



Superior Clamping and Gripping



Product data sheet

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



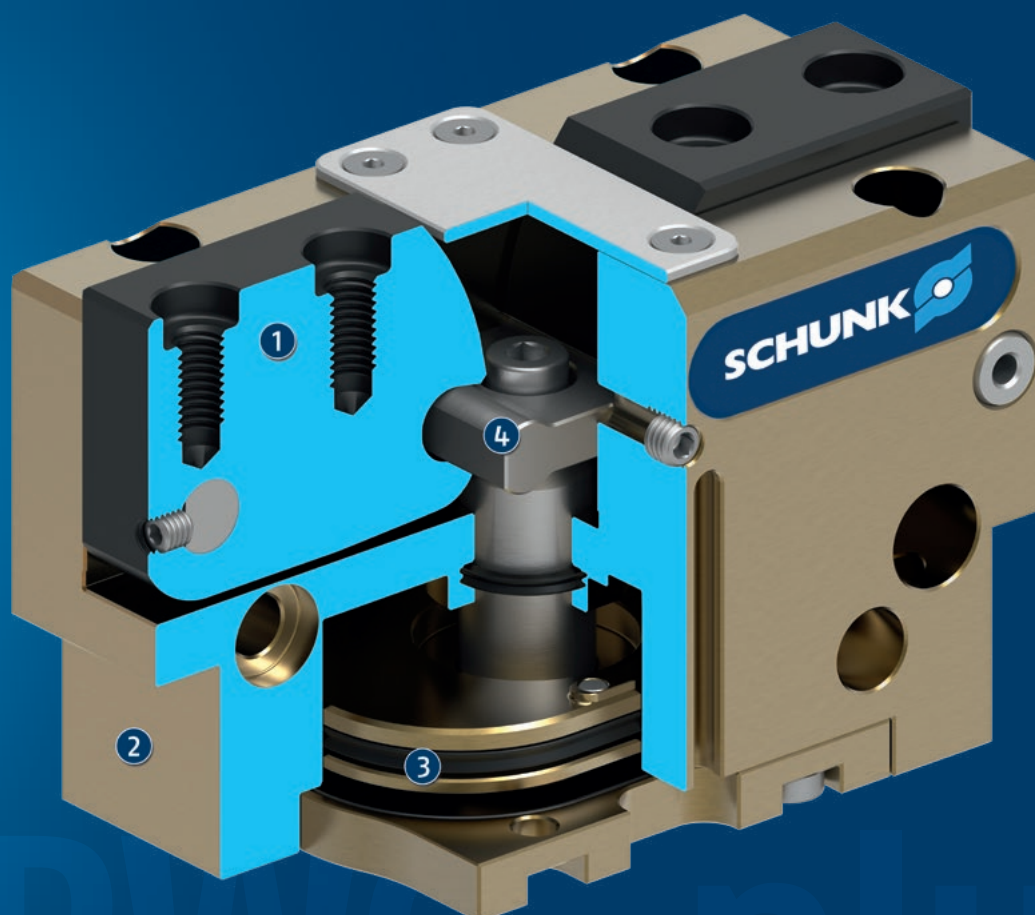
Angle per jaw
15°



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

Service life characteristics: on request

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.

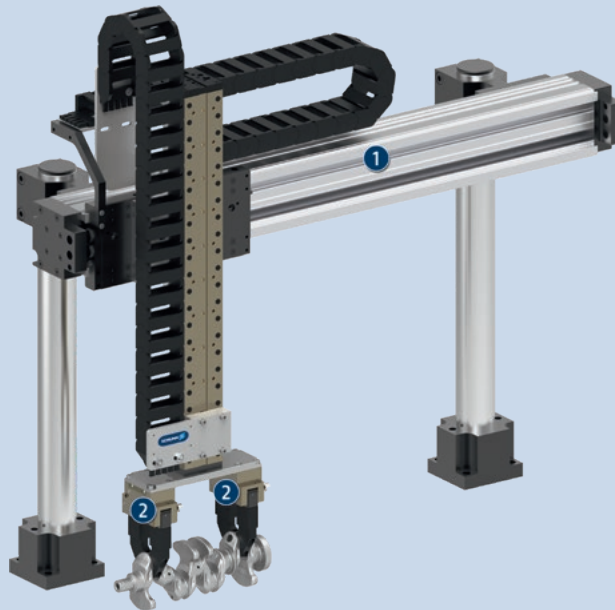
The indicated closing moment will be reached at an opening angle of 0°. A detailed closing moment course depending on the opening angle can be taken out of the diagram "closing moment course".

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



Application example

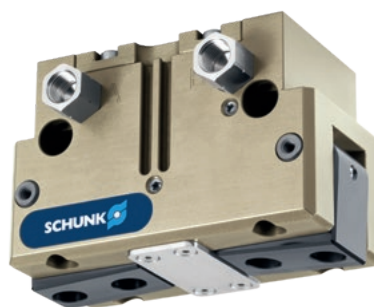
Cross gantry for light to medium-weight components.

① Line gantry LPP, pneumatic

② 2-finger angular gripper PWG-plus

SCHUNK offers more ...

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



Compensation unit



Manual change system



Tolerance compensation unit



Pressure maintenance valve



Flexible position sensor



Magnetic switches



Inductive proximity switches

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

Options and special information

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

High-temperature version VHT: for use in hot environments

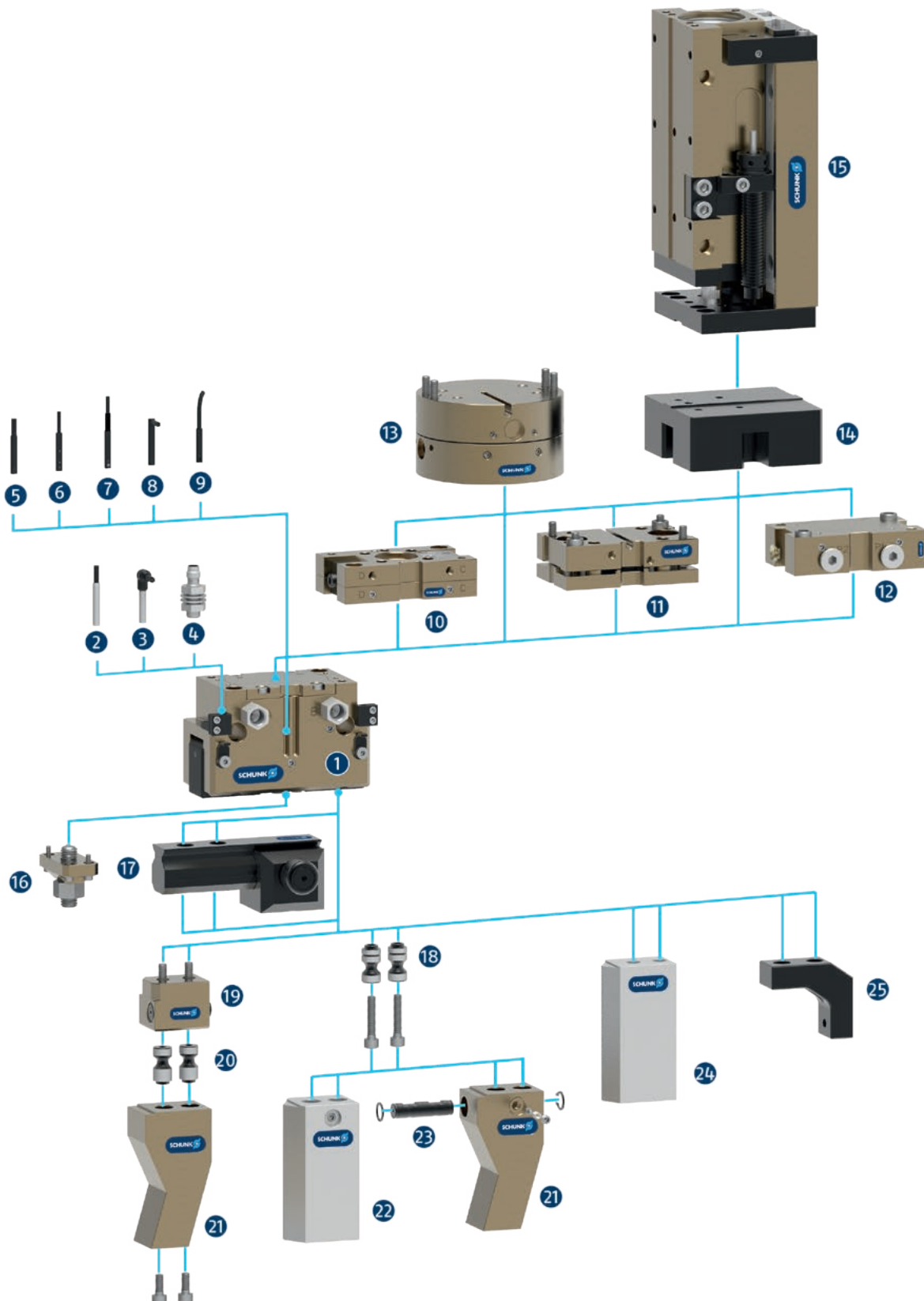
Power booster version KVZ: if higher gripping forces are required

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

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

SCHUNK gripper PWG-plus

Overview Accessories



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

Sensor system

- 2 **IN ...**
Inductive proximity switch with molded cable and straight cable outlet
- 3 **IN ...-SA**
Inductive proximity switch with molded cable and lateral cable outlet
- 4 **IN-C 80**
Inductive proximity switch, directly pluggable
- 5 **MMS 22**
Magnetic switch with straight cable outlet for monitoring a position

MMS 22-PI1
Magnetic switch with straight cable outlet for monitoring a freely programmable position
- 6 **MMS 22-PI2**
Magnetic switch with straight cable outlet for monitoring two freely programmable positions
- 7 **MMS 22-PI1-HD**
MMS 22-PI1 in robust design

MMS 22-PI2-HD
MMS 22-PI2 in robust design
- 8 **MMS 22-SA**
Magnetic switch with lateral cable outlet for monitoring a position

MMS 22-PI1-SA
Magnetic switch with side cable outlet for monitoring a freely programmable position
- 9 **MMS-P**
Magnetic switch with straight cable outlet for monitoring two freely programmable positions

Complementary products

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

- 13 **AGE**
Compensation unit for compensation of large tolerances along the X and Y axes

- 14 **ASG**
Adapter plate for combining various automation components in the modular system

- 15 **CLM**
Linear module with pneumatic drive and scope-free pre-loaded junction rollers

- 16 **HVE**
Sleeve for protection against dirt

Finger Accessories

- 17 **UZB**
The universal intermediate jaw allows fast tool-free and reliable plugging and shifting of top jaws at the gripper.
- 18 **BSWS-AR**
Adapter pin of the jaw quick-change system for fast, manual change of top jaws
- 19 **BSWS-B**
Locking mechanism of the jaw quick-change system for fast, manual exchange of top jaws
- 20 **BSWS-A**
Adapter pin of the jaw quick-change system for adaptation to the customized finger
- 21 **Customized fingers**
- 22 **BSWS-ABR**
Finger blank made of aluminum with interface to the jaw quick-change system

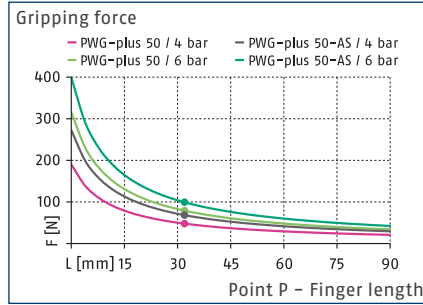
BSWS-SBR
Finger blank made of steel with interface to the jaw quick-change system
- 23 **BSWS-UR**
Locking mechanism for the integration of the jaw quick-change system into customized fingers
- 24 **ABR/SBR**
Finger blanks made of steel or aluminum with standardized screw connection diagram
- 25 **ZBA**
Intermediate jaws for reorientation of the mounting surface

PWG-plus 50

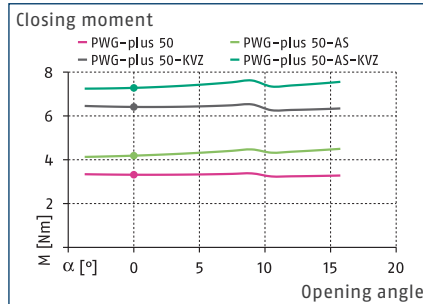
Angular gripper



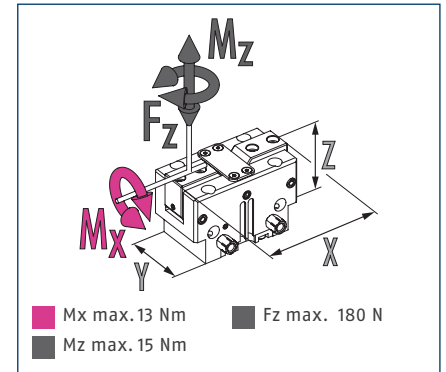
Gripping force O.D. gripping



Closing moment curve



Dimensions and maximum loads



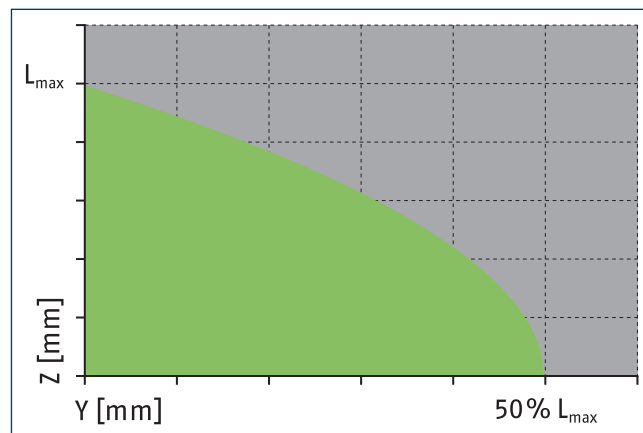
① The indicated torques and forces are static values, apply for each base jaw, and may occur simultaneously.

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
Cylinder volume per double stroke	[cm³]	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 inertia per chuck jaw	[kgcm²]	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
Options and their characteristics			
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

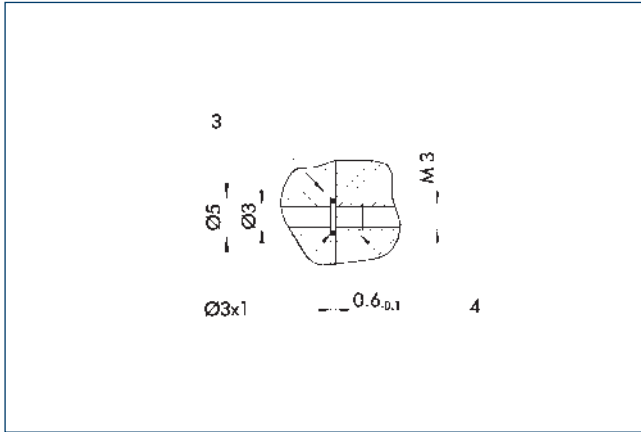
Technical drawing of a mechanical assembly, showing multiple views and dimensions. The drawing includes the following views and dimensions:

- Top View (Left):** Dimensions include 12±0.02, 24, 12, 6±0.02, 20, 20, 8, 16, 24, 13, 26.5, 15°±0.1, 3°±0.1, 14, 22.6, 30±0.1, 4, 35±0.02, 8.7, 22±0.02.
- Front View (Top Center):** Dimensions include 12±0.02, 6±0.02, 20±0.02, 11, 11, 18, 14, 80, 2.5, 80, 2.5, 13.5, 8.4, 2, 80, 15.5±0.02, 72 Ø5 (4x), 23.5, 23.5, 3.8, 9.5, 2, 8, M2.5/4 (4x).
- Side View (Bottom Center):** Dimensions include 14, 18, 14, 80, 2.5, 80, 2.5, 13.5, 8.4, 2, 80, 15.5±0.02, 72 Ø5 (4x), 23.5, 23.5, 3.8, 9.5, 2, 8, M2.5/4 (4x).
- Bottom View (Right):** Dimensions include 45.8, 42, 35±0.02, 24, 26.5, 35.5, 38.5, 32, 32, 53, 56, M3 (4x) 2, M5/6 (2x), M5/6, M4 (4x) 1, Ø3.3 (4x), Ø5.8 (4x), Ø3.3 (2x), Ø5.8 (2x), 13, 26.5, 15°±0.1, 3°±0.1, 14, 22.6, 30±0.1, 4, 35±0.02, 8.7, 22±0.02.
- Section A-A (Top Right):** Dimensions include 45.8, 42, 35±0.02, 24, 26.5, 35.5, 38.5, 32, 32, 53, 56, M3 (4x) 2, M5/6 (2x), M5/6, M4 (4x) 1, Ø3.3 (4x), Ø5.8 (4x), Ø3.3 (2x), Ø5.8 (2x), 13, 26.5, 15°±0.1, 3°±0.1, 14, 22.6, 30±0.1, 4, 35±0.02, 8.7, 22±0.02.
- Section B-B (Bottom Center):** Dimensions include 14, 18, 14, 80, 2.5, 80, 2.5, 13.5, 8.4, 2, 80, 15.5±0.02, 72 Ø5 (4x), 23.5, 23.5, 3.8, 9.5, 2, 8, M2.5/4 (4x).



