



Hand in hand for tomorrow



## Product data sheet

Angular gripper PWG-plus 125

# PWG-plus

Angular gripper

## Reliable. Robust. Compact.

## Universal gripper PWG-plus

Robust 2-finger angular gripper with oval piston and bone drive

### Field of application

For universal use in clean and slightly dirty environments.

### Advantages – Your benefits

**Variable top jaw design** since grippers are available in jaw version, but also in finger version via intermediate jaws

**Gripping force maintenance** for a high process reliability

**Stroke limitation while opening** optional available for confined spaces and short cycle times

**Can be used in tough environments** due to the gripper's sturdy set-up



Sizes  
Quantity: 8



Weight  
0.13 .. 13.6 kg



Gripping moment  
3.32 .. 1025 Nm



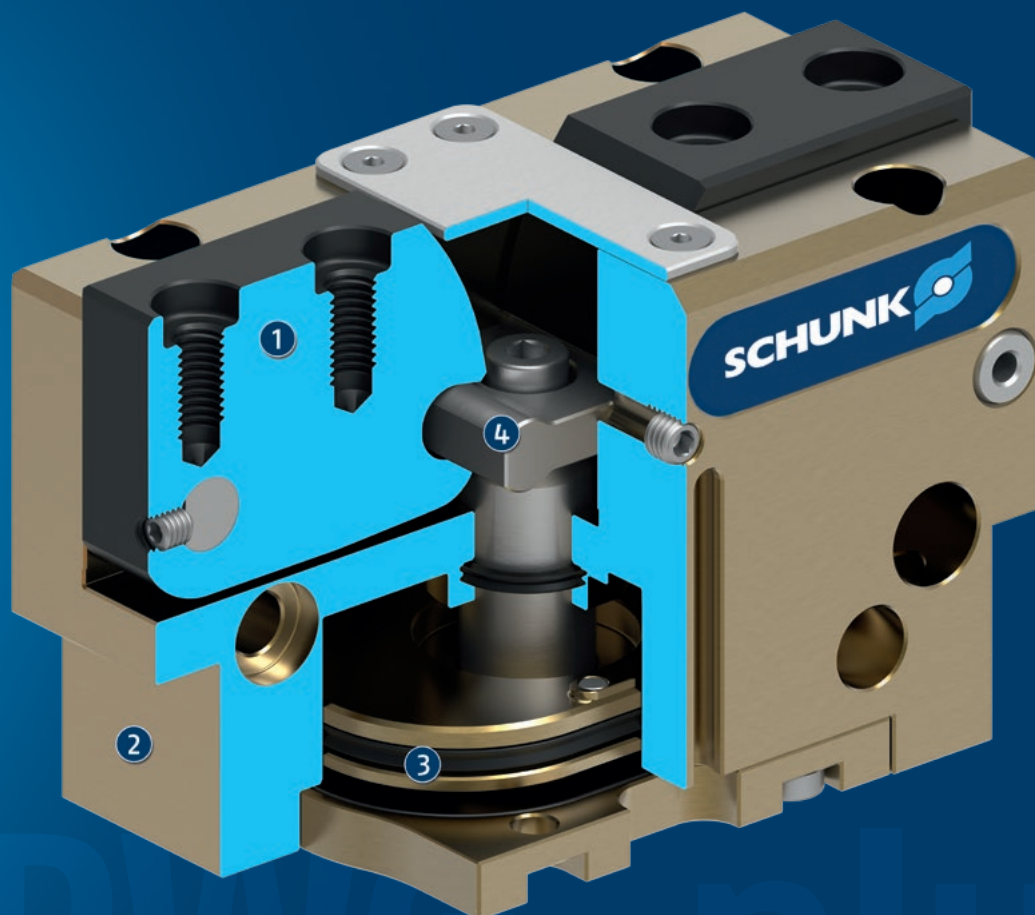
Angle per jaw  
15°



Workpiece weight  
0.4 .. 23.13 kg

## Functional description

The kinematics transforms this vertical motion into a synchronous and rotatory gripping motion of the base jaws.



① **Base jaw**  
for the connection of workpiece-specific gripper fingers

② **Housing**  
is weight-optimized due to the use of high-strength aluminum alloy

③ **Drive**  
pneumatic oval piston for maximum driving force

④ **Lever mechanism**  
for precise and synchronized gripping

## General notes about the series

**Operating principle:** force-guided lever gear

**Housing material:** Aluminum

**Base jaw material:** hard-anodized, high strength aluminum

**Actuation:** pneumatic, with filtered compressed air as per ISO 8573-1:2010 [7:4:4].

**Warranty:** 24 months

**Service life characteristics:** on request

**Scope of delivery:** Centering sleeves, O-rings for direct connection, fixed throttle (for size 50–200), safety information (product-specific instructions available online)

**Gripping force maintenance:** possible by using the version with mechanical gripping force maintenance or pressure maintenance valve SDV-P

**Closing moment:** is the arithmetic sum of the individual moment applied to each jaw.

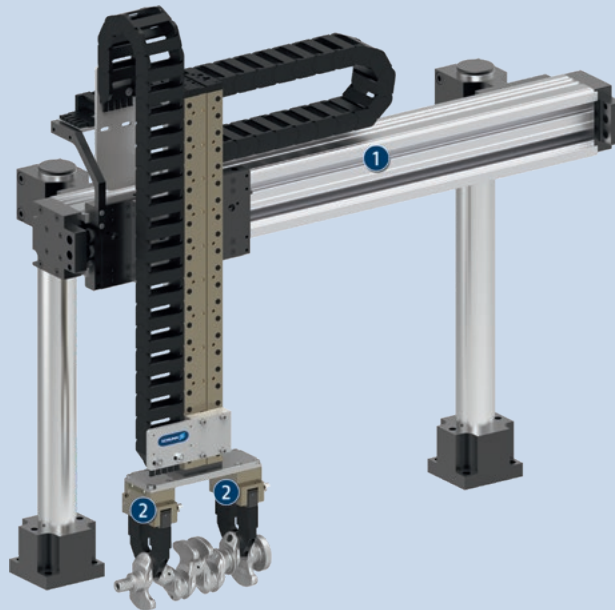
The indicated closing moment will be reached at an opening angle of 0°. A detailed closing moment course depending on the opening angle can be taken out of the diagram "closing moment course".

**Finger length:** is measured from the reference surface as the distance P in direction to the main axis.

**Repeat accuracy:** is defined as a distribution of the end Position for 100 consecutive strokes.

**Workpiece weight:** is calculated for force-fit gripping with a coefficient of static friction of 0.1 and a safety factor of 2 against workpiece slippage at acceleration due to gravity g. For form-fit or capture gripping, there are significantly higher permissible workpiece weights.

**Closing and opening times:** are movement times of the base jaws only, without application-specific gripper fingers. Valve switching times, hose fill times, or PLC reaction times are not included, and are to be considered when cycle times are calculated.



## Application example

Cross gantry for light to medium-weight components.

① Line gantry LPP, pneumatic

② 2-finger angular gripper PWG-plus

## SCHUNK offers more ...

The following components make the product even more productive – the suitable addition for the highest functionality, flexibility, reliability, and controlled production.



Compensation unit



Manual change system



Tolerance compensation unit



Pressure maintenance valve



Flexible position sensor



Magnetic switches



Inductive proximity switch

① For more information on these products can be found on the following product pages or at [schunk.com](https://www.schunk.com).

## Options and special information

**Gripping force maintenance version AS/IS:** The mechanical gripping force maintenance version ensures minimum gripping force even in the event of a pressure drop. In the AS/S version this acts as a closing force, in the IS version as an opening force.

