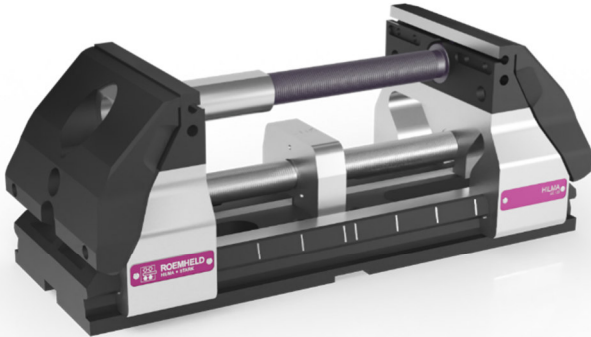




# HILMA.UC

Jaw width 125 mm, concentric – mechanical



## Contents

1	Product description .....	1
2	Validity of documentation .....	1
3	Target group.....	1
4	Symbols and signal words.....	2
5	For your safety .....	2
6	Use .....	2
7	Installation.....	3
8	Start-up.....	4
9	Operation.....	4
10	Accessory .....	6
11	Maintenance .....	11
12	Trouble shooting .....	11
13	Technical data .....	12
14	Disposal .....	12
15	Declaration of incorporation.....	13
16	List of the used standards .....	13

## 1 Product description

### Description

The product is designed for universal workpiece clamping on machine tools.

The clamping force is applied by turning the tension spindle clockwise using a torque wrench.

### Application

The product is used for machining of dimensionally stable workpieces in single or multiple clamping fixtures.

The product is suitable both for series production and individual production.

### Delivery

The scope of delivery includes the clamping system completely assembled with pull-down clamping jaws and spindle set with long tension spindle and long clamping nut. Enclosed is the spindle set with short tension spindle short and short clamping nut. The clamping ranges are stated in chapter 9.4 Jaw openings with spindle and nut pairing.

## 2 Validity of documentation

This documentation is valid for the following products:

Products of the catalogue WM-021-003. These are the types or order numbers in the number range 7023 - e.g. the clamping system HILMA.UC with the number 970230101.

## 3 Target group

Skilled workers, assemblers and setters of machines and equipment, with expertise of mechanical equipment.

### Qualification of the personnel

Expert knowledge means that the personnel must

- be able to read and fully understand technical specifications and product specific drawing documents,
- have expert knowledge of function and design of the corresponding components.

A **specialist** is somebody who has due to his professional education and experiences sufficient knowledge and is familiar with the relevant regulations so that he

- can judge the entrusted works,
- can recognize the possible dangers,
- can take the required measures to eliminate dangers,
- knows the acknowledged standards, rules and guidelines of the technology.
- has the required knowledge for repair and mounting.

## 4 Symbols and signal words

### **WARNING**

#### Personal damage

Stands for a possibly dangerous situation.

If it is not avoided, death or very severe injuries can be the consequences.

### **CAUTION**

#### Light injuries / property damage

Stands for a possibly dangerous situation.

If it is not avoided, minor injuries or property damages can be the consequences.

#### Hazardous to the environment



The symbol stands for important information for the proper handling with materials that are hazardous to the environment.

Ignoring these notes can lead to heavy damages to the environment.



#### Mandatory sign!

The symbol stands for important information, necessary protection equipment, etc.

### **NOTE**

- This symbol stands for tips for users or especially useful information. This is no signal word for a dangerous or harmful situation.

## 5 For your safety

### 5.1 Basic information

The operating manual serves for information and avoidance of dangers when installing the products into the machine as well as information and references for transport, storage and maintenance.

Only in strict compliance with this operating manual, accidents and property damages can be avoided as well as trouble-free operation of the products can be guaranteed.

Furthermore, the consideration of the operating instructions will:

- avoid injuries
- reduce down times and repair costs,
- increase the service life of the products.

### 5.2 Safety instructions

The product was manufactured in accordance with the generally accepted rules of the technology.

Observe the safety instructions and the operating instructions given in this manual to avoid personal or material damage.

- Read this operating manual thoroughly and completely, before you work with the product.
- Keep this operating manual so that it is accessible to all users at any time.
- Pay attention to the current safety regulations, regulations for accident prevention and environmental protection of the country in which the product will be used.
- Use the ROEMHELD product only in perfect technical condition.
- Observe all notes on the product.

- Use only accessories and spare parts approved by the manufacturer to exclude danger to persons because of not suited spare parts.
- Respect the intended use.
- You only may start up the product, when it has been found that the incomplete machine or machine, in which the product shall be mounted, corresponds to the country-specific provisions, safety regulations and standards.
- Perform a risk analysis for the incomplete machine, or the machine.  
Interactions between the product and the machine/fixture or its environment may result in risks, which may only be identified and minimized by the user, e.g. :
  - Forces generated,
  - Movements initiated,
  - Influence of hydraulic and electrical control,
  - etc.
- Use of personal protective equipment is to be considered for all work steps.

## 6 Use

### 6.1 Intended use

The products are exclusively designed for clamping workpieces in industrial applications.

In addition, use in compliance with the intended purpose includes:

- Use within the performance limits specified in the technical data (see catalogue).
- Use as described in this operating manual.
- Compliance with maintenance intervals.
- Qualified and trained personnel for the corresponding activities.
- Mounting of spare parts only with the same specifications as the original part.

### 6.2 Inappropriate use

#### **WARNING**

#### Injuries, material damages or malfunctions!

- Do not modify the product!

The use of these products is not admitted:

- For domestic use.
- On pallets or machine tool tables in primary shaping and metal forming machine tools.
- if the products might be damaged by physical/chemical effects (vibrations, welding currents or others).
- In machines, on pallets or machine tool tables that are used to change the characteristics of the material (magnetise, radiation, photochemical procedures, etc.).
- In areas for which special guidelines apply, especially installations and machines:
  - For use at fun fairs and in amusement parks.
  - In food processing or in areas with special hygiene regulations.
  - For military purposes.
  - In mines.
  - In explosive and aggressive environments (e.g. ATEX).
  - In medical engineering.
  - In the aerospace industry.
  - For passenger transport.

## 7 Installation

### **⚠ WARNING**

#### **Injury by dropping parts!**

- Keep hands and other parts of the body out of the working area!
- Wear personal protection equipment!

#### **Injury due to movement of the machine!**

- When working on the vise, switch off/lock dangerous movements in the operator's danger zone.

#### **Risk of injuries due to improper product fixing!**

If the product is fixed improperly, it may loosen from the machine table or be damaged during clamping or machining.

