



INSTALLATION AND OPERATING INSTRUCTIONS

2-jaw parallel gripper, pneumatic

GPP5000

3-jaw concentric gripper,
pneumatic

GPD5000

DDOC00196

THE KNOW-HOW FACTORY

Content

1	Supporting documents	4
1.1	Notices and graphics in the installation and operating instructions	4
2	Safety notices	5
3	Proper use	6
4	Personnel qualification	6
4.1	Electricians	6
4.2	Specialists	6
4.3	Instructed personnel.....	6
4.4	Service personnel.....	6
4.5	Additional qualifications	6
5	Product description	7
5.1	Type plate	7
6	Functional description	7
7	Technical data	7
8	Accessories/scope of delivery	8
9	Transportation/storage/preservation	8
10	Installation	9
10.1	Installing GPP5000	10
10.2	Installing GPD5000	11
10.3	Installing the energy supply	12
10.4	Installing the sensors.....	13
10.4.1	Adjusting the magnetic field sensors.....	13
10.4.2	Setting the inductive sensors	13
10.5	Installing the gripper fingers	14
10.6	Installing the support structure.....	15
10.7	Installing accessories	15
11	Maintenance.....	16
12	Decommissioning/disposal	17
13	Declaration of Incorporation	18

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, including warranty information.

⇒ Only those documents currently available on the website are valid.

In these installation and operating instructions, "product" refers to the product designation on the title page!

1.1 Notices and graphics in the installation and operating instructions

DANGER



This notice warns of an imminent danger to the life and health of people. Ignoring these notices can lead to serious injury or even death.

▶ You absolutely must comply with the described measures for avoiding these dangers!

⇒ The warning symbols are assigned according to the type of danger.

WARNING



This notice warns of a situation that is potentially hazardous to personal health. Ignoring these notices can cause serious injury or damage to health.

▶ You absolutely must comply with the described measures for avoiding these dangers!

⇒ The warning symbols are assigned according to the type of danger.

CAUTION



This notice warns of a situation that is potentially hazardous for people or that may result in material or environmental damage. Ignoring these notices may result in slight, temporary injuries or damage to the product or to the environment.

▶ You absolutely must comply with the described measures for avoiding these dangers!

⇒ The warning symbols are assigned according to the type of danger.

NOTICE



General notices contain usage tips and valuable information, but no warnings of dangers to health.

INFORMATION



This category contains useful tips for handling the product efficiently. Failure to observe these tips will not result in damage to the product. This information does not include any information relevant to health or workplace safety.

2 Safety notices

CAUTION



Risk of injury and material damage in case of non-compliance

Installation, commissioning, maintenance and repairs may only be performed by qualified specialists in accordance with these installation and operating instructions.

The product is state-of-the-art.

It is fitted to industrial machines and is used to hold, transport and store workpieces.

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 GmbH shall accept no liability for any damage caused by improper use. The operator bears sole responsibility.
- ▶ Make sure that the power supply is disconnected before you mount, adjust, modify, maintain or repair the product.
- ▶ Whenever work is carried out on the product, make sure that the product cannot be actuated by mistake.
- ▶ Perform maintenance tasks, renovation work or attachment work outside of the machine's danger zone when possible.
- ▶ Note that, due to the spring tension, you should exercise increased caution when uninstalling products with integrated springs.
- ▶ Do not reach into the operational range of the product.
- ▶ Operate the product only when it is mounted.
- ▶ Observe the specified maintenance intervals and specifications regarding the quality of the operating material.
- ▶ When using the product under extreme conditions, adjust the maintenance interval according to the degree of contamination.

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 GmbH shall accept no liability for any damage caused by improper use. The operator bears sole responsibility.

- The product is designed exclusively for pneumatic operation.
- The product is to be used as intended in enclosed rooms for temporary gripping, handling and holding.
- The product is not suitable for clamping workpieces during a machining process.
- Direct contact with perishable goods/food is not permitted.

4 Personnel qualification

WARNING



Injuries and material damage due to inadequate qualification

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.

The following qualifications are a prerequisite for performing various work on the product.

