

Installation and operating instructions
GEP1400/GED1300 series

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1. Supporting documents

NOTICE:



Read through the installation and operating instructions carefully before installing 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 life time.



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

- Catalogs, drawings, CAD data, performance data
- Information on accessories
- Detailed installation and operating instructions
- Technical data sheets
- General Terms and Conditions of Business with specifications for the warranty entitlement

2. Safety notes

CAUTION:



Non-compliance may result in severe injuries!

The following notes shall be taken into account in order to reduce the likelihood of injuries/malfunctions:

1. Installation, commissioning, maintenance and repairs may only be performed by qualified specialists in accordance with these installation and operating instructions.
2. The gripper is state-of-the-art. It is installed on industrial machines and is used to hold workpieces. The gripper can only cause a hazard if, for example:
 - It is not properly installed, used or maintained.
 - It is not used for its intended purpose.
 - Local regulations (legislation, ordinances, guidelines), such as the EC Machinery Directive, accident prevention regulations and the installation and operating instructions, are not observed.
3. The gripper may be used only in accordance with its proper use and technical data. Zimmer GmbH shall accept no liability for any damage caused by improper use.
4. Any use other than the intended use requires written approval from Zimmer GmbH.
5. Do not reach into the operational range of the gripper.
6. Make sure that the power cables are disconnected before you install, modify, maintain or repair the gripper.
7. In case of maintenance, modification or attachment work, remove the gripper from the machine and perform the work outside the danger zone.
8. When commissioning or testing, make sure that the gripper cannot be actuated by mistake.
9. Modifications to the gripper, such as adding drilled holes or threads, may be made only with prior approval from Zimmer GmbH.
10. The specified maintenance intervals are to be observed (refer to the "Maintenance" section).
11. Use of the gripper under extreme conditions, such as aggressive liquids and abrasive dusts, is subject to prior approval from Zimmer GmbH.
12. When uninstalling a gripper with an integrated spring, exercise increased caution due to the ever-present spring tension.

3. Proper use

NOTICE:



The gripper is to be used only in its original state with its original accessories, without any unauthorized changes and within the scope of its defined parameters of use. Zimmer GmbH shall accept no liability for any damage caused by improper use.

Unauthorized electrical or mechanical modifications must not be made.
The gripper is designed exclusively for electric operation using a 24 V power supply.
The gripper is designated for use in enclosed rooms for temporarily gripping, handling and holding parts.
The gripper is not suitable for clamping workpieces during a machining process.
Direct contact with perishable goods/food is not permitted.

4. Personnel qualification

Installation, commissioning and maintenance may only be performed by qualified personnel. These persons must have read and understood the installation instructions in full.

5. Product description

5.1 Forces and torques

INFORMATION:

For information on forces and torques, please visit our website.



Zimmer Customer Service is available to provide you with assistance if you have any further questions.

5.2 Type plate

A type plate is attached to the housing of the gripper. The serial number and the article number are indicated on this type plate.

- ▶ The serial number should be assigned to the project.

⇒ Article number:

⇒ Serial number:



INFORMATION:

Please state the serial number in the event of damage or a complaint.



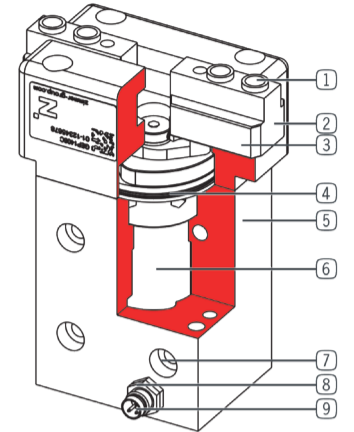
Zimmer Customer Service is available to provide you with assistance if you have any further questions.

6. Function

The electrical assembly requires a supply voltage of 24 V DC 0,5 A and is connected at terminals +UB and -UB. The opening/closing actuation is determined by the signal level at control input D (24 V/0 V). The enable takes place with the level at input EN (Enable) +24 V DC = Enable. If the enable is not reset in the end position, the motor in the gripper remains actuated with the current that is set. The gripper's supply line (brown M+, blue M-) is connected at terminals M+ and M-. P0 and P1 are PNP transistor outputs that report the position analog to the LEDs (signal level 24 V 150 mA). The M potentiometer is used to adjust the gripping force (PWM signal for the motor).