Lmax is equivalent to the maximum permitted finger length, see the technical data table.

Hose-free direct connection M3

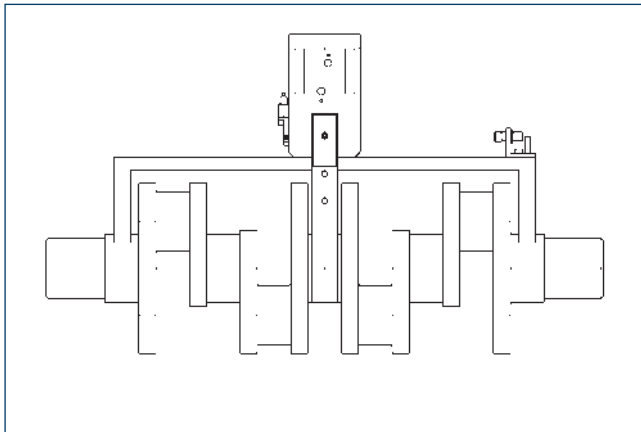


③ Adapter

④ Grippers

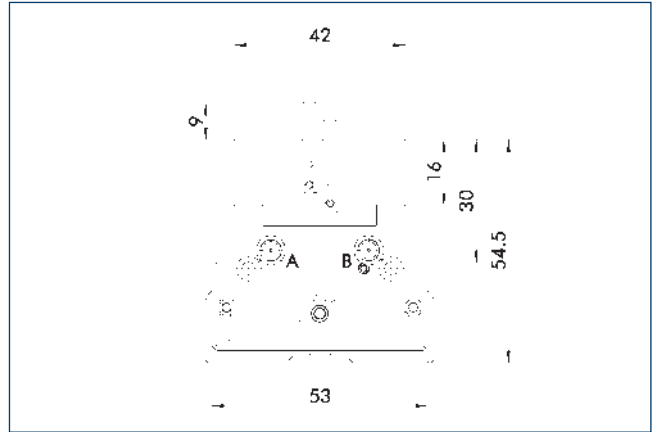
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

Shaft support



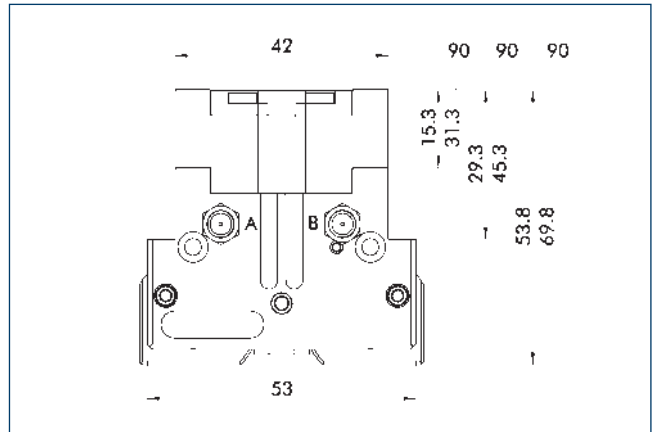
The complete assembly group for handling of cranks and cam shafts can be supplied on request.

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.

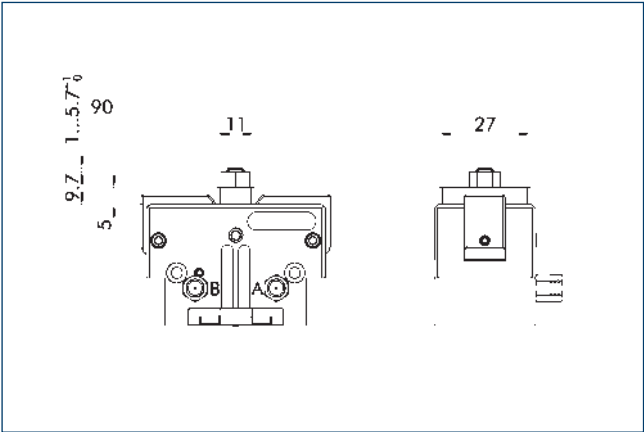
Power booster version



⑨0 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

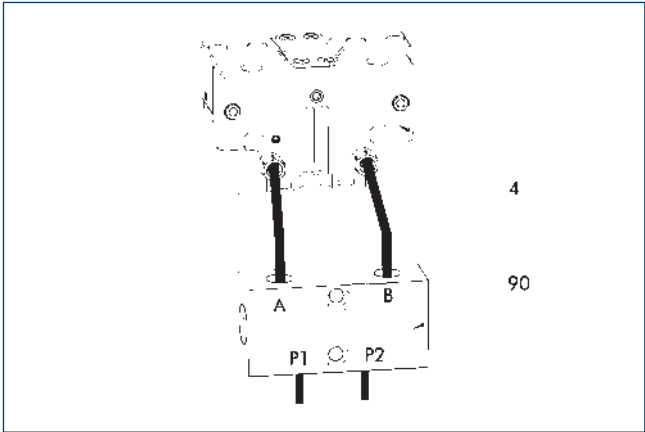


90 Max. adjustment travel

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

Description	ID	
Stroke adjustment		
HVE-PWG-plus 50	0311713	

SDV-P pressure maintenance valve



4 Grippers

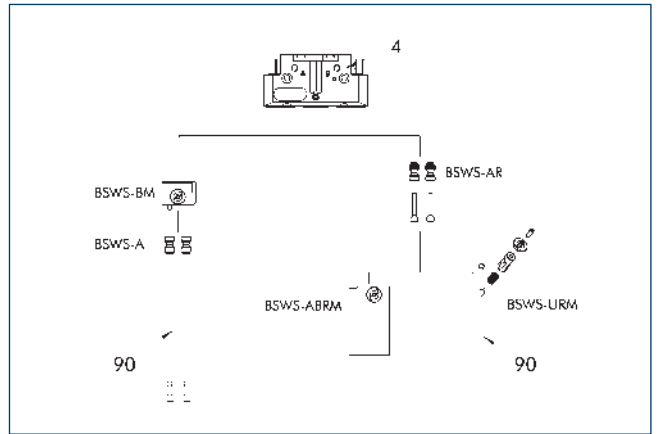
90 SDV-P pressure maintenance valve

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.

Jaw quick-change system BSWS-M



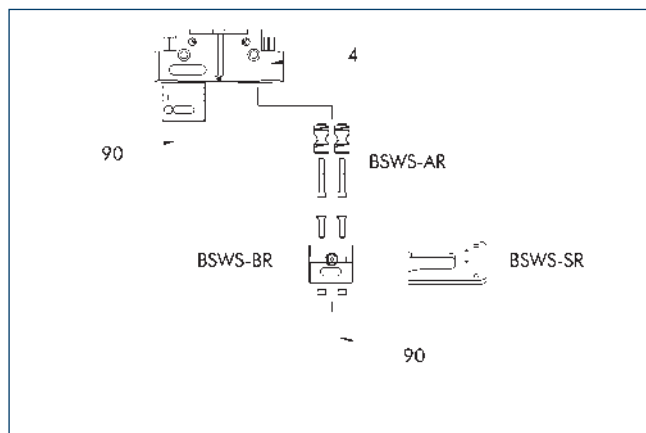
⑨⑩ Customized gripper fingers

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 50	0303020	2
BSWS-AR 50	0300091	2
Quick-change jaw system base		
BSWS-BM 50	1313899	1
Jaw quick-change system finger blank		
BSWS-ABRM-PGZN-plus 50	1420850	1
Jaw quick-change system locking mechanism		
BSWS-URM 50	1380614	1

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

Jaw quick-change system BSWS-R



④ Grippers

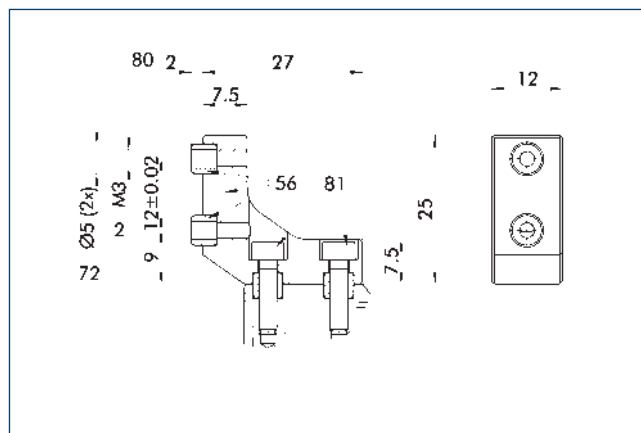
⑨⑩ Customized gripper fingers

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

Description	ID	Scope of delivery
Jaw quick-change system adapter pin		
BSWS-AR 50	0300091	2
Quick-change jaw system base		
BSWS-BR 50	1555889	1
Storage system		
BSWS-SR 50	1555948	1
Attachment kit for proximity switch		
AS-IN40-BSWS-SR 50/64	1561455	1
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	
INK 40-S-SA	0301565	

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

ZBA-L-plus 50 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

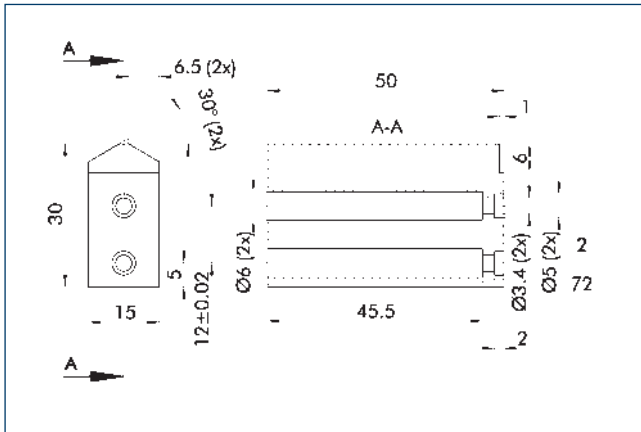
The optional ZBA-L-plus intermediate jaws allow the screw connection diagram of the top jaws to be rotated by 90°. This makes it easier to design and produce top jaws (particularly for long versions) because no deep through-bores are required.

Description	ID	Material	Finger interface	Scope of delivery
Intermediate jaw				
ZBA-L-plus 50	0311712	Aluminum	PGN-plus 50	1

PWG-plus 50

Angular gripper

Finger blanks ABR/SBR-PGZN-plus 50



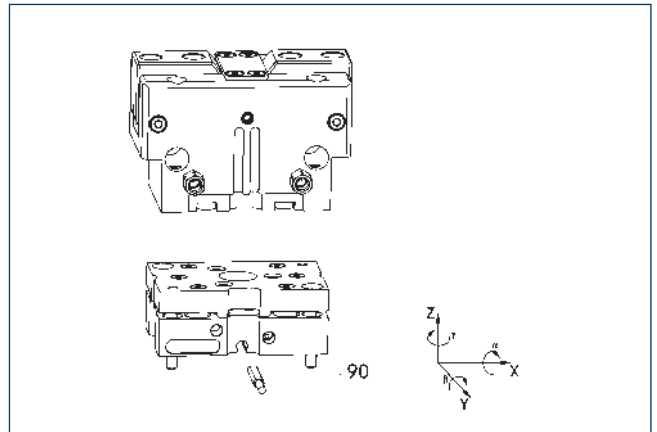
② Finger connection

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 (3.4365)	1
SBR-PGZN-plus 50	0300019	Steel (1.7131)	1

Tolerance compensation unit TCU

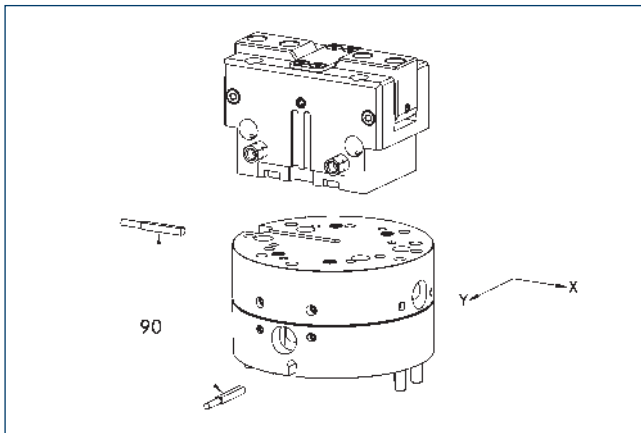


⑨⑩ Monitoring of locking

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

Compensation unit AGE-F

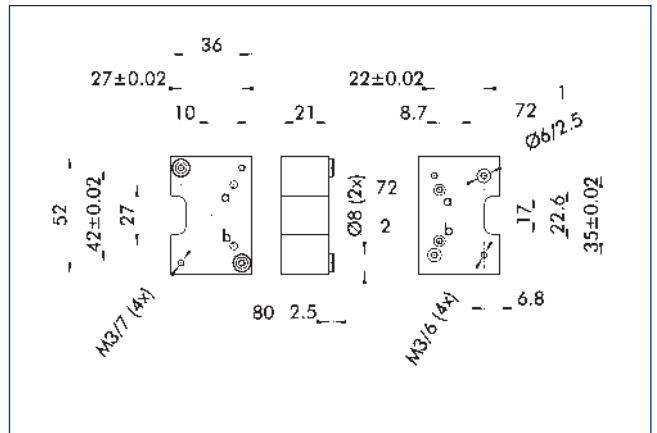


⑨⑩ Monitoring

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

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

Adapter plate for PGN-plus 50



① Robot-side connection

⑦② Fit for centering sleeves

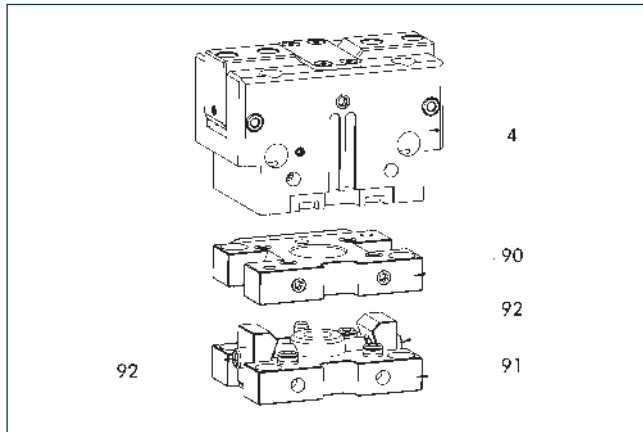
② Tool-side connection

⑧⑩ 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

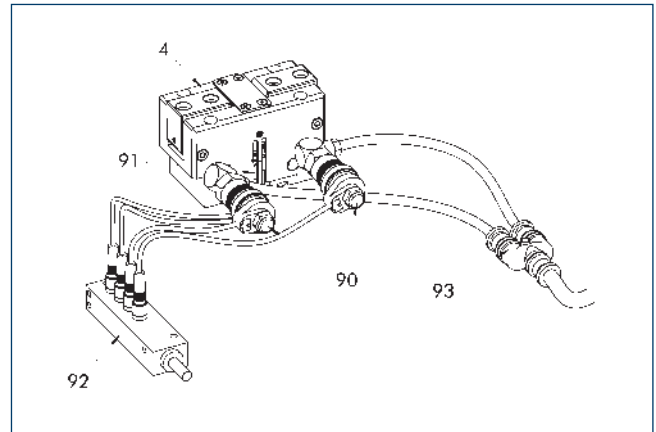


- ④ Grippers
- ⑨① CWK compact change master
- ⑨① CWA compact change adapter
- ⑨② Locking mechanism

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

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

Add-on valves for single grippers



- 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.

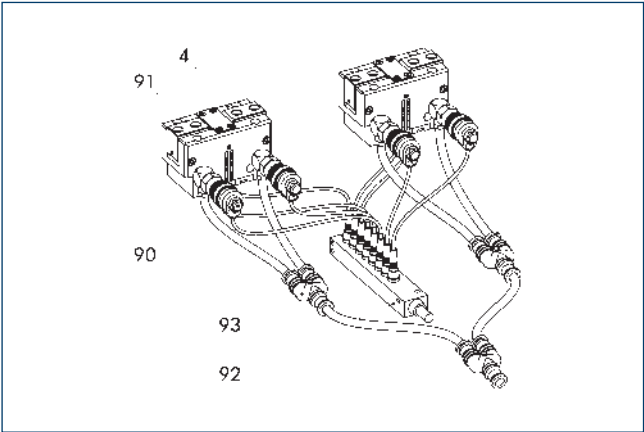
Description	ID	Often combined
Add-on valve set		
ABV-MV15-M5	0303323	
ABV-MV15-M5-V2-M8	0303386	
ABV-MV15-M5-V4-M8	0303356	●

- ① A set of add-on 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 or four inputs or outputs. Sensors for monitoring the gripper need to be ordered separately. Pneumatic hoses are not included in the scope of delivery.