- Install the product as instructed in the present operating manual.
- Ensure that the installation surface of the product base and the machine table are clean before installation.
- The installation surface of the product base must be even and have a minimum overlap of 75 % on the machine table.
- Install the product in accordance with the torque specified in the operating manual.
- Fix the product so that it may not be displaced by the machining forces.

### **⚠ CAUTION**

#### **Heavy weight may drop**

- Some product types have a considerable weight. These have to be secured against dropping during transport.
- Weight specifications see chapter "Technical data".

### **NOTE**

#### **Aggressive media**

If there is a possibility that aggressive cutting and cooling liquids including swarf may ingress the inside of the clamping slide, the clamping slide inside must be cleaned by the customer.

#### **Ease of movement**

Please make sure that the product moves easily upon installation!

### **7.1 Direct mounting on T-slot table**

The fixing set (970235007) is necessary for mounting the clamping system on a T-slot table.

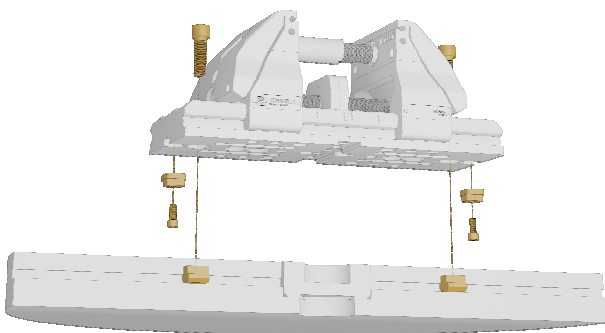


Figure 1: Mounting on T-slot table

- 1.) Fit 2x fitting keyblocks with M6x16 screw, fitting keyblock corresponds to 14 mm or 18 mm T-slot width, depending on alignment
- 2.) Remove swarf from the machine table and clean it thoroughly

- 3.) Smooth out unevenness of the table with whetstone
- 4.) Insert T-nuts into T-slot and roughly position
- 5.) Align the clamp in the T-slot by means of fitting keyblocks
- 6.) Tighten 2x locking screws M12x40 with 60 Nm

### **7.2 Combination with a zero point clamping system**

Various options are available for using the clamping system in combination with a zero point clamping system:

- Inserts for M8 thread (970235011)
- Inserts for M10 thread (970235012)
- Inserts for M12 thread (970235013)
- Set for STARK.classic.2 (970235014)
- Set for STARK.basic.M (970235015)

The assembly procedure for the set solutions is described below.

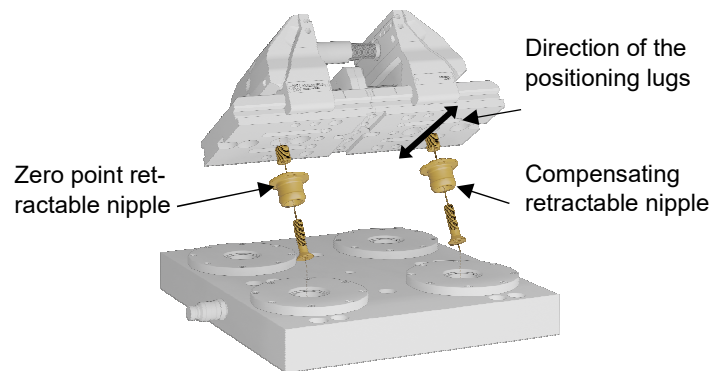


Figure 2: Mounting on zero point clamping system

On the bottom side of the clamp there are three different depth gauges available ( 150, 200, 282,842) that have been adapted to typical zero point clamping systems.

- 1.) Mount the appropriate threaded sleeve
  - i. Screw the bolt with nut and washer (for M8 and M10) into the threaded sleeve (washer between nut and threaded sleeve).
  - ii. Counter nut against threaded sleeve
  - iii. Apply medium-strength threadlocker (e.g. Loctite 243) to the threaded sleeve.
  - iv. Screw threaded sleeve into bore hole and tighten to 20 Nm
  - v. Allow the threadlocker to harden
  - vi. Loosen nut from threaded sleeve
  - vii. Remove screw and nut
  - viii. Note: for depth gauge 282,842, the nipple is fixed from above; the installation of threaded sleeves is not necessary.
- 2.) Mount the retractable nipple according to the manufacturer's instructions.
  - i. Zero point nipples have no direction of rotation
  - ii. Compensation nipples (with tapped hole) must be aligned so that the positioning lugs are at right angles to the centre axes of the retractable nipples
  - iii. Observe the tightening torques on the retractable nipples for the thread size

### **7.3 Combination with a quick-change system 96x96**

On the bottom side of the clamping system, there are also 4x Ø 16 fitting holes with M10 thread in a 96x96mm grid. The retractable nipples of common quick-change systems can be screwed into these.

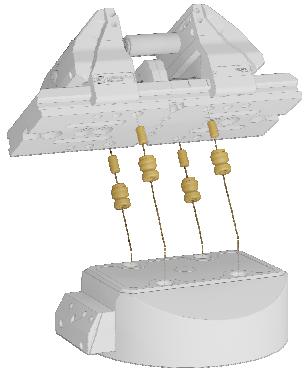


Figure 3: Mounting on 96x96 mm system

## 8 Start-up

### **NOTE**

#### Lubrication before start-up

- The elements are supplied with minimum lubrication.
- The sliding surfaces have to be lubricated lightly with slide way oil, ISO VG 220, before start-up.
- Check tight seat (check tightening torque of the fixing screws).

#### Product operation on grinding machines

When the product is used on grinding machines, the product will be more heavily contaminated.

- Clean product from contamination regularly.

### **WARNING**

#### **Risk of injuries or damage to property by collision with system components!**

In the range of motion of the system components, persons may be injured by collision with system components, or damage to property may be caused by collision with other system components.

- Check the range of motion of the system components before start-up.

## 9 Operation

### **WARNING**

#### **Vibration will loosen the product fixture!**

Vibration affects the workpiece fixture and results in an improperly fixed workpiece. An improperly fixed workpiece may be catapulted off the product during machining and result in personal injuries or damage to property.

- Exclude vibration on the product if possible.

#### **Risks of burns caused by hot workpieces!**

Hot workpieces may cause burns on parts of the body.

- Wear heat-resistant protective clothing.

#### **Bruises, burns and bone fractures caused by dropping workpieces!**

Workpieces may cause injuries when dropping.