**High-temperature version VHT:** for use in hot environments

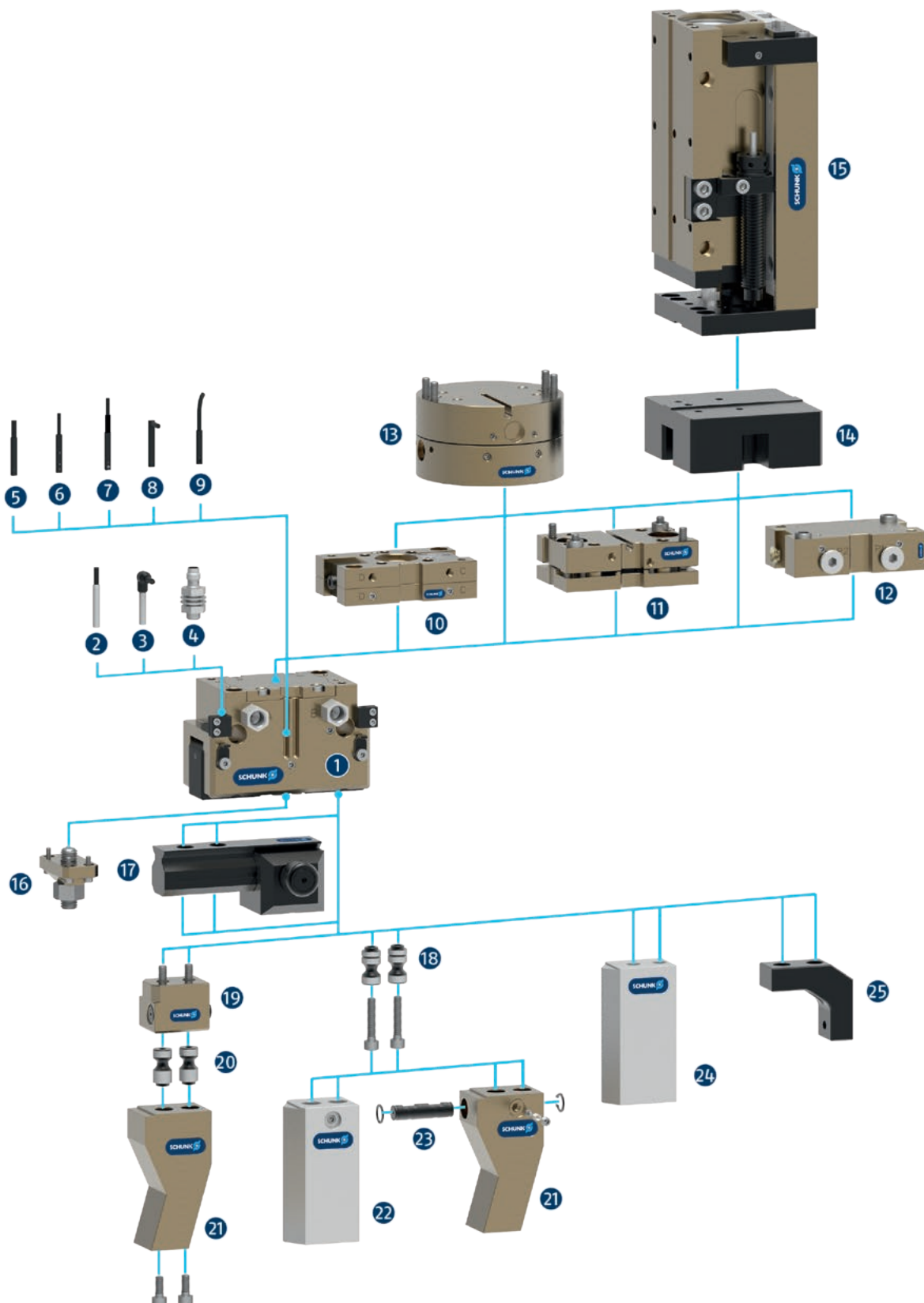
**Power booster version KVZ:** if higher gripping forces are required

**Additional versions:** Various options can be combined with each other. Numerous additional options are also available – just tell us what your task is!

**Food-grade lubrication:** The product contains food-compliant lubricants as standard. The requirements of EN 1672-2:2020 are not fully met. The relevant NSF certificates are available at <https://info.nsf.org/USDA/Listings.asp> using the lubricant information in the operating manual.

## SCHUNK gripper PWG-plus

### Overview Accessories



- 1 **PWG-plus**  
Universal 2-finger angular gripper with a high gripping force

### Sensor system

- 2 **IN ...**  
Inductive proximity switch with molded cable and straight cable outlet
- 3 **IN ...-SA**  
Inductive proximity switch with molded cable and lateral cable outlet
- 4 **IN-C 80**  
Inductive proximity switch, directly pluggable
- 5 **MMS 22**  
Magnetic switch with straight cable outlet for monitoring a position  
  
**MMS 22-PI1**  
Magnetic switch with straight cable outlet for monitoring a freely programmable position
- 6 **MMS 22-PI2**  
Magnetic switch with straight cable outlet for monitoring two freely programmable positions
- 7 **MMS 22-PI1-HD**  
MMS 22-PI1 in robust design  
  
**MMS 22-PI2-HD**  
MMS 22-PI2 in robust design
- 8 **MMS 22-SA**  
Magnetic switch with lateral cable outlet for monitoring a position  
  
**MMS 22-PI1-SA**  
Magnetic switch with side cable outlet for monitoring a freely programmable position
- 9 **MMS-P**  
Magnetic switch with straight cable outlet for monitoring two freely programmable positions

### Complementary products

- 12 **SDV-P-E-P**  
Pressure maintenance valve for temporary force and position maintenance

- 13 **AGE**  
Compensation unit for compensation of large tolerances along the X and Y axes
- 14 **ASG**  
Adapter plate for combining various automation components in the modular system
- 15 **CLM**  
Linear module with pneumatic drive and scope-free pre-loaded junction rollers
- 16 **HVE**  
Sleeve for protection against dirt

### Finger Accessories

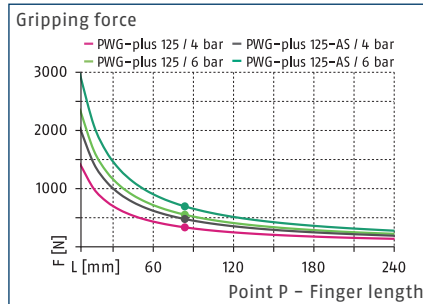
- 17 **UZZ**  
The universal intermediate jaw allows fast tool-free and reliable plugging and shifting of top jaws at the gripper.
- 18 **BSWS-AR**  
Adapter pin of the jaw quick-change system for fast, manual change of top jaws
- 19 **BSWS-B**  
Locking mechanism of the jaw quick-change system for fast, manual exchange of top jaws
- 20 **BSWS-A**  
Adapter pin of the jaw quick-change system for adaptation to the customized finger
- 21 **Customized fingers**
- 22 **BSWS-ABR**  
Finger blank made of aluminum with interface to the jaw quick-change system  
  
**BSWS-SBR**  
Finger blank made of steel with interface to the jaw quick-change system
- 23 **BSWS-UR**  
Locking mechanism for the integration of the jaw quick-change system into customized fingers
- 24 **ABR/SBR**  
Finger blanks made of steel or aluminum with standardized screw connection diagram
- 25 **ZBA**  
Intermediate jaws for reorientation of the mounting surface

