Bike proStand

Stationary assembly fixture for bicycles, cargo bikes and e-bikes
Electrically operated

Table of contents

1 Description of the product

The Bike proStand is an electric manipulator for handling and assembling bicycles that weigh up to 40 kg.

The assembly fixture consists primarily of the following basic components: base plate, lifting and rotation axis.

Both axes are self-locking; each set position is held securely.

The lifting and rotation axis are electrically operated. Both axes are operated with a common hand panel.

The long, 1225-mm lifting range allows the bicycles to be lifted from the ground and moved into an optimum working position.

The rotation axis allows endless rotation upward.

The lifting axis has a shutdown function if a collision occurs during lowering.

1.1 Variants

Bike proStand is available as a variant for mounting bicycles weighing up to 80 kg. (Without rotation axis)

1.2 Validity of the documentation

This document applies to the following products:

Bike proStand in data sheet M9102. The following types or part numbers are concerned:

6401205, 6401206

2 Target group of this document

- Bicycle mechanic

Further qualification / age restrictions

The personnel must:

- be physically and mentally in the position to do the work required
- protect the working area as per the existing rules

The responsibility for different activities at the product have to be clearly defined and kept. Unclear competences are a security risk.

3 Symbols and signal words

⚠ WARNING

Person damage

Stands for a possibly dangerous situation.
If it is not avoided, death or very severe injuries will result.

⚠ CAUTION

Easy injuries / property damage

Stands for a possibly dangerous situation.
If it is not avoided, minor injuries or material damages will result.

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.

4 For your safety

The operating manual provides information and aims to prevent hazards that may arise when using the product. It also provides information and suggestions regarding transport, storage, and maintenance.
Strict compliance with this operating manual is required to prevent accidents and material damage, as well as to ensure trouble-free operation of the assembly fixture.
Furthermore, observing the operating instructions will help to:

- Prevent injuries
- Reduce down times and repair costs
- Increase the service life of the fixture.

4.1 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, in order to avoid personal damage or material damage.

- Read these operating instructions thoroughly and completely, before you work with the product.
- Keep these operating instructions so that they are 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 in order to exclude danger to persons because of not suited spare parts.
- Respect the intended use.
- All bicycle mechanics must have received the relevant training and instructions from the operator. In addition, they should be able to assess the work assigned to them and recognize possible hazards on the basis of their professional training.

4.2 Product-specific safety instructions

⚠ WARNING

Injury due to crushing

Components of the product move while they are in operation, this can cause injuries.

- The assembly fixture may only be operated by one person.
- No other persons may be in the work area while the fixture components are moving.

Injury due to falling workpiece

Insufficiently clamped workpieces can fall during lifting or rotating and cause injuries.

- Check that the workpiece is securely clamped before lifting or rotating starts.

Injuries due to misuse, incorrect operation or abuse!

Injuries can occur if the product is not used within the intended use and the technical performance data.

- Before start up, read the operating instructions!

⚠ CAUTION

Transverse forces and forced conditions!

Side loads and forced conditions on the product lead to the premature failure.

- Avoid forced conditions (overdetermination) of the product.
- Max. forces and torques see technical characteristics.

Performance of the product!

The admissible performance data of the product, see chapter "Technical characteristics", may not be exceeded.

NOTE

Repairs may only be performed by service technicians of Römheld

- Repair works, as e.g. the change of components may only be effected by the service technicians of the company Römheld.

It is imperative to comply with the following notices to ensure safe operation:

- The maximum workpiece weight (see Technical Data), including the workpiece holder, must not be exceeded.
- If the workpiece weight is exceeded, internal components may not work properly.

4.3 Personal protective equipment

For works at and with the product, wear safety shoes!

5 Safety devices

The below safety devices are for the safety of the operators. As a matter of principle no safety devices may be detached, put out of action or modified.