- Wear safety shoes with safety level 1 (S1) as a minimum requirement.

#### **Risk of injuries by improperly mounted crank handle and/or torque wrench!**

An improperly mounted crank handle or torque wrench may slip off during operation and cause injuries to the operator.

- Check crank handle and/or torque wrench for proper seat.

#### **Risk of injuries due to limited range of motion of the crank handle and/or the torque wrench!**

When using the crank handle or the torque wrench, extremities may be squeezed between the crank handle and/or the torque wrench and objects in the range of motion.

- The range of the crank handle's and/or torque wrench's motion must be freely accessible.

#### **Risk of injuries when clamping the workpiece!**

The workpiece properties may induce personal injuries during clamping if the workpiece is not clamped properly.

- Remove contamination on the clamping surfaces before clamping.
- Observe material properties of the workpiece during clamping.
- Observe workpiece shape during clamping.
- Observe workpiece clamping surface during clamping.
- Observe workpiece inertia during clamping.

#### **Risk of injuries due to flexible or insufficiently clamped workpieces!**

Flexible or insufficiently clamped workpieces may be catapulted off the machine or drop and cause personal injuries during machining.

- Only use the product for clamping rigid workpieces.
- Sufficiently clamp the workpiece before machining.

#### **Risk of injuries due to insufficient clamping force or insufficient workpiece clamping!**

Insufficient clamping force or insufficiently clamped workpieces may be catapulted off the machine or drop and cause personal injuries during machining.

- Have the product checked for its operational reliability by a qualified expert after extended downtimes, repair work, and at regular intervals.
- Have the product checked for visual damage or wear by a qualified expert.
- Check whether the product is fixed properly before product start-up.
- Check whether the workpiece is clamped properly before product start-up.

**⚠ CAUTION**

**Risk of injuries by crushing of extremities during clamping**

The product is to be used in a manner so that the operator's own or other persons' extremities may not be squeezed during clamping.

- Keep your own or other persons' extremities off the clamping area during clamping.

**Risk of injuries due to exertion during clamping and unclamping of the product**

When unclamping the product, high forces have to be overcome initially. Persons may slip off the product during unclamping and be injured.

- Be careful and proceed slowly when unclamping the product.

**📌 NOTE**

**Machining with mounted crank handle and/or torque wrench is not permitted**

Machining with mounted crank handle and/or torque wrench on the product is not permitted.

- Remove the crank handle and/or torque wrench from the product before machining a workpiece.

**9.1 Functioning**

The force is applied via the tension spindle and clamping nut. The clamping claws transfer the force to the clamping jaws and thus to the workpiece. The clamping force is transmitted to the adjusting spindles via the adjusting elements, resulting in a closed force flow. In addition, the adjustment elements are clamped to the base plate when the clamping force is applied. The operating alignment is with the tension spindle in the right half. This half is marked with an L on the base plate (bearing plate) and the adjustment element.

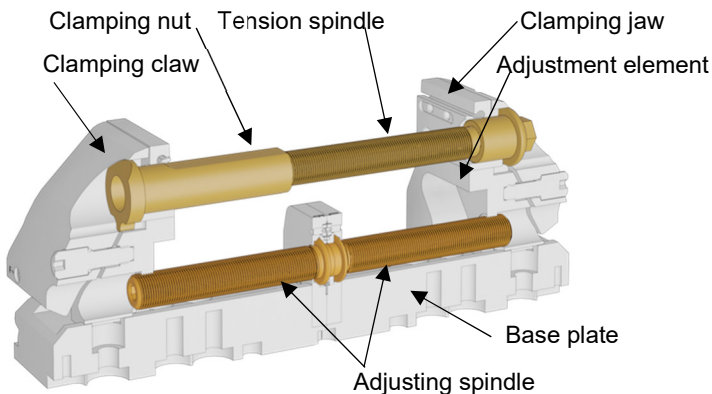


Figure 4: Structure of the clamping system

- Clamping nut (top left)
- Tension spindle (top right)
- Clamping force build-up using a torque wrench
- The clamping force develops proportionally to the torque.
- The adjusting spindle at the bottom is used to adjust the clamping range on the workpiece.

The pull-down clamping jaw is pre-assembled in the standard scope of delivery. Due to the bending element of the jaw and the elastic deformation, the workpiece is securely clamped and

pressed onto the support surface with repeat accuracy (pull-down effect).

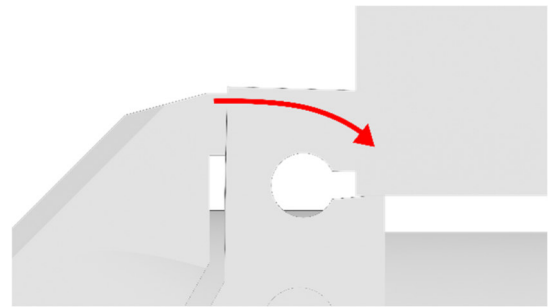


Figure 5: Function of pull-down clamping jaw

**9.2 Setting the clamping range**

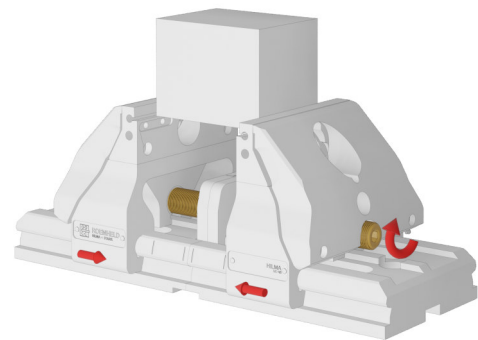


Figure 6: Setting the clamping range

- 1.) Turn to the left to open the tension spindle completely and remove it together with the clamping nut. Select the appropriate spindle and nut depending on the clamping range (see 9.4 Jaw openings with spindle and nut pairing)
- 2.) Adjust the clamping range on the adjusting spindle until the workpiece can be inserted. Check clamping range overlap
- 3.) Remount the tension spindle and adjust it to the workpiece by turning it clockwise.
- 4.) Do not build up any clamping force!

**9.3 Clamping and unclamping**

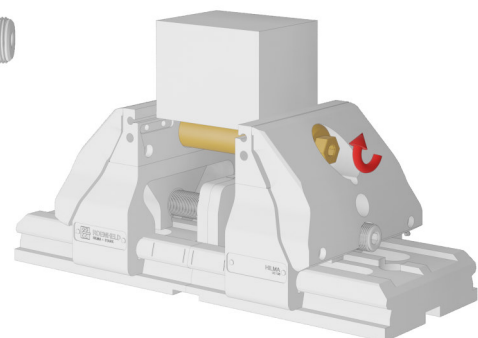


Figure 7: Clamping and unclamping

- 1.) Place the workpiece on the workpiece support
- 2.) Close the adjusting spindle until both slides are in contact with the workpiece. Do **not** build up any clamping force!