# PWG-plus 125

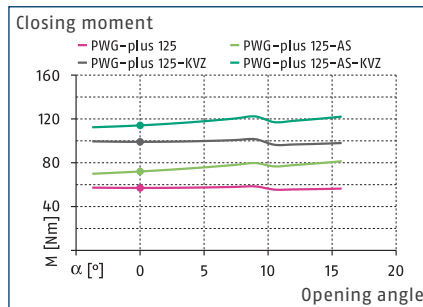
Angular gripper



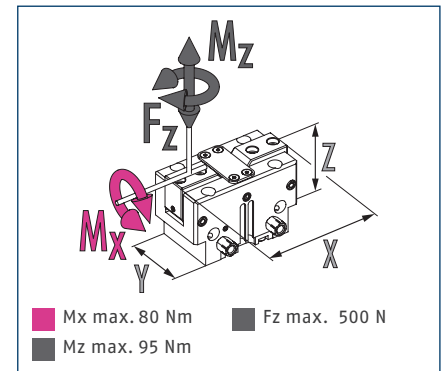
## Gripping force O.D. gripping



## Closing moment curve



## Dimensions and maximum loads

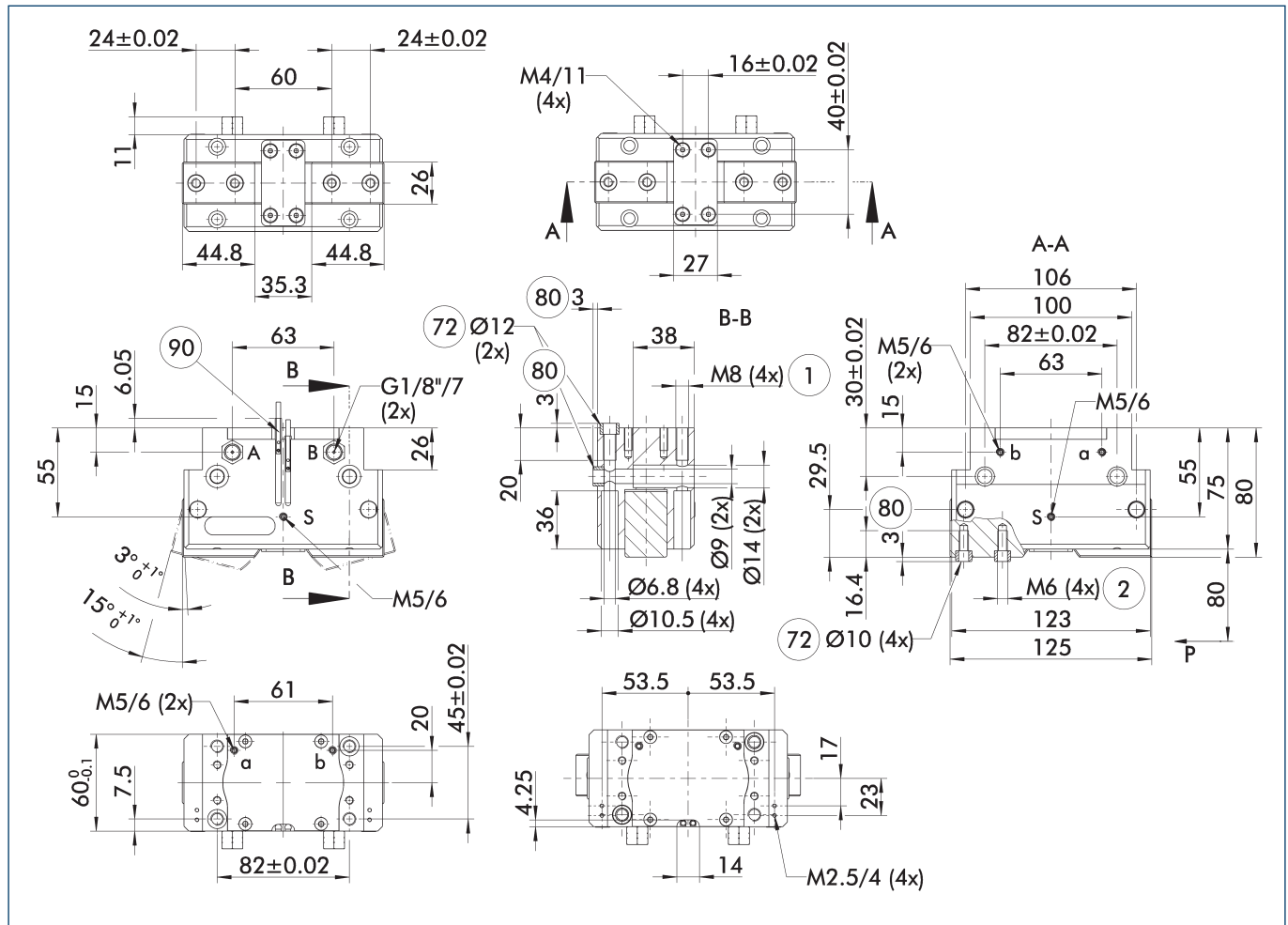


① The indicated torques and forces are static values, apply for each base jaw, and may occur simultaneously.

## Technical data

| Description                              |         | PWG-plus 125  | PWG-plus 125-AS |
|------------------------------------------|---------|---------------|-----------------|
| ID                                       |         | 0311650       | 0311651         |
| Opening angle per jaw                    | [°]     | 15            | 15              |
| Closed angle per jaw                     | [°]     | 3             | 3               |
| Closing moment                           | [Nm]    | 57            | 72              |
| Closing moment generated by spring       | [Nm]    |               | 15              |
| Weight                                   | [kg]    | 1.35          | 1.85            |
| Recommended workpiece weight             | [kg]    | 2.78          | 2.78            |
| Cylinder volume per double stroke        | [cm³]   | 75.5          | 107             |
| Min./nom./max. operating pressure        | [bar]   | 2/6/8         | 4/6/6.5         |
| Min./max. air purge pressure             | [bar]   | 0.5/1         | 0.5/1           |
| Closing/opening time                     | [s]     | 0.14/0.14     | 0.12/0.2        |
| Max. permissible finger length           | [mm]    | 160           | 160             |
| Max. permissible inertia per chuck jaw   | [kgcm²] | 203.9         | 203.9           |
| IP protection class                      |         | 30            | 30              |
| Min./max. ambient temperature            | [°C]    | 5/90          | 5/90            |
| Repeat accuracy                          | [mm]    | 0.02          | 0.02            |
| Dimensions X x Y x Z                     | [mm]    | 125 x 60 x 80 | 125 x 60 x 110  |
| <b>Options and their characteristics</b> |         |               |                 |
| High-temperature version                 |         | 39311650      | 39311651        |
| Min./max. ambient temperature            | [°C]    | 5/130         | 5/130           |
| Power booster version                    |         | 0311655       | 0311656         |
| Closing moment                           | [Nm]    | 99            | 114             |
| Closing moment generated by spring       | [Nm]    |               | 15              |
| Weight                                   | [kg]    | 1.85          | 2.3             |
| Maximum pressure                         | [bar]   | 6             | 6               |
| Max. permissible finger length           | [mm]    | 160           | 160             |

## Main view



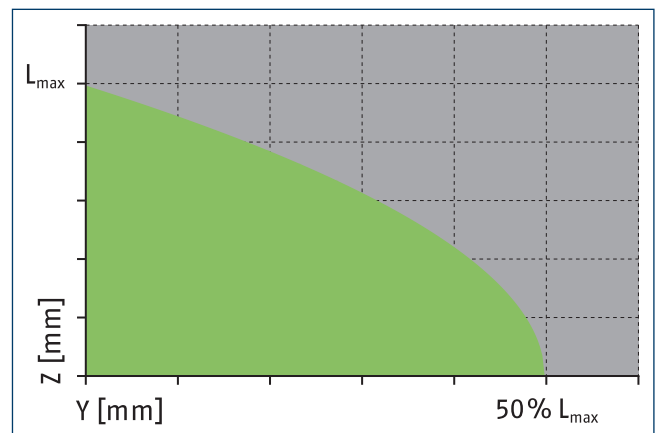
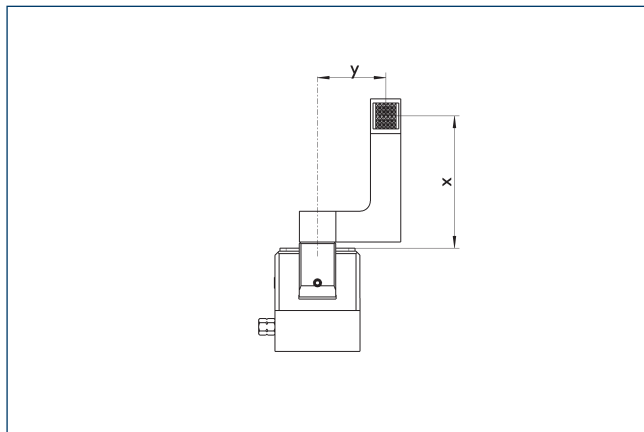
The drawing shows the gripper in the basic version with closed jaws, without dimensional consideration of the options described below.

① As an alternative/in addition to spring-assisted mechanical gripping force maintenance, the SDV-P pressure maintenance valve can be used for I.D. and O.D. gripping (see "Accessories" section of catalog).

A, a Main / direct connection, gripper opening  
 B, b Main / direct connection, gripper closing  
 S Air purge connection  
 ① Gripper connection

② Finger connection  
 72 Fit for centering sleeves  
 80 Depth of the centering sleeve hole in the counter part  
 90 Sensor MMS 22..

