Installation and operating instructions
Series MKS/MKRS

DDOC00060
Index k
EN / 2026-09-03

Am Glockenloch 2
77866 Rheinau, Germany
+49 7844 9138 0
info@zimmer-group.com
www.zimmer-group.com

1 Supporting documents

NOTICE

Read through the installation and operating instructions before installing or working with the product.
The installation and operating instructions contain important notes for your personal safety. They must be read and understood by all persons who work with or handle the product during any phase of the product lifetime.
The documents listed below are available for download on our website www.zimmer-group.com:

- Installation and operating instructions
- Catalogs, drawings, CAD data, performance data
- Information on accessories
- Technical data sheets
- General Terms and Conditions (GTCs), including warranty information.

⇨ Only the documents currently available on the website are valid.

In these installation and operating instructions, "product" refers to the product designation.

2 Safety notices

WARNING

Risk of injury due to objects being ejected
Certain components are under constant spring tension. When dismantling certain components, springs can spring out uncontrollably and cause serious injuries.

► Do not open the housing.

CAUTION

Risk of injury and material damage in case of non-compliance
The product is state-of-the-art.
The following are examples of situations in which the product may cause a hazard:

- The product is not properly installed, used or maintained.
- The product is not used for its designated purpose.
- The locally applicable regulations, laws, directives or guidelines are not observed.

► The product may only be used in accordance with these installation and operating instructions and the product's technical data. Any changes or additions to the intended use of the product, as well as modifications to the product, such as those in the following examples, require the written permission of the manufacturer:

- Use of the product under extreme conditions, such as aggressive fluids or abrasive dusts
- Additional drilled holes or threads

⇨ Zimmer Group GmbH accepts no liability for any damage caused by improper use. The operator bears sole responsibility.

► Whenever work is carried out on the product, make sure that the product cannot be actuated by mistake.
► Make sure that there are no foreign objects in the operational range.
► Observe the maintenance intervals.
► When using the product under extreme conditions, adjust the maintenance interval according to the degree of soiling.

3 Proper use

NOTICE

The product is only to be used in its original state with its original accessories, with no unauthorized changes and within the stipulated parameter limits and operating conditions.
Any other or secondary use is deemed improper.

► Operate the product only in compliance with the associated installation and operating instructions.
► Operate the product only when it is in a technical condition that corresponds to the guaranteed parameters and operating conditions.

⇨ Zimmer Group GmbH accepts no liability for any damage caused by improper use. The operator bears sole responsibility.

INFORMATION

In accordance with DIN EN ISO 13849-1, the product is considered a safety-related part of a control system.
In accordance with EN ISO 13849-1, the product is a proven component of a control system.
The product can thus be classified as control category B and control category 1 in accordance with DIN EN ISO 13849-1.
With a test channel, the product can thus be classified as control category 2 in accordance DIN EN ISO 13849-1.
Multi-channel control ensures a high degree of diagnostic coverage. The product can thus be classified as control category 3 or higher in accordance with DIN EN ISO 13849-1.

- The clamping process may only be carried out in a static state.
- Series MKS products may only be used on the profile rail guides specified by Zimmer Group GmbH.
- Products in the series MKRS may only be used on round rods.
- The product is designed for force absorption on linearly moving machine products.
- The product does not feature any guide characteristics.
  ⇨ Guidance must be performed externally.
- The product may only be used in the following situations with additional protection and/or control engineering measures:
  - In equipment used to transport persons (e.g. elevators)
  - In vehicles
  - Underwater or in other fluids
  - In corrosive environments (e.g. in connection with acids)
  - In contact with abrasive media (e.g. grinding dust)
  - In a vacuum
  - In direct contact with food
  - In areas with an explosive atmosphere

4 Personnel qualification

WARNING

Inadequate qualification can cause injury and material damage
If inadequately qualified personnel perform work on the product, this can cause serious injuries and significant material damage.

► All work on the product must be performed by qualified personnel.
► Before working with the product, read the document in its entirety and make sure that you have understood everything.
► Observe country-specific accident prevention regulations and the general safety notices.

