



Superior Clamping and Gripping



## Product Information

Angular gripper PWG-plus

# 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 device** 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



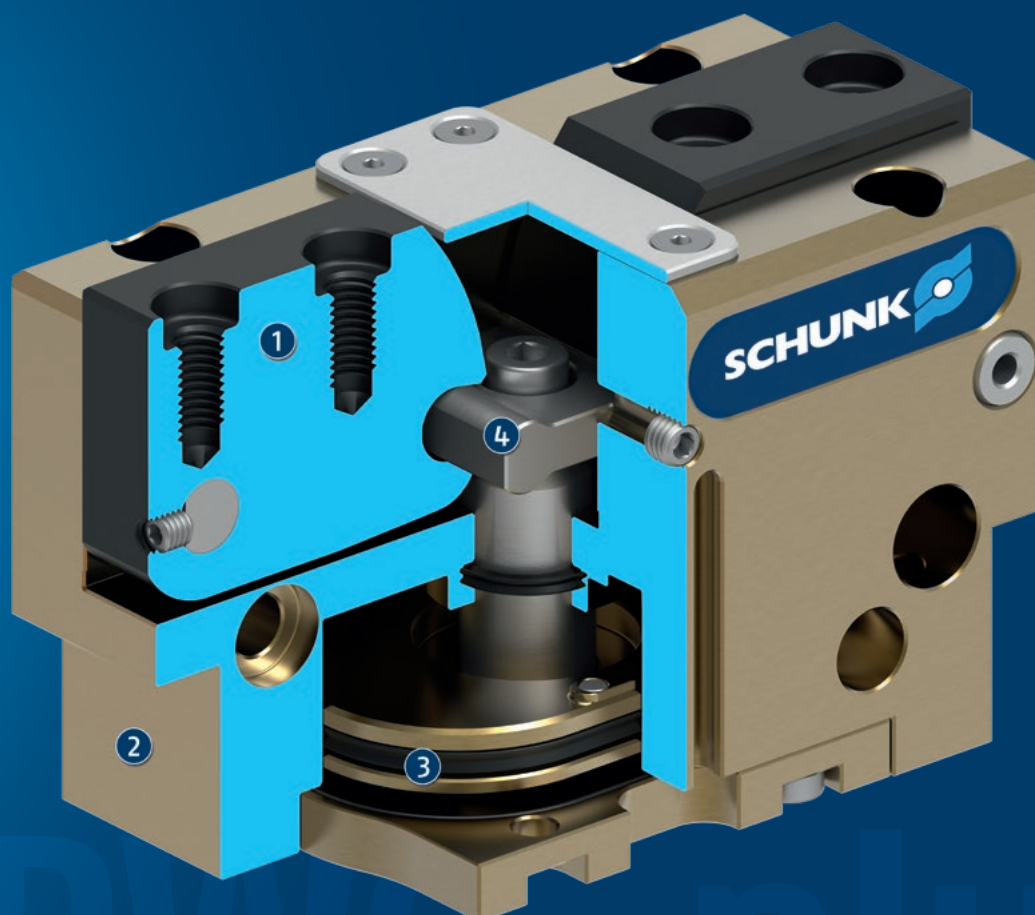
Angle per jaw  
15°



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

**Scope of delivery:** Centering elements, O-rings for direct connection, fixed throttle (for sizes 50-200), assembly instructions (operating manual with declaration of incorporation is available online)

**Gripping force maintenance device:** 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.

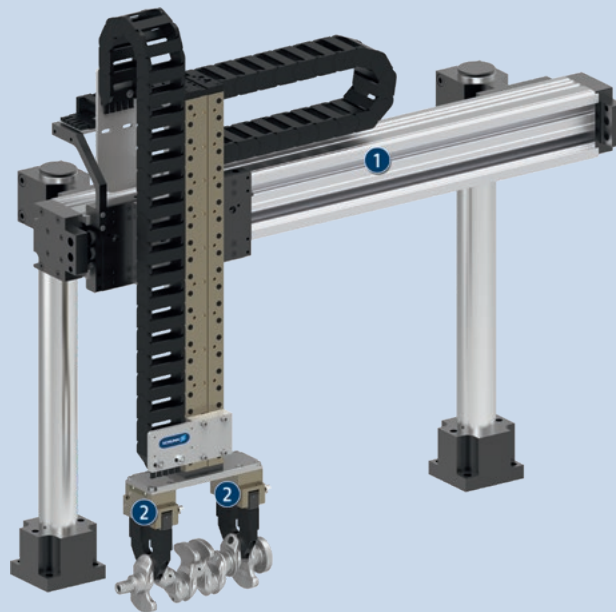
The indicated closing moment will be reached at an opening angle of 0°. A detailed closing moment course depending on the opening angle can be taken out of the diagram "closing moment course".

**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 purely the times that the base jaws or fingers are in motion. 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 ...

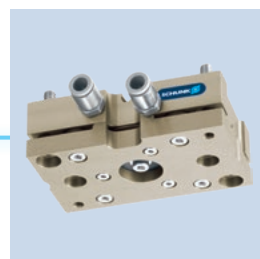
The following components make the product even more productive – the suitable addition for the highest functionality, flexibility, reliability, and controlled production.



Compensation unit



Manual change system



Tolerance compensation unit



Pressure maintenance valve



Flexible position sensor



Magnetic switches



Inductive proximity switches

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

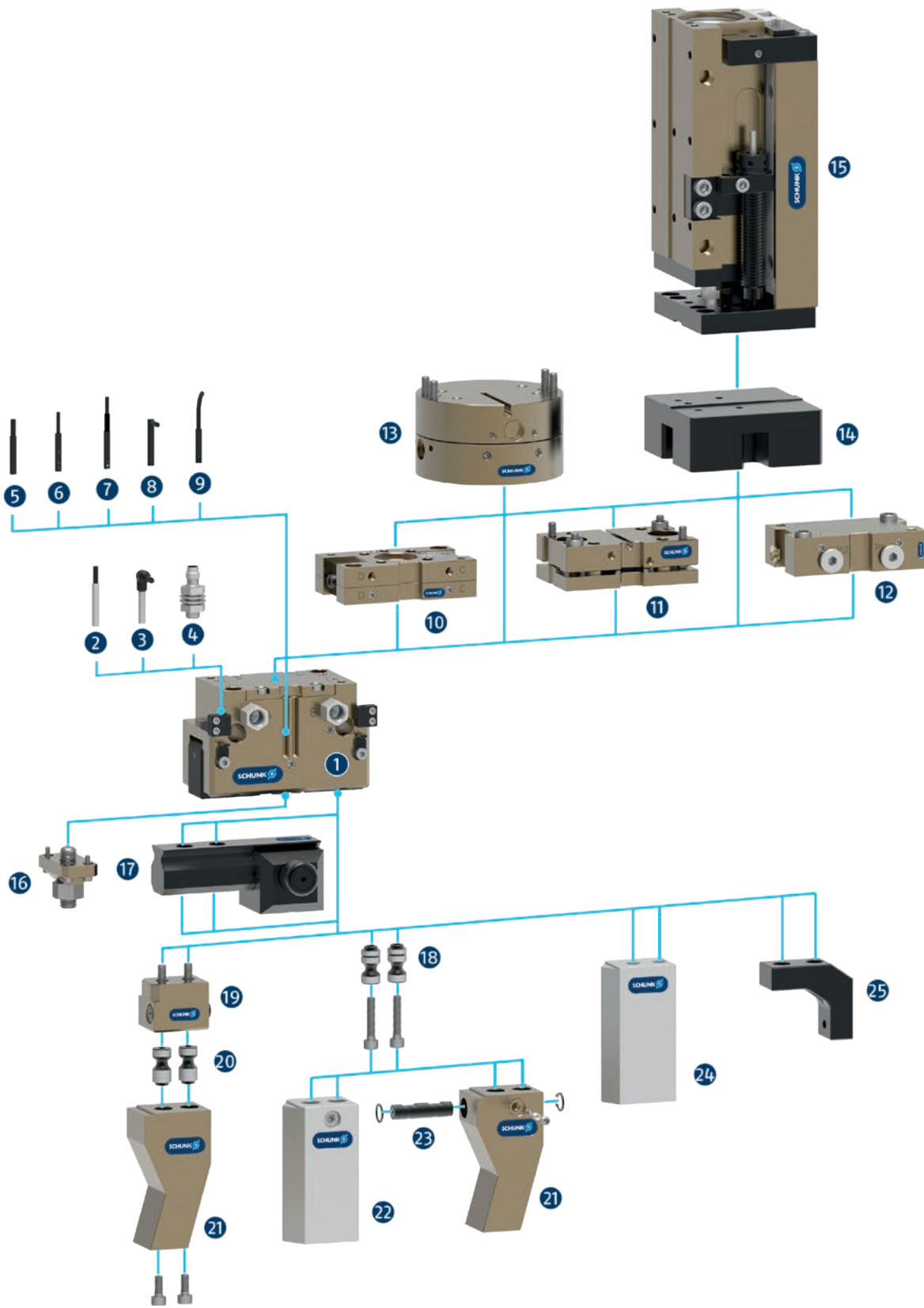
**Additional versions:** Various options can be combined with each other. Numerous additional options are also available – just tell us what your task is!

# PWG-plus

Angular gripper

## 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 **UZB**  
The universal intermediate jaw allows fast tool-free and reliable plugging and shifting of top jaws at the gripper.

- 18 **BSWS-AR**  
Adapter coupling of 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 coupling 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

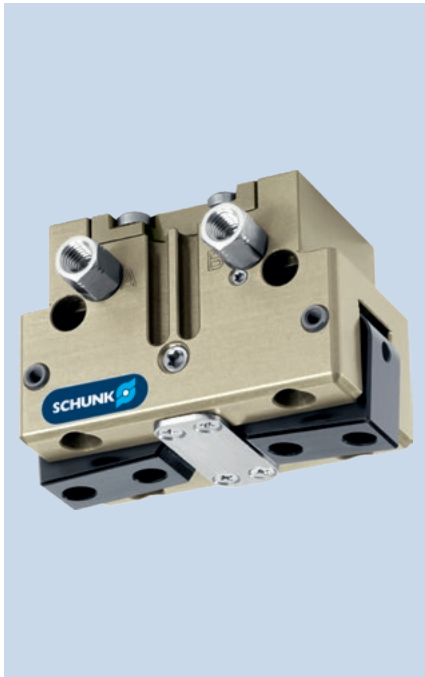
- 23 **BSWS-UR**  
Locking mechanism for the integration of the jaw quick-change system into customized fingers

- 24 **ABR/SBR**  
Finger blanks made of steel or aluminum with standardized screw connection diagram

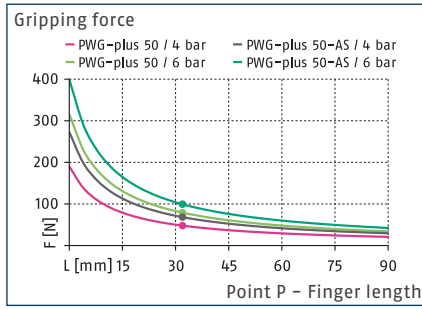
- 25 **ZBA**  
Intermediate jaws for reorientation of the mounting surface

# PWG-plus 50

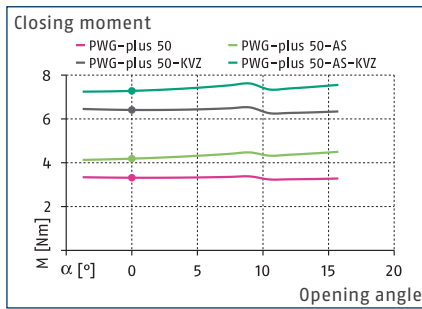
Angular gripper



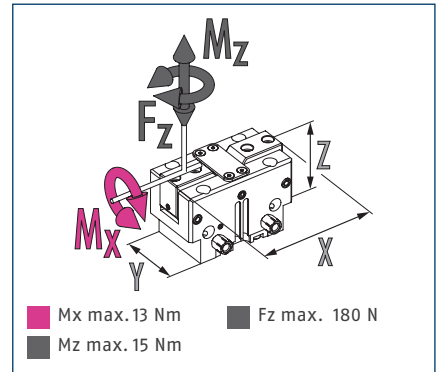
## Gripping force O.D. gripping



## Closing moment curve



## Dimensions and maximum loads



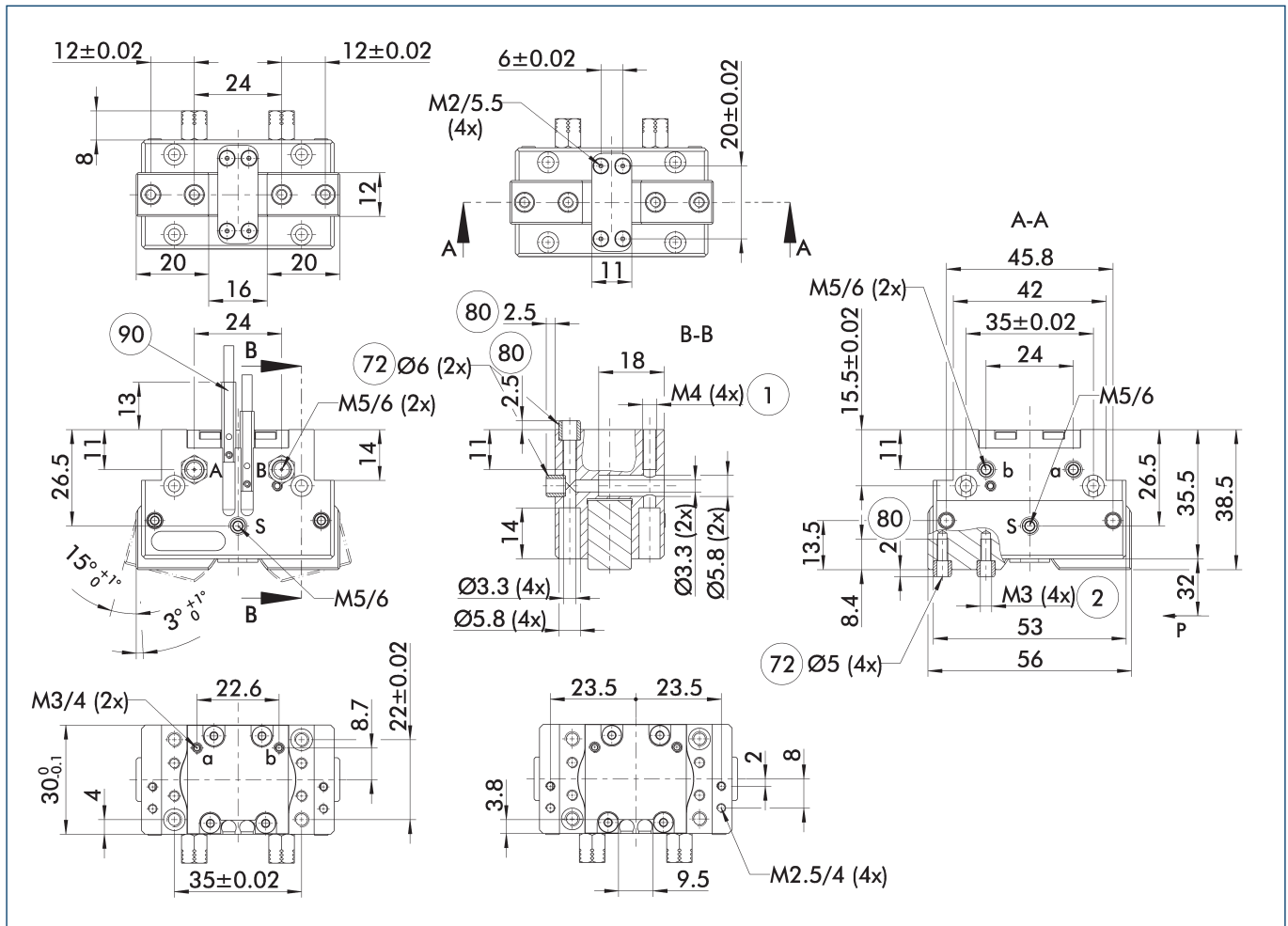
① The indicated torques and forces are static values, apply for each base jaw, and may occur simultaneously.

## Technical data

Description		PWG-plus 50	PWG-plus 50-AS
ID		0311610	0311611
Opening angle per jaw	[°]	15	15
Closed angle per jaw	[°]	3	3
Closing moment	[Nm]	3.32	4.19
Closing moment generated by spring	[Nm]		0.87
Weight	[kg]	0.13	0.17
Recommended workpiece weight	[kg]	0.4	0.4
Fluid consumption double stroke	[cm <sup>3</sup> ]	5.5	9
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]	0.06/0.06	0.06/0.1
Max. permissible finger length	[mm]	64	64
Max. permissible mass moment of inertia per chuck jaw	[kgcm <sup>2</sup> ]	5.3	5.3
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]	56 x 30 x 38.5	56 x 30 x 54.5
<b>Options and their characteristics</b>			
High-temperature version		39311610	39311611
Min./max. ambient temperature	[°C]	5/130	5/130
Power booster version		0311615	0311616
Closing moment	[Nm]	6.41	7.28
Closing moment generated by spring	[Nm]		0.87
Weight	[kg]	0.17	0.22
Maximum pressure	[bar]	6	6
Max. permissible finger length	[mm]	64	64



## Main view



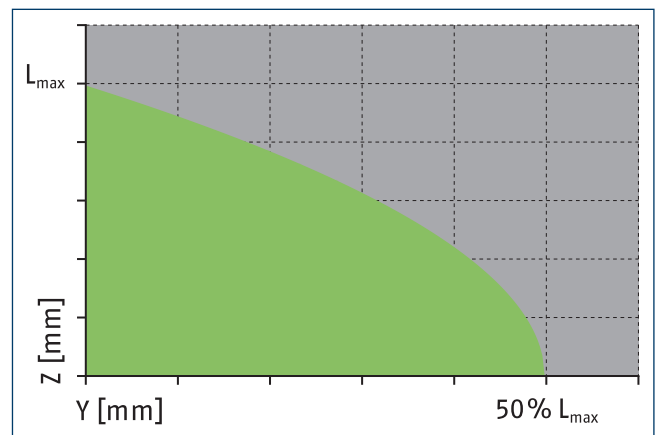
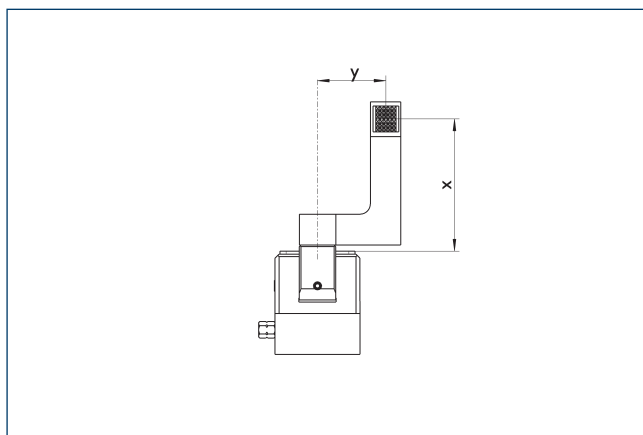
The drawing shows the gripper in the basic version with closed jaws, without dimensional consideration of the options described below.

① The SDV-P pressure maintenance valve can also be used for I.D. or O.D. gripping alternatively or in addition to the spring-loaded, mechanical gripping force maintenance device (see catalog section on accessories).

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

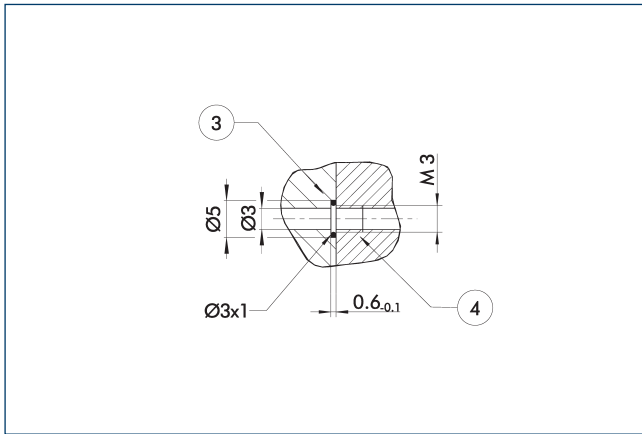
■ Inadmissible range

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

# PWG-plus 50

Angular gripper

## Hose-free direct connection M3

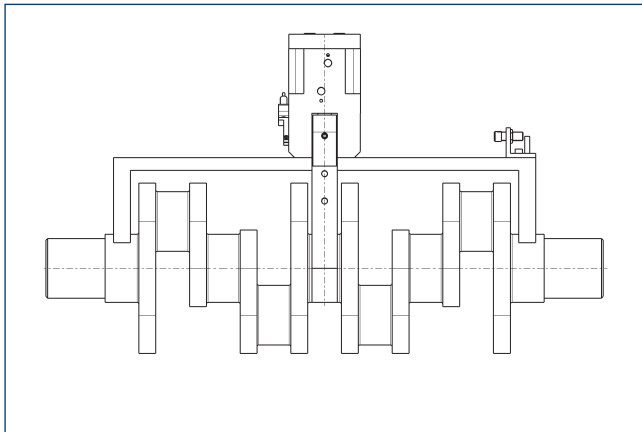


③ Adapter

④ Grippers

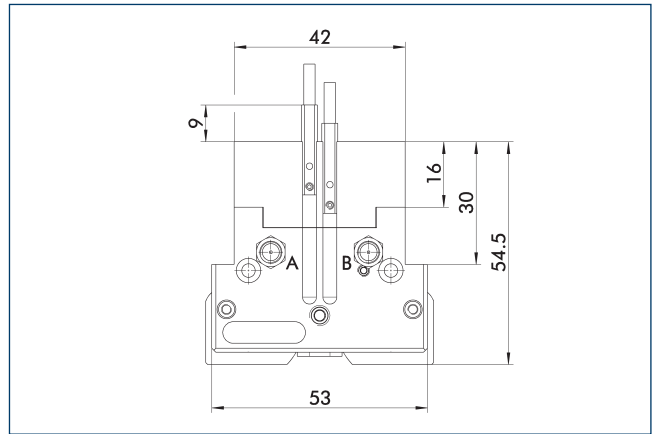
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

## Shaft support



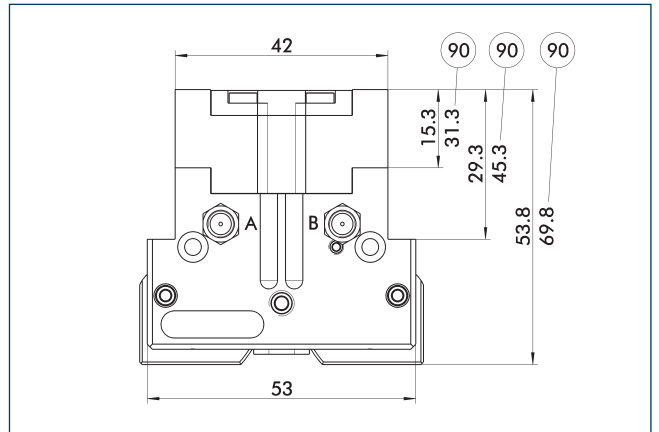
The complete assembly group for handling of cranks and cam shafts can be supplied on request.

## Gripping force maintenance device



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.

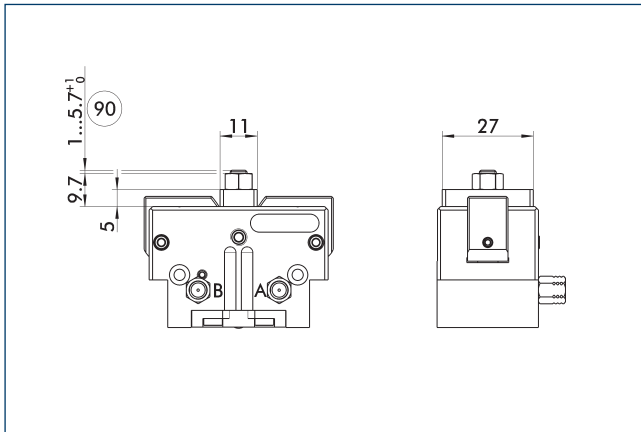
## Power booster version



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

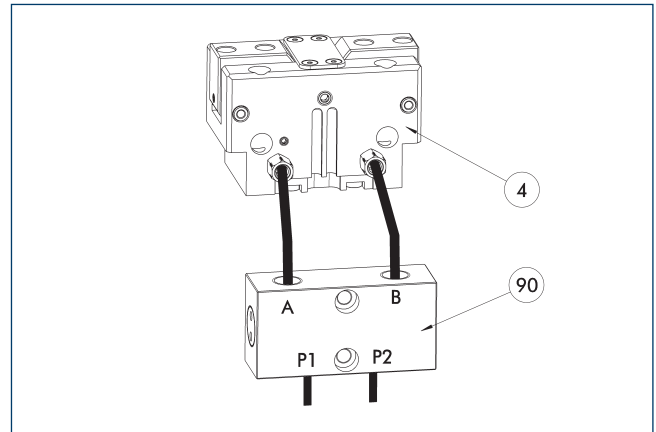


⑨⑩ Max. adjustment travel

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

Description	ID	
Stroke adjustment		
HVE-PWG-plus 50	0311713	

## SDV-P pressure maintenance valve



④ Grippers

⑨⑩ 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.

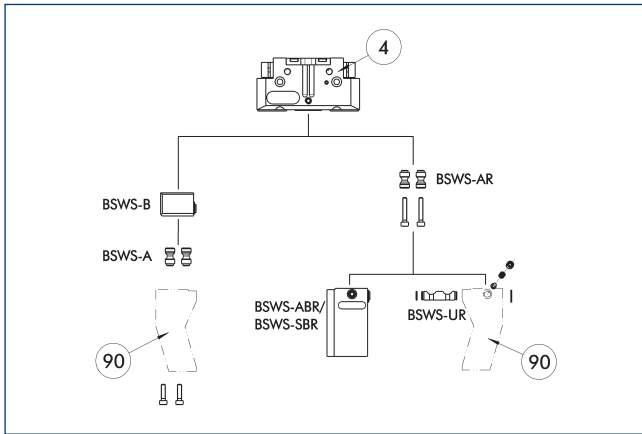
Description	ID	Recommended hose diameter
		[mm]
Pressure maintenance valve		
SDV-P 04	0403130	6
Pressure maintenance valve with air bleed screw		
SDV-P 04-E	0300120	6

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).

# PWG-plus 50

Angular gripper

## BSWS jaw quick-change jaw systems



④ Grippers

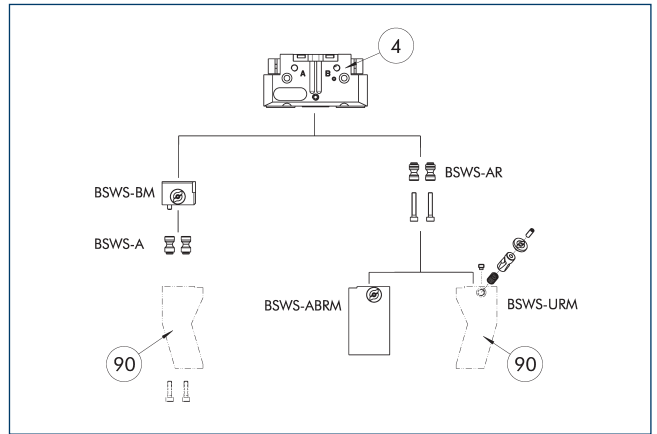
⑨⑩ Customized gripper fingers

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
<b>Jaw quick-change system adapter pin</b>		
BSWS-A 50	0303020	2
BSWS-AR 50	0300091	2
<b>Quick-change jaw system base</b>		
BSWS-B 50	0303021	1
<b>Jaw quick-change system finger blank</b>		
BSWS-ABR-PGZN-plus 50	0300071	1
BSWS-SBR-PGZN-plus 50	0300081	1
<b>Jaw quick-change system locking mechanism</b>		
BSWS-UR 50	0302990	1

⑩ Only systems that are listed in the table, can be used.

## Jaw quick-change system BSWS-M



④ Grippers

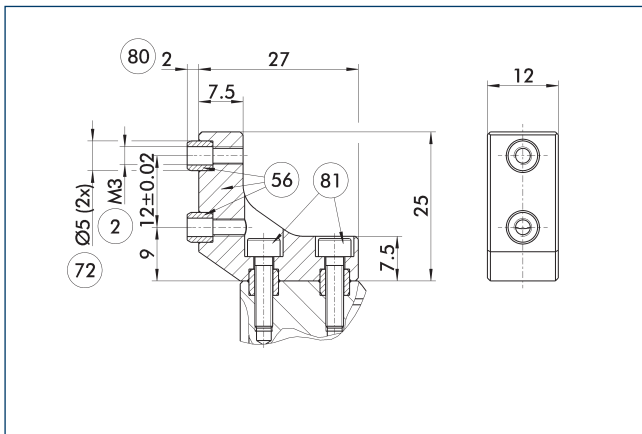
⑨⑩ Customized gripper fingers

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
<b>Jaw quick-change system adapter pin</b>		
BSWS-A 50	0303020	2
BSWS-AR 50	0300091	2
<b>Quick-change jaw system base</b>		
BSWS-BM 50	1313899	1
<b>Jaw quick-change system finger blank</b>		
BSWS-ABRM-PGZN-plus 50	1420850	1
<b>Jaw quick-change system locking mechanism</b>		
BSWS-URM 50	1380614	1

⑩ Only systems that are listed in the table, can be used.

ZBA-L-plus 50 intermediate jaws

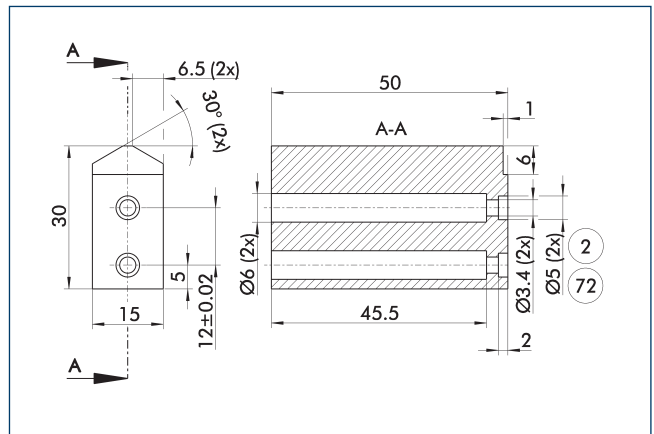


- ② Finger connection
- ⑤⑥ Included in the scope of delivery
- ⑦② Fit for centering sleeves
- ⑧① Depth of the centering sleeve hole in the counter part
- ⑧① Not included in the scope of delivery

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 50	0311712	Aluminum	PGN-plus 50	1

Finger blank ABR- / SBR-PGZN-plus 50

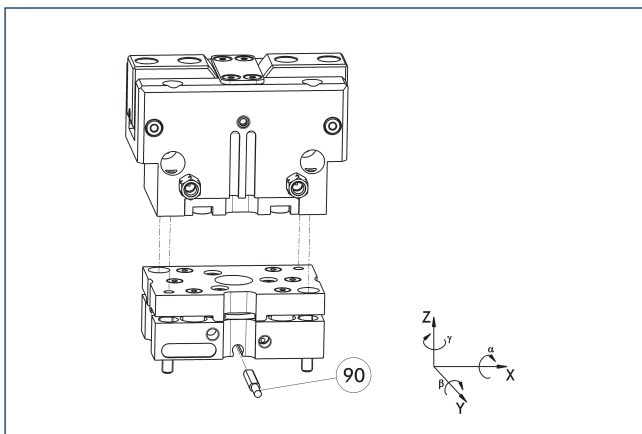


- ② Finger connection
- ⑦② Fit for centering sleeves

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

Description	ID	Material	Scope of delivery
Finger blank			
ABR-PGZN-plus 50	0300009	Aluminum	1
SBR-PGZN-plus 50	0300019	Steel	1

Tolerance compensation unit TCU

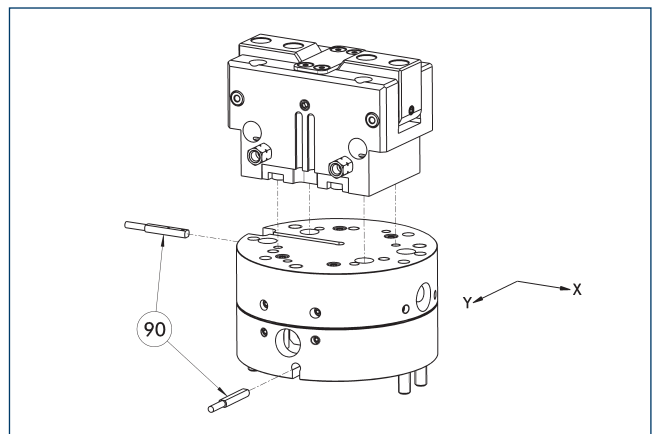


- ⑨① Monitoring of locking

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
Compensation unit			
TCU-P-050-3-0V	0324757	no	±1°/±1°/±1,5°

Compensation unit AGE-F



- ⑨① Monitoring

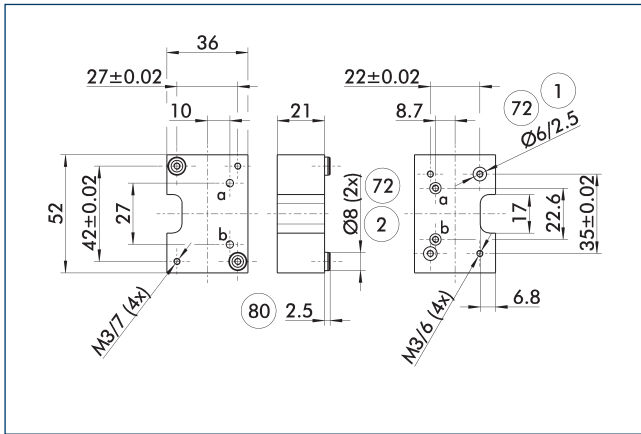
Grippers can be directly mounted without an adapter plate. For details see our catalog Gripping or Robot Accessories.

Description	ID	Compensation XY	Reset force	Often combined
		[mm]	[N]	
Compensation unit				
AGE-F-XY-040-1	0324920	± 2	3	
AGE-F-XY-040-2	0324921	± 2	4	
AGE-F-XY-040-3	0324922	± 2	4.5	●

# PWG-plus 50

Angular gripper

## Adapter plate for PGN-plus 50

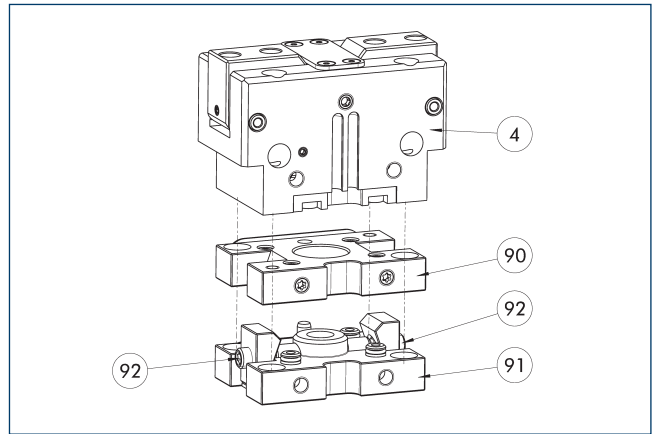


- ① Robot-side connection
- ② Tool-side connection
- ⑦② Fit for centering sleeves
- ⑧① Depth of the centering sleeve hole in the counter part

The adapter plate has integrated air feed-throughs in order to be able to use the hose-free direct connection of the appropriate gripper.

Description	ID
Tool side	
A-CWA-064-050-P	0305768

## Compact change system for grippers

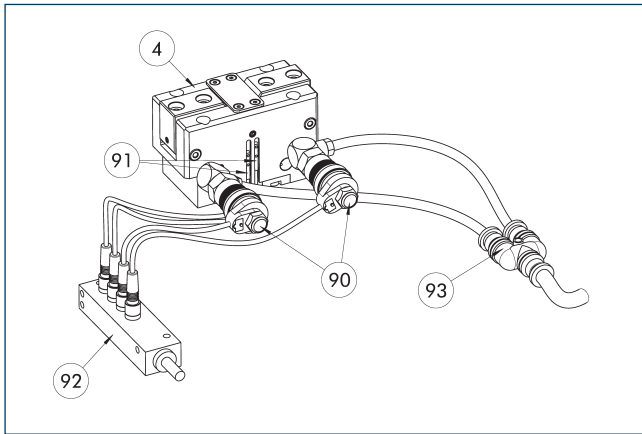


- ④ Grippers
- ⑨③ CWA compact change adapter
- ⑨① CWK compact change master
- ⑨② Locking mechanism

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

Description	ID
Tool side	
A-CWA-064-050-P	0305768
CWA compact change adapter	
CWA-050-P	0305751
CWK compact change master	
CWK-050-P	0305750

Attachment valves



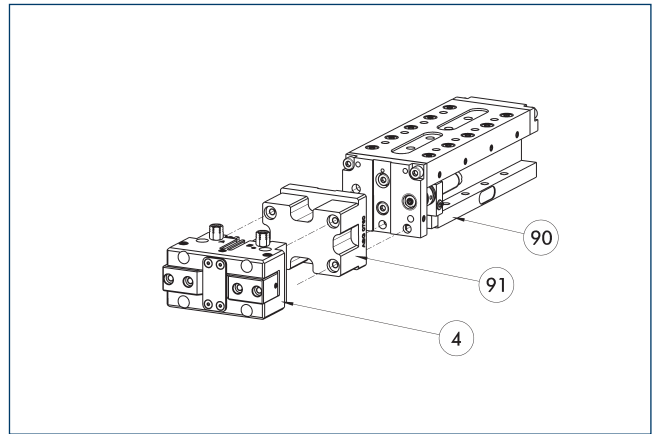
- ④ Grippers
- ⑨② Sensor distributor
- ⑨① Micro valves
- ⑨③ Y distributor
- ⑨① Sensor

The set of attachment valves reduces the compressed air consumption as there is no need to ventilate or bleed the supply lines. This can also reduce cycle time. The hose-free direct assembly of the micro valves reduces the hosing effort for the gripper. To further simplify electrical connection of the valves and sensors, their signals can be bundled via an optional distributor.

Description	ID	Often combined
Attachment valve		
ABV-MV15-M5	0303323	
ABV-MV15-M5-V2-M8	0303386	
ABV-MV15-M5-V4-M8	0303356	●
ABV-MV15-M5-V8-M8	0303357	

① A set of attachment valves ABV is required per actuator. The ABV set contains two 3/2 micro valves, an Y-distributor for compressed air supply and optionally a sensor distributor with two, four or eight inputs or outputs. Sensors for monitoring the gripper need to be ordered separately. Pneumatic hoses are not included in the scope of delivery.

