INSTALLATION AND OPERATING INSTRUC-TIONS

2-jaw parallel gripper
3-jaw concentric gripper
GPP/GPD5000-IL series

DDOC00247

THE KNOW-HOW FACTORY

ZIMMER group

Parameter explanation (glossary)

Parameter	Explanation
ControlWord	The gripper is controlled using the "ControlWord." The "ControlWord" is bit-exclusive, which means that only one bit at a time can be active in the "Word." The value "ZERO" is also permitted.
DeviceMode	The "DeviceMode" is used to select gripping profiles as well as the additional help modes in the gripper.
Workpiece No.	You can use this parameter to select or save the workpiece recipes stored in the gripper.
TeachPosition	The "TeachPosition" is the actual workpiece position.
WorkPosition	The "WorkPosition" is the inner jaw position on the gripper. Depending on the application, for example with internal grippers, this can also be the standby position.
PositionTolerance	This is the tolerance window for the "TeachPosition." The value of the parameter acts in both directions.
BasePosition	The "BasePosition" is the outer "JawPosition." Depending on the gripper profile, this can also be a work position!
StatusWord	In its bits, the "StatusWord" returns the most important information about the status of the gripper to the control system.
Diagnosis	If an error should occur, the "Diagnosis" outputs a diagnostic code that can be compared with the error list.
ActualPosition	The value of the current position of the gripper [1/100 mm].
Error	Fault, error message
Teach/Adjust	Program/Configure Using this signal, depending on the gripper type, the current position of the gripper jaws can be taught in as the new workpiece position. "Adjust" is used as a command to define the reachable end positions of the gripper jaws.
GND	Abbreviation for ground connection
Offset	Correction value
Traversing routine	Defined procedure for movement of the gripper jaws
Travel path	Path on which the gripper jaws travel

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1. Supporting documents

2. Safety notes

CAUTION:

Non-compliance may result in severe injuries!

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 fitted to industrial machines and is used to hold workpieces. The following are examples of situations in which the gripper may pose a hazard:
   - The gripper is not properly installed, used or maintained
   - The gripper 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. Make sure that the power cables are disconnected before you install, modify, maintain or repair the gripper.
6. In case of maintenance, modification or attachment work, remove the gripper from the machine and perform the work outside the danger zone.
7. When commissioning or testing, make sure that the gripper cannot be activated by mistake.
8. Modifications to the gripper, such as adding drilled holes or threads, may be made only with prior approval from Zimmer GmbH.
9. The specified maintenance intervals are to be observed; also refer to the "Maintenance" section. When the gripper is used under extreme conditions, the maintenance interval must be adapted depending on the extent of the contamination. Please contact our hotline for this purpose.
10. Use of the gripper under extreme conditions, such as aggressive liquids and abrasive dusts, is subject to prior approval from Zimmer GmbH.
11. Do not reach into the operational range of the gripper!
12. When disassembling grippers with integrated springs, exercise heightened caution because spring tension is always present.
13. The gripper is protected by temperature monitoring and the maximum duration of the current feed. Nevertheless, you should observe a certain cooling time immediately after use before the gripper is modified, serviced, repaired or dismantled. Wearing personal protective equipment is also advisable.
14. Persons with life-sustaining implants (e.g. pacemakers) must maintain a distance of 100 mm from the gripper!
15. Data carriers with a sensitivity to magnetic influences should not be used at a distance closer than 100 mm.

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.

Use outside of the defined parameters is not permitted. Unauthorized electrical or mechanical modifications must not be made.

The gripper is designed exclusively for pneumatic electric operation using a supply voltage of 24 V DC and a maximum operating pressure of:

- 4 to 7 bar – Spring variant (NC, SC, NO, SO)
- 3 to 8 bar – Universal operation (N, S)

.

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 personnel must have read and understood the installation and operating instructions in full.

5. Product description

CAUTION:

⚠️ **Reduction of gripping force**

Reduce the gripping force of the gripper when gripping flexible components.

A reduced gripping force can lead to material damage or injury to personnel, because the components that are being gripped can no longer be securely gripped and transported.

5.1 Possible applications

Outside gripping:

The gripper can be used for outside gripping.

Inside gripping:

The gripper can be used for inside gripping.

Outside gripping   Inside gripping
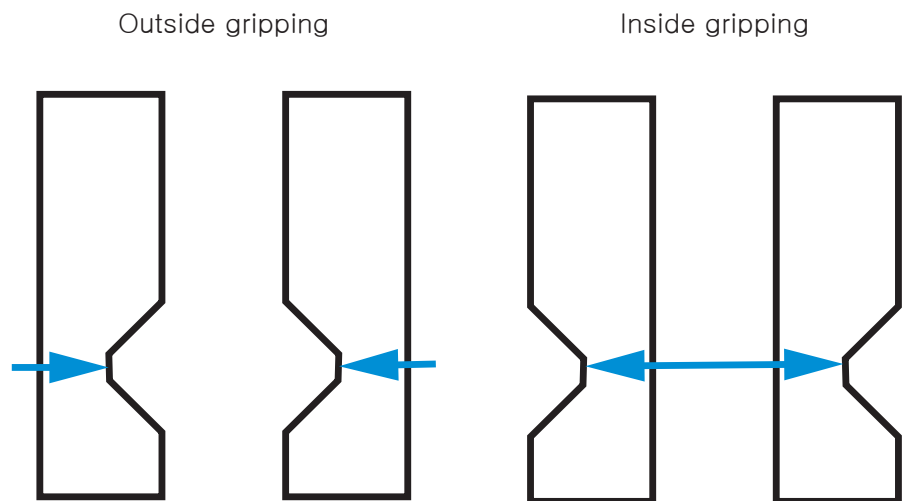
5.2 Forces and torques

INFORMATION:

ℹ️ 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.

5.3 Type plate

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

The serial number and the article number are shown on this type plate.

► The serial number ensures that the unit has an unambiguous, continuous classification in the event of an update or an overhaul.

► You should assign the serial number to your project when possible.

  ⇨ Article number: ㉚

  ⇨ Serial number: ㉛

㉚ **XXX**
㉛ **XX-XXXXXX**

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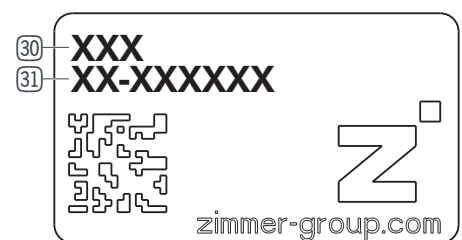
INFORMATION:

ℹ️ 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

6.1 GPP5006/08/10IL

The gripper fingers of the parallel gripper are arranged parallel to each other on two opposing guide rails and can be moved relative to each other. Compressed air is used to supply power. The compressed air moves an internal pneumatic piston. The stroke movement of this pneumatic piston is redirected to the gripper jaws via a connecting rod. This generates the movement of the gripper jaws. An internal spring is used to retain the gripping force if there is a drop in pressure (only for spring variants).

1	Removable centering sleeve
2	Positively driven wedge hook transmission
3	Mounting and positioning
4	Position sensing
5	Integrated valve technology
6	Steel linear guide
7	Double-lip seal
8	Gripper jaws
9	Integrated gripping force safety device (spring variant)
10	Integrated control module

Figure: Cutaway view of the GPP5000IL series gripper
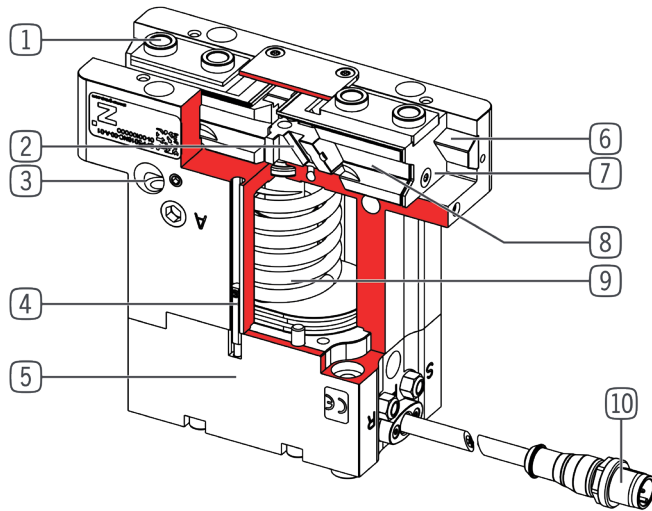
6.2 GPP5013/16/25IL

For these installation sizes, position sensing 4 is integrated into the gripper.

6.3 GPD5006/08/10IL

The gripper fingers of the three-jaw gripper are each positioned between two steel guide rails.