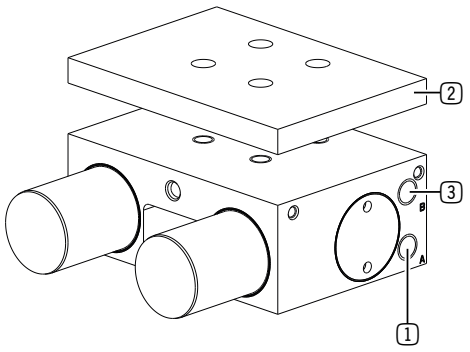


5 Product description

Products in the series MKS are used for clamping on profile rail guides. Products in the series MKRS are used for clamping round rod guides. The product is closed when de-energized.
The running surface of the guide rail (series MKS) and the round rod (series MKRS) are not damaged by the product.
Depending on the product, the holding force can be increased via a PLUS connection.

► You can find the information in the technical data sheet on our website.

The product is set to the respective rail dimension by the manufacturer.



1 Pneumatic connection (A)

2 Spacer plate (optional)

3 Air filter/PLUS connection (B)

6 Functional description

The clamping force is generated by a spring energy accumulator and transmitted to the guide rail/round rod via a wedge gear. If compressed air is applied to the product, the pressure acts against the spring energy accumulator and the product opens.

7 Technical data

B10d value [cycles]	5 million

INFORMATION

► You can find the information in the technical data sheet on our website.
This data varies within the series, depending on the specific design.

INFORMATION

The holding force corresponds to the maximum force to which the product may be loaded.
Due to the stiffness of the product, there may also be some offset below the holding force.

► If the application has specific requirements regarding stiffness, reduce the holding force until it reaches the required accuracy.

8 Accessories/scope of delivery

INFORMATION

If any accessories not sold or authorized by Zimmer Group GmbH are used, the function of the product cannot be guaranteed. The accessories from Zimmer Group GmbH are specifically tailored to the individual products.

- The mounting screws are not included in the scope of delivery.
- A spacer plate is required depending on the height of the rail carriage.

► For further information on optional accessories and those included in the scope of delivery, refer to our website.

9 Transportation/storage/preservation

NOTICE

Material damage in case of non-compliance
The product may be damaged if the clamping process is triggered without the guide rail/round rod or a transport lock between the clamping jaws.

► Only disconnect the product from the power supply when the guide rail/round rod or a transport lock is between the clamping jaws.

► Transport and store the product only in the original packaging.
► During transport, make sure that no uncontrolled movements can occur if the product is already mounted on the higher-level machine unit.
  ► Prior to commissioning and after transport, check all power and communication connections as well as all mechanical connections.
► Observe the following points when storing the product for longer periods of time:
  ► Keep the storage location as dust-free and dry as possible.
  ► Avoid temperature fluctuations.
  ► Avoid wind, drafts and formation of condensation.
  ► Avoid direct sunlight.
► Clean all components until all contamination has been removed.
► Visually inspect all components.
► Remove potential corrosion spots properly.
► Close off unused connections using pressure-resistant closures.

10 Installation

WARNING

Risk of injury due to uncontrolled movement
Risk of injury in case of uncontrolled movements of the machine or system into which the product is to be installed.

► Switch off the energy supply of the machine before all work.
► Secure the energy supply against being switched on unintentionally.
► Check the machine for any residual energy that may be present.

CAUTION

Risk of injury and material damage in case of non-compliance
If the mounting screws are tightened when not clamped, the product can shift and possibly be unable to achieve the optimum clamping force.
The guide rail/round rod can also be damaged.

⇨ The product cannot fulfill its safety function.
► Only tighten the mounting screws when clamped.

NOTICE

General installation instructions

► Install the product on an appropriate mounting surface in accordance with the flatness specifications.
► Make sure that the mounting piece is sufficiently rigid.
► Ensure the cleanliness of the connection surfaces.
► Observe the minimum screw-in depth of the mounting screws of 0.9 x Ø.
► Verify the permitted load capacity of the required screw connections in accordance with VDI 2230.