4.1 Electricians

Electricians are able to perform work on electrical systems, can recognize and avoid possible dangers and know the relevant standards and provisions due to their technical training, knowledge and experience.

4.2 Specialists

Specialists are able to perform the assigned work, can recognize and avoid possible dangers and know the relevant standards and provisions due to their technical training, knowledge and experience.

4.3 Instructed personnel

Instructed personnel have been trained by the operating company on the tasks and possible dangers of improper behavior.

4.4 Service personnel

Service personnel are able to perform the assigned work and can recognize and avoid possible dangers due to their technical training, knowledge and experience.

4.5 Additional qualifications

Persons who work with the product must be familiar with the valid safety regulations and laws as well as the standards, guidelines and laws listed in this document.

Personnel who work with the product must have facility-issued authorization to commission, program, configure, operate, maintain and also decommission this product.

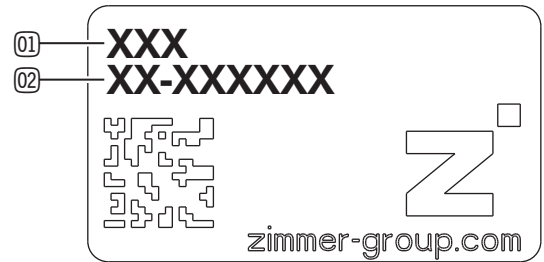
5 Product description

5.1 Type plate

A type plate is attached to the housing of the product.

The article number and the confirmation number are shown on the type plate.

- ① Article number
- ② Confirmation number



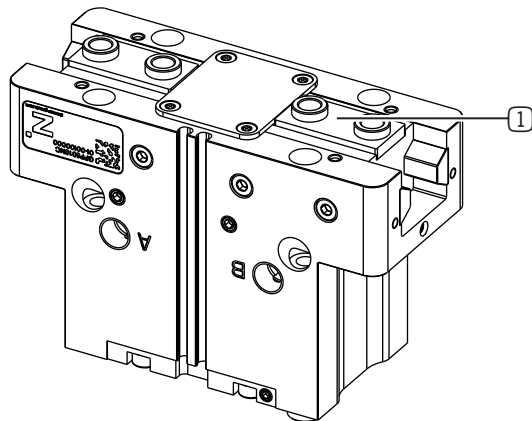
6 Functional description

Alternating ventilation moves the internal drive up and down.

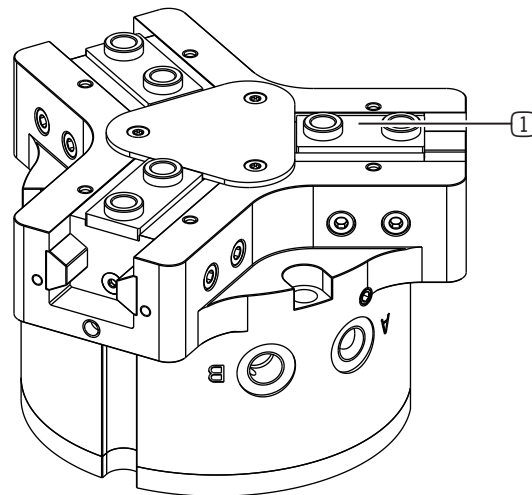
The movement generated in this process is transferred to the gripper jaws by kinematics, producing the gripper jaw movement.

For products with gripping force retention, this supports the grip force, acting in the force-transfer direction.

GPP5000



GPD5000



- ① Gripper jaw

7 Technical data

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.
- ▶ Please contact Zimmer Customer Service if you have any questions.

8 Accessories/scope of delivery

INFORMATION



If any accessories not sold or authorized by Zimmer GmbH are used, the function of the product cannot be guaranteed. Zimmer GmbH accessories are specifically tailored to the individual products.

- ▶ For optional accessories and those included in the scope of delivery, refer to our website.

9 Transportation/storage/preservation

- ▶ Transport and storage of the product must be done only with the original packaging.
- ▶ If the product has already been installed on the superordinate machine unit, care must be taken during transport to ensure that no unexpected movements can occur.
 - ▶ Before commissioning the product and 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.
 - ▶ Avoid wind/drafts/water condensation formation.
 - ▶ Pack the product and do not expose it to direct sunlight during storage.
- ▶ Clean all components. There must be no soiling left on the components.
- ▶ Visually inspect all components.
- ▶ Remove all foreign substances.