Compressed air that moves a piston is used to supply power. The stroke movement of the piston is redirected to the gripper jaws via a connecting rod. This generates the movement of the gripper jaws. An internal spring is used to retain the gripping force if there is a drop in pressure (only for spring variants).

1	Removable centering sleeve
2	Positively driven wedge hook transmission
3	Double-lip seal
4	Integrated gripping force safety device (spring variant)
5	Position sensing
6	Mounting and positioning
7	Gripper jaws
8	Steel linear guide
9	Integrated control module
10	Integrated valve technology

Figure: Cutaway view of the GPD5000IL series gripper
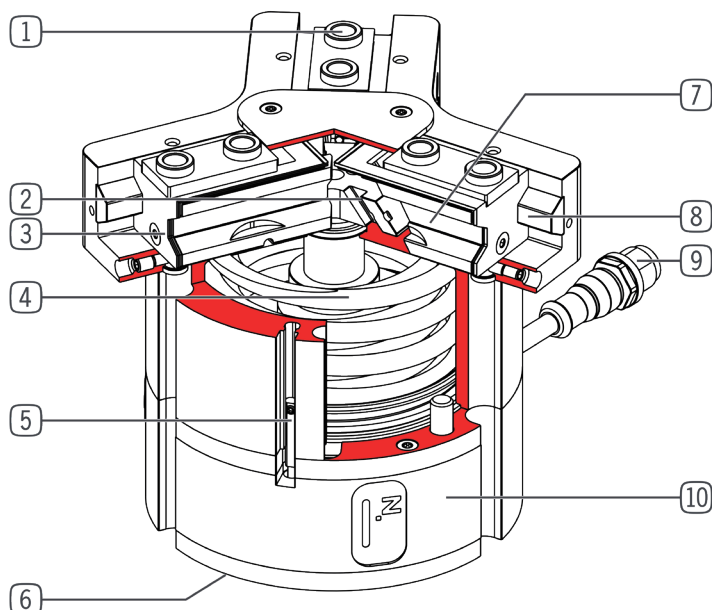
6.4 GPD5013/16/25IL

For these installation sizes, position sensing 5 is integrated into the gripper.

6.5 Gripping force safety device

INFORMATION:

An integrated spring is used to retain the gripping force if there is a drop in pressure.

⇨ Not for grippers in universal operation (N, S). Here, there is no gripping force safety device if there is a drop in pressure or a voltage loss!

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

	GPP/GPD5000IL	
	Without spring N/S	With spring NC/NO/SC/SO
• Pressure failure • Actuator voltage present • Without pressure safety valve	🔴	🟠
• Pressure failure • Actuator voltage present • With pressure safety valve	🟢	🟢
• Operating pressure present • No actuator voltage • Without pressure safety valve	🔴	🟠
• Operating pressure present • No actuator voltage • With pressure safety valve	🔴	🟠

🔴 No gripping force

🟠 Spring force

🟢 Complete gripping force

6.6 Verified configuration

INFORMATION:

For information about the verified configuration, please visit our website.

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

6.7 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.

6.8 Protection classes

NOTICE:

The gripper achieves protection class IP64 in all mounted positions of installation.

Ventilation (R + S): If the environment is dirty, replace filters with exhaust hoses and move the exhaust air outlet to a clean environment.

6.9 LED display

The colors of the LED reflect the status of the gripper.

Status	Function
Continuous light	"TeachPosition"
Flashing	Currently not assigned
Continuous light	"BasePosition" / "WorkPosition"
Flashing	Currently not assigned
Continuous light	The gripper has a malfunction
Flashing	No IO-Link connection available
Continuous light	Gripper is in an undefined position
Flashing	Currently not assigned
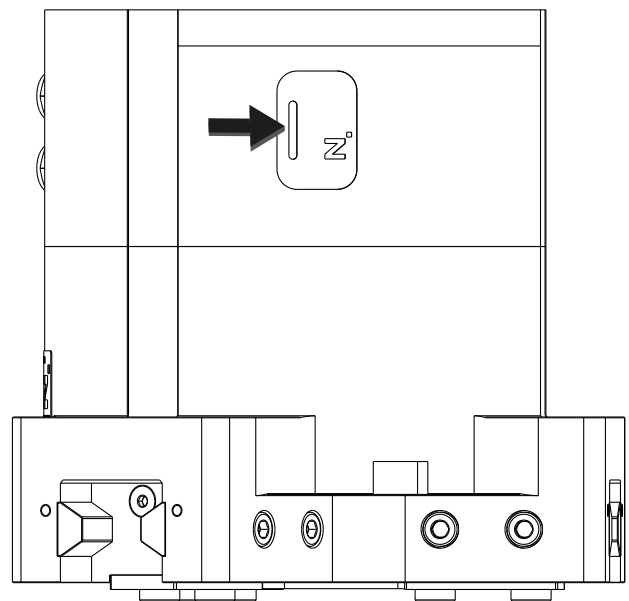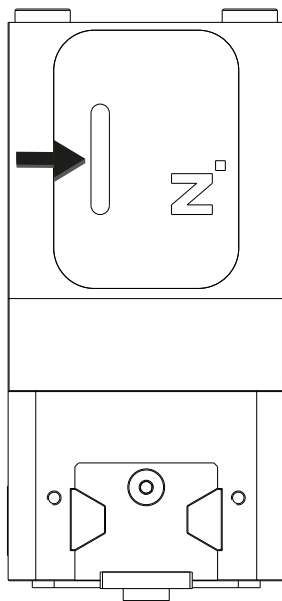
7. Installation

7.1 Safety notes

NOTICE:

> Switch off the power supply for the electronics before any assembly, installation or maintenance work.
> ► Electronics may get damaged.

CAUTION:

> Switch off the power supply for the electronics before any assembly, installation or maintenance work.
> ► Injuries are possible.

WARNING:

> Risk of injury in the event of unexpected movement of the machine or system into which the gripper is to be installed.
> ► Switch off the power supply to the machine or the system before all work.
> ► Secure the machine or system from being switched on unintentionally.
> ► Check the machine or system for any residual energy.

7.2 General installation information

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

Length ≤ 100 mm ➡ permitted flatness imperfection ≤ 0.02 mm

Length > 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 at least 8.8 DIN EN ISO 4762.

⇨ Observe the tightening torques of the mounting screws.

⇨ Make sure the mounting surface is sufficiently rigid and flat.

7.3   Installing the GPP5006/08/10/13/16/25IL gripper

The gripper can be installed from multiple sides: Either directly on the gripper or on the mounting piece.

The following work steps must be observed during installation:

▶ Insert the centering sleeves [11] into the designated fits [13] on the gripper.

▶ Position the gripper on the designated mounting piece using the centering sleeves [11] .

