



Hand in hand for tomorrow



## Product data sheet

Universal gripper PZN-plus 40

## Reliable. Robust. Flexible.

### Universal gripper PZN-plus

Universal 3-finger centric gripper with high gripping force and maximum moments due to multi-tooth guidance

#### Field of application

multi- purpose thanks to a diverse range of accessories.  
Can also be used in fields of application with special requirements to the gripper (temperature, chemical resistance, dirt, and many more).

#### Advantages – Your benefits

**Robust multi-tooth guidance** for precise handling

**High maximum moments possible** suitable for using long gripper fingers

**Wedge-hook design** for high power transmission and synchronized gripping

**Air supply via hose-free direct connection or screw connections** for flexible pressure supply in all automated systems

**Comprehensive sensor accessory program** for versatile querying possibilities and stroke position monitoring

**Manifold options** for special optimization for your specific case of application (dustproof, high-temperature, corrosion-protected, etc.)

**Fastening at one gripper side in two screw directions** for universal and flexible gripper assembly



Sizes  
Quantity: 11



Weight  
0.13 .. 80 kg



Gripping force  
255 .. 57300 N



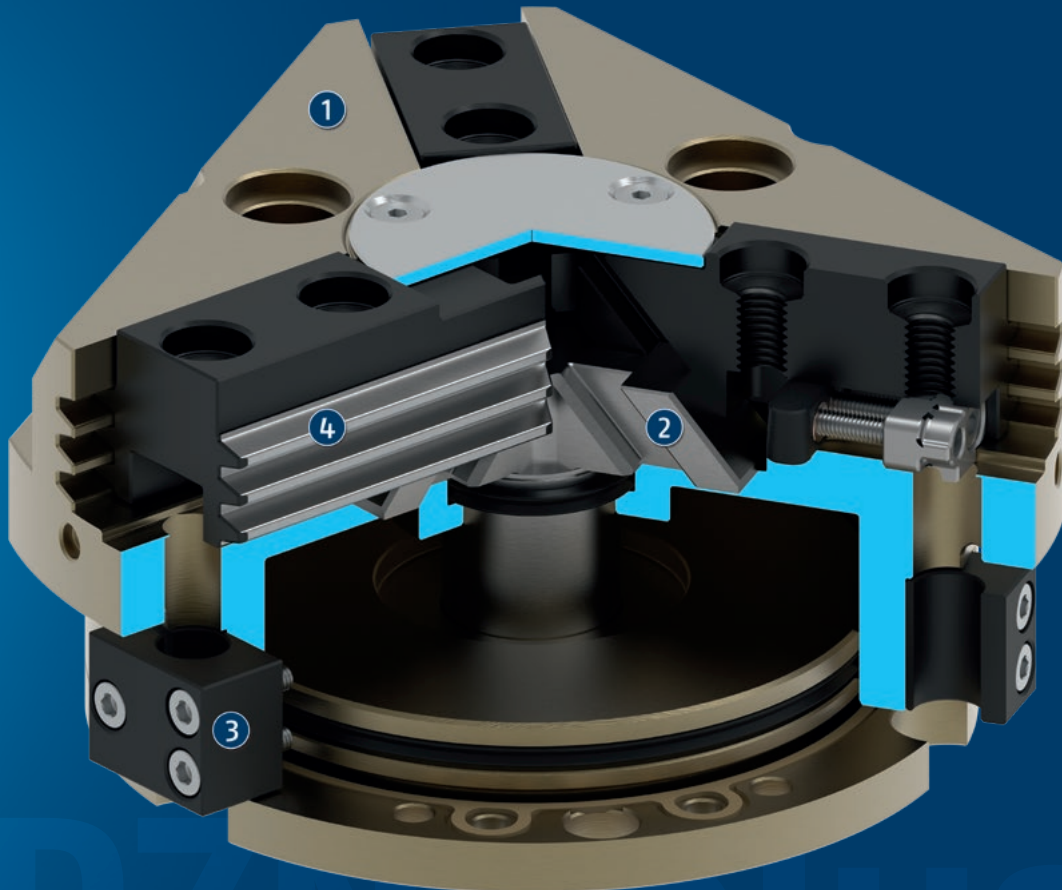
Stroke per jaw  
2 .. 45 mm



Workpiece weight  
1.3 .. 227 kg

## Functional description

The piston is moved up and down by compressed air.  
The angled active surfaces of the wedge-hook produce a synchronized, centric jaw movement.