Used safety devices

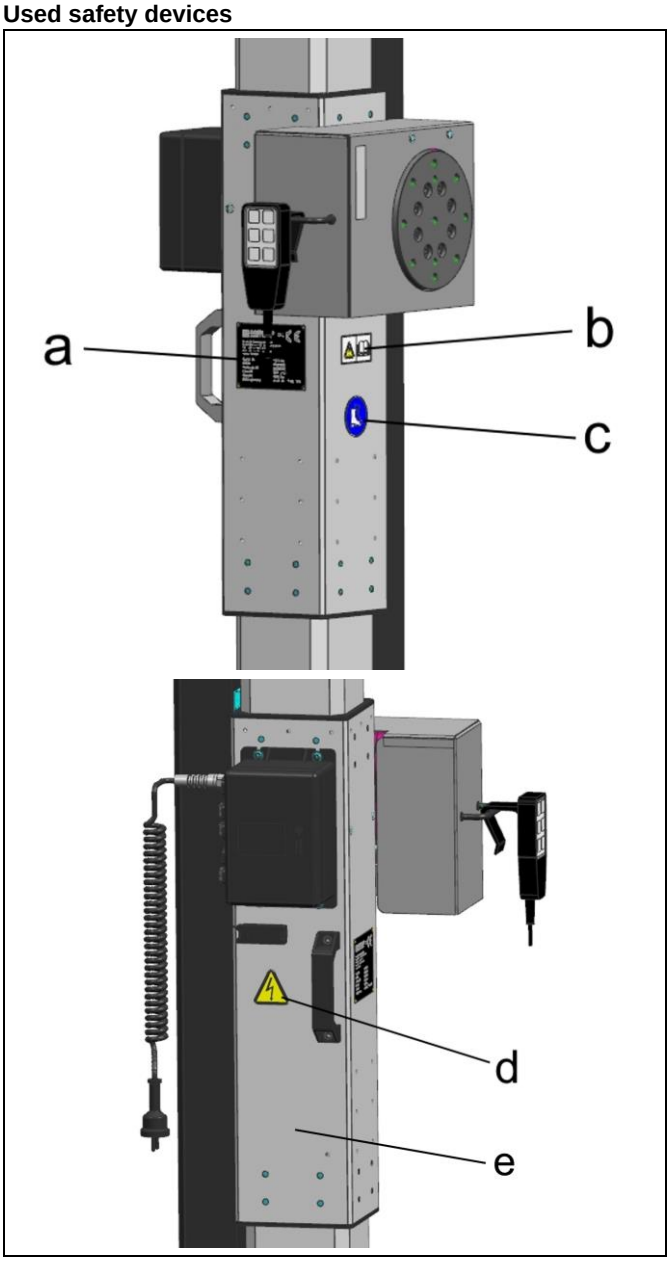

Fig. 1: Positions of the safety devices

a	Name plate	d	Warning - voltage
b	Sign: Read the Operating Manual	e	Lifting drive with collision shutdown in downward movement
c	Mandatory sign: Wear safety shoes		

5.1 Check the safety devices

NOTE

Checking the safety device

- To check the safety device, use the “General examination” checklist. Eliminate any identified safety device defects immediately.

Testing intervals

- at the beginning of every shift
- once a week in case of continuous shift
- after each maintenance or repair

Testing content

- Function
- State and position
- Safe fixing

General examination

Covers	Number, available and undamaged
Screw plugs	Number, available and undamaged
Name plates with specifications	Number, available, readable and undamaged
Danger signs	Number, available and undamaged
Mandatory signs	Number, available and undamaged
Other protective devices available	available, undamaged and ready for operation
Lifting drive with collision shutdown in downward movement	Collision shutdown check
Testing date:	Tester (signature):

(Number see "Position of safety devices")

6 Application

6.1 Intended use

The products are used in industrial applications to carry out lifting, lowering and rotational movements with an electric motor.

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

- Use within the capacity indicated in the Technical Data (pay particular attention to the torque load).
- Use as described in this operating manual.
- Comply with maintenance intervals.
- Have qualified and trained personnel carry out the corresponding activities.
- Mount spare parts only with the same specifications as the original part.
- Max. pressure load only with the lifting force indicated in the Technical Data.
- Use only within closed, low-dust rooms.

6.2 Misapplication

⚠ WARNING

Injuries, material damages or malfunctions!

Modifications can lead to weakening of the components, reduction in strength or malfunctions.

- Do not modify the product!

The use of the products is not authorised:

- For domestic use.
- For use at fairgrounds and amusement parks.
- In food processing or in areas with special hygiene regulations.
- In mines.
- In ATEX areas (in explosive and aggressive environments, e.g. explosive gases and dusts).
- If physical effects (welding currents, vibrations or others) or chemically acting media damage the seals (resistance of the seal material) or components and this can lead to functional failure or premature failure.
- For applications other than vertical lifting and rotation of loads. Suspended operation (e.g., from a ceiling) is not permitted.
- Not suitable for applications with strong impact loads or strong vibration.

Special solutions are available on request!

7 Transport

⚠ WARNING

Injury due to overturning product!

Overturning product due to inappropriate means of transportation.

- Do not stand below the load during lifting and lowering, stay outside the danger zone.
- Use suitable means of transportation.
- Pay attention to the weight of the equipment.
- Pay attention to safe support.

The product is secured for transport and delivered on a pallet.
The product (fixed on the pallet for transport) may only be transported to the place of installation by means of an appropriate floor-level conveyor (pay attention to the min. lifting force).
Ensure that the product is safely positioned on the hand-lift truck or a transport pallet.
The handle may only be used to assist with setup. It is not suitable for lifting the fixture.