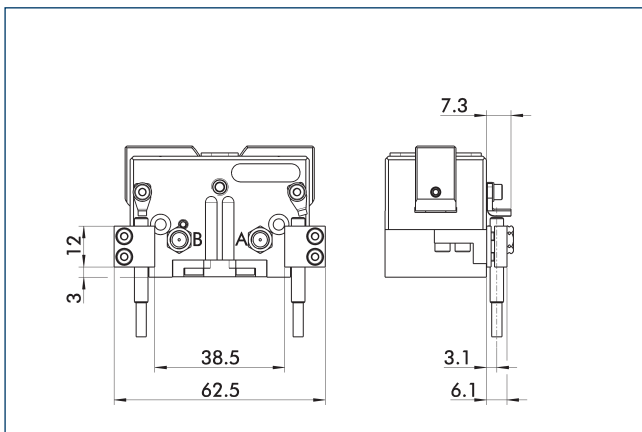
Modular Assembly Automation



- ④ Grippers
- ⑨① ASG adapter plate
- ⑨① CLM/KLM/LM/ELP/ELM/ELS/HLM linear modules

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.

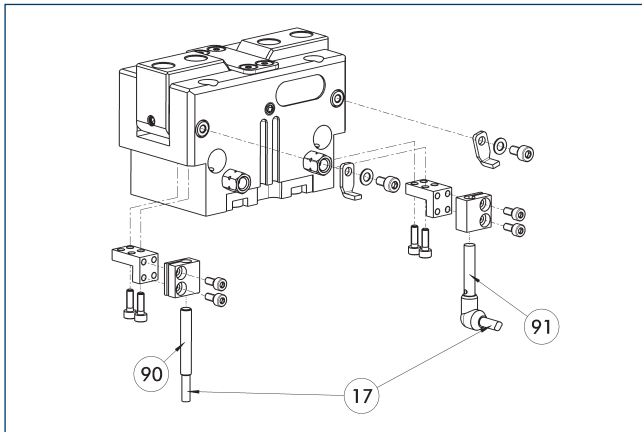
Description	ID	
Attachment kit for proximity switch		
AS-IN40-PWG-plus 50	0311710	

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

# PWG-plus 50

Angular gripper

## IN 40 inductive proximity switches



17 Cable outlet

91 Sensor IN..-SA

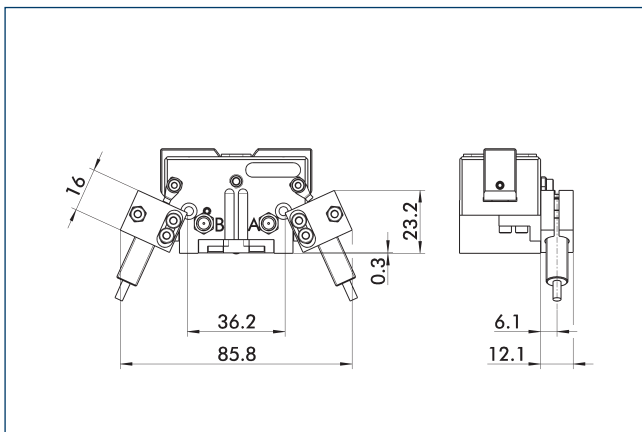
90 Sensor IN ...

End position monitoring can be mounted with an attachment kit.

Description	ID	Often combined
Attachment kit for proximity switch		
AS-IN40-PWG-plus 50	0311710	
Inductive proximity switches		
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



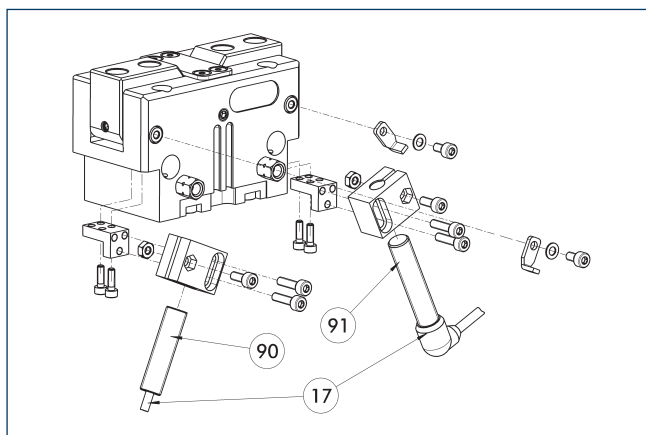
End position monitoring can be mounted with an attachment kit.

Description	ID	
Attachment kit for proximity switch		
AS-IN80-PWG-plus 50	0311711	

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



## IN 80 inductive proximity switches



- ①7 Cable outlet
- ①90 Sensor IN ...
- ①91 Sensor IN..-SA

End position monitoring can be mounted with an attachment kit.

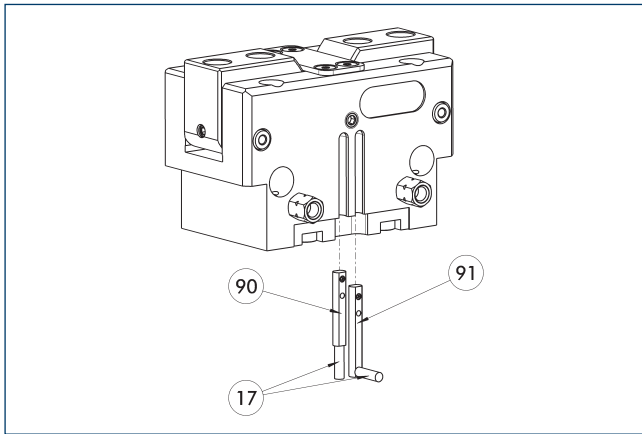
Description	ID	Often combined
Attachment kit for proximity switch		
AS-IN80-PWG-plus 50	0311711	
Inductive proximity switches		
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	●
IN-C 80-S-M8-PNP	0301475	
INK 80-S	0301550	
INK 80-SL	0301579	
Inductive proximity switch with lateral cable outlet		
IN 80-S-M12-SA	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.

# PWG-plus 50

Angular gripper

## Electronic magnetic switch MMS



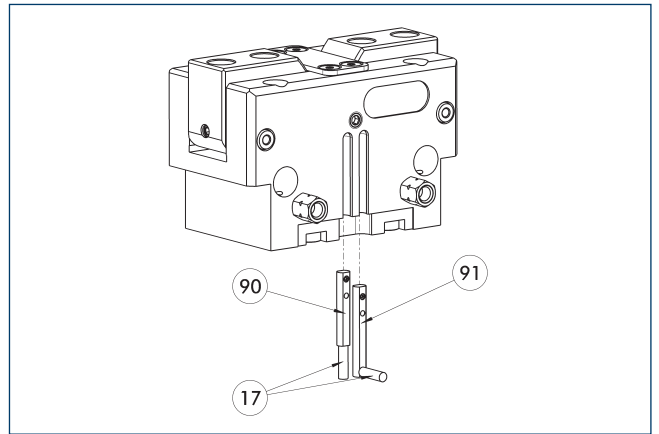
- ⑰ Cable outlet
- ⑲ Sensor MMS 22...-SA
- ① Sensor MMS 22..

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 plug/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



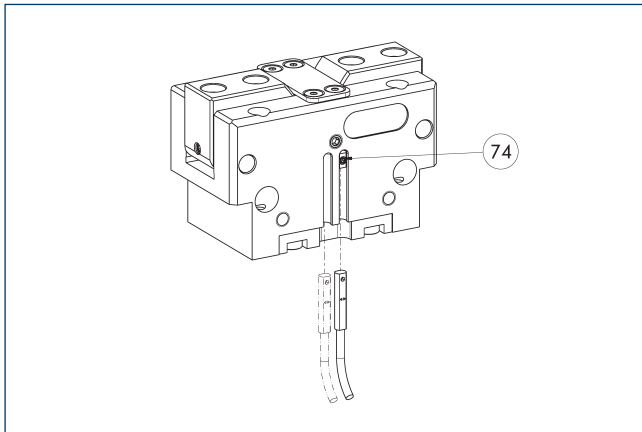
- ⑰ Cable outlet
- ⑲ Sensor MMS 22 ..-PI1...-SA
- ① Sensor MMS 22 PI1-...

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) 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.

**MMS-P programmable magnetic switch**



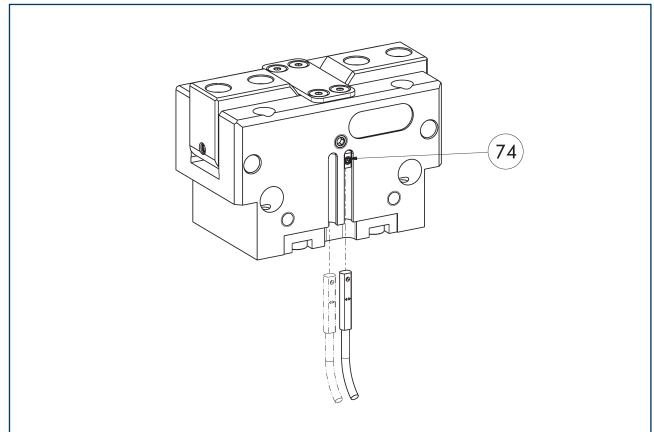
⑦④ Limit stop for sensor

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 BG08-L 4P-0500	0307767	●
KA BG08-L 4P-1000	0307768	
KA BW08-L 4P-0500	0307765	
KA BW08-L 4P-1000	0307766	
clip for plug/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. Sensor programming on the gripper takes place via the IO-Link interface or the MT magnetic teach tool (included in scope of delivery). 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	

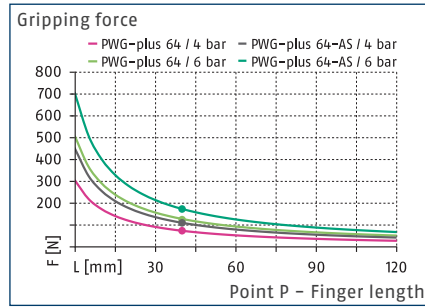
① One sensor is required for each gripper. No additional mounting kit is required – the gripper is equipped for use of the sensor by default. Further information and technical data can be found in the catalog chapter sensor systems.

# PWG-plus 64

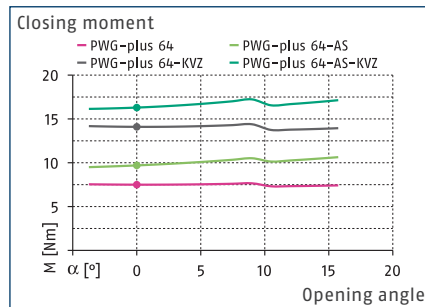
Angular gripper



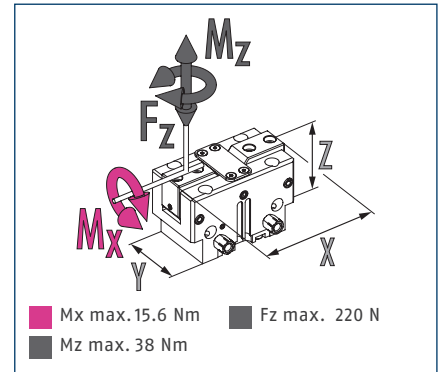
## Gripping force O.D. gripping



## Closing moment curve



## Dimensions and maximum loads

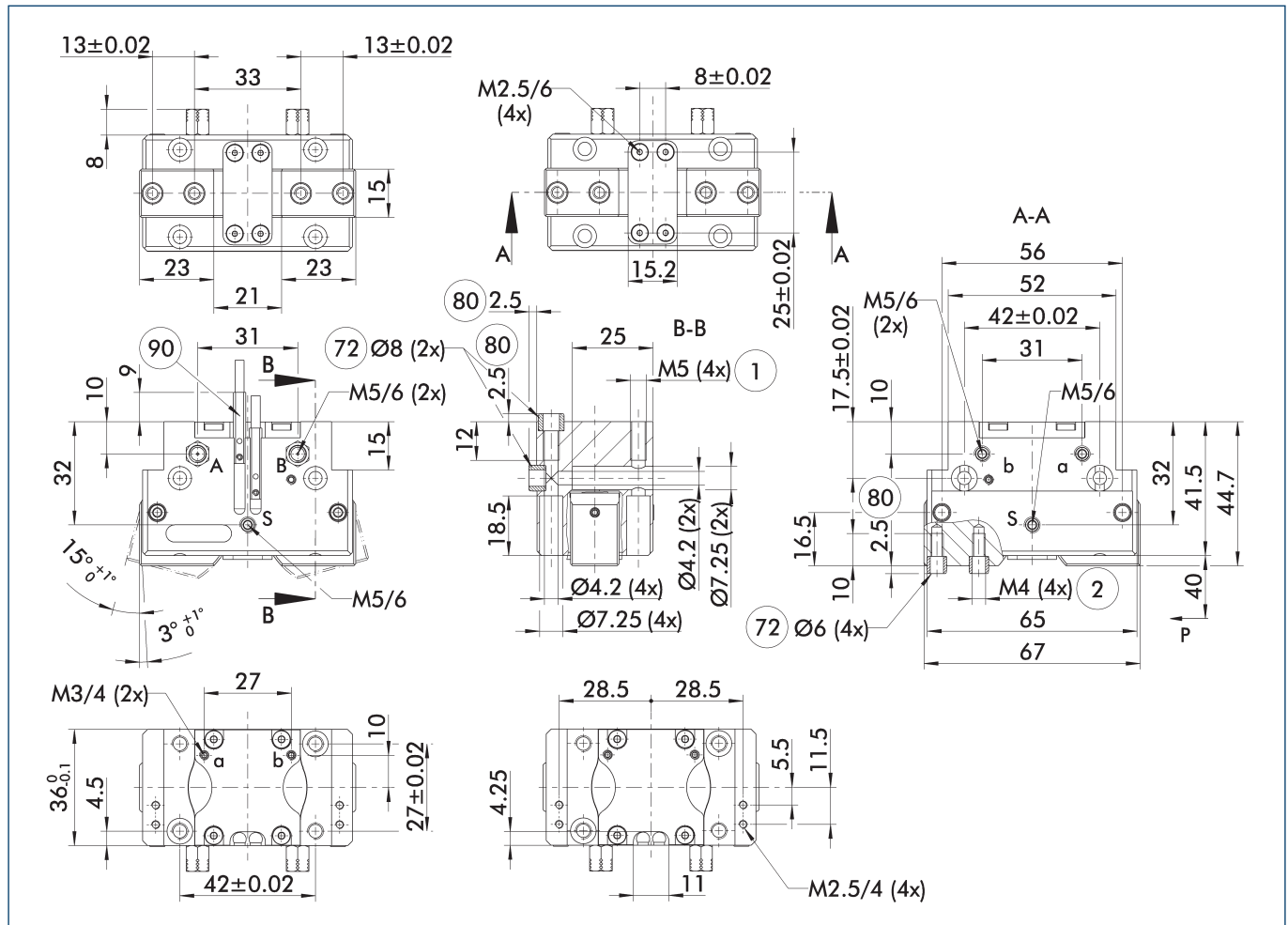


① The indicated torques and forces are static values, apply for each base jaw, and may occur simultaneously.

## Technical data

Description		PWG-plus 64	PWG-plus 64-AS
ID		0311620	0311621
Opening angle per jaw	[°]	15	15
Closed angle per jaw	[°]	3	3
Closing moment	[Nm]	6.8	9.4
Closing moment generated by spring	[Nm]		2.6
Weight	[kg]	0.24	0.33
Recommended workpiece weight	[kg]	0.65	0.65
Fluid consumption double stroke	[cm <sup>3</sup> ]	10	17
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]	0.07/0.07	0.07/0.13
Max. permissible finger length	[mm]	80	80
Max. permissible mass moment of inertia per chuck jaw	[kgcm <sup>2</sup> ]	15	15
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]	67 x 36 x 44.7	67 x 36 x 62.7
<b>Options and their characteristics</b>			
High-temperature version		39311620	39311621
Min./max. ambient temperature	[°C]	5/130	5/130
Power booster version		0311625	0311626
Closing moment	[Nm]	13.5	16.1
Closing moment generated by spring	[Nm]		2.6
Weight	[kg]	0.31	0.39
Maximum pressure	[bar]	6	6
Max. permissible finger length	[mm]	80	80

## Main view



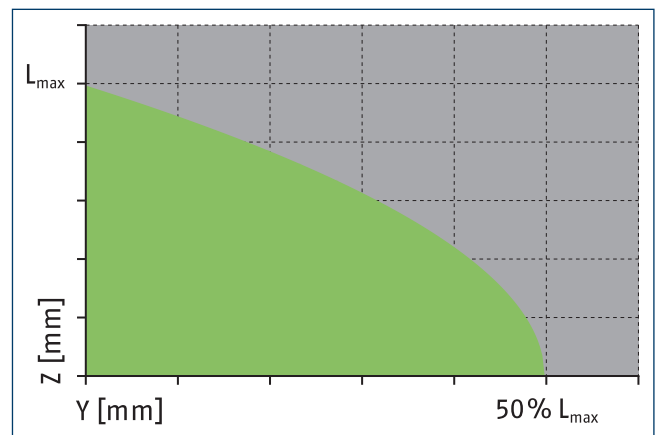
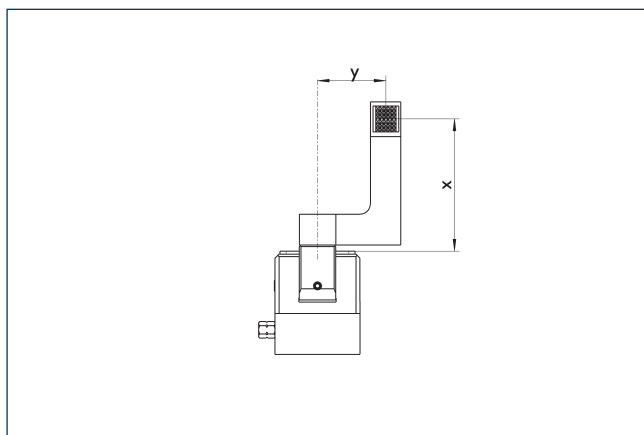
The drawing shows the gripper in the basic version with closed jaws, without dimensional consideration of the options described below.

① The SDV-P pressure maintenance valve can also be used for I.D. or O.D. gripping alternatively or in addition to the spring-loaded, mechanical gripping force maintenance device (see catalog section on accessories).

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

② Finger connection  
 ⑦ Fit for centering sleeves  
 ⑧ Depth of the centering sleeve hole in the counter part  
 ⑨ Sensor MMS 22..

## Maximum permitted finger projection



■ Permitted range

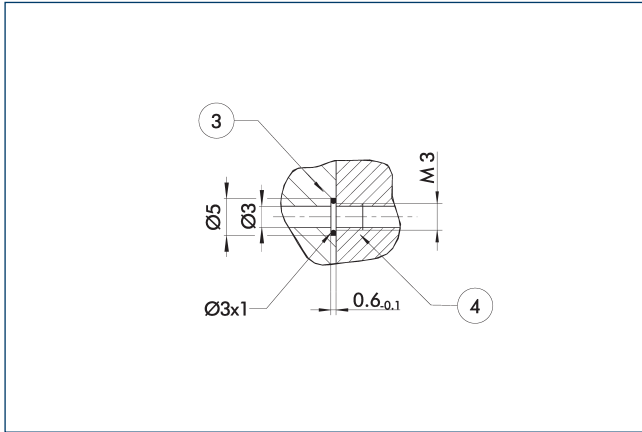
■ Inadmissible range

$L_{max}$  is equivalent to the maximum permitted finger length, see the technical data table.

# PWG-plus 64

Angular gripper

## Hose-free direct connection M3

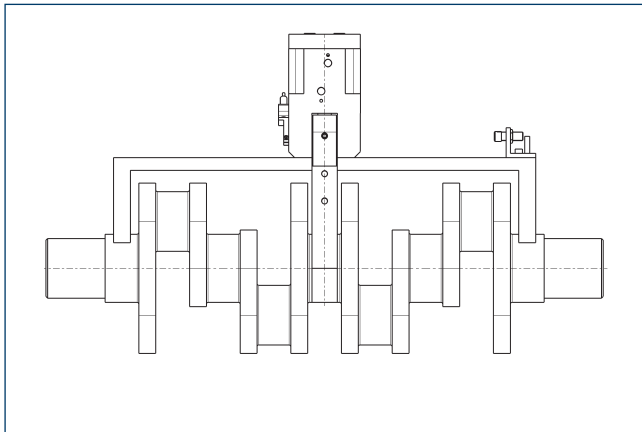


③ Adapter

④ Grippers

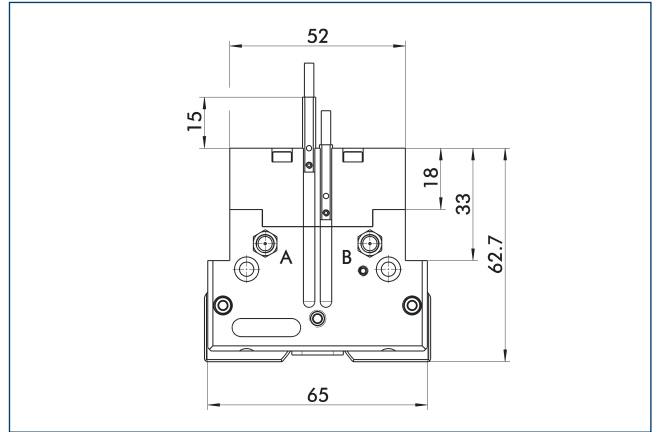
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

## Shaft support



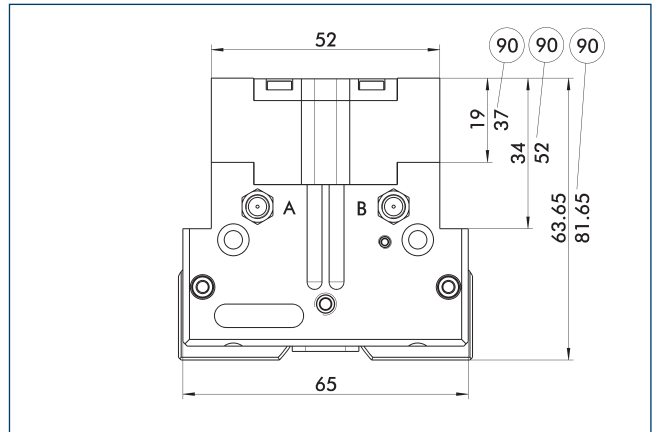
The complete assembly group for handling of cranks and cam shafts can be supplied on request.

## Gripping force maintenance device



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.

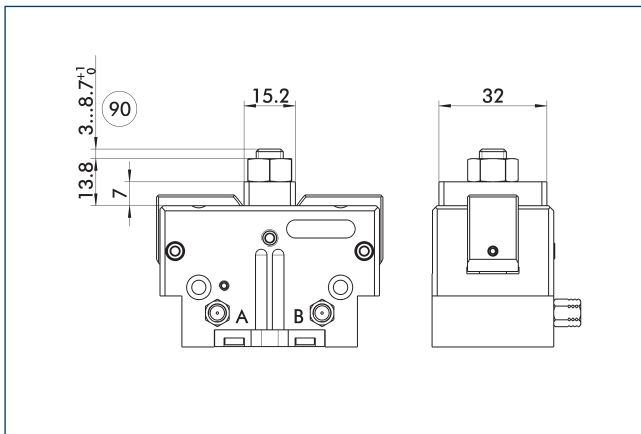
## Power booster version



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

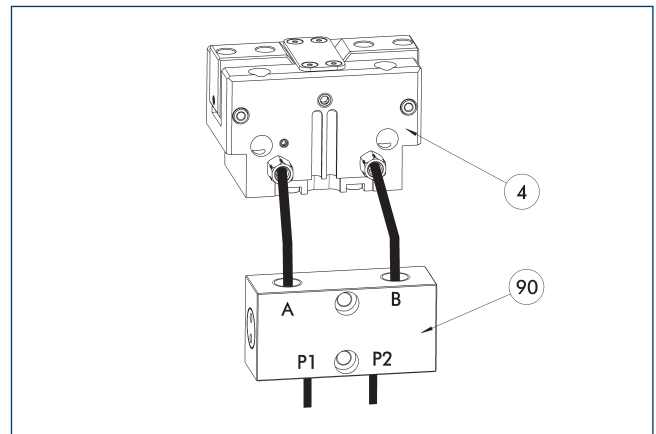


90 Max. adjustment travel

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

Description	ID	
Stroke adjustment		
HVE-PWG-plus 64	0311723	

### SDV-P pressure maintenance valve



4 Grippers

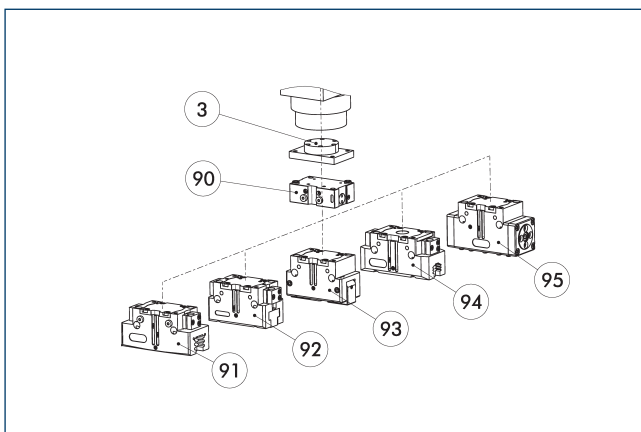
90 SDV-P pressure maintenance valve

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 PGN-plus / PGN-plus-P 2-finger parallel gripper
- 92 JGP 2-finger parallel grippers
- 93 2-finger angular gripper PWG-plus
- 94 2-finger parallel gripper PGB
- 95 Sealed DPG-plus gripper

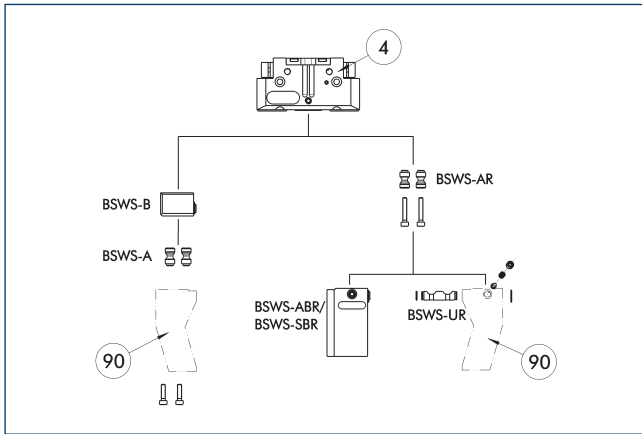
The SDV-P E-P pressure maintenance valves ensure that the pressure in the piston chamber is maintained temporarily during an emergency stop. SDV-P E-P can be directly connected to the listed grippers without the need for additional pneumatic hoses.

Description	ID	
Pressure maintenance valve		
SDV-P 64-E-P	0300124	

# PWG-plus 64

Angular gripper

## BSWS jaw quick-change jaw systems



④ Grippers

⑨ Customized gripper fingers

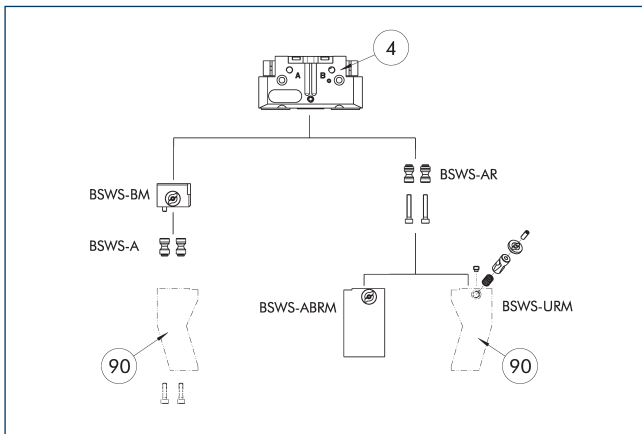
There are various jaw quick-change systems available for the gripper. For detailed information, please refer to the corresponding product.

Description	ID	Scope of delivery
<b>Jaw quick-change system adapter pin</b>		
BSWS-A 64	0303022	2
BSWS-AR 64	0300092	2
<b>Quick-change jaw system base</b>		
BSWS-B 64	0303023	1
<b>Jaw quick-change system finger blank</b>		
BSWS-ABR-PGZN-plus 64	0300072	1
BSWS-SBR-PGZN-plus 64	0300082	1
<b>Jaw quick-change system locking mechanism</b>		
BSWS-UR 64	0302991	1

① Only systems that are listed in the table, can be used.



Jaw quick-change system BSWs-M



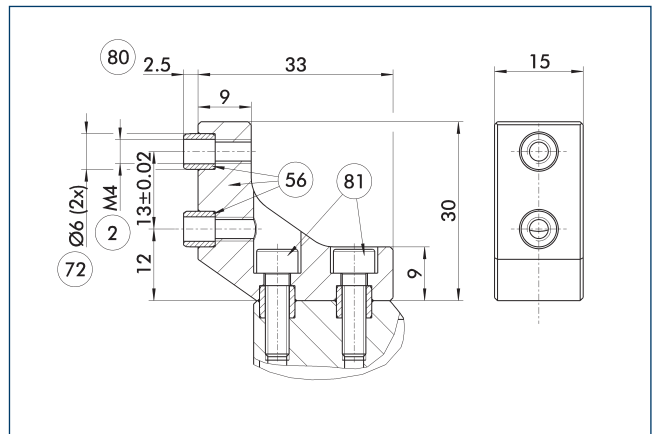
- ④ Grippers
- ⑨⑩ Customized gripper fingers

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 64	0303022	2
BSWS-AR 64	0300092	2
Quick-change jaw system base		
BSWS-BM 64	1313900	1
Jaw quick-change system finger blank		
BSWS-ABRM-PGZN-plus 64	1420851	1
Jaw quick-change system locking mechanism		
BSWS-URM 64	1398401	1

① Only systems that are listed in the table, can be used.

ZBA-L-plus 64 intermediate jaws

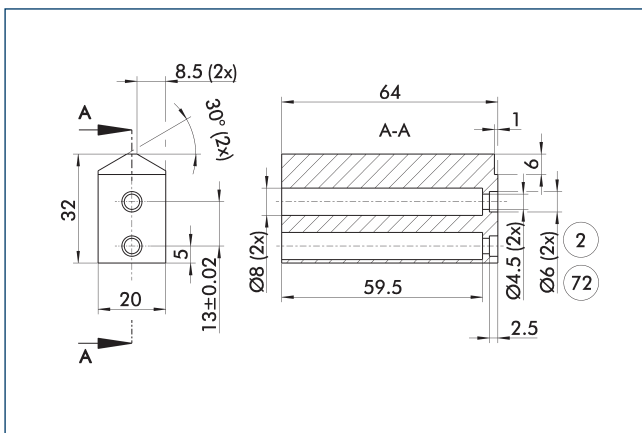


- ② Finger connection
- ⑤⑥ Included in the scope of delivery
- ⑦⑩ Fit for centering sleeves
- ⑧⑩ Depth of the centering sleeve hole in the counter part
- ⑧① Not included in the scope of delivery

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 64	0311722	Aluminum	PGN-plus 64	1

Finger blanks ABR- / SBR-PGZN-plus 64

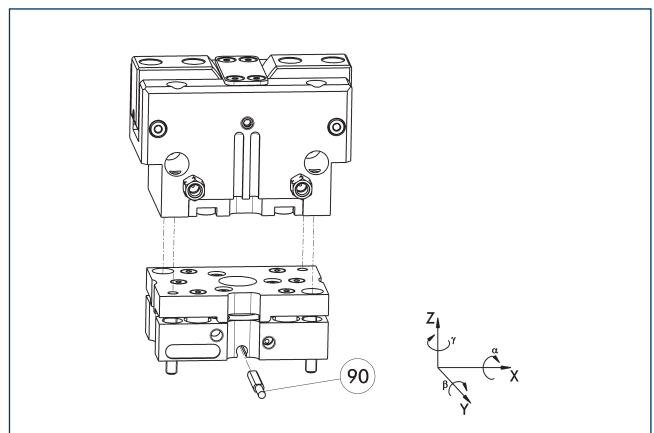


- ② Finger connection
- ⑦⑩ Fit for centering sleeves

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

Description	ID	Material	Scope of delivery
Finger blank			
ABR-PGZN-plus 64	0300010	Aluminum	1
SBR-PGZN-plus 64	0300020	Steel	1

Tolerance compensation unit TCU



- ⑨⑩ Monitoring of locking

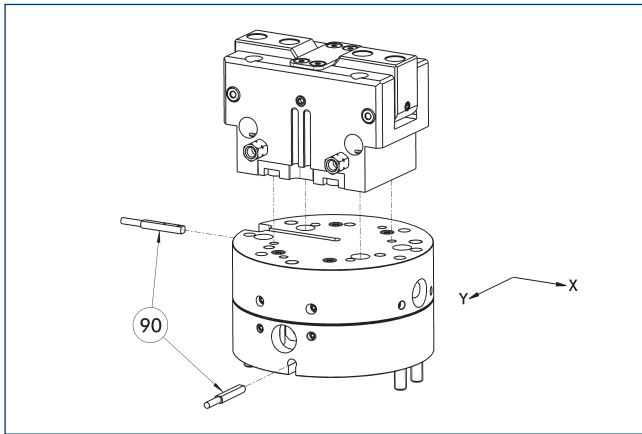
Grippers can be directly mounted without an adapter plate. Tolerance compensation unit and gripper have an identical screw connection diagram. Therefore the tolerance compensation units can be assembled later. Please consider the additional assembly height of the tolerance compensation unit. For details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

Description	ID	Locking	Deflection	Often combined
Compensation unit				
TCU-P-064-3-MV	0324774	yes	±1°/±1,5°/±2°	●
TCU-P-064-3-0V	0324775	no	±1°/±1,5°/±2°	

# PWG-plus 64

Angular gripper

## Compensation unit AGE-F

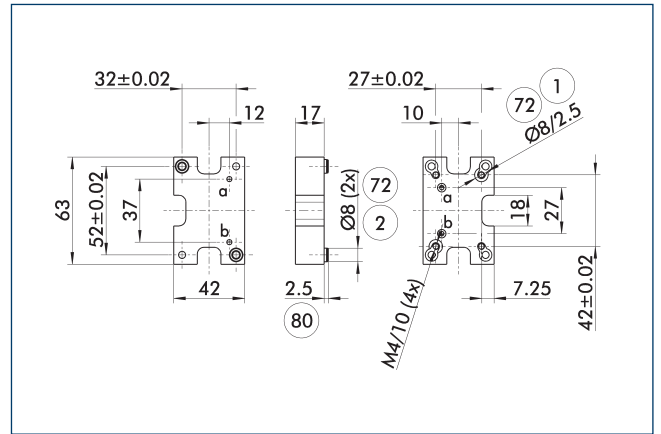


90 Monitoring

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-063-1	0324940	± 4	12	
AGE-F-XY-063-2	0324941	± 4	16	
AGE-F-XY-063-3	0324942	± 4	20	●

## Adapter plate for PGN-plus 64



1 Robot-side connection

72 Fit for centering sleeves

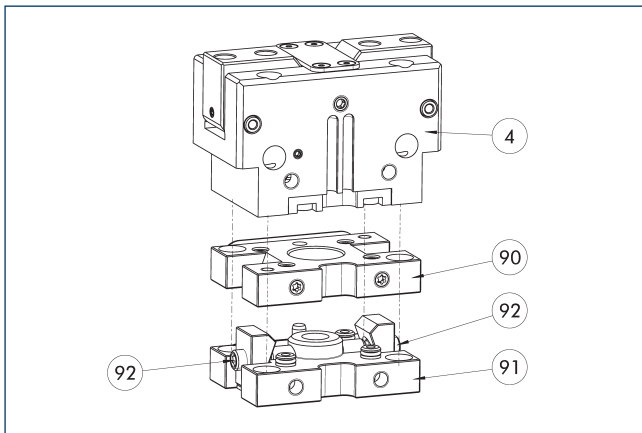
2 Tool-side connection

80 Depth of the centering sleeve hole in the counter part

The adapter plate has integrated air feed-throughs in order to be able to use the hose-free direct connection of the appropriate gripper.

Description	ID	
<b>Tool side</b>		
A-CWA-080-064-P	0305784	

## Compact change system for grippers



4 Grippers

91 CWK compact change master

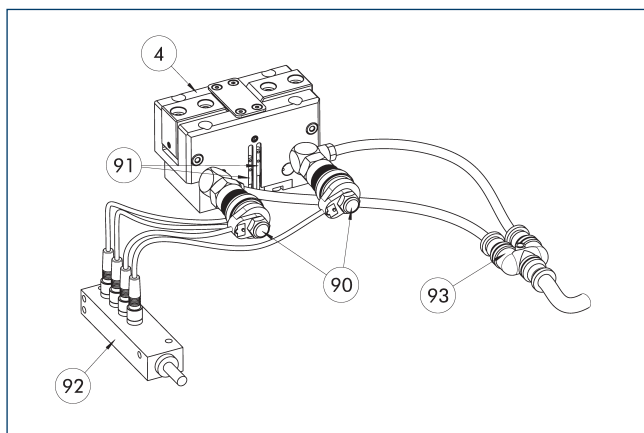
90 CWA compact change adapter

92 Locking mechanism

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

Description	ID	
<b>Tool side</b>		
A-CWA-080-064-P	0305784	
<b>CWA compact change adapter</b>		
CWA-064-P	0305765	
<b>CWK compact change master</b>		
CWK-064-P	0305764	

## Attachment valves



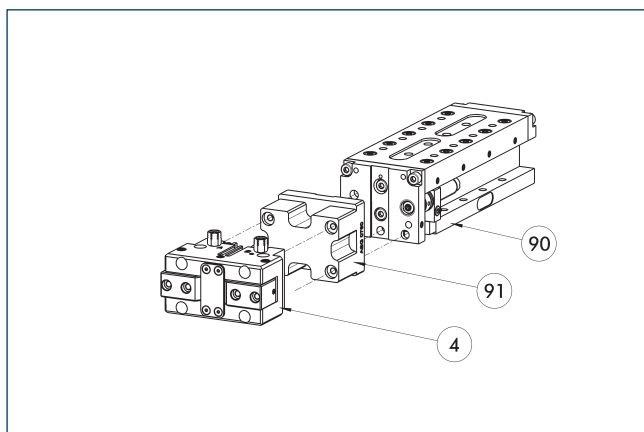
- ④ Grippers
- ⑨① Sensor
- ⑨② Sensor distributor
- ⑨③ Y distributor
- ⑨① Micro valves

The set of attachment valves reduces the compressed air consumption as there is no need to ventilate or bleed the supply lines. This can also reduce cycle time. The hose-free direct assembly of the micro valves reduces the hosing effort for the gripper. To further simplify electrical connection of the valves and sensors, their signals can be bundled via an optional distributor.