▶ Use the mounting screws [12] to secure the gripper onto the mounting piece.
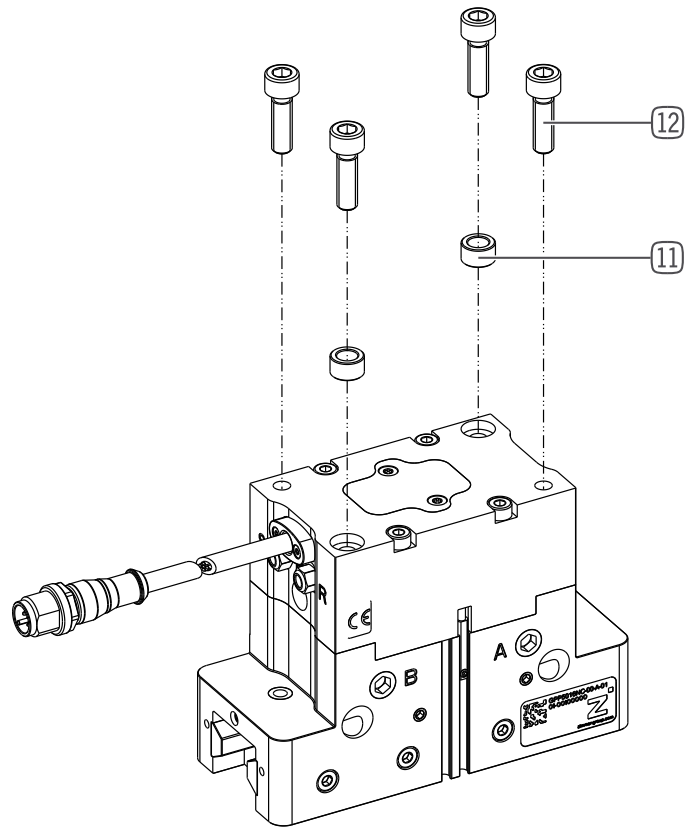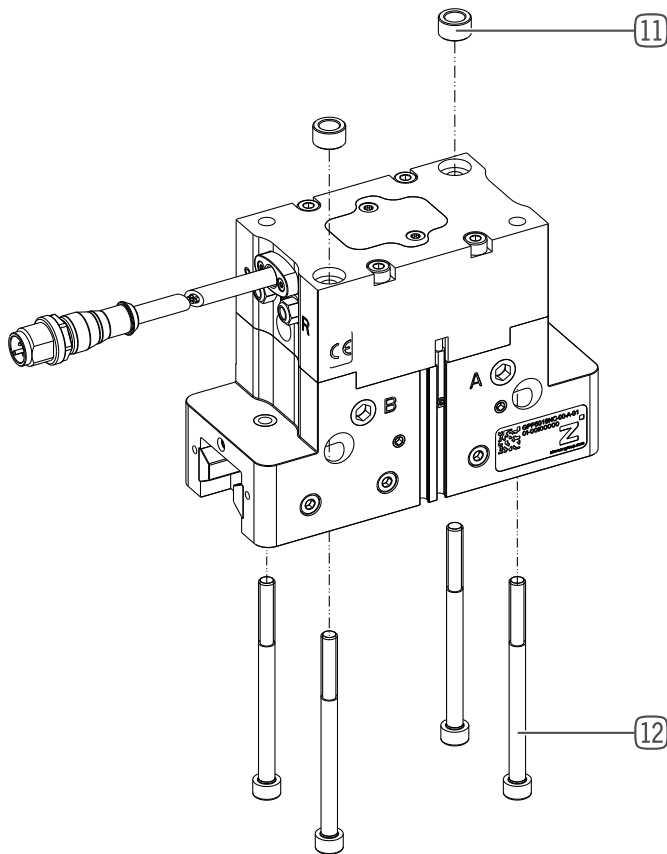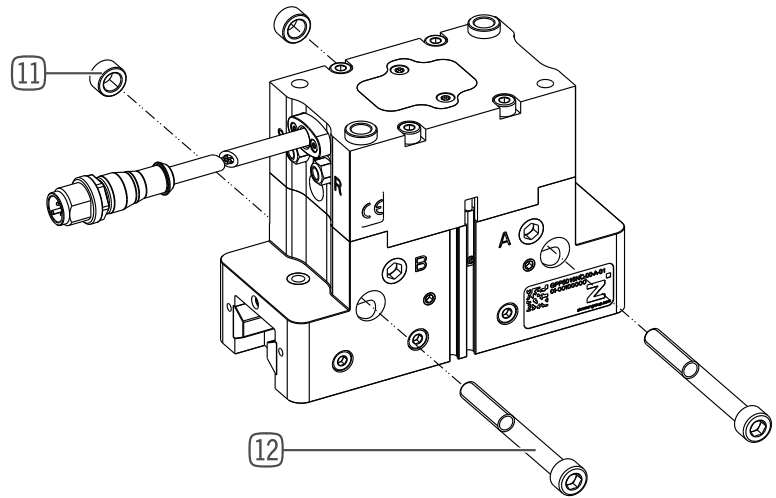
7.4 Installing the GPD5006/08/10/13/16/25IL gripper

The gripper can be installed from multiple sides: Either directly on the gripper or on the mounting piece.

The following work steps must be observed during installation:

► Insert the pins ⑭ into the designated drilled hole ⑮ on the gripper.

► Position the gripper on the designated mounting piece using pins ⑭ .

► Use the mounting screws ⑫ to secure the gripper onto the mounting piece.

7.5   Installing the power supply

7.5.1 Installing the pneumatic system

17	Connection "R": Exhaust air with mounted silencer
18	Connection "S": Exhaust air with mounted silencer
19	Connection "P": Compressed air
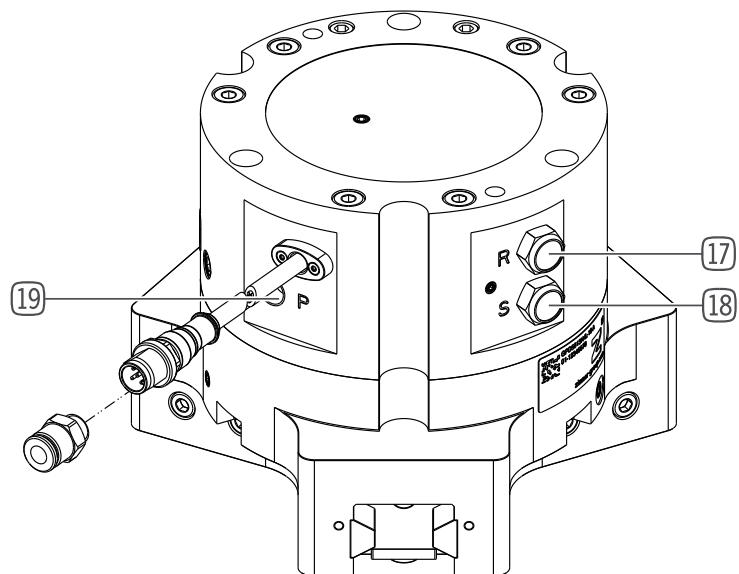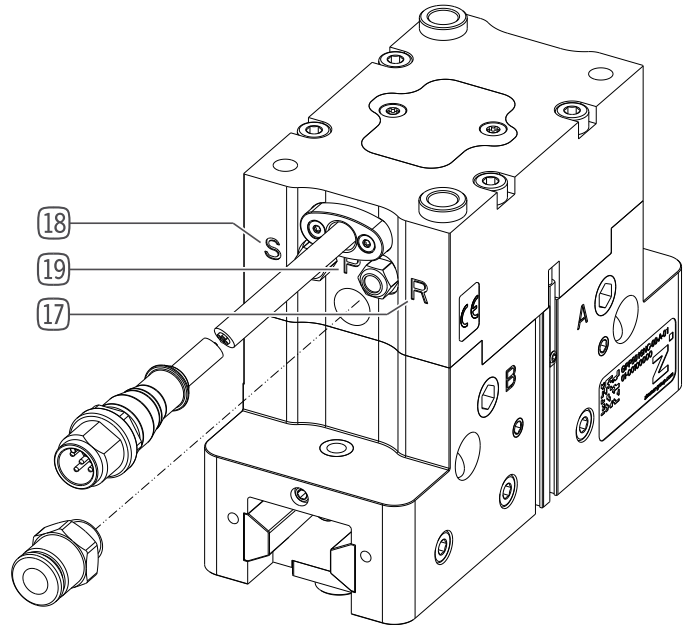
INFORMATION:

Refer to the technical data sheet for alternative connections.

The authorized pneumatic connections that are available can be found in the accessories list, available on our website.

The necessary ordering information can also be found there.

⇨ Use compressed air in accordance with DIN ISO 8573-1 [3:4:3].

The pneumatic connections A and B right on the gripper are not used and are closed. For applications with an IP64 protection class, we recommend installing hoses on the "R" and "S" connections for discharging the exhaust air to prevent foreign substances or water from damaging the gripper.

7.5.2 Installing the electrical system

Connect the supply cable to the gripper and the control system.