Manoeuvring the product

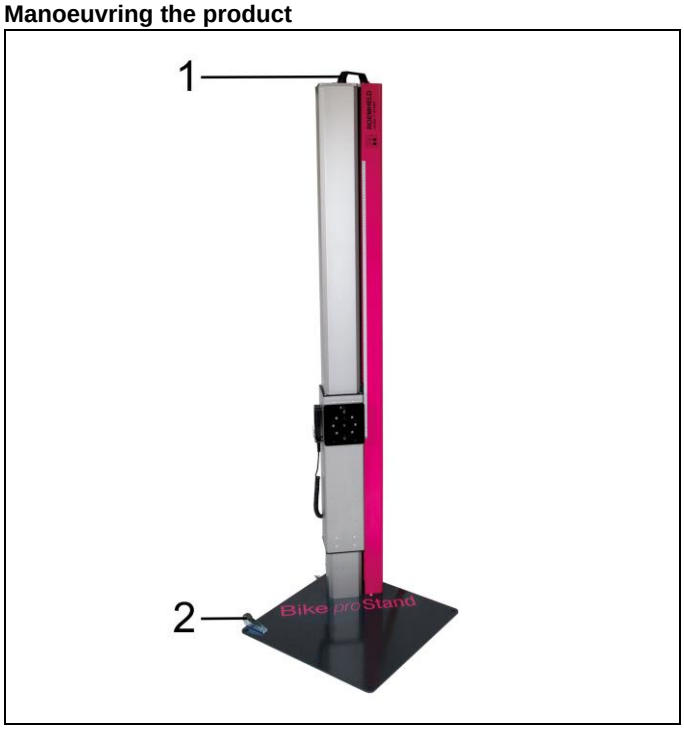

Fig. 2: Handle and rollers on the device

1	Handle for manoeuvring	2	Rollers for manoeuvring

8 Installation

8.1 Design

⚠ WARNING

Injury by dropping parts!

Some products have a heavy weight and can cause injury when dropping.

- Transport products professionally.
- Wear personal protection equipment!

Weight specifications see chapter "Technical characteristics".

⚠ CAUTION

Transverse forces and forced conditions!

Side loads and forced conditions on the product lead to the premature failure.

- Avoid forced conditions (overdetermination) of the product.
- Max. forces and torques see technical characteristics.

Design 6401205

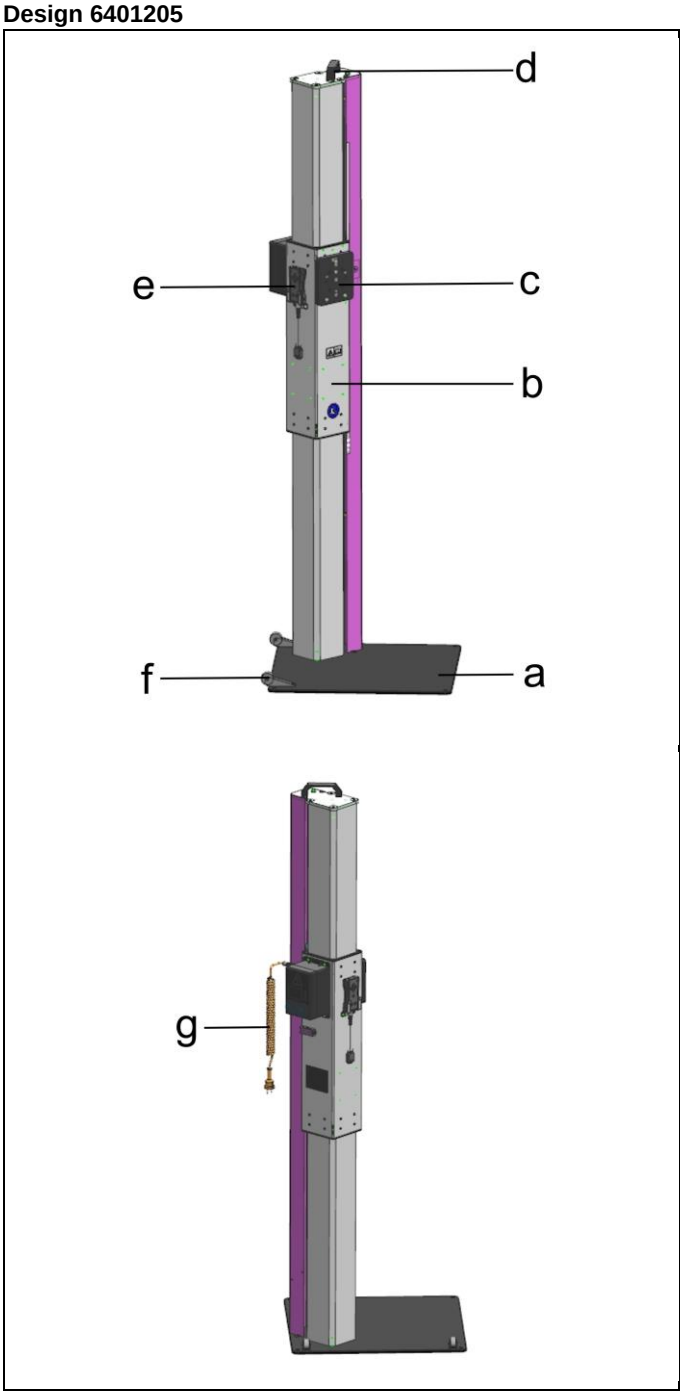

Fig. 3: Components

a	Base plate	e	Hand panel
b	Lifting axis	f	Rollers
c	Mounting flange	g	Mains cable
d	Handle		