PWG-plus 50

Angular gripper

Add-on valves for double grippers



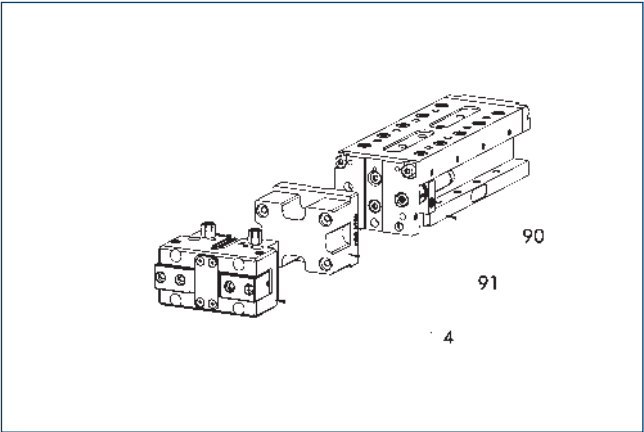
- ④ Grippers
- ⑨② Sensor distributor
- ⑨① Micro valves
- ⑨③ Y distributor
- ⑨① Sensor

The add-on valve set reduces 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 a distributor.

Description	ID
Add-on valve set	
ABV-MV15-M5-V8-M8	0303357

- ① A set of add-on valves ABV is required per double gripping unit. The ABV set contains four 3/2 microvalves, three Y-distributors for compressed air supply and a sensor distributor with eight inputs or outputs. Sensors for monitoring the gripper need to be ordered separately. Pneumatic hoses are not included in the scope of delivery.

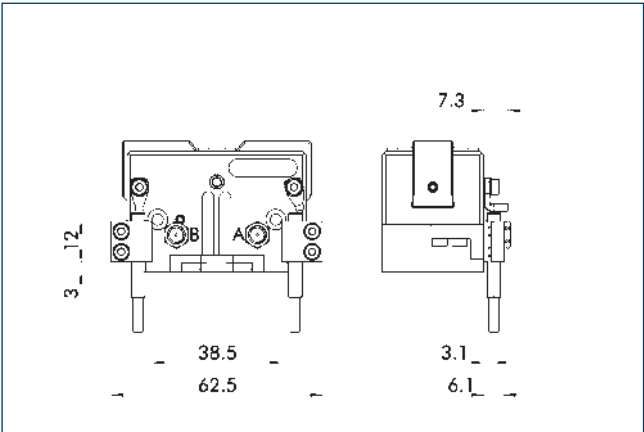
Modular Assembly Automation



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

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

Attachment kit for proximity switch IN 40

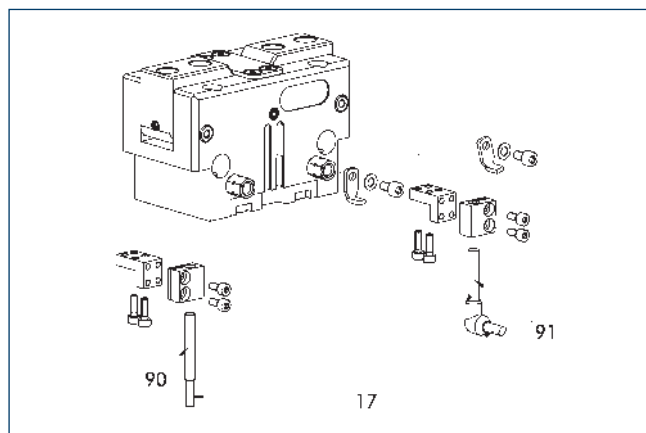


End position monitoring can be mounted with an attachment kit.

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

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

IN 40 inductive proximity switches



①⑦ Cable outlet

①⑨ Sensor IN..-SA

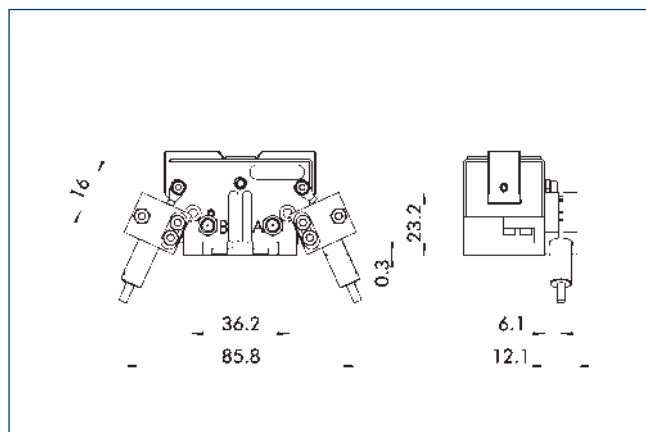
①⑩ Sensor IN ...

End position monitoring can be mounted with an attachment kit.

Description	ID	Often combined
Attachment kit for proximity switch		
AS-IN40-PWG-plus 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.

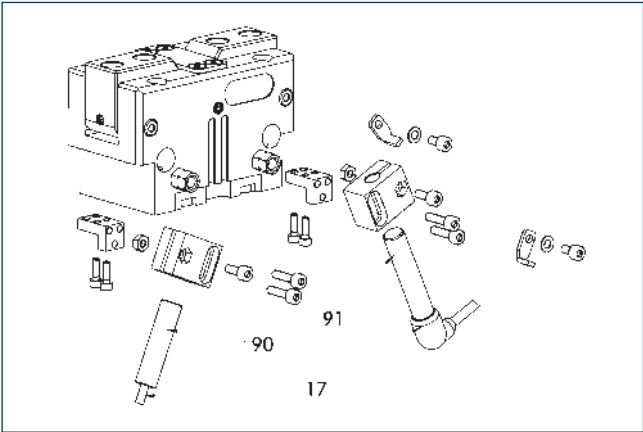
Description	ID	
Attachment kit for proximity switch		
AS-IN80-PWG-plus 50	0311711	

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

PWG-plus 50

Angular gripper

IN 80 inductive proximity switches



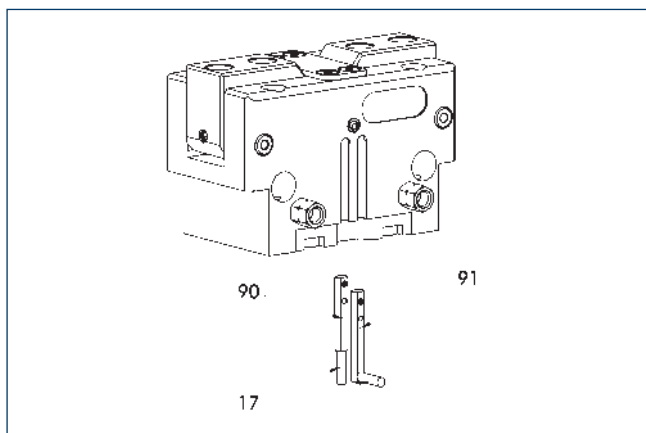
- 17 Cable outlet
- 91 Sensor IN..-SA
- 90 Sensor IN ...

End position monitoring can be mounted with an attachment kit.

Description	ID	Often combined
Attachment kit for proximity switch		
AS-IN80-PWG-plus 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.

Electronic magnetic switch MMS



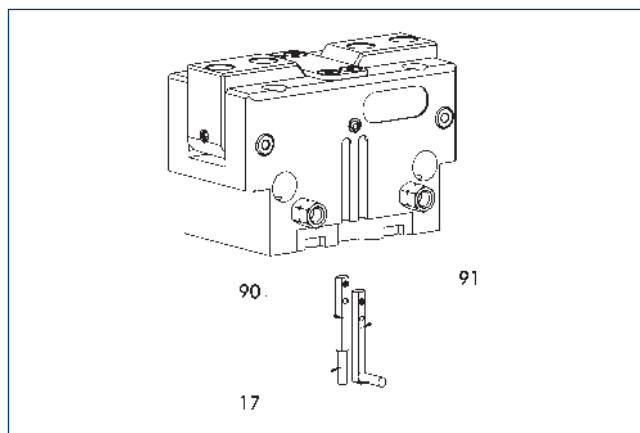
- ① Cable outlet
② Sensor MMS 22-...-SA

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 connector/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



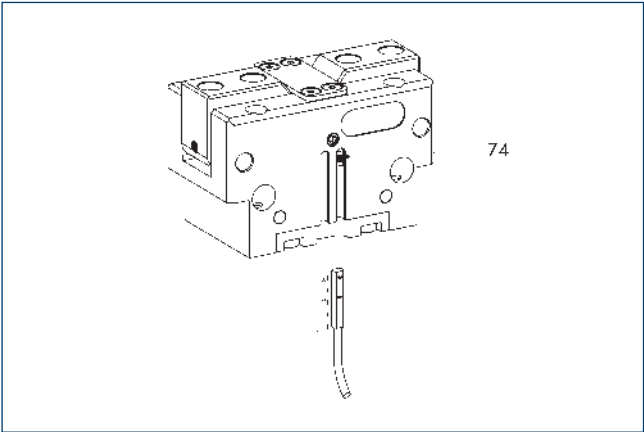
- ① Cable outlet
② Sensor MMS 22-PI1-...-SA

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, ID 0301030) or ST plug teaching tool (optional). End position monitoring for mounting in the C-slot. If the ST plug teaching tools are listed in the table provided, teaching is only possible with the ST teaching tools.

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

- 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



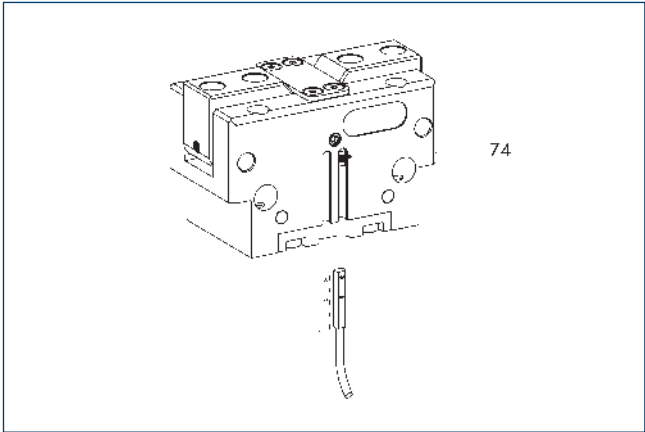
74 Limit stop for sensor

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 GLN0804-LK-00500-A	0307767	●
KA GLN0804-LK-01000-A	0307768	
KA WLN0804-LK-00500-A	0307765	
KA WLN0804-LK-01000-A	0307766	
Clip for connector/socket		
CLI-M8	0301463	
Sensor distributor		
V2-M8-4P-2XM8-3P	0301380	

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

Programmable magnetic switch MMS-IO-Link



74 Limit stop for sensor

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

Description	ID	
Programmable magnetic switch		
MMS 22-IOI-M08	0315830	
MMS 22-IOI-M12	0315835	

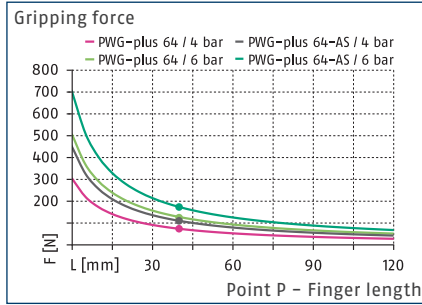
- ① One sensor is required for each gripper. No additional mounting kit is required – the gripper is equipped for use of the sensor by default. Further information and technical data can be found in the catalog chapter sensor systems.

PWG-plus 64

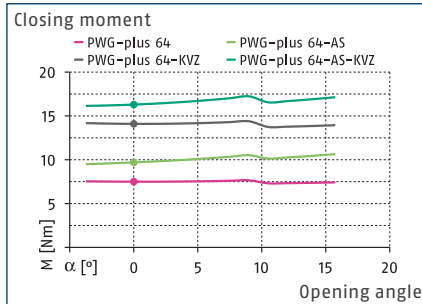
Angular gripper



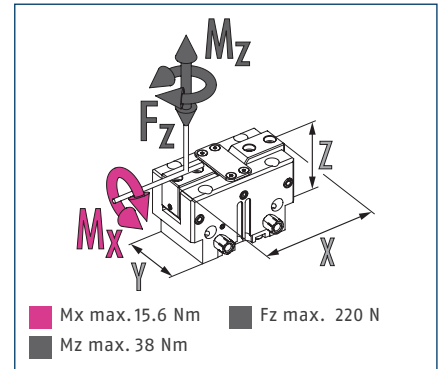
Gripping force O.D. gripping



Closing moment curve



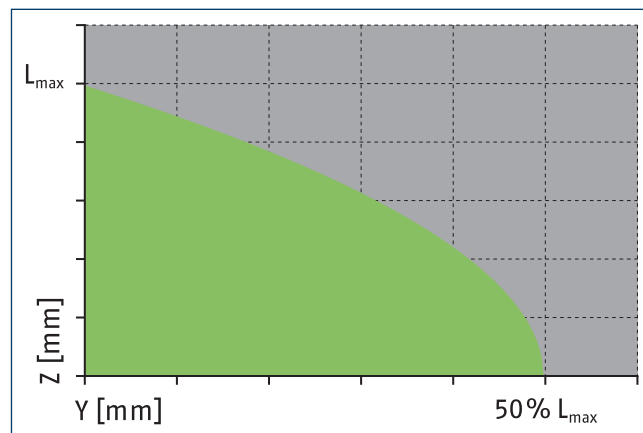
Dimensions and maximum loads



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

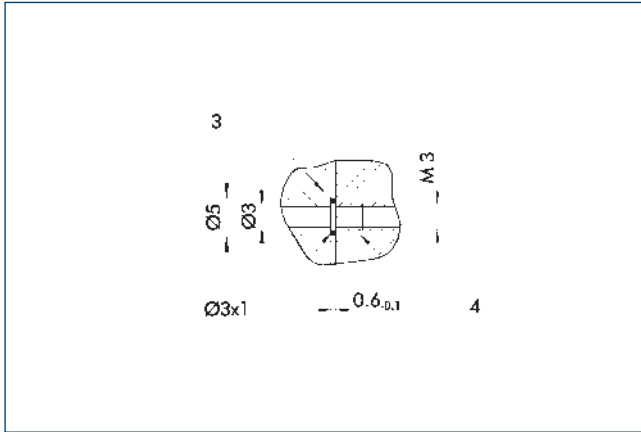
Technical data

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
Cylinder volume per double stroke	[cm³]	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 inertia per chuck jaw	[kgcm²]	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
Options and their characteristics			
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

[illegible]

Lmax is equivalent to the maximum permitted finger length, see the technical data table.

Hose-free direct connection M3

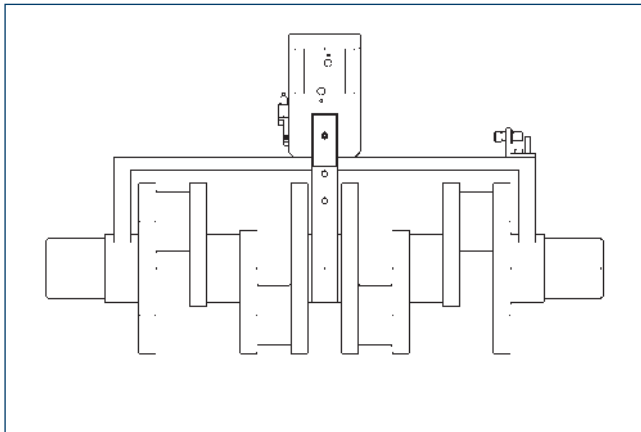


③ Adapter

④ Grippers

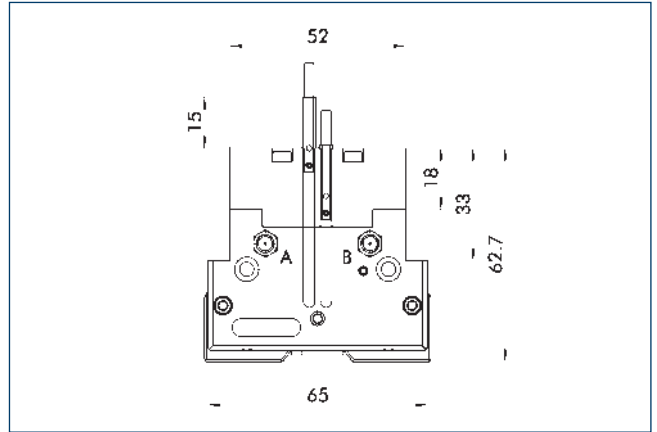
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

Shaft support



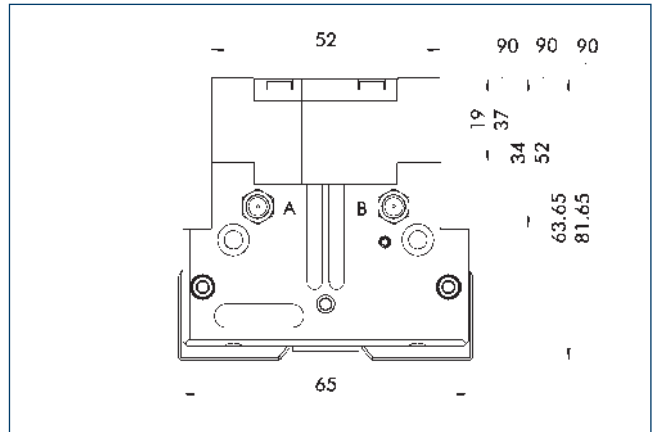
The complete assembly group for handling of cranks and cam shafts can be supplied on request.

