INSTALLATION AND OPERATING INSTRUCTIONS

Handling technology

HEM1000 series
magnetic gripper

THE KNOW-HOW FACTORY

1. Supporting documents

NOTE:
The following documents are available for download on our website. Only the documents currently available on the website are valid.

- Catalog
- Drawings, performance data, information about accessory parts, etc.
- Technical data (data sheets)
- General terms and conditions, including warranty information

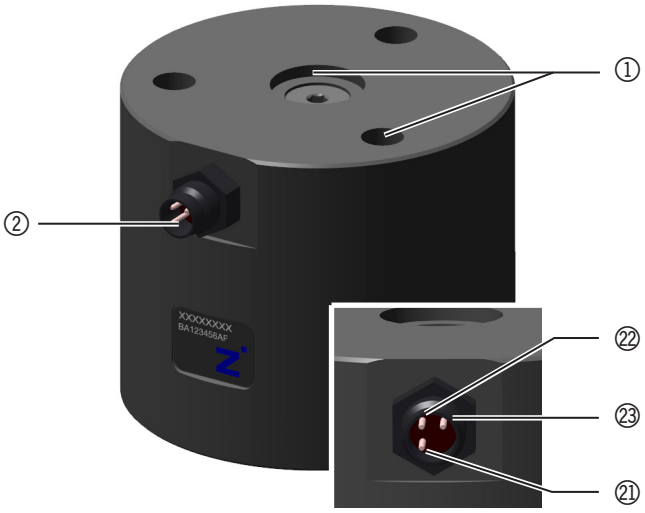
2. Proper use

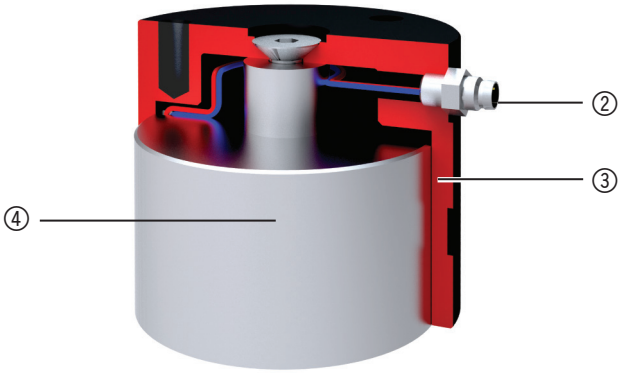
NOTE:
The magnetic grippers of the HEM1000 series may only be used in their original state, with original accessories, without any unauthorized changes and within the scope of their defined parameters for use.
Zimmer GmbH accepts no liability for any damage caused by improper use

The magnetic grippers of the HEM1000 series are based on the effect of a permanent magnet with electric shutoff.
This gripper may only be used to handle workpieces made of ferromagnetic materials. Handling workpieces that generate their own active electromagnetic field or themselves act as a permanent magnet may lead to malfunctions and therefore is regarded as improper use. Depending on application, the corresponding accident prevention regulations are to be observed.

3. Function

The magnetic grippers of the HEM1000 series generate the gripping force, referred to here as the adhesive force, by means of a permanent magnet with electric shutoff. There is an excitation winding (switch-off coil) located inside the permanent magnet, which neutralizes the magnetic field on the adhesive surface when switched on, thus enabling removal of workpieces or the settling of loads. To reach the nominal holding force, the steel surfaces of the adhesive side must be completely covered by the workpiece.





①	Mounting and positioning
②	Energy supply
㉑	PIN 1: Voltage supply 24V +
㉒	PIN 2: not used

㉓	PIN 3: Voltage supply 24V -
③	Housing, hard-coated aluminum
④	Permanent magnet with electric shutoff

Information:
The adhesive forces depend on the surface quality and material thickness of the workpieces to be handled.
As a rule: "The rougher the surface, the lower the residual adhesive forces."
"The lower the material thickness, the lower the holding forces."