⇨ You can find the corresponding supply cable on our website
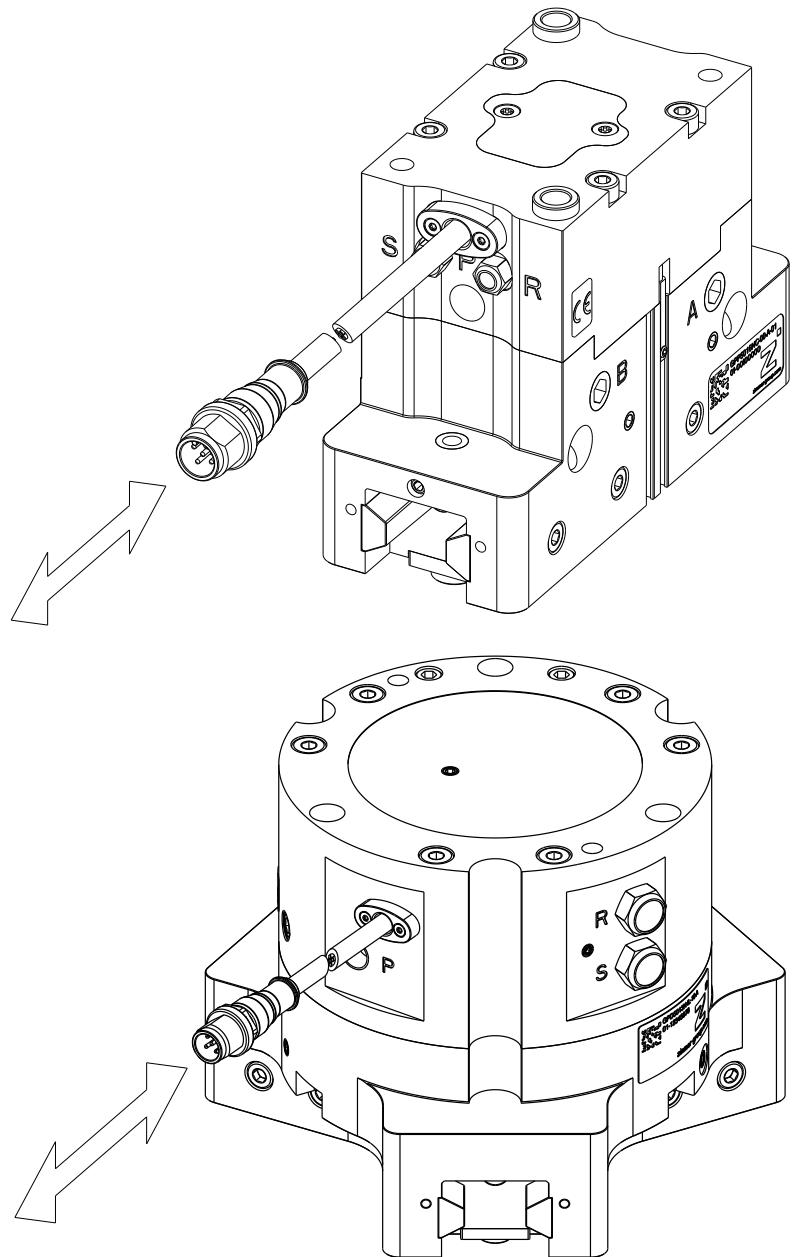
INFORMATION:

The cables that are used by Zimmer GmbH feature a minimum bending radius of 10 x the outer diameter. This bending radius must not be undershot!

⇨ All IO-Link cables that are installed in the grippers have an outer diameter of 5 mm and thus have a bending radius of 50 mm.

⇨ Freely suspended cables must be secured to prevent excessive motion loads or pinching.

7.6   Installing the "IO-Link"

Pin assignment of the power supply line:

PIN	Color	Function	Explanation
1	Brown	Sensor + 24 V DC	Power supply for IO-Link communication
2	White	Actuator + 24 V DC	Actuator supply voltage
3	Blue	GND sensor	Sensor 0 V DC supply voltage
4	Black	C/Q	IO-Link communication
5	Gray	GND actuator	Actuator 0 V DC supply voltage
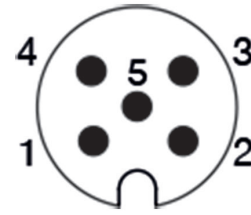
The following steps must be carried out to commission or mount with IO-Link:

► Connect the gripper to the IO-Link master.

► Secure the voltage supply.

⇨ For Port Class A, additional power supply via Y-cable.

► Importing the IODD (device description) into the control system.

⇨ Go to our website.

⇨ Select the desired gripper and download the corresponding .zip file via the "Download IODD" link.

⇨ The .zip file is required for importing into the control system.

When the hardware configuration is complete and the IO-Link connection to the gripper is established, some data must be visible in the process input data.

⇨ Some control systems demand a byte swap to bring this process data into a logical sequence.

► To determine whether a byte swap is necessary, you can view bit 6 (GripperPLCActive) in the "StatusWord".

► For this purpose, it is necessary to determine whether bit 6 is active in the first or second status byte.

⇨ Bit 6 must be active in the low byte.

⇨ If bit 6 is active in the first byte, a byte swap still has to be applied here.

⇨ If bit 6 is active in the second byte, the bytes already have the correct sequence and you can continue with the rest of the commissioning.

INFORMATION:

It is mandatory to verify the process data!

The gripper is controlled via IO-Link by means of the cyclical process data as well as the acyclic service data with a cycle time of 2.5 ms.

During a communication cycle, the IO-Link master sends 8 bytes to the gripper and receives 6 bytes of process data.

Cold boot or initial commissioning or "Easy startup mode" initial commissioning

"From switching on the gripper to the initial movement"

Connect the gripper according to the assignment diagram.

The gripper reports the "StatusWord", "Diagnosis" and "ActualPosition" processes immediately after the internal controller is booted up.

Once the bit in the "StatusWord" bit 6 PLC active is registered, the communication process can start.

To move the gripper, the process parameters must first be transmitted. The following process parameters are involved:

• "DeviceMode" (movement profile)

• "WorkpieceNo" (workpiece number)

A "handshake" is required to transmit the process parameters to the gripper.

INFORMATION:

For information on the "handshake," refer to Section „8.2 Verfahren der Datenübertragung „Handshake".

The data transmission starts with the ControlWord = 1 (dec). Once the process parameters have been transmitted to the gripper, the gripper will report this back in the "StatusWord" with the "DataTransferOK" bit.

The gripper is now ready for operation. The gripper then moves to the relevant position after receiving the corresponding command in the "ControlWord."

The gripper features bidirectional behavior. This means that the gripper cannot position itself to intermediate values automatically. Each movement command is executed to the maximum possible position.

INFORMATION:

Refer to the description of the "StatusWord" for more information concerning this.

7.7   Static charge

The movement of the gripper jaws creates low voltages as a result of static charging. These charges cannot be dissipated if the gripper is mounted on an insulating surface and if discharge is also not possible through the workpiece.

NOTICE:

Non-compliance may result in material damage

Grounding the gripper attachment / gripper jaws is recommended if ESD-sensitive parts come into contact with the gripper.

The exact position of the ground connection can be found in the technical drawing on the data sheet.

Grounding is also recommended in applications that require high EMC shielding.

INFORMATION:

The exact position of the grounding can be found in the technical data sheet on 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.

7.8 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.

7.9 Influencing the position sensor

The figure depicts an area in which no magnets or components with ferromagnetic properties may be attached.

This can have a significant influence on the accuracy of the position sensor and/or result in a malfunction of the position sensor.

⇨ This only applies to the following installation sizes:

- GPP5006IL/5008IL/5010IL
- GPD5006IL/5008IL/5010IL
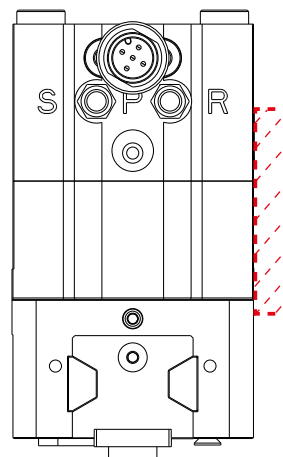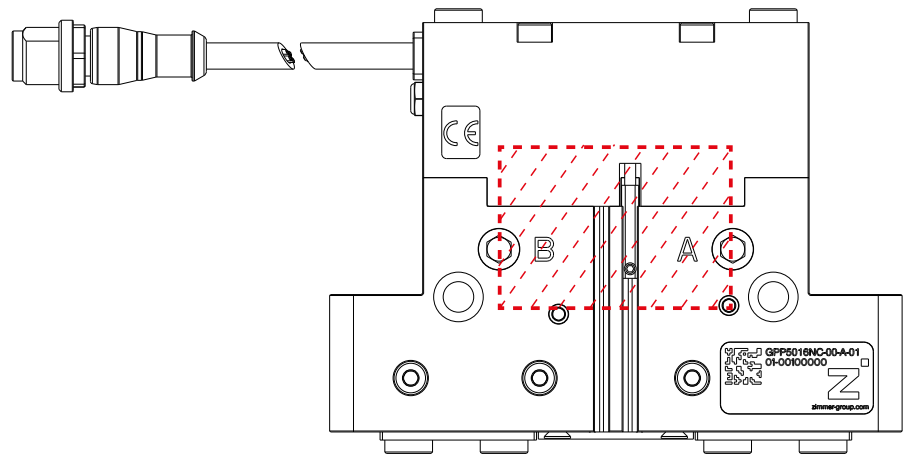
NOTICE:

The position sensor itself must never be covered up by ferromagnetic attachment or design elements.

7.10 Installing accessories

NOTICE:

Before installing an accessory, make sure it is suitable for use with the selected variant.

For information on all available accessories, please visit our website.

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

8. Commissioning

8.1 "IO-Link" commissioning

8.1.1 Process data

The option exists for the gripper to be controlled only by the process data transmitted in each cycle.