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.

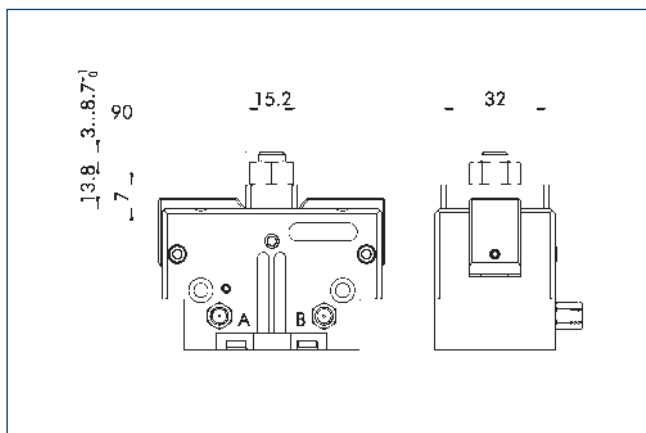
Power booster version



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

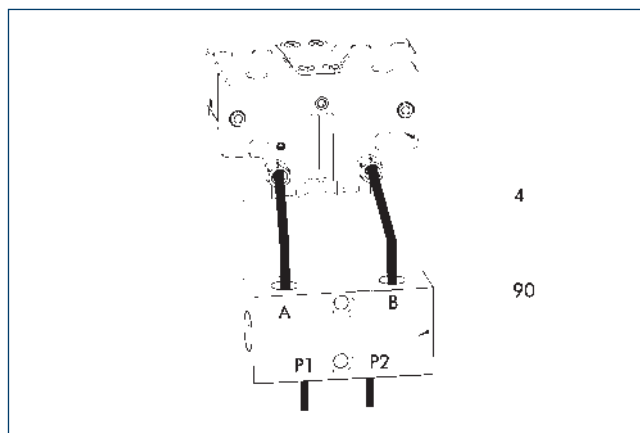


⑨⑩ Max. adjustment travel

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

Description	ID	
Stroke adjustment		
HVE-PWG-plus 64	0311723	

SDV-P pressure maintenance valve



④ Grippers

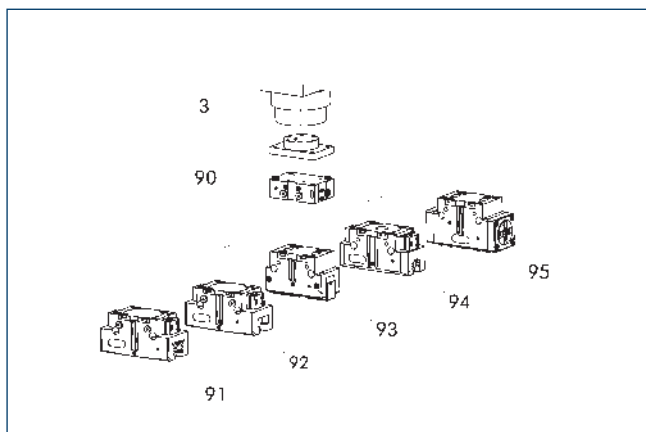
⑨⑩ SDV-P pressure maintenance valve

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.

SDV-P E-P pressure maintenance valve

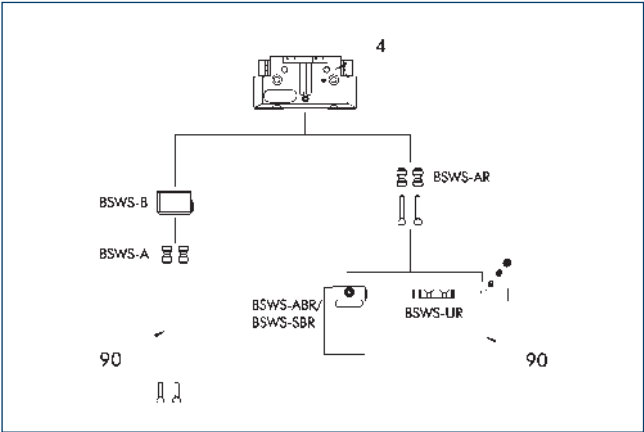


- ③ Adapter
- ⑨⑩ SDV-P E-P pressure maintenance valve
- ⑨① 2-finger parallel gripper PGN-plus/PGN-plus-P
- ⑨② 2-finger parallel gripper JGP-P
- ⑨③ 2-finger angular gripper PWG-plus
- ⑨④ 2-finger parallel gripper PGB
- ⑨⑤ Sealed DPG-plus gripper

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

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

BSWS jaw quick-change jaw systems



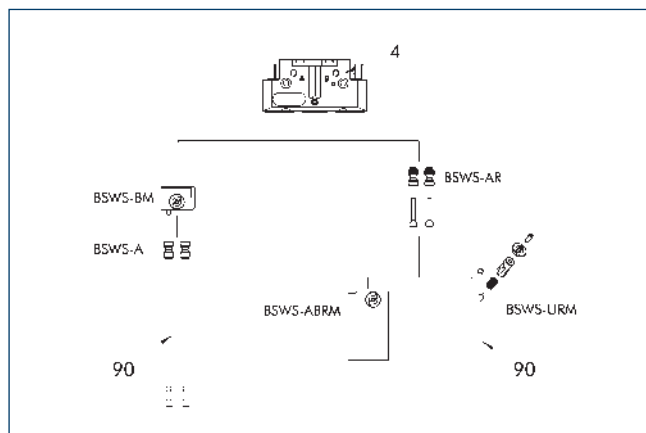
- ④ Grippers 90 Customized gripper fingers

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

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

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

Jaw quick-change system BSWS-M



④ Grippers

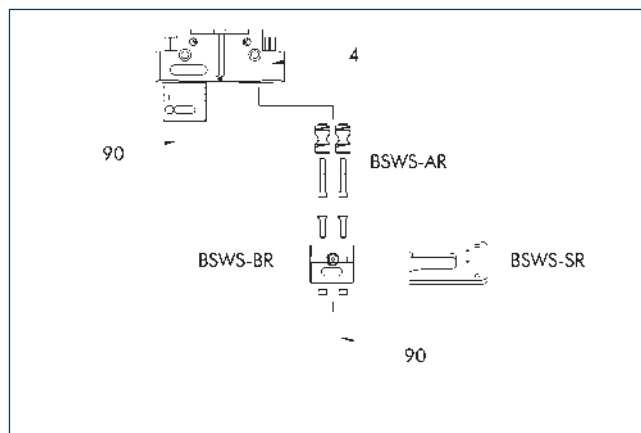
⑨⑩ Customized gripper fingers

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

Description	ID	Scope of delivery
Jaw quick-change system adapter pin		
BSWS-A 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 If the operating pressure is higher than 6 bar, suitability for use beyond the application limits must be checked. Only systems that are listed in the table, can be used.

Jaw quick-change system BSWS-R



④ Grippers

⑨⑩ Customized gripper fingers

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

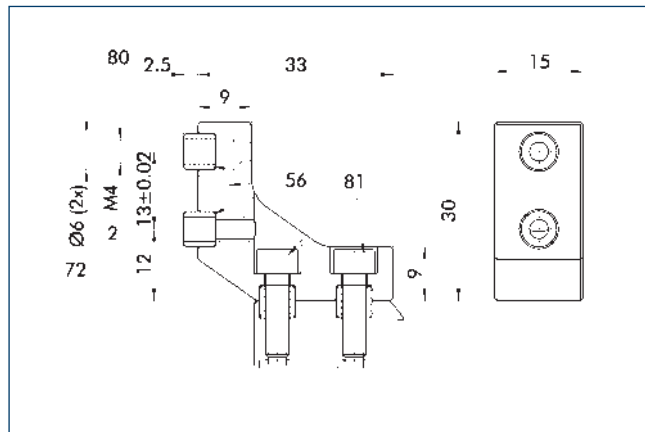
Description	ID	Scope of delivery
Jaw quick-change system adapter pin		
BSWS-AR 64	0300092	2
Quick-change jaw system base		
BSWS-BR 64	1555914	1
Storage system		
BSWS-SR 64	1555950	1
Attachment kit for proximity switch		
AS-IN40-BSWS-SR 50/64	1561455	1
Inductive proximity switches		
IN 40-S-M12	0301574	
IN 40-S-M8	0301474	
INK 40-S	0301555	

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

PWG-plus 64

Angular gripper

ZBA-L-plus 64 intermediate jaws

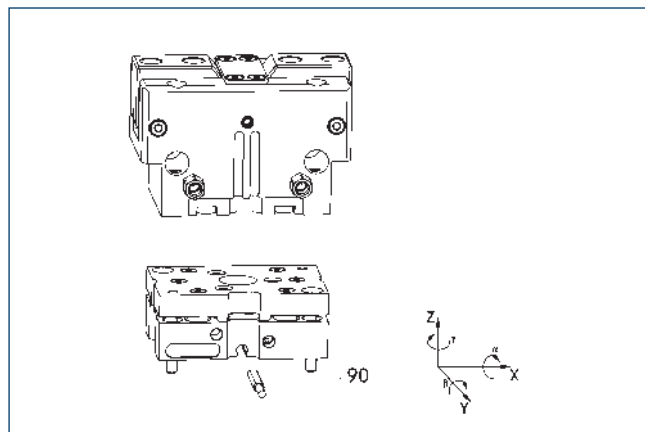


- | | |
|--------------------------------------|---|
| ② Finger connection | ⑧① Depth of the centering sleeve hole in the counter part |
| ⑤⑥ Included in the scope of delivery | ⑧① Not included in the scope of delivery |
| ⑦② Fit for centering sleeves | |

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

Tolerance compensation unit TCU

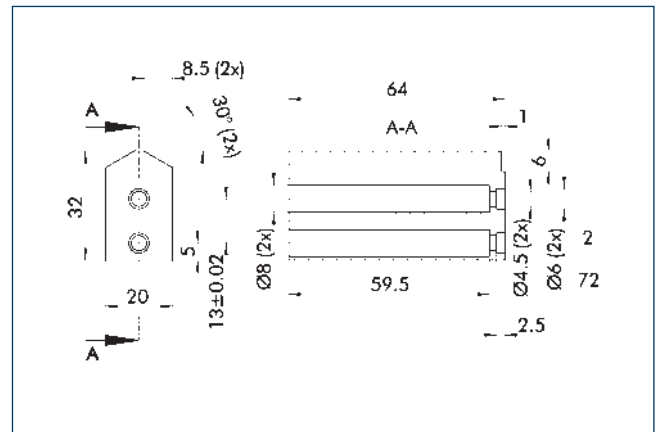


- ⑨0 Monitoring of locking

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-064-3-MV	0324774	yes	$\pm 1^\circ / \pm 1,5^\circ / \pm 2^\circ$	●
TCU-P-064-3-OV	0324775	no	$\pm 1^\circ / \pm 1,5^\circ / \pm 2^\circ$	

Finger blanks ABR/SBR-PGZN-plus 64



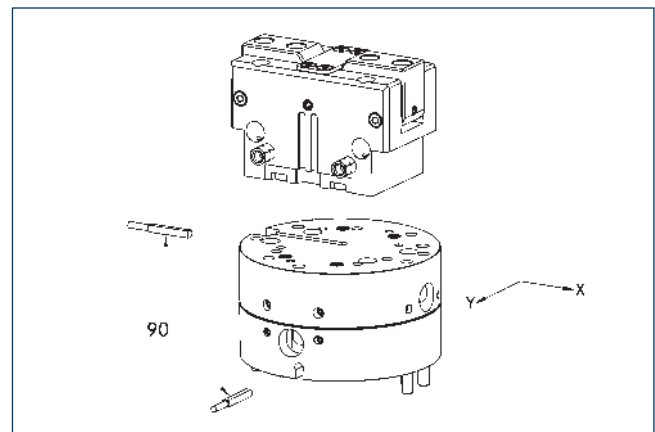
- (72) Fit for centering sleeves

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

Description	ID	Material	Scope of delivery
Finger blank			
ABR-PGZN-plus 64	0300010	Aluminum (3.4365)	1
SBR-PGZN-plus 64	0300020	Steel (1.7131)	1

- ❗ In the PGL-plus-P gripper series, the use of finger blanks results in a limitation of the closing stroke. Please check this in detail in advance using the CAD data and adjust the reworking of the fingers accordingly.

Compensation unit AGE-F

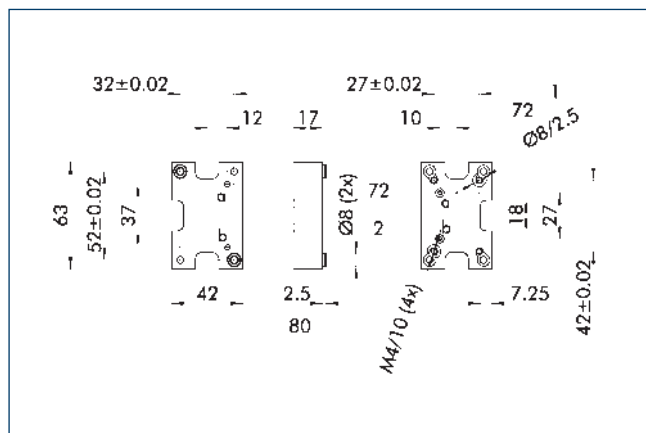


- ## 90 Monitoring

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]	
Compensation unit				
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

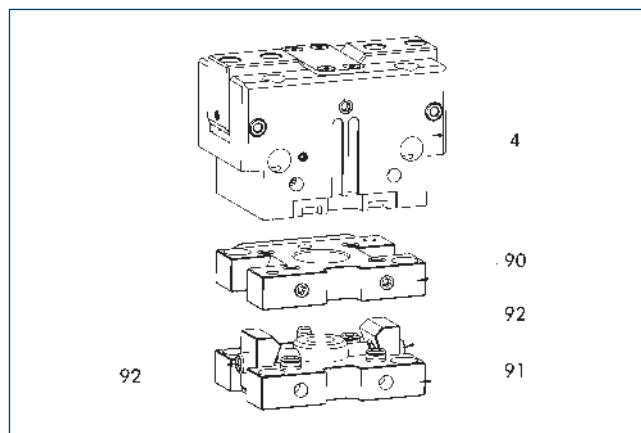


- ① Robot-side connection
- ② Tool-side connection
- ⑦② Fit for centering sleeves
- ⑧① Depth of the centering sleeve hole in the counter part

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-080-064-P	0305784	

Compact change system for grippers

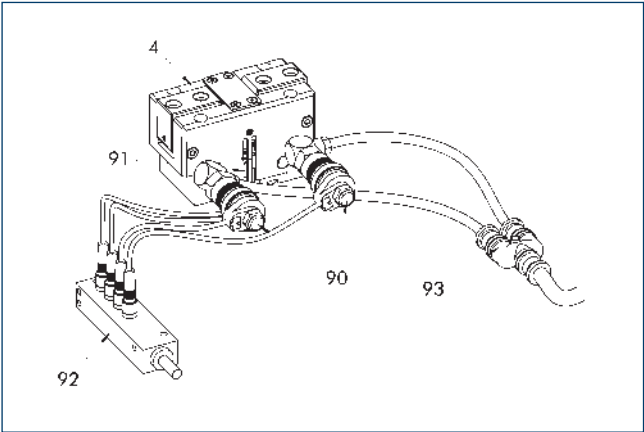


- ④ Grippers
- ⑨① CWK compact change master
- ⑨② CWA compact change adapter
- ⑨③ Locking mechanism

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

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

Add-on valves for single grippers



- ④

Grippers
- ⑨②

Sensor distributor
- ⑨①

Micro valves
- ⑨③

Y distributor
- ⑨①

Sensor

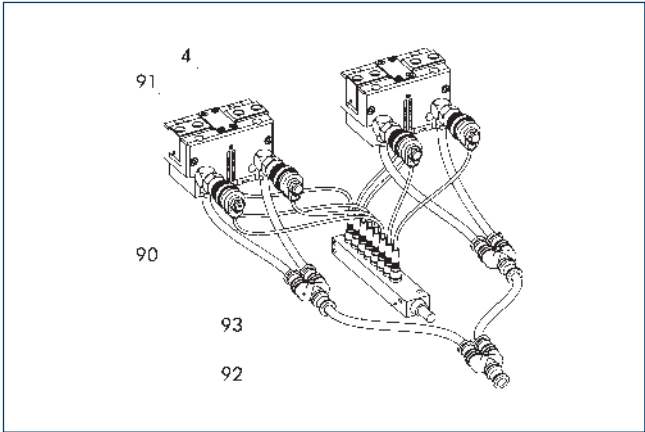
The set of attachment valves reduces the compressed air consumption as there is no need to ventilate or bleed the supply lines. This can also reduce cycle time. The hose-free direct assembly of the micro valves reduces the hosing effort for the gripper. To further simplify electrical connection of the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

Description	ID	Often combined
Add-on valve set		
ABV-MV15-M5	0303323	
ABV-MV15-M5-V2-M8	0303386	
ABV-MV15-M5-V4-M8	0303356	●

- ①

A set of add-on 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 or four inputs or outputs. Sensors for monitoring the gripper need to be ordered separately. Pneumatic hoses are not included in the scope of delivery.