- 3.) The tension spindle must be screwed into the clamping nut at least up to the marking (ring). Otherwise, the tension spindle/clamping nut pairing must be changed (see 9.4 Jaw openings with spindle and nut pairing)
- 4.) Close the tension spindle with a torque wrench and build up the clamping force; observe the maximum values according to chapter 13 Technical data
- 5.) To release, open the tension spindle approx. 1-2 turns
- 6.) Open the adjusting spindle until the workpiece can be removed.

#### 9.4 Jaw openings with spindle and nut pairing

Two clamping spindles and two clamping nuts are included in the standard scope of delivery. In this way, the different clamping ranges can be mapped according to the following diagram:

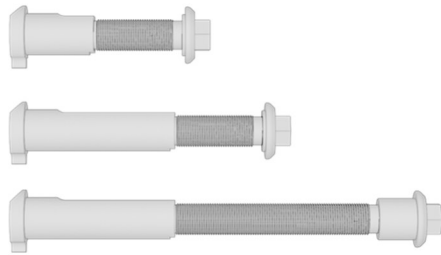


Figure 8: Jaw openings

- 1.) Short tension spindle, short clamping nut: 0 mm - 50 mm
- 2.) Short tension spindle, long clamping nut: 48 mm - 104 mm
- 3.) Long tension spindle, long clamping nut: 100 mm - 200 mm

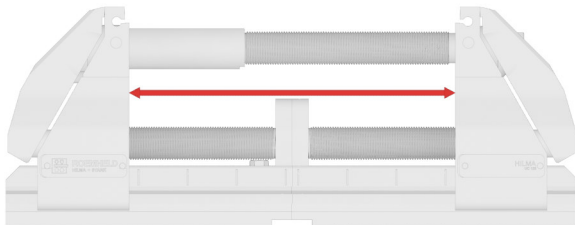


Figure 9: Jaw opening definition

**Note:** The jaw opening refers to the distance between the adjustment elements. The actual jaw opening may vary depending on the mounted jaw.

## 10 Accessory

### NOTE

#### Accessory

- Only the use of original STARK components, such as clamping jaws or corresponding accessories, is approved.

Raiser	970235001
Extension 200 - 400 mm	970235002
Extension 400 - 600 mm	970235003
Support strips 3 mm	970235005
Support strips 5 mm	970235017
Clamping claw set	970235006
Fixing set	970235007
Adapter plate 150x400	970235008

Adapter plate 400x400	970235009
Adapter plate 600x400	970235010
Inserts for M8 thread	970235011
Inserts for M10 thread	970235012
Inserts for M12 thread	970235013
Retractable nipple set for STARK.classic.2	970235014
Retractable nipple set for STARK.basic.M	970235015
Pull-down clamping jaws	970236001
Clamping jaw 125 mm with GripPins	970236002
Clamping jaw 60 mm with GripPins	970236003
Set of spare GripPins	970235004
Vee jaw	970236004
Clamping jaw with round clamping bolt	970236005
Spare round clamping bolt	970235016
Clamping jaw 125 mm smooth	970236006
Clamping jaw 60 mm smooth	970236007
Clamping jaw, soft	970236008

### 10.1 Change of clamping jaws

#### ⚠ WARNING

**Clamping jaws must be securely fastened!**

Jaws that are not mounted properly can jeopardise the precision of the system as well as the clamping safety.

- Before using the product, ensure that the clamping jaws are securely and properly fastened.

Changing the clamping jaws is done in the following steps.

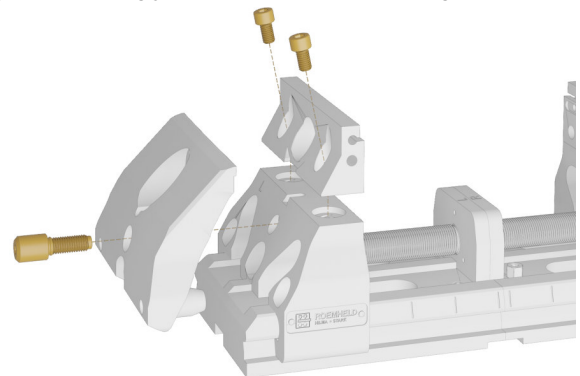


Figure 10: Procedure for changing the clamping jaws

- 1.) Remove tension spindle and clamping nut
- 2.) Loosen clamping claw screw and remove clamping claw
- 3.) Remove 2x screws M8x16 from the clamping jaws
- 4.) Replace clamping jaws
- 5.) Tighten the M8x16 screws hand-tight and securely.
- 6.) Attach clamping claw and tighten clamping claw screw

Different clamping jaws are available for the different workpieces and operations.

### 10.1.1 Pull-down clamping jaw

Clamping jaws in standard scope of delivery. These have a pull-down effect; due to the bending element of the jaw and the elastic deformation, the workpiece is securely clamped and pressed onto the support surface with repeat accuracy. Only pre-machined or smooth surfaces may be clamped.

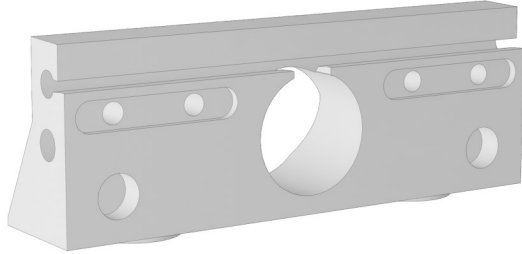


Figure 11: Pull-down clamping jaw

The pull-down clamping jaw set 970236001 is available as an accessory (2 pull-down clamping jaws as well as 4x M8x16 fixing screws).

### 10.1.2 Clamping jaws with GripPins

With these jaws, blanks with saw cut surfaces or cast surfaces can be clamped. The plastic deformation of the workpiece creates a form fit. The clamping of uneven surfaces becomes much more secure.