Design 6401206

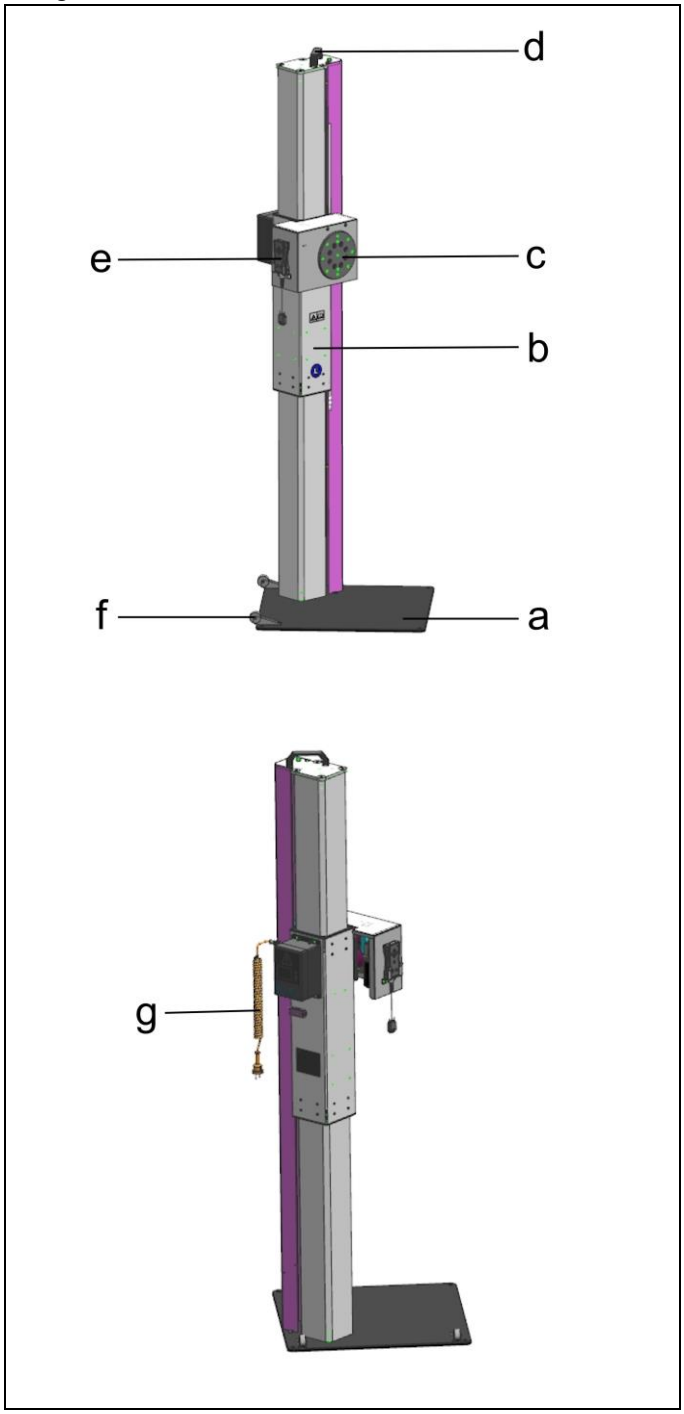

Fig. 4: Components

a	Base plate	e	Hand panel
b	Lifting axis	f	Rollers
c	Rotation axis	g	Mains cable
d	Handle		

8.2 Fixing of the product

⚠ WARNING

Injury due to overturning product!

Overturning product due to missing or incorrect fixing!

- Fasten base plate on the floor.

1. The assembly fixture must be placed horizontally on a level and firm concrete factory floor (concrete strength

class B 25) or on a rigid connecting construction (level: 0.20 mm).
2. The base plate of the assembly fixture must be fastened to the concrete factory floor or the connecting construction with four socket head cap screws ISO 4762 – M10 with a property class of 10.9.
3. For this purpose, have heavy-duty anchors (e.g. Fischer order no.: SL M-10 N) or bolt anchors (e.g. Fischer FAZ II) professionally installed in the concrete factory floor.

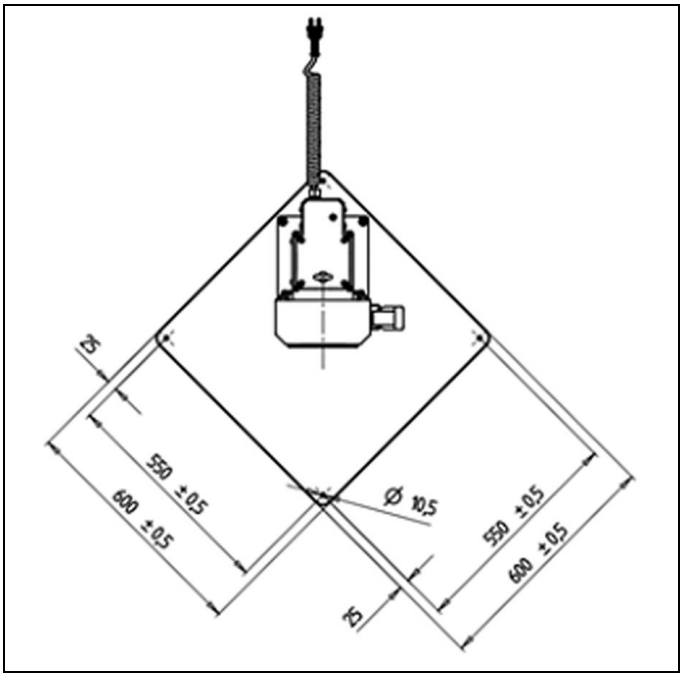

Fig. 5: Base plate with mounting holes (4x Ø 10.5 mm)

8.2.1 Fastening the fixing brackets and mounts

⚠ CAUTION

Damage to components

The flange plate may become blocked.