Assembly requirements	
Permissible flatness tolerance [mm]	0.03
Permissible spotface roughness for the O-ring and cutting ring [mm]	Ra 1.6
Strength class of the mounting screws	≥ 8.8
Tolerance class of the round rod (MKRS)	f8, g8, h7
Permissible roundness tolerance of the round rod (MKRS)	0.5 x tolerance class
Surface of the round rod (MKRS)	Ra 0.2 – 3.2
Minimum yield strength of the round rod (MKRS) [N/mm²]	400
Hardness option 1 case hardening (MKRS)	Min. 54 HRC, min. 0.5 mm hardening depth
Hardness option 2 hard chrome plating (MKRS)	Min. 800 HV, min. 20 µm layer thickness

10.1 Installing the product

NOTICE

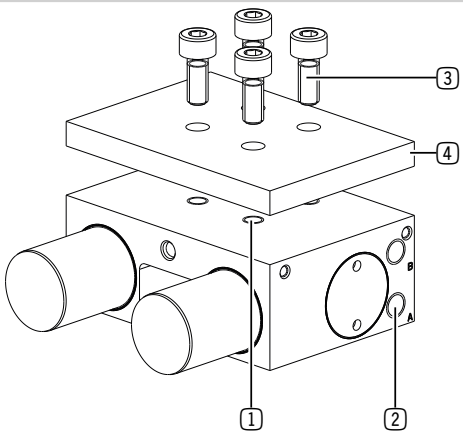
- ► Select the shortest possible hose length to ensure short response times.
- ► Use compressed air in accordance with ISO 8573-1 [7:4:4].
- ► Make sure that the hoses cannot be pinched.

INFORMATION

The product has alternative connections. Only one connection is required for the product to function safely.

- ► Close off unused connections using pressure-resistant closures.

- ► Clean the guide rail.
- ► Remove the cap from one of the pneumatic connections A.
- ► Install the screw fitting in one of the pneumatic connections A.
- ► Close off unused connections using pressure-resistant closures.
- ► Apply pressure to the product.
- ⇨ The clamping process is interrupted.
- ► Remove the transport lock.
- ► If the product has wipers, loosen the mounting screws of the wipers.
- ► Push the product onto the guide rail.
- ► If you are using a spacer plate as height compensation, position the spacer plate on the housing of the product.
- ► Loosely attach the mounting screws.
  - ► Make sure that the product lies on the mounting piece.
- ► Depressurize the product.
- ⇨ The product clamps the guide rail.
- ► Open and close the product at least 10 times within 10 s so that it centers itself on the guide rail.
- ► Tighten the mounting screws of the product without tension when clamped.
- ► Tighten the mounting screws of the wipers.



1 Installation thread

2 Pneumatic connection (A)

3 Mounting screw

4 Spacer plate (optional)

10.2 Removing the product

- ► Carry out disassembly in reverse order.
- ► If the product can no longer be opened by applying compressed air, contact Customer Service.

11 Commissioning

WARNING

Risk of injury due to uncontrolled movement

An emergency stop of the complete machine and the accompanying emergency braking of the product can lead to a decrease of the holding force. The malfunction resulting from this can lead to injuries.

- ► After an emergency stop, check the operational readiness of the product.
- ► Depressurize the product.
  - ► Initiate a force that is not greater than the maximum holding force of the product.
    - ► Make sure that the mounting piece does not move in this status.
  - ⇨ If the mounting piece moves, the holding force is no longer available.
- ► Do not put the product into operation again until the operational readiness has been checked successfully.

11.1 Checking operational readiness

- ► Check the product and all connections for visible and audible leaks.
- ► Check all mounting screws for the prescribed tightening torque.
- ► Check whether the mounting piece can be moved easily when the product is open.
- ► Check whether the mounting piece cannot be moved up to the defined holding force or holding torque when the product is closed.
  - ► Make sure that the permitted holding force is not exceeded.
    - ► Observe the associated data sheet on our website.
  - ► Make sure that the weight force of the mounting piece is added to the test force for vertical applications.
    - ⇨ The test force to be applied is lower than in horizontal applications.
- ► If one of the checks is negative, please contact Customer Service.