Description	ID	Often combined
Attachment valve		
ABV-MV15-M5	0303323	
ABV-MV15-M5-V2-M8	0303386	
ABV-MV15-M5-V4-M8	0303356	●
ABV-MV15-M5-V8-M8	0303357	

① A set of attachment valves ABV is required per actuator. The ABV set contains two 3/2 micro valves, an Y-distributor for compressed air supply and optionally a sensor distributor with two, four or eight inputs or outputs. Sensors for monitoring the gripper need to be ordered separately. Pneumatic hoses are not included in the scope of delivery.

## Modular Assembly Automation



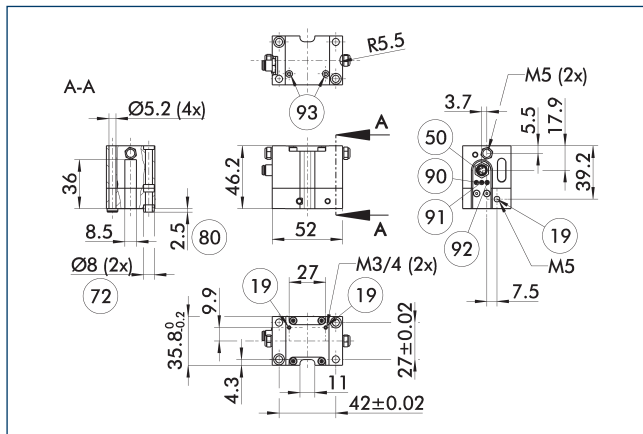
- ④ Grippers
- ⑨① ASG adapter plate
- ⑨① CLM/KLM/LM/ELP/ELM/ELS/HLM linear modules

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".

# PWG-plus 64

Angular gripper

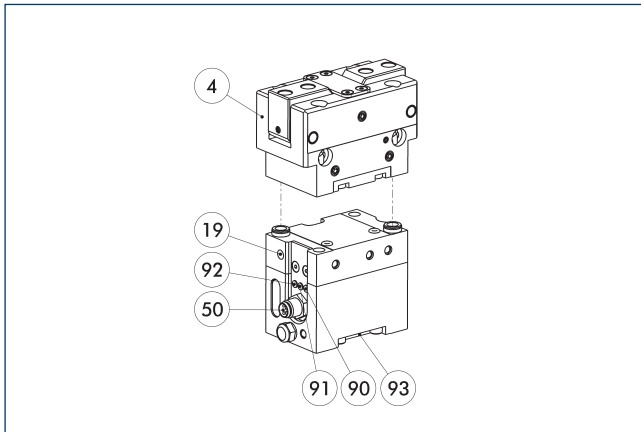
## VB-PGN-plus 64 valve box



- ① Air connection
- ② Voltage status indicator
- ③ Electrical connection
- ④ Status display valve connection b opened
- ⑤ Fit for centering sleeves
- ⑥ Status display valve connection a opened
- ⑦ Depth of the centering sleeve hole in the counter part
- ⑧ Valve connection a and b

Description	ID	
Valve box		
VB-PGN-plus 64	0310092	

## Valve box



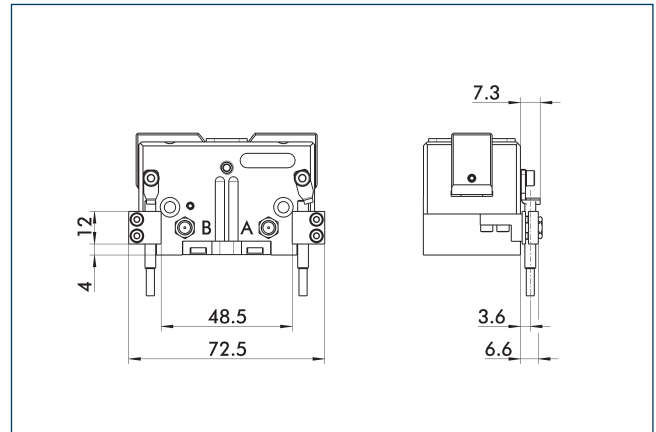
- ④ Grippers
- ①⑨ Air connection
- ⑤⑩ Electrical connection
- ⑧⑬ Power supply
- ⑨① Status display valve connection b opened
- ⑨② Status display valve connection a opened
- ⑨③ Direct connection for hose-free compressed air supply

Decentralized control solution completely ready for use! The valves are directly mounted on the handling component. This allows a strong reduction of cycle times, commissioning times, air consumption, and less tubing. All of these combined lead to maximum process reliability with minimum effort.

Description	ID	Often combined
Valve box		
VB-PGN-plus 64	0310092	
Connection cables		
KA BG08-L 4P-0500	0307767	●
KA BG08-L 4P-1000	0307768	
KA BW08-L 4P-0500	0307765	
KA BW08-L 4P-1000	0307766	
Sensor distributor		
V2-M8-4P-2XM8-3P	0301380	
clip for plug/socket		
CLI-M8	0301463	

- ① Valve and sensor signals of the unit can be merged on a bus distributor so that the electrical as well as the pneumatic connections can be decentralized.

## Attachment kit for proximity switch IN 40



End position monitoring can be mounted with an attachment kit.

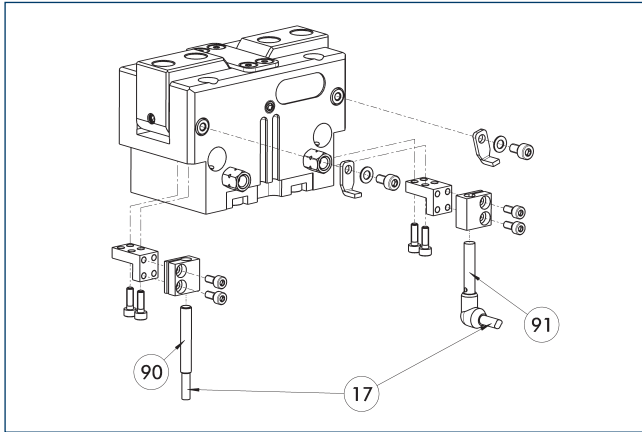
Description	ID	
Attachment kit for proximity switch		
AS-IN40-PWG-plus 64	0311720	

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

# PWG-plus 64

Angular gripper

## IN 40 inductive proximity switches



17 Cable outlet

91 Sensor IN..-SA

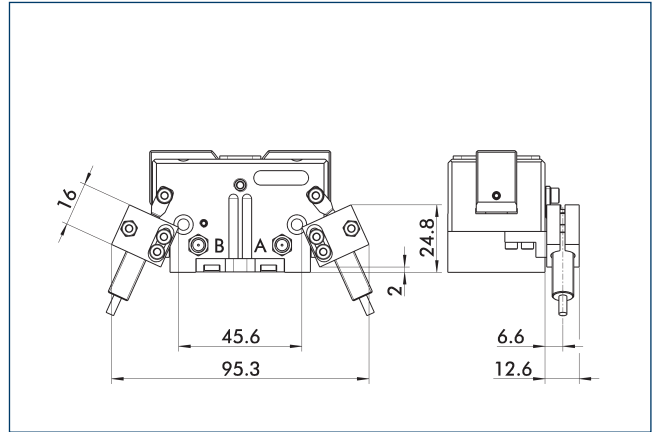
90 Sensor IN ...

End position monitoring can be mounted with an attachment kit.

Description	ID	Often combined
Attachment kit for proximity switch		
AS-IN40-PWG-plus 64	0311720	
Inductive proximity switches		
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

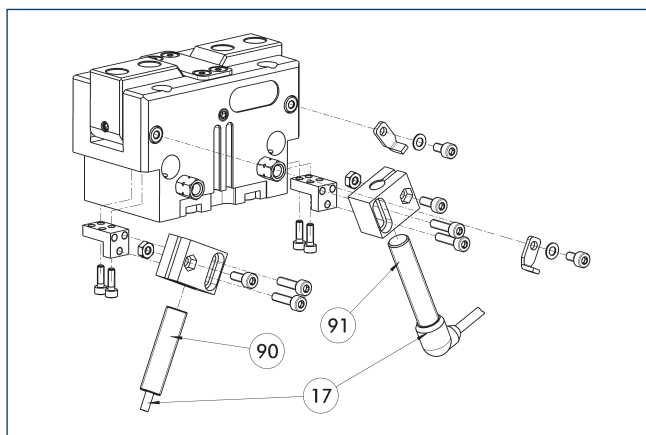


End position monitoring can be mounted with an attachment kit.

Description	ID	
Attachment kit for proximity switch		
AS-IN80-PWG-plus 64	0311721	

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

### IN 80 inductive proximity switches



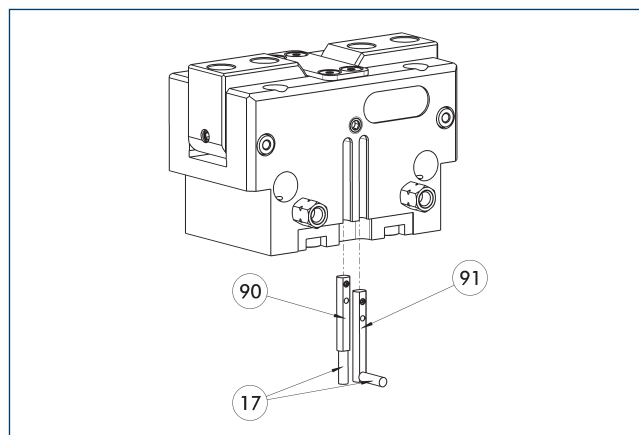
- ① Cable outlet
- ② Sensor IN...-SA
- ③ Sensor IN ...

End position monitoring can be mounted with an attachment kit.

Description	ID	Often combined
Attachment kit for proximity switch		
AS-IN80-PWG-plus 64	0311721	
Inductive proximity switches		
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	

- ④ 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



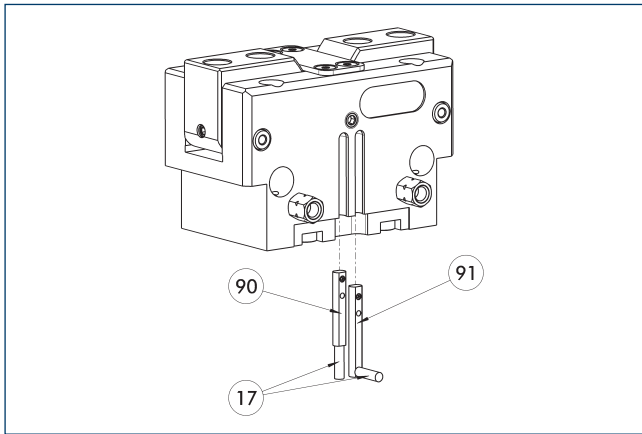
- ① Cable outlet
- ② Sensor MMS 22...-SA
- ③ Sensor MMS 22..

End position monitoring for mounting in the C-slot.

Description	ID	Often combined
Electronic magnetic switch		
MMS 22-S-M8-PNP	0301032	●
MMSK 22-S-PNP	0301034	
Electronic magnetic switches with lateral cable outlet		
MMS 22-S-M8-PNP-SA	0301042	●
MMSK 22-S-PNP-SA	0301044	
Connection cables		
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	
clip for plug/socket		
CLI-M8	0301463	
Cable extension		
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
Sensor distributor		
V2-M8	0301775	●
V4-M8	0301746	
V8-M8	0301751	

- ④ 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



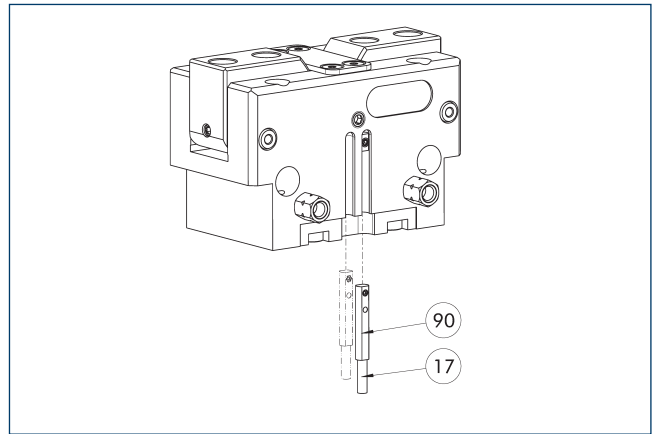
- ①⑦ Cable outlet
- ①⑨ Sensor MMS 22 ..-PI1-...-SA
- ①⑩ Sensor MMS 22 PI1-...

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) 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
- ①⑩ MMS 22...-PI2-... sensor

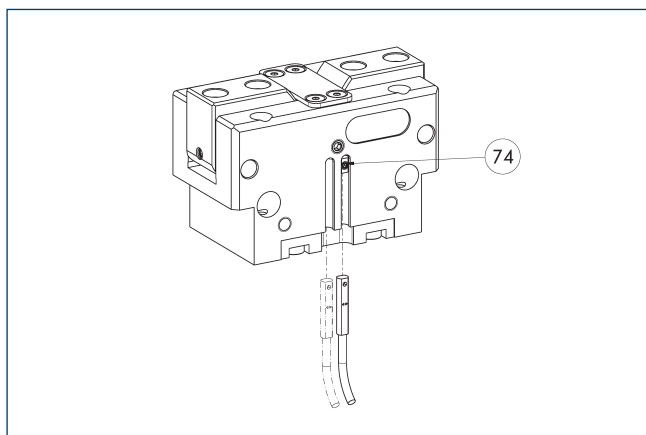
Position monitoring with two programmable positions per sensor and electronics built into the sensor. Can be programmed using MT magnetic teaching tool (included in the scope of delivery) or ST plug teaching tool (optional). End position monitoring for mounting in the C-slot. If the ST plug teaching 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-PI2-S-M8-PNP	0301180	●
MMSK 22-PI2-S-PNP	0301182	
<b>Programmable magnetic switch with lateral cable outlet</b>		
MMS 22-PI2-S-M8-PNP-SA	0301186	●
MMSK 22-PI2-S-PNP-SA	0301188	
<b>Programmable magnetic switch with stainless steel housing</b>		
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**



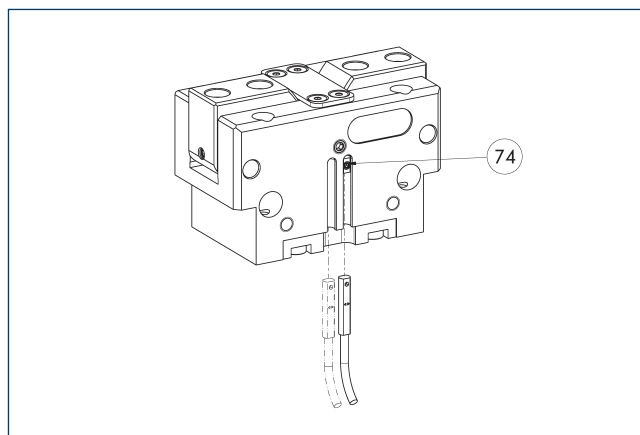
⑦④ Limit stop for sensor

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 BG08-L 4P-0500	0307767	●
KA BG08-L 4P-1000	0307768	
KA BW08-L 4P-0500	0307765	
KA BW08-L 4P-1000	0307766	
clip for plug/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. Sensor programming on the gripper takes place via the IO-Link interface or the MT magnetic teach tool (included in scope of delivery). 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	

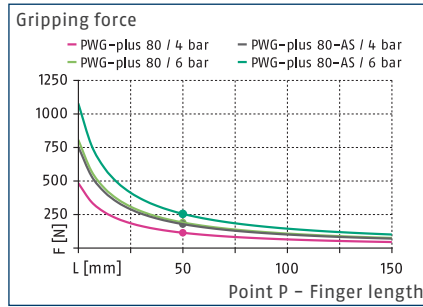
① One sensor is required for each gripper. No additional mounting kit is required – the gripper is equipped for use of the sensor by default. Further information and technical data can be found in the catalog chapter sensor systems.

# PWG-plus 80

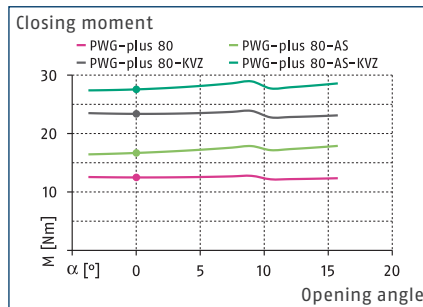
Angular gripper



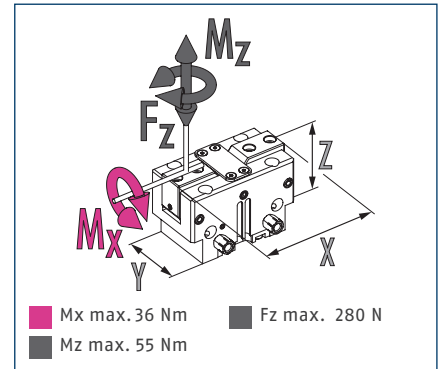
## Gripping force O.D. gripping



## Closing moment curve



## Dimensions and maximum loads

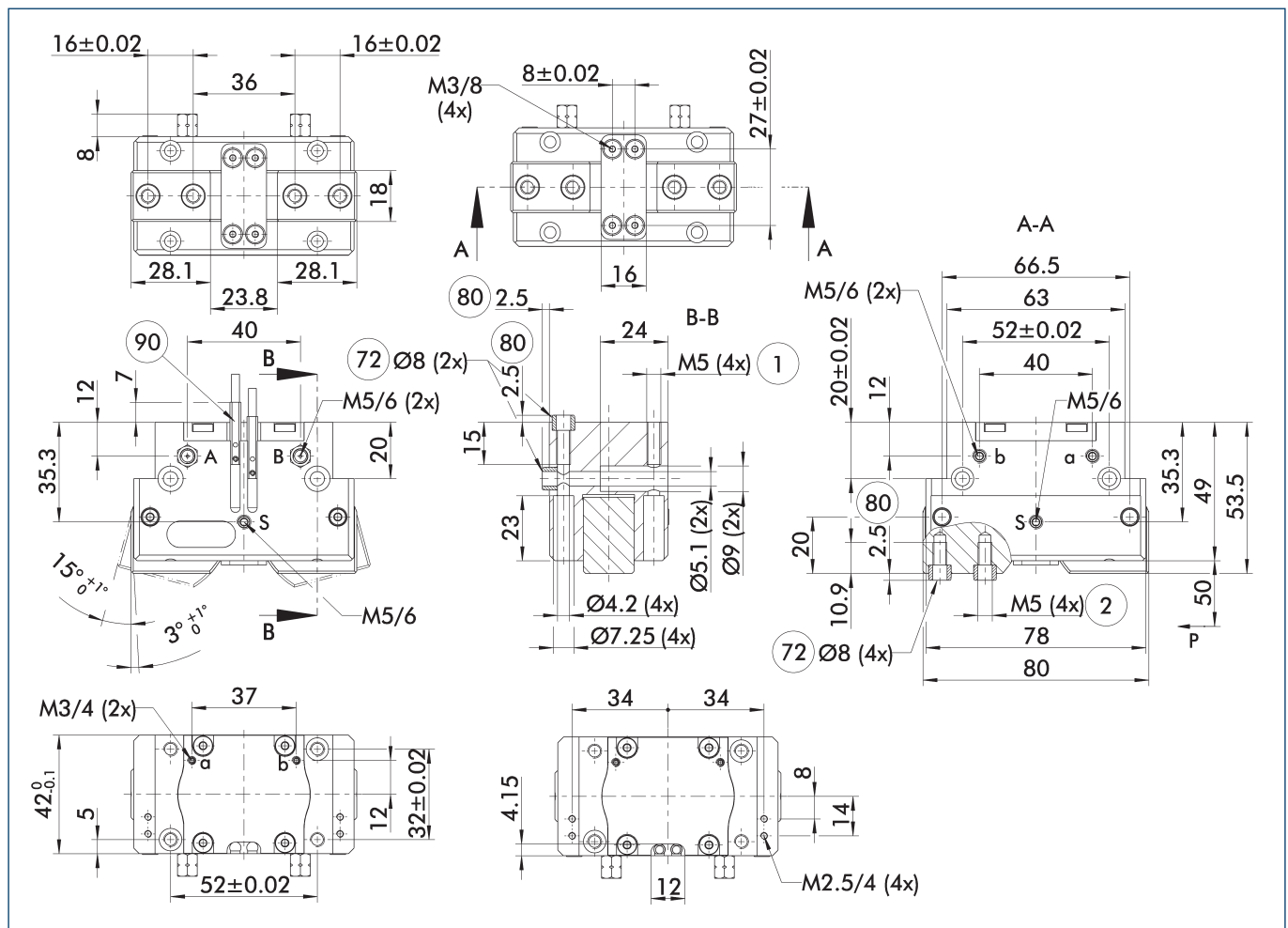


① The indicated torques and forces are static values, apply for each base jaw, and may occur simultaneously.

## Technical data

Description		PWG-plus 80	PWG-plus 80-AS
ID		0311630	0311631
Opening angle per jaw	[°]	15	15
Closed angle per jaw	[°]	3	3
Closing moment	[Nm]	12.5	16.7
Closing moment generated by spring	[Nm]		4.2
Weight	[kg]	0.39	0.49
Recommended workpiece weight	[kg]	0.97	0.97
Fluid consumption double stroke	[cm³]	20	33.5
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]	0.08/0.08	0.08/0.15
Max. permissible finger length	[mm]	100	100
Max. permissible mass moment of inertia per chuck jaw	[kgcm²]	37.3	37.3
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]	80 x 42 x 53.5	80 x 42 x 71.5
<b>Options and their characteristics</b>			
High-temperature version		39311630	39311631
Min./max. ambient temperature	[°C]	5/130	5/130
Power booster version		0311635	0311636
Closing moment	[Nm]	23.4	27.6
Closing moment generated by spring	[Nm]		4.2
Weight	[kg]	0.54	0.64
Maximum pressure	[bar]	6	6
Max. permissible finger length	[mm]	100	100

## Main view



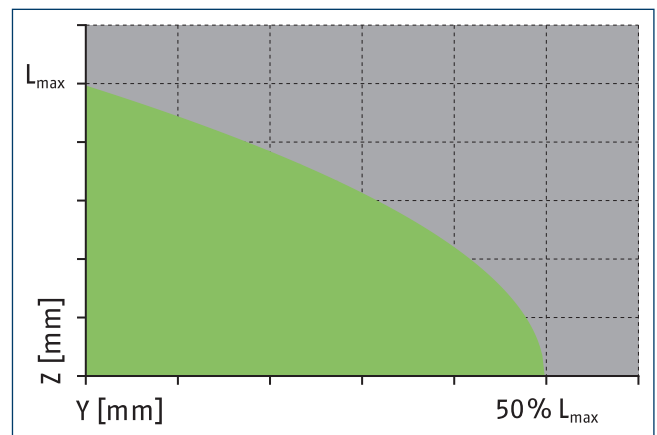
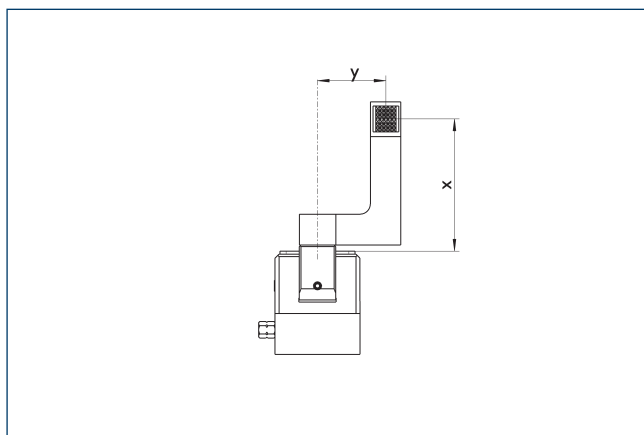
The drawing shows the gripper in the basic version with closed jaws, without dimensional consideration of the options described below.

① The SDV-P pressure maintenance valve can also be used for I.D. or O.D. gripping alternatively or in addition to the spring-loaded, mechanical gripping force maintenance device (see catalog section on accessories).

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

② Finger connection  
 ⑦ Fit for centering sleeves  
 ⑧ Depth of the centering sleeve hole in the counter part  
 ⑨ Sensor MMS 22..

## Maximum permitted finger projection



■ Permitted range

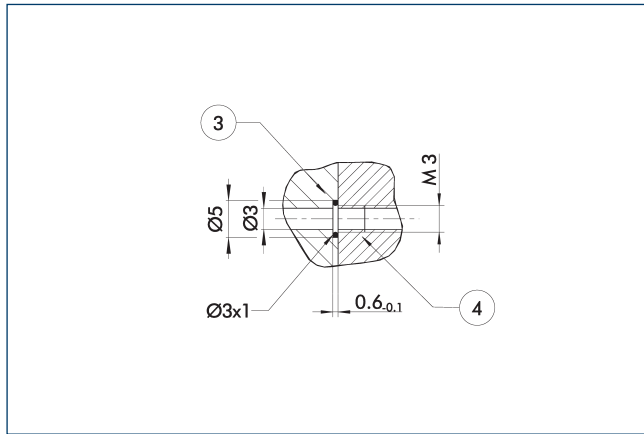
■ Inadmissible range

$L_{max}$  is equivalent to the maximum permitted finger length, see the technical data table.

# PWG-plus 80

Angular gripper

## Hose-free direct connection M3

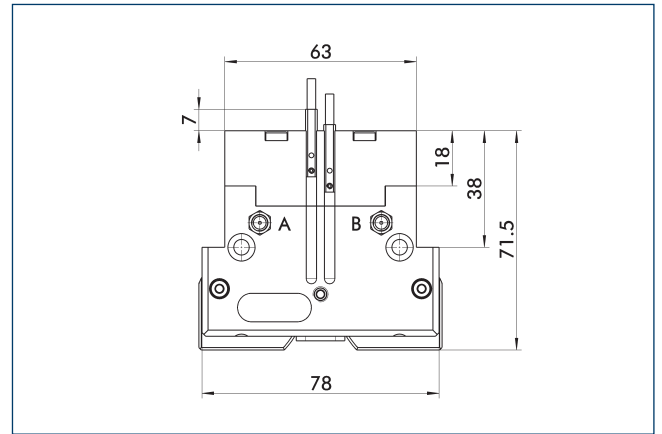


③ Adapter

④ Grippers

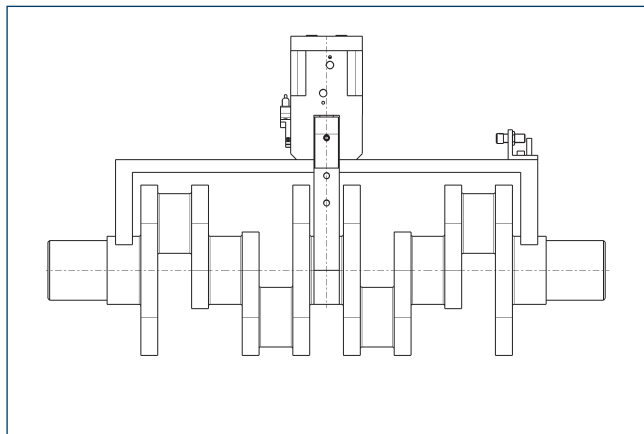
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

## Gripping force maintenance device



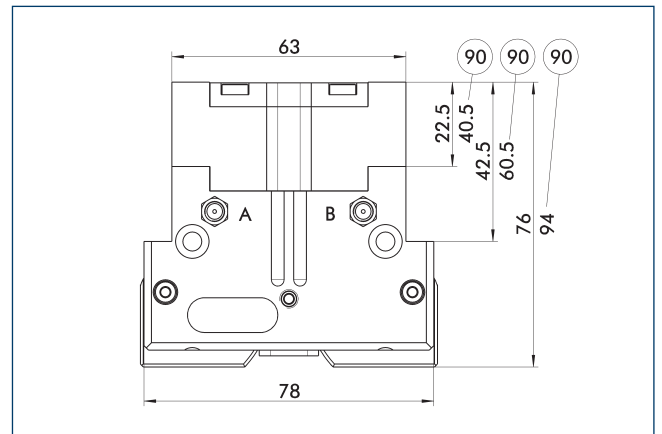
The mechanical gripping force maintenance ensures that a minimum clamping force will be applied even in case of pressure drop. This acts as closing force in the AS version. Besides this, the gripping force maintenance can be used to increase gripping force or for single actuated gripping.

## Shaft support



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

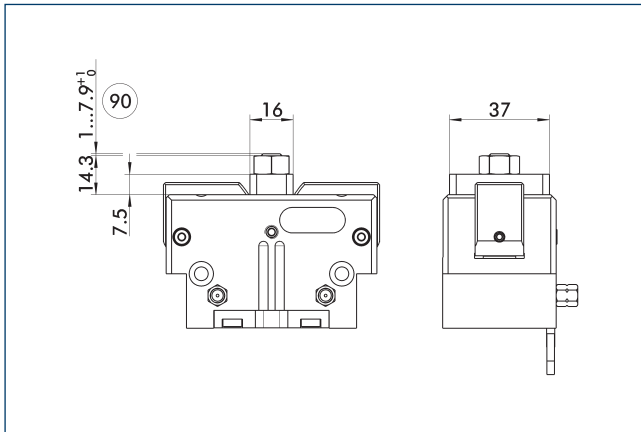
## Power booster version



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

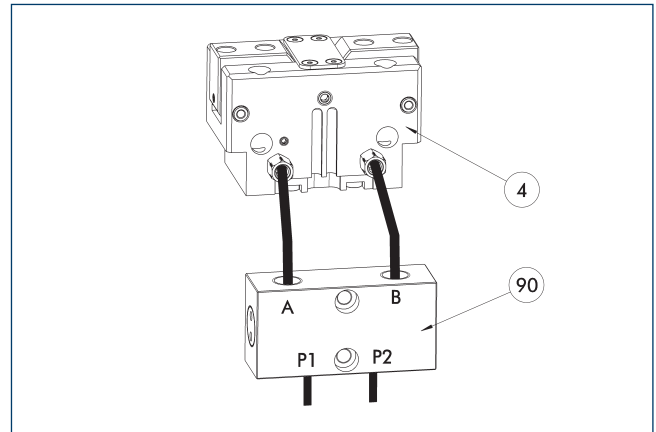


⑨⑩ Max. adjustment travel

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

Description	ID	
Stroke adjustment		
HVE-PWG-plus 80	0311733	

### SDV-P pressure maintenance valve



④ Grippers

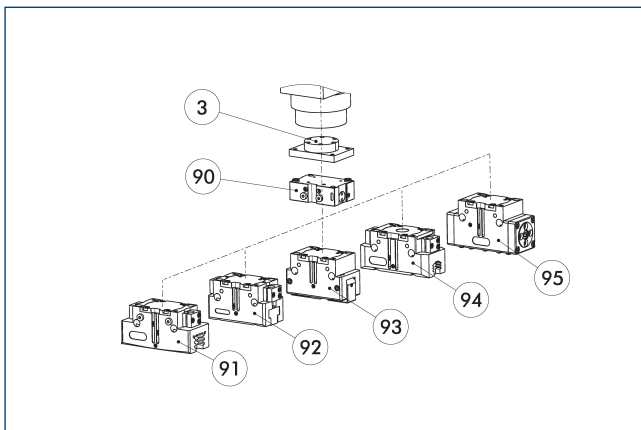
⑨⑩ SDV-P pressure maintenance valve

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
- ⑨⑩ SDV-P E-P pressure maintenance valve
- ⑨① PGN-plus / PGN-plus-P 2-finger parallel gripper
- ⑨② JGP 2-finger parallel grippers
- ⑨③ 2-finger angular gripper PWG-plus
- ⑨④ 2-finger parallel gripper PGB
- ⑨⑤ Sealed DPG-plus gripper

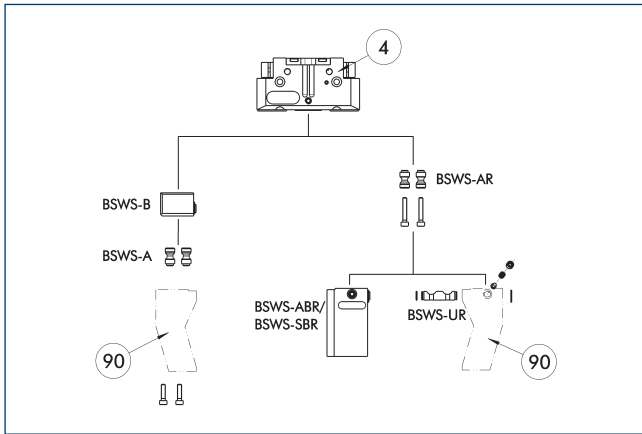
The SDV-P E-P pressure maintenance valves ensure that the pressure in the piston chamber is maintained temporarily during an emergency stop. SDV-P E-P can be directly connected to the listed grippers without the need for additional pneumatic hoses.

Description	ID	
Pressure maintenance valve		
SDV-P 80-E-P	0300125	

# PWG-plus 80

Angular gripper

## BSWS jaw quick-change jaw systems



④ Grippers

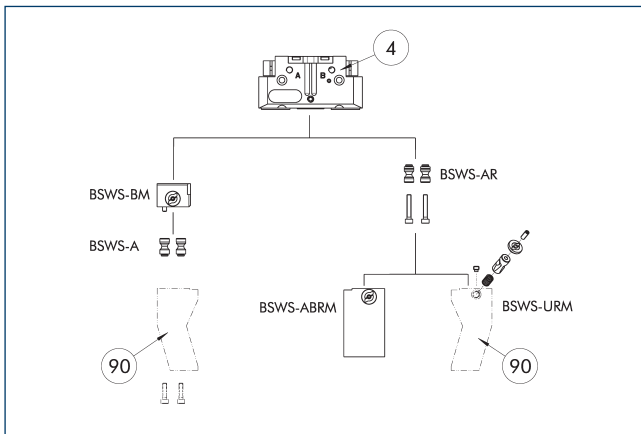
⑨ Customized gripper fingers

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
<b>Jaw quick-change system adapter pin</b>		
BSWS-A 80	0303024	2
BSWS-AR 80	0300093	2
<b>Quick-change jaw system base</b>		
BSWS-B 80	0303025	1
<b>Jaw quick-change system finger blank</b>		
BSWS-ABR-PGZN-plus 80	0300073	1
BSWS-SBR-PGZN-plus 80	0300083	1
<b>Jaw quick-change system locking mechanism</b>		
BSWS-UR 80	0302992	1

① Only systems that are listed in the table, can be used.

Jaw quick-change system BSWs-M



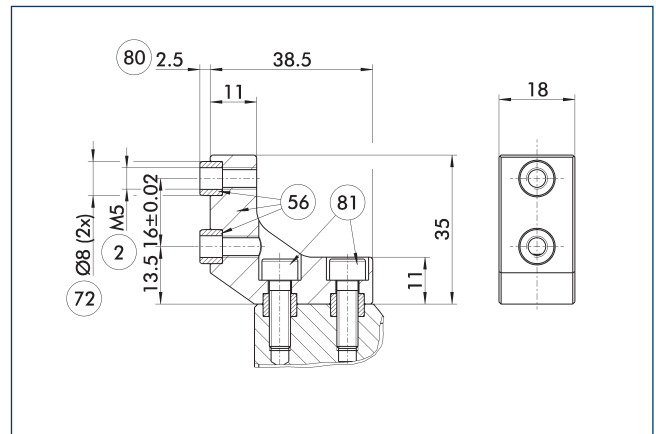
- 4 Grippers
- 90 Customized gripper fingers

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 80	0303024	2
BSWS-AR 80	0300093	2
Quick-change jaw system base		
BSWS-BM 80	1313901	1
Jaw quick-change system finger blank		
BSWS-ABRM-PGZN-plus 80	1420852	1
Jaw quick-change system locking mechanism		
BSWS-URM 80	1398402	1

Only systems that are listed in the table, can be used.

