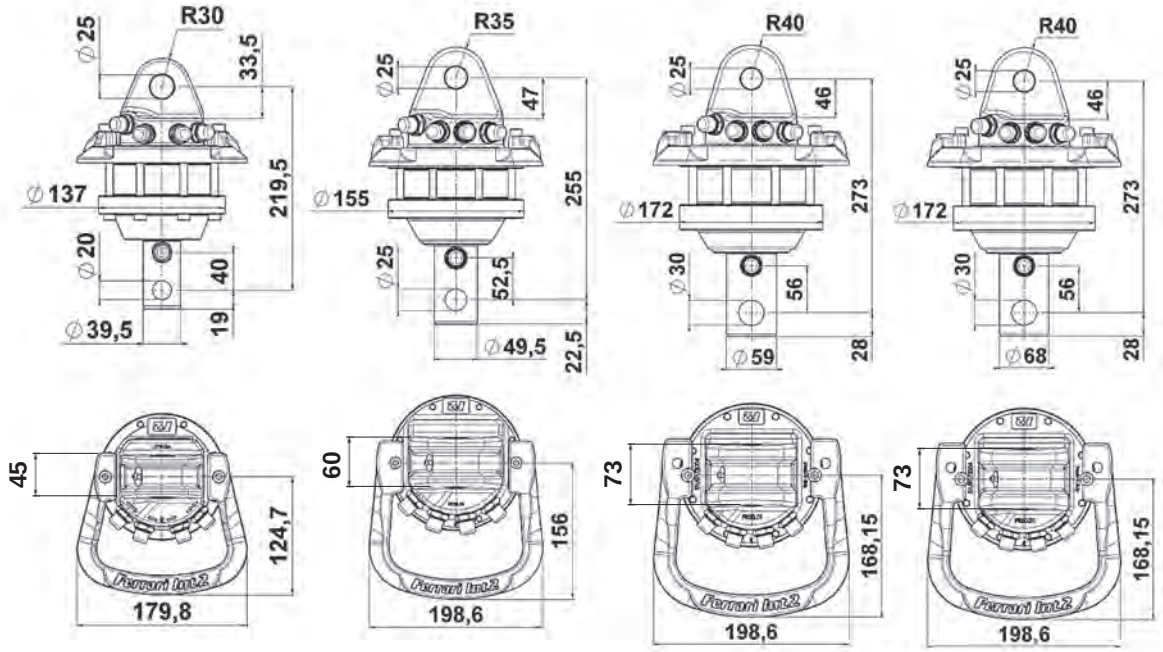
FR 35

FR 50

FR 55

Models	Static load	Dinamic load	Weight	Pressure	Rotation	Torque	Oil flow
	kg	kg	kg	bar		Nm	l/min
FR 15	1200	600	10	250	360° cont.	500	10
FR 35	3500	1750	17	250	360° cont.	900	20
FR 50	5000	2500	25	250	360° cont.	1100	20
FR 55	5500	2700	28	250	360° cont.	1300	20

According 2006/42/CE EN4413:2012 EN12100:2010



FR 15 FR 35 FR 50 FR 55

SHAFT VERSION

FR 85 SX

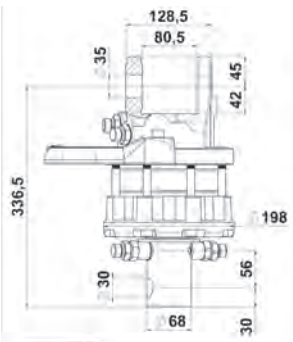
FR 85 SX/2

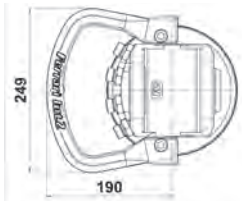
FR 128 SX

FR 128 SX/2

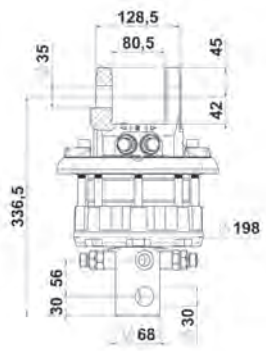
Models	Static load	Dinamic load	Weight	Pressure	Rotation	Torque	Oil flow
	kg	kg	kg	bar		Nm	l/min
FR 85 SX	7000	3500	36	250	360° cont.	1900	25
FR 85 SX/2	7000	3500	38	250	360° cont.	1900	25
FR 128 SX	12000	6000	48	250	360° cont.	2700	30
FR 128 SX/2	12000	6000	51	250	360° cont.	2700	30