- ① **Housing**  
is weight-optimized due to the use of high-strength aluminum alloy
- ② **Wedge-hook design**  
for high force transmission and centric gripping
- ③ **Sensor system**  
Brackets for proximity switches and adjustable control cams in the housing
- ④ **Multi-tooth guidance**  
precise gripping through base jaw guidance with a high load capacity and a minimum Play

## General notes about the series

**Operating principle:** Wedge-hook kinematics

**Housing material:** Aluminum alloy, anodized

**Base jaw material:** Steel

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

**Warranty:** 36 months

**Service life characteristics:** on request

**Scope of delivery:** Gripper in the ordered variant, accessory kit (centering sleeves, O-rings for direct connection/detailed contents see operating manual) and safety information. Product-specific instructions can be downloaded at [schunk.com/downloads-manuals](https://schunk.com/downloads-manuals).

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

**Gripping force:** is the arithmetic sum of the individual force applied to each jaw at distance P (see illustration).

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

The maximum permissible finger length applies until the nominal operating pressure is achieved. With higher pressures, the finger length must be reduced proportionally to the nominal operating pressure.

**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.

**Cleanroom class ISO 14644-1:1999:** 5

## Application example

Insertion tool for assembly of small to medium-sized axes. Due to the rotary feed-through, the axes can be rotated several times infinitely ( $> 360^\circ$ ) during the assembly process. Slip ring contacts integrated in the rotary feed-through reliably supply the gripper with power.

- ❶ Rotary feed-through DDF 2
- ❷ Automatic tool changers CPS
- ❸ 3-finger centric gripper PZN-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



Universal intermediate jaw



Jaw quick-change system



Pressure maintenance valve



Inductive proximity switch



Magnetic switches



Finger blank

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/IS version this acts as a closing force, in the IS version as an opening force.

**Anti-corrosion version K:** for use in corrosion-inducing atmospheres

**High-temperature version V/HT:** for use in hot environments

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

**Dustproof version SD:** absolutely dustproof, increased degree of protection against ingress of materials.

**Precision version P:** for the highest accuracy

**ATEX version EX:** for explosive environments

**H1G compliant grease:** for use in the food and pharmaceutical industries

**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.

**Additional versions:** Various options can be combined with each other.

## SCHUNK gripper PZN-plus

### Overview Accessories



- 1 **PZN-plus**  
Universal 3-finger centric gripper with high gripping force and maximum moments due to multi-tooth guidance

### 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 **FPS**  
Flexible position sensor for monitoring up to five different, freely selectable positions
- 6 **APS-Z80**  
Inductive position sensor for precise position detection of the gripper jaws with analog output
- 7 **APS-M15**  
Mechanical measuring system for precise position detection of the gripper jaw with analog output
- 8 **RMS**  
Reed switch in round version
- 9 **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
- 10 **MMS 22-PI2**  
Magnetic switch with straight cable outlet for monitoring two freely programmable positions
- 11 **MMS 22-PI1-HD**  
MMS 22-PI1 in robust design  
  
**MMS 22-PI2-HD**  
MMS 22-PI2 in robust design
- 12 **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
- 13 **MMS-P**  
Magnetic switch with straight cable outlet for monitoring two freely programmable positions
- 14 **MMS 22-A**  
Analog magnetic switch with straight cable outlet for measuring the gripper jaw position with analog output and teach function