10 Installation

WARNING



Risk of death due to unsuitable lifting equipment

- ▶ Use suitable lifting equipment for overhead assembly or disassembly of the product if the dead weight of the product is > 3 kg.

WARNING



Risk of injury from crushing

Removing the cover of the wedge hook transmission results in a crushing hazard between the gripper jaws. Crushing injuries can result from the gripping process.

- ▶ Make sure that there are no parts of the body in the range of movement of the product!
- ▶ Only permit installation, maintenance and servicing work to be carried out by trained personnel.
- ▶ Do installation, maintenance and servicing work in jog mode only.

WARNING



Risk of injury due to uncontrolled movements

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

- ▶ Switch off the energy supply of the machine before any work.
- ▶ Secure the power supply against being switched on unintentionally.
- ▶ Check the machine for any residual energy that may be present.
- ▶ For spring-assisted products, wait until the gripper jaws reach the end position with the system depressurized.

CAUTION



Risk of injury due to uncontrolled movements

Risk of injury in the event of uncontrolled movement of the product when the power supply is connected.

- ▶ Switch off the power supply to the machine before carrying out any work.
- ▶ Secure the power supply against being switched on unintentionally.
- ▶ Check the machine for any residual energy that may be present.

CAUTION



Risk of injury from impact

When the gripper jaws are opening, there is a risk of impact in the guide area.

NOTICE



Installation may only be carried out by qualified personnel in accordance with these installation and operating instructions.

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

Assembly requirements

Permissible unevenness [mm]	Mounting surface length [mm] < 100	0.02
	Mounting surface length [mm] > 100	0.05
Strength class of the mounting screws (EN ISO 4762)	8.8	

INFORMATION



Further installation information:

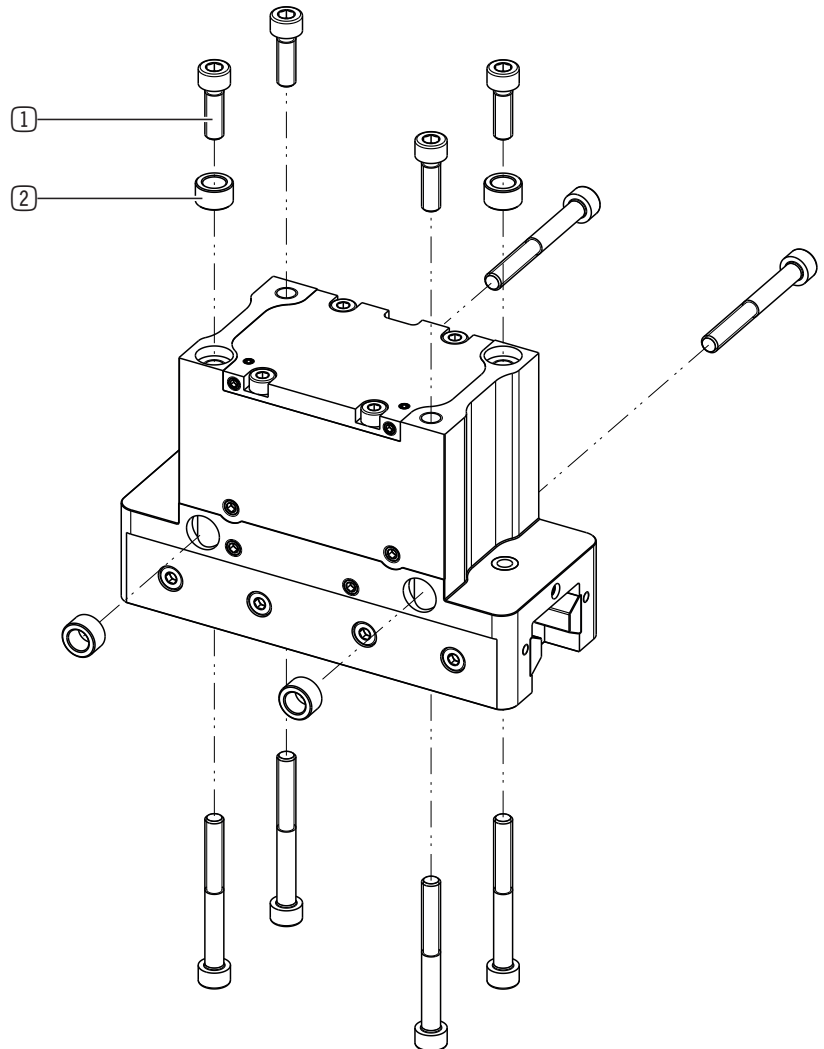
- The mounting screws are not included in the scope of delivery.