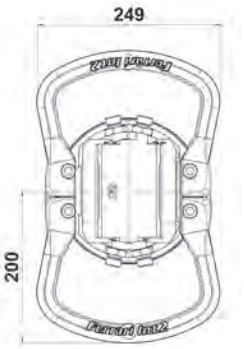
According 2006/42/CE EN4413:2012 EN12100:2010



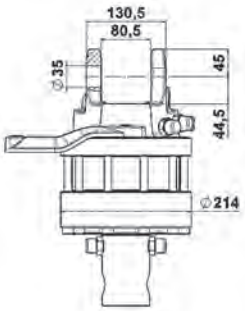


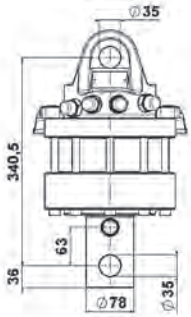
FR 85 SX

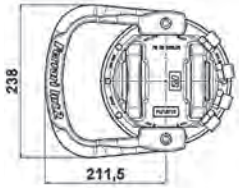




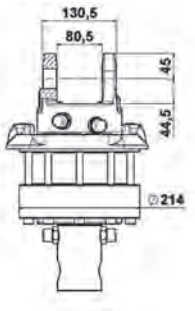
FR 85 SX/2

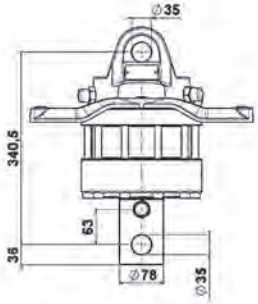


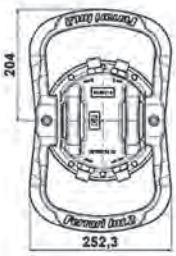




FR 128 SX







FR 128 SX/2

FLANGED VERSION

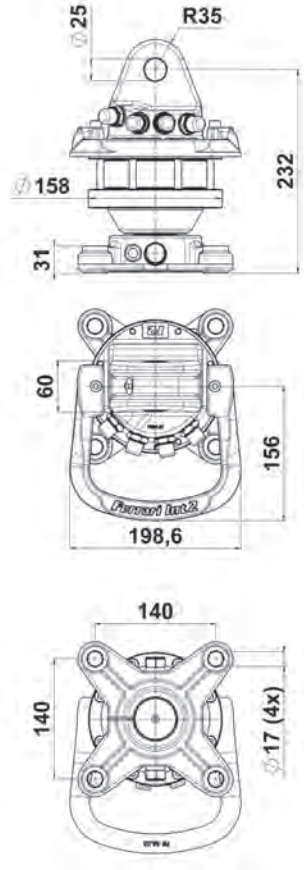
FR 35 F

FR 50 F

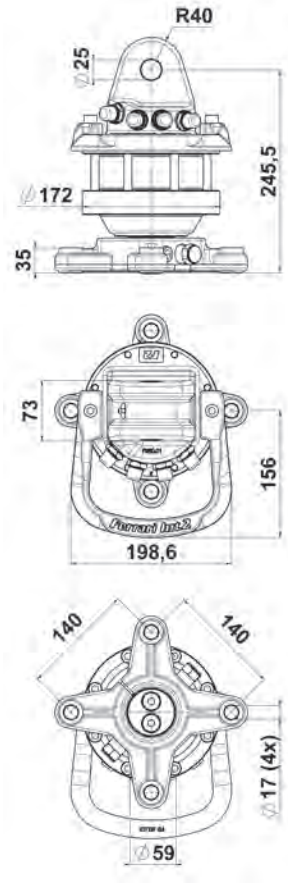
FR 55 F

Models	Static load	Dinamic load	Weight	Pressure	Rotation	Torque	Oil flow
	kg	kg	kg	bar		Nm	l/min
FR 35 F	3500	1750	22	250	360° cont.	900	20
FR 50 F	5000	2500	28	250	360° cont.	1100	20
FR 55 F	5500	2700	33	250	360° cont.	1300	20