## Maximum permitted finger projection

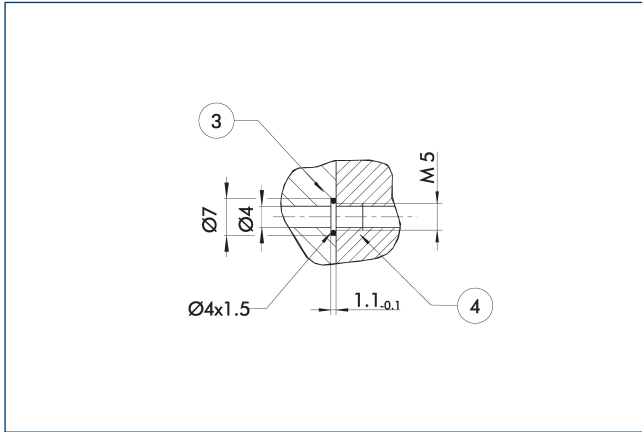


■ Permitted range

■ Inadmissible range

L<sub>max</sub> is equivalent to the maximum permitted finger length, see the technical data table.

### Hose-free direct connection M5

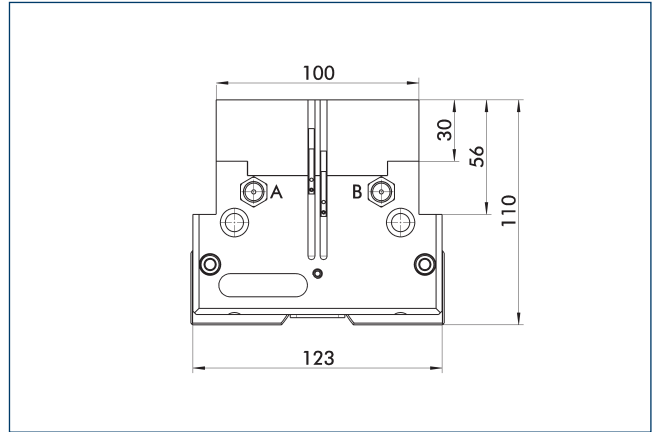


③ Adapter

④ Grippers

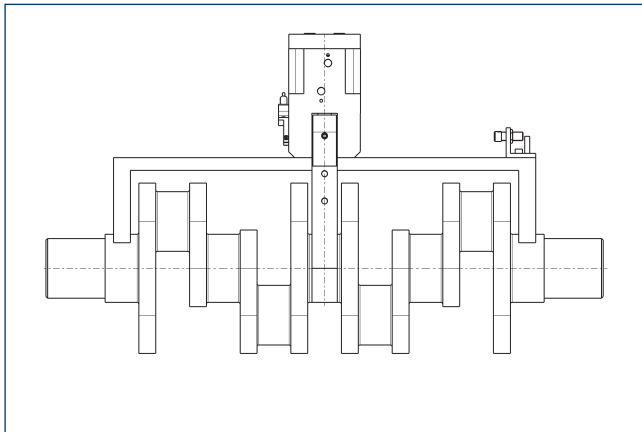
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

### Gripping force maintenance



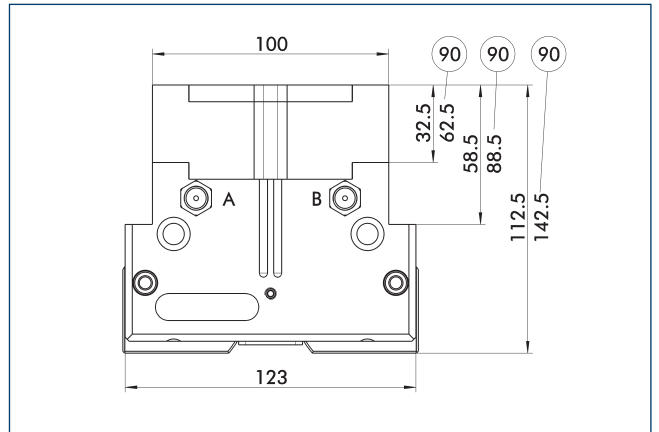
The mechanical gripping force maintenance ensures that a minimum clamping force will be applied even in case of pressure drop. This acts as closing force in the AS version. Besides this, the gripping force maintenance can be used to increase gripping force or for single actuated gripping.

### Shaft support



The complete assembly group for handling of cranks and cam shafts can be supplied on request.

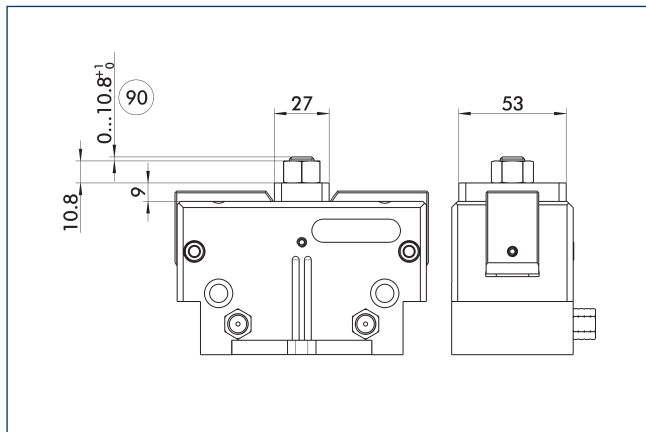
### Power booster version



⑨⑩ Applies to AS version

The KVZ cylinder increases the gripping forces during opening and closing. A second, in series-connected piston also increases the force on the wedge hook. Please consider that grippers which are equipped with a gripping force maintenance device are higher.

## Attachment kit for opening angle limitation

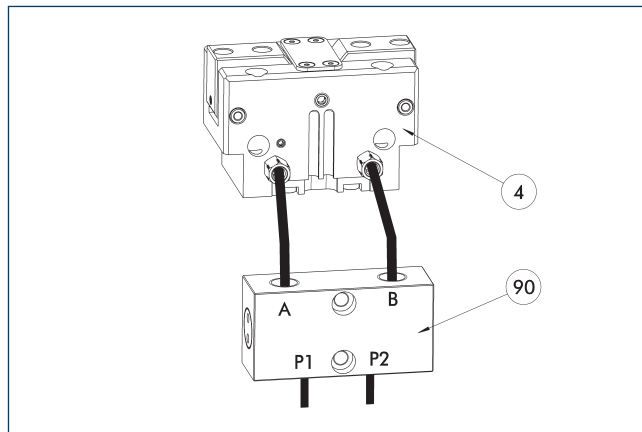


90 Max. adjustment travel

Stepless adjustment of the opening angle is possible with an attachment kit.

| Description       | ID      |
|-------------------|---------|
| Stroke adjustment |         |
| HVE-PWG-plus 125  | 0311753 |

## SDV-P pressure maintenance valve



4 Grippers

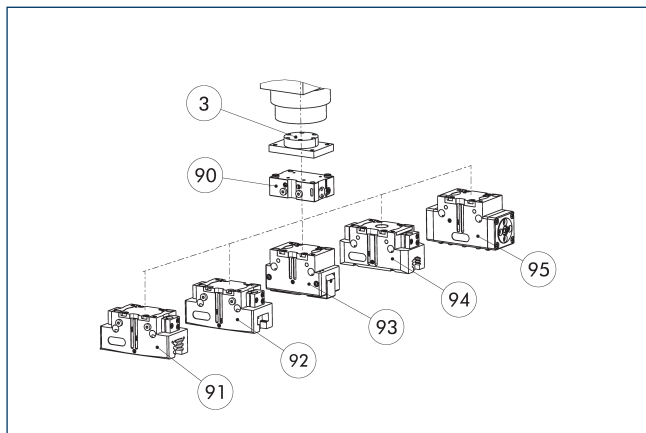
90 SDV-P pressure maintenance valve

The SDV-P pressure maintenance valve ensures in emergency STOP situations that the pressure in the piston chamber of pneumatic gripper, swivel, linear, and quick-change modules is temporarily maintained.

| Description                                     | ID      | Recommended hose diameter |
|-------------------------------------------------|---------|---------------------------|
|                                                 |         | [mm]                      |
| Pressure maintenance valve                      |         |                           |
| SDV-P 04                                        | 0403130 | 6                         |
| Pressure maintenance valve with air bleed screw |         |                           |
| SDV-P 04-E                                      | 0300120 | 6                         |

① In order to achieve the specified closing and opening time for each gripper variant, the recommended hose diameter must be used. The direct allocation of the respective variant of the gripper for the respective SDV-P can be found at [schunk.com](http://schunk.com).