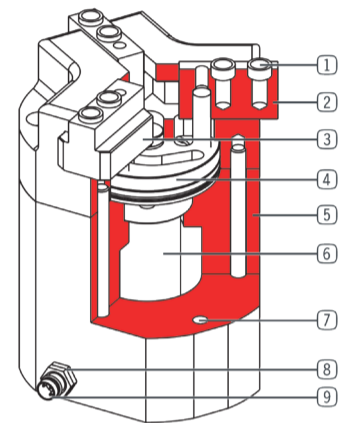
Inputs		Gripper function	
D	EN	Open	Close
0	0	0	0
1	0	0	0
1	1	1	0
0	1	0	1

Fig. 1: Cutaway view of the GEP1400 gripper



- ① Removable centering sleeve
- ② Gripper jaw
- ③ Guide
- ④ Positively driven cam disk
- ⑤ Housing
- ⑥ Drive
- ⑦ Positioning and mounting
- ⑧ Position sensing
- ⑨ Power supply

Fig. 4: Cutaway view of the GEP1300 gripper



7. Installation

NOTICE:



Switch off the power supply before any assembly, installation or maintenance work.

CAUTION:



Risk of injury in the event of unexpected movement of the gripper when the energy supply is connected.

- ▶ Switch off the power supply to the gripper before all work.
- ▶ Secure the power supply against being switched on unintentionally.
- ▶ Check the power supply for any residual energy.

WARNING:



Risk of injury in case of unexpected movement of the machine or system into which the gripper is to be installed.

- ▶ Switch off the energy supply to the machine before all work
- ▶ Secure the machine against being switched on unintentionally
- ▶ Check the machine for any residual energy.

7.1 General installation information

The gripper must be installed on a mounting surface in accordance with the specifications for flatness.

GEP1400 series:

Length < 100 mm → permitted flatness imperfection < 0.02 mm

Length > 100 mm → permitted flatness imperfection < 0.05 mm

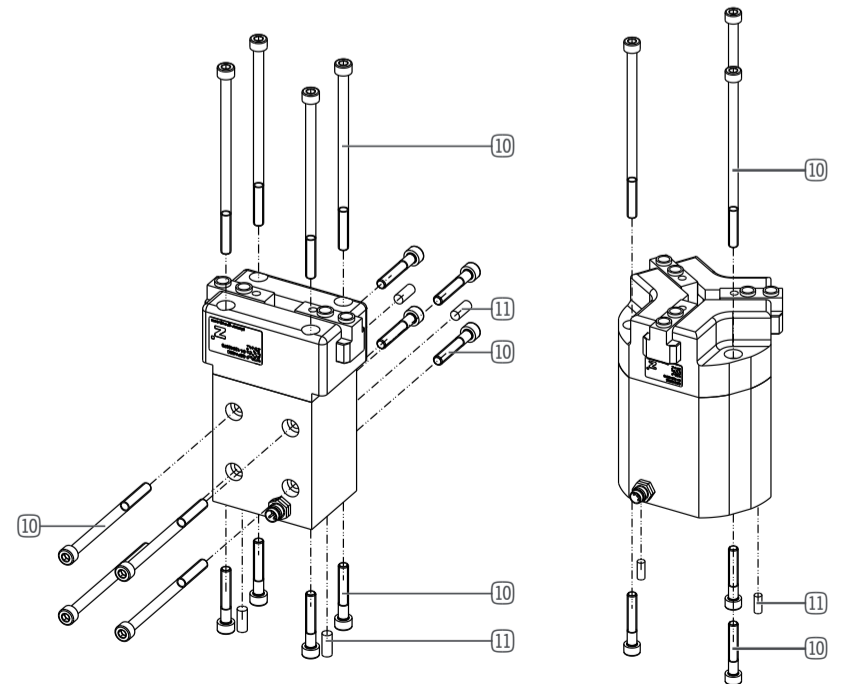
GED1300 series:

Diameter < 100 mm → permitted flatness imperfection < 0.02 mm

Diameter > 100 mm → permitted flatness imperfection < 0.05 mm

- ⇒ The mounting screws are not included in the scope of delivery.
- ⇒ Strength class of the mounting screws ≥ 8.8 (DIN EN ISO 4762)
- ⇒ Observe the tightening torque of the mounting screws.
- ⇒ Make sure the mounting surface is sufficiently rigid and flat.
- ⇒ The exact positions can be found on the technical data sheet on our website.