12 Error diagnosis

INFORMATION

- ► An overview of possible malfunctions and their remedies can be found on our website.
  - www.zimmer-group.com/de/lt-faq
- ► Please contact Customer Service if you have any questions.



Installation and operating instructions Series MKS/MKRS

DDOC00060
Index k
EN / 2026-09-03

Am Glockenloch 2
77866 Rheinau, Germany
+49 7844 9138 0
info@zimmer-group.com
www.zimmer-group.com

13 Maintenance

NOTICE

Material damage caused by unsuitable cleaning materials

Seals, insulation, coatings and other surfaces may be damaged by solvent-based cleaning agents.

- ► Make sure that no liquids penetrate the product.
- ► Use chemically and biologically neutral cleaning agents.

NOTICE

Contamination of the environment due to escaping lubricants

Lubricants can escape due to moving machine parts. This can cause soiling of the machine, the workpiece and the environment.

- ► Remove leaking lubricant immediately and thoroughly.

The product is maintenance-free during the listed service life.
The maintenance interval may be shortened under the following circumstances:

- Dirty environment
- Operation with unauthorized compressed air
- Permissible temperature range not observed
- Operation without or with a dirty air filter
- Improper use and use that does not comply with the performance data

- ► Despite the maintenance-free performance mentioned, visually check the product regularly for damage and dirt.
- ⇨ Dismantling and reassembling the product without authorization may result in complications, as special installation equipment is required in some cases. Zimmer Group GmbH accepts no liability for any resulting malfunctions or damage.

14 Decommissioning/disposal

WARNING

Risk of injury due to objects being ejected

Certain components are under constant spring tension. When dismantling certain components, springs can spring out uncontrollably and cause serious injuries.

INFORMATION

When the product reaches the end of its operational phase, it can be disposed of.

- ► Disconnect the product completely from the power supply.
- ► Comply with the locally applicable environmental and disposal regulations.

15 Declaration of Conformity (Machinery Directive)

in terms of the Machinery Directive 2006/42/EC (Annex II 1 A)

Name and address of the manufacturer:

Zimmer Group GmbH, Am Glockenloch 2, 77866 Rheinau, Germany, +49 7844 9138 0, www.zimmer-group.com

We hereby declare that the safety components described below

Product designation:	Clamping element with spring energy accumulator, pneumatic
Series designation:	MKS/MKRS

conform to the requirements of the 2006/42/EC directive in their design and the version we put on the market.
The following harmonized standards have been used:

DIN EN ISO 12100:2011-03	Safety of machinery – General principles – Risk assessment and risk reduction
DIN EN ISO 13849-1/-2	Safety of machinery – Safety-related parts of control systems
DIN EN ISO 4414	Safety-related requirements for pneumatic systems and their components

A full list of applied standards can be obtained from the manufacturer.

Michael Hemler	Rheinau, Germany, 2020-05-12	Martin Zimmer
Authorized representative for compiling the relevant technical documents	(Place and date of issue)	(Legally binding signature) Managing Partner

16 Declaration of Conformity (Machinery Regulation)

in terms of the EU Machinery Regulation 2023/1230, Annex V, Part A

Name and address of the manufacturer:

Zimmer Group GmbH, Am Glockenloch 2, 77866 Rheinau, Germany, +49 7844 9138 0, www.zimmer-group.com

We hereby declare that the safety components described below

Product designation:	Clamping element with spring energy accumulator, pneumatic
Series designation:	MKS/MKRS

conforms to the requirements of the Regulation 2023/1230 in its design and the version we put on the market.
The following harmonized standards have been used:

DIN EN ISO 12100:2011-03	Safety of machinery – General principles – Risk assessment and risk reduction
DIN EN ISO 13849-1/-2	Safety of machinery – Safety-related parts of control systems
DIN EN ISO 4414	Safety-related requirements for pneumatic systems and their components

A complete list of the standards applied and the essential health and safety requirements is available from the manufacturer.

Michael Hemler	Rheinau, Germany, 2027-01-20	Martin Zimmer
Authorized representative for compiling the relevant technical documents	(Place and date of issue)	(Legally binding signature) Managing Partner