

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 with 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 be carried out in a static and dynamic state.
- Products from the series RBPS may only be used on round rods.
- The product is designed for force absorption on linearly moving machine products.
- The product is designed for force absorption on rotating machine products.
- The product must not be used as a brake in the rotating application.
- 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

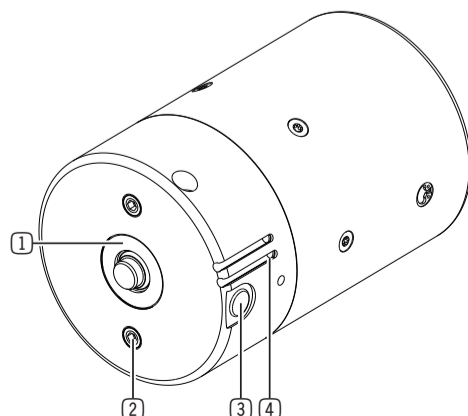
WARNING

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 RBPS are used for clamping and braking on round rod guides. The product is closed when de-energized. The round rod is not damaged by the product.



- 1 Wiper
- 2 Grub screw for emergency release
- 3 Pneumatic connection (A)
- 4 Sensor slots



Installation and operating instructions Series RBPS

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INFORMATION

The sensor slots are only available starting at installation size RBPS1200-A. For installation sizes up to and including RBPS1000-A, the following item must be ordered to accommodate sensors:

- Sensor strip - 103151

6 Functional description

The clamping force is generated by a spring energy accumulator and transmitted to the 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
Brake cycles	up to 2000

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.
- ▶ 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 round rod or a transport lock between the clamping jaws.

- ▶ Only disconnect the product from the power supply when the 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 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.

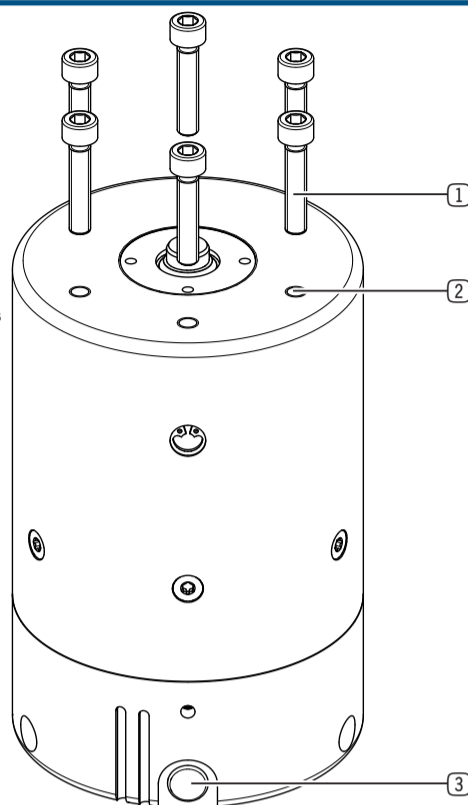
Assembly requirements	
Permissible flatness tolerance [mm]	0.03
Strength class of the mounting screws	≥ 8.8
Tolerance class of the round rod	f8, g8, h7
Permissible roundness tolerance of the round rod	0.5 x tolerance class
Surface of the round rod	Ra 0.2 - 3.2
Minimum yield strength of the round rod [N/mm ²]	400
Hardness option 1 (case hardening)	Min. 54 HRC, min. 0.5 mm hardening depth
Hardness option 2 (hard chrome plating)	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.

- ▶ Clean the round rod.
- ▶ Remove the cap on pneumatic connection A.
- ▶ Install the screw fitting on pneumatic connection A.
- ▶ Apply pressure to the product.
- ⇒ The clamping process is interrupted.
- ▶ Remove the transport lock.
- ▶ Push the product onto the round rod.
- ▶ Loosely attach the mounting screws.
- ▶ Make sure that the product lies on the mounting piece.
- ▶ Depressurize the product.
- ⇒ The product clamps the round rod.
- ▶ Open and close the product at least 10 times within 10 seconds so that it centers itself on the round rod.
- ▶ Tighten the mounting screws without tension when clamped.



- ① Mounting screw
- ② Installation thread
- ③ Pneumatic connection (A)

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

INFORMATION

- ▶ The product can also be used without wipers on request.
- ▶ Please note that dirt may enter the product and cause malfunctions.
- ▶ Please contact Customer Service if you have any questions.

11.1 Checking operational readiness

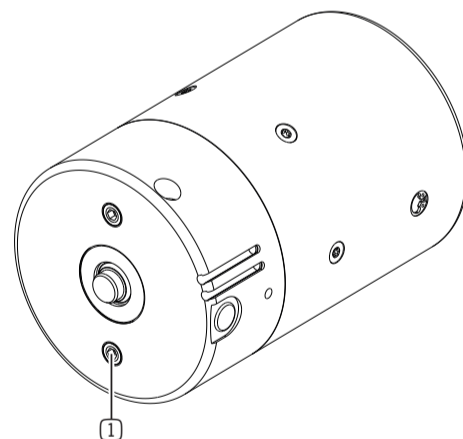
- ▶ Check the product and all connections for visible and audible leaks.
- ▶ Check all mounting screws for the prescribed tightening torque.
- ▶ Check whether the mounting piece can be moved easily when the product is open.
- ▶ Check whether the mounting piece cannot be moved up to the defined holding 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.

11.2 Manual unlocking

CAUTION

- ▶ **Risk of injury due to uncontrolled movement**
There is a risk of injury when using the manual release.
- ▶ Make sure that there are no people or tools in the working area when using the emergency actuation.

- ▶ Remove the grub screws.
- ▶ Gradually screw in alternating M6 threaded rods or M6x40 screws until the product comes loose.



- ① Grub screw for emergency release

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.



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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.

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
- Operation without a wiper
- 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.
 - ▶ Perform an annual visual inspection of the wipers.
- ⇒ 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

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 and braking element with spring energy accumulator, pneumatic

Series designation: RBPS

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, 2020-11-20

Authorized representative for compiling the relevant technical document

(Place and date of issue)

Martin Zimmer
(Legally binding signature)
Managing Partner