ZBA-L-plus 80 intermediate jaws

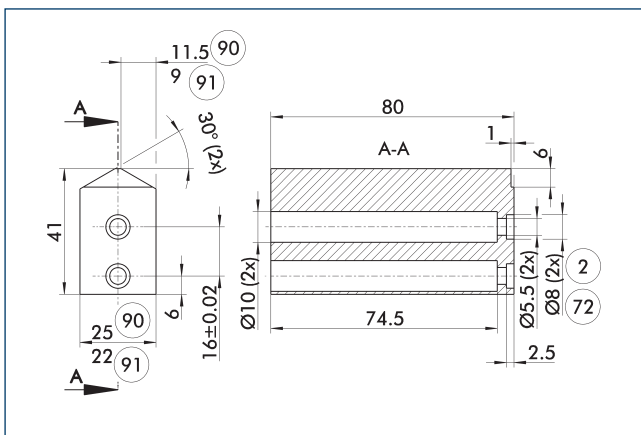


- 2 Finger connection
- 56 Included in the scope of delivery
- 72 Fit for centering sleeves
- 80 Depth of the centering sleeve hole in the counter part
- 81 Not included in the scope of delivery

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 80	0311732	Aluminum	PGN-plus 80	1

Finger blanks ABR- / SBR-PGZN-plus 80

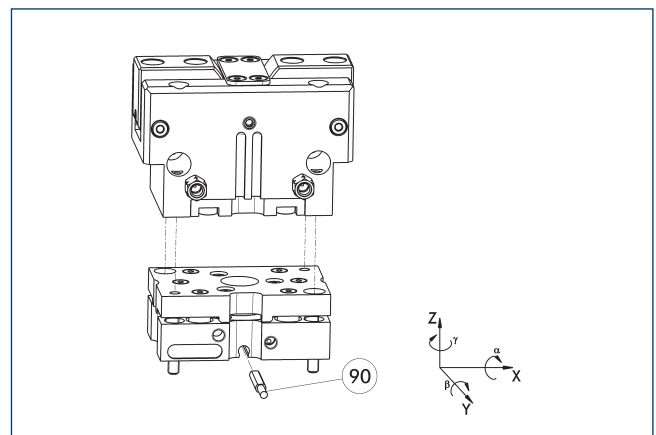


- 2 Finger connection
- 72 Fit for centering sleeves
- 90 ABR-PGZN-plus
- 91 SBR-PGZN-plus

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

Description	ID	Material	Scope of delivery
Finger blank			
ABR-PGZN-plus 80	0300011	Aluminum	1
SBR-PGZN-plus 80	0300021	Steel	1

Tolerance compensation unit TCU



- 90 Monitoring of locking

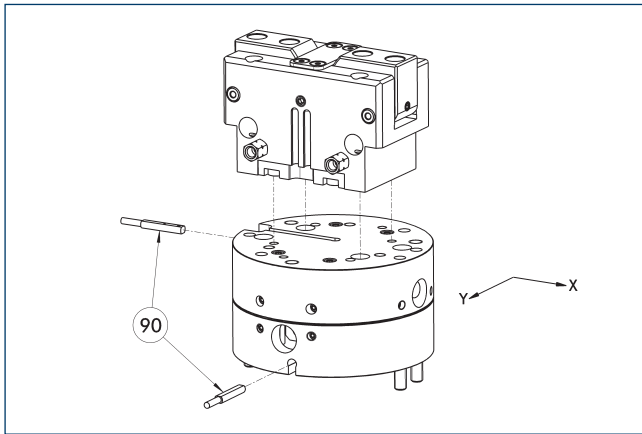
Grippers can be directly mounted without an adapter plate. Tolerance compensation unit and gripper have an identical screw connection diagram. Therefore the tolerance compensation units can be assembled later. Please consider the additional assembly height of the tolerance compensation unit. For details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

Description	ID	Locking	Deflection	Often combined
Compensation unit				
TCU-P-080-3-MV	0324792	yes	±1°/±1,5°/±2°	●
TCU-P-080-3-0V	0324793	no	±1°/±1,5°/±2°	

# PWG-plus 80

Angular gripper

## Compensation unit AGE-F

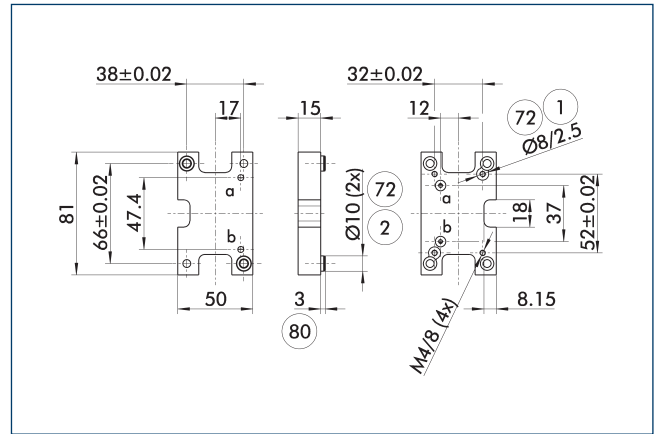


90 Monitoring

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-063-1	0324940	± 4	12	
AGE-F-XY-063-2	0324941	± 4	16	
AGE-F-XY-063-3	0324942	± 4	20	●

## Adapter plate PGN-plus 80



1 Robot-side connection

2 Tool-side connection

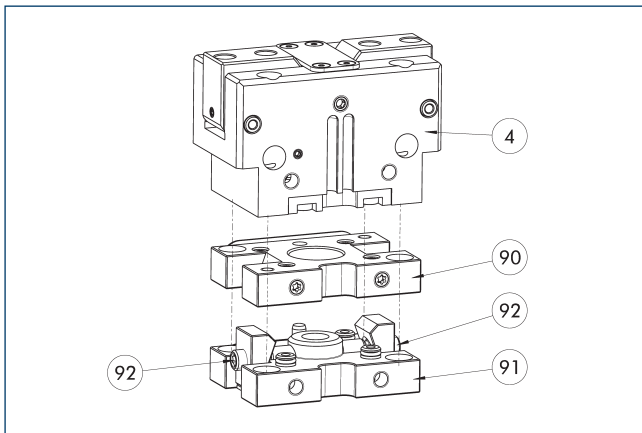
72 Fit for centering sleeves

80 Depth of the centering sleeve hole in the counter part

The adapter plate has integrated air feed-throughs in order to be able to use the hose-free direct connection of the appropriate gripper.

Description	ID
<b>Tool side</b>	
A-CWA-100-080-P	0305804

## Compact change system for grippers



4 Grippers

90 CWA compact change adapter

91 CWK compact change master

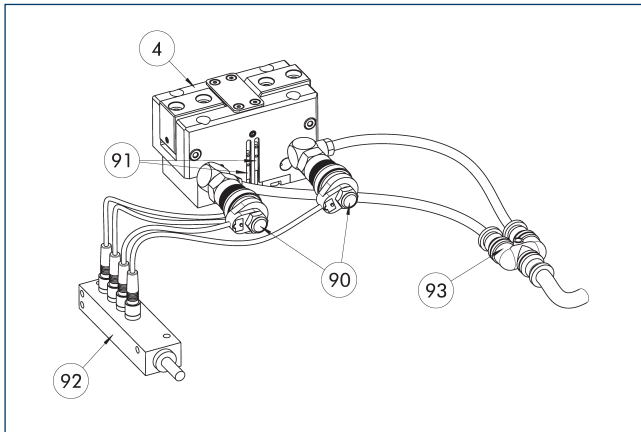
92 Locking mechanism

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

Description	ID
<b>Tool side</b>	
A-CWA-100-080-P	0305804
<b>CWA compact change adapter</b>	
CWA-080-P	0305781
<b>CWK compact change master</b>	
CWK-080-P	0305780



## Attachment valves



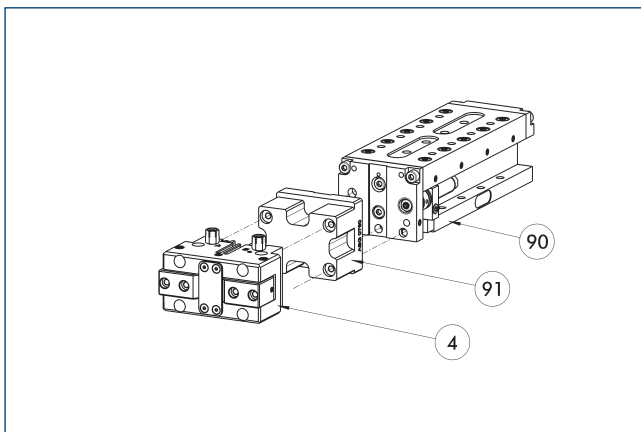
- ④ Grippers
- ⑨② Sensor distributor
- ⑨① Micro valves
- ⑨③ Y distributor
- ⑨① Sensor

The set of attachment valves reduces the compressed air consumption as there is no need to ventilate or bleed the supply lines. This can also reduce cycle time. The hose-free direct assembly of the micro valves reduces the hosing effort for the gripper. To further simplify electrical connection of the valves and sensors, their signals can be bundled via an optional distributor.

Description	ID	Often combined
Attachment valve		
ABV-MV25-M5	0303326	
ABV-MV25-M5-V2-M8	0303392	
ABV-MV25-M5-V4-M8	0303362	●
ABV-MV25-M5-V8-M8	0303363	

① A set of attachment valves ABV is required per actuator. The ABV set contains two 3/2 micro valves, an Y-distributor for compressed air supply and optionally a sensor distributor with two, four or eight inputs or outputs. Sensors for monitoring the gripper need to be ordered separately. Pneumatic hoses are not included in the scope of delivery.

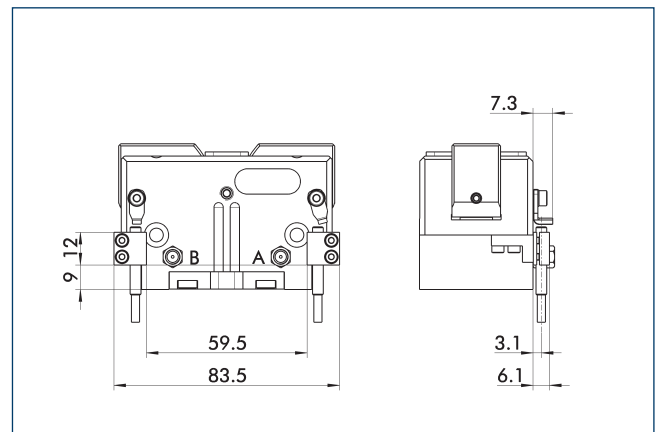
## Modular Assembly Automation



- ④ Grippers
- ⑨① ASG adapter plate
- ⑨① CLM/KLM/LM/ELP/ELM/ELS/HLM linear modules

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.

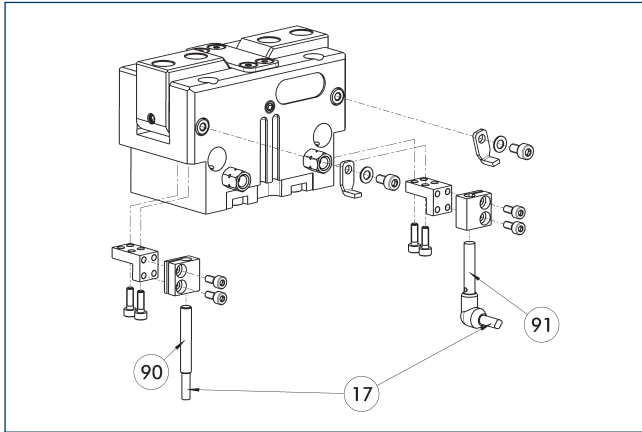
Description	ID	
Attachment kit for proximity switch		
AS-IN40-PWG-plus 80	0311730	

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

# PWG-plus 80

Angular gripper

## IN 40 inductive proximity switches



⑰ Cable outlet

⑨① Sensor IN..-SA

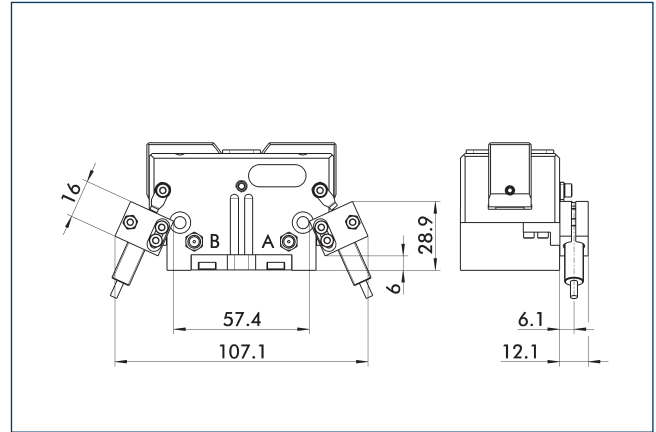
⑨② Sensor IN ...

End position monitoring can be mounted with an attachment kit.

Description	ID	Often combined
Attachment kit for proximity switch		
AS-IN40-PWG-plus 80	0311730	
Inductive proximity switches		
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

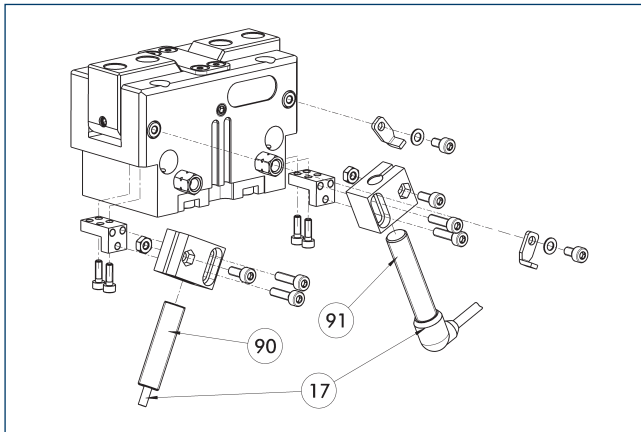


End position monitoring can be mounted with an attachment kit.

Description	ID	
Attachment kit for proximity switch		
AS-IN80-PWG-plus 80	0311731	

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

## IN 80 inductive proximity switches



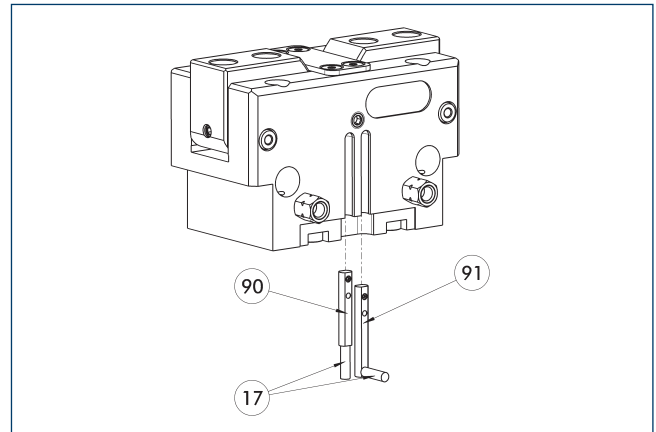
- ⑰ Cable outlet
- ⑲ Sensor IN...-SA
- ⑱ Sensor IN ...

End position monitoring can be mounted with an attachment kit.

Description	ID	Often combined
Attachment kit for proximity switch		
AS-IN80-PWG-plus 80	0311731	
Inductive proximity switches		
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	

- ⑰ 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
- ⑱ Sensor MMS 22..

End position monitoring for mounting in the C-slot.

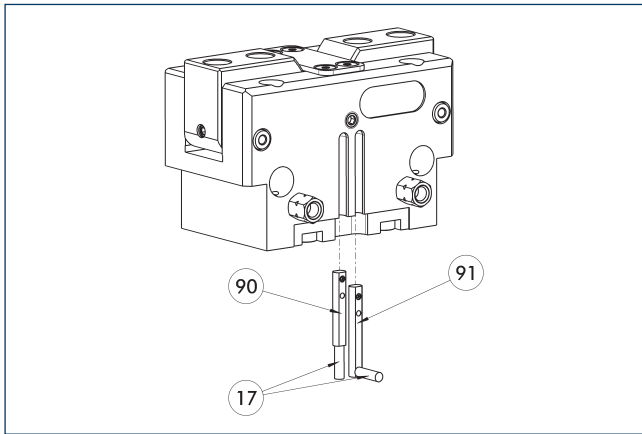
Description	ID	Often combined
Electronic magnetic switch		
MMS 22-S-M8-PNP	0301032	●
MMSK 22-S-PNP	0301034	
Electronic magnetic switches with lateral cable outlet		
MMS 22-S-M8-PNP-SA	0301042	●
MMSK 22-S-PNP-SA	0301044	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623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

- ⑰ 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.

# PWG-plus 80

Angular gripper

## Programmable magnetic switch MMS 22-PI1



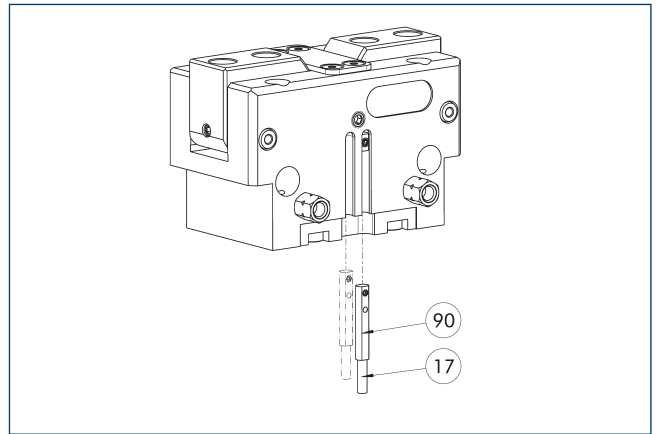
- ①⑦ Cable outlet
- ①⑨ Sensor MMS 22 ..-PI1-...-SA
- ①⑩ Sensor MMS 22 PI1-...

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) 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



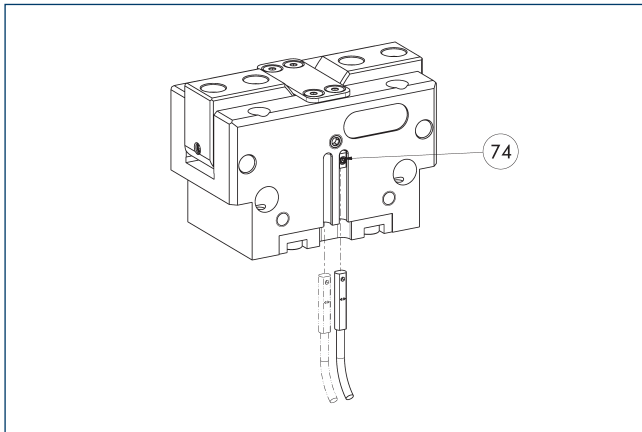
- ①⑦ Cable outlet
- ①⑩ MMS 22...-PI2-... sensor

Position monitoring with two programmable positions per sensor and electronics built into the sensor. Can be programmed using MT magnetic teaching tool (included in the scope of delivery) 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-PI2-S-M8-PNP	0301180	●
MMSK 22-PI2-S-PNP	0301182	
<b>Programmable magnetic switch with lateral cable outlet</b>		
MMS 22-PI2-S-M8-PNP-SA	0301186	●
MMSK 22-PI2-S-PNP-SA	0301188	
<b>Programmable magnetic switch with stainless steel housing</b>		
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**



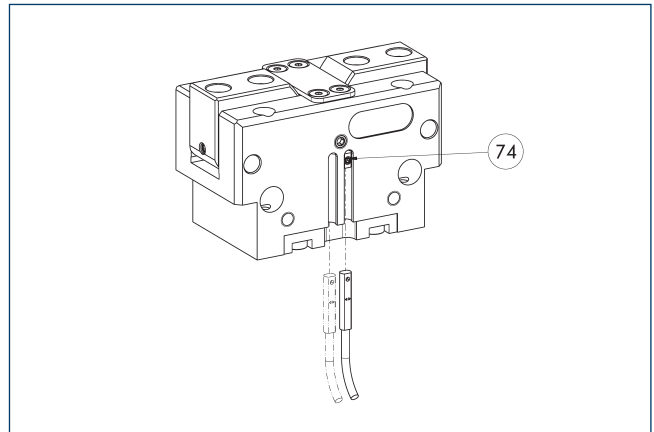
74 Limit stop for sensor

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 BG08-L 4P-0500	0307767	●
KA BG08-L 4P-1000	0307768	
KA BW08-L 4P-0500	0307765	
KA BW08-L 4P-1000	0307766	
clip for plug/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. Sensor programming on the gripper takes place via the IO-Link interface or the MT magnetic teach tool (included in scope of delivery). 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	

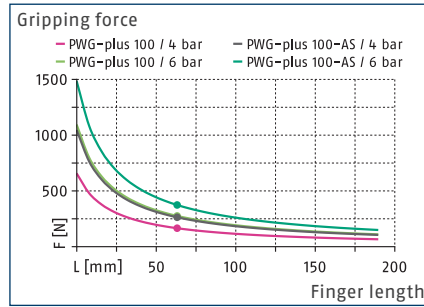
① One sensor is required for each gripper. No additional mounting kit is required – the gripper is equipped for use of the sensor by default. Further information and technical data can be found in the catalog chapter sensor systems.

# PWG-plus 100

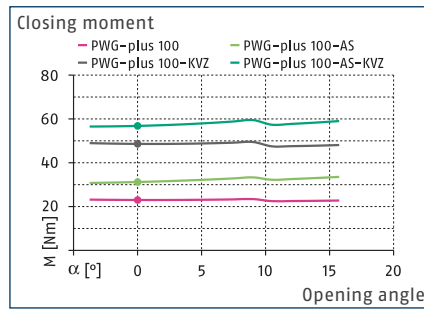
Angular gripper



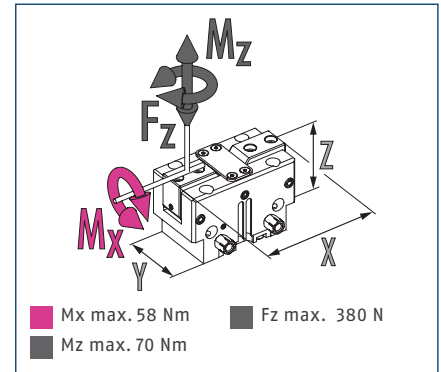
## Gripping force O.D. gripping



## Closing moment curve



## Dimensions and maximum loads

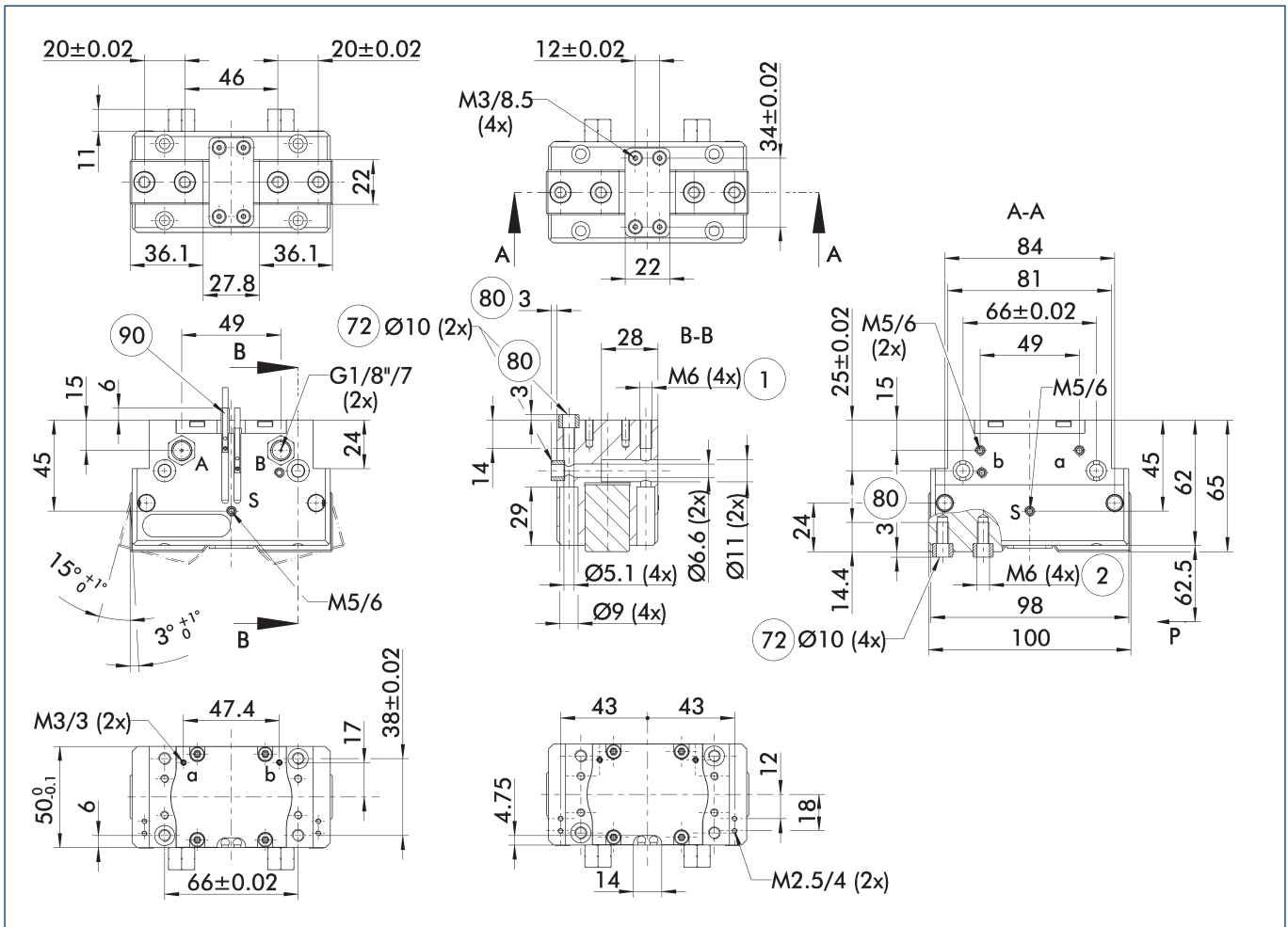


① The indicated torques and forces are static values, apply for each base jaw, and may occur simultaneously.

## Technical data

Description		PWG-plus 100	PWG-plus 100-AS
ID		0311640	0311641
Opening angle per jaw	[°]	15	15
Closed angle per jaw	[°]	3	3
Closing moment	[Nm]	23	31.2
Closing moment generated by spring	[Nm]		8.2
Weight	[kg]	0.76	0.95
Recommended workpiece weight	[kg]	1.4	1.4
Fluid consumption double stroke	[cm <sup>3</sup> ]	40.5	74
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]	0.12/0.12	0.12/0.18
Max. permissible finger length	[mm]	125	125
Max. permissible mass moment of inertia per chuck jaw	[kgcm <sup>2</sup> ]	74.7	74.7
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]	100 x 50 x 65	100 x 50 x 91
<b>Options and their characteristics</b>			
High-temperature version		39311640	39311641
Min./max. ambient temperature	[°C]	5/130	5/130
Power booster version		0311645	0311646
Closing moment	[Nm]	48.6	56.8
Closing moment generated by spring	[Nm]		8.2
Weight	[kg]	1	1.25
Maximum pressure	[bar]	6	6
Max. permissible finger length	[mm]	125	125

## Main view



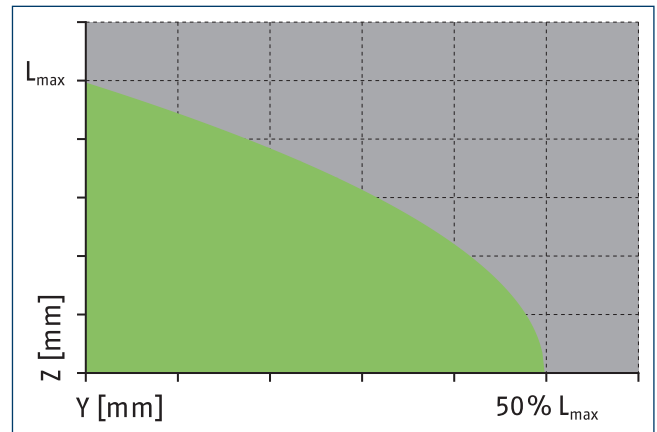
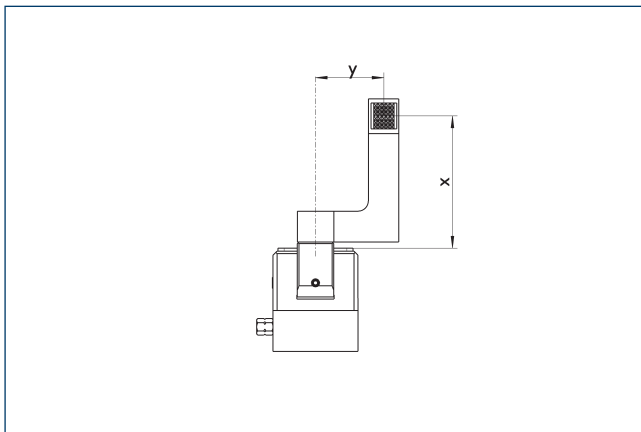
The drawing shows the gripper in the basic version with closed jaws, without dimensional consideration of the options described below.

① The SDV-P pressure maintenance valve can also be used for I.D. or O.D. gripping alternatively or in addition to the spring-loaded, mechanical gripping force maintenance device (see catalog section on accessories).

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  
 ⑧① Depth of the centering sleeve hole in the counter part  
 ⑨① Sensor MMS 22..

## Maximum permitted finger projection



■ Permitted range

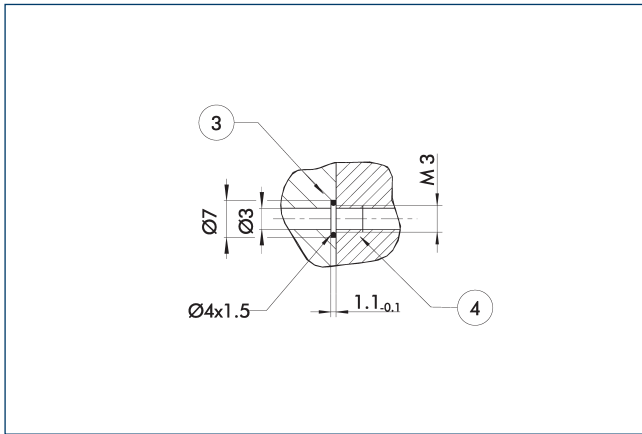
■ Inadmissible range

$L_{max}$  is equivalent to the maximum permitted finger length, see the technical data table.

# PWG-plus 100

Angular gripper

## Hose-free direct connection M3

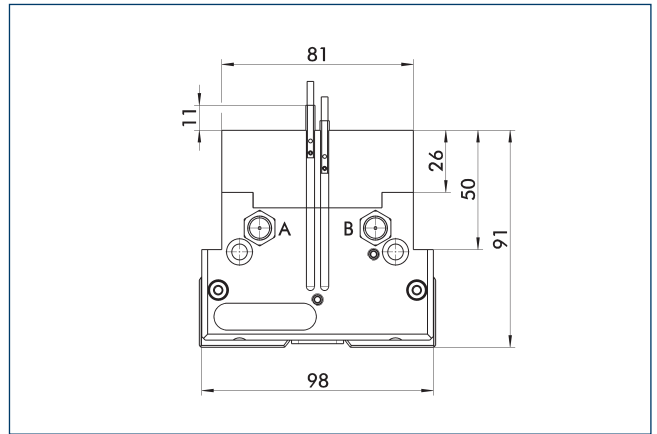


③ Adapter

④ Grippers

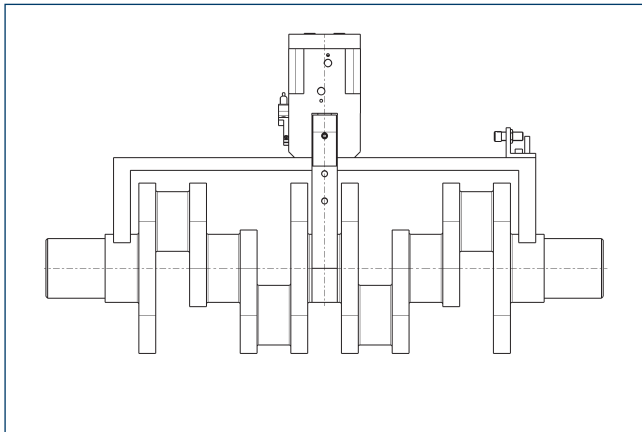
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

## Gripping force maintenance device



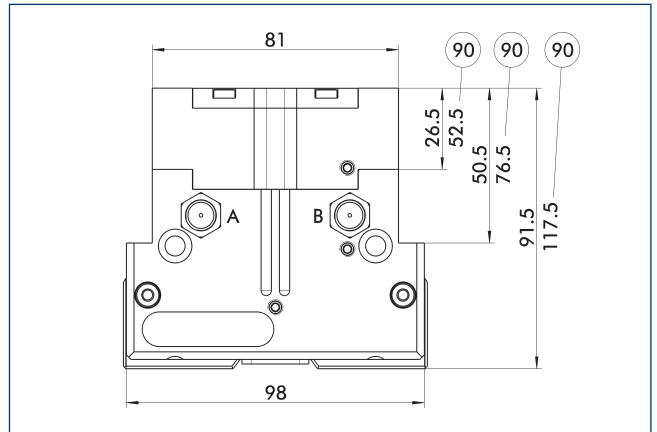
The mechanical gripping force maintenance ensures that a minimum clamping force will be applied even in case of pressure drop. This acts as closing force in the AS version. Besides this, the gripping force maintenance can be used to increase gripping force or for single actuated gripping.

## Shaft support



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

## Power booster version

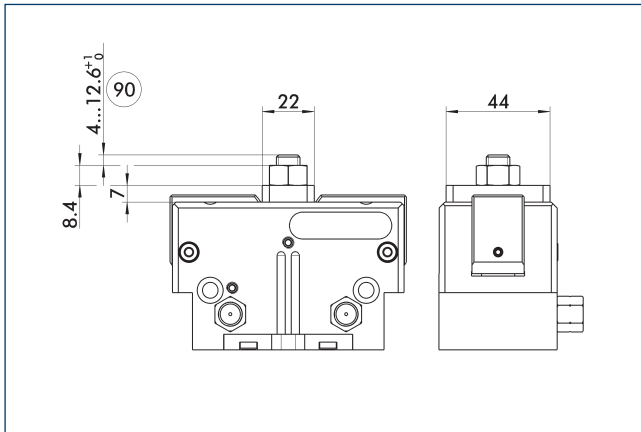


⑨⑩ Applies to AS version

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

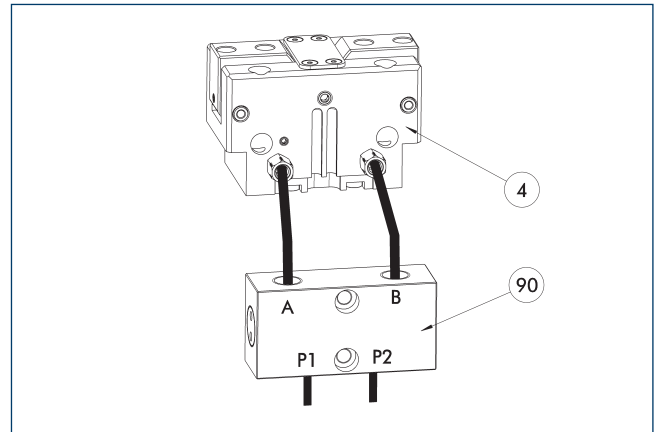


90 Max. adjustment travel

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

Description	ID
Stroke adjustment	
HVE-PWG-plus 100	0311743

### SDV-P pressure maintenance valve



4 Grippers

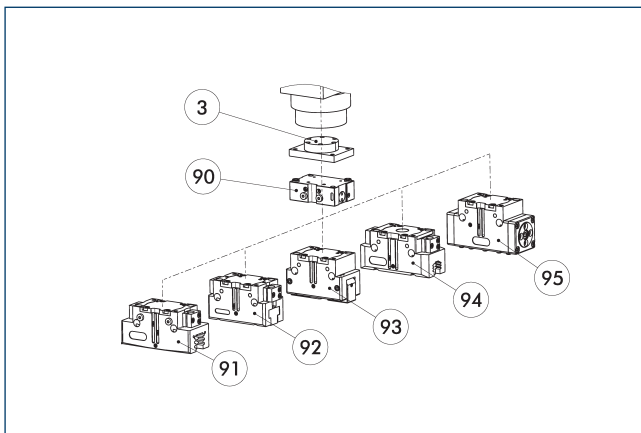
90 SDV-P pressure maintenance valve

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 PGN-plus / PGN-plus-P 2-finger parallel gripper
- 92 JGP 2-finger parallel grippers
- 93 2-finger angular gripper PWG-plus
- 94 2-finger parallel gripper PGB
- 95 Sealed DPG-plus gripper

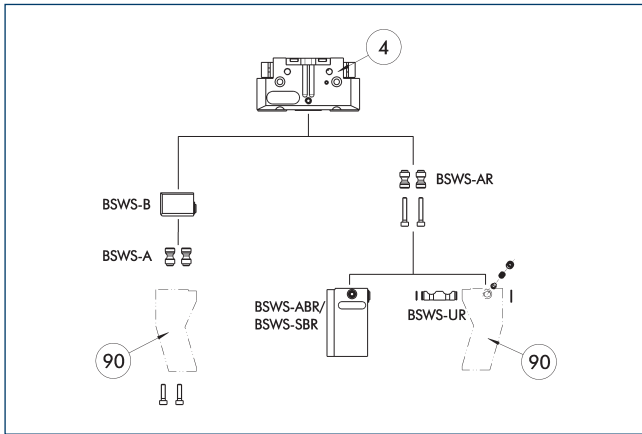
The SDV-P E-P pressure maintenance valves ensure that the pressure in the piston chamber is maintained temporarily during an emergency stop. SDV-P E-P can be directly connected to the listed grippers without the need for additional pneumatic hoses.

Description	ID
Pressure maintenance valve	
SDV-P 100-E-P	0300126

# PWG-plus 100

Angular gripper

## BSWS jaw quick-change jaw systems



④ Grippers

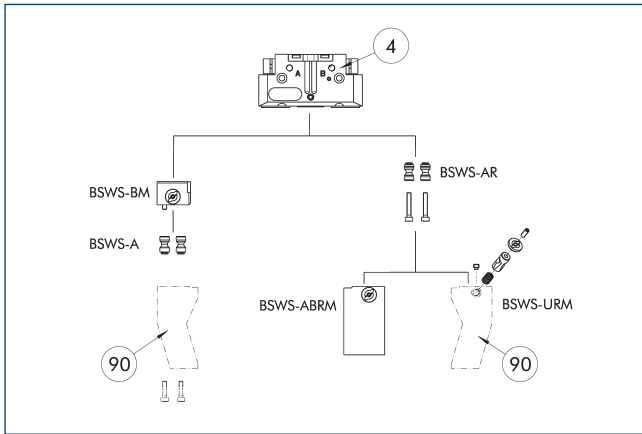
⑨ Customized gripper fingers

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
<b>Jaw quick-change system adapter pin</b>		
BSWS-A 100	0303026	2
BSWS-AR 100	0300094	2
<b>Quick-change jaw system base</b>		
BSWS-B 100	0303027	1
<b>Jaw quick-change system finger blank</b>		
BSWS-ABR-PGZN-plus 100	0300074	1
BSWS-SBR-PGZN-plus 100	0300084	1
<b>Jaw quick-change system locking mechanism</b>		
BSWS-UR 100	0302993	1

① Only systems that are listed in the table, can be used.

Jaw quick-change system BSWs-M



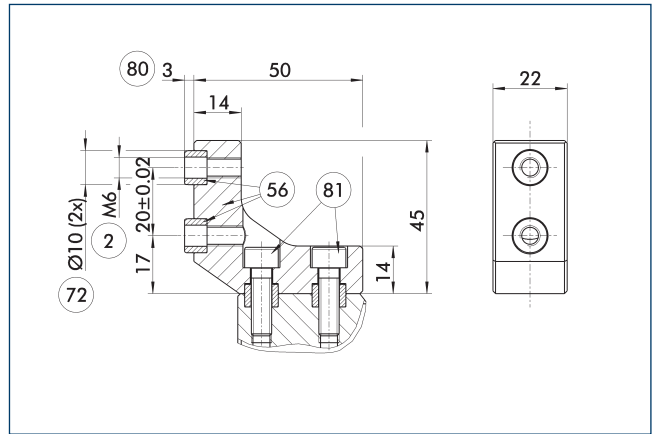
- ④ Grippers
- ⑨0 Customized gripper fingers

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 100	0303026	2
BSWS-AR 100	0300094	2
Quick-change jaw system base		
BSWS-BM 100	1313902	1
Jaw quick-change system finger blank		
BSWS-ABRM-PGZN-plus 100	1420853	1
Jaw quick-change system locking mechanism		
BSWS-URM 100	1398403	1

① Only systems that are listed in the table, can be used.