## SDV-P E-P pressure maintenance valve

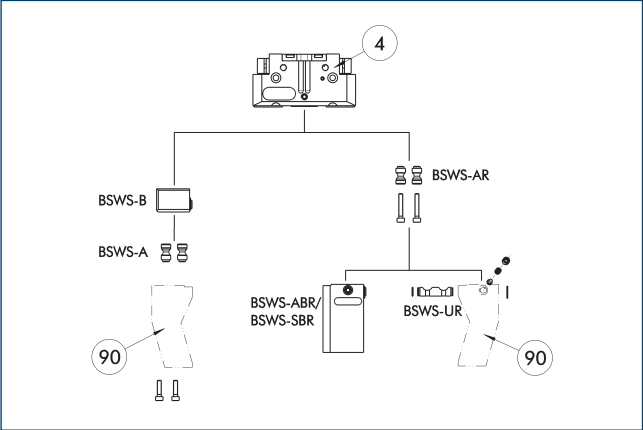


- 3 Adapter
- 90 SDV-P E-P pressure maintenance valve
- 91 2-finger parallel gripper PGN-plus/PGN-plus-P
- 92 2-finger parallel gripper JGP-P
- 93 2-finger angular gripper PWG-plus
- 94 2-finger parallel gripper PGB
- 95 Sealed DPG-plus gripper

The SDV-P E-P pressure maintenance valves ensure that the pressure in the piston chamber is maintained temporarily during an emergency stop. SDV-P E-P can be directly connected to the listed grippers without the need for additional pneumatic hoses.

| Description                | ID      |
|----------------------------|---------|
| Pressure maintenance valve |         |
| SDV-P 125-E-P              | 0300127 |

BSWS jaw quick-change jaw systems



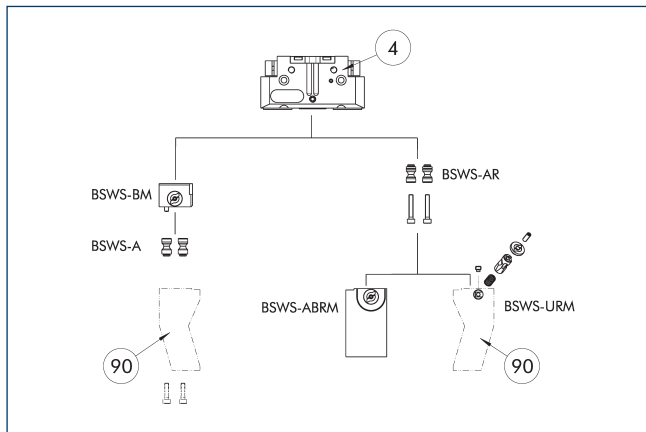
- ④ Grippers                      90 Customized gripper fingers

There are various jaw quick-change systems available for the gripper. For detailed information, please refer to the corresponding product.

| Description                               | ID      | Scope of delivery |
|-------------------------------------------|---------|-------------------|
| Jaw quick-change system adapter pin       |         |                   |
| BSWS-A 125                                | 0303028 | 2                 |
| BSWS-AR 125                               | 0300095 | 2                 |
| Quick-change jaw system base              |         |                   |
| BSWS-B 125                                | 0303029 | 1                 |
| Jaw quick-change system finger blank      |         |                   |
| BSWS-ABR-PGZN-plus 125                    | 0300075 | 1                 |
| BSWS-SBR-PGZN-plus 125                    | 0300085 | 1                 |
| Jaw quick-change system locking mechanism |         |                   |
| BSWS-UR 125                               | 0302994 | 1                 |

① If the operating pressure is higher than 6 bar, suitability for use beyond the application limits must be checked. Only systems that are listed in the table, can be used.

### Jaw quick-change system BSWs-M



④ Grippers

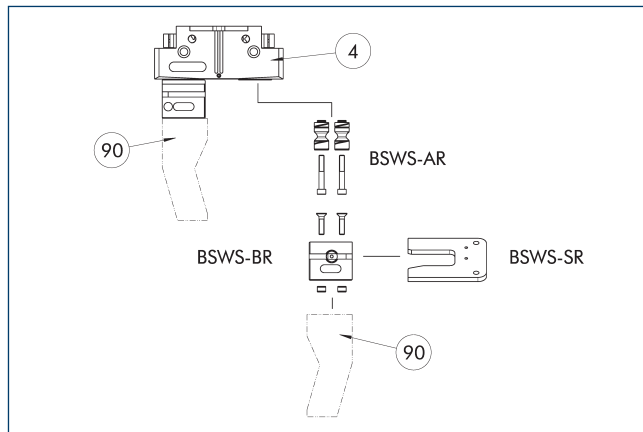
⑨⑩ Customized gripper fingers

There are various jaw quick-change systems available for the gripper. For detailed information, please refer to the corresponding product.

| Description                               | ID      | Scope of delivery |
|-------------------------------------------|---------|-------------------|
| Jaw quick-change system adapter pin       |         |                   |
| BSWS-A 125                                | 0303028 | 2                 |
| BSWS-AR 125                               | 0300095 | 2                 |
| Quick-change jaw system base              |         |                   |
| BSWS-BM 125                               | 1302006 | 1                 |
| Jaw quick-change system finger blank      |         |                   |
| BSWS-ABRM-PGZN-plus 125                   | 1420854 | 1                 |
| Jaw quick-change system locking mechanism |         |                   |
| BSWS-URM 125                              | 1398404 | 1                 |

① If the operating pressure is higher than 6 bar, suitability for use beyond the application limits must be checked. Only systems that are listed in the table, can be used.

### Jaw quick-change system BSWs-R



④ Grippers

⑨⑩ Customized gripper fingers

There are various jaw quick-change systems available for the gripper. For detailed information, please refer to the corresponding product.

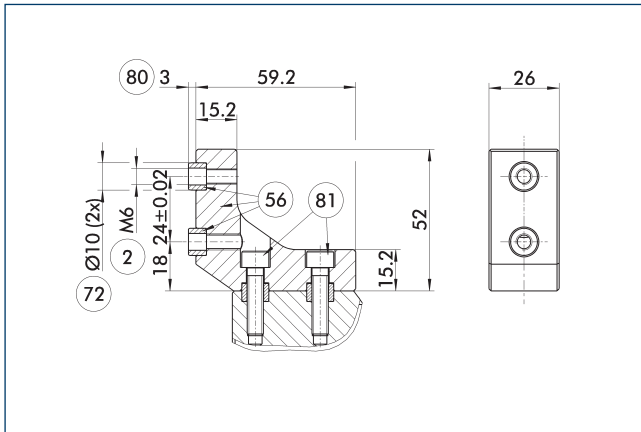
| Description                         | ID      | Scope of delivery |
|-------------------------------------|---------|-------------------|
| Jaw quick-change system adapter pin |         |                   |
| BSWS-AR 125                         | 0300095 | 2                 |
| Quick-change jaw system base        |         |                   |
| BSWS-BR 125                         | 1555937 | 1                 |
| Storage system                      |         |                   |
| BSWS-SR 125                         | 1555972 | 1                 |
| Attachment kit for proximity switch |         |                   |
| AS-IN80-BSWS-SR 125/160             | 1561467 | 1                 |
| Inductive proximity switch          |         |                   |
| IN 80-S-M12                         | 0301578 |                   |
| IN 80-S-M8                          | 0301478 |                   |
| INK 80-S                            | 0301550 |                   |

① If the operating pressure is higher than 6 bar, suitability for use beyond the application limits must be checked. Only systems that are listed in the table, can be used.