Add-on valves for double grippers



- ④

Grippers
- ⑨②

Sensor distributor
- ⑨①

Micro valves
- ⑨③

Y distributor
- ⑨①

Sensor

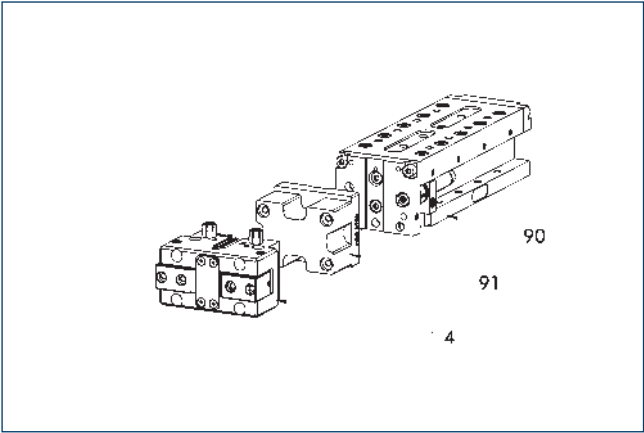
The add-on valve set reduces compressed air consumption as there is no need to ventilate or bleed the supply lines. This can also reduce cycle time. The hose-free direct assembly of the micro valves reduces the hosing effort for the gripper. To further simplify electrical connection of the valves and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

Description	ID	
Add-on valve set		
ABV-MV15-M5-V8-M8	0303357	

- ①

A set of add-on valves ABV is required per double gripping unit. The ABV set contains four 3/2 microvalves, three Y-distributors for compressed air supply and a sensor distributor with 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

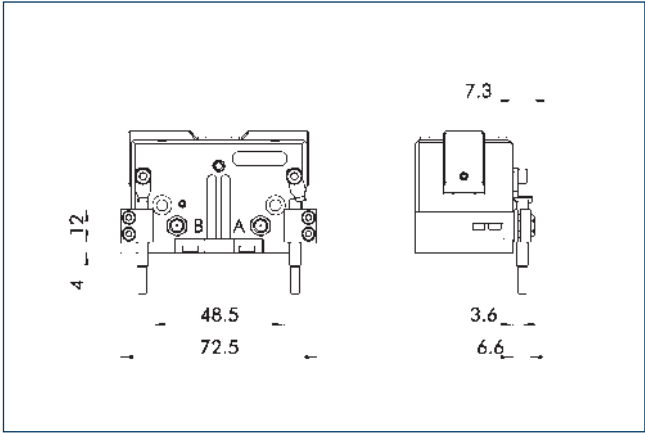
Grippers
- ⑨①

ASG adapter plate
- ⑨①

Linear module CLM/KLM/LM/ELP/
ELM/ELS/HLM

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

Attachment kit for proximity switch IN 40



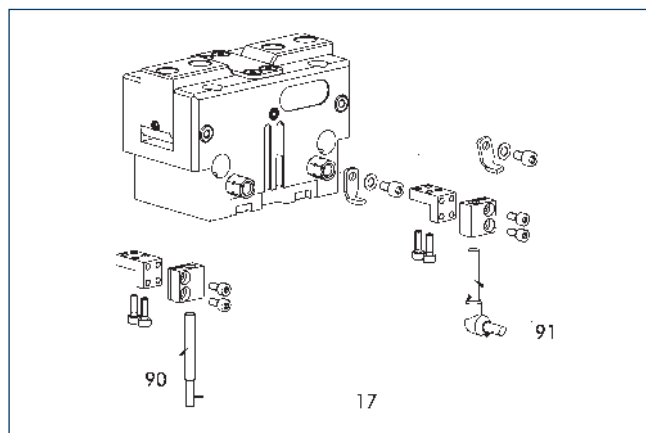
End position monitoring can be mounted with an attachment kit.

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

- ①

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

IN 40 inductive proximity switches



① Cable outlet

② Sensor IN..-SA

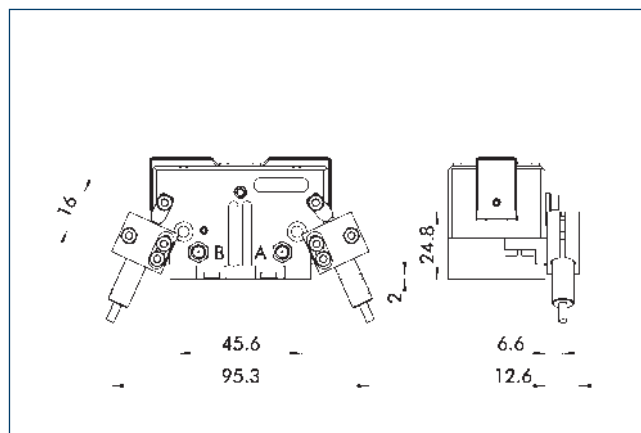
③ Sensor IN ...

End position monitoring can be mounted with an attachment kit.

Description	ID	Often combined
Attachment kit for proximity switch		
AS-IN40-PWG-plus 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	

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

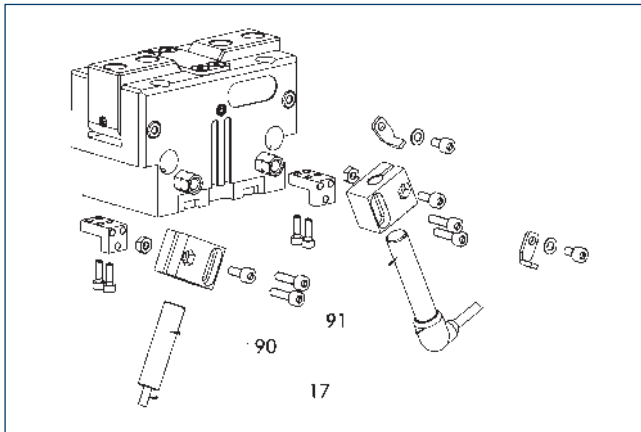


End position monitoring can be mounted with an attachment kit.

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

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

IN 80 inductive proximity switches



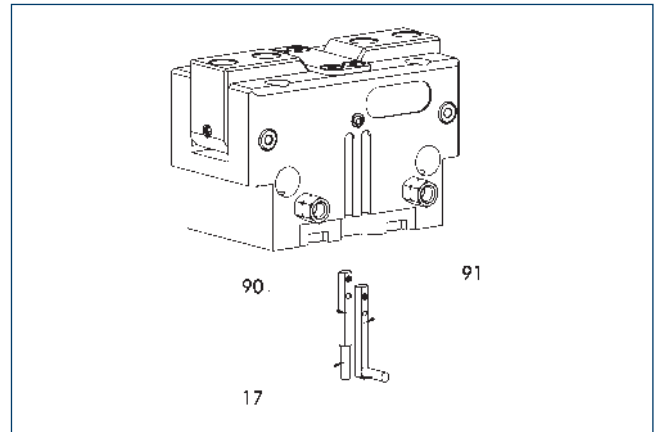
- ① Cable outlet
② Sensor IN...-SA
③ Sensor IN ...

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	

- 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



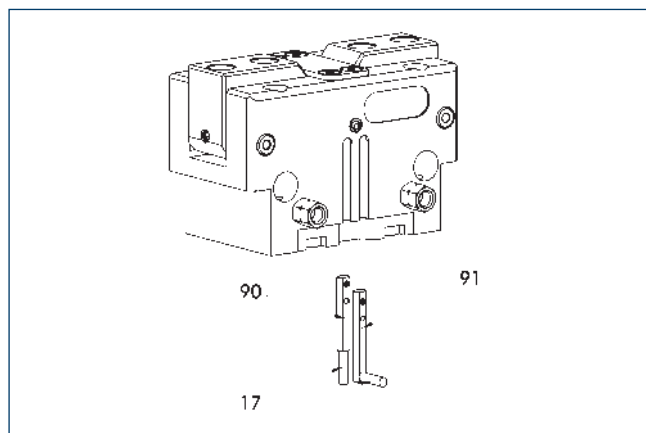
- ① Cable outlet
② Sensor MMS 22...-SA
③ Sensor MMS 22..

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 connector/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



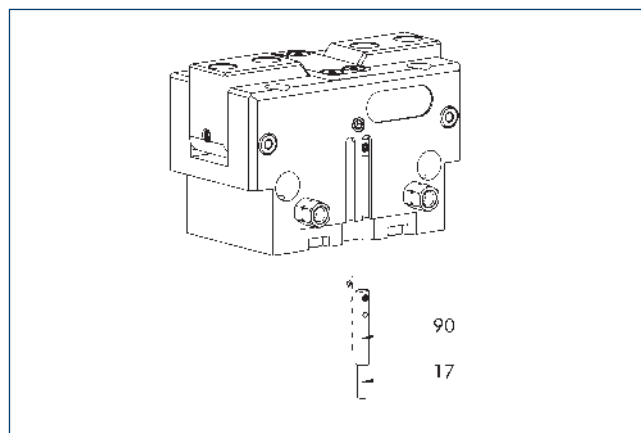
- ①⑦ Cable outlet ①⑨ Sensor MMS 22 ...-PI1-...-SA
 ①⑩ Sensor MMS 22 PI1-...

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

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

- 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



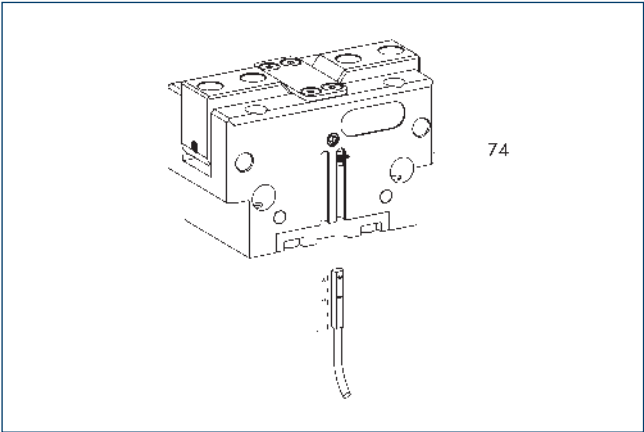
- ①⑦ Cable outlet ①⑩ MMS 22...-PI2-... sensor

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

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

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

MMS-P programmable magnetic switch



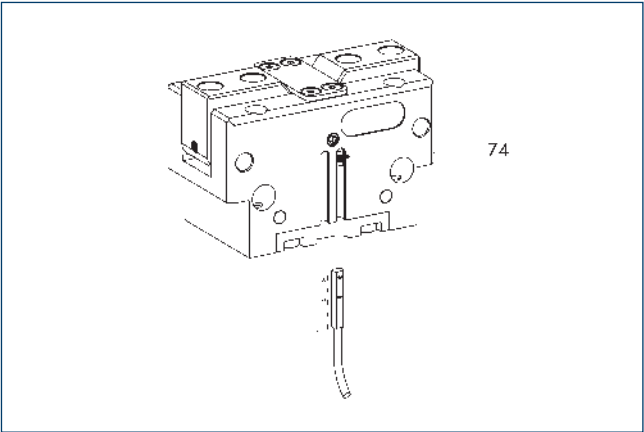
74 Limit stop for sensor

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

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

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

Programmable magnetic switch MMS-IO-Link



74 Limit stop for sensor

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

Description	ID	
Programmable magnetic switch		
MMS 22-IOI-M08	0315830	
MMS 22-IOI-M12	0315835	

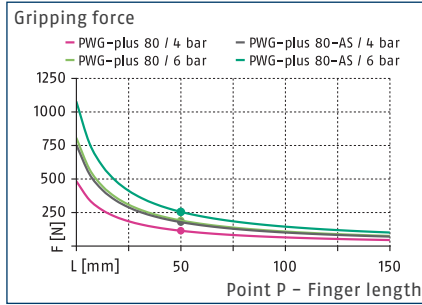
- ① One sensor is required for each gripper. No additional mounting kit is required – the gripper is equipped for use of the sensor by default. Further information and technical data can be found in the catalog chapter sensor systems.

PWG-plus 80

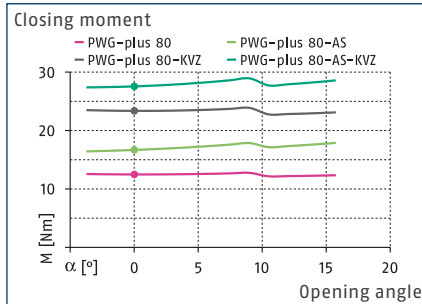
Angular gripper



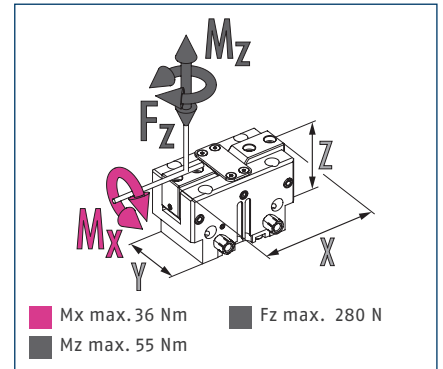
Gripping force O.D. gripping



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.

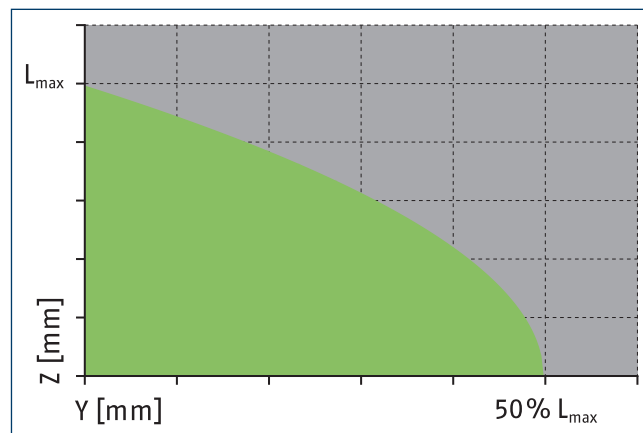
Technical data

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
Cylinder volume per 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 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
Options and their characteristics			
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

Technical drawing of a mechanical assembly, showing multiple views and dimensions. The drawing includes the following views and dimensions:

- Top View (Top Left):** Dimensions include 16±0.02, 36, 8, 18, 28.1, 23.8, and 28.1.
- Front View (Top Right):** Dimensions include 8±0.02, 27±0.02, M3/8 (4x), 16, 24, 80, 2.5, 20±0.02, 12, 20, 10.2, 72 Ø8 (4x), 34, 34, 12, 4.15, 8, 14, and M2.5/4 (4x).
- Side View (Middle Left):** Dimensions include 90, 40, 72 Ø8 (2x), M5/6 (2x), 20, 15, 23, Ø4.2 (4x), Ø7.25 (4x), Ø5.1 (2x), Ø9 (2x), 20, 2.5, 80, 12, 35.3, 15° 0'±1', 3° 0'±1', M5/6, and B.
- Bottom View (Bottom Left):** Dimensions include 37, M3/4 (2x), 42⁰_{-0.1}, 5, 52±0.02, 12, 32±0.02, and 3.
- Section A-A (Middle Right):** Dimensions include 66.5, 63, 52±0.02, 40, M5/6, M5/6 (2x), 1, 2, 78, 80, 35.3, 49, 53.5, 50, and P.
- Section B-B (Bottom Right):** Dimensions include 20±0.02, 12, 20, 10.2, 72 Ø8 (4x), 34, 34, 12, 4.15, 8, 14, and M2.5/4 (4x).

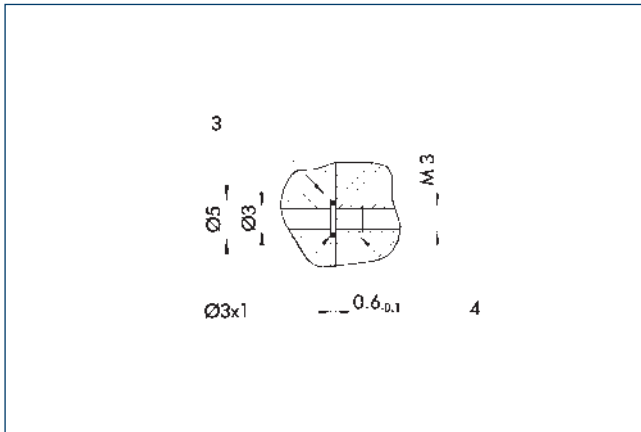
90 Sensor MMS 22..