- 15 **RMS 22**  
Reed switch for direct assembly in the C-slot

### Complementary products

- 16 **TCU**  
Tolerance compensation unit for compensating small tolerances in the plane
- 17 **AGE**  
Compensation unit for compensation of large tolerances along the X and Y axes
- 18 **ASG**  
Adapter plate for combining various automation components in the modular system
- 19 **CLM**  
Linear module with pneumatic drive and scope-free pre-loaded junction rollers
- 20 **HUE**  
Sleeve for protection against dirt

### Finger Accessories

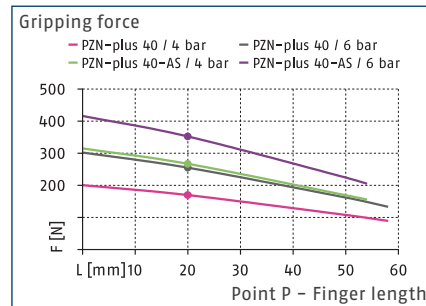
- 21 **UZB**  
The universal intermediate jaw allows fast tool-free and reliable plugging and shifting of top jaws at the gripper.
- 22 **BSWS-AR**  
Adapter pin of the jaw quick-change system for fast, manual change of top jaws
- 23 **BSWS-B**  
Locking mechanism of the jaw quick-change system for fast, manual exchange of top jaws
- 24 **BSWS-A**  
Adapter pin of the jaw quick-change system for adaptation to the customized finger
- 25 **Customized fingers**
- 26 **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
- 27 **BSWS-UR**  
Locking mechanism for the integration of the jaw quick-change system into customized fingers
- 28 **ABR/SBR**  
Finger blanks made of steel or aluminum with standardized screw connection diagram
- 29 **ZBA**  
Intermediate jaws for reorientation of the mounting surface

# PZN-plus 40

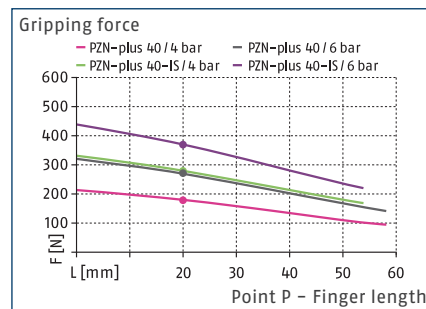
Universal gripper



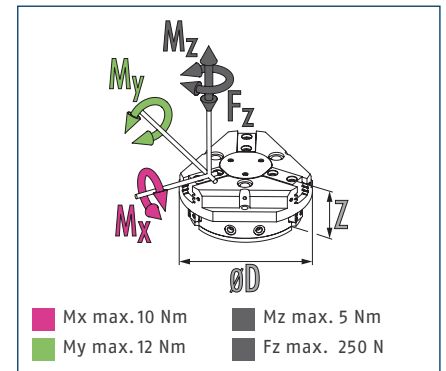
## Gripping force O.D. gripping



## Gripping force I.D. gripping



## Dimensions and maximum loads



① The indicated moments and forces are static values, apply for each base jaw and may appear simultaneously. Loads may additionally occur to the moment produced by the gripping force itself.