- ▶ Install the product on an appropriate mounting surface in accordance with the flatness specifications.
- ▶ Make sure that the mounting piece is sufficiently rigid.
- ▶ Observe the tightening torque of the mounting screws.
- ▶ Verify the permitted load capacity of the required screw connections in accordance with VDI 2230.

10.1 Installing GPP5000

The product can be installed from multiple sides.

- ▶ Insert the centering sleeves into the provided fits on the product.
- ▶ Position the product on the mounting piece using centering sleeves.
- ▶ Mount the product on the mounting piece using the appropriate mounting screws.

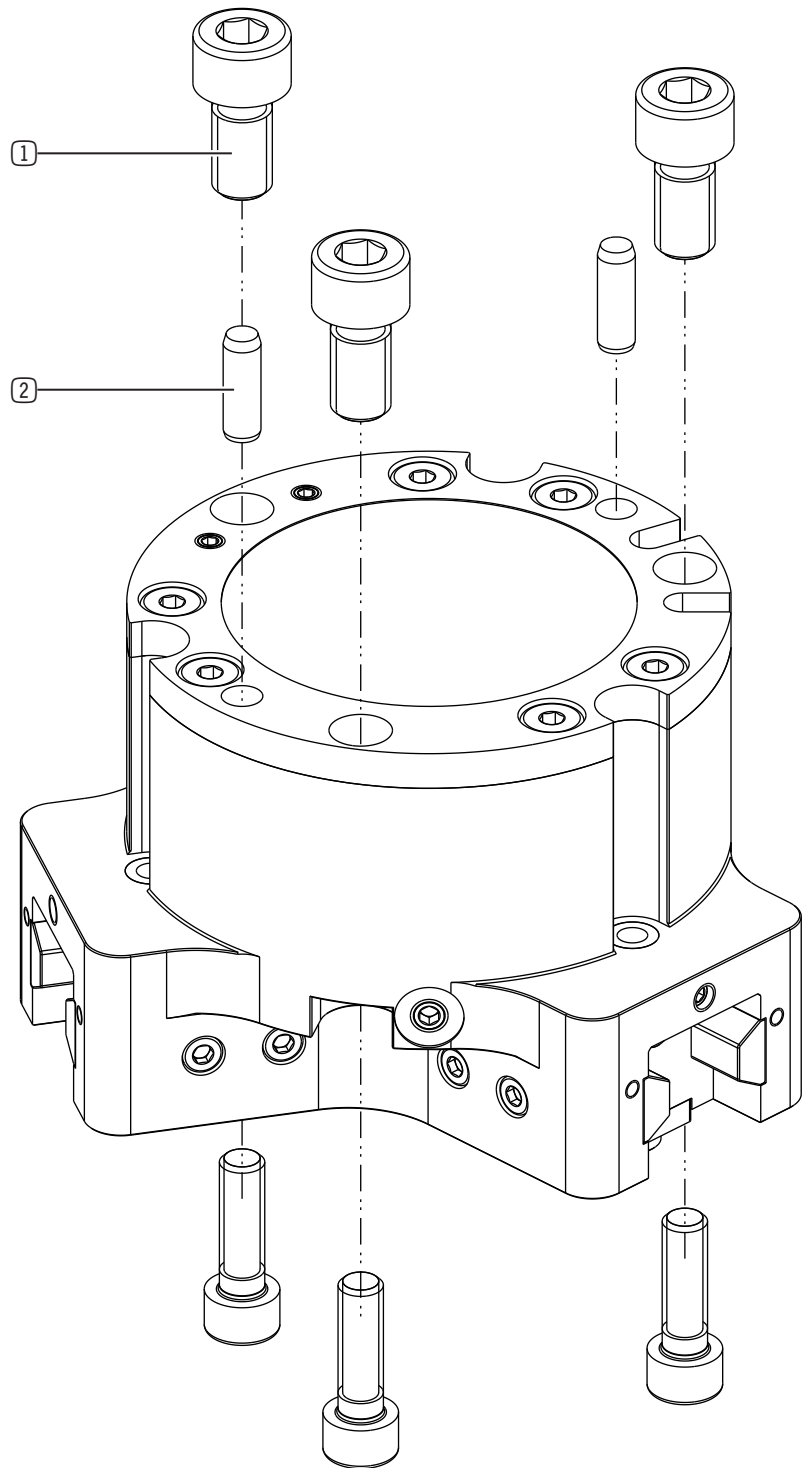


- ① Mounting screw
- ② Centering Disc

10.2 Installing GPD5000

The product can be installed from multiple sides.

- ▶ Insert the straight pins into the designated fits on the product.
- ▶ Use the straight pins to position the product on the mounting piece.
- ▶ Mount the product on the mounting piece using the appropriate mounting screws.



- ① Mounting screw
- ② Straight pins