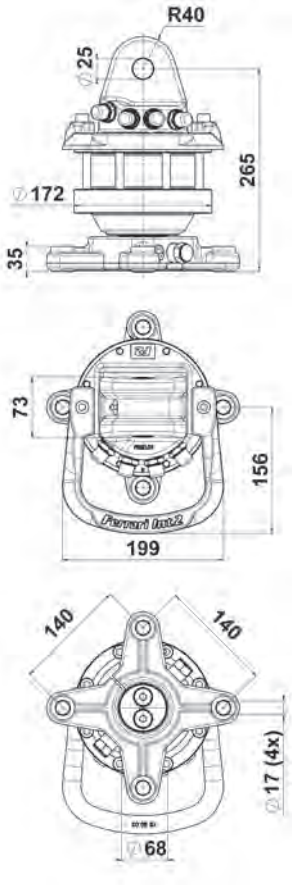
According 2006/42/CE EN4413:2012 EN12100:2010



FR 35 F



FR 50 F



FR 55 F

FLANGED VERSION

FR 85 SXF

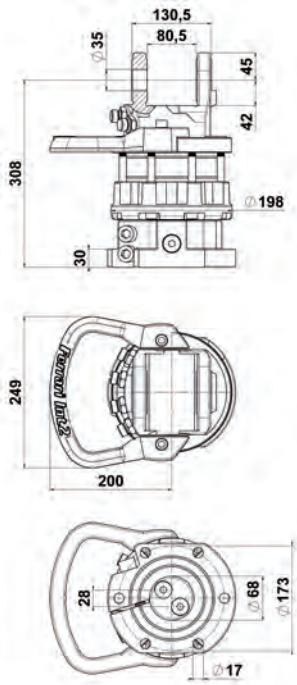
FR 85 SXF/2

FR 128 SX-F

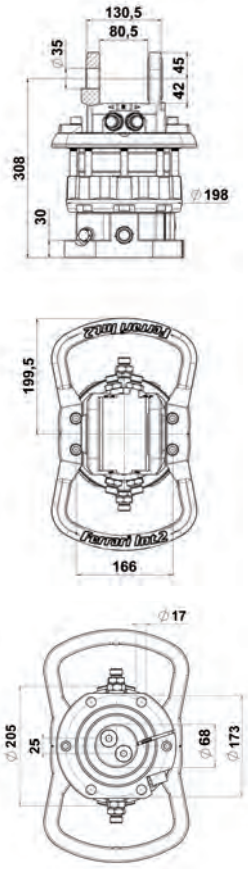
FR 128 SX-F/2

Models	Static load	Dinamic load	Weight	Pressure	Rotation	Torque	Oil flow
	kg	kg	kg	bar		Nm	l/min
FR 85 SXF	7000	3500	41	250	360° cont.	1900	25
FR 85 SXF/2	7000	3500	44	250	360° cont.	1900	25
FR 128 SX-F	12000	6000	56	250	360° cont.	2700	30
FR 128 SX-F/2	12000	6000	59	250	360° cont.	2700	30

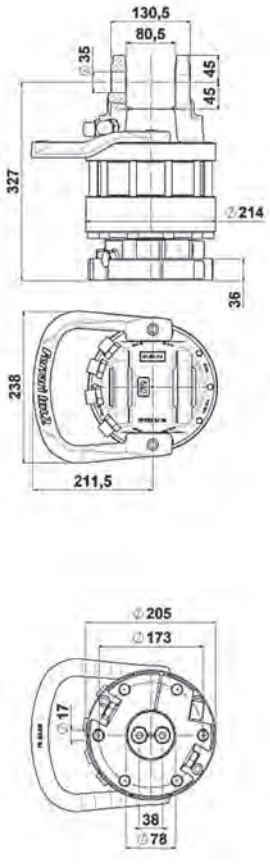
According 2006/42/CE EN4413:2012 EN12100:2010