ZBA-L-plus 100 intermediate jaws

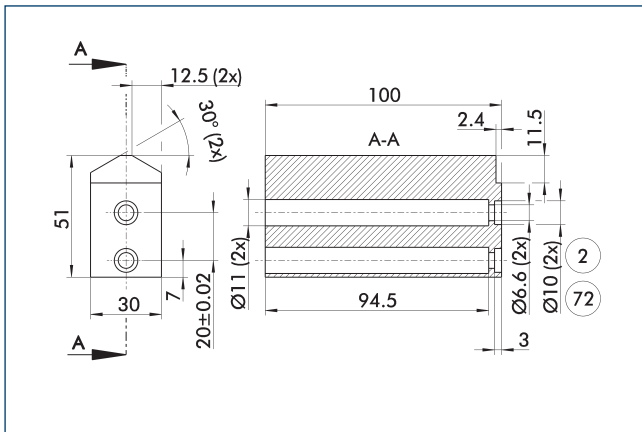


- ② Finger connection
- ⑤6 Included in the scope of delivery
- ⑦2 Fit for centering sleeves
- ⑧0 Depth of the centering sleeve hole in the counter part
- ⑧1 Not included in the scope of delivery

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 100	0311742	Aluminum	PGN-plus 100	1

Finger blanks ABR- / SBR-PGZN-plus 100

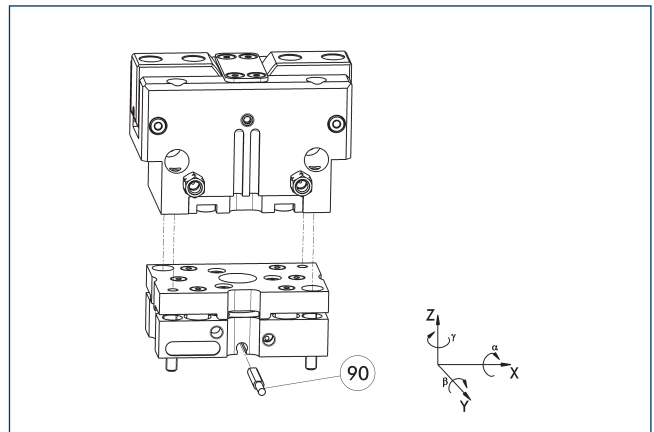


- ② Finger connection
- ⑦2 Fit for centering sleeves

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

Description	ID	Material	Scope of delivery
Finger blank			
ABR-PGZN-plus 100	0300012	Aluminum	1
SBR-PGZN-plus 100	0300022	Steel	1

Tolerance compensation unit TCU



- ⑨0 Monitoring of locking

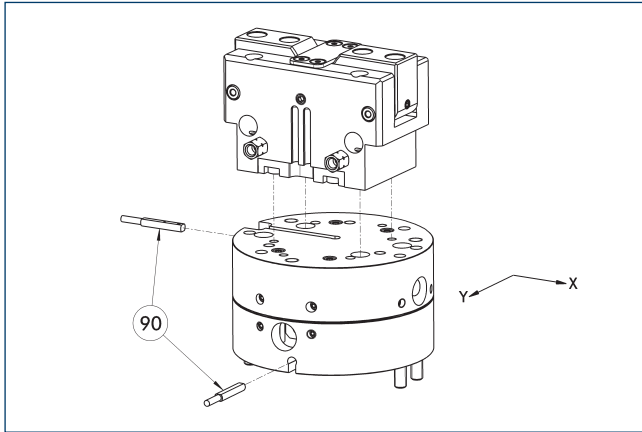
Grippers can be directly mounted without an adapter plate. Tolerance compensation unit and gripper have an identical screw connection diagram. Therefore the tolerance compensation units can be assembled later. Please consider the additional assembly height of the tolerance compensation unit. For details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

Description	ID	Locking	Deflection	Often combined
Compensation unit				
TCU-P-100-2-MV	0324808	yes	±1°/±1,5°/±1,2°	●
TCU-P-100-3-0V	0324811	no	±1°/±1,5°/±1,2°	

# PWG-plus 100

Angular gripper

## Compensation unit AGE-F

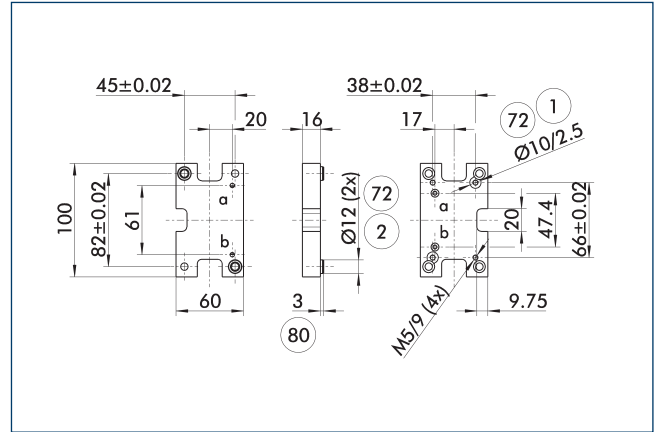


90 Monitoring

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-080-1	0324960	± 5	39	
AGE-F-XY-080-2	0324961	± 5	85	
AGE-F-XY-080-3	0324962	± 5	90	●

## Adapter plate for PGN-plus 100



1 Robot-side connection

2 Tool-side connection

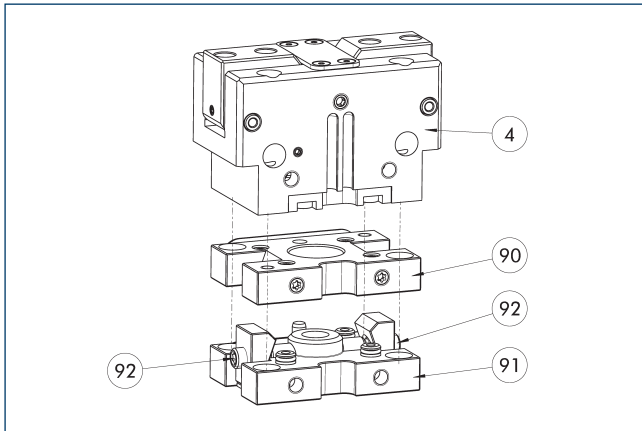
72 Fit for centering sleeves

80 Depth of the centering sleeve hole in the counter part

The adapter plate has integrated air feed-throughs in order to be able to use the hose-free direct connection of the appropriate gripper.

Description	ID
<b>Tool side</b>	
A-CWA-125-100-P	0305829

## Compact change system for grippers



4 Grippers

90 CWA compact change adapter

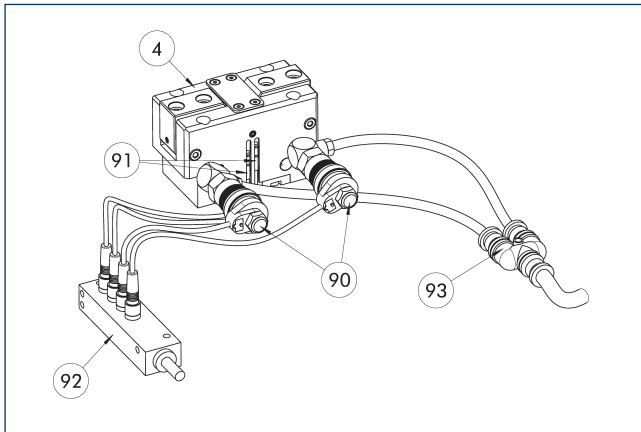
91 CWK compact change master

92 Locking mechanism

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

Description	ID
<b>Tool side</b>	
A-CWA-125-100-P	0305829
<b>CWA compact change adapter</b>	
CWA-100-P	0305801
<b>CWK compact change master</b>	
CWK-100-P	0305800

## Attachment valves



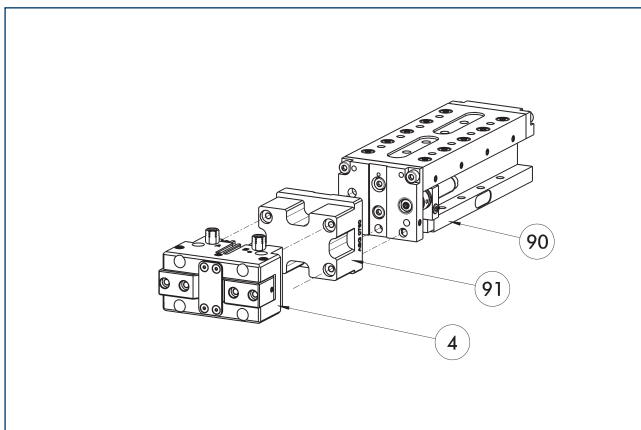
- ④ Grippers
- ⑨② Sensor distributor
- ⑨① Micro valves
- ⑨③ Y distributor
- ⑨① Sensor

The set of attachment valves reduces the compressed air consumption as there is no need to ventilate or bleed the supply lines. This can also reduce cycle time. The hose-free direct assembly of the micro valves reduces the hosing effort for the gripper. To further simplify electrical connection of the valves and sensors, their signals can be bundled via an optional distributor.

Description	ID	Often combined
Attachment valve		
ABV-MV30-G1/8	0303328	
ABV-MV30-G1/8-V2-M8	0303396	
ABV-MV30-G1/8-V4-M8	0303366	●
ABV-MV30-G1/8-V8-M8	0303367	

① A set of attachment valves ABV is required per actuator. The ABV set contains two 3/2 micro valves, an Y-distributor for compressed air supply and optionally a sensor distributor with two, four or eight inputs or outputs. Sensors for monitoring the gripper need to be ordered separately. Pneumatic hoses are not included in the scope of delivery.

## Modular Assembly Automation



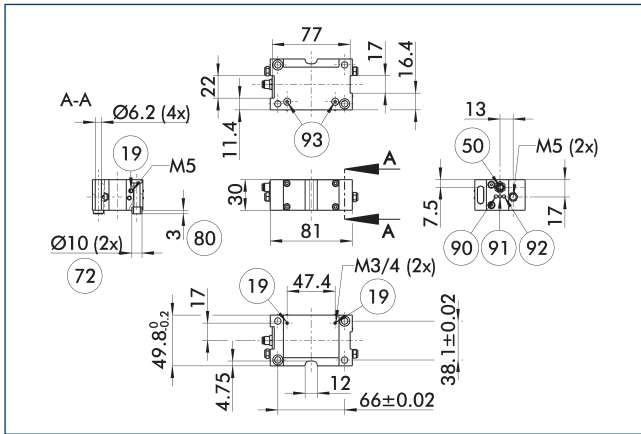
- ④ Grippers
- ⑨① ASG adapter plate
- ⑨① CLM/KLM/LM/ELP/ELM/ELS/HLM linear modules

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".

# PWG-plus 100

Angular gripper

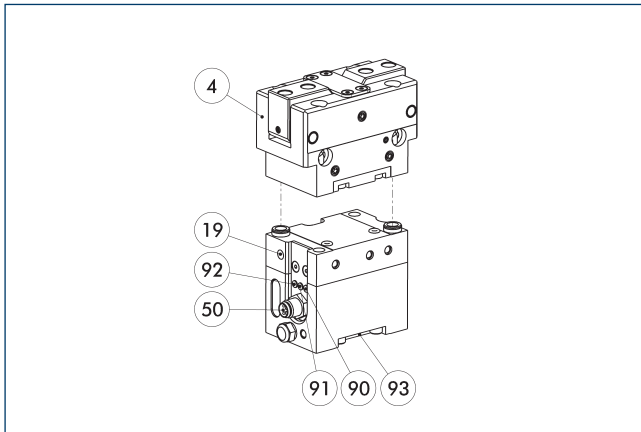
## VB-PGN-plus 100 valve box



- ①⑨ Air connection
- ⑤⑩ Electrical connection
- ⑦② Fit for centering sleeves
- ⑧① Depth of the centering sleeve hole in the counter part
- ⑨① Voltage status indicator
- ⑨① Status display valve connection b opened
- ⑨② Status display valve connection a opened
- ⑨③ Valve connection a and b

Description	ID	
Valve box		
VB-PGN-plus 100	0310094	

## Valve box



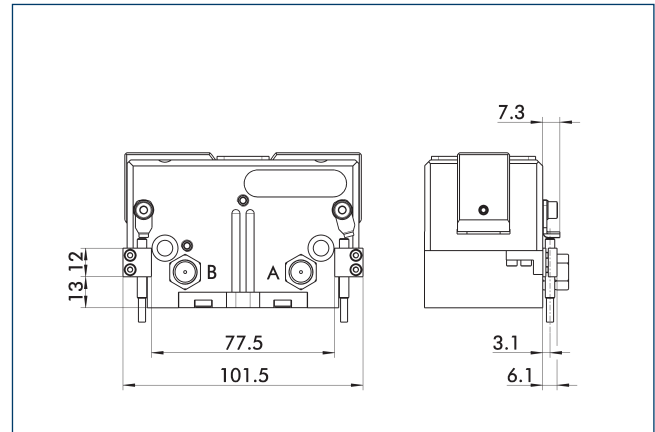
- ④ Grippers
- ①⑨ Air connection
- ⑤⑩ Electrical connection
- ⑧⑩ Power supply
- ⑨① Status display valve connection b opened
- ⑨② Status display valve connection a opened
- ⑨③ Direct connection for hose-free compressed air supply

Decentralized control solution completely ready for use! The valves are directly mounted on the handling component. This allows a strong reduction of cycle times, commissioning times, air consumption, and less tubing. All of these combined lead to maximum process reliability with minimum effort.

Description	ID	Often combined
Valve box		
VB-PGN-plus 100	0310094	
Connection cables		
KA BG08-L 4P-0500	0307767	●
KA BG08-L 4P-1000	0307768	
KA BW08-L 4P-0500	0307765	
KA BW08-L 4P-1000	0307766	
Sensor distributor		
V2-M8-4P-2XM8-3P	0301380	
clip for plug/socket		
CLI-M8	0301463	

- ① Valve and sensor signals of the unit can be merged on a bus distributor so that the electrical as well as the pneumatic connections can be decentralized.

## Attachment kit for proximity switch IN 40



End position monitoring can be mounted with an attachment kit.

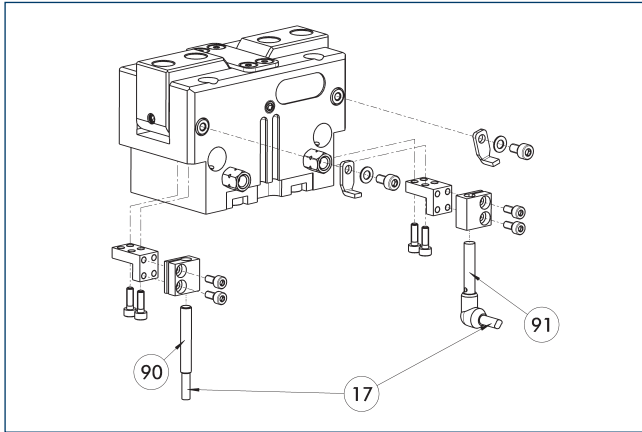
Description	ID	
Attachment kit for proximity switch		
AS-IN40-PWG-plus 100	0311740	

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

# PWG-plus 100

Angular gripper

## IN 40 inductive proximity switches



17 Cable outlet

91 Sensor IN..-SA

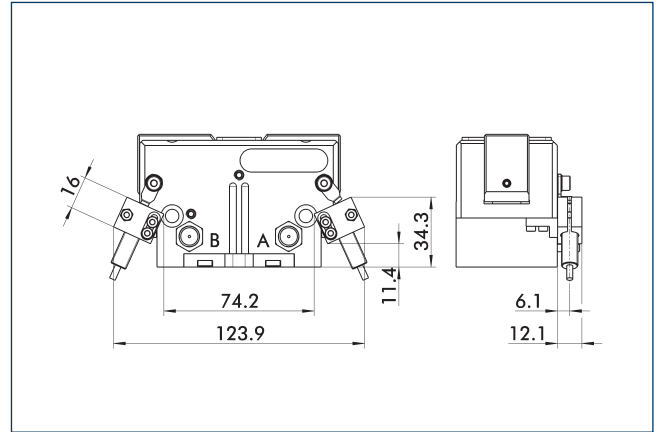
90 Sensor IN ...

End position monitoring can be mounted with an attachment kit.

Description	ID	Often combined
Attachment kit for proximity switch		
AS-IN40-PWG-plus 100	0311740	
Inductive proximity switches		
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



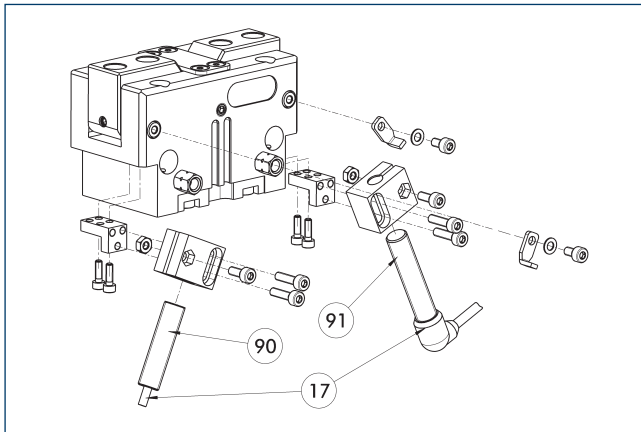
End position monitoring can be mounted with an attachment kit.

Description	ID	
Attachment kit for proximity switch		
AS-IN80-PWG-plus 100	0311741	

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



## IN 80 inductive proximity switches



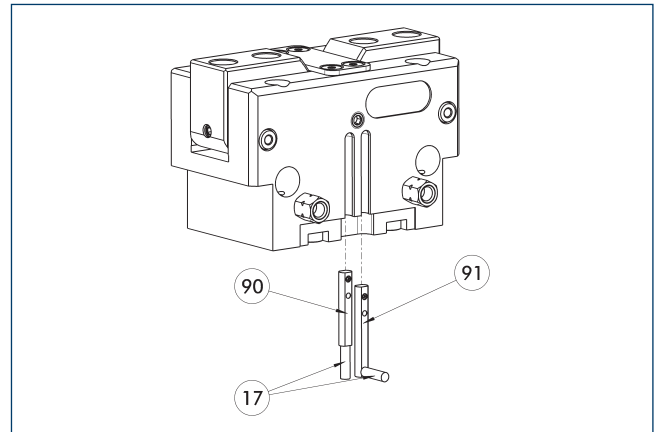
- ⑰ Cable outlet
- ① Sensor IN...-SA
- ① Sensor IN ...

End position monitoring can be mounted with an attachment kit.

Description	ID	Often combined
Attachment kit for proximity switch		
AS-IN80-PWG-plus 100	0311741	
Inductive proximity switches		
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



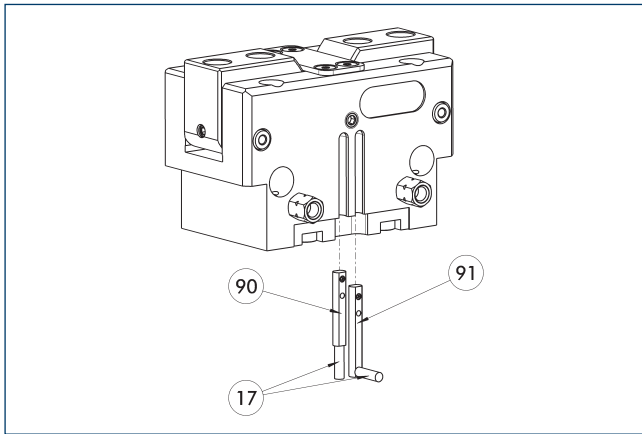
- ⑰ Cable outlet
- ① Sensor MMS 22...-SA
- ① Sensor MMS 22..

End position monitoring for mounting in the C-slot.

Description	ID	Often combined
Electronic magnetic switch		
MMS 22-S-M8-PNP	0301032	●
MMSK 22-S-PNP	0301034	
Electronic magnetic switches with lateral cable outlet		
MMS 22-S-M8-PNP-SA	0301042	●
MMSK 22-S-PNP-SA	0301044	
Connection cables		
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	
clip for plug/socket		
CLI-M8	0301463	
Cable extension		
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
Sensor distributor		
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



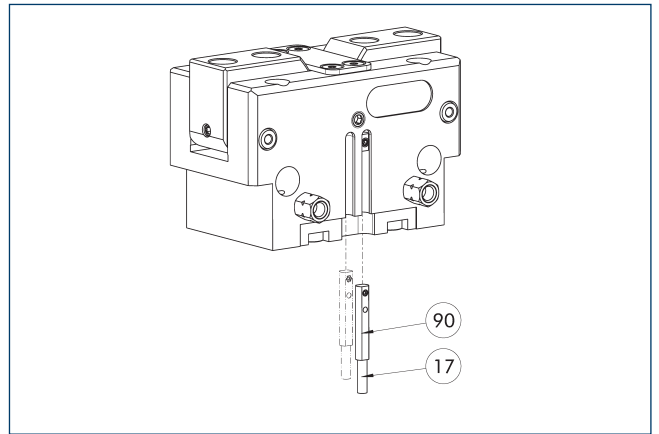
- ⑰ Cable outlet
- ⑲ Sensor MMS 22 ..-PI1-...-SA
- ⑳ Sensor MMS 22 PI1-...

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) 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	

- ⑰ 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



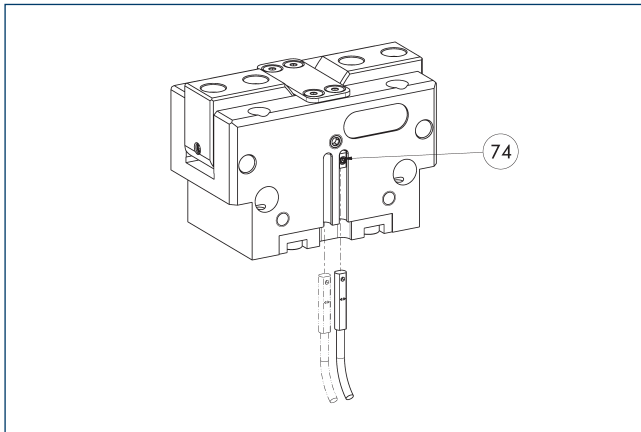
- ⑰ Cable outlet
- ⑲ MMS 22...-PI2-... sensor

Position monitoring with two programmable positions per sensor and electronics built into the sensor. Can be programmed using MT magnetic teaching tool (included in the scope of delivery) 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-PI2-S-M8-PNP	0301180	●
MMSK 22-PI2-S-PNP	0301182	
<b>Programmable magnetic switch with lateral cable outlet</b>		
MMS 22-PI2-S-M8-PNP-SA	0301186	●
MMSK 22-PI2-S-PNP-SA	0301188	
<b>Programmable magnetic switch with stainless steel housing</b>		
MMS 22-PI2-S-M8-PNP-HD	0301130	●
MMSK 22-PI2-S-PNP-HD	0301132	

- ⑰ 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**



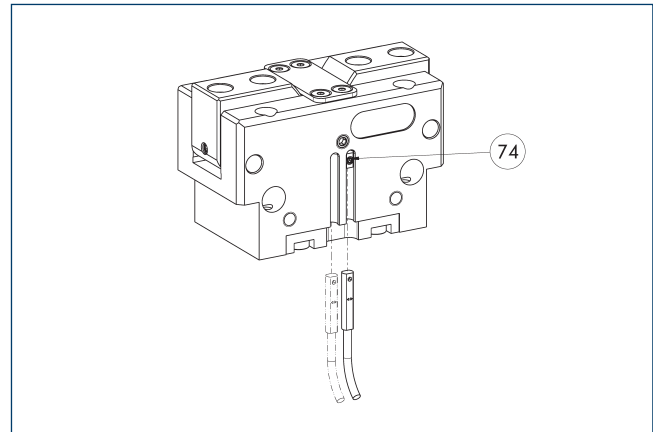
74 Limit stop for sensor

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 BG08-L 4P-0500	0307767	●
KA BG08-L 4P-1000	0307768	
KA BW08-L 4P-0500	0307765	
KA BW08-L 4P-1000	0307766	
clip for plug/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. Sensor programming on the gripper takes place via the IO-Link interface or the MT magnetic teach tool (included in scope of delivery). 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	

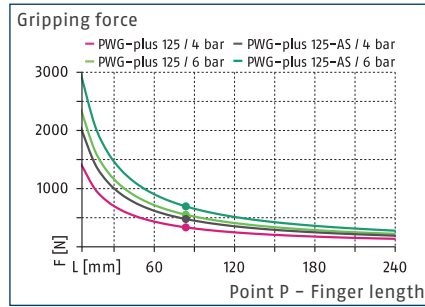
① One sensor is required for each gripper. No additional mounting kit is required – the gripper is equipped for use of the sensor by default. Further information and technical data can be found in the catalog chapter sensor systems.

# PWG-plus 125

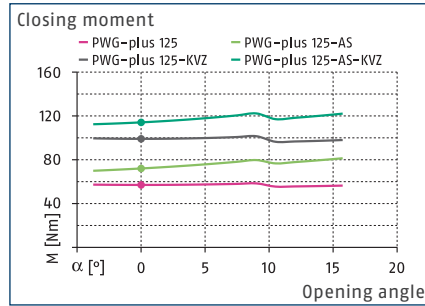
Angular gripper



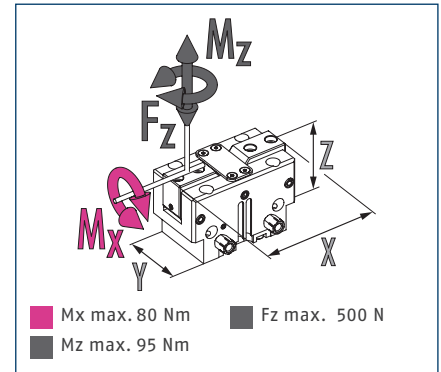
## Gripping force O.D. gripping



## Closing moment curve



## Dimensions and maximum loads

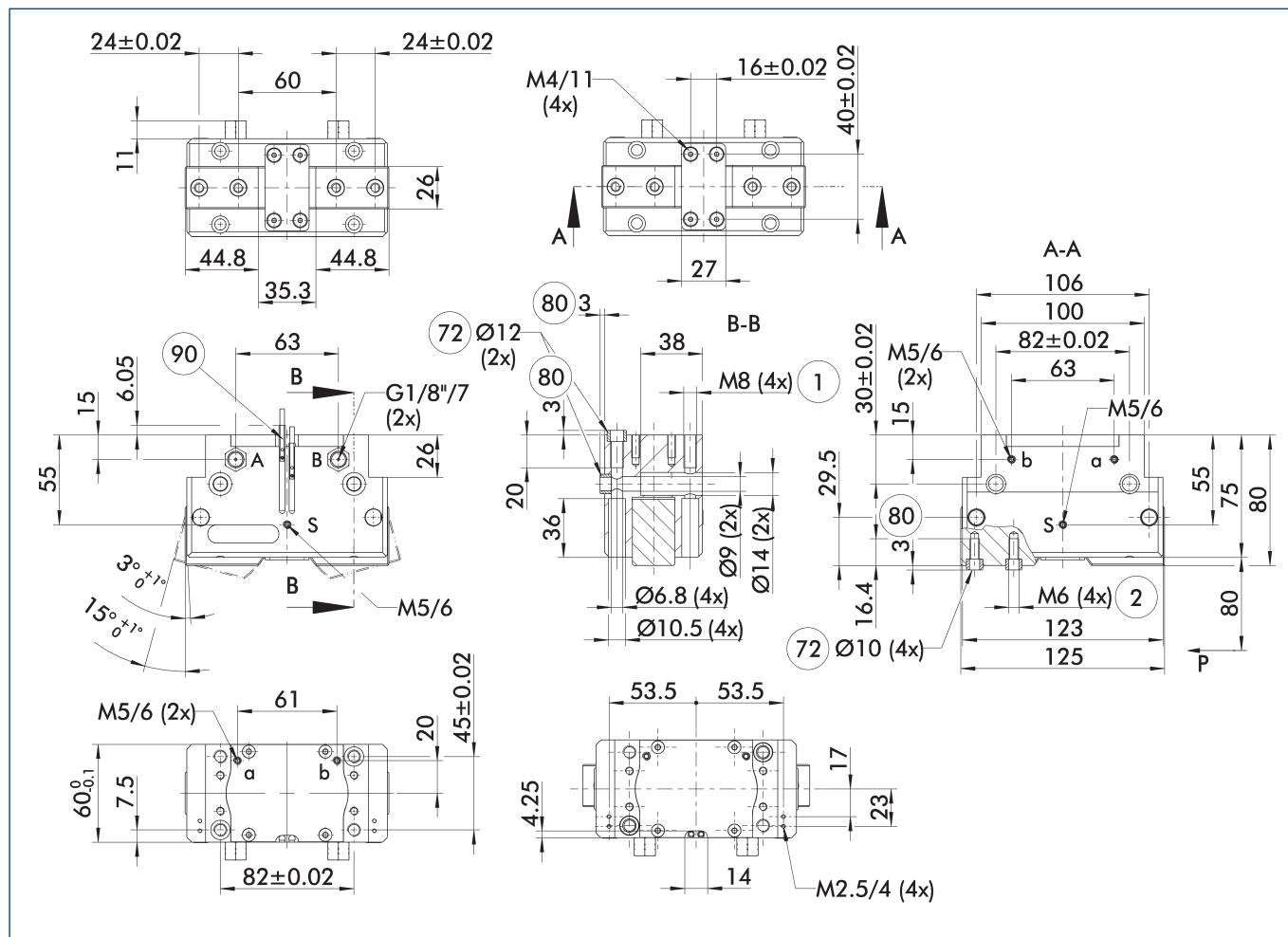


① The indicated torques and forces are static values, apply for each base jaw, and may occur simultaneously.

## 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
Fluid consumption 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 mass moment of 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



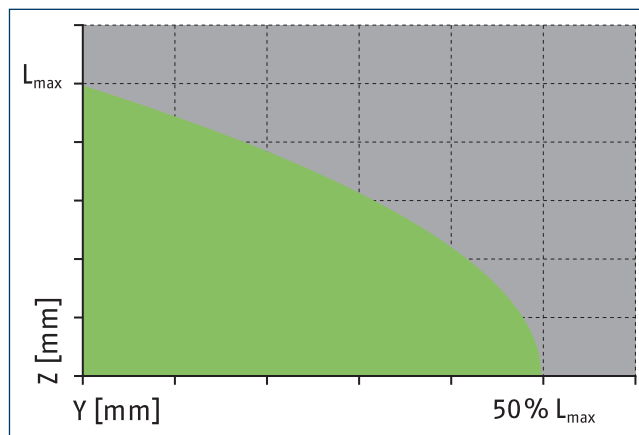
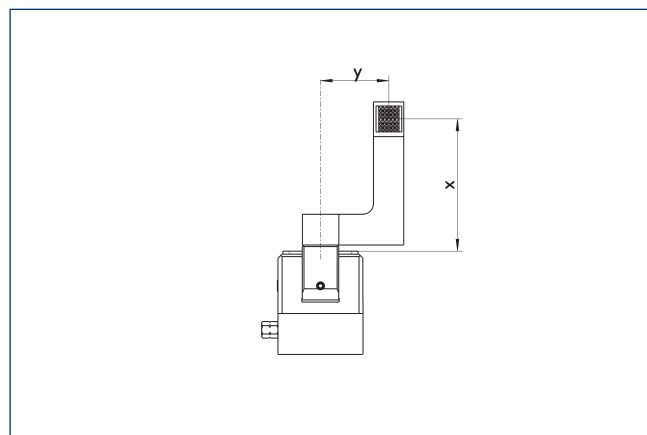
The drawing shows the gripper in the basic version with closed jaws, without dimensional consideration of the options described below.

① The SDV-P pressure maintenance valve can also be used for I.D. or O.D. gripping alternatively or in addition to the spring-loaded, mechanical gripping force maintenance device (see catalog section on accessories).

- 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
- ⑧① Depth of the centering sleeve hole in the counter part
- ⑨① Sensor MMS 22..

Maximum permitted finger projection



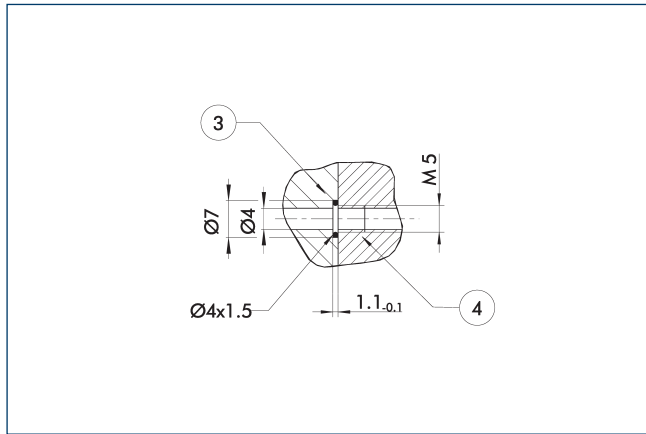
■ Permitted range      ■ Inadmissible range

$L_{max}$  is equivalent to the maximum permitted finger length, see the technical data table.

# PWG-plus 125

Angular gripper

## Hose-free direct connection M5

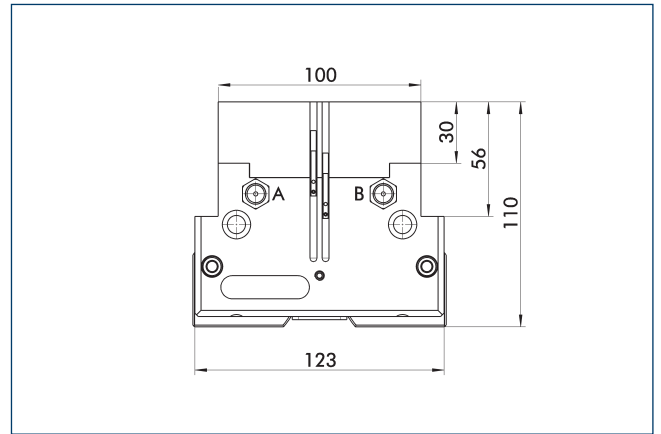


③ Adapter

④ Grippers

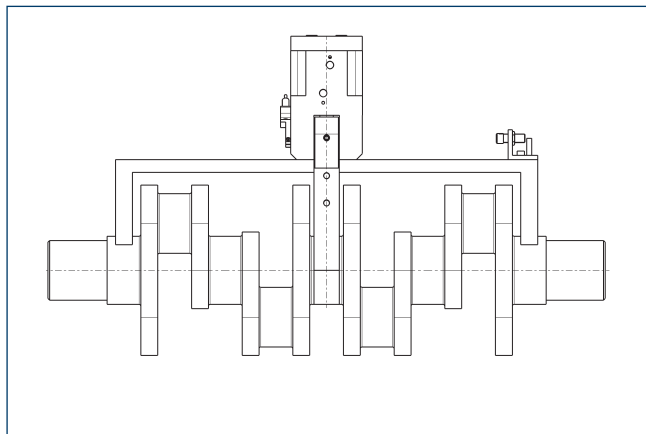
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

## Gripping force maintenance device



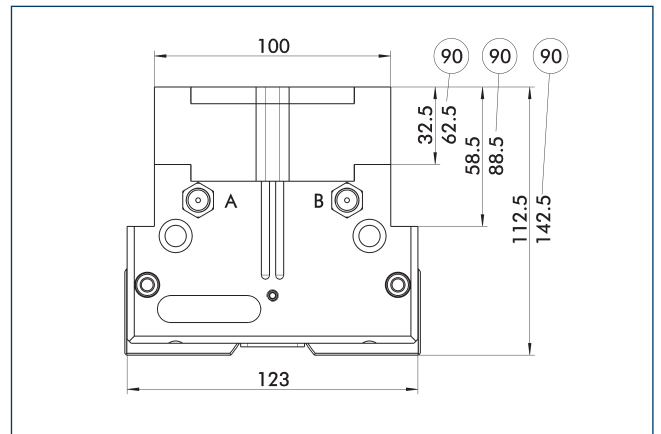
The mechanical gripping force maintenance ensures that a minimum clamping force will be applied even in case of pressure drop. This acts as closing force in the AS version. Besides this, the gripping force maintenance can be used to increase gripping force or for single actuated gripping.