## Technical data

| Description                              |                    | PZN-plus 40 | PZN-plus 40-AS | PZN-plus 40-IS |
|------------------------------------------|--------------------|-------------|----------------|----------------|
| ID                                       |                    | 0303308     | 0303508        | 0303538        |
| Stroke per jaw                           | [mm]               | 2.5         | 2.5            | 2.5            |
| Closing/opening force                    | [N]                | 255/270     | 355/-          | -/370          |
| Min. spring force                        | [N]                |             | 100            | 100            |
| Weight                                   | [kg]               | 0.13        | 0.15           | 0.15           |
| Recommended workpiece weight             | [kg]               | 1.3         | 1.3            | 1.3            |
| Cylinder volume per double stroke        | [cm <sup>3</sup> ] | 5           | 9              | 9              |
| Min./nom./max. operating pressure        | [bar]              | 2/6/8       | 4/6/6.5        | 4/6/6.5        |
| Min./max. air purge pressure             | [bar]              | 0.5/1       | 0.5/1          | 0.5/1          |
| Closing/opening time                     | [s]                | 0.03/0.03   | 0.02/0.04      | 0.04/0.02      |
| Closing/opening time with spring         | [s]                |             | 0.08           | 0.08           |
| Max. permissible finger length           | [mm]               | 58          | 54             | 54             |
| Max. permissible weight per finger       | [kg]               | 0.1         | 0.1            | 0.1            |
| IP protection class                      |                    | 40          | 40             | 40             |
| Min./max. ambient temperature            | [°C]               | 5/90        | 5/90           | 5/90           |
| Repeat accuracy                          | [mm]               | 0.01        | 0.01           | 0.01           |
| Dimensions Ø D x Z                       | [mm]               | 52 x 27.2   | 52 x 35.2      | 52 x 35.2      |
| <b>Options and their characteristics</b> |                    |             |                |                |
| Dustproof version                        |                    | 37303308    | 37303508       | 37303538       |
| IP protection class                      |                    | 64          | 64             | 64             |
| Weight                                   | [kg]               | 0.16        | 0.18           | 0.18           |
| Corrosion-protected version              |                    | 38303308    | 38303508       | 38303538       |
| High-temperature version                 |                    | 39303308    | 39303508       | 39303538       |
| Min./max. ambient temperature            | [°C]               | 5/130       | 5/130          | 5/130          |
| Power booster version                    |                    | 0372199     | 0372219        | 0372239        |
| Closing/opening force                    | [N]                | 363/381     | 446/-          | -/463          |
| Weight                                   | [kg]               | 0.19        | 0.21           | 0.21           |
| Maximum pressure                         | [bar]              | 6           | 6              | 6              |
| Max. permissible finger length           | [mm]               | 50          | 40             | 40             |
| Precision version                        |                    | 0303338     | 0303488        |                |

① It may take a few 100 gripping cycles until the full gripping force (as indicated in the data table) will be available.

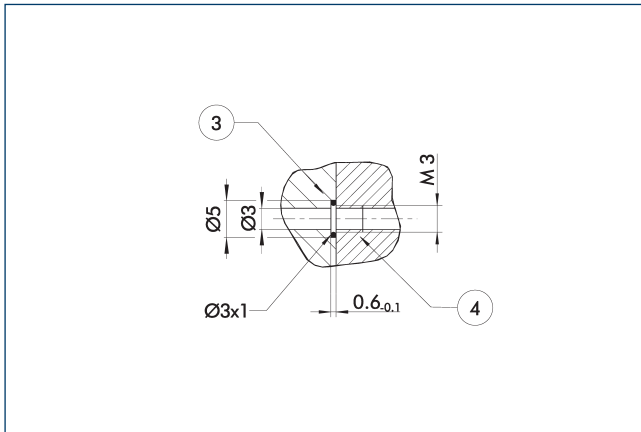
[illegible]

attachments

# PZN-plus 40

Universal gripper

## Hose-free direct connection M3

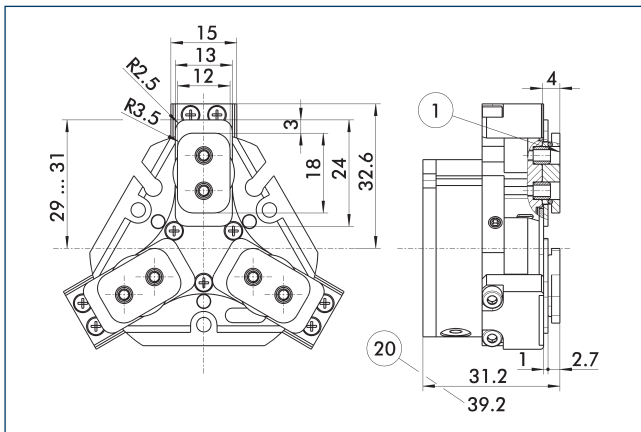


③ Adapter

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.