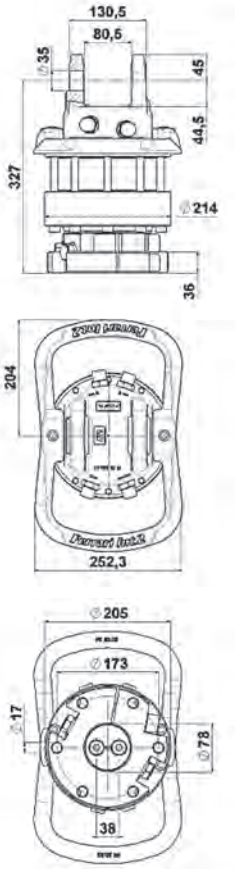
FR 85 SX-F



FR 85 SX-F/2



FR 128 SX-F



FR 128 SX-F/2

6 WAY VERSION

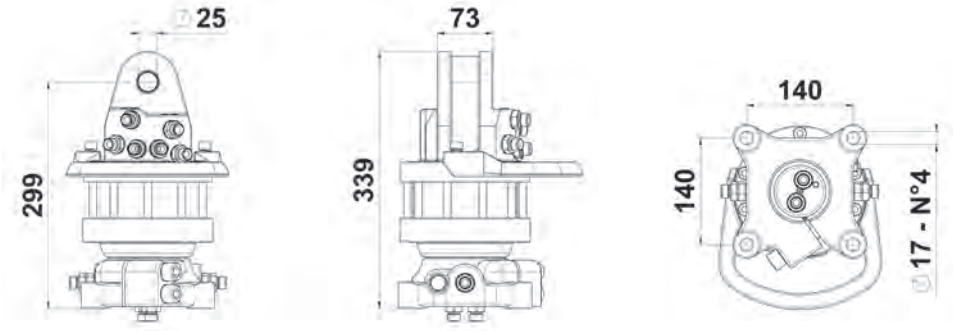
FR 50 F S6X

FR 128 F S6X

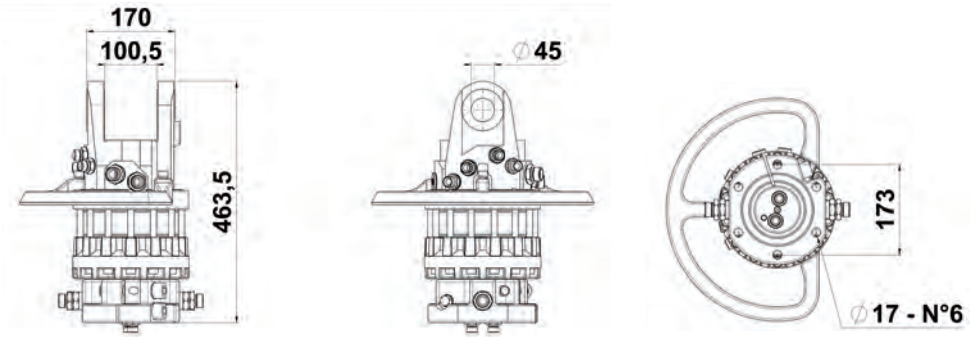
Models	Static load	Dinamic load	Weight	Pressure	Rotation	Torque	Oil flow
	kg	kg	kg	bar		Nm	l/min
FR 50 F S6X	5000	2500	36	250	360° cont.	1100	20
FR 128 F S6X	12000	6000	78	250	360° cont.	2900	30

According 2006/42/CE EN4413:2012 EN12100:2010

FR 50 F S6X



FR 128 F S6X



6. INSTALLATION

6.1 Handling

For lifting and transporting, use means adequate to the weight to be moved.

To ensure safe transport, the equipment must be securely fastened onto a pallet.

Lifting is carried out together with the pallet using a lift truck or by harnessing as shown in the figure, providing belts with a suitable capacity.

See the weight of the components indicated in Chapter 5 - Technical Characteristics.

Move the load by lifting it very slowly in order not to create sudden movements that could give rise to dangerous situations.

The personnel assigned to moving and handling must wear: protective gloves, hard hat, and safety shoes with steel toe and non-skid sole.

Make sure that all personnel are outside the range of action of the lift truck during the operations of lifting, transport, and handling.

Do not stand below suspended loads

6.2 Assembly

The hydraulic system of the machine must be equipped to power the equipment.

If the machine in the original version is not equipped for this purpose, it is necessary to modify the hydraulic system to adapt it to the present requirements.

This modification must only be carried out by authorised personnel from the machine manufacturer.

For fitting on the crane boom, the upper part of the rotator is equipped with a coupling fork, with a fastening pin passed inside it that is secured with a safety split pin.

The rotator must always hang free vertically with respect to the shaft.
Make sure to limit the possibility of rotator oscillation and protect it from the hydraulic system hoses to prevent it from being damaged.

6.2.2 Hydraulic connection

Make sure that the hydraulic fluid of the crane is clean and free from impurities, optimal filtration 10 µm.
The hoses that control the rotation must be connected to each other by means of a nipple in order to allow the circulation of the fluid for at least 5 minutes.
Subsequently, the hoses are connected to the rotator following the instructions shown by the symbols situated on the head and shaft of the rotator.