Name	Data type
ControlWord	UINT 16
DeviceMode	UINT 8
Workpiece No.	UINT 8
TeachPosition	UINT 16
Reserved	UINT 8
PositionTolerance	UINT 8
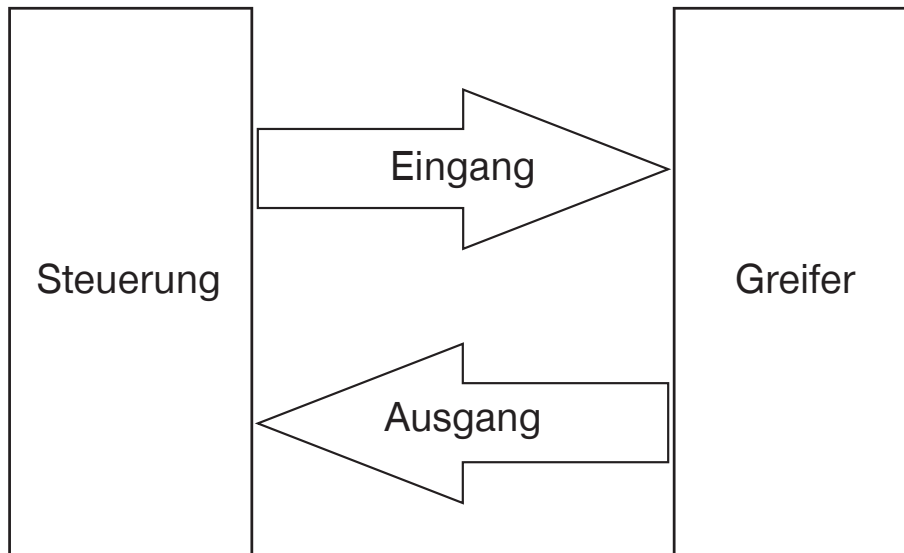
Name	Data type
StatusWord	UINT 16
Diagnosis	UINT 16
ActualPosition	UINT 16

Outputs: Process data from the IO-Link master to the gripper!

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8.1.2 Process data control system

In general, it is only possible to control the gripper by means of the cyclically exchanged process data.

However, this is possible only if the value 0 is transmitted in the "WorkpieceNo" process data word.

When the gripper is restarted, it is mandatory to write a "1" in the "ControlWord" first. Only then is the gripper active and able to move.

Step 1:

All other process data must be configured to the desired values. These values are loaded in the gripper as the current data set using a "1" in the "ControlWord." The workpiece must then be inserted and the bit toward "WorkPosition" (= 512) must be set using the "ControlWord." This command makes the gripper move toward the "WorkPosition" until it is stopped by the workpiece or the end position has been reached.

Step 2:

The "Actual position" can now be read from the incoming process data. This value can be written to the "TeachPosition" of the outgoing process data in order to teach in the current position as the new workpiece position.

At the same time, a "5" should be transferred in the "PositionTolerance" parameter for the standard size of the "Teach position" tolerance. If these values have been entered in the process data, a "1" can be written in the "ControlWord" to tell the gripper again that these values are to be accepted into the currently valid data set.

Step 3:

After the gripper recognizes the data set as the current valid data set, it uses the "StatusWord" (= 512) to provide corresponding feedback on a whether it has gripped the taught-in workpiece.

8.1.3 IODD import

► Importing the IODD (device description) into the control system.

⇨ Go to our website

⇨ Select the desired gripper and download the corresponding .zip file via the "Download IODD" link.

⇨ The ".zip file" is required for importing into the control system.

When the hardware configuration is complete and the IO-Link connection to the gripper is established, some data must be visible in the process input data.

⇨ Some control systems demand a byte swap to bring this process data into a logical sequence.

► To determine whether a byte swap is necessary, you can view bit 6 (GripperPLCActive) in the "StatusWord".

► For this purpose, it is necessary to determine whether bit 6 is active in the first or second status byte.

⇨ If bit 6 is active in the first byte, the bytes already have the correct sequence and commissioning can be continued.

⇨ If bit 6 is active in the second byte, a byte swap still has to be applied here.

⇨ For further information, refer to the "StatusWord" section.

INFORMATION:

It is mandatory to verify the process data!

The gripper is controlled via IO-Link by means of the cyclical process data as well as the acyclical service data with a cycle time of 5 ms.

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8.2 "Handshake" data transfer method

All process data that is transferred to the gripper and is described in the sections that follow must be transferred using the "handshake" method.

INFORMATION:
This method is referred to as a "handshake" because it enables "clean" transfer.
The process data transfer takes place, so to speak, from "hand to hand" - from the control system to the gripper.

The following steps are required for the "handshake":

The data transfer starts with the transfer of ➔ "ControlWord" = 0x01 ➔ to the gripper.
Subsequently, the response of the gripper must be tested by means of ➔ "Statusbit" 12 = TRUE ➔ (data transfer OK).
Following this, the "ControlWord" = 0 ➔ can be sent, which ends the data transfer.
The operator automatically concludes the data transfer with the ➔ "ControlWord" = 0x00 ➔ and the corresponding response from the gripper via the ➔ "Statusbit" 12 = FALSE ➔.

INFORMATION:
The status of the gripper should be used to verify whether a workpiece has been gripped correctly.
⇨ The position measurement resolution is: 0.01 mm
⇨ The position measurement accuracy is: 0.1 mm
If the "ActualPosition" parameter is used for detecting the workpiece, then fluctuations around the exact value must be taken into consideration during commissioning!

The following steps are required for the "fault acknowledgment":

If the gripper has a malfunction, the error bit is set in the status word.
This malfunction can be reset by sending ➔ "ControlWord" = 0x8000 ➔.

NOTICE:
There are currently no resettable errors present!
Errors disappear when the cause of the error is remedied.
For example: Overheating fault case.

8.2.1 "Initial commissioning" example parameters

For "initial commissioning," observe the following steps:

► Transfer of standard parameters

The following table contains standard parameters for initial commissioning.

Name	Value	Unit
"DeviceMode"	100	Decimal
"WorkpieceNo."	0	Decimal
"PositionTolerance"	20	0.01 mm

These standard parameters are transferred using the "handshake" from Section 8.4.3.

The gripper then reports its operational readiness with ➜ "DiagnosisWord" = 0x00.

8.2.2 "Starting gripping movement: example parameters

The gripper receives the move command by sending the "ControlWord" = 0x0100 ➜ or "ControlWord" = 0x0200 ➜.

When the gripper reaches the corresponding position, this is displayed in the StatusWord as follows:
➜ "Statusbit" 8 or 9 or 10 = TRUE

8.3   Parameter

8.3.1 "ControlWord" parameter

NOTICE:

In the "ControlWord" parameter, only one single bit or the value 0 may be set at a time. Only the values listed in the following table are valid:

Parameter	Decimal value	Hexadecimal value
Data transfer	1	0x1
WritePDU	2	0x2
Teach	8	0x8
Adjust	128	0x80
MoveToBase	256	0x100
MoveToWork	512	0x200
ErrorReset	32768	0x8000

Name	"ControlWord"
Data format	UINT16
Permission	Write
Transfer	Cyclical
Value range	0 to 65535

"ControlWord" structure:

	Bit 15	**Bit 14**	**Bit 13**	**Bit 12**	**Bit 11**	**Bit 10**	**Bit 9**	**Bit 8**
Byte 1	"ErrorReset"	-	-	-	-	-	"Move-ToWork"	"MoveTo-Base"
	Bit 7	**Bit 6**	**Bit 5**	**Bit 4**	**Bit 3**	**Bit 2**	**Bit 1**	**Bit 0**
Byte 2	"Adjust"	-	-	-	"Teach"	"ResetDirec-tionFlag"	"WritePDU"	"DataTrans-fer"

Bit 0: "DataTransfer"

► Setting this bit causes the gripper to acquire the data transmitted in the process data ("WorkpieceNo" = 0) or the data stored in the workpiece data records ("WorkpieceNo = 1 to 32) as the active data set.

Bit 1: "WritePDU"

► Setting this bit communicates to the gripper that it should write the current process data to the selected tool recipe.

Bit 2: "ResetDirectionFlag"

► Setting this bit informs the gripper that the direction flag needs to be reset.

► This makes a repeated movement to a position possible.

► This is logical during a switchover of workpiece recipes.

Bit 3: "Teach"

► Setting this bit informs the gripper to save the current position as the "TeachPosition" in the selected "WorkpieceNo".

INFORMATION:

This only works if there is no "0" that is transmitted in the workpiece number!

Bit 7: "Adjust"

► If no other bit is set in the control word, the "AdjustBit" can be used to execute a readjustment of the end positions of the jaw.

Bit 8: "MoveToBase"

► Setting this bit communicates to the gripper that it should move towards the "BasePosition".