## Dustproof version

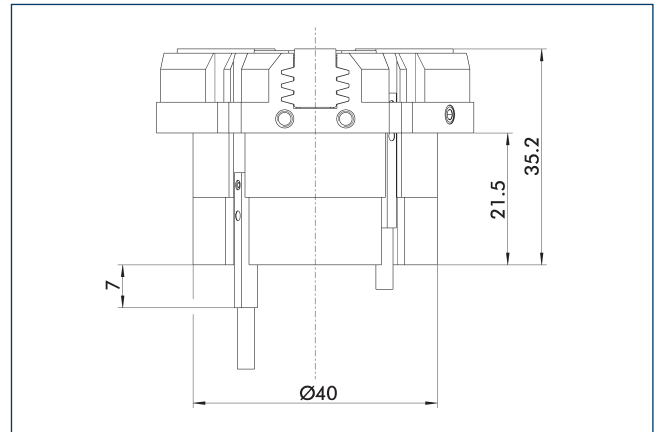


① Gripper connection

②② For version AS/IS

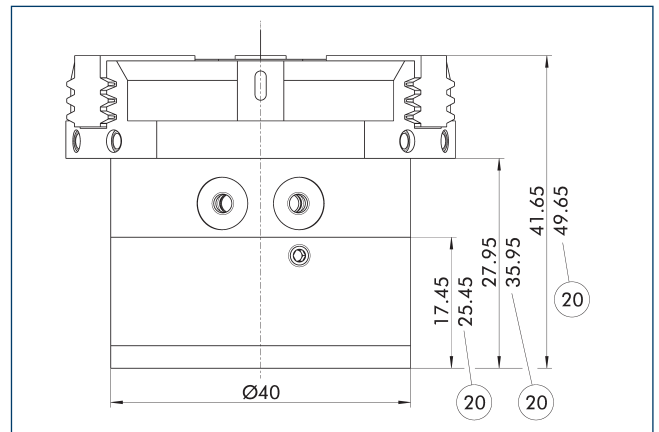
The "dustproof" option increases the degree of protection against penetrating substances. The assembly diagram shifts by the height of the intermediate jaw. The finger length is still measured from the upper edge of the gripper housing.

## Gripping force maintenance version AS/IS



The mechanical gripping force maintenance device ensures that a minimum clamping force will be applied even if there is a drop in pressure. In the AS/IS variant this acts as a closing force, in the IS variant as an opening force. Besides this, gripping force maintenance can be used to increase gripping force or for single actuated gripping.

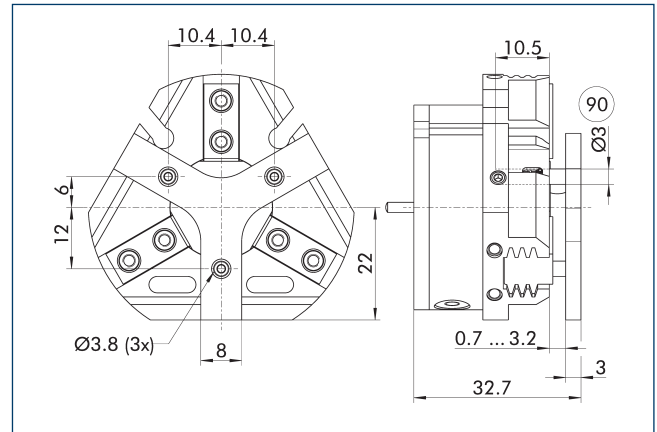
## Power booster version



②② For version AS/IS

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.

### Spring-loaded pressure piece

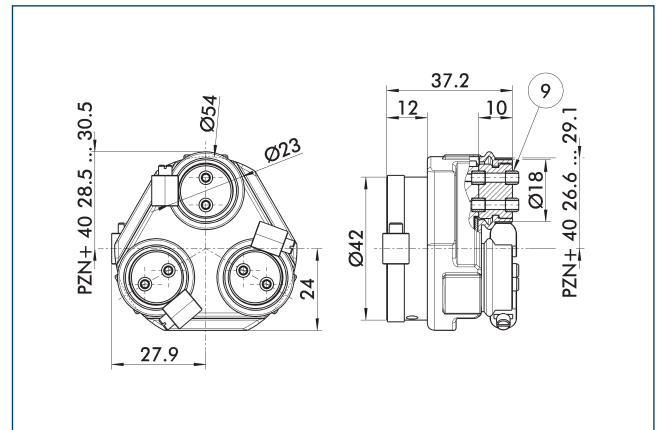


- ⑨ Guide pin

For spring-supported positioning of the workpiece against a stop after the gripper has opened. Especially developed for loading machines.