GO ↔ Opening
GC→← Closing
R Rotation in the direction of the arrow

The hydraulic system of the crane must be equipped with relief valves that limit the pressure to the required 250 bar, and the flow rate.
The rotation direction of the rotator and the movement of the bucket must respond to the indications on the crane controls.
The crane and all the related equipment must conform to the CE Machinery Directive.

6.3 Cleaning

The equipment can be cleaned by personnel who do not have specific technical skills, but they must be informed beforehand of the need to perform this operation only when the machine is stopped in order not to cause dangerous situations.

6.4 Demolition and disposal

Before proceeding to the demolition of the equipment, it is mandatory to eliminate and dispose of all the parts that may be harmful to the environment, according to the local laws and regulations.

Elements in plastic:
must be removed and disposed of separately.

Lubricants:
must be collected and taken to the dedicated collection centres.

Elements in carbon steel:
must be recycled through the dedicated collection centres.

7. OPERATION AND USE

7.1 Proper use

The FERRARI INTERNATIONAL S.p.A. hydraulic rotator is designed to be installed on the end of the crane boom and allows the connection and use of equipment such as buckets, polyp grabs, forks, and so on.

The rotator is equipped with hydraulic hoses that are connected following the instructions shown by the symbols situated on the head and on the shaft.

The fittings of the hydraulic system of the crane must pass through the axis of the rotator. The maximum load of the accessory must not exceed the load permitted by the rotator.
When the rotator is in operation, the fluid of the hydraulic system must have reached the operating temperature (–20°C / +50°C) and the operating viscosity.

7.2 Improper use

Any type of use not expressly indicated in Chapter 7.1 is to be considered IMPROPER USE.

The manufacturer may not be held responsible for any damage to things, persons, or to the machine resulting from accidents caused by an improper use of the equipment.

7.3 PPE

As necessary or required by the internal regulations, personal protective equipment must be used.

Personal protective equipment (PPE) comprises clothing and accessories to be worn by the workers to protect them from the specific risks of the activity being carried out.

The employer must provide the PPE, choosing it in conjunction with the workers and their representatives.

The PPE must be:
- Strictly individual
- Obligatorily worn
- Selected with attention that it is suitable to prevent the specific risks of the activity that the worker wearing it is carrying out.
- Practical and comfortable
- Maintained in good condition of efficiency and must be replaced when worn out or damaged.

For maintenance operations, the following PPE elements are required:

Gloves and suitable clothing

Safety shoes

Protective helmet

When for reasons of maintenance it is necessary to work at heights, it is mandatory to observe all the regulations stipulated by the current legislation.

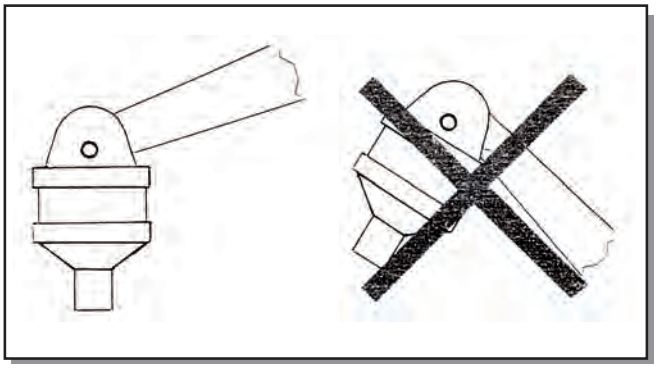
The personnel assigned to operate the machine, before starting the work, must have studied the chapter “Safety Rules”. This is especially important for personnel using the machine only sporadically.
Check periodically that the personnel, while working, are following the safety and accident prevention rules indicated in the instruction manual.
Establish the responsibilities of the operator of the machine and authorise him to refuse to follow any directions given by other persons that are contrary to the safety rules.
Any trainee or student personnel may work with the machine or the system only under the constant supervision of experienced personnel.

8. OPERATION

Before using the equipment, read all the information in the chapter “Safety Rules”.

The crane and the rotator must be used following all the safety rules.

Do not subject the rotator shaft to lateral loads.
Maintain a working angle as indicated in the figure; incorrect positioning of the working angle is to be considered dangerous and can damage the shaft of the rotator itself.



Failure to follow the instructions given below may cause situations of danger and/or serious damage to the equipment, making it unsafe.