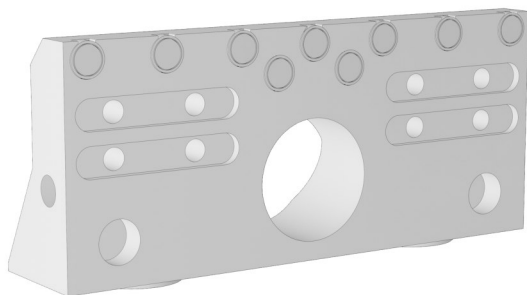


Figure 12: Clamping jaw 125 mm with GripPins

The clamping jaw set 970236002 is available as an accessory (2 clamping jaws 125mm with pre-mounted GripPins as well as 4x M8x16 fixing screws).

The clamping jaw set 970236003 is also available with a jaw width of 60mm for narrower workpieces to optimise accessibility

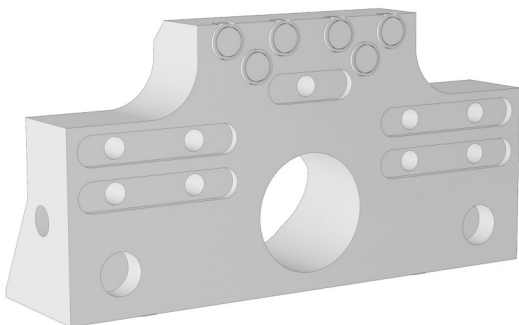


Figure 13: Clamping jaw 60 mm with GripPins

The clamping surfaces of the workpiece are imprinted by the deformation during the clamping process. The imprints are still visible after unclamping!

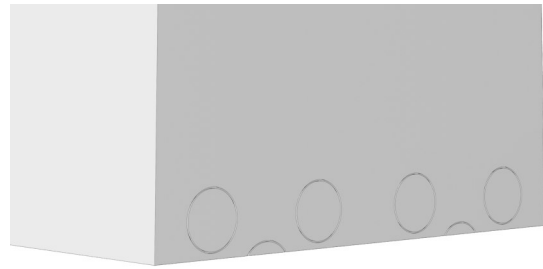


Fig. 14: Exemplary clamping imprints of the GripPins

The GripPins are available as spare parts (970235004) to replace the GripPins when worn.

- 1.) Knock damaged GripPins out of the jaw from the rear using a punch
- 2.) Carefully knock the new GripPins into the jaw

### 10.1.3 Smooth clamping jaws

These clamping jaws are primarily used for clamping the second side.

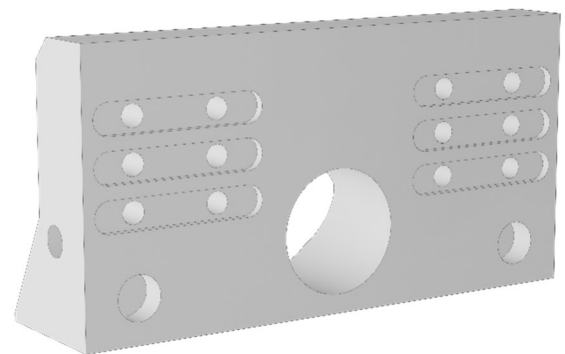


Figure 15: Clamping jaw 125 mm smooth

Here too, the clamping jaw sets are available in two versions - with 125mm (970236006) as well as with 60mm (970236007).

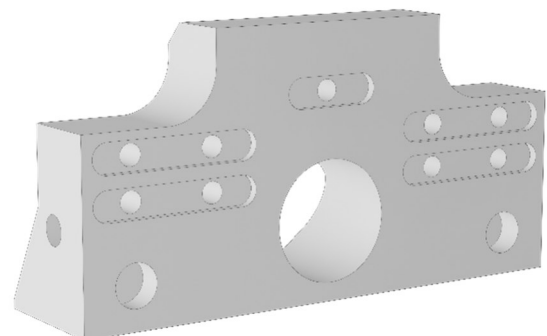


Figure 16: Clamping jaw 60 mm, smooth

### 10.1.4 Vee jaw

These clamping jaws are designed for clamping cylindrical workpieces. Cylindrical parts with a 8 to 40 mm diameter can be clamped horizontally as well as vertically (single central or double external).

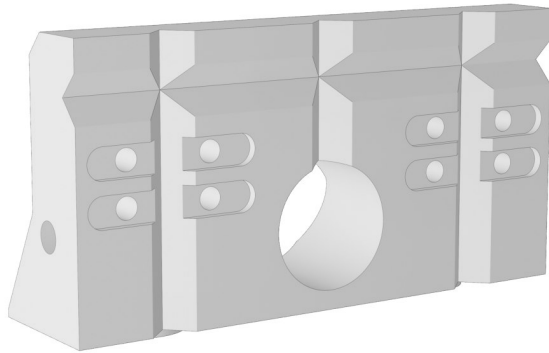


Figure 17: Vee jaw

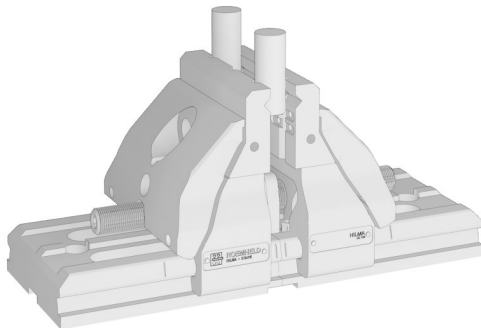


Fig. 18: Two vertically clamped workpieces

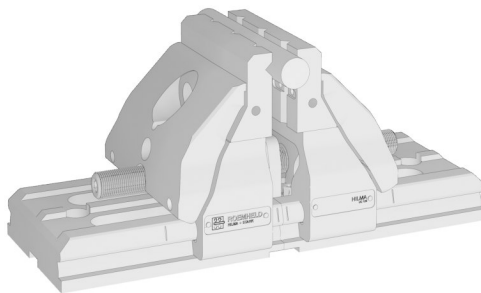


Fig. 19: Workpiece clamped horizontally

### 10.1.5 Support strips

With the support strips, a support surface for the workpiece is created on the clamping jaws (except rough clamping jaws). The possible clamping depths are 3, 5, 8 and 10 mm, depending on the alignment of the selected support strip. The distance between the grooves for the support strips is 10 mm.