## Shaft support



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

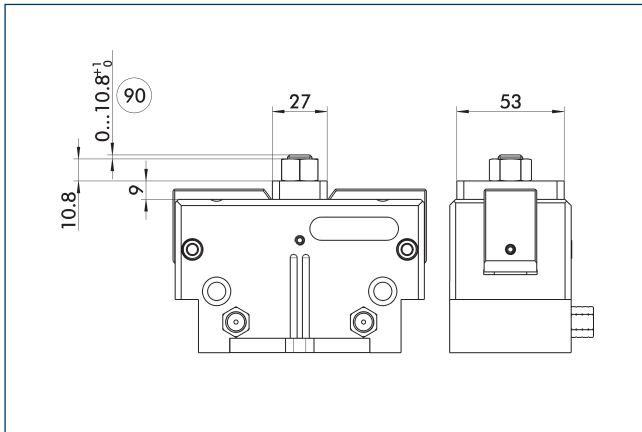
## Power booster version



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

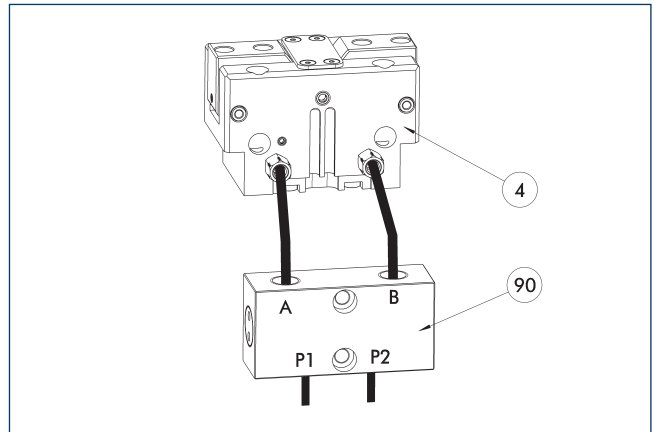


90 Max. adjustment travel

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

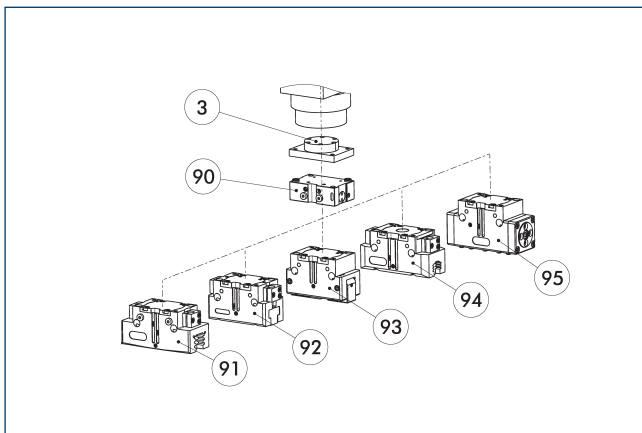
90 SDV-P pressure maintenance valve

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

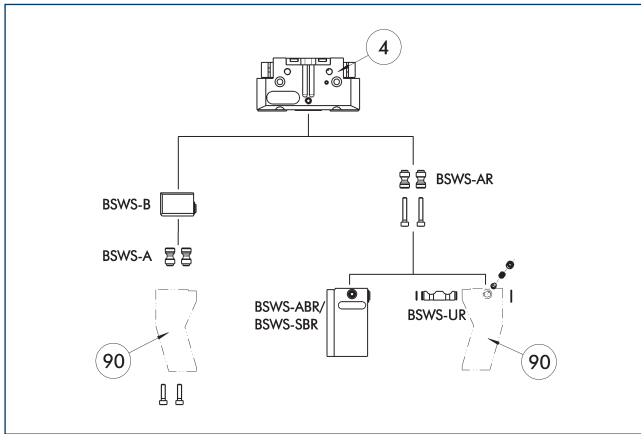


- 3 Adapter
- 90 SDV-P E-P pressure maintenance valve
- 91 PGN-plus / PGN-plus-P 2-finger parallel gripper
- 92 JGP 2-finger parallel grippers
- 93 2-finger angular gripper PWG-plus
- 94 2-finger parallel gripper PGB
- 95 Sealed DPG-plus gripper

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

⑨ Customized gripper fingers

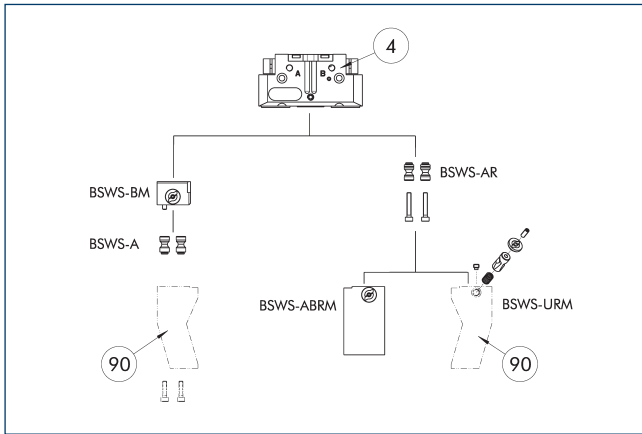
There are various jaw quick-change systems available for the gripper. For detailed information, please refer to the corresponding product.

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

① Only systems that are listed in the table, can be used.



Jaw quick-change system BSWs-M



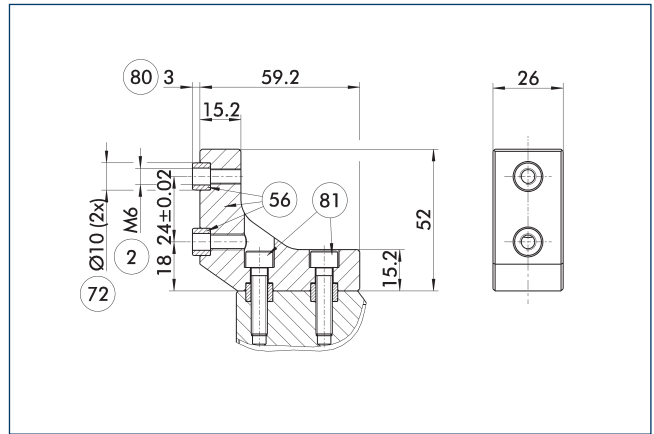
- ④ Grippers
- ⑨0 Customized gripper fingers

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-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 Only systems that are listed in the table, can be used.

ZBA-L-plus 125 intermediate jaws

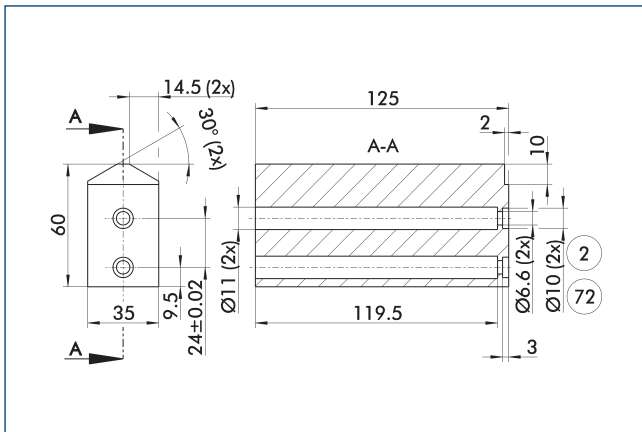


- ② Finger connection
- ⑤6 Included in the scope of delivery
- ⑦2 Fit for centering sleeves
- ⑧0 Depth of the centering sleeve hole in the counter part
- ⑧1 Not included in the scope of delivery

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

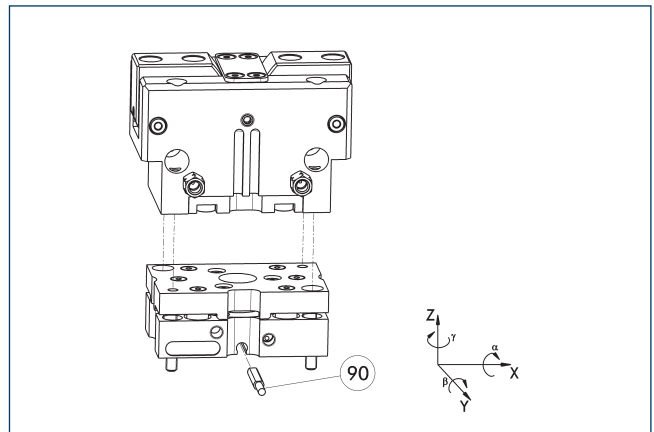


- ② Finger connection
- ⑦2 Fit for centering sleeves

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	1
SBR-PGZN-plus 125	0300023	Steel	1

Tolerance compensation unit TCU



- ⑨0 Monitoring of locking

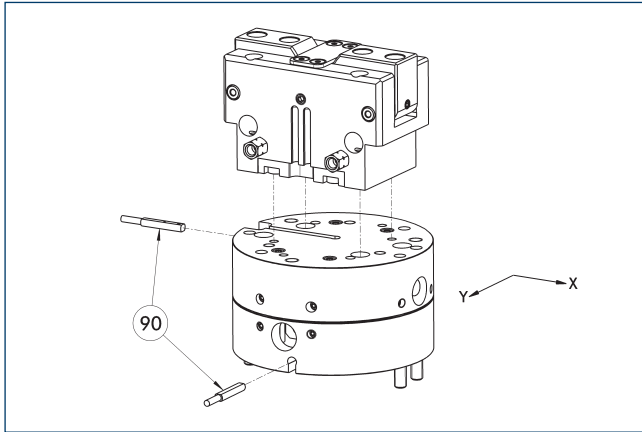
Grippers can be directly mounted without an adapter plate. Tolerance compensation unit and gripper have an identical screw connection diagram. Therefore the tolerance compensation units can be assembled later. Please consider the additional assembly height of the tolerance compensation unit. For details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

# PWG-plus 125

Angular gripper

## Compensation unit AGE-F

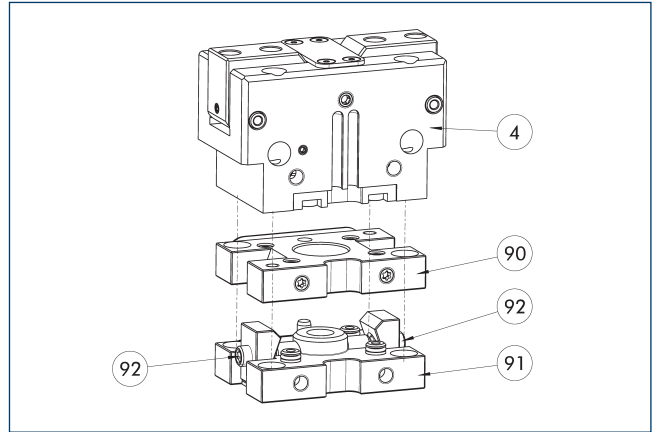


90 Monitoring

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

Description	ID	Compensation XY [mm]	Reset force [N]	Often combined
<b>Compensation unit</b>				
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

90 CWA compact change adapter

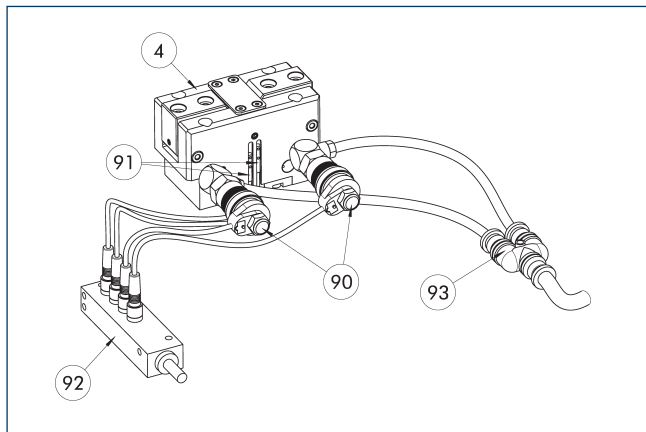
91 CWK compact change master

92 Locking mechanism

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

Description	ID	
<b>CWA compact change adapter</b>		
CWA-125-P	0305826	
<b>CWK compact change master</b>		
CWK-125-P	0305825	

Attachment valves



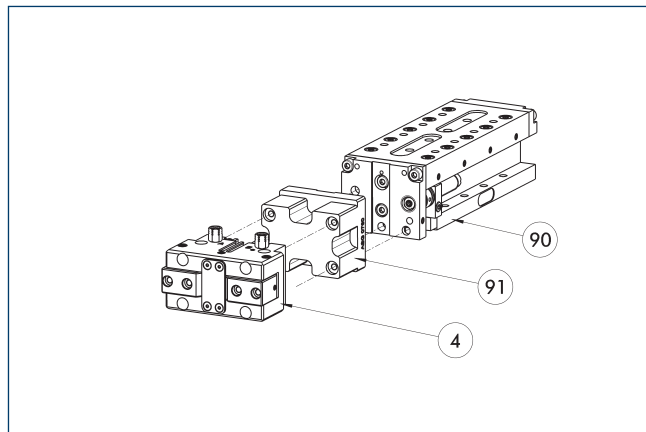
- ④ Grippers
- ⑨② Sensor distributor
- ⑨① Micro valves
- ⑨③ Y distributor
- ⑨① Sensor

The set of attachment valves reduces the compressed air consumption as there is no need to ventilate or bleed the supply lines. This can also reduce cycle time. The hose-free direct assembly of the micro valves reduces the hosing effort for the gripper. To further simplify electrical connection of the valves and sensors, their signals can be bundled via an optional distributor.

Description	ID	Often combined
Attachment valve		
ABV-MV30-G1/8	0303328	
ABV-MV30-G1/8-V2-M8	0303396	
ABV-MV30-G1/8-V4-M8	0303366	●
ABV-MV30-G1/8-V8-M8	0303367	

① A set of attachment valves ABV is required per actuator. The ABV set contains two 3/2 micro valves, an Y-distributor for compressed air supply and optionally a sensor distributor with two, four or eight inputs and outputs. Sensors for monitoring the gripper need to be ordered separately. Pneumatic hoses are not included in the scope of delivery.

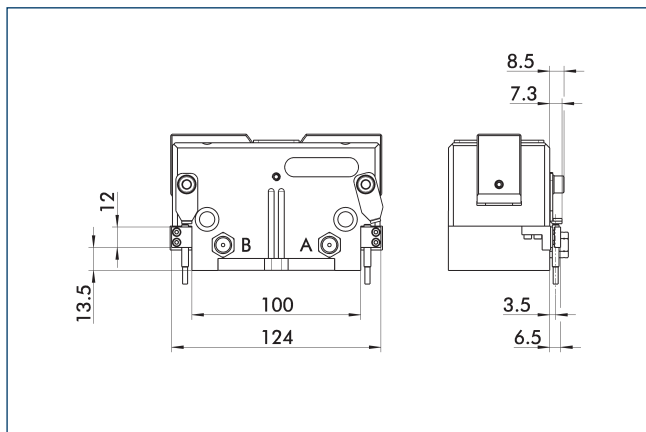
Modular Assembly Automation



- ④ Grippers
- ⑨① CLM/KLM/LM/ELP/ELM/ELS/HLM linear modules
- ⑨① ASG adapter plate

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.

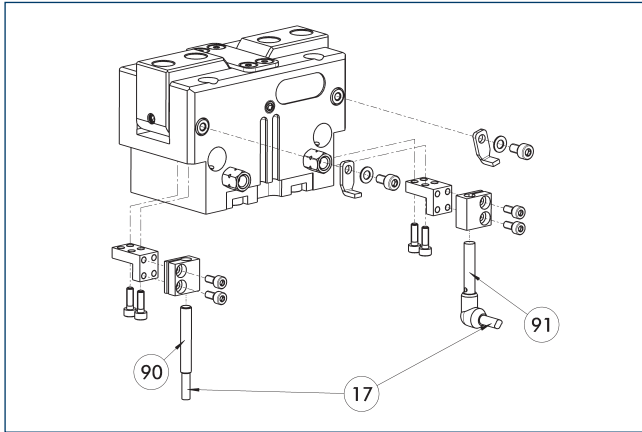
Description	ID	
Attachment kit for proximity switch		
AS-IN40-PWG-plus 125	0311750	

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

# PWG-plus 125

Angular gripper

## IN 40 inductive proximity switches



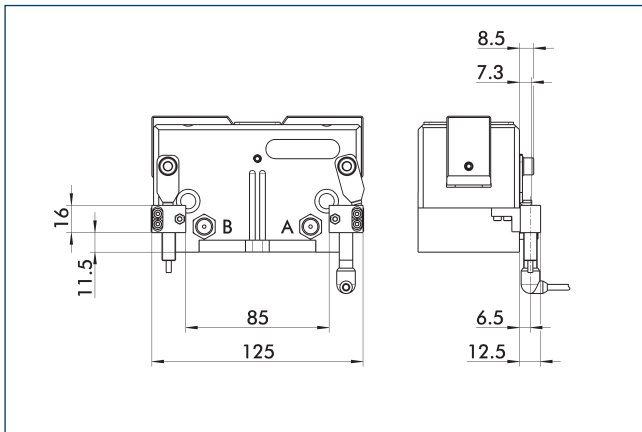
- ①⑦ Cable outlet
- ①⑨ Sensor IN ..-SA
- ①⑩ Sensor IN ...

End position monitoring can be mounted with an attachment kit.

Description	ID	Often combined
Attachment kit for proximity switch		
AS-IN40-PWG-plus 125	0311750	
Inductive proximity switches		
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

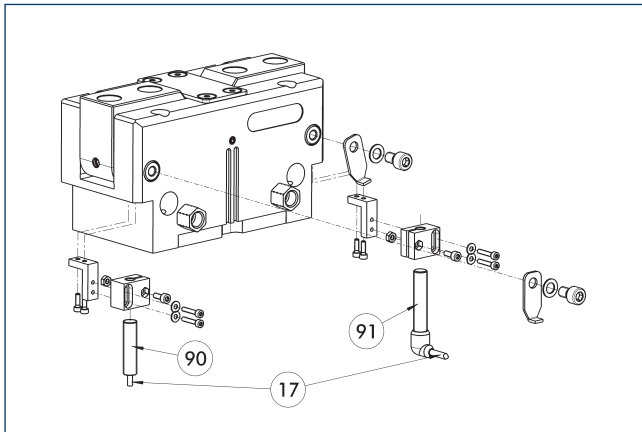


End position monitoring can be mounted with an attachment kit.

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.

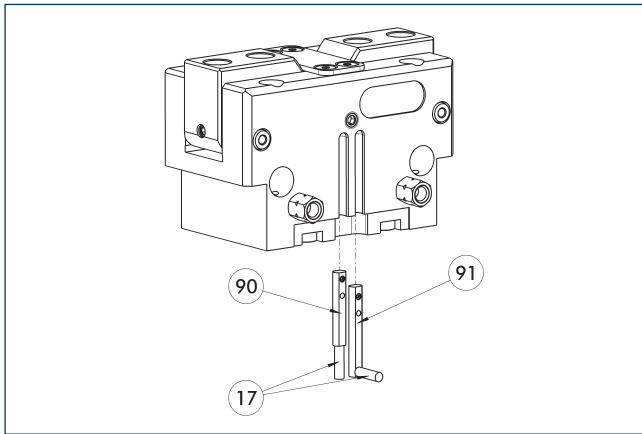
Description	ID	Often combined
Attachment kit for proximity switch		
AS-IN80-PWG-plus 125	0311751	
Inductive proximity switches		
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	●
IN-C 80-S-M8-PNP	0301475	
INK 80-S	0301550	
INK 80-SL	0301579	
Inductive proximity switch with lateral cable outlet		
IN 80-S-M12-SA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

# PWG-plus 125

Angular gripper

## Electronic magnetic switch MMS



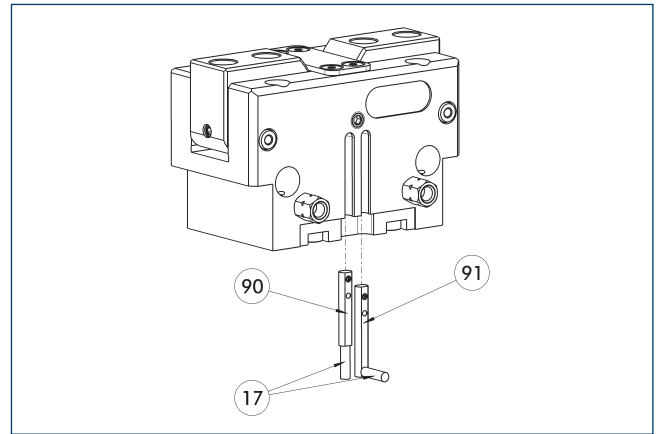
- ⑰ Cable outlet
- ⑲ Sensor MMS 22...-SA
- ① Sensor MMS 22..

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 plug/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



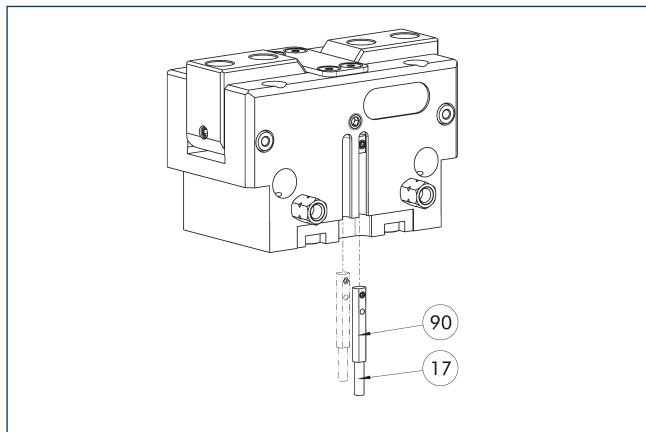
- ⑰ Cable outlet
- ⑲ Sensor MMS 22 ..-PI1...-SA
- ① Sensor MMS 22 PI1...

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) 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

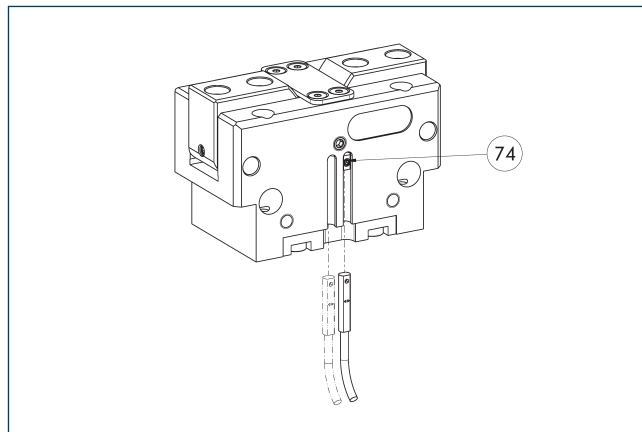
⑨⑩ MMS 22...-PI2-... sensor

Position monitoring with two programmable positions per sensor and electronics built into the sensor. Can be programmed using MT magnetic teaching tool (included in the scope of delivery) 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-PI2-S-M8-PNP	0301180	●
MMSK 22-PI2-S-PNP	0301182	
<b>Programmable magnetic switch with lateral cable outlet</b>		
MMS 22-PI2-S-M8-PNP-SA	0301186	●
MMSK 22-PI2-S-PNP-SA	0301188	
<b>Programmable magnetic switch with stainless steel housing</b>		
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**



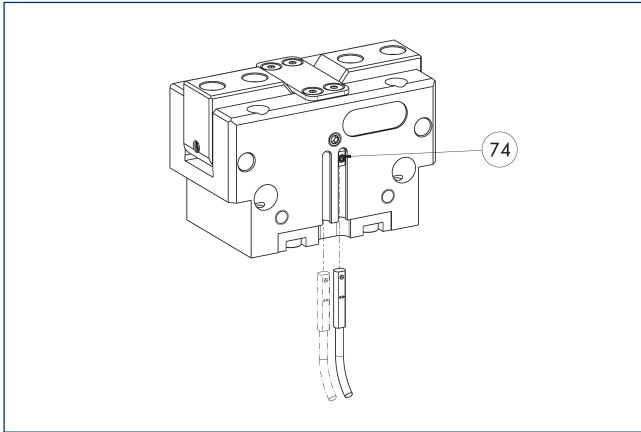
⑦④ Limit stop for sensor

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

Description	ID	Often combined
<b>Programmable magnetic switch</b>		
MMSK-P 22-S-PNP	0301371	
MMS-P 22-S-M8-PNP	0301370	●
<b>Connection cables</b>		
KA BG08-L 4P-0500	0307767	●
KA BG08-L 4P-1000	0307768	
KA BW08-L 4P-0500	0307765	
KA BW08-L 4P-1000	0307766	
<b>clip for plug/socket</b>		
CLI-M8	0301463	
<b>Sensor distributor</b>		
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. Sensor programming on the gripper takes place via the IO-Link interface or the MT magnetic teach tool (included in scope of delivery). 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.



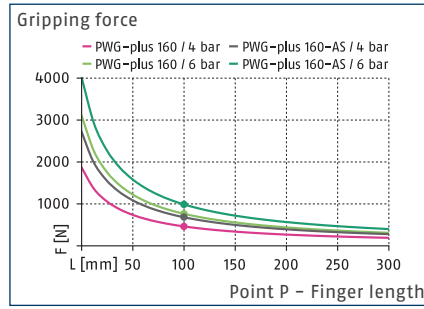


# PWG-plus 160

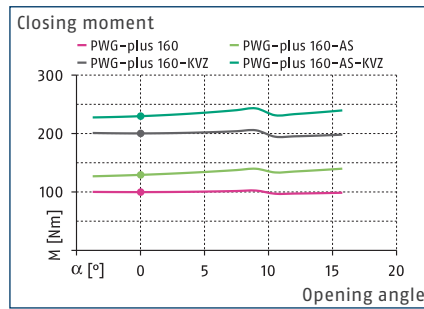
Angular gripper



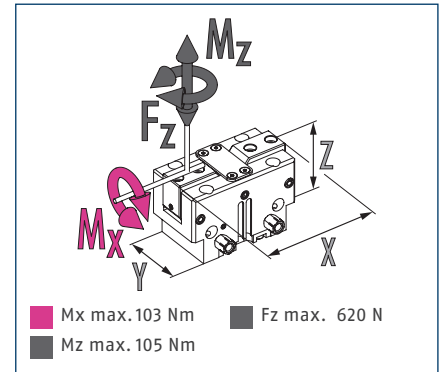
## Gripping force O.D. gripping



## Closing moment curve



## Dimensions and maximum loads

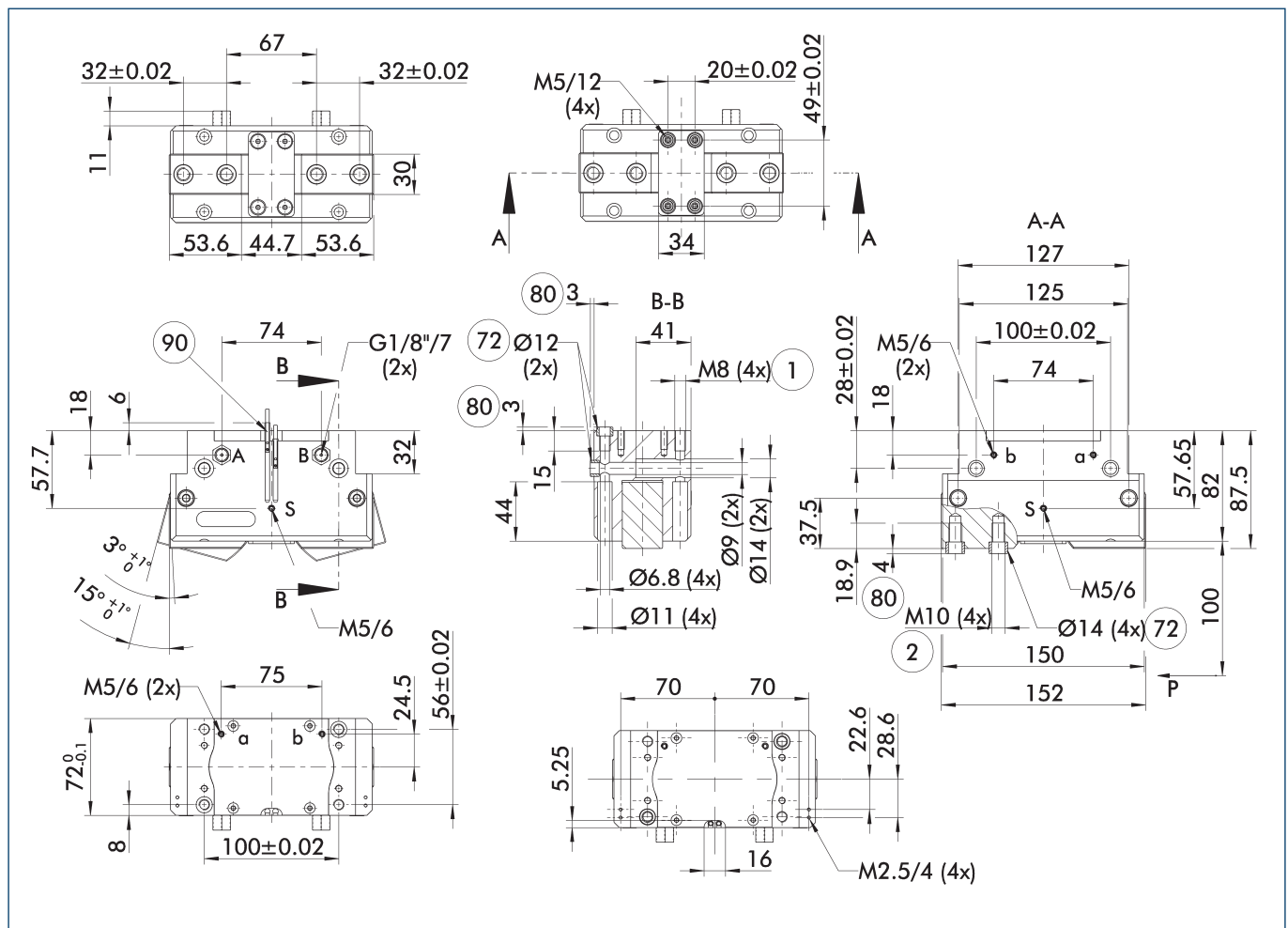


① The indicated torques and forces are static values, apply for each base jaw, and may occur simultaneously.

## Technical data

Description		PWG-plus 160	PWG-plus 160-AS
ID		0311660	0311661
Opening angle per jaw	[°]	15	15
Closed angle per jaw	[°]	3	3
Closing moment	[Nm]	100	129.5
Closing moment generated by spring	[Nm]		29.5
Weight	[kg]	2.12	3.12
Recommended workpiece weight	[kg]	3.86	3.86
Fluid consumption double stroke	[cm³]	135	178
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]	0.16/0.13	0.13/0.21
Max. permissible finger length	[mm]	200	200
Max. permissible mass moment of inertia per chuck jaw	[kgcm²]	560.7	560.7
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]	152 x 72 x 87.5	152 x 72 x 127.5
<b>Options and their characteristics</b>			
High-temperature version		39311660	39311661
Min./max. ambient temperature	[°C]	5/130	5/130
Power booster version		0311665	0311666
Closing moment	[Nm]	200	229.5
Closing moment generated by spring	[Nm]		29.5
Weight	[kg]	2.92	3.92
Maximum pressure	[bar]	6	6
Max. permissible finger length	[mm]	200	200

## Main view



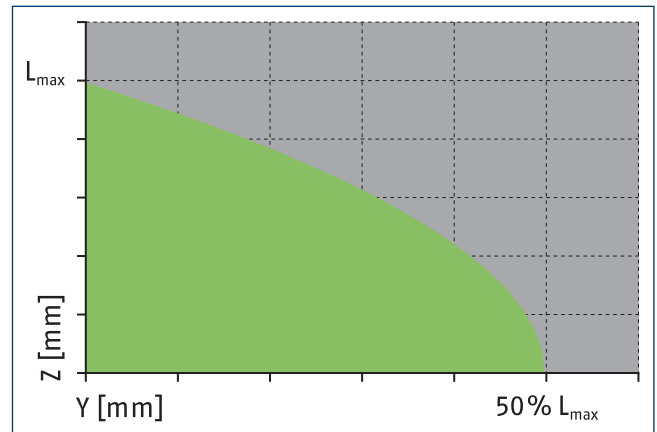
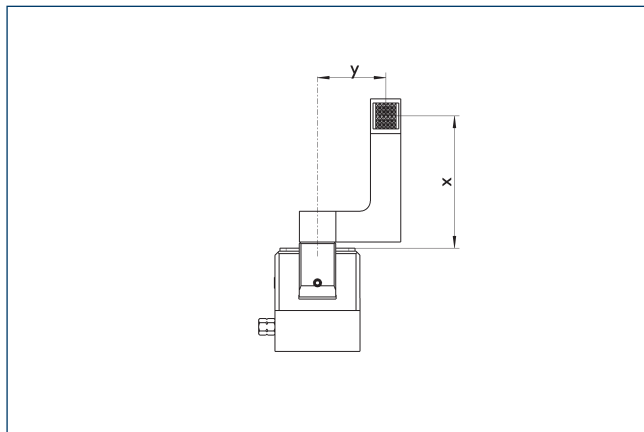
The drawing shows the gripper in the basic version with closed jaws, without dimensional consideration of the options described below.

① The SDV-P pressure maintenance valve can also be used for I.D. or O.D. gripping alternatively or in addition to the spring-loaded, mechanical gripping force maintenance device (see catalog section on accessories).

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

② Finger connection  
 ⑦ Fit for centering sleeves  
 ⑧ Depth of the centering sleeve hole in the counter part  
 ⑨ Sensor MMS 22..

## Maximum permitted finger projection



■ Permitted range

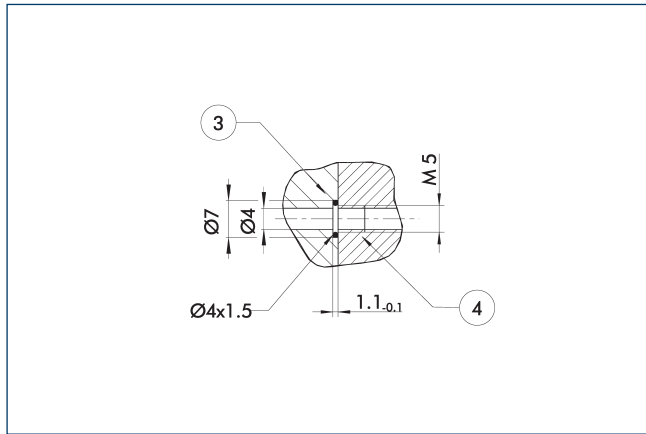
■ Inadmissible range

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

# PWG-plus 160

Angular gripper

## Hose-free direct connection M5

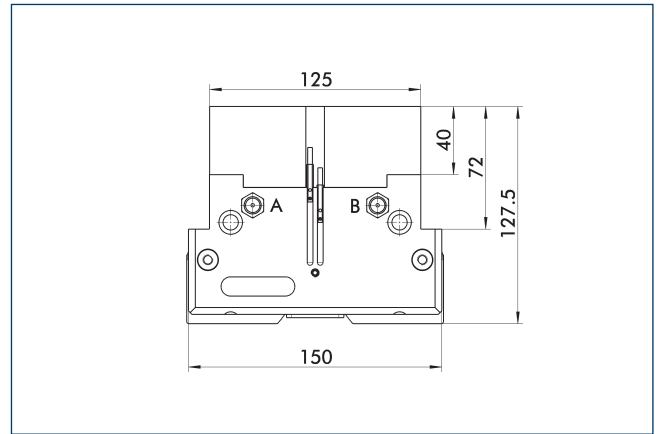


③ Adapter

④ Grippers

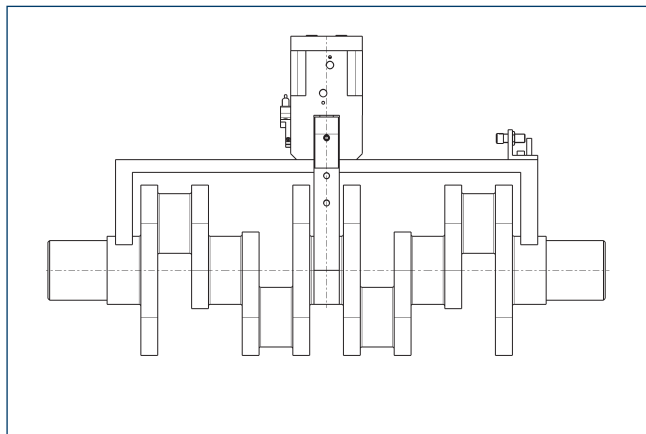
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

## Gripping force maintenance device



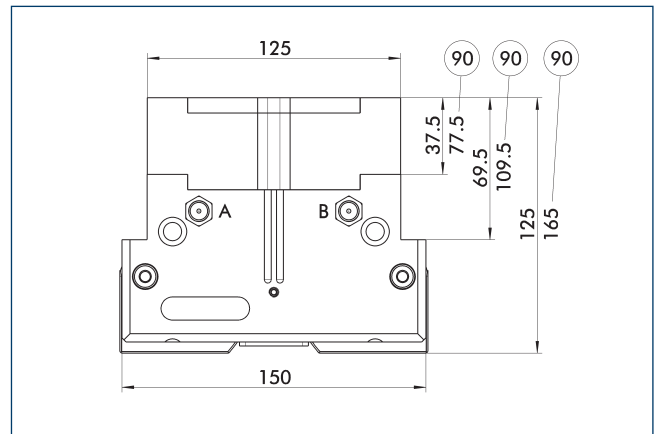
The mechanical gripping force maintenance ensures that a minimum clamping force will be applied even in case of pressure drop. This acts as closing force in the AS version. Besides this, the gripping force maintenance can be used to increase gripping force or for single actuated gripping.

## Shaft support



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

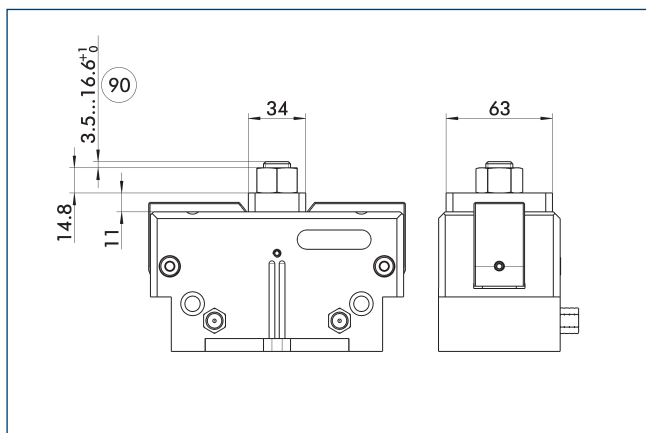
## Power booster version



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

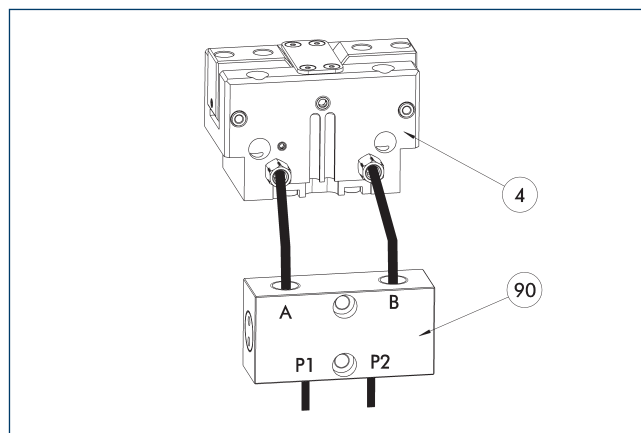


⑨ Max. adjustment travel

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

Description	ID	
Stroke adjustment		
HVE-PWG-plus 160	0311763	

## SDV-P pressure maintenance valve



④ Grippers

⑨ 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.

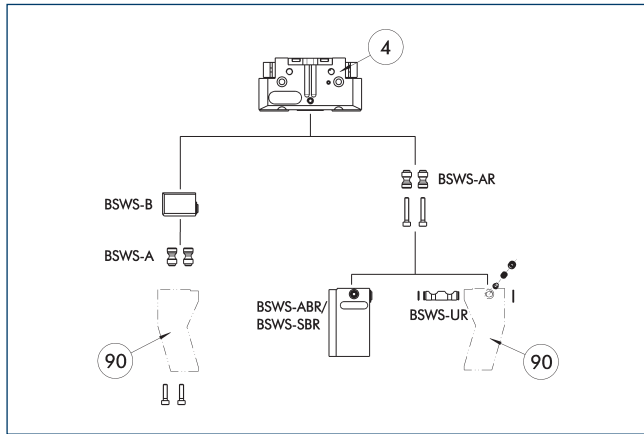
Description	ID	Recommended hose diameter
		[mm]
Pressure maintenance valve		
SDV-P 07	0403131	8
Pressure maintenance valve with air bleed screw		
SDV-P 07-E	0300121	8

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).