① The pressure piece cannot be combined with the dustproof option. The combination of star-shaped pressure piece and jaw quick-change system BSWs must be checked in detail for a possible collision. Please contact us if you require a customized pressure piece.

## Protective cover HUE PZN-plus 40



- ⑨ For mounting screw connection diagram, see basic version

The HUE protective cover fully protects the gripper against external influences. The cover is suitable for applications of up to IP65 if an additional sealing of the cover bottom is provided. For detailed information, please see the HUE series. The connection diagram shifts by the height of the intermediate jaw.

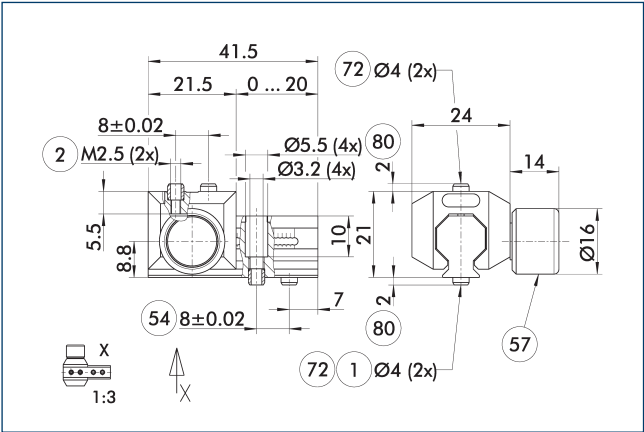
| Description      | ID      | IP protection class |
|------------------|---------|---------------------|
| Protection cover |         |                     |
| HUE PZN-plus 40  | 0303478 | 65                  |

- 11

# PZN-plus 40

Universal gripper

## UZH 40 universal intermediate jaw



- 1 Gripper connection

2 Finger connection

54 Optional right or left connection
- 57 Locking

72 Fit for centering sleeves

80 Depth of the centering sleeve hole in the counter part

The drawing shows the UZH universal intermediate jaw.

| Description                | ID      | Grid dimension |
|----------------------------|---------|----------------|
|                            |         | [mm]           |
| Universal intermediate jaw |         |                |
| UZH 40                     | 0300040 | 1              |
| Finger blank               |         |                |
| ABR-PGZN-plus 40           | 0300008 |                |
| SBR-PGZN-plus 40           | 0300018 |                |

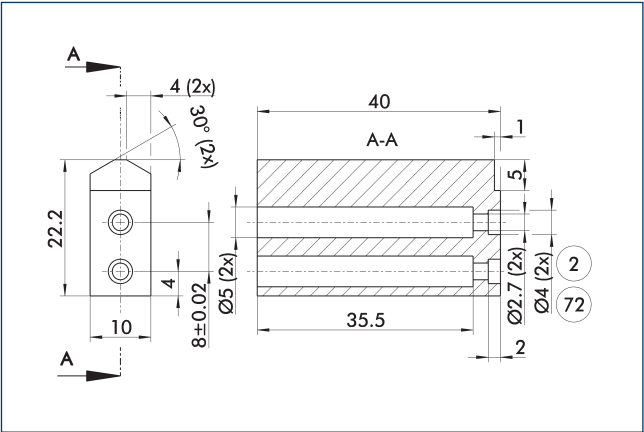
- ① If the operating pressure is higher than 6 bar, suitability for use beyond the application limits must be checked.