7.2 Installing the mechanical system



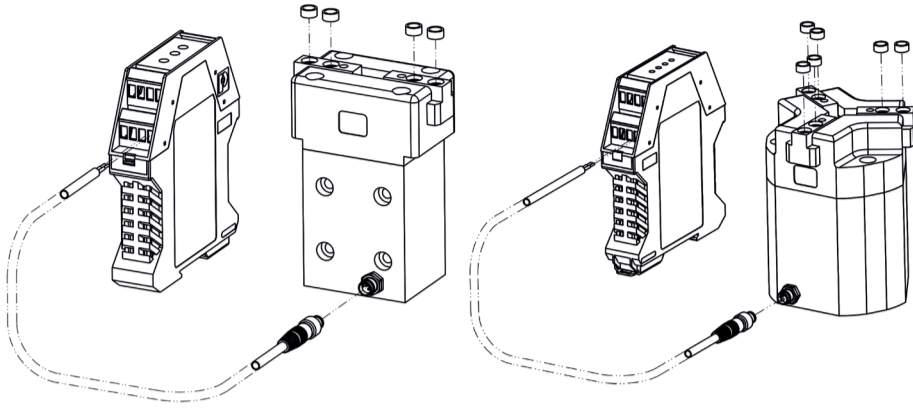
Depending on the design size or variant, you can mount the gripper from multiple sides. Either directly on the gripper or on the mounting piece.

Note the following work steps when mounting:

- ▶ Insert the straight pin into the designated fits on the gripper.
- ▶ Use the straight pin to position the gripper on the designated mounting piece.
- ▶ Use the mounting screws to secure the gripper to the mounting piece.

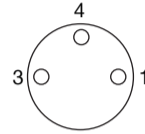
7.3 Installing the electrical system

7.3.1 GEP1400/GED1300 control system ELEGR01 (included in the scope of delivery of the gripper)



7.3.2 PIN assignment of the gripper's power supply

PIN	Color	Designation	Function
1	Brown	M+	Motor + gripper
3	Blue	M-	Motor - gripper
4	Black	-	Currently, no function

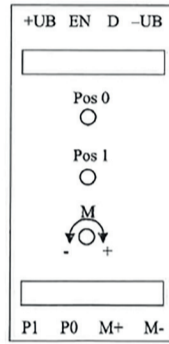


7.3.3 Terminal assignment of the control system

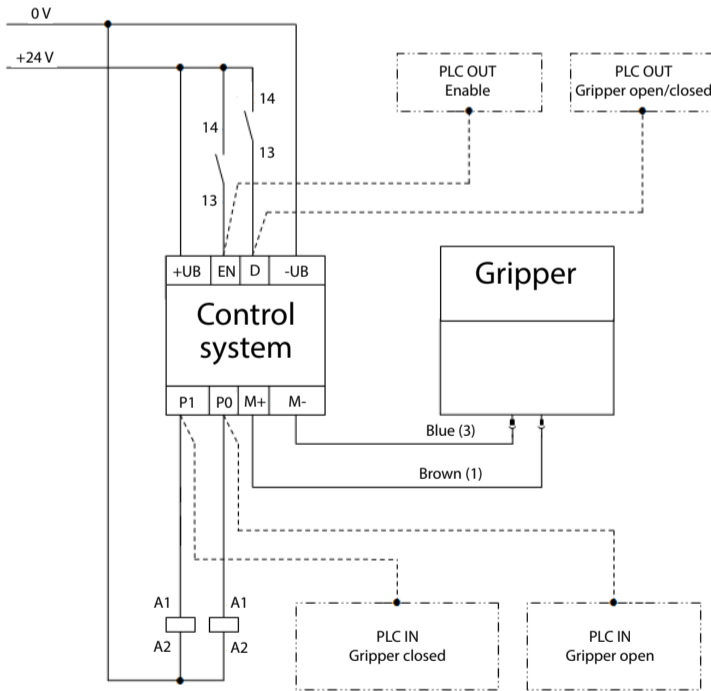
Terminal	Function
+UB	+24 V DC operating voltage
-UB	GND operating voltage
EN	Enable
D	Control input, open/close
P0	Gripper output, open PNP
P1	Gripper output, closed PNP
M+	Motor + gripper
M-	Motor - gripper

LED color	Designation	Display
RED	Pos. 0	Gripper open
GREEN	Pos. 1	Gripper closed

Potentiometer	Function
M	Torque



7.3.4 Wiring drawing



7.4 Installing accessories

NOTICE: Before installing an accessory, make sure it is suitable for use with the selected variant. For more information on the complete range of accessories, contact Zimmer Customer Service.