- Do not overload the rotator! Make sure that the maximum lifting load of the crane boom does not exceed the limit set for the rotator.
- Make sure that the hydraulic system has reached the operating temperature.
- Lift the load from the base or from the ground before proceeding to transfer or rotate it.
- It is prohibited to leave the suspended load unattended.
- Make sure that the hoses do not come into contact with obstacles of any type.
- Breakage of the hoses or a nipple can cause uncontrolled rotation and the load could be dropped.

9. MAINTENANCE

Maintenance must be a scheduled preventive activity, viewed as a fundamental requirement for the purpose of safety, with the assumption that the machines and the equipment are subject to wear and tear that is a potential cause of breakdowns.

Therefore, the safety of the machines also depends on good preventive maintenance that enables the replacement of parts subject to wear and tear before any operating anomalies appear.

All maintenance operations must be carried out with the equipment on the ground and the machine stopped in a stable position with the engine off.

9.1 Routine maintenance

Lubricate the pivot of the upper support of the rotator regularly.
Check the upper support, the shaft, the hoses and the nipples once a week.
Make sure there is no breakage.
At least once a year, check the tightening of the bolts.
The rotator cannot be repaired with weldings.
We recommend always using original spare parts.
Any operation of maintenance that requires disassembly of internal components of the rotator must be carried out by technical personnel authorised by FERRARI INTERNATIONAL S.p.A..
Hydraulic fluid according to DIN 51524 standard.

9.2 Overhauls

Must be carried out by specialised personnel with suitable tools.

Possibility of residual pressure in the circuit: before any operation, discharge the pressure of the machine and disconnect the equipment.

The extraction of the pins may cause unpredictable movements in the structural work: immobilise the parts before performing any operation.

Use only original spare parts.

For spare parts orders, please specify:
- MODEL
- SERIAL NO.
- YEAR OF MANUFACTURE

To be performed every 500 working hours:
- verify that the play between pin and bush is less than 0.6 mm; if greater, replace the worn parts;
- check the seal of the cylinder gaskets and replace if necessary;
- check the condition of the hoses and replace if necessary;
- check the condition of the metal structure, if necessary replace the damaged parts;
- check the tightness and condition of the pin locking nuts and the bolts joints;
- check that the equipment is working properly.

9.3 Service

For any repairs or overhauls, contact FERRARI INTERNATIONAL S.p.A. so we can provide qualified personnel and suitable tools.

We also offer technical service at our headquarters for any information, advice, and indications on authorised service centres.

9.4 Servicing report

9.4.2 Overhauls and repairs

All overhaul and repair operations must be recorded on the maintenance record form. The specialised technician in charge of these operations will prepare a signed report, specifying the work carried out as well as any modifications and/or deficiencies of the equipment.

10. SPARE PARTS

To identify a spart part, follow the procedure described below:
- Locate the part and its position number on the specific drawing of the assembly.
- Consult the table and, in correspondence with the position, find the information necessary for ordering the part:
  - Code
  - Description of the part
  - Quantities fitted on the machine (Qty)
- Complete the order form and FERRARI INTERNATIONAL S.p.A. will supply the spare parts.