Bit 9: "MoveToWork"

► Setting this bit communicates to the gripper that it should move towards the "WorkPosition".

Bit 15: "ErrorReset"

► This bit can be used to acknowledge all errors that can be reset and thus reset them.

► You can find out whether an error is present from the error list.

INFORMATION:

For further information, please refer to the "Error diagnosis" section.

8.3.2 "DeviceMode" parameter

The universal operation drive mode can be selected using "DeviceMode."

"DeviceMode"	Function
2	Shut off the valves
100	Universal mode
109	Ignore position error

Name	"DeviceMode"
Data format	UINT8
Permission	Write
Transfer	Cyclical
Value range	0 to 255

INFORMATION:

All transmitted process data must be acquired using the "ControlWord" = 0x01 "DataTransfer."

8.3.3 "WorkpieceNo" parameter

This workpiece number is used for selecting the previously stored workpiece data, as well as for selecting the "Workpiece-No" data record in which the current process data is stored.

The current process data "TeachPosition," "DeviceMode," "PositionTolerance" and the specified gripping force can be stored by setting bit 2 "Store process data in workpiece data." This "WorkpieceNo" data set enables individual workpieces to be taught-in to the gripper very quickly.

> **INFORMATION:**
>
> Example:
> To use the data stored in workpiece record 3 ("PositionTolerance," "TeachPosition," "GripForce" and "Device-Mode"), a 3 (WorkpieceNo. = 3) must be transmitted in the workpiece number of the process data.

Name	"WorkpieceNo"
Data format	UINT8
Permission	Write
Transfer	Cyclical
Value range	0 to 32

Index	Name	Data format	Access right	Values	Description
0x800 to 0x81F (2048 to 2079)	Workpiece number record 1 to 32	-	-	1 to 32	Each main index (0x800 to 0x81F) contains the four subindexes listed below (0x01 to 0x05)
Subindex					
1	"DeviceMode"	UINT8	Read	100 = Universal operation (inward or outward gripping, both movements at the same speed) 109 = Ignore position error	
2	"TeachPosition"	UINT16	Read	0 to full stroke of the gripper in "mm x 100."	This value can be used to change the workpiece position via the cyclical data. Example: "TeachPosition" = 2010 corresponds to a stroke of 20.10 mm
3	Tolerance of the "TeachPosition"	UINT8	Read	This variable is used to configure the position tolerance with a resolution of 0.01 mm. Thus the value range of 0 to 255 can be used to set a maximum tolerance of 2.55 mm in both directions.	This value can be used to define a tolerance for the set "TeachPosition."

8.3.4 "TeachPosition" parameter

"TeachPosition" is used to tell the gripper at which position the workpiece is expected. The "PositionTolerance" functions around this position. Thus the gripper can distinguish whether a correct or incorrect workpiece has been gripped. Confirmation that the correct workpiece has been gripped is communicated to the control system via the "StatusWord" parameter. If the detection is correct, the "Teach" bit is set, thereby giving the user the option to monitor this work step.

By means of the position measuring system, it is possible to achieve a "TeachPosition" accuracy of +/- 0.05 mm.

The following values are to be used:

Product	Stroke per gripper jaw	"BasePosition"	"WorkPosition"	"TeachPosition"
GPP/GPD5006IL	6 mm	0	1200	0 to 1200
GPP/GPD5008IL	8 mm	0	1600	0 to 1600
GPP/GPD5010IL	10 mm	0	2000	0 to 2000
GPP/GPD5013IL	13 mm	0	2600	0 to 2600
GPP/GPD5016IL	16 mm	0	3200	0 to 3200
GPP/GPD5025IL	25 mm	0	5000	0 to 5000

Name	"TeachPosition"
Data format	UINT16
Permission	Write
Transfer	Cyclical
Value range	0 to max. jaw stroke of the gripper

Example: GPP5006IL

- Full stroke of 6 mm per gripper jaw.
- "BasePosition" = 0
- "WorkPosition" = 1200
  - ⇨ (2*6*100 ➡ 2 gripper jaws * 3 mm stroke per gripper jaw * Resolution at 1/100 mm)
- The "TeachPosition" can acquire values from 0 to 1200.

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8.3.5 "PositionTolerance" parameter

The PositionTolerance" parameter can be used to transmit the currently desired position detection tolerance of the work-piece to the gripper. The entry is in mm/100 and has the same effect in the "+" direction and "-" direction.

INFORMATION:

All transmitted process data must be acquired using the "ControlWord" = 0x01 "DataTransfer."

Name	"PositionTolerance"
Data format	UINT8
Permission	Write
Transfer	Cyclical
Value range	0 to 255

WARNING:

Non-compliance may result in minor to serious injuries

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

► Switch off the power supply to the machine before all work.

► Secure the machine against being switched on unintentionally.

► Check the machine for any residual energy.

8.3.6 "StatusWord" parameter

	Bit 15	Bit 14	Bit 13	Bit 12	Bit 11	Bit 10	Bit 9	Bit 8
Byte 1	"Error"	"Control-Word" 0x200	"Control-Word" 0x100	"DataTrans-ferOK"	"Undefined-Position"	"WorkPosi-tion"	"TeachPosi-tion"	"BasePosi-tion"
	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Byte 0	-	"GripperPLC active"	-	-	-	-	-	-

Bit 6: "GripperPLCActive"

► Active as soon as the gripper has booted up after the cold boot.

► This bit can be used to verify a "byte swap."

Bit 8: "BasePosition"

► Active if the gripper is set to "BasePosition."

Bit 9: "TeachPosition"

► Active if the gripper is set to "TeachPosition."

Bit 10: "WorkPosition"

► Active if the gripper is set to "WorkPosition."

Bit 11: "UndefinedPosition"

► Active if the gripper is not set to any taught-in position.

Bit 12: "DataTransferOK"

► This bit signals the successful data transfer, which is initiated with the "ControlWord" = 1 (DataTransfer).

► Once the data from the gripper has been taken over by the parameter "ControlWord" = 1 (decimal), this bit is active.

Bit 13: "ControlWord 0x100"

► This bit is a direction flag and is active when the previous movement order was in the direction of the "BasePosition."

Bit 14: "ControlWord 0x200"

► This bit is a direction flag and is active when the previous movement order was in the direction of the "WorkPosition."

Bit 15: "Error"

► Error in the gripper.

► If this bit is active, the error message can be determined using the "Diagnosis" parameter.

The following steps are required for the "fault acknowledgment":

If the gripper has a malfunction, the error bit is set in the status word.
This malfunction can be reset by sending ➜ "ControlWord" = 0x8000 ➜.

INFORMATION:

It is advisable to use the "StatusWord" to verify correct gripping!

The "TeachPosition" tolerance can be adjusted in another process parameter.

For sensing the correct position via the ACTUAL position, the tolerances and fluctuations of the value must be observed during programming!

Name	"StatusWord"
Data format	UINT16
Permission	Read
Transfer	Cyclical
Value range	0 to 65535

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8.3.7 "Diagnosis" parameter

The value returned in the "Diagnosis" parameter corresponds to the error code.

⇨ Refer to the "Error diagnosis" section

Name	"Diagnosis"
Data format	UINT16
Permission	Read
Transfer	Cyclical
Value range	0 to 65535

8.3.8 "ActualPosition" parameter

The parameter "ActualPosition" corresponds to the current position of the gripper jaws relative to the full stroke.

The value is specified with a resolution of 0.01 mm.

The values can move between the "BasePosition" (minimum values) and the "WorkPosition" (maximum values).

With the position measuring system, it is possible to achieve a position accuracy of +/- 0.05 mm.

Product	Stroke per gripper jaw	"BasePosition"	"WorkPosition"	"TeachPosition"
GPP/GPD5006IL	6 mm	0	1200	0 to 1200
GPP/GPD5008IL	8 mm	0	1600	0 to 1600
GPP/GPD5010IL	10 mm	0	2000	0 to 2000
GPP/GPD5013IL	13 mm	0	2600	0 to 2600
GPP/GPD5016IL	16 mm	0	3200	0 to 3200
GPP/GPD5025IL	25 mm	0	5000	0 to 5000

Name	"ActualPosition"
Data format	UINT16
Permission	Read
Transfer	Cyclical
Value range	0 to max. jaw stroke of the gripper

INFORMATION:

The "StatusWord" of the gripper should be used to check whether a workpiece has been gripped correctly.

⇨ The position measurement resolution is: 0.01 mm

⇨ The position measurement accuracy is: 0.05 mm

If the "ActualPosition" parameter is used for detecting the workpiece, then fluctuations around the exact value must be taken into consideration during commissioning!