- When mounting workpiece holders to the flange plate, the max. screw-in depth of 15 mm must be observed and the shaft of the screw may not protrude.
- Workpiece holders must be demonstrably suitable for accommodating the workpieces as well as the forces and torques that occur.

Damage to internal components

Shock-type loads to the lifting axis can cause damage.

- When mounting the workpiece holders, the permissible holding torque (see Technical Data) must not be exceeded.

Threads (M10) are provided on the flange plate for fastening the workpiece holders.
All the provided bore holes in the workpiece holders must be used.

The screw-in depth for the fastening screws to be used (property class 8.8) is a minimum of 10 mm, maximum of 15 mm.

In off-position the specified maximum torques may occur (see technical characteristics).

The required forces and torques must be observed by the operator.

6401205 Flange without rotation axis

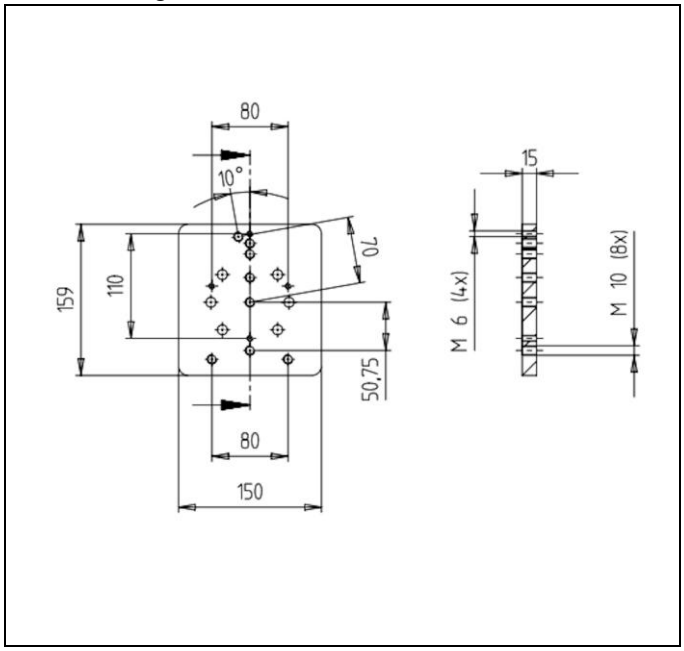

Fig. 6: Fixing threads for flange plate

6401206 Flange with rotation axis

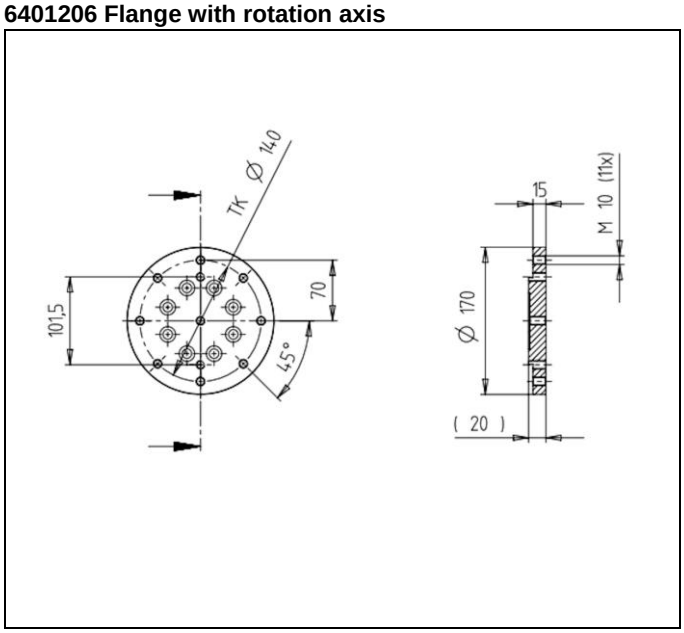

Fig. 7: Fixing threads for flange plate

NOTICE

Hazards due to workpiece holders

Any hazards caused by the workpiece holders, e.g. crushing points, must be eliminated by the customer in the design.

9 Start up

⚠ WARNING

Injury / burning due to contact with energized parts!

- Before working on electric equipment, the energized parts must be de-energized and secured.
- Do not open protection covers at electric parts.
- All electrical works must only be realised by electricians.

Injury by crushing!

Components of the product make a movement while they are in operation, this can cause injuries.

- Keep parts of the body and items out of the working area!

Injury due to falling workpiece

Insufficiently clamped workpieces can fall during lifting and rotating and cause injuries.