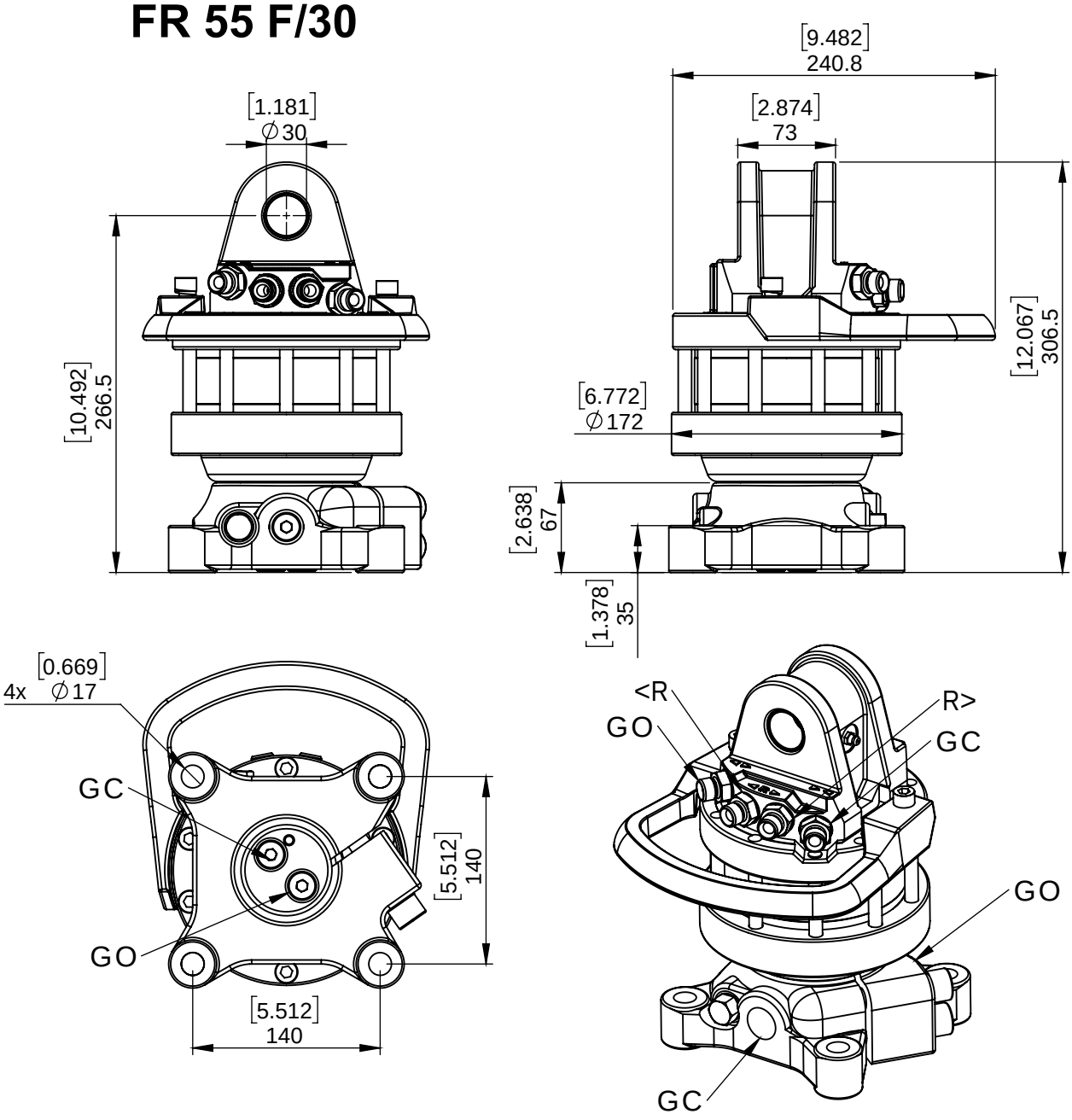
We recommend that you record in the manual the periodic servicing operations and/or special maintenance operations carried out so that, when necessary, it will be faster and easier to find the problems and therefore the most economical solution.

The equipment purchased must always be kept in perfect working order. Therefore, when spare parts are required it is indispensable to use only original spare parts, requesting them directly from the manufacturer or through your authorised dealer.

Applying spare parts of inferior quality may cause damage to other components.

The positive outcome of the maintenance and overhaul operations depends on the instructions and advice suggested based on our experience.