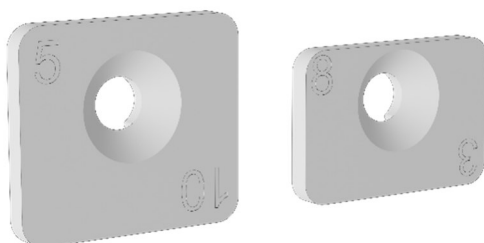


Fig. 20: Different support strips

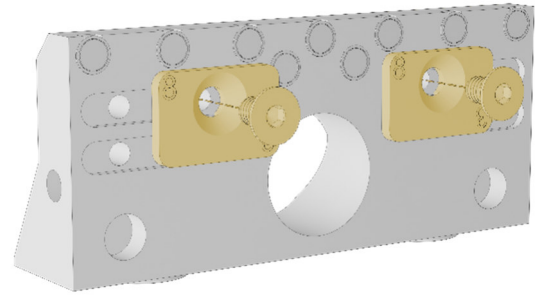


Figure 21: Mounting the support strips

- 1.) Select the support strips according to the desired clamping depth, align them and insert them into the appropriate groove
- 2.) Screw on with countersunk screw M6x10
- 3.) Tighten the screw hand-tight

### 10.1.6 Clamping jaw with round clamping bolt

With these clamping jaws, cylindrical workpieces with a 30 to 200 mm diameter can be clamped vertically. The diameter range that can be clamped is adjusted by repositioning the round clamping bolts; in addition, the round clamping bolts can be exchanged. Clamping imprints on the surface are possible. Three- and four-point clamping can be realised.

- 1.) Loosen and remove the round clamping bolt
- 2.) Insert the round clamping bolt in the desired position
- 3.) Hand-tighten the round clamping bolt

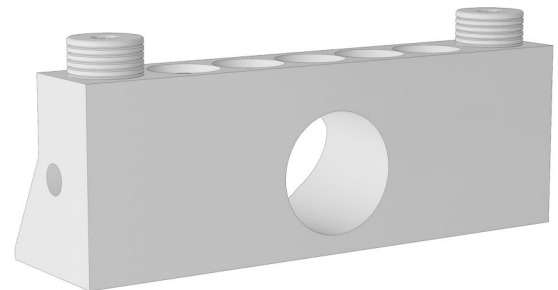


Figure 22: Clamping jaw with round clamping bolt

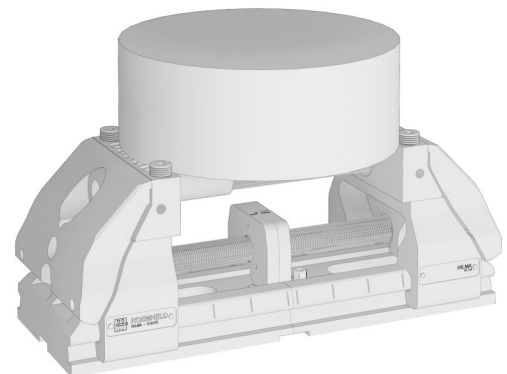


Figure 23: Clamping jaw with round clamping bolt and clamped workpiece

The round clamping bolts are available as a spare part (970235016) to replace the round clamping bolts when worn.



### 10.1.7 Clamping jaw, soft

Workpiece-specific clamping contours can be incorporated in these jaws, which cannot be covered with the other range of jaws.

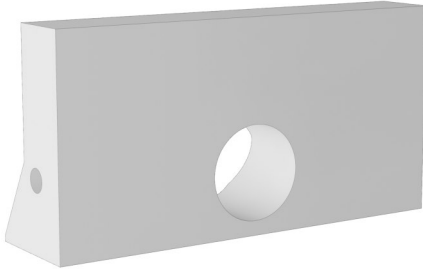


Figure 24: Clamping jaw, soft

### 10.2 Raising the Z-axis

If a raised workpiece position is required for better accessibility, the clamping system can be raised by 35 mm by means of the raisers 970235001.

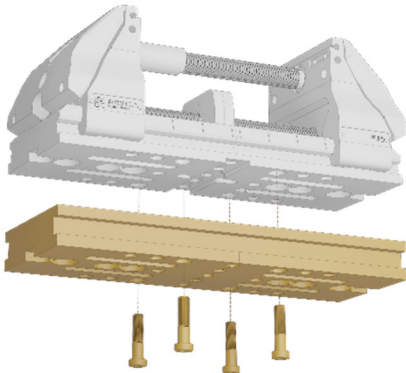


Figure 25: Fasten raiser

- 1.) Place the raiser on the bottom side
- 2.) Fasten with the 4x M10x40 screws and hand-tighten
- 3.) Several raisers can be mounted on top of each other; the screw length must be adjusted

The same fastening options on the machine table are available for the raisers as for the clamping system (direct clamping or via zero point clamping system). The M12x75 screws for fixation of the system are not included in the scope of delivery.

Alternatively, clamping claws can be used to fix the clamping system with raisers on the machine table. The clamping claw fixing set (970235006) is necessary for this.

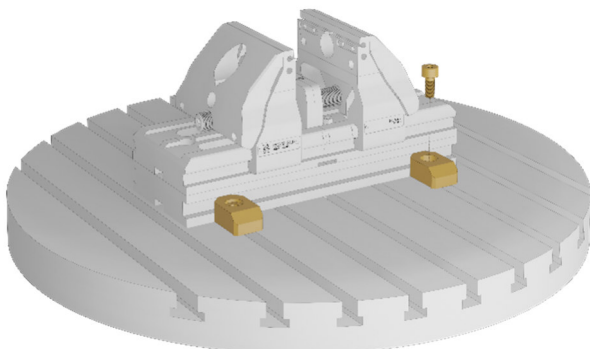


Figure 26: Mounting on raiser using clamping claws

- 1.) Align clamping system on machine table
- 2.) Push keyblocks into T-slot
- 3.) Place the clamping claw on the vise
- 4.) Insert locking screw M12x30 and tighten to 60 Nm

### 10.3 Extension of the clamping range

The clamping system can be extended with extensions to a 200 - 400 mm (set 970235002) or 400 - 600 mm (set 970235003) clamping range. Large workpieces can thus be clamped easily. The extension to 200 - 400 mm is shown.

The extended clamping system can be mounted directly on the machine table, raisers or adapter plates.