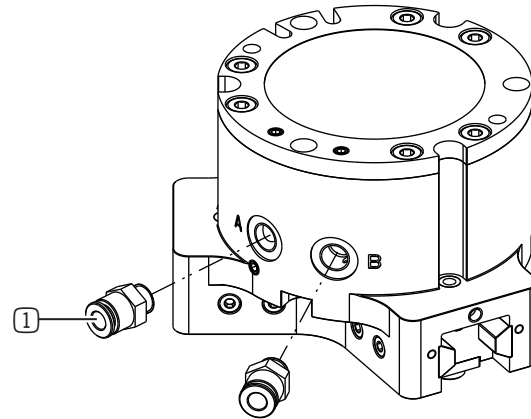
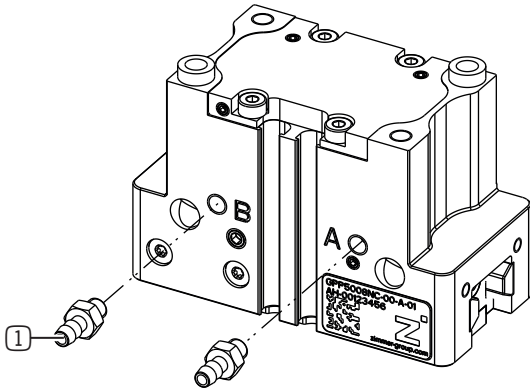
10.3 Installing the energy supply

NOTICE



- ▶ You can find the information in the technical data sheet on our website.
- ▶ Close off unused connections using pressure-resistant closures.
- ▶ The authorized connections that are available can be found in the accessories list on our website. The necessary ordering information can also be found there.
- ▶ Use compressed air in accordance with DIN ISO 8573-1 [4:4:4].

- ▶ Insert the screw fittings into the provided connections.



① Connector

INFORMATION



- Multiple alternative connections are available.
- No screw fittings have to be installed in the alternative connections.

10.4 Installing the sensors

10.4.1 Adjusting the magnetic field sensors

NOTICE



- ▶ Note that switching point shifts may occur if the sensors are exposed to an additional, external magnetic field.

INFORMATION



- The sensors are available as accessories.
- ▶ More information can be found in the installation and operating instructions of the sensor.

