

1 Supporting documents

NOTE:

The documents listed below are available for download on our website www.zimmer-group.com. Only the documents currently available on the website are valid.

- Catalogs, drawings, CAD data, performance data
- Detailed installation and operating instructions
- General Terms and Conditions with specifications for the warranty entitlement

2 Safety notices

CAUTION:

Non-compliance may result in severe injuries.

Injuries/malfunctions can occur especially with:

- Pinching during installation due to an unsecured mounting piece
- Improperly assembled pneumatic connections
- Pneumatic supply faults, e.g. due to pressure fluctuations
- Damaged or loose pneumatic lines
- Missing or loose fastening screws
- Removal of the cover
- Failure to switch off the working medium during installation or repair work on the element
- Human error
- Failure to observe the safety and warning instructions during installation and commissioning

These installation and operating instructions are intended for installation and maintenance technicians as well as design engineers requiring the element for an application. Please read through all of the installation and operating instructions carefully before commissioning and pay special attention to the following hazard warnings and notes.

3 Proper use

NOTE:

The element is only to be used in its original state with its original accessories, with no unauthorized changes and within the scope of its defined operating parameters. Zimmer GmbH shall accept no liability for any damage caused by improper use.

The MCP element is designed for operation with compressed air only. The element is not suited for operation with any other media.

In accordance with EN ISO 13849-1, the MCP element is a safety related component of control systems. Furthermore, we can confirm the manufacture of the product using the basic and proven safety principles (EN 13849-2, appendix B.1 and B.2) and thus define the clamping element MCP as a proven component in accordance with EN 13849-1, chap. 6.2.4, para. b. The element can be used without any control engineering measures in control systems of Category B or 1; for category 2 control systems, a test channel must be provided. For use in higher control categories, the control must be multi-channel, where each channel must implement the safety function separately.

The element may not be used in any linear guide other than those approved by the manufacturer.

Without additional protection or control engineering measures, the element may not:

- be installed in facilities that are used for transporting people (e.g. elevators)
- be used in vehicles
- be used underwater or in other fluids
- be used in a corrosive environment (for example, in connection with acids)
- come in contact with abrasive media (such as grinding dust)
- be used in a vacuum
- come in direct contact with food
- be used in areas with a potentially explosive atmosphere.

For questions on the use of the MCP series clamping element, please contact Zimmer GmbH.

4 Personnel qualification

DANGER:

Never open the housing. Intervention is not permitted and may lead to serious injuries.
⇒ Warranty and disclaimer.

The installation, commissioning, maintenance and repairs may be undertaken only in accordance with these installation and operating instructions and only by qualified personnel who have the professional expertise and know the conditions, as well as the dangers, of the machine into which the element is being installed.

5 Product description

The pneumatically operated MCP series element is designed for the static clamping of linear guide rails. The function is based upon a wedge gear. The element is open when depressurized. The contact profiles are pressed onto the free surfaces of the profile rail guide by pressurization. The clamping process therefore has no influence on the accuracy and service life of the profile rails. Any damage to the contact surface of the linear guide rail is ruled out by the pairing of rail and contact profile materials as well as by the contact profile geometry. The elements are configured to the respective factory default rail measurement.

⇒ Increased displacement resistance when using wipers, due to front and longitudinal seals.

A	Air filter
B	Pneumatic connection
1	Thread for mounting screw
2	Adjustment screw
3	Sliding block/floating bearing
4	Piston
5	Wedge gear

Fig. 1: MCP element

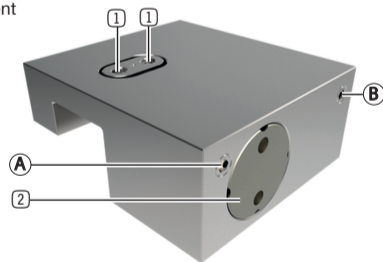
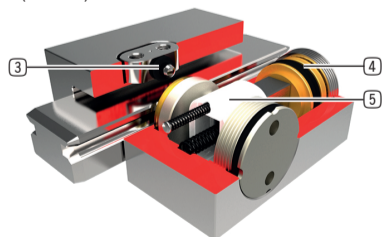


Fig. 2: MCP element (section)



6 Connections

NOTE:

Only the clamp on pneumatic connection B needs to be connected to ensure safe function of the product. The supplied air filter must be screwed to connection A.