FR 55 F/30



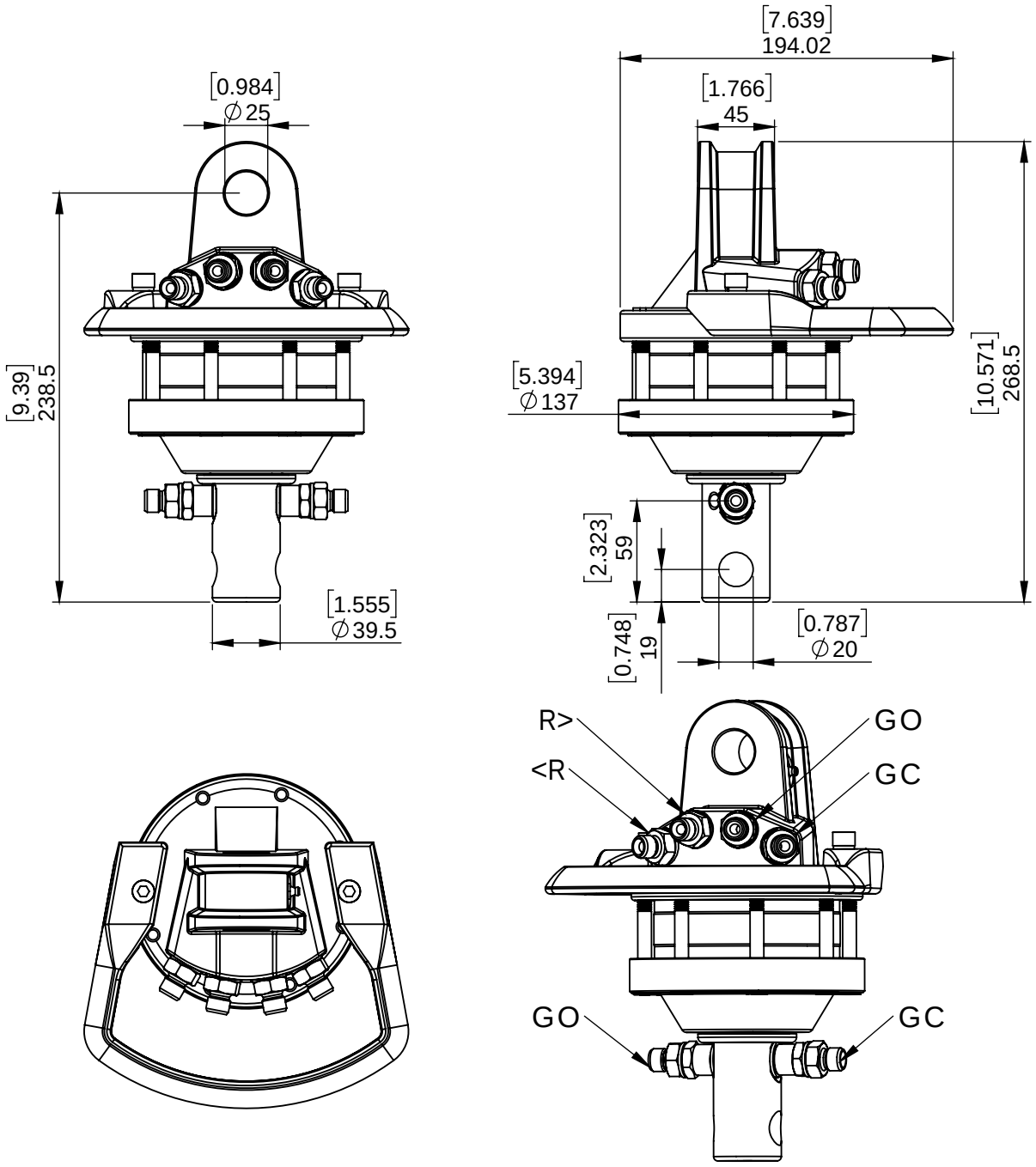
ROTATION ANGLE	UNLIMITED	
MAX PRESSURE (R) [BAR/PSI]	250	3625
MAX PRESSURE (GO) [BAR/PSI]	200	2901
MAX PRESSURE (GC) [BAR/PSI]	300	4351
DISPLACEMENT [cm3/Inch3]	420	26
TORQUE [Nm/lbf-ft]	1100	811
MAX AXIAL LOAD STATIC [KN/lbf]	55	12365
MAX AXIAL LOAD DYNAMIC [KN/lbf]	27	6070
WEIGHT [kg/lb]	33	73
CONNECTIONS	G3/8"	G3/8"
REQ. OIL FLOW FOR ROTATION [LPM/GPM]	20	5.3

Probst GmbH
Gottlieb-Daimler-Straße 6
71729 Erdmannhausen, Germany

Telefon +49 7144 3309-0
Fax +49 7144 3309-50

www.probst-handling.de
info@probst-handling.de

FR 15



ROTATION ANGLE	UNLIMITED	
MAX PRESSURE (R) [BAR/PSI]	250	3625
MAX PRESSURE (GO) [BAR/PSI]	200	2901
MAX PRESSURE (GC) [BAR/PSI]	300	4351
DISPLACEMENT [cm3/Inch3]	193	12
TORQUE [Nm/lbf-ft]	450	332
MAX AXIAL LOAD STATIC [KN/lbf]	10	2248
MAX AXIAL LOAD DYNAMIC [KN/lbf]	5	1124
WEIGHT [kg/lb]	10	22
CONNECTIONS	G1/4"	G1/4"
REQ. OIL FLOW FOR ROTATION [LPM/GPM]	10	2.6

Probst GmbH
Gottlieb-Daimler-Straße 6
71729 Erdmannhausen, Germany
Telefon +49 7144 3309-0
Fax +49 7144 3309-50
www.probst-handling.de
info@probst-handling.de