■ Inadmissible range

37

Hose-free direct connection M3

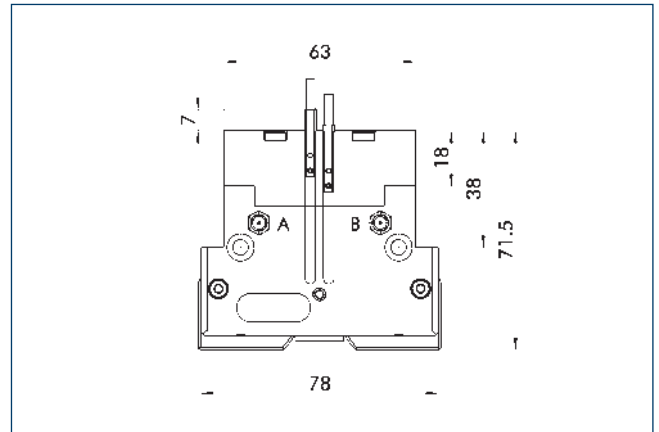


③ Adapter

④ Grippers

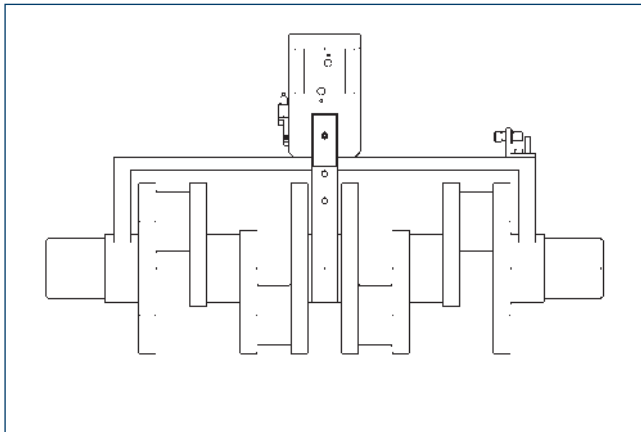
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

Gripping force maintenance device



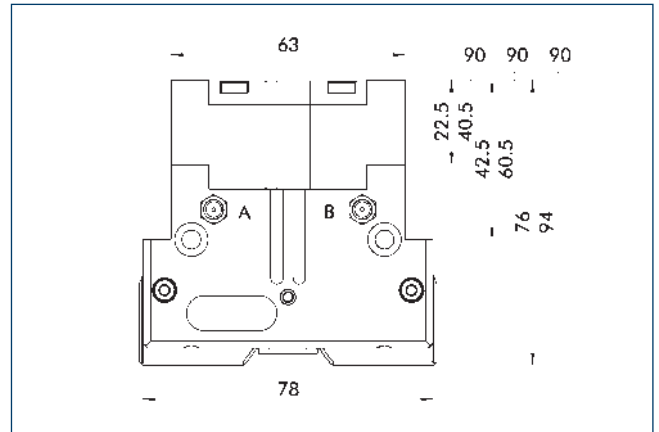
The mechanical gripping force maintenance ensures that a minimum clamping force will be applied even in case of pressure drop. This acts as closing force in the AS version. Besides this, the gripping force maintenance can be used to increase gripping force or for single actuated gripping.

Shaft support



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

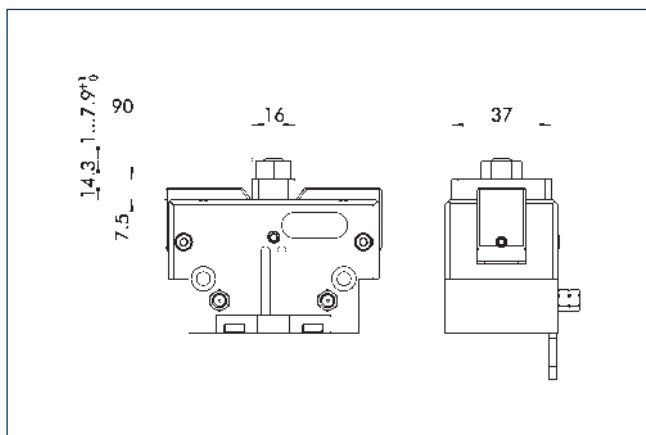
Power booster version



⑨0 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

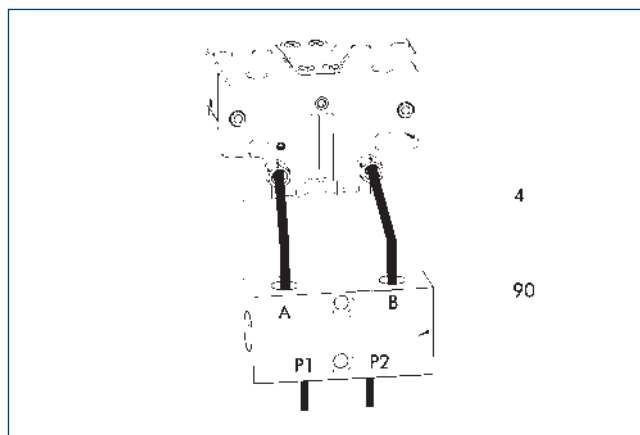


⑨⑩ Max. adjustment travel

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

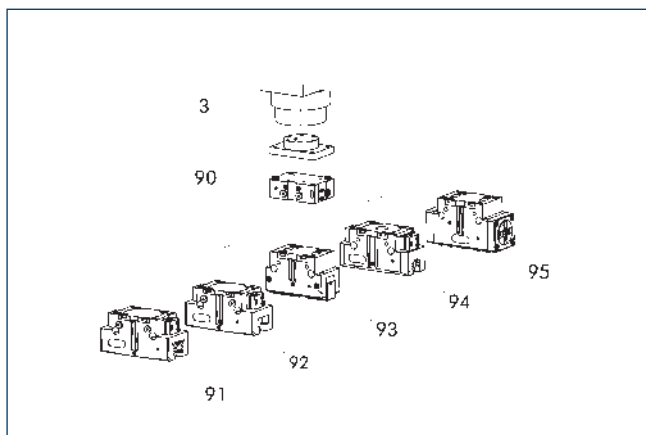
⑨⑩ SDV-P pressure maintenance valve

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.

SDV-P E-P pressure maintenance valve

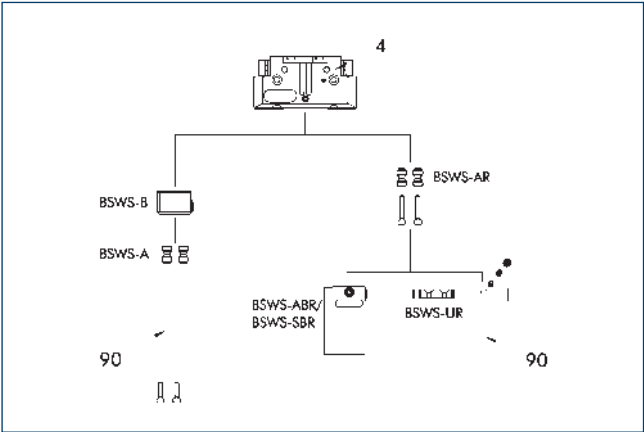


- ③ Adapter
- ⑨⑩ SDV-P E-P pressure maintenance valve
- ⑨① 2-finger parallel gripper PGN-plus/PGN-plus-P
- ⑨② 2-finger parallel gripper JGP-P
- ⑨③ 2-finger angular gripper PWG-plus
- ⑨④ 2-finger parallel gripper PGB
- ⑨⑤ Sealed DPG-plus gripper

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

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

BSWS jaw quick-change jaw systems



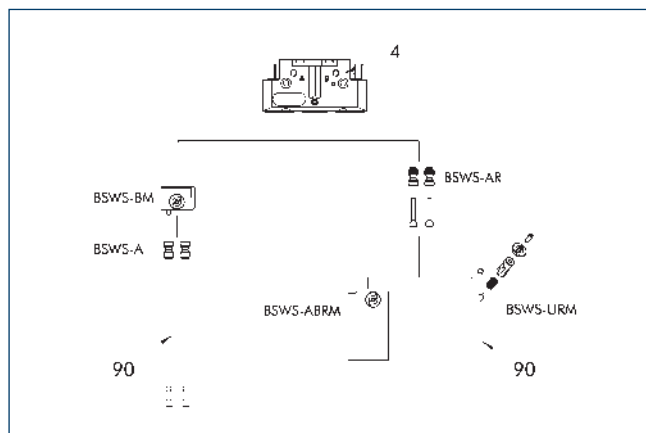
- ④ Grippers
- ⑨⑩ Customized gripper fingers

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

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

Jaw quick-change system BSWS-M



④ Grippers

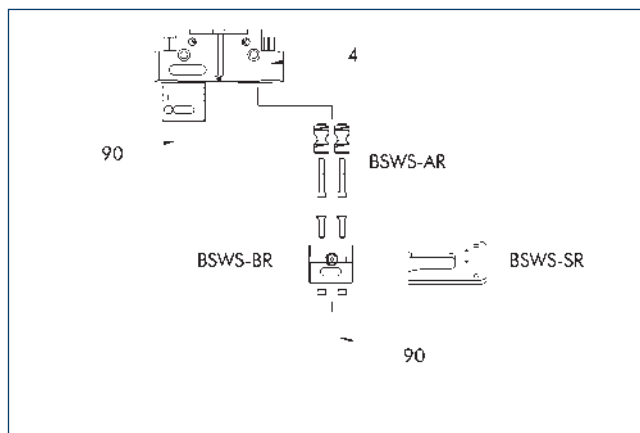
⑨ Customized gripper fingers

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
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

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

Jaw quick-change system BSWS-R



④ Grippers

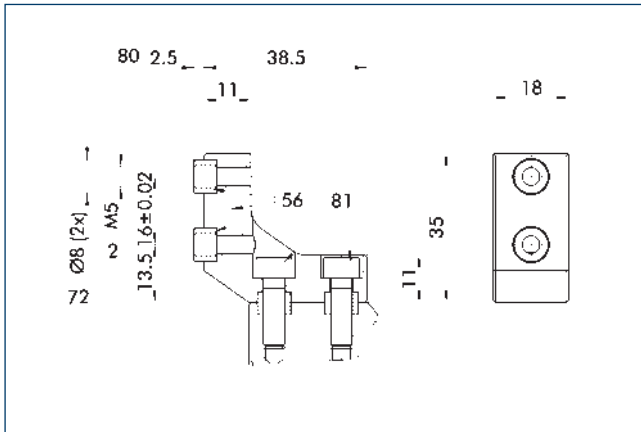
⑨ Customized gripper fingers

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
Jaw quick-change system adapter pin		
BSWS-AR 80	0300093	2
Quick-change jaw system base		
BSWS-BR 80	1555917	1
Storage system		
BSWS-SR 80	1555951	1
Attachment kit for proximity switch		
AS-IN40-BSWS-SR 80/100	1561458	1
Inductive proximity switches		
IN 40-S-M12	0301574	
IN 40-S-M8	0301474	
INK 40-S	0301555	

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

ZBA-L-plus 80 intermediate jaws

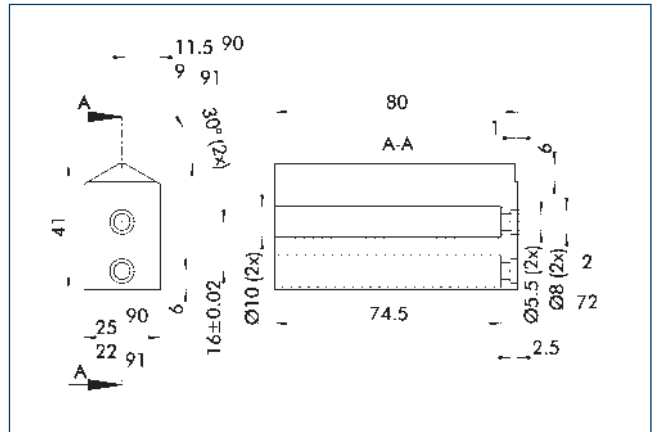


- ② Finger connection
- ⑤⑥ Included in the scope of delivery
- ⑦② Fit for centering sleeves
- ⑧⑩ Depth of the centering sleeve hole in the counter part
- ⑧① Not included in the scope of delivery

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 80	0311732	Aluminum	PGN-plus 80	1

Finger blanks ABR/SBR-PGZN-plus 80



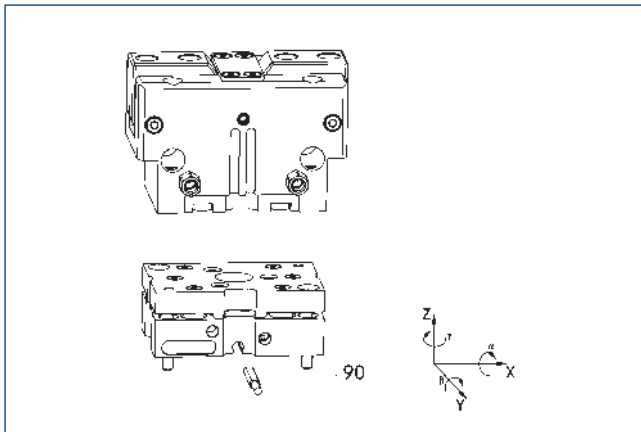
- ② Finger connection
- ⑦② Fit for centering sleeves
- ⑨⑩ ABR-PGZN-plus
- ⑨① SBR-PGZN-plus

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

Description	ID	Material	Scope of delivery
Finger blank			
ABR-PGZN-plus 80	0300011	Aluminum (3.4365)	1
SBR-PGZN-plus 80	0300021	Steel (1.7131)	1

- ① In the PGL-plus-P gripper series, the use of finger blanks results in a limitation of the closing stroke. Please check this in detail in advance using the CAD data and adjust the reworking of the fingers accordingly.

Tolerance compensation unit TCU

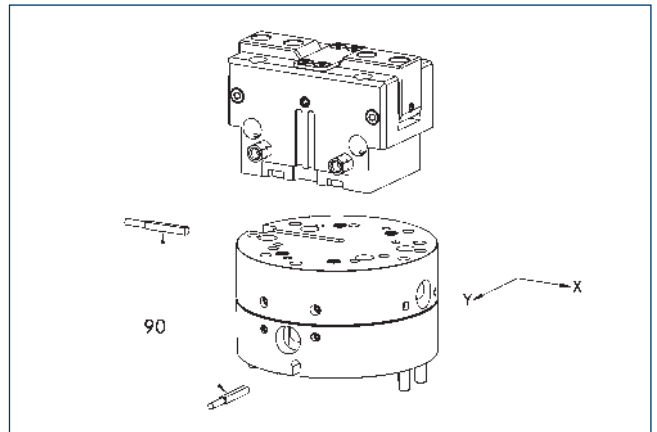


- ⑨⑩ Monitoring of locking

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

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

Compensation unit AGE-F

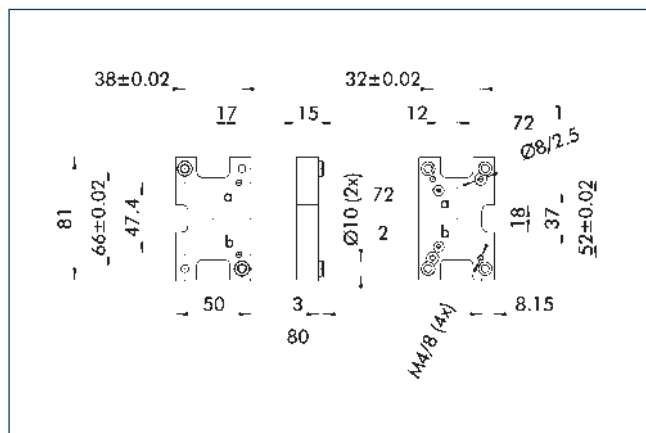


- ⑨⑩ Monitoring

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

Description	ID	Compensation XY	Reset force	Often combined
		[mm]	[N]	
Compensation unit				
AGE-F-XY-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

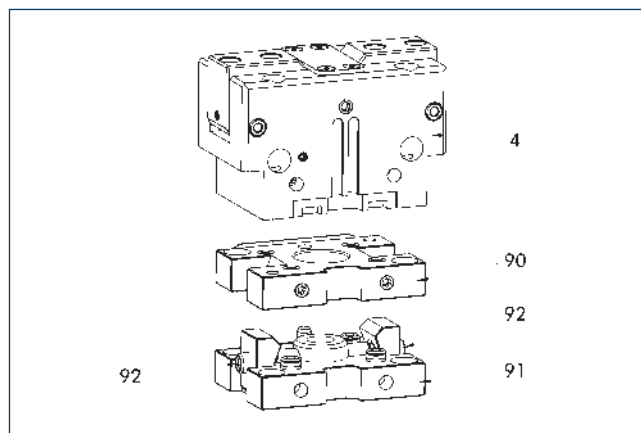


- ① Robot-side connection
- ② Tool-side connection
- ⑦ Fit for centering sleeves
- ⑧ Depth of the centering sleeve hole in the counter part

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-100-080-P	0305804	

Compact change system for grippers



- ④ Grippers
- ⑨ CWA compact change adapter
- ⑨ CWK compact change master
- ⑨ Locking mechanism

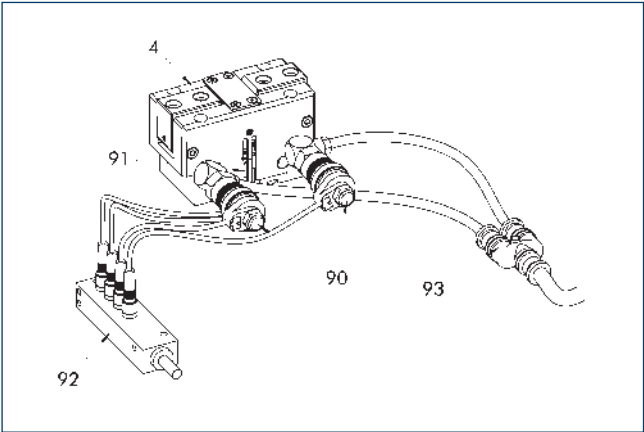
Grippers can be directly mounted without an adapter plate. For details see our catalog Gripping or Robot Accessories.