# PWG-plus 160

Angular gripper

## BSWS jaw quick-change jaw systems



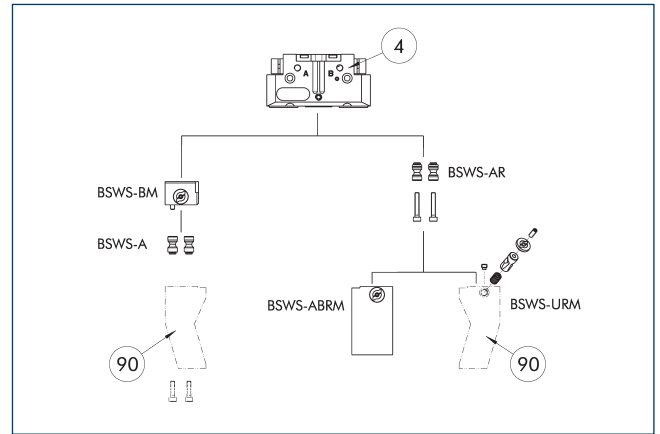
④ Grippers                      ⑨⑩ Customized gripper fingers

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
<b>Jaw quick-change system adapter pin</b>		
BSWS-A 160	0303030	2
BSWS-AR 160	0300096	2
<b>Quick-change jaw system base</b>		
BSWS-B 160	0303031	1
<b>Jaw quick-change system finger blank</b>		
BSWS-ABR-PGZN-plus 160	0300076	1
BSWS-SBR-PGZN-plus 160	0300086	1
<b>Jaw quick-change system locking mechanism</b>		
BSWS-UR 160	0302995	1

⑩ Only systems that are listed in the table, can be used.

## Jaw quick-change system BSWS-M



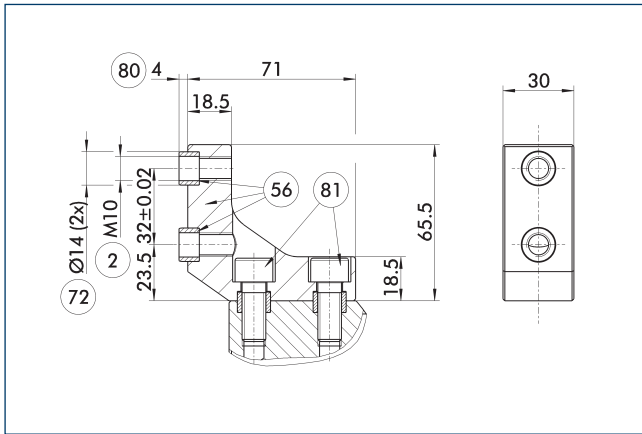
④ Grippers                      ⑨⑩ Customized gripper fingers

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
<b>Jaw quick-change system adapter pin</b>		
BSWS-A 160	0303030	2
BSWS-AR 160	0300096	2
<b>Quick-change jaw system base</b>		
BSWS-BM 160	1418962	1
<b>Jaw quick-change system finger blank</b>		
BSWS-ABRM-PGZN-plus 160	1420855	1
<b>Jaw quick-change system locking mechanism</b>		
BSWS-URM 160	1420541	1

⑩ Only systems that are listed in the table, can be used.

ZBA-L-plus 160 intermediate jaws

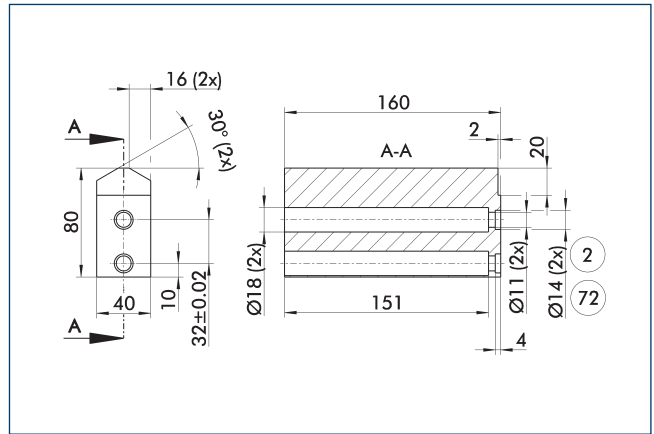


- ② Finger connection
- ⑤⑥ Included in the scope of delivery
- ⑦② Fit for centering sleeves
- ⑧⑩ Depth of the centering sleeve hole in the counter part
- ⑧① Not included in the scope of delivery

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 160	0311762	Aluminum	PGN-plus 160	1

Finger blanks ABR- / SBR-PGZN-plus 160

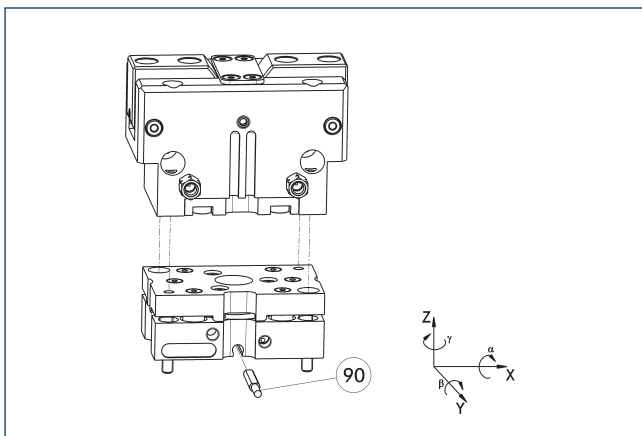


- ② Finger connection
- ⑦② Fit for centering sleeves

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

Description	ID	Material	Scope of delivery
Finger blank			
ABR-PGZN-plus 160	0300014	Aluminum	1
SBR-PGZN-plus 160	0300024	Steel	1

Tolerance compensation unit TCU



- ⑨⑩ Monitoring of locking

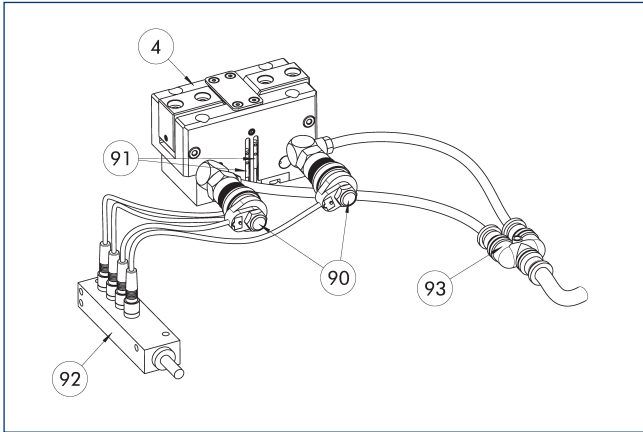
Grippers can be directly mounted without an adapter plate. Tolerance compensation unit and gripper have an identical screw connection diagram. Therefore the tolerance compensation units can be assembled later. Please consider the additional assembly height of the tolerance compensation unit. For details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

Description	ID	Locking	Deflection	Often combined
Compensation unit				
TCU-P-160-3-MV	0324846	yes	±1°/±2°/±1,5°	●
TCU-P-160-3-OV	0324847	no	±1°/±2°/±1,5°	

# PWG-plus 160

Angular gripper

## Attachment valves



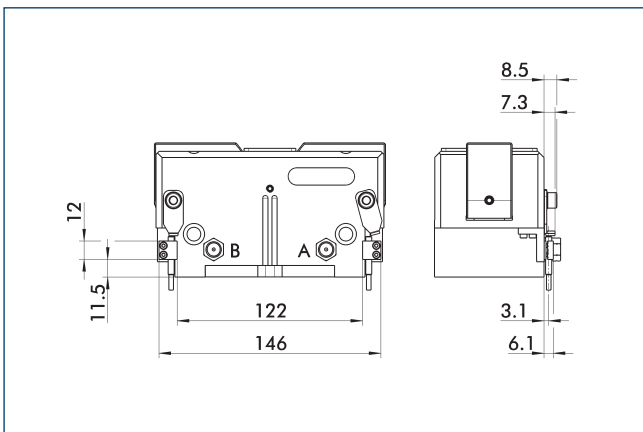
- ④ Grippers
- ⑨② Sensor distributor
- ⑨① Micro valves
- ⑨③ Y distributor
- ⑨① Sensor

The set of attachment valves reduces the compressed air consumption as there is no need to ventilate or bleed the supply lines. This can also reduce cycle time. The hose-free direct assembly of the micro valves reduces the hosing effort for the gripper. To further simplify electrical connection of the valves and sensors, their signals can be bundled via an optional distributor.

Description	ID	Often combined
Attachment valve		
ABV-MV30-G1/8	0303328	
ABV-MV30-G1/8-V2-M8	0303396	
ABV-MV30-G1/8-V4-M8	0303366	●
ABV-MV30-G1/8-V8-M8	0303367	

ⓘ A set of attachment valves ABV is required per actuator. The ABV set contains two 3/2 micro valves, an Y-distributor for compressed air supply and optionally a sensor distributor with two, four or eight inputs and outputs. Sensors for monitoring the gripper need to be ordered separately. Pneumatic hoses are not included in the scope of delivery.

## Attachment kit for proximity switch IN 40



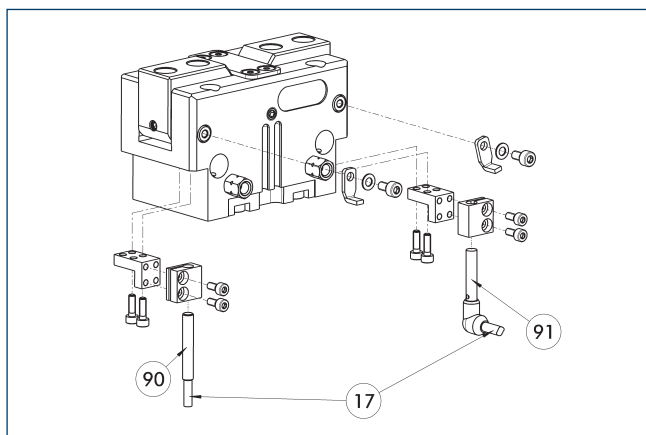
End position monitoring can be mounted with an attachment kit.

Description	ID	
Attachment kit for proximity switch		
AS-IN40-PWG-plus 160	0311760	

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



### IN 40 inductive proximity switches



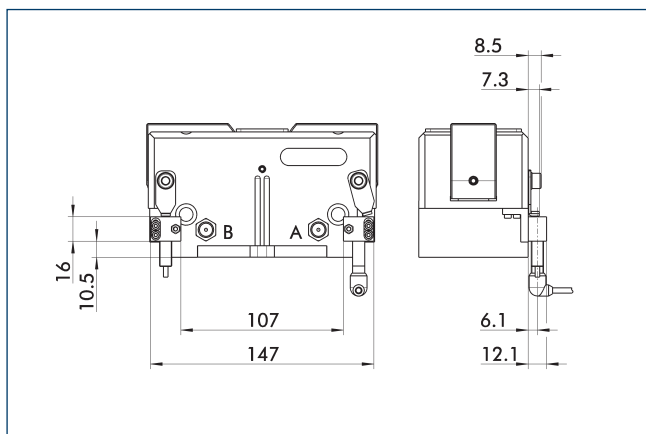
- ①⑦ Cable outlet
- ①⑨ Sensor IN...-SA
- ①⑩ Sensor IN ...

End position monitoring can be mounted with an attachment kit.

Description	ID	Often combined
Attachment kit for proximity switch		
AS-IN40-PWG-plus 160	0311760	
Inductive proximity switches		
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.

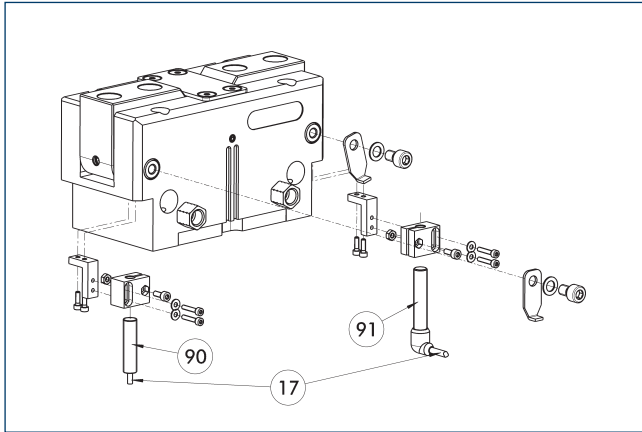
Description	ID	
Attachment kit for proximity switch		
AS-IN80-PWG-plus 160	0311761	

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

# PWG-plus 160

Angular gripper

## IN 80 inductive proximity switches



17 Cable outlet

91 Sensor IN..-SA

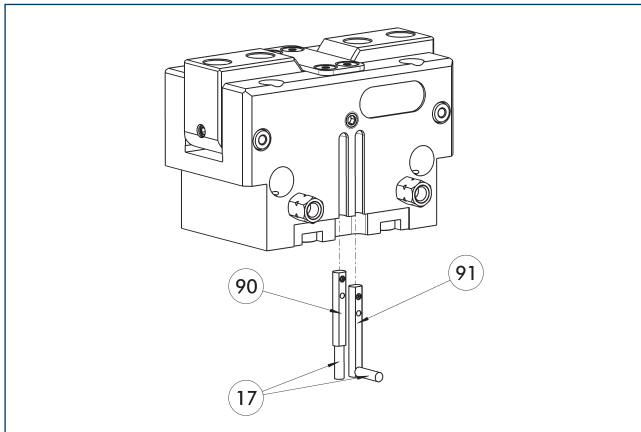
90 Sensor IN ...

End position monitoring can be mounted with an attachment kit.

Description	ID	Often combined
Attachment kit for proximity switch		
AS-IN80-PWG-plus 160	0311761	
Inductive proximity switches		
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



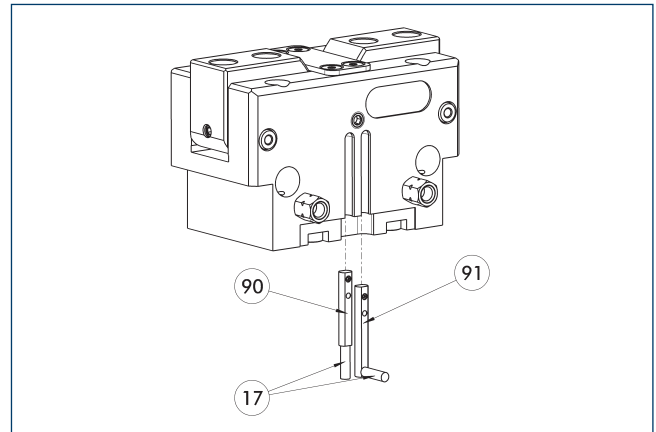
- ①⑦ Cable outlet
- ①⑨ Sensor MMS 22...-SA
- ①⑩ Sensor MMS 22..

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 plug/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



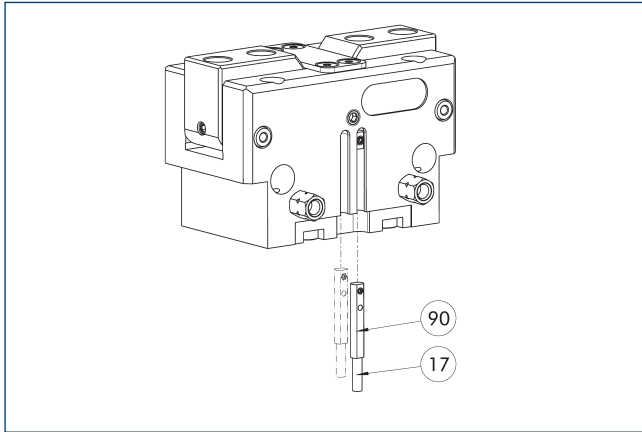
- ①⑦ Cable outlet
- ①⑨ Sensor MMS 22 ..-PI1...-SA
- ①⑩ Sensor MMS 22 PI1...

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) 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

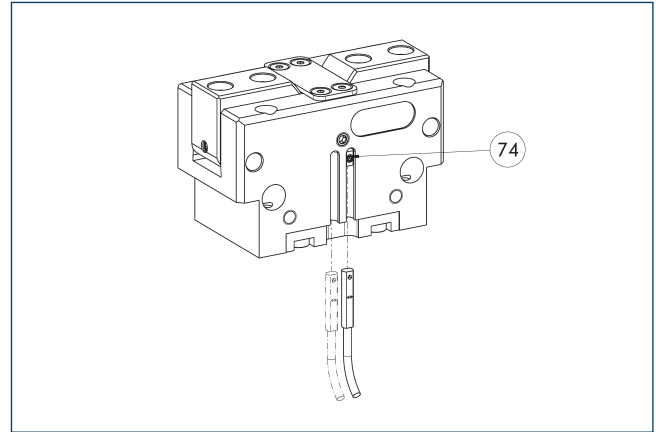
90 MMS 22...-PI2-... sensor

Position monitoring with two programmable positions per sensor and electronics built into the sensor. Can be programmed using MT magnetic teaching tool (included in the scope of delivery) 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-PI2-S-M8-PNP	0301180	●
MMSK 22-PI2-S-PNP	0301182	
<b>Programmable magnetic switch with lateral cable outlet</b>		
MMS 22-PI2-S-M8-PNP-SA	0301186	●
MMSK 22-PI2-S-PNP-SA	0301188	
<b>Programmable magnetic switch with stainless steel housing</b>		
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



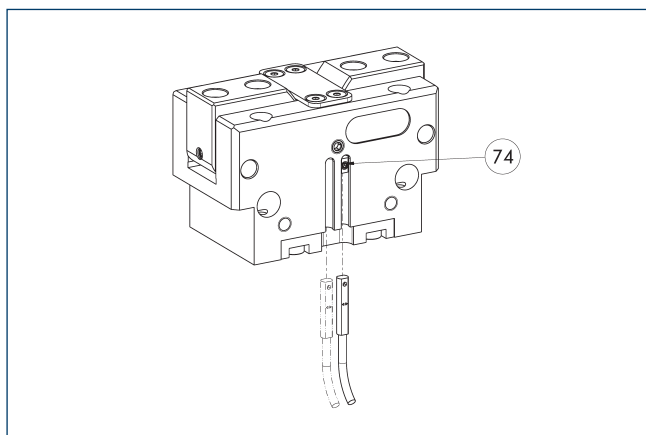
74 Limit stop for sensor

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

Description	ID	Often combined
<b>Programmable magnetic switch</b>		
MMSK-P 22-S-PNP	0301371	
MMS-P 22-S-M8-PNP	0301370	●
<b>Connection cables</b>		
KA BG08-L 4P-0500	0307767	●
KA BG08-L 4P-1000	0307768	
KA BW08-L 4P-0500	0307765	
KA BW08-L 4P-1000	0307766	
<b>clip for plug/socket</b>		
CLI-M8	0301463	
<b>Sensor distributor</b>		
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. Sensor programming on the gripper takes place via the IO-Link interface or the MT magnetic teach tool (included in scope of delivery). 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

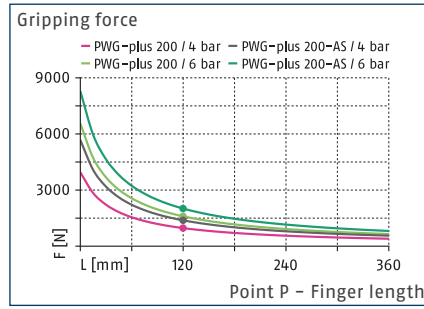
① One sensor is required for each gripper. No additional mounting kit is required – the gripper is equipped for use of the sensor by default. Further information and technical data can be found in the catalog chapter sensor systems.

# PWG-plus 200

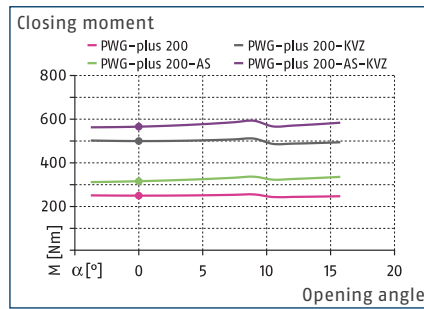
Angular gripper



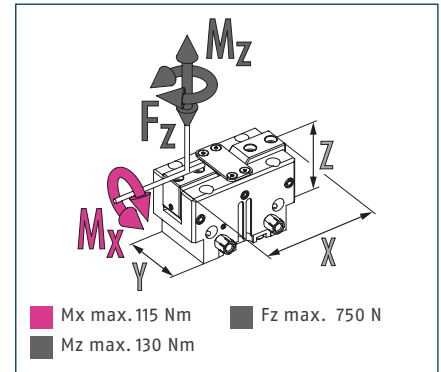
## Gripping force O.D. gripping



## Closing moment curve



## Dimensions and maximum loads

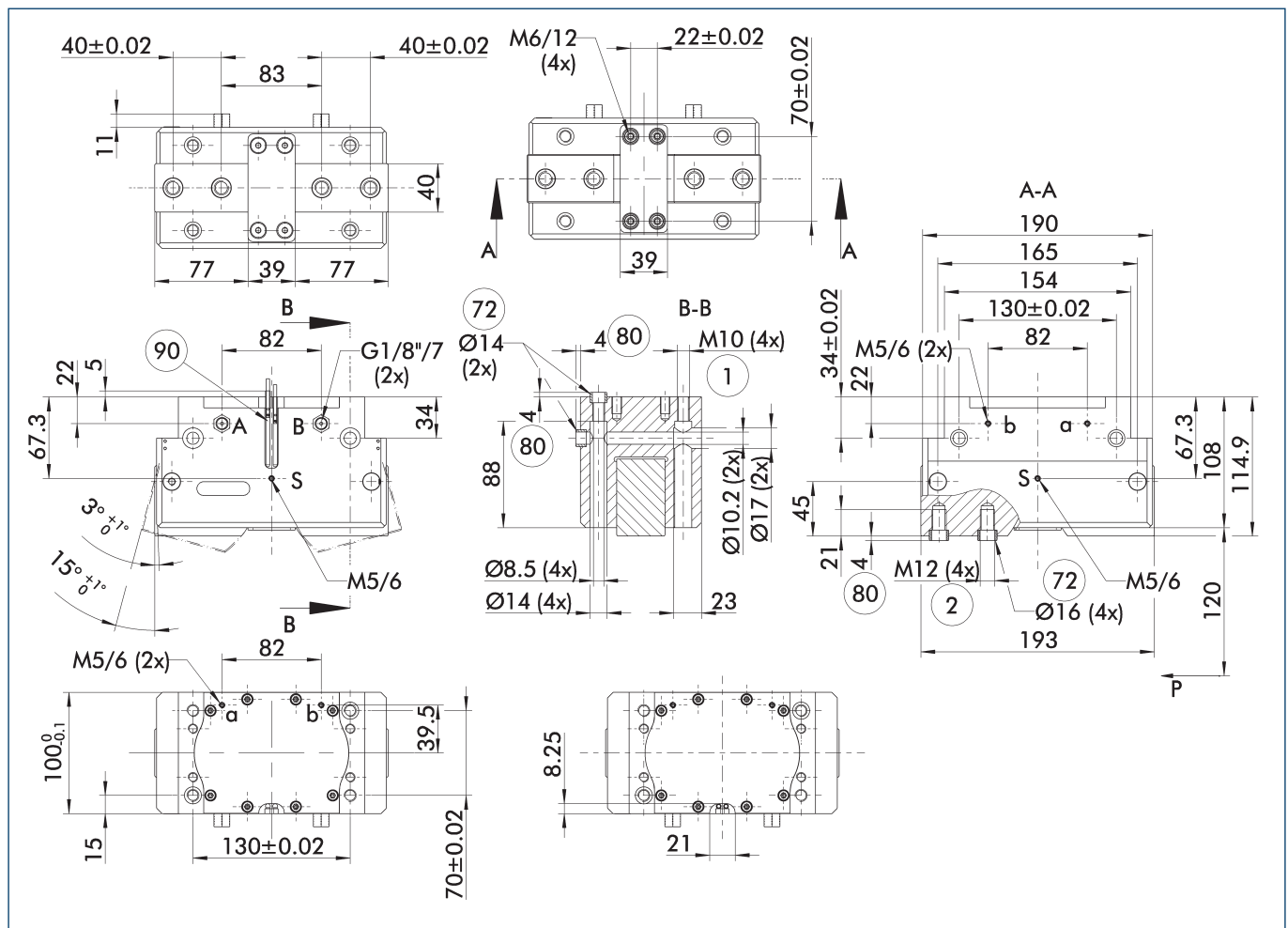


ⓘ The indicated torques and forces are static values, apply for each base jaw, and may occur simultaneously.

## Technical data

Description		PWG-plus 200	PWG-plus 200-AS
ID		0311670	0311671
Opening angle per jaw	[°]	15	15
Closed angle per jaw	[°]	3	3
Closing moment	[Nm]	250	316
Closing moment generated by spring	[Nm]		66
Weight	[kg]	4.9	7
Recommended workpiece weight	[kg]	8.06	8.06
Fluid consumption double stroke	[cm³]	338	442
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]	0.32/0.25	0.2/0.32
Max. permissible finger length	[mm]	240	240
Max. permissible mass moment of inertia per chuck jaw	[kgcm²]	1228.1	1228.1
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]	193 x 100 x 114.9	193 x 100 x 164.9
<b>Options and their characteristics</b>			
High-temperature version		39311670	39311671
Min./max. ambient temperature	[°C]	5/130	5/130
Power booster version		0311675	0311676
Closing moment	[Nm]	500	566
Closing moment generated by spring	[Nm]		66
Weight	[kg]	6.3	8.5
Maximum pressure	[bar]	6	6
Max. permissible finger length	[mm]	240	240

### Main view

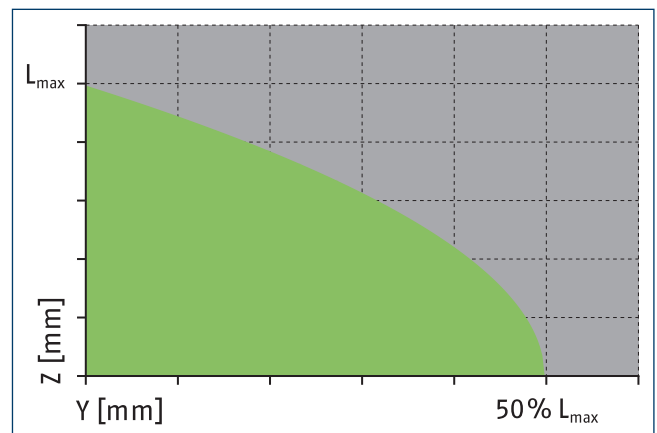
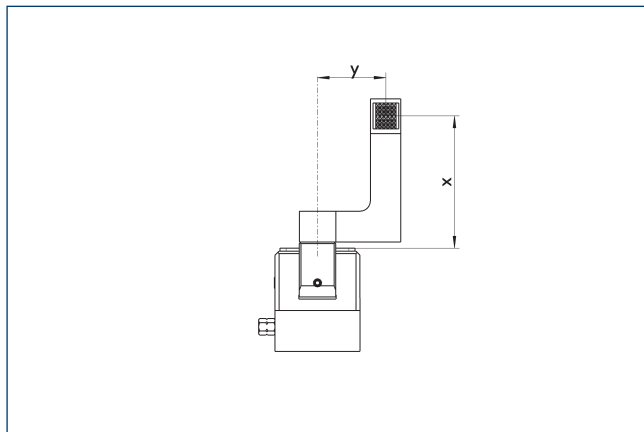


The drawing shows the gripper in the basic version with closed jaws, without dimensional consideration of the options described below.

① The SDV-P pressure maintenance valve can also be used for I.D. or O.D. gripping alternatively or in addition to the spring-loaded, mechanical gripping force maintenance device (see catalog section on accessories).

- 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



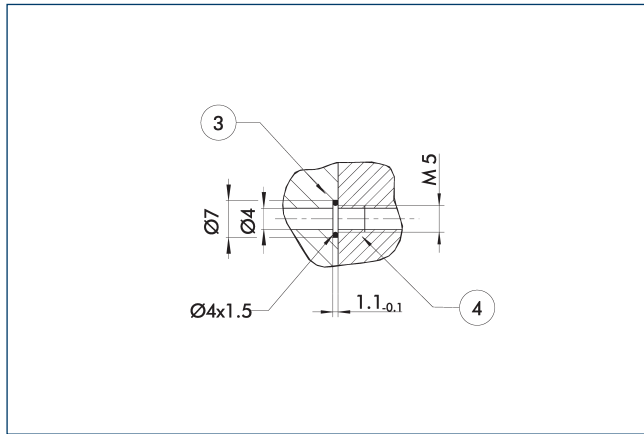
■ Permitted range      ■ Inadmissible range

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

# PWG-plus 200

Angular gripper

## Hose-free direct connection M5

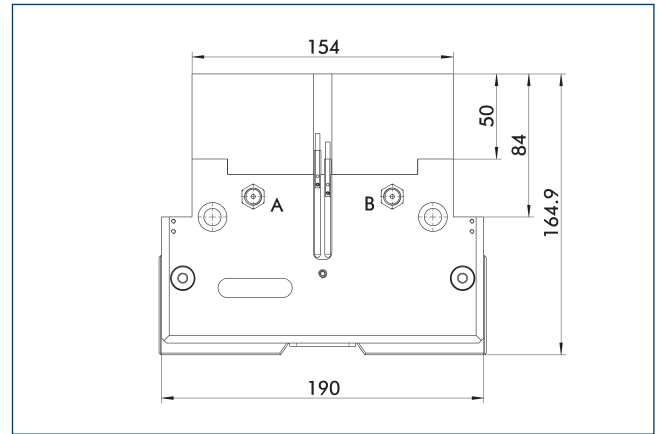


③ Adapter

④ Grippers

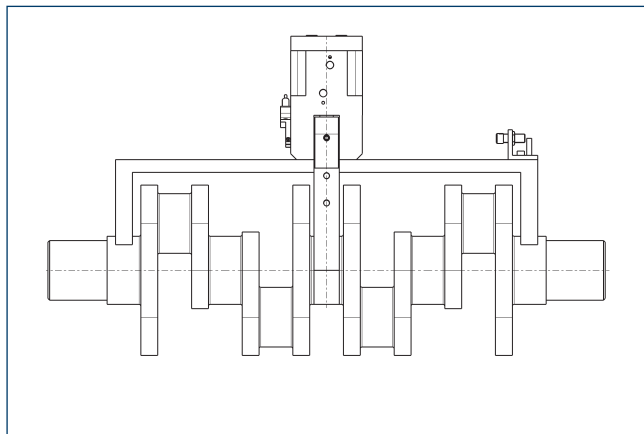
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

## Gripping force maintenance device



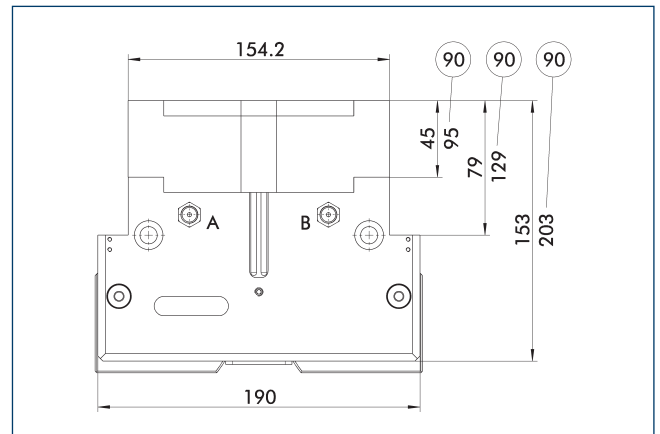
The mechanical gripping force maintenance ensures that a minimum clamping force will be applied even in case of pressure drop. This acts as closing force in the AS version. Besides this, the gripping force maintenance can be used to increase gripping force or for single actuated gripping.

## Shaft support



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

## Power booster version

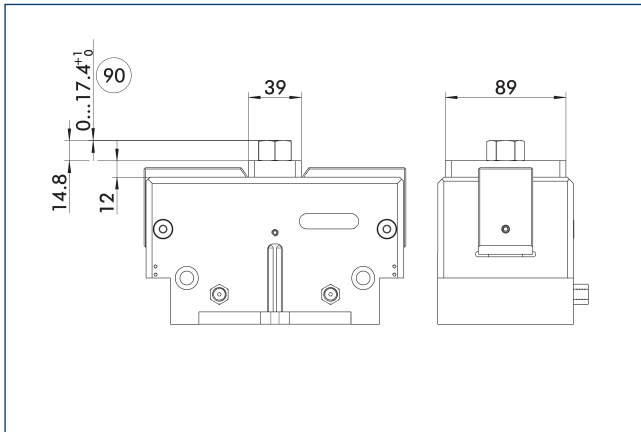


⑨⑩ Applies to AS version

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

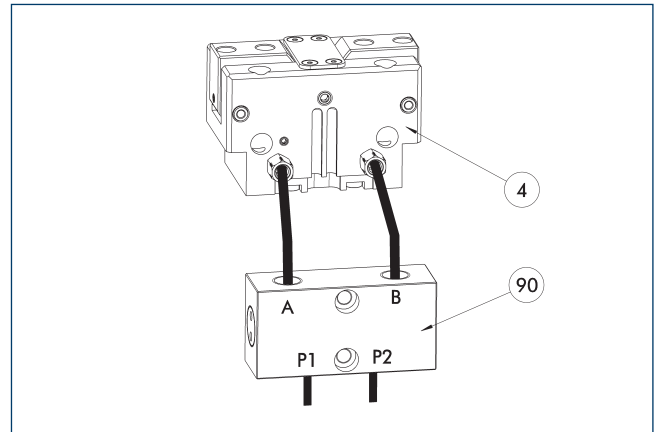


90 Max. adjustment travel

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

Description	ID	
Stroke adjustment		
HVE-PWG-plus 200	0311773	

### SDV-P pressure maintenance valve



4 Grippers

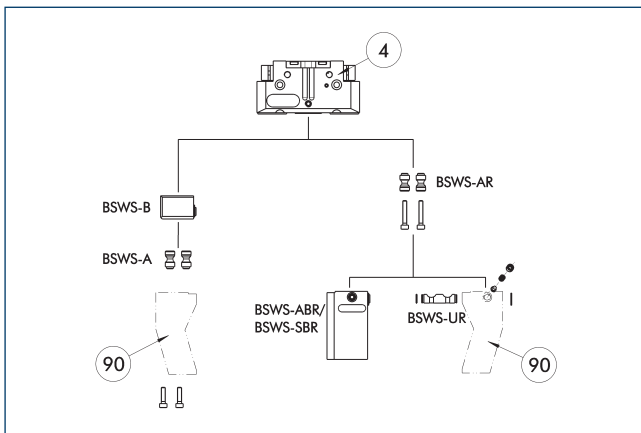
90 SDV-P pressure maintenance valve

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 07	0403131	8
Pressure maintenance valve with air bleed screw		
SDV-P 07-E	0300121	8

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.

### BSWS jaw quick-change jaw systems



4 Grippers

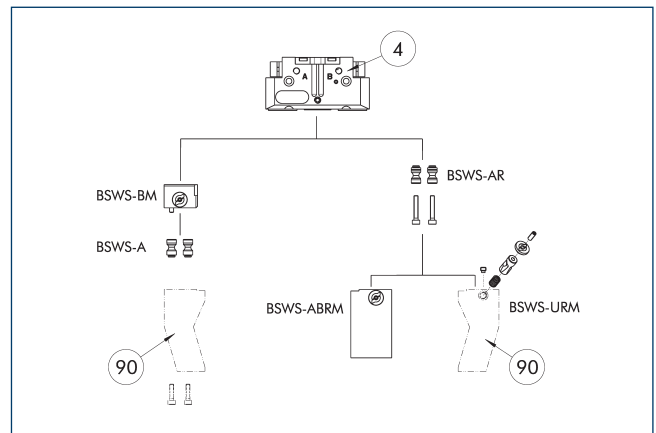
90 Customized gripper fingers

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
Quick-change jaw system base		
BSWS-B 200	0303033	1
Jaw quick-change system adapter pin		
BSWS-A 200	0303032	2

① Only systems that are listed in the table, can be used.

### Jaw quick-change system BSWS-M



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.

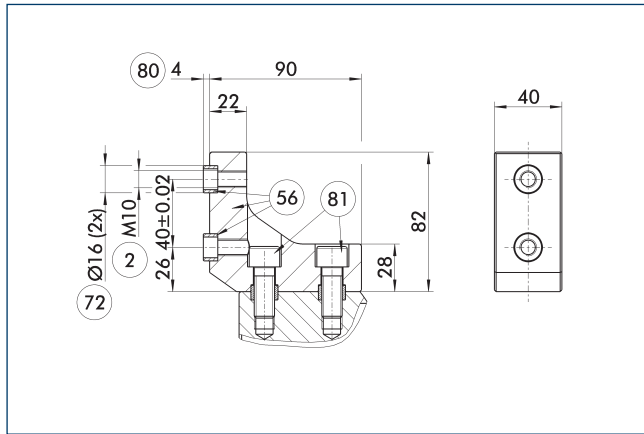
Description	ID	Scope of delivery
Quick-change jaw system base		
BSWS-BM 200	1419306	1
Jaw quick-change system adapter pin		
BSWS-A 200	0303032	2

① Only systems that are listed in the table, can be used.

# PWG-plus 200

Angular gripper

## ZBA-L-plus 200 intermediate jaws

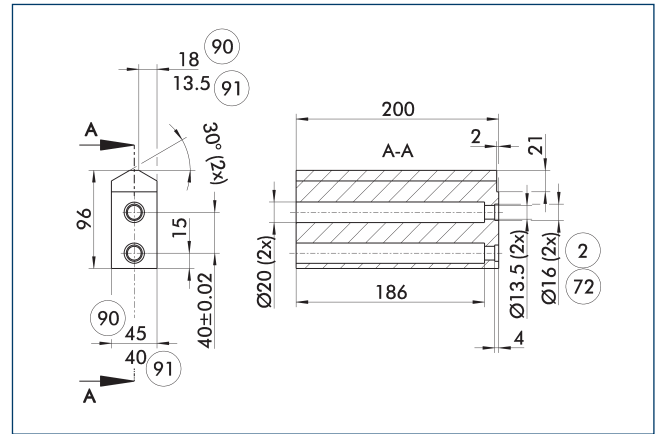


- ② Finger connection
- ⑤⑥ Included in the scope of delivery
- ⑦② Fit for centering sleeves
- ⑧⑩ Depth of the centering sleeve hole in the counter part
- ⑧① Not included in the scope of delivery

Optionally intermediate jaws can be used, enabling direct connection and alignment of top jaws and various standard accessories in Z-direction.