During mounting, lifting and rotating movements the customer must ensure that:

- the workpiece holder is securely fastened
- the workpiece is securely clamped in the workpiece holder

⚠ CAUTION

Fixing the connecting cable

Connection cable can be damaged.

- The cables must be fixed by the user so that no bending and tensile stress will act and the cable cannot be damaged in any way.

NOTE

Damage with variant 6401205

To avoid damaging the internal components, operate the first 200 cycles with a maximum load of 75 kg.

9.1 Electronics

The product is ready to be attached.
Check for a tight fit (check the tightening torques of the fastening screws).

Proceed as follows for the electrical connection:

1. Check that the mains voltage corresponds to the specifications of the product. (see Technical Data: supply voltage)
2. Connect the mains cable (a) to an earthed socket.

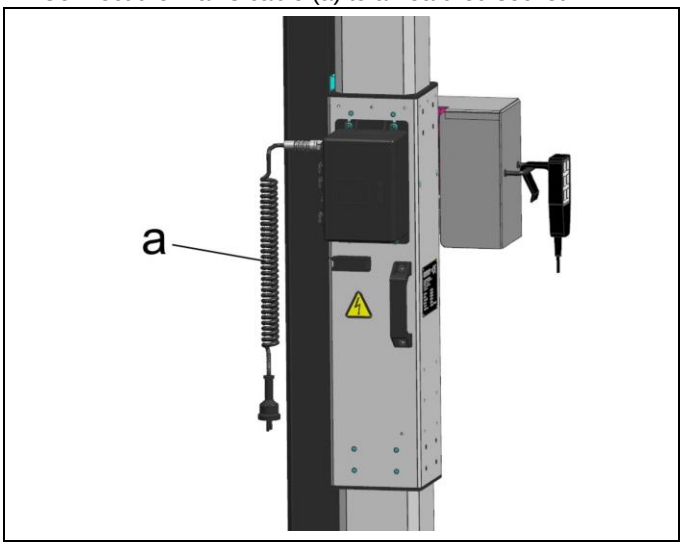

Fig. 8: Connecting the power supply

a	Mains cable 3x1.5 mm²

10 Operation

⚠ WARNING

Injuries due to non-compliance of the operating instructions!

- The product may only be operated, if the operating instructions - especially the chapter "Safety instructions" have been read and understood.

Injury by crushing!

Components of the product make a movement while they are in operation, this can cause injuries.

- Keep parts of the body and items out of the working area!

Injury due to falling workpiece

Insufficiently clamped workpieces can fall during lifting and rotating and cause injuries.

During mounting, lifting and rotating movements the customer must ensure that:

- the workpiece holder is securely fastened
- the workpiece is securely clamped in the workpiece holder

Injury due to falling load!

The product does not have an emergency safety catch (safety device).
In case of overload, the load can fall down unbraked!

- The product must not be overloaded.

Injuries due to misuse, incorrect operation or abuse!

Injuries can occur if the product is not used within the intended use and the technical performance data.

- Before start up, read the operating instructions!

⚠ CAUTION

Avoiding collisions

Workpiece and/or the workpiece holder and the assembly fixture may become damaged.

- The customer must ensure that the workpiece holder and/or workpiece do not collide with the floor, factory ceiling, assembly fixture or other equipment during lifting or rotating movements.

The operator is obliged to report immediately to the safety expert or the person who is responsible for safety any changes to the product that may affect safety and to stop operating the product.
The operator must ensure that only authorised persons who have been instructed in the use of the product and who have been familiarized with the operating instructions work on the product.

10.1 Workplace

The operator's workplace is divided into the assembly area and the operating area.

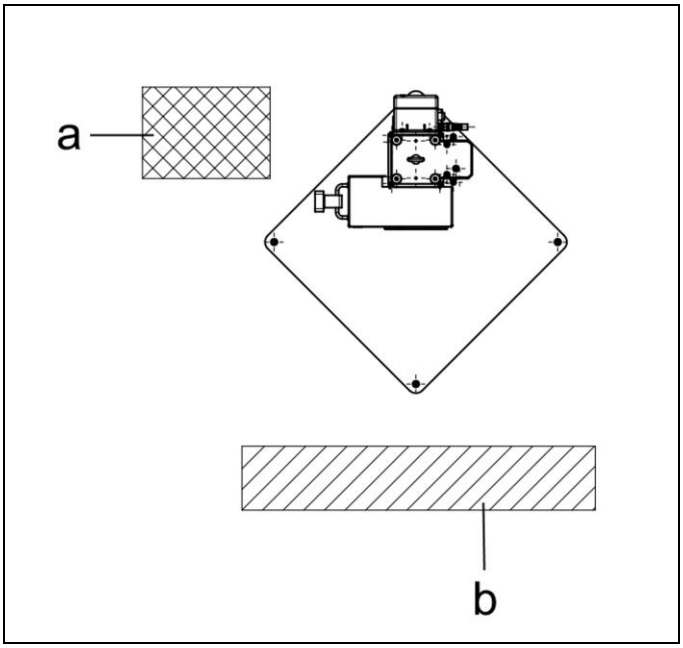

Fig. 9: Working place

a Operating area	b Assembly area (danger zone)

10.2 Operating in the assembly area

⚠ WARNING

Injury due to falling workpiece

Insufficiently clamped workpieces can fall during lifting or rotating and cause injuries.