Installation and Operating Instructions MCP	Im Salmenkopf D-77866 Rheinau ☎: +49 7844 9138-5556 Fax: +49 7844 9138 80
DDOC00151 Index e EN / 2024-01-30	www.zimmer-group.com

7 Installation

- Check the element for any damage before installing it.
- The element may only be used in conjunction with linear guide carriages.
- The through holes of the attachment screws must be designed in accordance with Table 1 and must always have a chamfer smaller than 0.1 mm.
- The maximum holding force is attained only through a rigid mounting piece.
- The mounting piece must cover the entire connection surface of the element and must not exceed a mean roughness value of Ra 3.2.
- Use screws with a minimum strength class of 8.8 ⇒ <http://www.schrauben-normen.de/anziehmomente.html>.
- The vent holes and filters have to be completely open to the passage of air over their entire cross-section and protected against liquids (oil, grease, etc.) and chips.
- Suitable pneumatic connections have to be used. We recommend tested compressed air hoses.
- To ensure a short response time, choose the shortest possible hose length. Insert a quick exhaust valve, if necessary.
- Shifting the position of the adjustment screws is not permitted.

7.1 Installation procedure

CAUTION:

If the mounting screws are tightened when the element is not clamped, the element can shift and consequently be unable to achieve the optimum clamping force! Furthermore, the guide rail could become damaged.

- Remove the sealing plugs.
- Connect the pneumatic connection to connection A.
- Attach the element to the rail of the linear guide.
- When an adapter plate is used, it is inserted between the element and the mounting piece as height compensation.
- Manually screw the mounting screws into the threads ⇒ Note the minimum screw-in depth of 0.9 x Ø.
- Pressurize the element, causing it to clamp.
- Tighten the mounting screws alternately and gradually to the specified tightening torque.
⇒ <http://www.schrauben-normen.de/anziehmomente.html> ⇒ DIN 912 and ISO 4762

7.2 Checking operational readiness

- After the element has been properly installed, check whether it is ready to be operated according to the following characteristics:
- Check pneumatic connections for leaks by looking and listening
 - Check that all mounting screws are tightened to their prescribed tightening torques
⇒ <http://www.schrauben-normen.de/anziehmomente.html> ⇒ DIN 912 and ISO 4762
 - Check for leaks in the pressurized element by looking and listening.
 - Check for ease of movement on the linear guide rail when the element is open.
 - Check the clamping process by attempting to manually move the mounting piece.

7.3 Disassembly

Disassembly is carried out in the reverse order of that described in section 7.1.

8 Maintenance

NOTE:

The filters of the exhaust valves as well as the air filters must not be clogged by contamination (see Fig. 1).

- The element is maintenance-free up to the number of cycles listed in the "Technical Data" table:
- Compressed air in accordance with DIN ISO 8573-1 [7:4:4].
 - The air filter must be kept clean and must be cleaned if necessary. The element must not be operated without this filter.
 - Even though the element is, as mentioned, maintenance-free, perform a regular visual inspection to check for corrosion, damage and contamination. A readjustment is not required after proper installation due to the factory default contact surface.
 - Clean the element as needed using a commercially available machine cleaning agent and then apply an anti-corrosion agent to the housing.

9 Technical data

INFORMATION:

Please refer to our website [www.https://www.zimmer-group.com/en/td](https://www.zimmer-group.com/en/td) for technical data. If you should have further questions about products or technical data, please contact Zimmer GmbH Customer Service. For this purpose, please call our technology hotline at ☎ +49 7844 9138-5556.

10 Troubleshooting

INFORMATION:

For an accurate and detailed overview of possible faults and their remedies, visit our website at www.zimmer-group.com/en/it-faq. If the described measures for corrective actions are unsuccessful, contact the customer service department at Zimmer GmbH. For this purpose, please call our technology hotline at ☎ +49 7844 9138-5556.

11 Transport and storage

The clamping element is to be transported and stored only in the packaging supplied by Zimmer GmbH. If the element is stored differently, it must be provided with corrosion protection to prevent any corrosion.

12 Declaration of Incorporation

In terms of the EU Machinery Directive 2006/42/EC (Annex II 1 B)
Name and address of the manufacturer:
 Zimmer GmbH • Im Salmenkopf 5 • D-77866 Rheinau, Germany • Phone: +49 7844 9138 0 • Fax: +49 7844 9138 80
www.zimmer-group.com

We hereby declare that the following, identically constructed safety components
Product designation: Clamping element
Type designation: MCP
 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: (The manufacturer has a full list of the applied standards.)
 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
 We also declare that the specific technical documents were produced in accordance with Annex VII Part B of this Directive. We undertake to provide the market supervisory bodies with electronic versions of special documents for the incomplete machine through our documentation department, should they have reason to request them. The incomplete machine may only be commissioned if the machine or system in which the incomplete machine is to be installed has been determined to satisfy the conditions of the Machinery Directive 2006/42/EC and the EC Declaration of Conformity has been produced in accordance with Annex II 1 A.

Authorized representative for the compilation of the relevant documents:

Michael Hemler	(see manufacturer's address)	Rheinau, Germany, 2018-08-06	Martin Zimmer
First name, last name	Address	Place and date of issuance	(Legally binding signature)