# PWG-plus 125

Angular gripper

## ZBA-L-plus 125 intermediate jaws

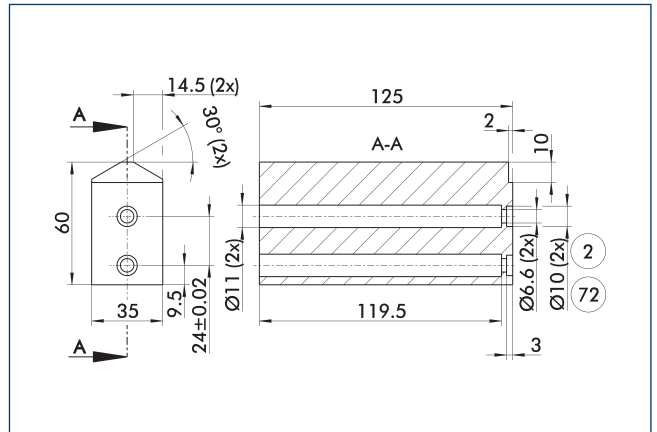


- ② Finger connection
- ⑤⑥ Included in the scope of delivery
- ⑦② Fit for centering sleeves
- ⑧⑩ Depth of the centering sleeve hole in the counter part
- ⑧① Not included in the scope of delivery

The optional ZBA-L-plus intermediate jaws allow the screw connection diagram of the top jaws to be rotated by 90°. This makes it easier to design and produce top jaws (particularly for long versions) because no deep through-bores are required.

| Description      | ID      | Material | Finger interface | Scope of delivery |
|------------------|---------|----------|------------------|-------------------|
| Intermediate jaw |         |          |                  |                   |
| ZBA-L-plus 125   | 0311752 | Aluminum | PGN-plus 125     | 1                 |

## Finger blanks ABR/SBR-PGZN-plus 125



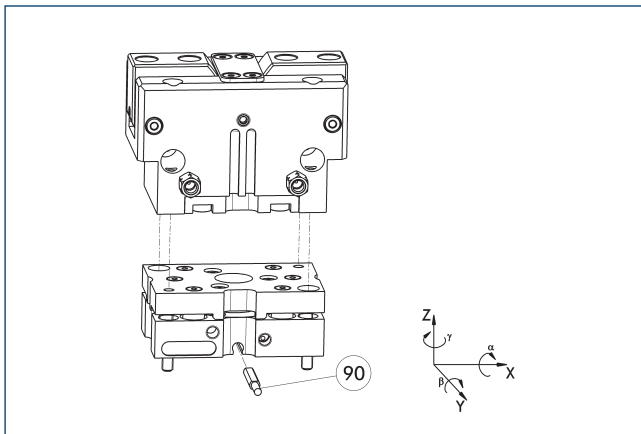
- ② Finger connection
- ⑦② Fit for centering sleeves

The drawing shows the finger blank which can be reworked by the customer.

| Description       | ID      | Material          | Scope of delivery |
|-------------------|---------|-------------------|-------------------|
| Finger blank      |         |                   |                   |
| ABR-PGZN-plus 125 | 0300013 | Aluminum (3.4365) | 1                 |
| SBR-PGZN-plus 125 | 0300023 | Steel (1.7131)    | 1                 |

- ① When finger blanks are used, the closing stroke of individual gripper series may be limited. Please check this in detail in advance using the CAD data and adjust the reworking of the fingers accordingly.

## Tolerance compensation unit TCU

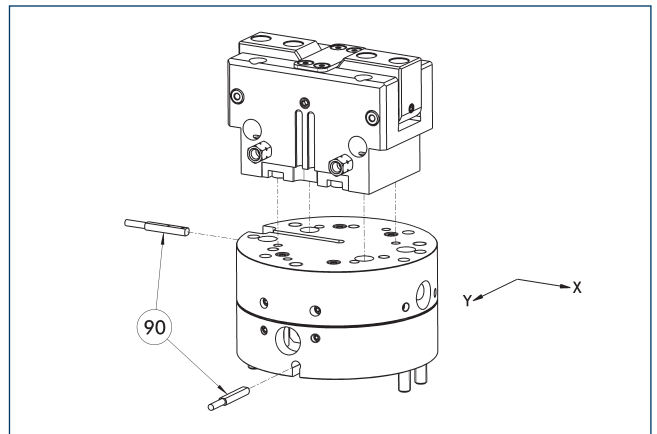


- ⑨⑩ Monitoring of locking

Grippers can be directly mounted without an adapter plate. Tolerance compensation unit and gripper have an identical screw connection diagram. Therefore the tolerance compensation units can be assembled later. Please consider the additional assembly height of the tolerance compensation unit. For details please refer to our catalog robot accessories.

| Description       | ID      | Locking | Deflection      | Often combined |
|-------------------|---------|---------|-----------------|----------------|
| Compensation unit |         |         |                 |                |
| TCU-P-125-3-MV    | 0324828 | yes     | ±1°/±1,5°/±1,5° | ●              |
| TCU-P-125-3-OV    | 0324829 | no      | ±1°/±1,5°/±1,5° |                |

## Compensation unit AGE-F

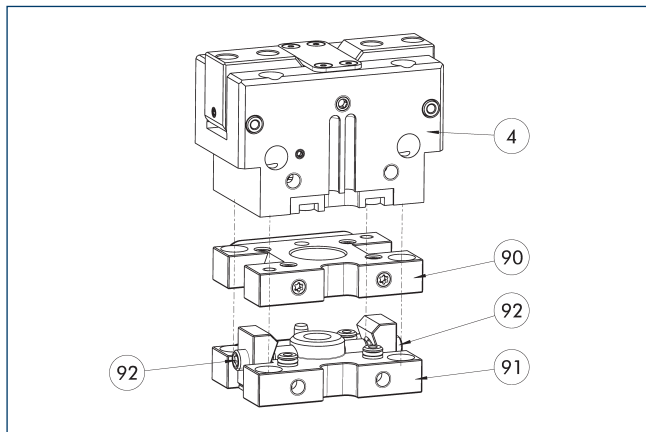


- ⑨⑩ Monitoring

Grippers can be directly mounted without an adapter plate. For details see our catalog Gripping or Robot Accessories.

| Description       | ID      | Compensation XY | Reset force | Often combined |
|-------------------|---------|-----------------|-------------|----------------|
|                   |         | [mm]            | [N]         |                |
| Compensation unit |         |                 |             |                |
| AGE-F-XY-080-1    | 0324960 | ± 5             | 39          |                |
| AGE-F-XY-080-2    | 0324961 | ± 5             | 85          |                |
| AGE-F-XY-080-3    | 0324962 | ± 5             | 90          | ●              |

## Compact change system for grippers

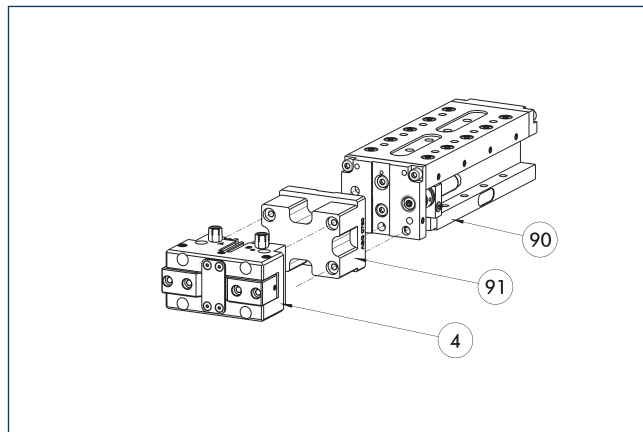


- ④ Grippers
- ⑨① CWK compact change master
- ⑨① CWA compact change adapter
- ⑨② Locking mechanism

Grippers can be directly mounted without an adapter plate. For details see our catalog Gripping or Robot Accessories.

| Description                | ID      |  |
|----------------------------|---------|--|
| CWA compact change adapter |         |  |
| CWA-125-P                  | 0305826 |  |
| CWK compact change master  |         |  |
| CWK-125-P                  | 0305825 |  |

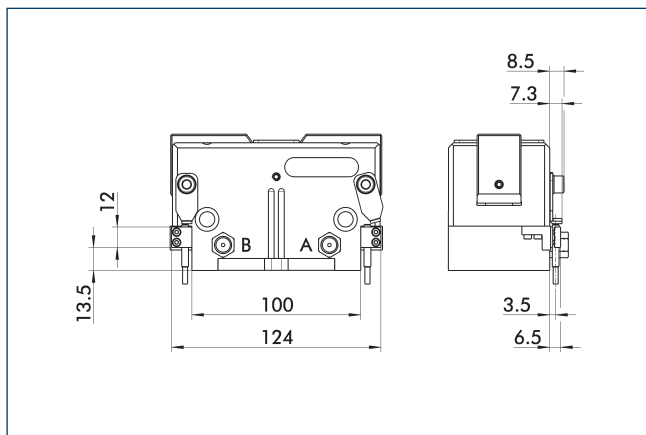
## Modular Assembly Automation



- ④ Grippers
- ⑨① ASG adapter plate
- ⑨① Linear module CLM/KLM/LM/ELP/ELM/ELS/HLM

Grippers and linear modules can be combined with standard adapter plates from the modular assembly system. For more information see our main catalog "Modular Assembly Automation".