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

PWG-plus 80

Angular gripper

Add-on valves for single grippers



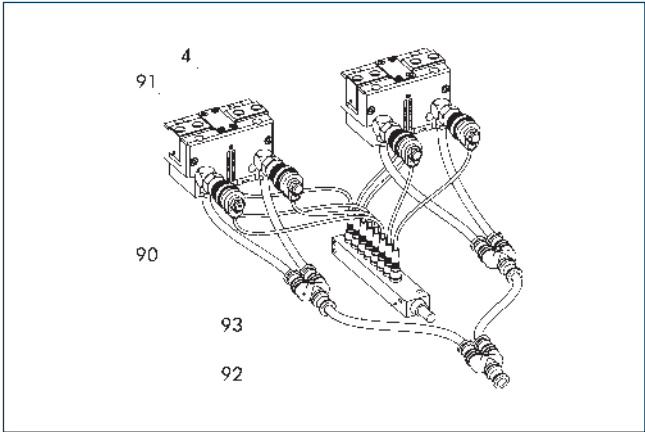
- ④ Grippers
- ⑨② Sensor distributor
- ⑨① Micro valves
- ⑨③ Y distributor
- ⑨① Sensor

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
Add-on valve set		
ABV-MV25-M5	0303326	
ABV-MV25-M5-V2-M8	0303392	
ABV-MV25-M5-V4-M8	0303362	●

- ① A set of add-on 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 or four inputs or outputs. Sensors for monitoring the gripper need to be ordered separately. Pneumatic hoses are not included in the scope of delivery.

Add-on valves for double grippers



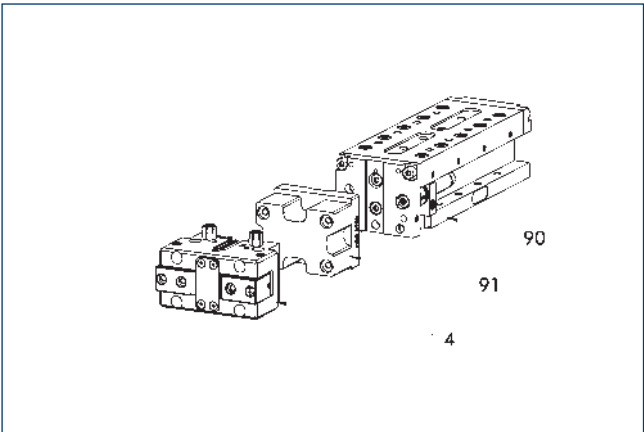
- ④ Grippers
- ⑨② Sensor distributor
- ⑨① Micro valves
- ⑨③ Y distributor
- ⑨① Sensor

The add-on valve set reduces 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 a distributor.

Description	ID	
Add-on valve set		
ABV-MV25-M5-V8-M8	0303363	

- ① A set of add-on valves ABV is required per double gripping unit. The ABV set contains four 3/2 microvalves, three Y-distributors for compressed air supply and a sensor distributor with eight inputs or outputs. Sensors for monitoring the gripper need to be ordered separately. Pneumatic hoses are not included in the scope of delivery.

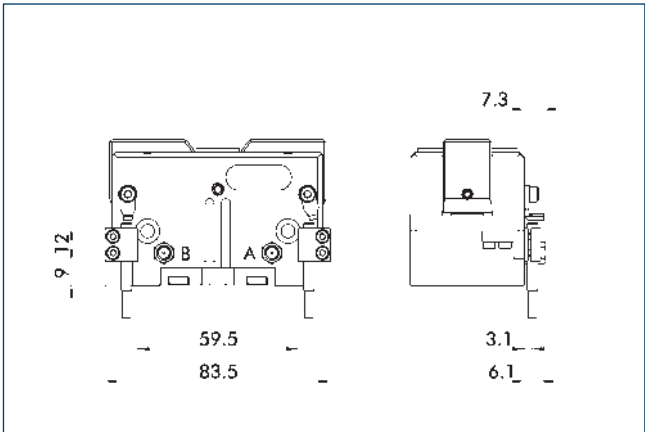
Modular Assembly Automation



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

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

Attachment kit for proximity switch IN 40

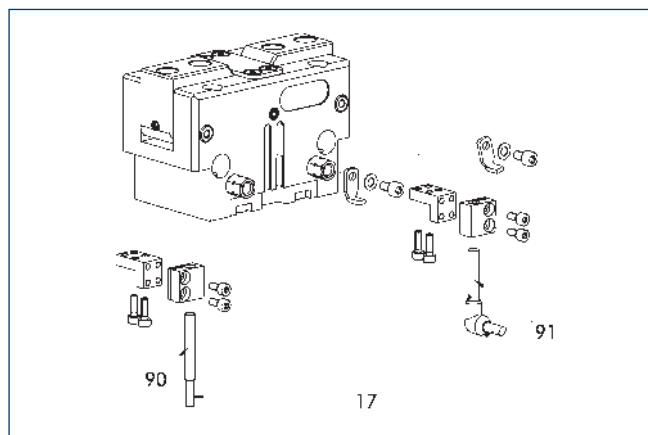


End position monitoring can be mounted with an attachment kit.

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

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

IN 40 inductive proximity switches



①⑦ Cable outlet

①⑨ Sensor IN...-SA

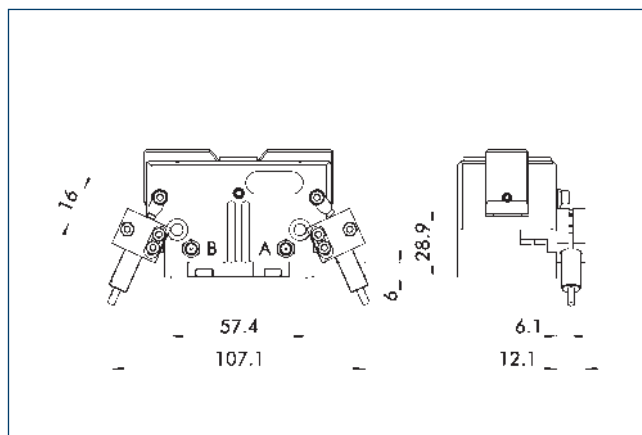
①⑩ Sensor IN ...

End position monitoring can be mounted with an attachment kit.

Description	ID	Often combined
Attachment kit for proximity switch		
AS-IN40-PWG-plus 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

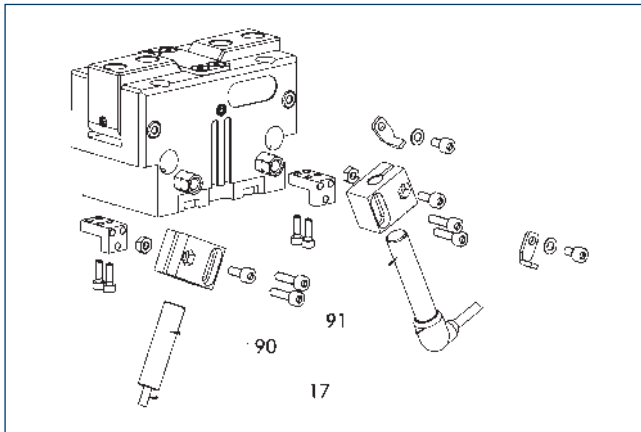


End position monitoring can be mounted with an attachment kit.

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



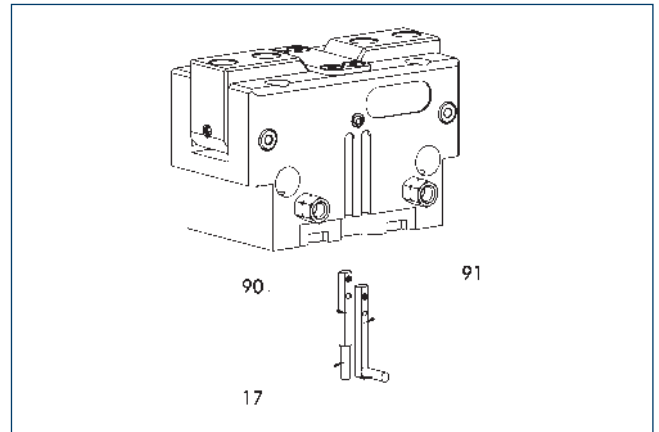
- ① Cable outlet
- ② Sensor IN...-SA
- ③ Sensor IN ...

End position monitoring can be mounted with an attachment kit.

Description	ID	Often combined
Attachment kit for proximity switch		
AS-IN80-PWG-plus 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	

- 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



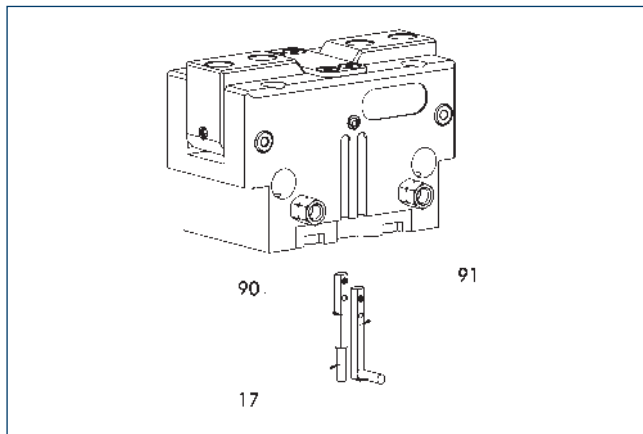
- ① Cable outlet
- ② Sensor MMS 22...-SA
- ③ Sensor MMS 22..

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 connector/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



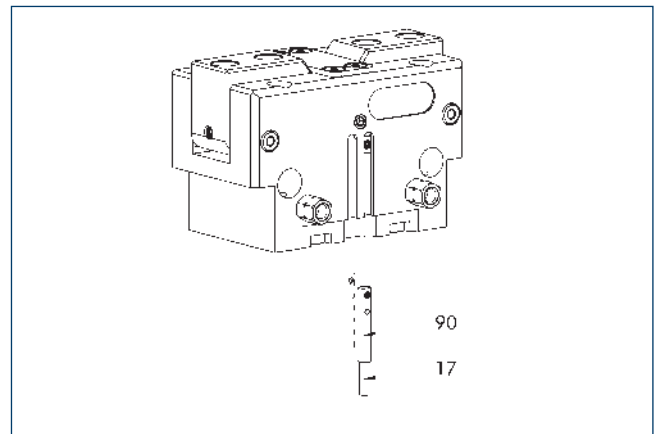
- ①⑦ Cable outlet ①⑨ Sensor MMS 22 ...-PI1-...-SA
①⑩ Sensor MMS 22 PI1-...

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

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

- 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



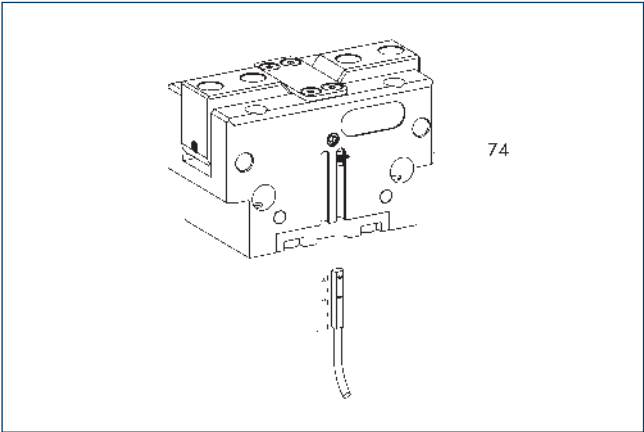
- ①⑦ Cable outlet ①⑩ MMS 22...-PI2-... sensor

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

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

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

MMS-P programmable magnetic switch



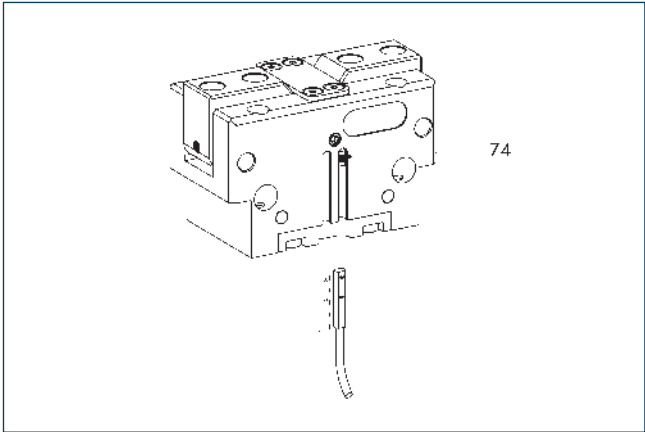
74 Limit stop for sensor

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

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

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

Programmable magnetic switch MMS-IO-Link



74 Limit stop for sensor

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

Description	ID	
Programmable magnetic switch		
MMS 22-IOI-M08	0315830	
MMS 22-IOI-M12	0315835	

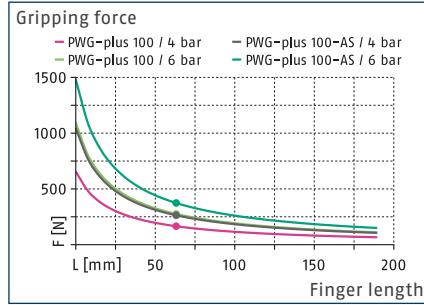
- ① One sensor is required for each gripper. No additional mounting kit is required – the gripper is equipped for use of the sensor by default. Further information and technical data can be found in the catalog chapter sensor systems.