### Fields of application

| Series   | Size                                       | Variant            | Suitability |
|----------|--------------------------------------------|--------------------|-------------|
| PZN-plus | 40                                         | -1 (6 bar)         | ■■■■        |
| PZN-plus | 40                                         | -1-AS/1-IS (6 bar) | ■ ■ □ □     |
| PZN-plus | 40                                         | ---KVZ (6 bar)     | □ □ □ □     |
| Legend   |                                            |                    |             |
| ■■■■     | Can be combined without restrictions       |                    |             |
| ■ ■ □ □  | Use with restrictions (see loading limits) |                    |             |
| □ □ □ □  | cannot be combined                         |                    |             |

The load limits for describing the application limits can be found in the catalog chapter of the corresponding accessories.

## Finger blanks ABR/SBR-PGZN-plus 40

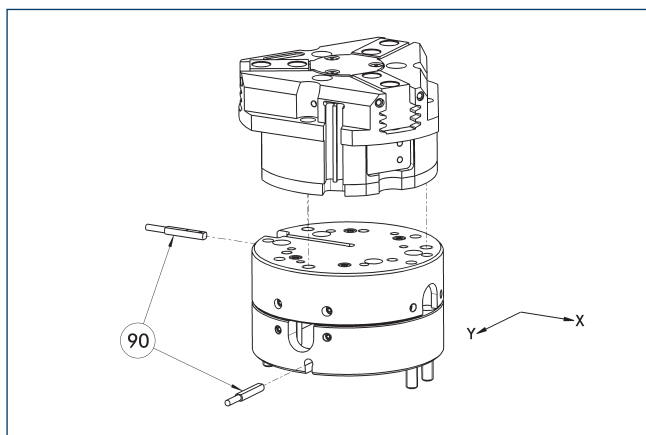


- 2 Finger connection
- 72 Fit for centering sleeves

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

| Description      | ID      | Material          | Scope of delivery |
|------------------|---------|-------------------|-------------------|
| Finger blank     |         |                   |                   |
| ABR-PGZN-plus 40 | 0300008 | Aluminum (3.4365) | 1                 |
| SBR-PGZN-plus 40 | 0300018 | Steel (1.7131)    | 1                 |

### Compensation unit AGE-F

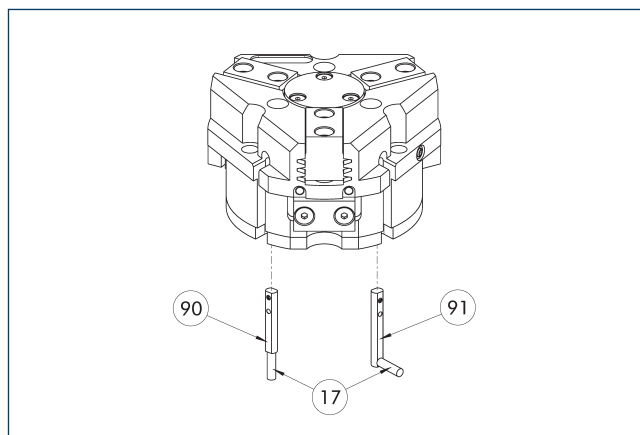


90 Monitoring

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]         |                |
| <b>Compensation unit</b> |         |                 |             |                |
| AGE-F-XY-031-1           | 0324900 | ± 1.5           | 1.5         |                |
| AGE-F-XY-031-2           | 0324901 | ± 1.5           | 4           |                |
| AGE-F-XY-031-3           | 0324902 | ± 1.5           | 5.5         | ●              |

### Electronic magnetic switch MMS



17 Cable outlet

91 Sensor MMS 22...-SA

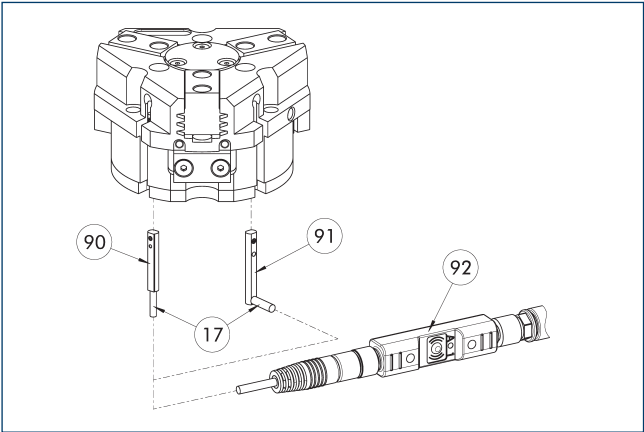
90 Sensor MMS 22..