10.4.2 Setting the inductive sensors

INFORMATION



- The inductive sensors can be used in ascending order starting from installation sizes GPP5006 and GPD5006. Exceptions are the GPP50XX-AL-A and GPD50XX-AL-A

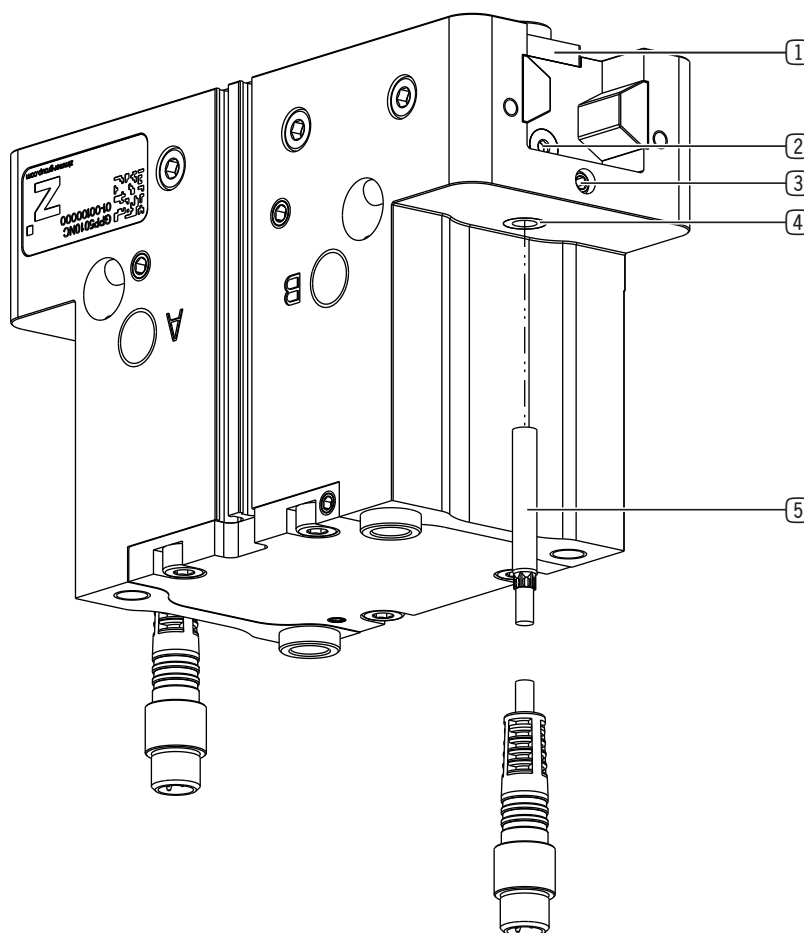
INFORMATION



- External limit stops are a requirement to use inductive sensors.
- ▶ For information on optional accessories and those included in the scope of delivery, refer to our website.

The sensors can detect any desired position of the gripper jaws directly at the mechanical system.

- ▶ Insert the sensor into the terminal block provided for this purpose.
- ▶ Push the sensor as far as it will go (to the end stop).
- ▶ Clamp the sensor using the clamping screw.
- ▶ Connect the sensor to the operating voltage.
- ▶ Move the gripper jaws into the desired position.
- ▶ Adjust the switch cam using the set screw until the function display on the sensor illuminates.



- ① Gripper jaw
- ② Adjusting screw
- ③ Clamping screw
- ④ Mounting block
- ⑤ Inductive sensor