8.3.9 Sensing the end position

Two bits in the "status" parameter give feedback about the end positions.

The "BasePosition" bit (status = 768) is set when the base position is reached.

Accordingly, the "WorkPosition" bit (status = 1024) is set when the "WorkPosition" is reached.

The sensing of the end positions of the gripper is preset at the factory to the maximum possible stroke of the gripper.

For special gripper jaws, if necessary, the end positions can be reset using an automated traversing routine. This means that the "WorkPosition" or "BasePosition" will reference itself again accordingly.

► For this purpose, the "AdjustBit" in the "ControlWord" has to be set to 2048 for at least 2 seconds in the "ControlWord."

⇨ It is a requirement that there are no additional bits set in the "ControlWord."

If this bit is canceled before the end of the traversing routine, the procedure must be repeated since the end positions are not correctly determined.

> **WARNING:**
>
> When the bit is set, a movement is immediately triggered at the gripper!
>
> Risk of injury
>
> ► Before setting the bit, check whether the movement range of the gripper is clear.

8.4   Service parameters

8.4.1 "Status" 0x40

This parameter can be used to read out the "StatusWord" of the gripper.

Name	"StatusWord"
Data format	UINT16
Permission	Read
Transfer	Acyclical

8.4.2 "Diagnosis" 0x41

This parameter can be used to read out the "DiagnosisWord" of the gripper.
Notice: Corresponds to the process data field.

Name	"Diagnosis"
Data format	UINT16
Permission	Read
Transfer	Acyclical

8.4.3 "CycleCounter" 0x42

This parameter can be used to read out the total number of cycles of the gripper. During each gripping cycle, this parameter is incremented.

Name	"CycleCounter"
Data format	UINT32
Permission	Read
Transfer	Acyclical

8.4.4 "SystemTemperature" 0x43

This parameter can be used to read out the current temperature of the electronics of the gripper.

Name	"SystemTemperature"
Data format	UINT16
Permission	Read
Transfer	Acyclical

8.4.5 "ControlWord" 0x44

This parameter can be used to read out the current "ControlWord" of the electronics of the gripper.

Name	"ControlWord"
Data format	UINT16
Permission	Read
Transfer	Acyclical

8.4.6 "ErrorCode" 0x45

This parameter can be used to read out the fault status as a string.

Name	"ErrorCode"
Data format	String
Permission	Read
Transfer	Acyclical

8.4.7 "ErrorCounter" 0x46

Returns the number of the faults that have occurred since the last restart.

Name	"ErrorCounter"
Data format	UINT32
Permission	Read
Transfer	Acyclical

8.4.8 "Operating seconds counter" 0x47

This parameter can be used to read out the current operating time of the electronics of the gripper within seconds.

Name	"Operating seconds counter"
Data format	UINT32
Permission	Read
Transfer	Acyclical

8.4.9 "ActualPosition" 0x100

The "ActualPosition" corresponds to the current position of the gripper jaws with respect to the full stroke of the gripper, scaled to 1/100 mm.

The "ActualPosition" can be influenced by a few positions, depending on the orientation of the gripper to the earth's magnetic field.

Name	"ActualPosition"
Data format	UINT16
Permission	Read
Transfer	Acyclical
Value range	0–max. jaw stroke of the gripper

8.4.10   "TeachPosition" 0x101

This parameter can be used to read out the "TeachPosition" of the gripper that is currently being transmitted.

Name	"TeachPosition"
Data format	UINT16
Permission	Read
Transfer	Acyclical

8.4.11   "WorkpieceNo" 0x102

This parameter can be used to read out the workpiece number of the gripper that is currently being transmitted.

Name	"WorkpieceNo"
Data format	UINT8
Permission	Read
Transfer	Acyclical

8.4.12   "DeviceMode" 0x103

This parameter can be used to read out the driving mode of the gripper that is currently being transmitted.

Name	"DeviceMode"
Data format	UINT8
Permission	Read
Transfer	Acyclical

8.4.13   "PositionTolerance" 0x104

This parameter can be used to read out the tolerance of the "TeachPosition" of the gripper that is currently being transmitted.

Name	"PositionTolerance"
Data format	UINT8
Permission	Read
Transfer	Acyclical

8.4.14 "Current operating pressure" 0x110

This parameter can be used to read out the current operating pressure of the gripper [in 1/10 bar].

Name	"ActualPressure"
Data format	UINT8
Permission	Read
Transfer	Acyclical

8.4.15 "Bottom pressure switch" 0x111

This can be used to define the minimum operating pressure (in increments of 0.1 bar) of the gripper, below which a diagnostic message is output.

Name	"Low Pressure Error Threshold"
Data format	UINT8
Permission	Read/write
Transfer	Acyclical

8.4.16 "Top pressure switch" 0x112

This can be used to define the maximum operating pressure of the gripper (in increments of 0.1 bar), above which a diagnostic message is output.

Name	"High Pressure Error Threshold"
Data format	UINT16
Permission	Read
Transfer	Acyclical

8.4.17 "PressureHysteresis" 0x113

This parameter can be used to specify the hysteresis-range of the pressure switch [in increments of 0.01 bar].

Name	"PressureHysteresis"
Data format	UINT8
Permission	Read/write
Transfer	Acyclical

8.4.18 "BasePosition/WorkPosition switching thresholds" 0x114

This parameter can be used to change the position switching thresholds for the Base and WorkPosition.

Name	Base/WorkPosition switching thresholds
Subindex 1	From the BasePosition to the outside
Subindex 2	From the BasePosition to the inside
Subindex 3	From the WorkPosition to the inside
Subindex 4	From the WorkPosition to the outside
Subindex 0	All 4 values at once
Data format	UINT16 or UINT16[4]
Permission	Read/write
Transfer	Acyclical

8.4.19 "MovementDetection" 0x115

This can be used to adjust the threshold of the movement detection.

Name	"MovementThreshold"
Data format	UINT16
Permission	Read/write
Transfer	Acyclical

8.4.20 "HallErrorThreshold" 0x118

This can be used to set the trigger threshold of diagnosis 0x404 (error of the position sensor).

This information is specified as a one-sided error of the "Actual Position" ± Δ (AP).

Name	"Hall Error Threshold"
Data format	UINT16
Value range	0 to 500
Unit	0.01 mm
Permission	Read/write
Transfer	Acyclical

9. Service parameters

Service parameters are exchanged acyclically in each communication cycle. This data is exchanged only upon request of the IO-Link master. Transmission of the acyclical data occurs over multiple communication cycles.

Display of the service parameters:

Parameter	Name	Data format	Permission	Transfer
0x40	"StatusWord"	UINT16	Read	Acyclical
0x41	"Diagnosis"	UINT16	Read	Acyclical
0x42	"CycleCounter"	UINT32	Read	Acyclical
0x43	"SystemTemperature"	INT16	Read	Acyclical
0x44	"ControlWord"	UINT16	Read	Acyclical
0x45	"ErrorCode"	STRING	Read	Acyclical
0x46	"ErrorCounter"	UINT32	Read	Acyclical
0x47	"OperationCounter"	UINT32	Read	Acyclical
0x100	"ActualPosition"	UINT16	Read	Acyclical
0x101	"TeachPosition"	UINT16	Read	Acyclical
0x102	"WorkpieceNo."	UINT8	Read	Acyclical
0x103	"DeviceMode"	UINT8	Read	Acyclical
0x104	"PositionTolerance"	UINT8	Read	Acyclical
0x110	"ActualPressure"	UINT8	Read	Acyclical
0x111	"LowPressureError-Threshold"	UINT8	Read/write	Acyclical
0x112	"HighPressureError-Threshold"	UINT8	Read/write	Acyclical
0x113	"PressureHysteresis"	UINT8	Read/write	Acyclical
0x114	"BasePosition"/"Work-Position" switching thresholds	UINT16[4]	Read/write	Acyclical
0x115	"MovementThreshold"	UINT16	Read/write	Acyclical
0x118	"HallErrorThreshold"	UINT16	Read/write	Acyclical