During mounting, lifting and rotating movements the customer must ensure that:

- the workpiece holder is securely fastened
- the workpiece is securely clamped in the workpiece holder

NOTICE

Preload forces/tightening torques

Preload forces and tightening torques must be defined by the customer.

In the assembly area, the workpiece is assembled according to customer-specific instructions.

10.2.1 Operating in the operating area

⚠ WARNING

Injury due to lifting and rotating movement

People in the assembly area can be injured.

- Do not move the assembly fixture if there is a person in the assembly area.

The lifting axis is extended or retracted by pressing the Lift (c) or Lower (d) button on the hand panel. Due to the touch control function, the button must remain pressed during lifting and/or lowering.

By pressing the "Turn clockwise" (b) button or "Turn counter-clockwise" (a) button on the hand panel, the rotating module is turned in the selected direction. Due to the touch control function, the corresponding button must remain pressed during rotation.

The angular or holding position is not specified. Rotation is possible in any position. The axis rotates infinitely.

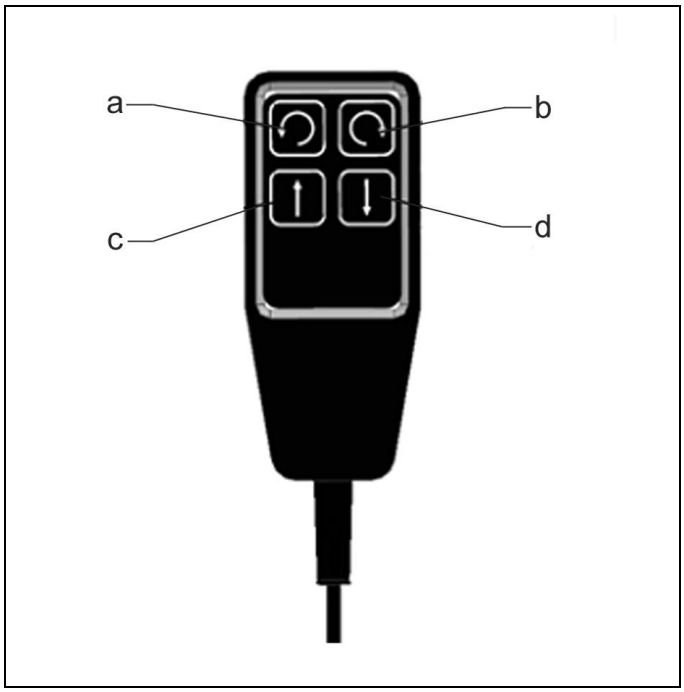

Fig. 10: hand panel

10.2.2 Collision shutdown function

If the workpiece (e.g. bicycle) should make unintentional contact with the ground during lowering, the downward movement is interrupted. As a result, it is only possible to lift the workpiece.

Attention! The weight of the workpiece holder and the assembly fixture slide (approx. 20 kg) act on the workpiece!

10.2.3 Thermal cut-out function

If the device is overloaded during the lifting movement, it is automatically switched off when it overheats.

Caution! Automatic switch-on takes place after approx. 30 minutes.

10.3 Handling emergency situations

⚠ CAUTION

The product may not be operated if there is an emergency situation!

Disconnect the power supply by pulling the plug out of the socket.

11 Maintenance

⚠ WARNING

Danger of injury due to a lifting or lowering movement!

- Do not reach into the stroke area during the lifting or lowering movement.

Injuries, material damages or malfunctions

- Do not use damaged or worn components.

Injury / burning due to contact with energized parts!

- Before working on electric equipment, the energized parts must be de-energized and secured.
- Do not open protection covers at electric parts.
- All electrical works must only be realised by electricians.

Work by qualified personnel

- Works only to be effected by authorised personnel.

ⓘ NOTE

Operating instructions

- Further operating instructions for individual components are available on the internet (www.ROEMHELD.com) or on request!

11.1 Plan for maintenance

Maintenance work	Interval	by...
Clean and visually inspect the lifting module and test the guide unit.	Daily	Operator
Test for smooth operation at low load over the entire lifting and rotation range.	Monthly	Expert
Check the fixing screws, the cable fastenings and cable glands; tighten if necessary. Test the guide unit.	Half-yearly checks	Expert
The electrical components must be checked by an expert at regular intervals, but at least once a year.	Yearly checks	Expert
Lifting axis Manufacturer inspection (recommendation).	After 2 years (lifting and lowering)	Römheld service personnel
Rotation axis Manufacturer inspection (recommendation).	After 2 years (rotation)	Römheld service personnel
Repair	in case of damages	Römheld service personnel

ⓘ NOTICE

Pay attention to the qualification of the personnel.

11.2 Cleaning

⚠ WARNING

Danger of injury due to a lifting or lowering movement!

- Do not reach into the stroke area during the lifting or lowering movement.

Material damage, damage or functional failure

Aggressive cleaning agents can cause damage, especially to seals.

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 following cleaning works have to be effected daily at the mechanical components.