10.5 Installing the gripper fingers

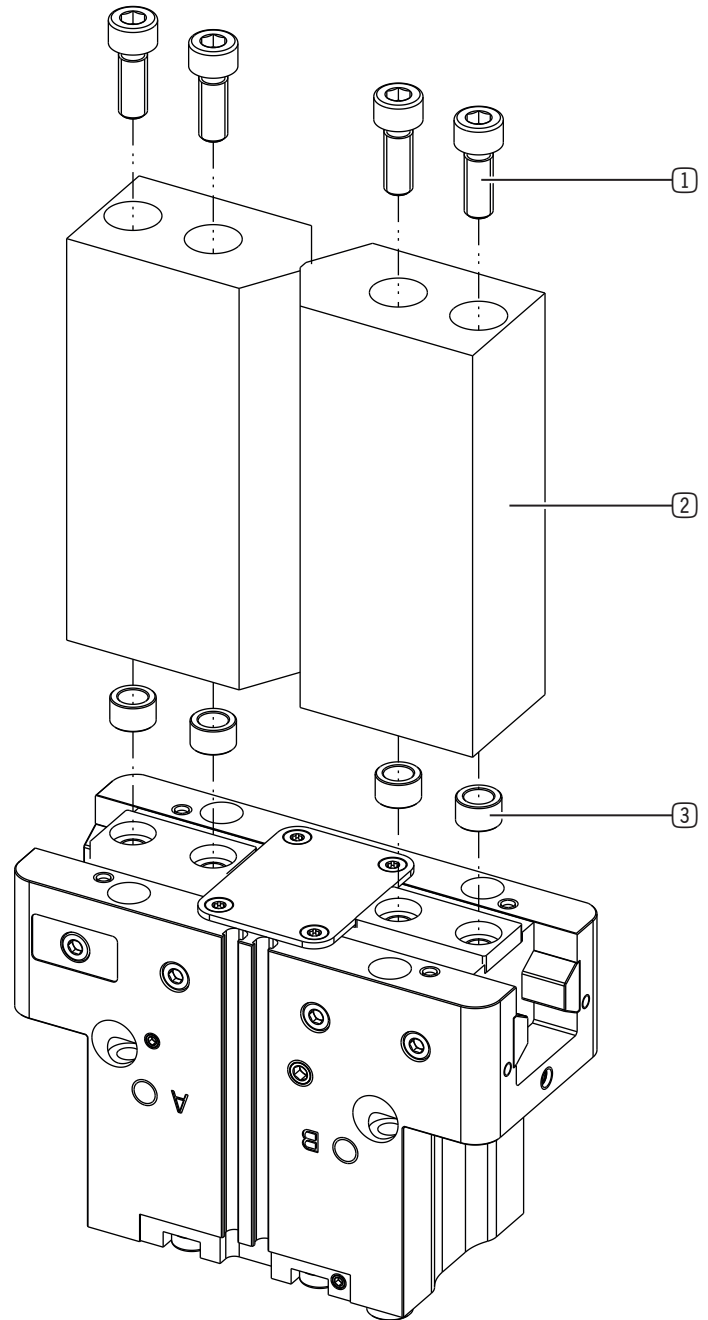
NOTICE



- ▶ Before installing the gripper fingers, check whether their length is suitable for use with the selected variant.
- ▶ You can find information on our website.
- ▶ Please contact Zimmer Customer Service if you have any questions.

Assembly requirements

Strength class (DIN EN ISO 4762)	GPP5000	8.8
	GPD5000	12.9



- ① Mounting screw
- ② Gripper finger
- ③ Centering Disc

10.6 Installing the support structure

CAUTION



Risk of injury from collision

- ▶ Make sure that when the product is moving, the support structure does not collide with other parts of the machine in which the product is installed.

NOTICE



This customer-specific support structure must be designed such that it does not impede the movement of the gripper jaws.

Dimension A may not be exceeded by the support structure.

Dimension B may be exceeded by the support structure.

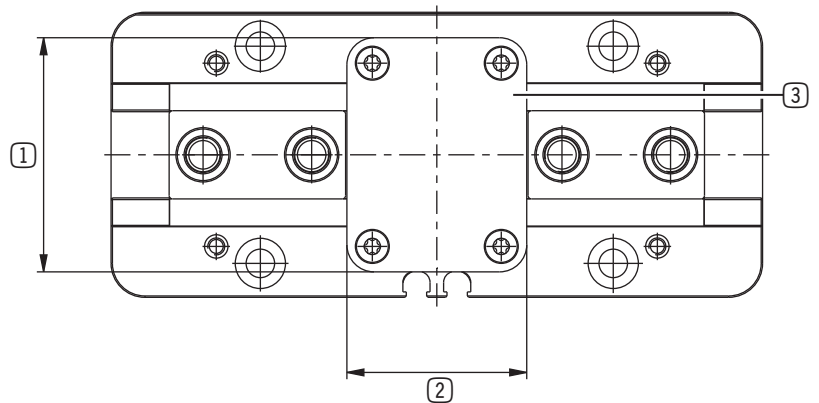
- ▶ For the dimensions required for the customer-specific support structure, refer to the technical data sheet found on our website.