8. Technical data

INFORMATION: For technical data, please visit our website. This data varies within the series, depending on the specific design. Zimmer Customer Service is available to provide you with assistance if you have any further questions.

9. Heat dissipation

In the event of high ambient temperatures, the gripper has to be installed on heat-dissipating materials. If the gripper is operated under very high ambient temperatures and with fast clock cycles on an ongoing basis, this might reduce its service life.

10. Maintenance

Maintenance-free operation of the gripper is guaranteed for up to **5 million** gripping cycles. The maintenance interval may shorten under the following circumstances:

- Dirty environment
- Improper use and use that does not comply with the performance data.
- Ambient temperature above 60° C, lubricants harden faster!

We recommend allowing maintenance and seal replacement to be carried out by Zimmer Customer Service. Dismantling and reassembling the gripper without authorization may result in complications, as special installation equipment is required in some cases. Zimmer GmbH accepts no liability for any resulting malfunctions or damage.

11. Transportation/storage/preservation

- ▶ The transport and storage of the gripper must take place exclusively in the original packaging.
- ▶ If the gripper has already been installed on the higher-level machine unit, it must be ensured during transport that no uncontrolled movements take place. Before commissioning the machine after transport, check all power and communication connections as well as all mechanical connections.
- ▶ If the product is stored for an extended period, the following points are to be observed:
 - ⇒ Keep the storage location as dust-free and dry as possible.
 - ⇒ Avoid temperature fluctuations/observe and adhere to the temperature range.
 - ⇒ Avoid wind/drafts/water condensation formation.
 - ⇒ Store product packaged.
 - ⇒ During storage, it must be kept from direct sunlight.
- ▶ Visually inspect all of the components.
- ▶ Remove all foreign objects.

12. Decommissioning and disposal

INFORMATION: When the gripper reaches the end of its operational phase, the gripper can be completely disassembled and properly disposed of according to material groups. Disconnect the gripper from the power supply completely. When disposing of it, observe the locally applicable environmental provisions and codes and regulations for disposal.

13. Declaration of Incorporation

in terms of EU Machinery Directive 2006/42/EC (Annex II 1 B)

Name and address of the manufacturer:
 Zimmer GmbH
 Im Salmenkopf 5, 77866 Rheinau, Germany
 +49 7844 9138 0
 +49 7844 9138 80
 www.zimmer-group.com

We hereby declare that the incomplete machine described below
Product designation: Electric parallel gripper/electric three-jaw gripper
Type designation: GEP1400 series/GED1300 series
 conform to the requirements of the Machinery Directive, 2006/42/EC, Article 2g, Annex VII.b – Annex II.b, in their design and the version we put on the market.

The following harmonized standards have been used:
 Basic health and safety requirements:
 No. 1.1.2, No. 1.1.3, No. 1.1.5, No. 1.3.1, No. 1.3.2, No. 1.3.4, No. 1.3.7, No. 1.5.1, No. 1.5.3, No. 1.5.4, No. 1.6.4, No. 1.7.1, No. 1.7.3.

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

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 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 1A.

Authorized representative for the compilation of relevant technical documents

Kurt Ross	See manufacturer's address	Rheinau, Germany, 2020-02-20	Martin Zimmer, Managing Director
First name, last name	Address	Place and date of issuance	Legally binding signature

14. Declaration of Conformity

in terms of the EC Directive 2014/30/EC on electromagnetic compatibility

Name and address of the manufacturer:
 Zimmer GmbH
 Im Salmenkopf 5, 77866 Rheinau, Germany
 +49 7844 9138 0
 +49 7844 9138 80
 www.zimmer-group.com

We hereby declare that the products described below
Product designation: Electric parallel gripper/electric three-jaw gripper
Type designation: GEP1400/GED1300 series
 conform to the requirements of the Electromagnetic Compatibility Directive 2014/30/EU 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 for design - Risk assessment and risk reduction
 DIN EN 61000-6-3 EMC Generic standard, Emission standard for residential, commercial and light-industrial environments
 DIN EN 61000-6-2 EMC Generic standards - Immunity for industrial environments
 DIN EN 61000-6-4 EMC Generic standards - Emission standard for industrial environments

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

Authorized representative for the compilation of relevant technical documents

Kurt Ross	See manufacturer's address	Rheinau, Germany, 2020-02-20	Martin Zimmer, Managing Director
First name, last name	Address	Place and date of issuance	Legally binding signature