- 1.) Position the adjustment elements on one of the markings on the base plate (see Fig. 28)
- 2.) Loosen the locking screws and both connecting bolts (see Fig. 27)
- 3.) Pull the clamp apart. The adjusting spindles must not be turned when pulled apart (loss of centre)
- 4.) Insert adjusting spindle extension, observe alignment of the dowel pins (see Fig. 28)
- 5.) When fastening both halves of the clamping system (see 7), there must be no gap between the adjusting spindle extension and the adjusting spindles
- 6.) Insert long tension spindle and extended clamping nut (see Fig. 29)
- 7.) Adjust jaw opening (see 9.2) and clamp workpiece (see 9.3)

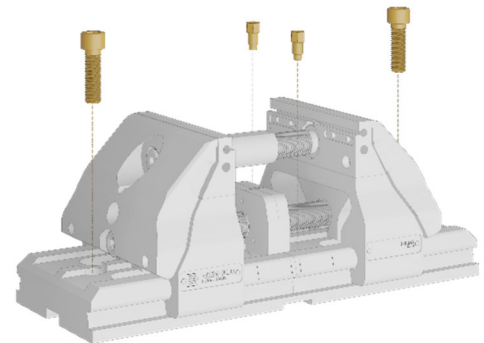


Fig. 27: Loosening the connecting bolts and fixing screws



Fig. 28: Inserting the adjusting spindle extension

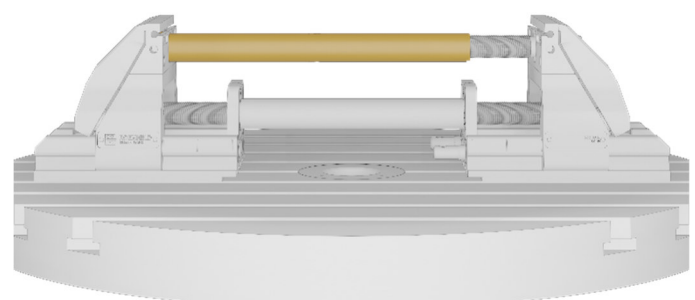


Fig. 29: Inserting the tension spindle and extended clamping nut (see )

The different tension spindle/clamping nut combinations thus allow the clamping range to be extended up to 600mm.



Figure30: Configuration for clamping range 500 - 600 mm

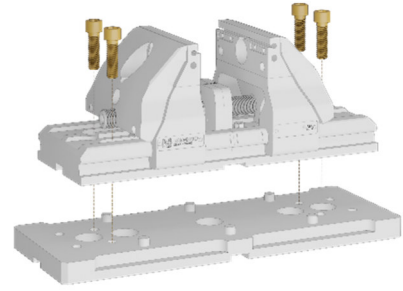


Figure 34: Mounting on adapter plate

#### 10.4 Adaptor plates

The available adapter plates allow the flexibility of the system to be optimally utilised. The supplied dowel pins facilitate the exact positioning of the clamp on the adapter plate, both in the assembled and in the split version (clamping range extension).

The adapter plate itself can in turn be fastened either using a zero-point clamping system, a direct screw connection in T-slots or clamping claws.

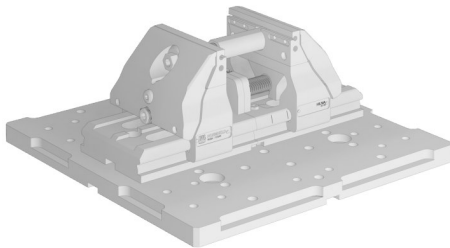


Figure 31: Clamping system centred on 400x400 mm adapter plate

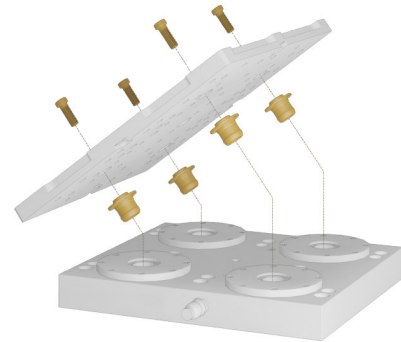


Figure 35: Combination of adapter plate with zero point clamping system

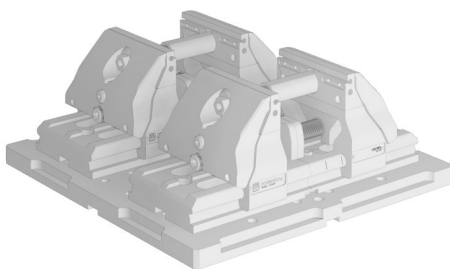


Fig. 32: Two clamping systems on 400x400 mm adapter plate

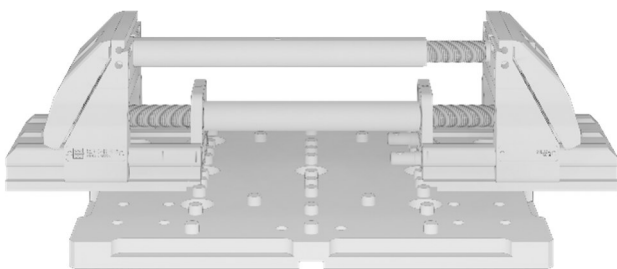


Figure 33: Clamping system with clamping range extension on 400x400 mm adapter plate

The clamping system is mounted using M12x40 screws (fixing set 970235007).

## 11 Maintenance

### **⚠ WARNING**

#### **Burning due to hot surface!**

- In operation, surface temperatures of over 70°C may develop on the product.
- Maintenance and repair work should only be performed in a cooled down condition and/or with protective gloves.

#### **Risk of injuries by breaking product parts!**

During operation, product parts may break, and this may cause personal injuries.

- Observe maintenance intervals for all parts pursuant to this Operating Manual.
- Components and materials subject to wear must be replaced before a dangerous failure occurs.

### 11.1 Maintenance plan

Maintenance works	Interval	Realisation
Cleaning	As required	Operator
Regular checks	daily	Operator
Regular lubrication	At least once a month, after 200 clamping cycles at the latest! (see 11.4)	Operator <b>⚠ Caution!</b> If this lubrication will not be made, this can lead to a failure of the clamping system!
Repair	As required	Qualified personnel

### 11.2 Cleaning

#### **⚠ CAUTION**

#### **Damage to moving components!**

Avoid damage to the moving components (spindle and slide).

#### **Aggressive cleaning agents**

The product must not be cleaned with:

- corrosive or caustic substances or
- organic solvents such as halogenated or aromatic hydrocarbons and ketones (cellulose thinner, acetone, etc.).

The element must be cleaned at regular intervals. In this regard, the lead screw drive area and the housing have to be cleaned from swarf and liquids in particular.

In the case of heavy contamination, cleaning must be made at shorter intervals.