## Attachment kit for proximity switch IN 40

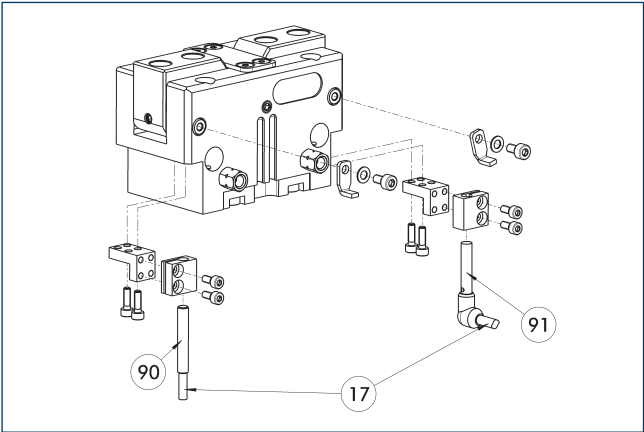


End position monitoring can be mounted with an attachment kit.

| Description                         | ID      |  |
|-------------------------------------|---------|--|
| Attachment kit for proximity switch |         |  |
| AS-IN40-PWG-plus 125                | 0311750 |  |

- ① This attachment kit needs to be ordered optionally as an accessory.

IN 40 inductive proximity switches



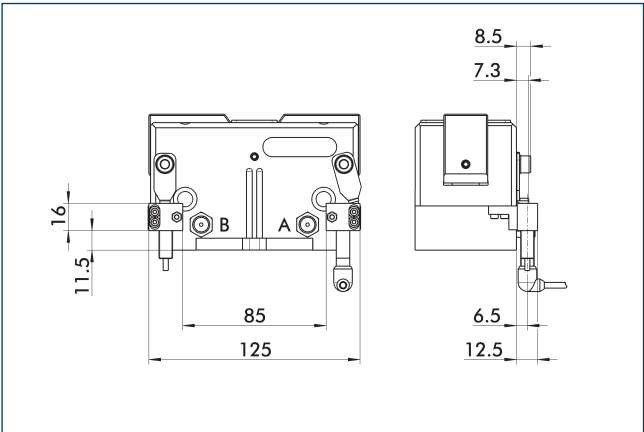
- 17 Cable outlet
- 91 Sensor IN..-SA
- 90 Sensor IN ...

End position monitoring can be mounted with an attachment kit.

| Description                                          | ID      | Often combined |
|------------------------------------------------------|---------|----------------|
| Attachment kit for proximity switch                  |         |                |
| AS-IN40-PWG-plus 125                                 | 0311750 |                |
| Inductive proximity switch                           |         |                |
| IN 40-S-M12                                          | 0301574 |                |
| IN 40-S-M8                                           | 0301474 | ●              |
| INK 40-S                                             | 0301555 |                |
| Inductive proximity switch with lateral cable outlet |         |                |
| IN 40-S-M12-SA                                       | 0301577 |                |
| IN 40-S-M8-SA                                        | 0301473 | ●              |
| INK 40-S-SA                                          | 0301565 |                |

- ① Two sensors (closer/S) are required for each unit and extension cables are available as an option. This attachment kit needs to be ordered optionally as an accessory. For sensor cables, note the minimum permissible bending radii. These are generally 35 mm.

Attachment kit for proximity switch IN 80

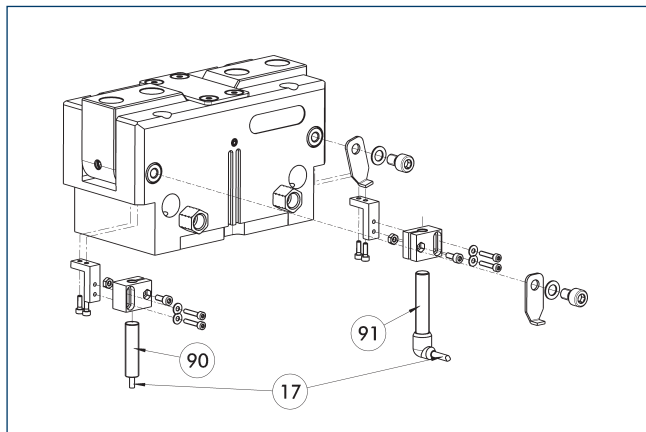


End position monitoring can be mounted with an attachment kit.

| Description                         | ID      |  |
|-------------------------------------|---------|--|
| Attachment kit for proximity switch |         |  |
| AS-IN80-PWG-plus 125                | 0311751 |  |

- ① This attachment kit needs to be ordered optionally as an accessory.

## IN 80 inductive proximity switches



①⑦ Cable outlet

①⑨ Sensor IN..-SA

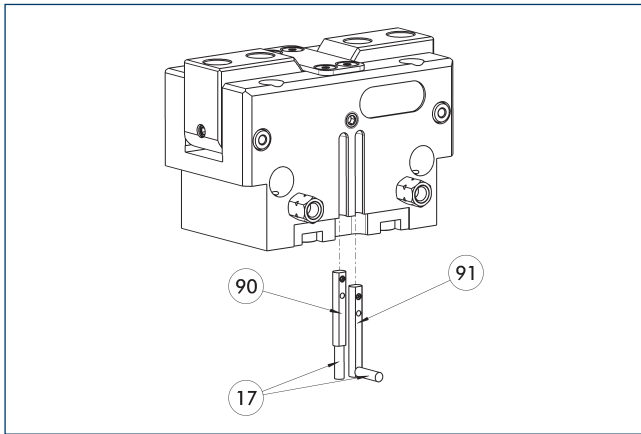
①⑩ Sensor IN ...

End position monitoring can be mounted with an attachment kit.

| Description                                          | ID      | Often combined |
|------------------------------------------------------|---------|----------------|
| Attachment kit for proximity switch                  |         |                |
| AS-IN80-PWG-plus 125                                 | 0311751 |                |
| Inductive proximity switch                           |         |                |
| IN 80-S-M12                                          | 0301578 |                |
| IN 80-S-M8                                           | 0301478 | ●              |
| IN-C 80-S-M8-PNP                                     | 0301475 |                |
| INK 80-S                                             | 0301550 |                |
| INK 80-SL                                            | 0301579 |                |
| Inductive proximity switch with lateral cable outlet |         |                |
| IN 80-S-M12-SA                                       | 0301587 |                |
| IN 80-S-M8-SA                                        | 0301483 | ●              |
| INK 80-S-SA                                          | 0301566 |                |

① Two sensors (closer/S) are required for each unit and extension cables are available as an option. This attachment kit needs to be ordered optionally as an accessory. For sensor cables, note the minimum permissible bending radii. These are generally 35 mm.

### Electronic magnetic switch MMS



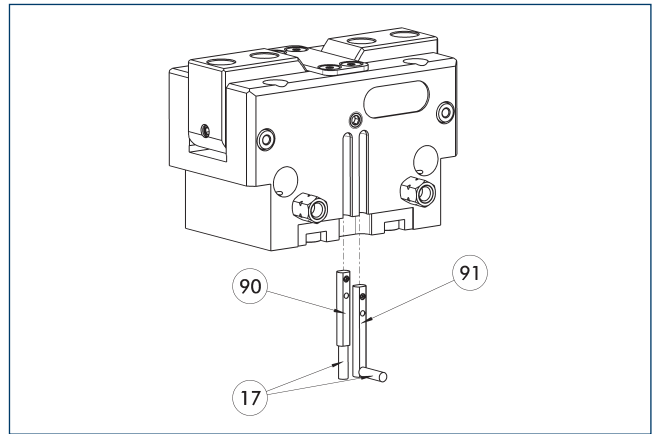
- ①⑦ Cable outlet                      ①⑨ Sensor MMS 22...-SA  
①⑩ Sensor MMS 22..