Description	ID	Material	Finger interface	Scope of delivery
Intermediate jaw				
ZBA-L-plus 200	0311772	Aluminum	PGN-plus 200	1

## Finger blanks ABR- / SBR-PGZN-plus 200

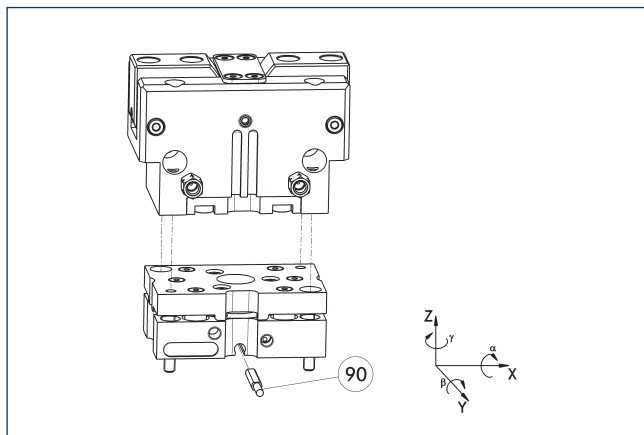


- ② Finger connection
- ⑦② Fit for centering sleeves
- ⑨⑩ ABR-PGZN-plus
- ⑨① SBR-PGZN-plus

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

Description	ID	Material	Scope of delivery
Finger blank			
ABR-PGZN-plus 200	0300015	Aluminum	1
SBR-PGZN-plus 200	0300025	Steel	1

## Tolerance compensation unit TCU

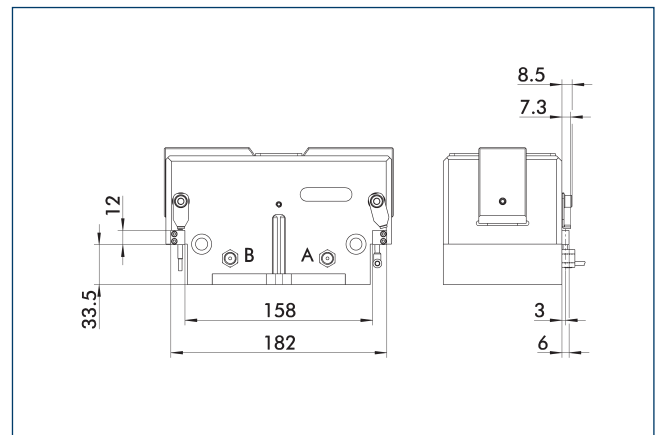


- ⑨⑩ Monitoring of locking

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-200-3-MV	0324864	yes	±1°/±2°/±1,5°	●
TCU-P-200-3-OV	0324865	no	±1°/±2°/±1,5°	

## Attachment kit for proximity switch IN 40

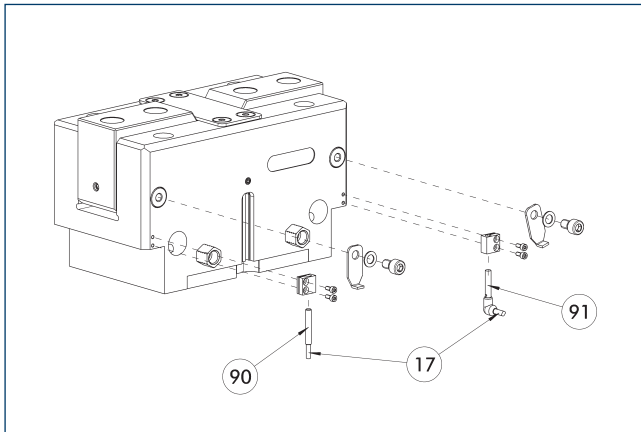


End position monitoring can be mounted with an attachment kit.

Description	ID
Attachment kit for proximity switch	
AS-IN40-PWG-plus 200	0311770

- ④ This attachment kit needs to be ordered optionally as an accessory.

## IN 40 inductive proximity switches



① Cable outlet

② Sensor IN...-SA

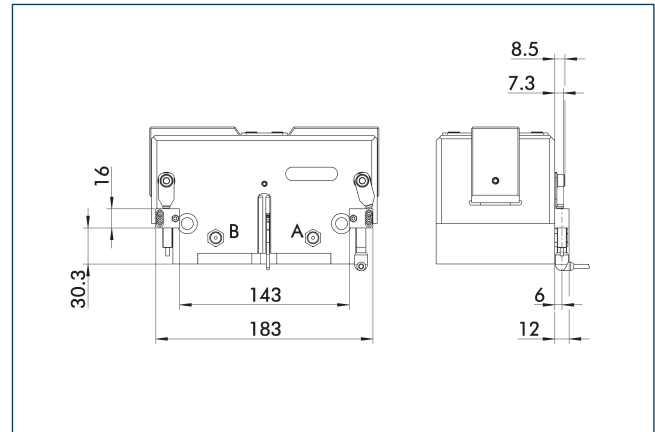
③ Sensor IN ...

End position monitoring can be mounted with an attachment kit.

Description	ID	Often combined
Attachment kit for proximity switch		
AS-IN40-PWG-plus 200	0311770	
Inductive proximity switches		
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	

④ 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.

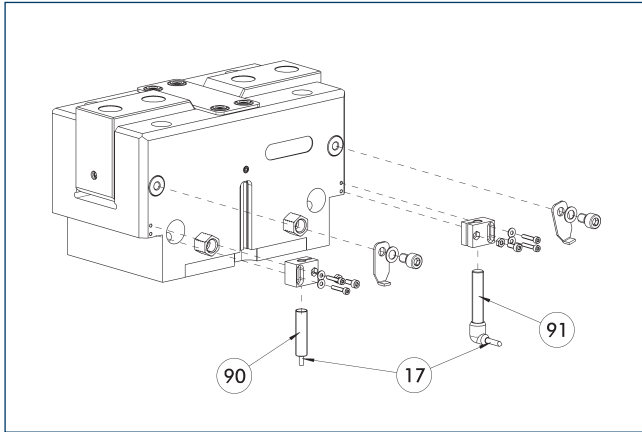
Description	ID	
Attachment kit for proximity switch		
AS-IN80-PWG-plus 200	0311771	

④ This attachment kit needs to be ordered optionally as an accessory.

# PWG-plus 200

Angular gripper

## IN 80 inductive proximity switches



17 Cable outlet  
90 Sensor IN ...

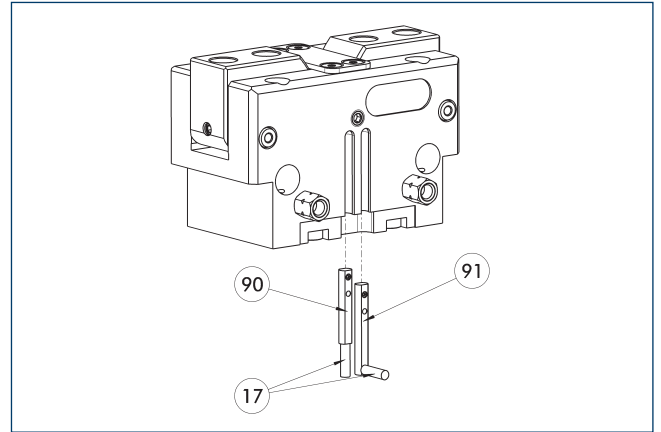
91 Sensor IN...-SA

End position monitoring can be mounted with an attachment kit.

Description	ID	Often combined
Attachment kit for proximity switch		
AS-IN80-PWG-plus 200	0311771	
Inductive proximity switches		
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  
90 Sensor MMS 22..

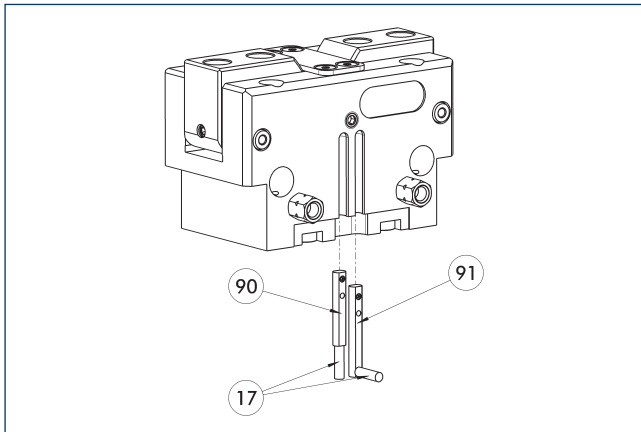
91 Sensor MMS 22...-SA

End position monitoring for mounting in the C-slot.

Description	ID	Often combined
Electronic magnetic switch		
MMS 22-S-M8-PNP	0301032	●
MMSK 22-S-PNP	0301034	
Electronic magnetic switches with lateral cable outlet		
MMS 22-S-M8-PNP-SA	0301042	●
MMSK 22-S-PNP-SA	0301044	
Connection cables		
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	
clip for plug/socket		
CLI-M8	0301463	
Cable extension		
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
Sensor distributor		
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



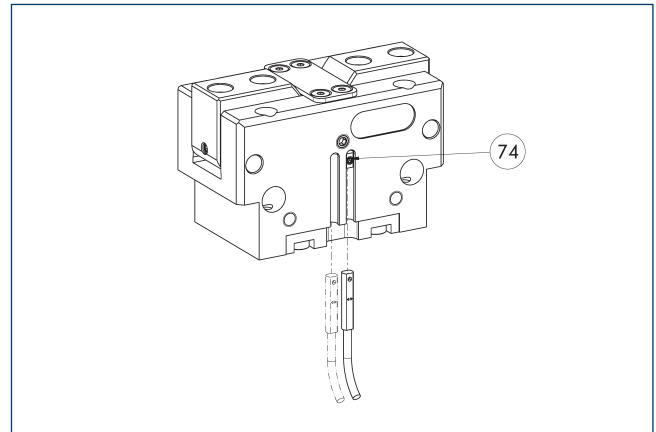
- ①⑦ Cable outlet
- ⑨① Sensor MMS 22 ..-PI1-...-SA
- ⑨① Sensor MMS 22 PI1-...

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) 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-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. Sensor programming on the gripper takes place via the IO-Link interface or the MT magnetic teach tool (included in scope of delivery). An IO-Link master is required for operation.

Description	ID	
<b>Programmable magnetic switch</b>		
MMS 22-IO-L-M08	0315830	
MMS 22-IO-L-M12	0315835	

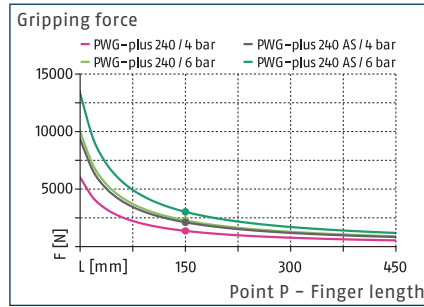
- ① One sensor is required for each gripper. No additional mounting kit is required – the gripper is equipped for use of the sensor by default. Further information and technical data can be found in the catalog chapter sensor systems.

# PWG-plus 240

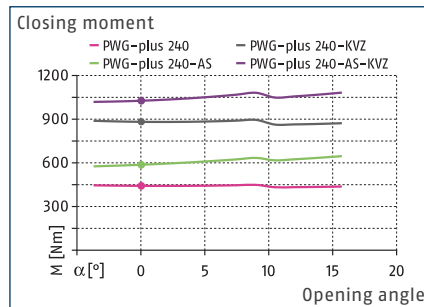
Angular gripper



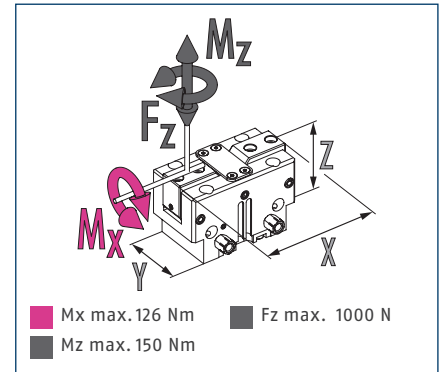
## Gripping force O.D. gripping



## Closing moment curve



## Dimensions and maximum loads

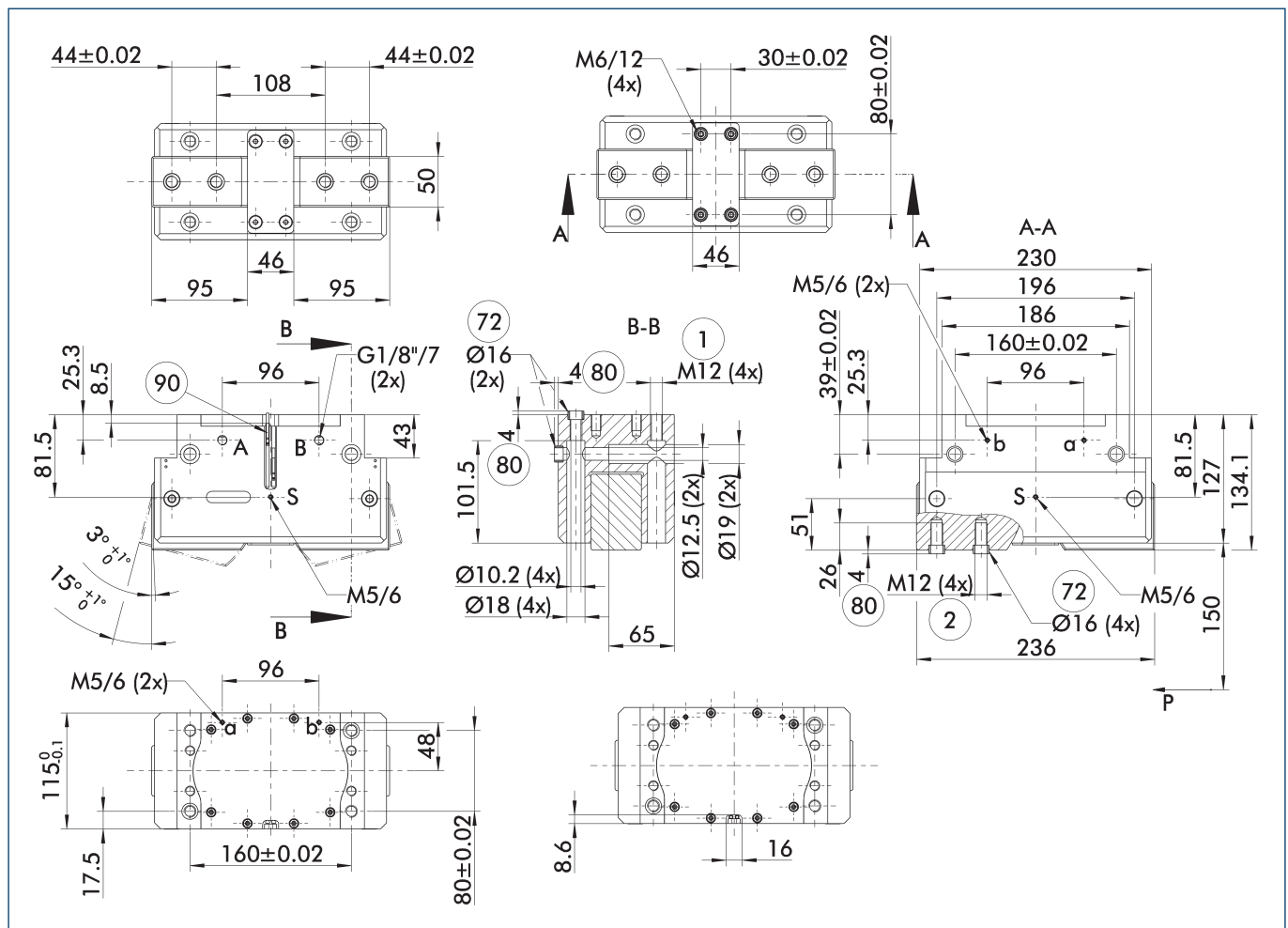


① The indicated torques and forces are static values, apply for each base jaw, and may occur simultaneously.

## Technical data

Description		PWG-plus 240	PWG-plus 240-AS
ID		0311680	0311681
Opening angle per jaw	[°]	15	15
Closed angle per jaw	[°]	3	3
Closing moment	[Nm]	440	585
Closing moment generated by spring	[Nm]		145
Weight	[kg]	7.8	11.3
Recommended workpiece weight	[kg]	11.57	11.57
Fluid consumption double stroke	[cm <sup>3</sup> ]	556	726
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]	0.32/0.25	0.25/0.46
Max. permissible finger length	[mm]	300	300
Max. permissible mass moment of inertia per chuck jaw	[kgcm <sup>2</sup> ]	3113.3	3113.3
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]	236 x 115 x 134.1	236 x 115 x 190.6
<b>Options and their characteristics</b>			
High-temperature version		39311680	39311681
Min./max. ambient temperature	[°C]	5/130	5/130
Power booster version		0311685	0311686
Closing moment	[Nm]	880	1025
Closing moment generated by spring	[Nm]		145
Weight	[kg]	10.1	13.6
Maximum pressure	[bar]	6	6
Max. permissible finger length	[mm]	300	300

## Main view



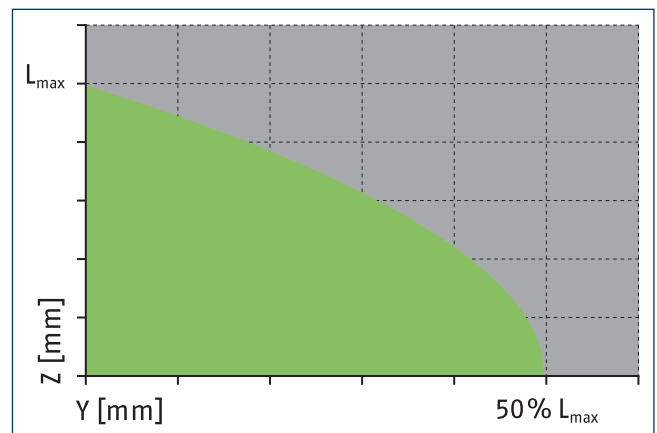
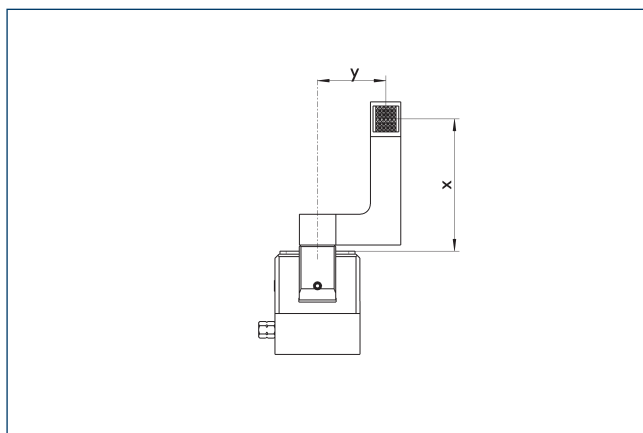
The drawing shows the gripper in the basic version with closed jaws, without dimensional consideration of the options described below.

① The SDV-P pressure maintenance valve can also be used for I.D. or O.D. gripping alternatively or in addition to the spring-loaded, mechanical gripping force maintenance device (see catalog section on accessories).

- 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
- ⑧① Depth of the centering sleeve hole in the counter part
- ⑨① Sensor MMS 22..

## Maximum permitted finger projection



■ Permitted range

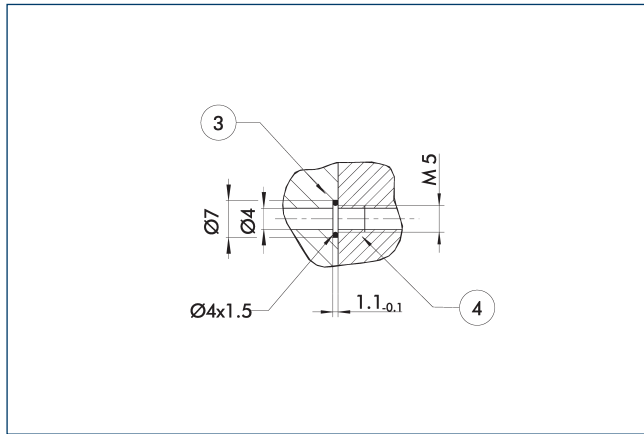
■ Inadmissible range

$L_{max}$  is equivalent to the maximum permitted finger length, see the technical data table.

# PWG-plus 240

Angular gripper

## Hose-free direct connection M5

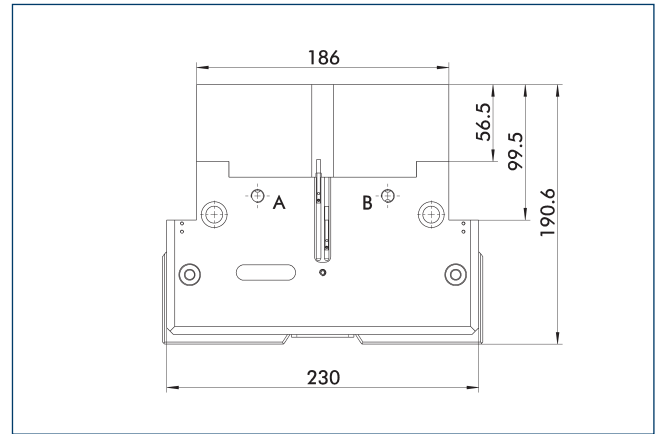


③ Adapter

④ Grippers

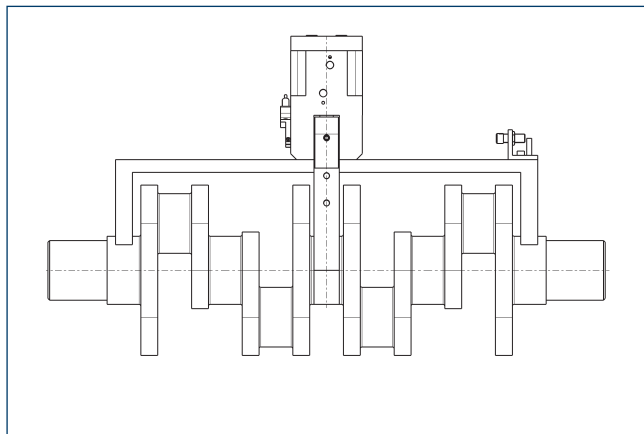
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

## Gripping force maintenance device



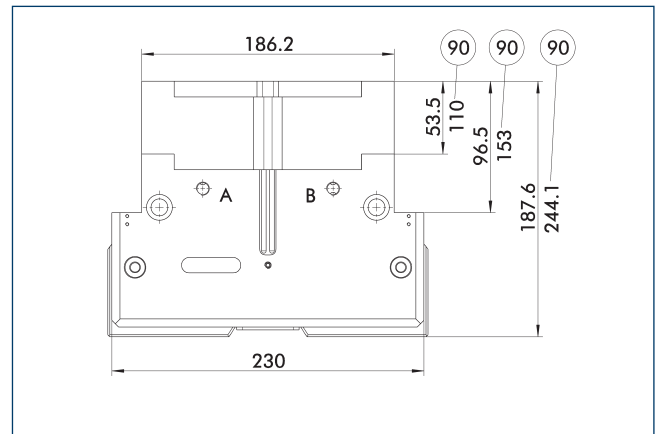
The mechanical gripping force maintenance ensures that a minimum clamping force will be applied even in case of pressure drop. This acts as closing force in the AS version. Besides this, the gripping force maintenance can be used to increase gripping force or for single actuated gripping.

## Shaft support



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

## Power booster version

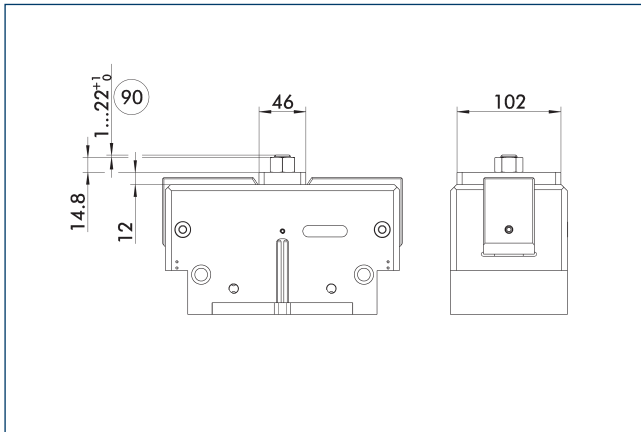


⑨⑩ Applies to AS version

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

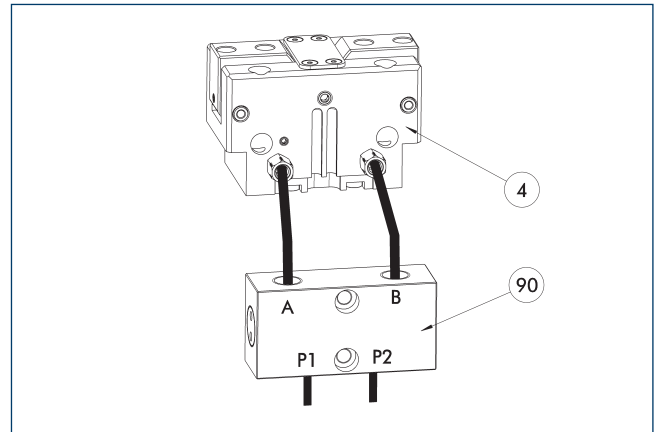


⑨⑩ Max. adjustment travel

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

Description	ID	
Stroke adjustment		
HVE-PWG-plus 240	0311783	

## SDV-P pressure maintenance valve



④ Grippers

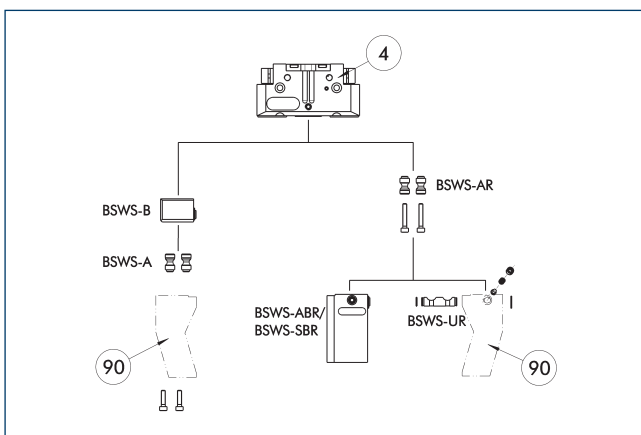
⑨⑩ SDV-P pressure maintenance valve

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 07	0403131	8
Pressure maintenance valve with air bleed screw		
SDV-P 07-E	0300121	8
SDV-P 10-E	0300109	10

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).

## BSWS jaw quick-change jaw systems



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.

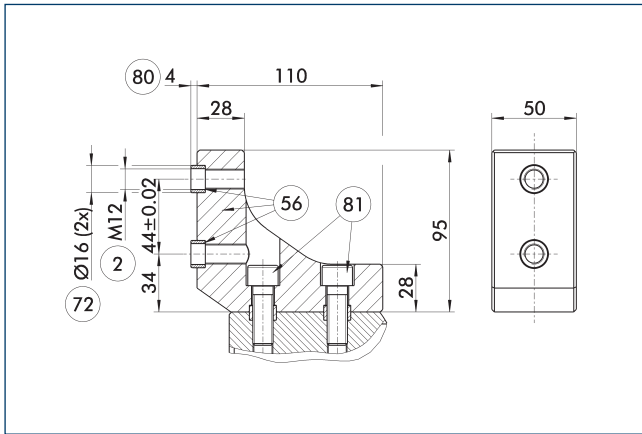
Description	ID	Scope of delivery
Quick-change jaw system base		
BSWS-B 240	0303035	1
Jaw quick-change system adapter pin		
BSWS-A 240	0303034	2

① Only systems that are listed in the table, can be used.

# PWG-plus 240

Angular gripper

## ZBA-L-plus 240 intermediate jaws

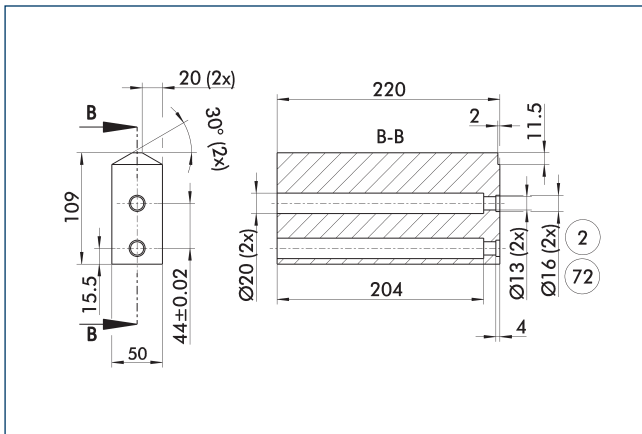


- ② Finger connection
- ⑤⑥ Included in the scope of delivery
- ⑦② Fit for centering sleeves
- ⑧⑩ Depth of the centering sleeve hole in the counter part
- ⑧① Not included in the scope of delivery

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 240	0311782	Aluminum	PGN-plus 240	1

## Finger blanks ABR- / SBR-PGZN-plus 240

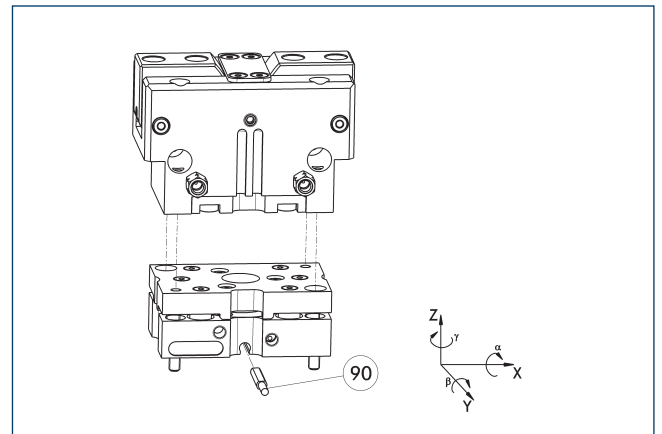


- ② Finger connection
- ⑦② Fit for centering sleeves

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

Description	ID	Material	Scope of delivery
Finger blank			
ABR-PGZN-plus 240	0300017	Aluminum	1
SBR-PGZN-plus 240	0300027	Steel	1

## Tolerance compensation unit TCU

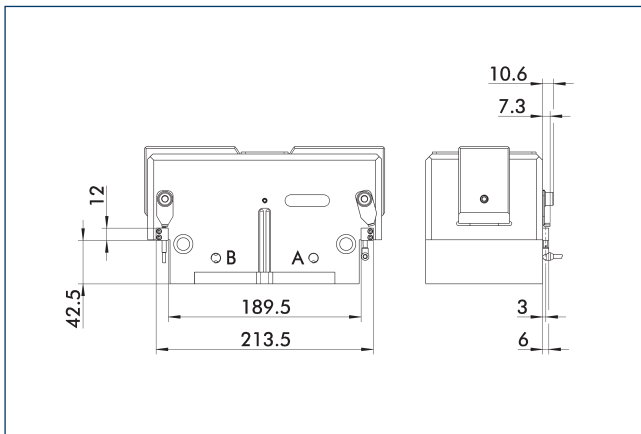


- ⑨⑩ Monitoring of locking

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-240-3-MV	0324730	yes	±1°/±1,5°/±1°	●
TCU-P-240-3-OV	0324731	no	±1°/±1,5°/±1°	

## Attachment kit for proximity switch IN 40

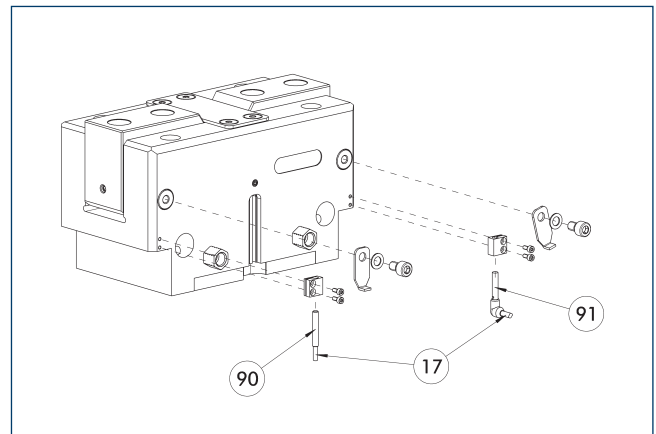


End position monitoring can be mounted with an attachment kit.

Description	ID
Attachment kit for proximity switch	
AS-IN40-PWG-plus 240	0311780

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

## IN 40 inductive proximity switches



①⑦ Cable outlet

①⑨ Sensor IN...-SA

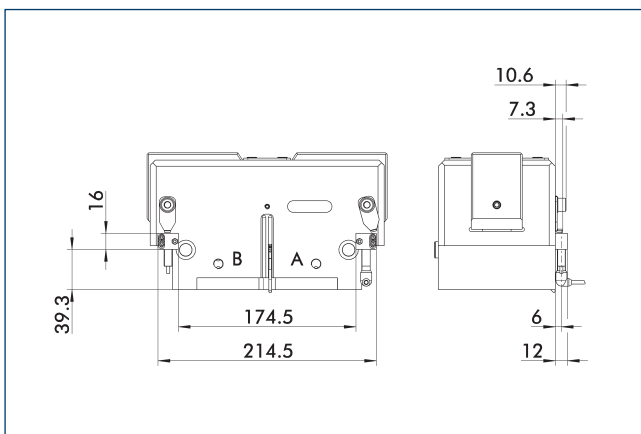
①⑩ Sensor IN ...

End position monitoring can be mounted with an attachment kit.

Description	ID	Often combined
Attachment kit for proximity switch		
AS-IN40-PWG-plus 240	0311780	
Inductive proximity switches		
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.

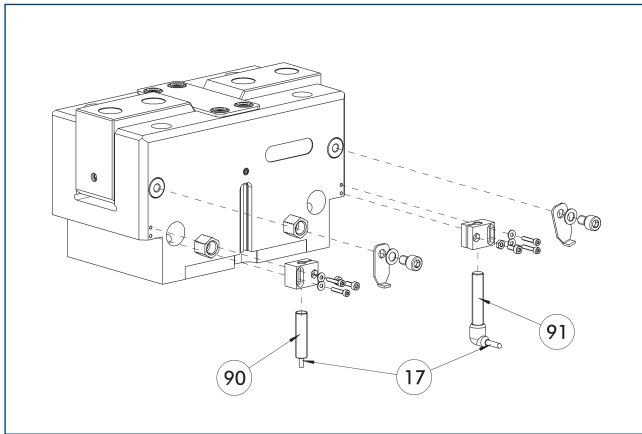
Description	ID
Attachment kit for proximity switch	
AS-IN80-PWG-plus 240	0311781

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

# PWG-plus 240

Angular gripper

## IN 80 inductive proximity switches



17 Cable outlet

91 Sensor IN..-SA

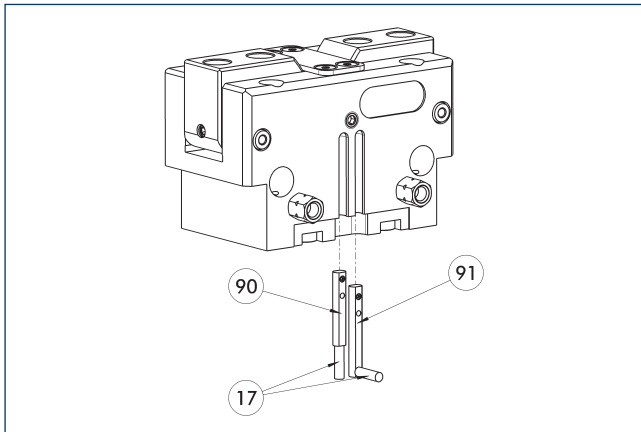
90 Sensor IN ...

End position monitoring can be mounted with an attachment kit.

Description	ID	Often combined
Attachment kit for proximity switch		
AS-IN80-PWG-plus 240	0311781	
Inductive proximity switches		
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



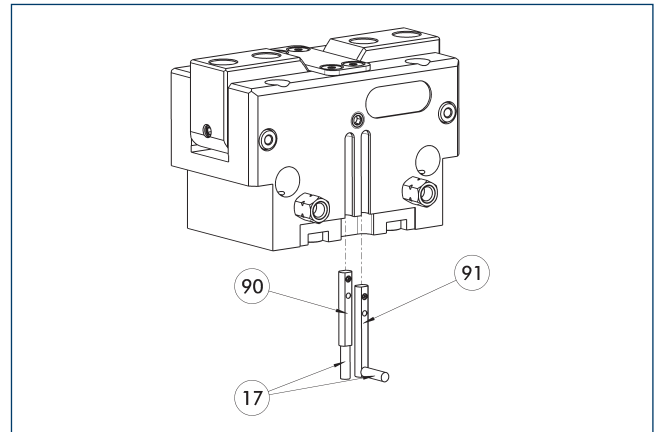
17 Cable outlet  
90 Sensor MMS 22..  
91 Sensor MMS 22...-SA

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 plug/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  
90 Sensor MMS 22 PI1-...  
91 Sensor MMS 22 ..-PI1-...-SA

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) 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.

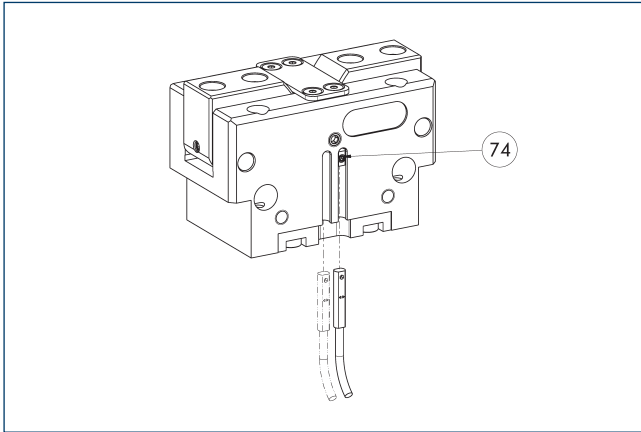
Description	ID	Often combined
<b>Programmable magnetic switch</b>		
MMS 22-PI1-S-M8-PNP	0301160	●
MMSK 22-PI1-S-PNP	0301162	
<b>Programmable magnetic switch with lateral cable outlet</b>		
MMS 22-PI1-S-M8-PNP-SA	0301166	●
MMSK 22-PI1-S-PNP-SA	0301168	
<b>Programmable magnetic switch with stainless steel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

# PWG-plus 240

Angular gripper

## 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. Sensor programming on the gripper takes place via the IO-Link interface or the MT magnetic teach tool (included in scope of delivery). 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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