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



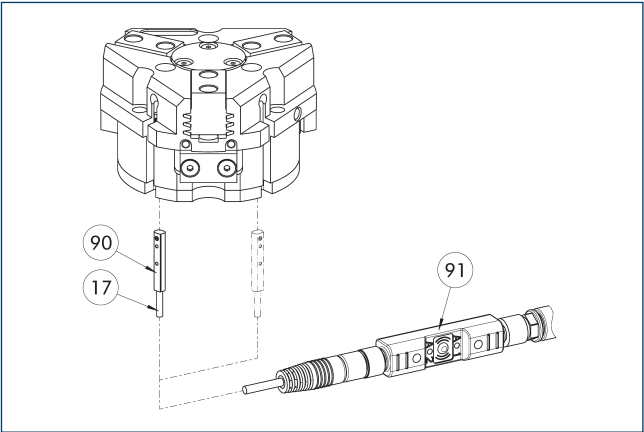
- ⑪ Cable outlet
- ⑨① Sensor MMS 22 ..-PI1-...-SA
- ⑨② Connector teaching tool ST
- ⑨② Connector teaching tool ST

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 |
|-----------------------------------------------------------|---------|----------------|
| Programmable magnetic switch                              |         |                |
| MMS 22-PI1-S-M8-PNP                                       | 0301160 | ●              |
| MMSK 22-PI1-S-PNP                                         | 0301162 |                |
| Programmable magnetic switch with lateral cable outlet    |         |                |
| MMS 22-PI1-S-M8-PNP-SA                                    | 0301166 | ●              |
| MMSK 22-PI1-S-PNP-SA                                      | 0301168 |                |
| Programmable magnetic switch with stainless steel housing |         |                |
| MMS 22-PI1-S-M8-PNP-HD                                    | 0301110 | ●              |
| MMSK 22-PI1-S-PNP-HD                                      | 0301112 |                |
| Plug teaching tool                                        |         |                |
| ST-MMS 22-PI1-PNP                                         | 0301025 |                |

- ⑪ 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



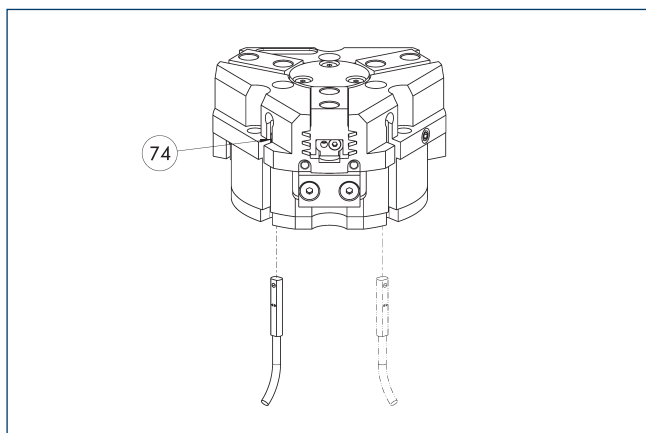
- ⑪ Cable outlet
- ⑨① Connector teaching tool ST
- ⑨② MMS 22...-PI2-... sensor
- ⑨② MMS 22...-PI2-... sensor

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 |                |
| Plug teaching tool                                        |         |                |
| ST-MMS 22-PI2-PNP                                         | 0301026 |                |

- ⑪ 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.



**SCHUNK SE & Co. KG**

**Spanntechnik**

**Greiftechnik**

**Automatisierungstechnik**

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