1. Clean with cleaning clothes or cleaning rags.

11.2.1 Daily checks

⚠ WARNING

Danger of injury due to a lifting or lowering movement!

- Switch off the mains before cleaning and maintenance works.

- Visual inspection of the lifting module
- Check the guide unit for damages and possible running marks, repair if required.
- Check the mains cable and hand panel cable and their housing lead-ins for damage.

11.2.2 Monthly checks

- Visual inspection.
- Check the unit for damages and possible running marks, repair if required.
- Check the axial and radial clearance, repair if required.
- Check all fixing screws, retighten if required.

11.2.3 Half-yearly checks

⚠ WARNING

Danger of injury due to a lifting or lowering movement!

- Switch off the mains before cleaning and maintenance works.

- Check all fixing screws of the lifting module, retighten if required.
- Check the wear of the guide unit based on the guiding clearance. If the clearance exceeds 0.5 mm, the guiding elements have to be exchanged. (See chapter Repair).

11.2.4 Yearly checks

⚠ WARNING

Danger of injury due to a lifting or lowering movement!

- Switch off the mains before cleaning and maintenance works.

The electrical components of the lifting module are to be checked by an expert at regular intervals, but at least once a year. The check includes:

- The perfect functioning
- The state of the component
- Check the Occupational Health and Safety Regulations of the trade associations (German DGUV Vorschrift 3)

The power supply must be checked regularly by a specialist, but at least once a year for proper function.

11.3 Repair

NOTE

Repair works

- Repair works, as e.g. the change of the interior lifting jack may only be effected by the ROEMHELD service technicians.

Repair works, as e.g. the change of internal linear actuator may only be effected by the service technicians of the company Römheld.

12 Trouble shooting

⚠ WARNING

Injury / burning due to contact with energized parts!

- Before working on electric equipment, the energized parts must be de-energized and secured.
- Do not open protection covers at electric parts.
- All electrical works must only be realised by electricians.

⚠ CAUTION

All work by service personnel only!

- All works only to be effected by ROEMHELD service staff.

12.1 Lifting axis

Fault	Cause	Remedy
Flange plate does not lift or lower after pressing the button	Interior linear actuator defective	Linear actuator must be replaced by Römheld service personnel
Flange plate lowers when the button is not pushed	Interior linear actuator defective	Linear actuator must be replaced by Römheld service personnel

12.2 Rotation axis

Fault	Cause	Remedy
The product stops or does not start even if the button is pressed.	Energy supply is interrupted	Re-establish the energy supply
	Max. admissible torques exceeded	Reduce torques
	External blockade of the workpiece or the fixture	Remove blockade
Angular clearance of the flange plate too large	Wear or max. admissible torques exceeded	⚠ **Caution** Work should be performed only by Römheld service personnel.
Rotation of the module uneven	Mass inertia of the workpiece too high	Reduce speed of rotation
	Speed of rotation too high	

13 Technical characteristics

Part no.	6401206	6401205
Max. workpiece weight	40 kg	80 kg
Max. permissible force distribution by the operators	250 N	
Height	1992 mm	
Lowest position / Centre of rotation axis	565 mm	
Lifting drive	Electrically driven trapezoidal spindle	
Stroke	1225 mm	
Lifting speed	40-60 mm/s	
Rotating drive	Electrically driven worm gear	
Rotation angle	360°- infinite	
Indexing angle	Self-retaining in any position	
Number of revolutions	3 r.p.m.	
Max. driving torque of rotation axis	90 Nm	
Max. bending moment	275 Nm	
Operating element	Hand panel with 4 push-buttons	Hand panel with 2 push-buttons
Safety concept	Moving by touch control with self-locking drive elements + Collision shutdown	
Supply voltage	230 V 1P/ 50 Hz (16 A fused)	
Max. relative cycle time	15 % ED	
Total weight	approx. 100 kg	approx. 70 kg

14 Disposal

Hazardous to the environment
Due to possible environmental pollution, the individual components must be disposed only by an authorised expert company.

All materials must be disposed of in compliance with the applicable codes and regulations as well as environmental protection regulations.

15 Declaration of conformity

CE

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Responsible person for the documentation:
Dipl.-Ing. (FH) Jürgen Niesner, Tel.: +49(0)6405 89-0.

This declaration of conformity applies to the following products:
Bike proStand in data sheet M9102. The following types or part numbers are concerned:

6401205, 6401206

We hereby declare that the machine described in its design and construction as well as in the version we have placed on the market complies with the essential health and safety requirements according to the following EC directives.

The following additional EU directives were applied:

- **2006/42/EC,** Machinery directive [www.eur-lex.europa.eu]

The following harmonised standards have been applied:

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

DIN EN 60204-1; 2007-06, Safety of machinery - Electrical equipment of machines, Part 1: General requirements

The technical documents according to the specified guidelines were created for the products.
The manufacturer obligates to provide the special documentation of the products to national authorities on demand.

If the product is modified and not approved by us, this declaration will become invalid.

i. A. Sch

Ewgeni Schleining
Development Team Leader MH

Römheld GmbH
Friedrichshütte

Laubach, 16.01.2025