

1 Supporting documents

NOTE:



The documents mentioned 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

2 Safety notes

CAUTION:



Non-compliance may result in severe injuries.

Injuries/malfunctions can occur especially with:

- Contusion during assembly due to unsecured connection structure.
- Improperly assembled pneumatic connections.
- Pneumatic supply interferences, e.g. due to pressure fluctuations.
- Damaged or loose pneumatic lines.
- Missing or loosened fastening screws.
- Removal of the safety cover.
- Not switching off the working medium during assembly or repair work on the element.
- Human error.
- Failure to observe the safety and warning instructions during installation and start-up.



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 all installation and operation instructions carefully before start-up and pay Special attention to the following hazard warnings and notes.

3 Proper use

NOTE:



The element should only be used in its original state with its original accessories, with no unauthorized changes and within the scope of its defined parameters for use. Zimmer GmbH accepts 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 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 implemented using multiple channels, where each channel must implement the safety function for itself.

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

The element 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 element, please contact Zimmer GmbH.

4 Personnel qualification

DANGER:



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

The assembly, commissioning, maintenance and repairs may only be undertaken according to the present installation and operating instructions and by only 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 element of the MCP series is designed for static clamping on linear guide rails. The function is based on a wedge-type gear. The element is open when depressurized. The contact profiles are pressed onto the free surfaces of the profile rail guide by pressurization. Therefore, the clamping process 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, based on front and longitudinal seals.

Fig.1: MCP element

A	Air connection
2	Adjustment screw
B	Air filter
4	Sliding block/Floating bearing
5	Thread for mounting screws
6	Piston
7	Wedge-type gear

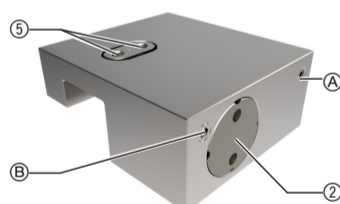
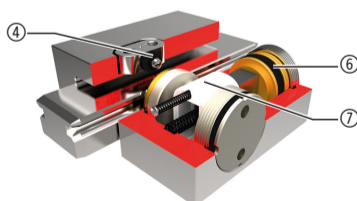


Fig.2: MCP element cross section



6 Connections

A	Air connection
B	Air filter

Fig. 3: Pneumatic connection



7 Assembly

- ▶ Check the element for any damage before installing it.
 - The element may only be used in conjunction with linear rail carriages.
- ▶ The through holes of the attachment screws must be designed in accordance with Table 1 and must always have a chamfer smaller than 0.1mm.
 - The maximum holding force is attained only through a rigid mounting piece.
 - The mounting piece must cover the entire connecting surface of the element and must not exceed a mean roughness value of Ra3.2.
 - Use bolts with a minimum strength class of 8.8 <http://www.schrauben-normen.de/anziehmomente.html>.
- ▶ The vent holes and filters have to be atmospherically free 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. If necessary, use a quick exhaust valve.
- ▶ Moving the position of the adjustment screws is not permitted.

7.1 Assembly procedure

CAUTION:



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

- ▶ Remove sealing plugs.
- ▶ Connect the pneumatic connection to connection.
- ▶ 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 and clamp thereby.
- ▶ Alternate assembly bolts and gradually tighten to the specified tightening torque.
 - ⇒ <http://www.schrauben-normen.de/anziehmomente.html> ⇒ DIN 912 bzw. ISO 4762

7.2 Checking operational readiness

After the element has been properly installed, check that it is ready to be operated according to the following characteristics:

- The pneumatic connections are checked for leaks by looking/listening.
- All mounting screws are checked for tightening torque
 - ⇒ <http://www.schrauben-normen.de/anziehmomente.html>, ⇒ DIN 912 bzw. ISO 4762,
- The pressurized element are checked for leaks by looking/listening.
- The ability to move on the linear guide rail when the element is open is checked.
- The clamping process is checked by manually moving the connection structure.

7.3 Removal

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

8 Maintenance

NOTE:



The filters of the exhaust valve and the air filter may not be clogged by contaminations (see Fig. 1).

The element is maintenance-free up to the number of cycles listed in table "Technical data" under the following conditions:

- Compressed air quality as per ISO 8573-1 Class 4.
- The air filter must be kept clean and 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 for possible corrosion, damage and contamination on the element. 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:



The technical data can be found on our homepage www.zimmer-group.com/en/lt-td. If you have any further questions about the product or the technical data, please contact the customer Service of ZIMMER GmbH. Our technical hotline ☎ +49 7844 9138-5556 is available for this.

10 Troubleshooting

INFORMATION:



For an exact and detailed overview of possible malfunctions and their remedies, please visit our website www.zimmer-group.com/en/lt-faq. If these measures do not lead to success, please contact the customer service of ZIMMER GmbH. For this purpose our technical-hotline ☎ +49 7844 9138-5556 is available.

11 Transport and Storage

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

12 Declaration of incorporation

in terms of the EC Directive 2006/42/EC on Machinery (appendix 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.de

We hereby declare that the following, identically constructed safety components

Product designation: Clamping element

Type designation: MCP

conforms 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 special 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 the incomplete machine's Special documents via our documentation department should they have reason to request them.

The incomplete machine may only be commissioned if it has been ascertained, if applicable, that the machine or system in which the incomplete machine is to be installed satisfies the requirements of Directive 2006/42/EC on Machinery and an EC declaration of conformity has been drawn up in accordance with Annex II 1 A.

Authorized representative for compiling the relevant documents:

Michael Hemler	(see manufacturer's address)	Rheinau, 30.06.2014	Martin Zimmer
First name, last name	address	Place and date	(legally binding signature)