INFORMATION



GPD5000 series: You cannot install an additional support structure if a pressure piece is installed on the product.

It is possible to remove the cover plate in order to use a customer-specific support structure. For installing a support structure, there are additional fits under the cover plate.



- ① Dimension B
- ② Dimension A
- ③ Cover plate

10.7 Installing accessories

NOTICE



- ▶ Before installing an accessory, make sure it is suitable for use with the selected variant.
- ▶ You can find information on our website.
- ▶ Please contact Zimmer Customer Service if you have any questions.

11 Maintenance

WARNING



Risk of injury from crushing

Removing the cover of the wedge hook transmission results in a crushing hazard between the gripper jaws. Crushing injuries can result from the gripping process.

- ▶ Make sure that there are no parts of the body in the range of movement of the product!
- ▶ Only permit installation, maintenance and servicing work to be carried out by trained personnel.
- ▶ Do installation, maintenance and servicing work in jog mode only.

WARNING



Risk of injury due to objects being ejected

The product has integrated gripping force retention. This device is a spring that acts as an energy accumulator. When uninstalling the piston cover, it and/or the piston can be ejected due to the pretensioned spring.

- ▶ When disassembling the product, use a device that prevents the piston or the piston cover from being ejected.
- ▶ Have maintenance work be performed only by Zimmer Customer Service.

CAUTION



Risk of injury from impact

When the gripper jaws are opening, there is a risk of impact in the guide area.

CAUTION



Material damage resulting from blowing out with compressed air

Blowing out the product with compressed air can cause malfunctions and pose a risk of accidents.

- ▶ Never purge the product with compressed air.

CAUTION



Material damage caused by liquid and solvent-based cleaners

Liquid and solvent-based cleaning agents can cause malfunctions and pose a risk of accidents.

- ▶ Do not clean the product with any cleaning agents that are liquid or contain solvents.

NOTICE



Material damage due to leaking lubricant

Excessive lubrication can cause moving machine parts to leak lubricant. This can contaminate the machine, object being gripped or workpiece.

- ▶ Only use approved or recommended lubricants.
- ▶ Observe the manufacturer information for use of specific lubricants.
- ▶ Adhere to the lubrication interval.
- ▶ Avoid excessive lubrication.
- ▶ Remove leaking lubricant immediately and thoroughly.
- ▶ Replace damaged seals.

Maintenance-free operation of the product is guaranteed for up to **30 million cycles** , with the exception of maintenance-free operation of the product for installation sizes GPP50XX-AL-A and GPD50XX-AL-A within up to **15 million cycles**.

The maintenance interval may be shortened under the following circumstances:

- Dirty environment
 - Improper use and use that does not comply with the power specifications.
 - Operation with impermissible compressed air
 - Permissible temperature range not observed
 - Ambient temperature > 60°C
- ▶ Even though the product is maintenance-free as mentioned above, perform a regular visual inspection to check for any damage or contamination.
- ▶ Have maintenance work be performed by Zimmer Customer Service whenever possible.
- ⇒ Dismantling and reassembling the product 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.

12 Decommissioning/disposal

INFORMATION



When the product reaches the end of its operational phase, it can be completely disassembled and disposed of.

- ▶ Disconnect the product completely from the power supply.
- ▶ Dispose of the components properly according to the material groups.
- ▶ Comply with the locally applicable environmental and disposal regulations.

13 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
77866 Rheinau, Germany
☎ +49 7844 9138 0
✉ info@zimmer-group.com
🌐 www.zimmer-group.com

We hereby declare that the incomplete machine described below

Product designation: 2-jaw parallel gripper/3-jaw concentric gripper, pneumatic
Type designation: GPP5000, GPD5000

conform to the requirements of the Machinery Directive, 2006/42/EC, Article 2g, Annex VII.b – Annex II.b, in its design and the version we put on the market.

Basic health and safety requirements:

No. 1.1.2, No. 1.1.3, No. 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

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 1 A.

Kurt Ross

Authorized representative for the compilation of relevant technical documents

Rheinau, Germany, 2020-10-08

(Place and date of issuance)

Martin Zimmer
(Legally binding signature)
Managing Partner