The holding force depends on the ferromagnetic properties of the workpieces being handled.
Assuming a holding force of 100% for technically pure iron, the following materials may be assumed to have:
St37: **94%** / St34: **82%** / St50: **75 %** / St70: **70%** / 20MnCr5: **50%** / Cast iron: **30%**

Warning:
The magnetic gripper contains a permanent magnet. The magnetic field can pose a health hazard to persons with electronic implants (such as a pacemaker).
► *Health hazard*
► Avoid staying within the effective range of the magnetic field

Danger:
Unintended ignition sources can arise from the magnetic field. For this reason, use within potentially explosive environments is not permitted.
► **Risk of fatal injury**

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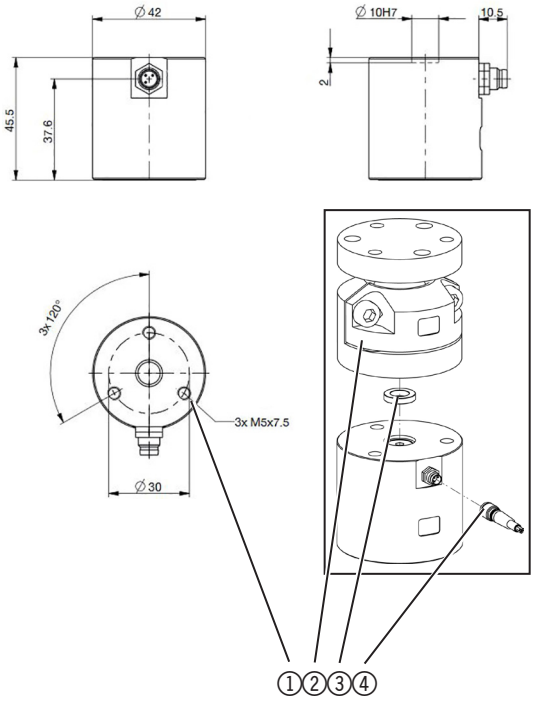
4. Technical data

*1)		HEM1030NC	HEM1042NC	HEM1062NC	HEM1080NC
Max. adhesive force	N	40	160	420	720
Minimum coating thickness	mm	2.5	3	4.5	6
Max. residual holding force	N	1.2	4.8	12.6	21.6
Max. on-time (with cycle time <2 minutes)	%	25			
Max. on-time (with cycle time <0.5 minutes)	%	40			
Input power	W	3.6	4.6	9	13.3
Voltage	V	24			
Min./max. operating temperature	°C	-25 / +80			
Weight	kg	0.09	0.28	0.66	1.3
Ø pitch circle mounting holes	Ø	20	30	45	60
Mounting screws, quality 8.8	mm	3 x M4x5.5	3 x M5x7.5	3 x M8x9	3 x M10x15
Permitted tightening torque	N	2.97	6.03	24.93	49.45
Ø centering hole for centering disk	Ø	10H7	10H7	15H7	20H7

*1) Please always compare the technical data with the corresponding tables on the Internet at www.zimmer-group.de!

5. Installation

- ▶ The dimensions for a particular mounting piece ② can be taken from the drawings on the product data sheets.
  - ⇨ The product data sheets and CAD data are available on our website, www.zimmer-group.de, in all common data formats
  - ⇨ The drawing to the right shows the HEM1042 as an example
  - ⇨ The mounting piece ② shown to the right is a ball joint and is available as an accessory matching the gripper
- ▶ Observe the permitted tightening torque (*see Tab. Technical data*)
- ▶ The gripper is aligned on the mounting piece using a centering disk ③ that matches the gripper and is also available as an accessory.
- ▶ Establish the electrical connection ④ (*see Tab. Technical data*)



6. Maintenance

- ▶ The magnetic grippers of the HEM1000 series are maintenance-free.
  - ⇨ Even though the magnetic grippers are, as mentioned, maintenance-free, perform a regular visual inspection to check for any corrosion, damage and contamination.
  - ⇨ Clean the magnetic gripper as needed using a commercially available machine cleaning agent and then apply an anti-corrosion agent to the housing.

INFORMATION:
If the shutoff coil fails, the magnetic gripper is to be considered irreparably defective and must be completely replaced.

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7. Declaration of incorporation in terms of the EC Machinery Directive 2006/42/EC on Machinery (Annex II 1 B)

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, 77866 Rheinau, Germany
Phone: +49 7844 91380, www.zimmer-group.de

We hereby declare that the incomplete machines described below

Product designation: magnetic gripper
Type designation: **HEM10□□**

satisfy the following basic requirements of the Machinery Directive 2006/42/EC:
No. 1.1.2., No. 1.1.3., No. 1.1.5., No. 1.3.2., No. 1.3.4., No. 1.3.7., No. 1.5.3., No. 1.5.4., No. 1.5.8., No. 1.6.4., No. 1.7.1., No. 1.7.4.

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 compiling the relevant technical documents

Kurt Ross	See manufacturer's address	Rheinau, Germany, 7/25/2013	Martin Zimmer
First name, last name	Address	(Place and date of issuing)	(Legally binding signature) Managing Director