10. Error diagnosis

10.1 Troubleshooting display

Error code	Error	Possible cause	Measure
0x0000	No error	-	-
0x0100	Actuator power supply is not present or too low.	• Actuator power supply not connected • Cable break • Actuator power supply insufficient	▶ Check the actuator power supply
0x0101	Max. permitted temperature exceeded.	• Surrounding temperature too high • Overload of the gripper	▶ Ensure sufficient ventilation/cooling/connection
0x0102	Temperature below minimum permitted temperature.	• Ambient temperature is too low	▶ Ensure sufficient operating temperature
0x0104	Operating pressure too low.	• Operating pressure is not connected • Operating pressure of the device is too low	▶ Check the pressure supply
0x0105	Operating pressure too high.	• Maximum operating pressure exceeded • Operating pressure of the device is too high	▶ Check the pressure supply ▶ Install a pressure regulator
0x0200	IO-Link communication interrupted.	• n.a.	▶ n.a.
0x0300	"ControlWord" implausible.	• Multiple bits were set in the "ControlWord"	▶ In the "ControlWord," only one single bit may be set ▶ Check the "ControlWord"
0x0301	"TeachPosition" implausible.	• Transmitted "Teach position" is not correct • Modified process data has not been taken over	▶ Check the transmitted process data ▶ Apply the process data via a "handshake"
0x0304	"TeachTolerance" implausible.	• Transmitted tolerance value is not correct • Modified process data has not been taken over	▶ Check the transmitted process data ▶ Apply the process data via a "handshake"
0x0306	"DeviceMode" not available.	• Transmitted "DeviceMode" is incorrect • Modified process data has not been taken over	▶ Check the transmitted process data ▶ Apply the process data via a "handshake"

Error code	Error	Possible cause	Measure
0x0307	Movement order cannot be executed.	• Multiple move commands in the same direction • Move command transferred despite existing error	▶ Reset the direction flag ("ResetDirectionFlag" in the "ControlWord") and resend the move command
0x0308	Workpiece number not available.	• Transmitted workpiece number is outside the permitted range 0 to 32 • Modified process data has not been taken over	▶ Check the transmitted process data ▶ Apply the process data via a "handshake"
0x0309	"TeachPosition" does not correspond to the active value in the gripper.	• Process data sent by the master has been changed	▶ Confirm the newly transferred process data with a "handshake" - "ControlWord" = 0x1
0x030F	The "TeachPosition" tolerance does not correspond to the active value in the gripper.	• Process data sent by the master has been changed	▶ Confirm the newly transferred process data with a "handshake" - "ControlWord" = 0x1
0x0310	"DeviceMode" sent by the master does not correspond to the active value in the gripper.	• Process data sent by the master has been changed	▶ Confirm the newly transferred process data with a "handshake" - "ControlWord" = 0x1
0x0311	The workpiece number sent by the master does not correspond to the active value in the gripper.	• Process data sent by the master has been changed	▶ Confirm the newly transferred process data with a "handshake" - "ControlWord" = 0x1
0x0312	Initial status after a gripper restart	• After a cold boot, a one-time data transfer via "ControlWord" = 1 must be performed	▶ Confirm the newly transferred process data with a "handshake" - "ControlWord" = 0x1
0x0404	Gripper jaw hall sensor error	• Malfunction of the integrated position sensor	▶ Check whether the sensor is being influenced by an external magnetic field ▶ Ensure the necessary distance between the sensor and ferromagnetic materials ▶ 📞 Zimmer Customer Service

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11. Elimination of errors

Inherently safe engineering:

The safety function is implemented using movable parts that are connected to each other via a form fit.

No indirect triggering of the safety function caused by coupler elements (sensors, etc.).

Proven technology:

Methods in accordance with ISO 139491, Annex C, C.2 "Methods of good engineering practice."

⇨ MTTFd value = 150 years

⇨ Failure of spring ④ "on the safe side"

- No safety function failure

- Fatigue strength confirmed by the manufacturer

⇨ Failure of spring ④

- Fatigue strength confirmed by the manufacturer

⇨ Connecting rod broken: Gripper jaw is no longer drawn inwards = force buildup no longer possible

Wear resistance:

⇨ Verification in above-mentioned endurance test that any potential wear does not impede the safety function.

⇨ Use of wear-resistant materials for the safety-relevant components.

⇨ Material of the gripper finger: 16MnCr5

12. Gripping force charts

INFORMATION:

For information on the gripping force charts, please visit our website.

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

13. Accessories/scope of delivery

INFORMATION:

If any accessories not marketed or authorized by Zimmer GmbH are used, the function of the gripper cannot be guaranteed.
The accessories from Zimmer GmbH are specifically fitted for the individual gripper.
Please refer to our website for information on corresponding accessories.

14. Maintenance

Maintenance-free operation of the gripper is guaranteed for up to 30 million cycles.

The maintenance interval may shorten under the following circumstances:

Dirty environment

Improper use and use that does not comply with the power specifications.

Observe ambient temperature; lubricants harden faster!

Even though the gripper is, as mentioned, maintenance-free, perform a regular visual inspection to check for any corrosion, damage or contamination.

We recommend using the Zimmer Customer Service for maintenance and the replacement of seals.

Dismantling and reassembling the gripper without authorization may result in complications, as special installation equipment is required in some cases.

Zimmer GmbH shall not be liable in the event of unauthorized dismantling and reassembling of the gripper or in the event of any malfunction or damage resulting from this.

15. 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 superordinate machine unit, care must be taken during transport to ensure that no unintentional movements can occur. 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.

⇨ Package the product.

⇨ During storage, it must be kept away from direct sunlight.

► Clean all components. There must be no soiling left on the components.

► Visually inspect all of the components.

► Remove all foreign substances.

► Properly remove potential corrosion spots.

► Close electrical connections using suitable covers.

16. Decommissioning and disposal

INFORMATION:

When the gripper reaches the end of its operational phase, it can be completely disassembled and disposed of. The gripper must be completely removed from the machine or system.
The gripper can be disassembled and properly disposed of according to material groups. When disposing of it, observe the locally applicable environmental regulations and codes and regulations for disposal.
Zimmer Customer Service is available to provide you with assistance if you have any further questions.

17. RoHS declaration

... in terms of the EU Directive 2011/65/EU

Name and address of the manufacturer:

Zimmer GmbH

📍 Im Salmenkopf 5
   D-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: **2-jaw parallel gripper/3-jaw concentric gripper, pneumatically intelligent**

Type designation: **GPP/GPD5000IL series**

conform to the requirements of the directive in its design and the version we put on the market.

Authorized representative for the compilation of relevant technical documents

Michael Hoch	See manufacturer's address	Rheinau, Germany, 2020-03-31	Martin Zimmer
First name, last name	Address	(Place and date of issuance)	(Legally binding signature) Managing Partner

18. REACH declaration

... in terms of the EU Regulation 1907/2006

Name and address of the manufacturer:

Zimmer GmbH

📍 Im Salmenkopf 5
   D-77866 Rheinau, Germany

📞 +49 7844 9138 0

🖶 +49 7844 9138 80

✉ www.zimmer-group.com

REACH stands for Registration, Evaluation, Authorisation and Restriction of Chemicals.

A full declaration of REACH can be obtained from the manufacturer due to the duty to notify in accordance with Art. 33 of the REACH regulation ("Duty to communicate information on substances in articles").

Authorized representative for the compilation of relevant technical documents

Michael Hoch	See manufacturer's address	Rheinau, Germany, 2020-03-31	Martin Zimmer
First name, last name	Address	(Place and date of issuance)	(Legally binding signature) Managing Partner

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19. 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

+49 7844 9138 0

+49 7844 9138 80

www.zimmer-group.com

We hereby declare that the incomplete machines described below

Product designation: **2-jaw parallel gripper/3-jaw concentric gripper, pneumatically intelligent**
Type designation: **GPP/GPD5000IL series**

conforms 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.

DIN EN ISO 12100:2011-03	Safety of machinery – General principles for design – Risk assessment and risk reduction
DIN EN 60204-1	Safety of machinery – Electrical equipment of machines, part 1
DIN EN ISO 13849-1	Safety of machinery – Safety-related parts of control systems
DIN EN ISO 13849-2	Safety-related parts of control systems

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.

Commissioning of the incomplete machine is prohibited until it has been found that—where applicable—the machine in which the above-mentioned incomplete machine is to be installed complies with the Machinery Directive (2006/42/EC).

Authorized representative for the compilation of relevant technical documents

Kurt Ross	See manufacturer's address	Rheinau, Germany, 4/30/2020	Martin Zimmer
First name, last name	Address	(Place and date of issuance)	(Legally binding signature) Managing Partner

20. 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
D-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: **2-jaw parallel gripper/3-jaw concentric gripper, pneumatically intelligent**

Type designation: **GPP/GPD5000IL 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 standard, Immunity for industrial environments
DIN EN 61000-6-4	EMC Generic standard, 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, 4/30/2020	Martin Zimmer
First name, last name	Address	(Place and date of issuance)	(Legally binding signature) Managing Partner

EN / 2020-07-20

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42 Zimmer GmbH · Im Salmenkopf 5 · ⚲ 77866 Rheinau, Germany · 📞 +49 7844 9138 0 · 🖷 +49 7844 9138 80 · www.zimmer-group.com