End position monitoring for mounting in the C-slot.

| Description                                                   | ID      | Often combined |
|---------------------------------------------------------------|---------|----------------|
| <b>Electronic magnetic switch</b>                             |         |                |
| MMS 22-S-M8-PNP                                               | 0301032 | ●              |
| MMSK 22-S-PNP                                                 | 0301034 |                |
| <b>Electronic magnetic switches with lateral cable outlet</b> |         |                |
| MMS 22-S-M8-PNP-SA                                            | 0301042 | ●              |
| MMSK 22-S-PNP-SA                                              | 0301044 |                |
| <b>Connection cables</b>                                      |         |                |
| KA BG08-L 3P-0300-PNP                                         | 0301622 | ●              |
| KA BG08-L 3P-0500-PNP                                         | 0301623 |                |
| KA BW08-L 3P-0300-PNP                                         | 0301594 |                |
| KA BW08-L 3P-0500-PNP                                         | 0301502 |                |
| <b>Clip for connector/socket</b>                              |         |                |
| CLI-M8                                                        | 0301463 |                |
| <b>Cable extension</b>                                        |         |                |
| KV BW08-SG08 3P-0030-PNP                                      | 0301495 |                |
| KV BW08-SG08 3P-0100-PNP                                      | 0301496 |                |
| KV BW08-SG08 3P-0200-PNP                                      | 0301497 | ●              |
| <b>Sensor distributor</b>                                     |         |                |
| V2-M8                                                         | 0301775 | ●              |
| V4-M8                                                         | 0301746 |                |
| V8-M8                                                         | 0301751 |                |

- ① Two sensors are required per unit for monitoring two positions. On option, extension cables and sensor distributors are available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor system.

### Programmable magnetic switch MMS 22-PI1



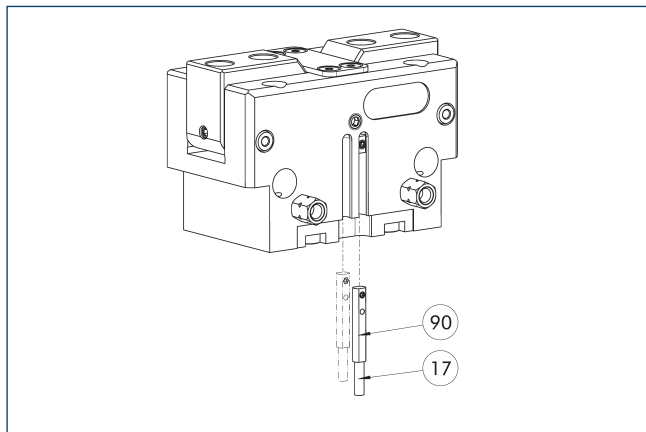
- ①⑦ Cable outlet                      ①⑨ Sensor MMS 22 ..-PI1-...-SA  
①⑩ Sensor MMS 22 PI1-...

Position monitoring with one programmable position per sensor and integrated electronic system in the sensor. Can be programmed using MT magnetic teaching tool (included in the scope of delivery, ID 0301030) or ST plug teaching tool (optional). End position monitoring for mounting in the C-slot. If the ST plug teaching tools are listed in the table provided, teaching is only possible with the ST teaching tools.

| Description                                                      | ID      | Often combined |
|------------------------------------------------------------------|---------|----------------|
| <b>Programmable magnetic switch</b>                              |         |                |
| MMS 22-PI1-S-M8-PNP                                              | 0301160 | ●              |
| MMSK 22-PI1-S-PNP                                                | 0301162 |                |
| <b>Programmable magnetic switch with lateral cable outlet</b>    |         |                |
| MMS 22-PI1-S-M8-PNP-SA                                           | 0301166 | ●              |
| MMSK 22-PI1-S-PNP-SA                                             | 0301168 |                |
| <b>Programmable magnetic switch with stainless steel housing</b> |         |                |
| MMS 22-PI1-S-M8-PNP-HD                                           | 0301110 | ●              |
| MMSK 22-PI1-S-PNP-HD                                             | 0301112 |                |

- ① Two sensors are required per unit for monitoring two positions. On option, extension cables and sensor distributors are available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor system.

## Programmable magnetic switch MMS 22-PI2



17 Cable outlet

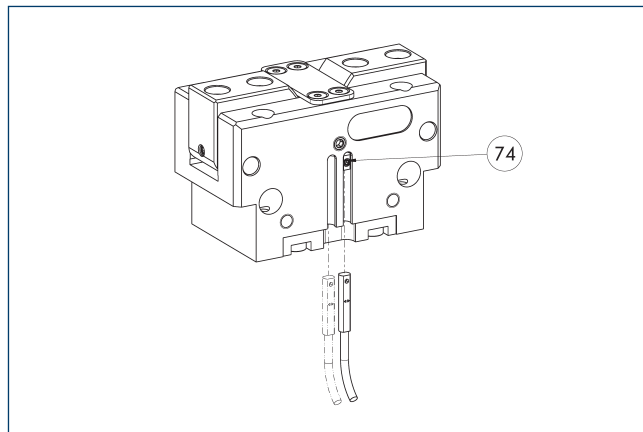
90 MMS 22...-PI2-... sensor

Position monitoring with two programmable positions per sensor and electronics integrated in the sensor. Can be programmed using MT magnetic teaching tool (included in the scope of delivery, ID 0301030) or ST plug teaching tool (optional). End position monitoring for mounting in the C-slot. If the ST plug teaching tools are listed in the table provided, teaching is only possible with the ST teaching tools.

| Description                                               | ID      | Often combined |
|-----------------------------------------------------------|---------|----------------|
| Programmable magnetic switch                              |         |                |
| MMS 22-PI2-S-M8-PNP                                       | 0301180 | ●              |
| MMSK 22-PI2-S-PNP                                         | 0301182 |                |
| Programmable magnetic switch with lateral cable outlet    |         |                |
| MMS 22-PI2-S-M8-PNP-SA                                    | 0301186 | ●              |
| MMSK 22-PI2-S-PNP-SA                                      | 0301188 |                |
| Programmable magnetic switch with stainless steel housing |         |                |
| MMS 22-PI2-S-M8-PNP-HD                                    | 0301130 | ●              |
| MMSK 22-PI2-S-PNP-HD                                      | 0301132 |                |

- ① One sensor is required per unit for monitoring two positions. Extension cables and sensor distributors are optionally available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor systems.

## MMS-P programmable magnetic switch



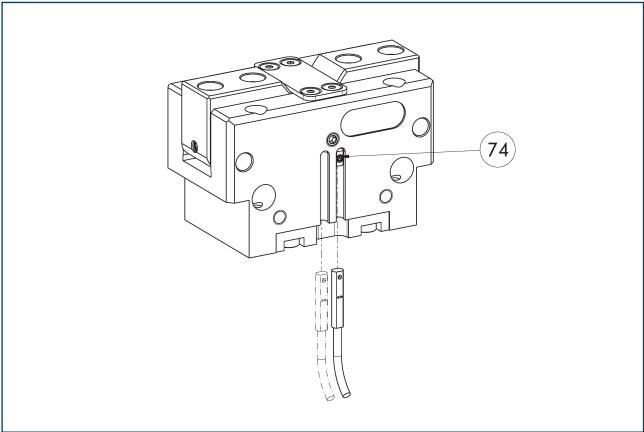
74 Limit stop for sensor

Position monitoring with two programmable positions per sensor. End position monitoring for mounting in the C-slot.

| Description                  | ID      | Often combined |
|------------------------------|---------|----------------|
| Programmable magnetic switch |         |                |
| MMSK-P 22-S-PNP              | 0301371 |                |
| MMS-P 22-S-M8-PNP            | 0301370 | ●              |
| Connection cables            |         |                |
| KA GLN0804-LK-00500-A        | 0307767 | ●              |
| KA GLN0804-LK-01000-A        | 0307768 |                |
| KA WLN0804-LK-00500-A        | 0307765 |                |
| KA WLN0804-LK-01000-A        | 0307766 |                |
| Clip for connector/socket    |         |                |
| CLI-M8                       | 0301463 |                |
| Sensor distributor           |         |                |
| V2-M8-4P-2XM8-3P             | 0301380 |                |

- ① One sensor is required per unit for monitoring two positions. Extension cables and sensor distributors are optionally available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor systems.

Programmable magnetic switch MMS-IO-Link



74 Limit stop for sensor

Sensor for multi-position monitoring through detection of the complete gripper stroke. The sensor is mounted directly in the C-slot of the gripper. The sensor is programmed for the gripper via the IO-Link interface, Magnet teaching tool MT (included in scope of delivery; ID 0301030) or the ST plug teaching tool (not included in scope of delivery; ID 0301026). An IO-Link master is required for operation.

| Description                  | ID      |  |
|------------------------------|---------|--|
| Programmable magnetic switch |         |  |
| MMS 22-IO-L-M08              | 0315830 |  |
| MMS 22-IO-L-M12              | 0315835 |  |

- ① One sensor is required for each gripper. No additional mounting kit is required – the gripper is equipped for use of the sensor by default. Further information and technical data can be found in the catalog chapter sensor systems.





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