### 11.3 Regular checks

Comply with maintenance intervals

### 11.4 Regular lubrication and cleaning

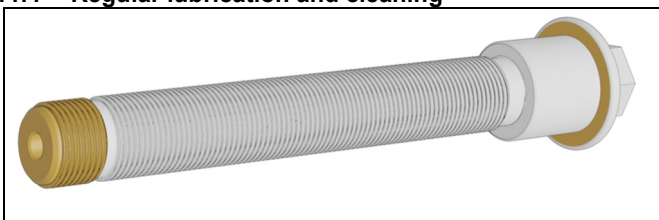


Fig. 36: Surfaces of the tension spindle to be lubricated

1. The spindle and spindle head must be cleaned and greased (Metaflux 70-81 or similar) every 200 clamping processes
2. Spray all surfaces once a week with anti-corrosion oil
3. Every 200 clamping processes, loosen clamping claw and remove swarf from the space in between

### 11.5 Service / maintenance service

1. Austria and Germany

#### Maintenance by manufacturer:

Please return the clamping system free of transportation charges with the STARK return shipping form.

Stark Spannsysteme GmbH  
Römergrund 14  
6830 Rankweil, Austria  
Phone: +43 5522 37400  
E-mail: info@stark-roemheld.com

#### Maintenance at customer workshop:

Please request the maintenance service.

Service phone: +49 6405 89400  
E-mail: service@roemheld.de

2. Third country

Please contact the HILMA-RÖMHELD general importer or your local dealer.

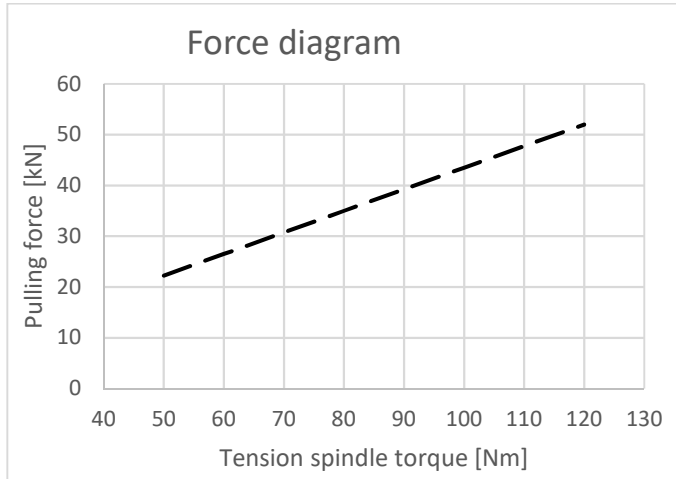
## 12 Trouble shooting

Trouble	Cause	Remedy
Clamping system does not function	Individual parts defective	Replace vise
No clamping force build up	Clamping range set incorrectly.	See chapter "Setting the clamping range".

## 13 Technical data

### Characteristics

Jaw width [mm]	125
Max. pulling force [kN]	52
Max. torque [Nm]	120
Base length [mm]	350
Weight [kg]	20



Legend:

— — Pulling force (determined in external device)

### NOTE

#### Further details

- Further technical data can be found in the catalogue.

### NOTE

- The indicated values are approximate values and have to be interpreted according to the user's application!  
See note!

Thread	Tightening torque (MA) [Nm]		
	8.8	10.9	12.9
M6	10	15	18
M8	25	36	45
M10	49	72	84
M12	85	125	145
M14	135	200	235
M16	210	310	365
M20	425	610	710

**Note:** Applicable to workpieces and set screws made of steel with metric thread and connecting surface dimensions as per DIN 912, 931, 933, 934 / ISO 4762, 4014, 4017, 4032  
The tightening torque (MA) values in the table take account of: steel/steel design, friction value  $\mu_{ges} = 0.14$  - not lubricated, utilisation of minimum yield point = 90%.

### 13.1 Storage

#### CAUTION

#### Storage of components!

- Storage not in compliance with the storage conditions is inadmissible.
- Improper storage can lead to resinification of the anti-corrosion oil or corrosion of the element.

The exterior of the products is protected against corrosion. The oil film that remains after the test provides six months of internal corrosion protection when stored in dry room at uniform temperatures.

For extended storage periods, the product must be filled with a non-resinating corrosion inhibitor, and the outside surfaces have to be treated.

## 14 Disposal



#### Hazardous to the environment

To avoid potential environmental damage, the individual components have to be disposed of by approved expert companies.

All materials have to be disposed of in compliance with the applicable codes and regulations as well as environment protection regulations.

Particular importance is to be attached to the disposal of components containing residues of pressure liquids. The notes regarding disposal in the safety data sheet have to be observed. As regards the disposal of electrical and electronic components (e.g. stroke measuring systems, proximity switches, etc.) the country-specific statutory requirements and regulations have to be complied with.

## 15 Declaration of incorporation

### Manufacturer

STARK Spannsysteme GmbH  
Römergrund 14  
6830 Rankweil, Austria  
Tel.: +43 5522 37400-0  
E-mail: info@stark-roemheld.com  
Internet: www.stark-roemheld.com

They are designed and manufactured in line with the relevant versions of the directives **2006/42/EC** (EC MSRL) and in compliance with the valid technical rules and standards. In accordance with EC-MSRL, these products are components, that are not yet ready for use and are exclusively designed for the installation in a machine, a fixture or a plant. The products may only be put into operation after it was assessed that the incomplete machine / machine, in which the product shall be installed, corresponds to the machinery directives (2006/42/EC).

The manufacturer commits to transmit the special documents of the products to state authorities on request. The technical documentation as per appendix VII part B was prepared for the products.

## 16 List of the used standards

**Product Safety Act - ProdSG**; November 2011

**DIN EN ISO 12100**, 2011-03, Safety of machinery; Basic concepts, General principles for design (replacement for part 1 and 2)

**DIN EN ISO 13857; 2008-06**, Safety of machinery - Safety distances to prevent hazard zones being reached by upper and lower limbs. (replaces: DIN EN 294)

**DIN EN 349**, 2008-09, Safety of machinery - Minimum gaps to avoid crushing of parts of the human body

**DIN EN 81714-2**, 2007-08, Design of graphical symbols for use in the technical documentation of products

**DIN EN 82079; 2010-10**, Preparation of instructions, structuring, content and presentation - Part 1

**STARK SPANNSYSTEME GmbH**  
**Martin Greif**  
Managing director



Rankweil, dated 25.07.2023





## **STARK** Spannsysteme

A company of the ROEMHELD group

STARK Spannsysteme GmbH  
Römergrund 14 | 6830 Rankweil  
Austria

+43 5522 37 400-0  
info@stark-roemheld.com

[stark-roemheld.com](http://stark-roemheld.com)