PWG-plus 100

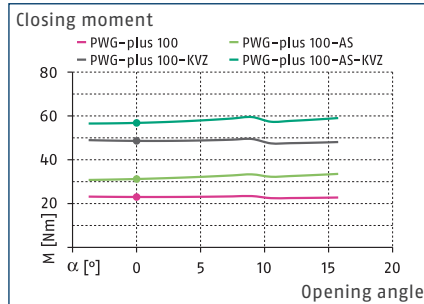
Angular gripper



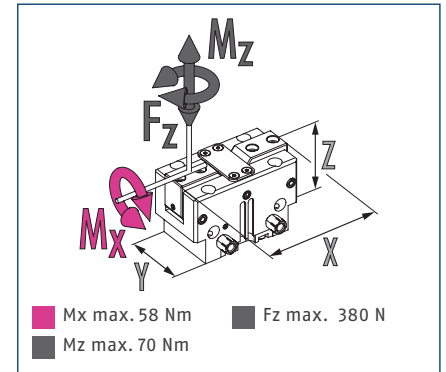
Gripping force O.D. gripping



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

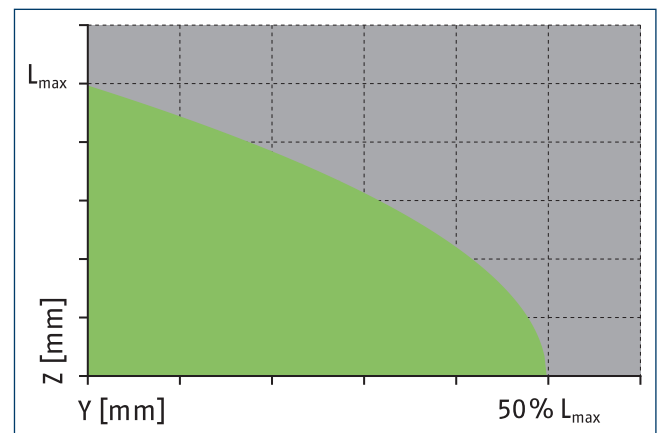
Description		PWG-plus 100	PWG-plus 100-AS
ID		0311640	0311641
Opening angle per jaw	[°]	15	15
Closed angle per jaw	[°]	3	3
Closing moment	[Nm]	23	31.2
Closing moment generated by spring	[Nm]		8.2
Weight	[kg]	0.76	0.95
Recommended workpiece weight	[kg]	1.4	1.4
Cylinder volume per double stroke	[cm³]	40.5	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 inertia per chuck jaw	[kgcm²]	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
Options and their characteristics			
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

Technical drawing of a mechanical assembly, showing multiple views and dimensions. The drawing includes the following components and dimensions:

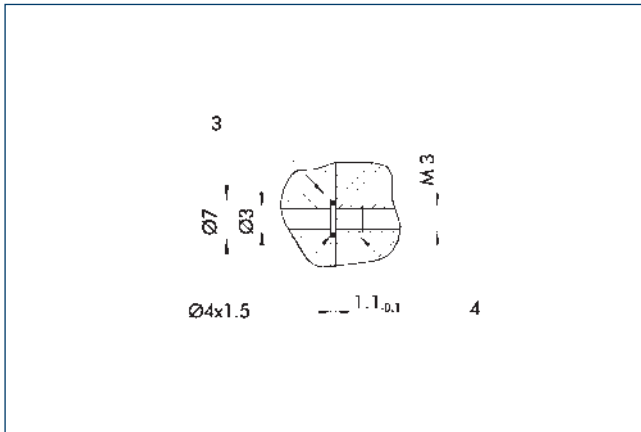
- Top View (Left):** Dimensions include 20 ± 0.02 , 20 ± 0.02 , 12 ± 0.02 , 34 ± 0.02 , 22 , 36.1 , 27.8 , 11 , 46 , and 22 . Features include $M3/8.5$ (4x) and $M5/6$ (2x).
- Front View (Left):** Dimensions include 90 , 49 , $72 \text{ } \varnothing 10$ (2x), $G1/8''/7$ (2x), 24 , 15 , 6 , 45 , $15^\circ_{+0.1}^\circ$, $3^\circ_{+0.1}^\circ$, $M5/6$, and 38 ± 0.02 . Features include $M3/3$ (2x) and 66 ± 0.02 .
- Side View (Left):** Dimensions include 43 , 43 , 12 , 18 , 14 , 4.75 , and $M2.5/4$ (2x).
- Front View (Right):** Dimensions include 80 , 3 , 28 , $M6$ (4x), 1 , 80 , 3 , 14 , 29 , $\varnothing 5.1$ (4x), $\varnothing 6.6$ (2x), $\varnothing 11$ (2x), $\varnothing 9$ (4x), 25 ± 0.02 , $M5/6$ (2x), 15 , 80 , 24 , 14.4 , $72 \text{ } \varnothing 10$ (4x), 45 , 62 , 65 , 66 ± 0.02 , 49 , $M5/6$, $M6$ (4x) 2, 98 , 100 , and 62.5 . Features include $A-A$, $B-B$, A , B , a , b , and s .

⑨0 Sensor MMS 22..

A schematic diagram of a vertical lathe machine. It features a vertical table with a rotating workpiece mounted on it. A vertical tool holder is positioned above the workpiece, and a vertical axis is indicated by a line with an 'x' at the top. The diagram is labeled with 'y' and 'x' to indicate the coordinate system.



Hose-free direct connection M3

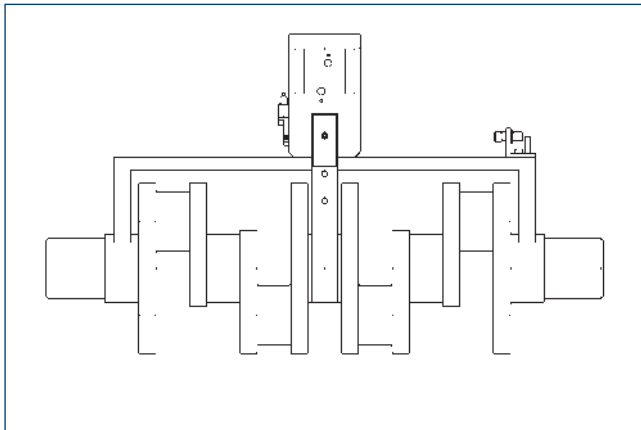


③ Adapter

④ Grippers

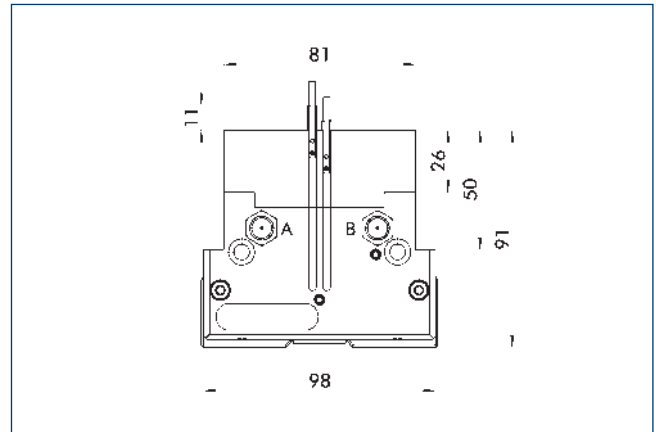
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

Shaft support



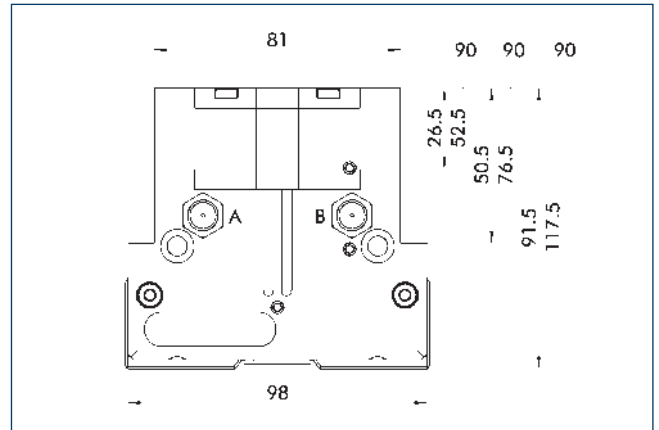
The complete assembly group for handling of cranks and cam shafts can be supplied on request.

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.

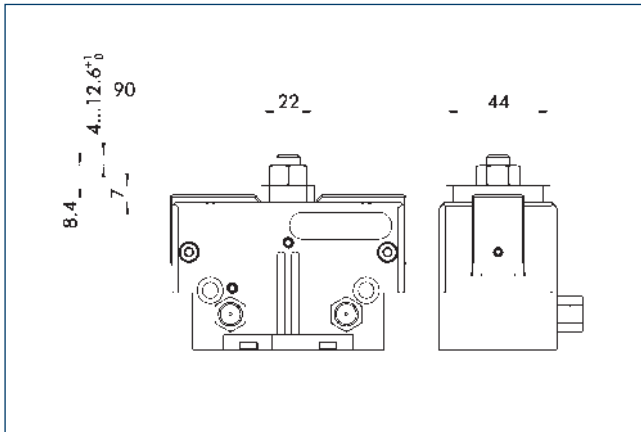
Power booster version



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

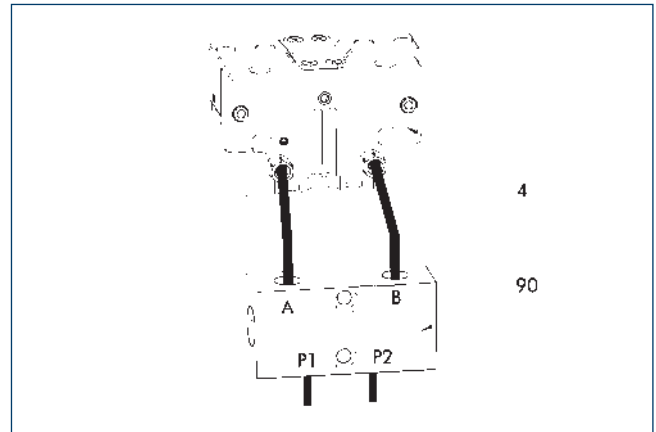


⑨⑩ Max. adjustment travel

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

Description	ID
Stroke adjustment	
HVE-PWG-plus 100	0311743

SDV-P pressure maintenance valve



④ Grippers

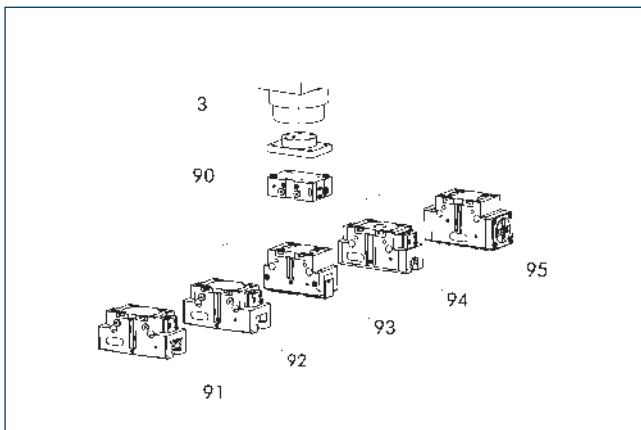
⑨⑩ SDV-P pressure maintenance valve

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.

SDV-P E-P pressure maintenance valve

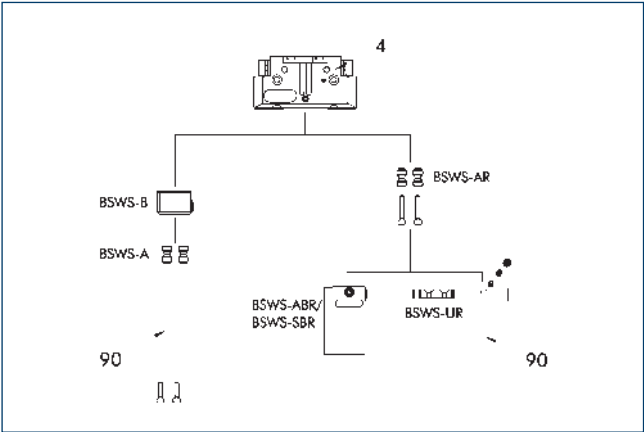


- ③ Adapter
- ⑨⑩ SDV-P E-P pressure maintenance valve
- ⑨① 2-finger parallel gripper PGN-plus/PGN-plus-P
- ⑨② 2-finger parallel gripper JGP-P
- ⑨③ 2-finger angular gripper PWG-plus
- ⑨④ 2-finger parallel gripper PGB
- ⑨⑤ Sealed DPG-plus gripper

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

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

BSWS jaw quick-change jaw systems



④ Grippers

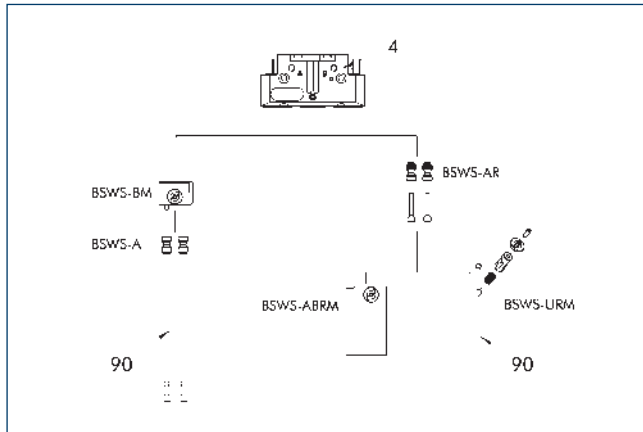
⑨⑩ Customized gripper fingers

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

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

Jaw quick-change system BSWS-M



④ Grippers

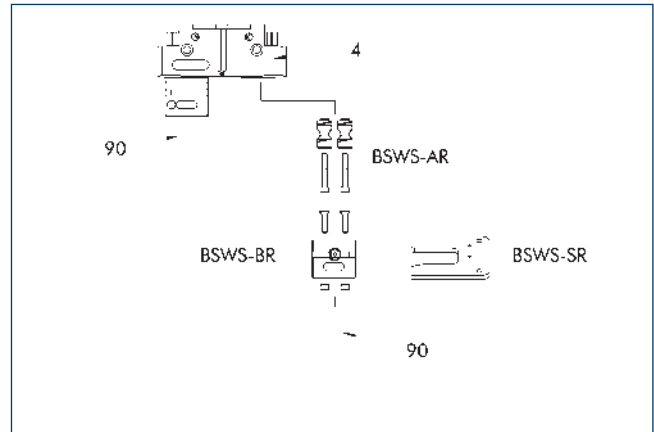
⑨ Customized gripper fingers

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

Jaw quick-change system BSWS-R



④ Grippers

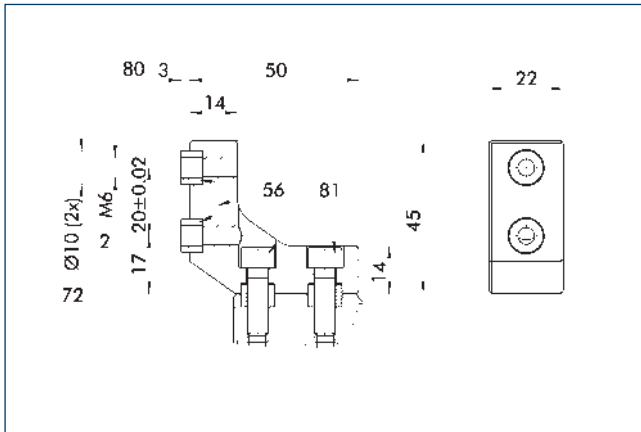
⑨ Customized gripper fingers

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
Jaw quick-change system adapter pin		
BSWS-AR 100	0300094	2
Quick-change jaw system base		
BSWS-BR 100	1555933	1
Storage system		
BSWS-SR 100	1555959	1
Attachment kit for proximity switch		
AS-IN40-BSWS-SR 80/100	1561458	1
Inductive proximity switches		
IN 40-S-M12	0301574	
IN 40-S-M8	0301474	
INK 40-S	0301555	

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

ZBA-L-plus 100 intermediate jaws

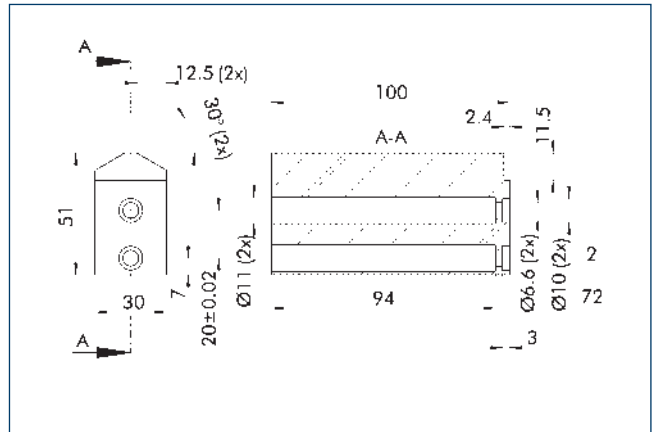


- ② Finger connection
- ⑤⑥ Included in the scope of delivery
- ⑦② Fit for centering sleeves
- ⑧① Depth of the centering sleeve hole in the counter part
- ⑧① Not included in the scope of delivery

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 100	0311742	Aluminum	PGN-plus 100	1

Finger blanks ABR/SBR-PGZN-plus 100



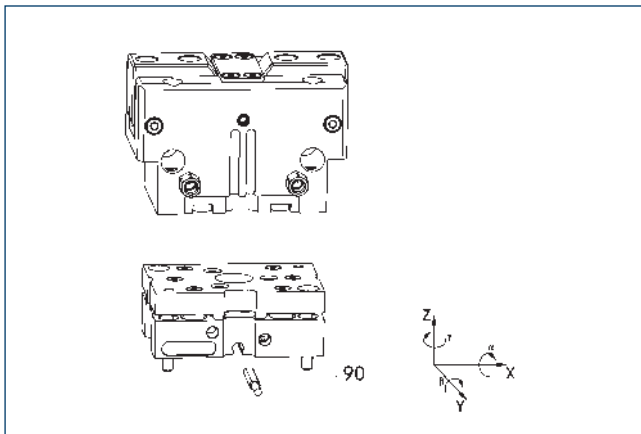
- ② Finger connection
- ⑦② Fit for centering sleeves

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 (3.4365)	1
SBR-PGZN-plus 100	0300022	Steel (1.7131)	1

- ① In the PGL-plus-P gripper series, the use of finger blanks results in a limitation of the closing stroke. Please check this in detail in advance using the CAD data and adjust the reworking of the fingers accordingly.

Tolerance compensation unit TCU

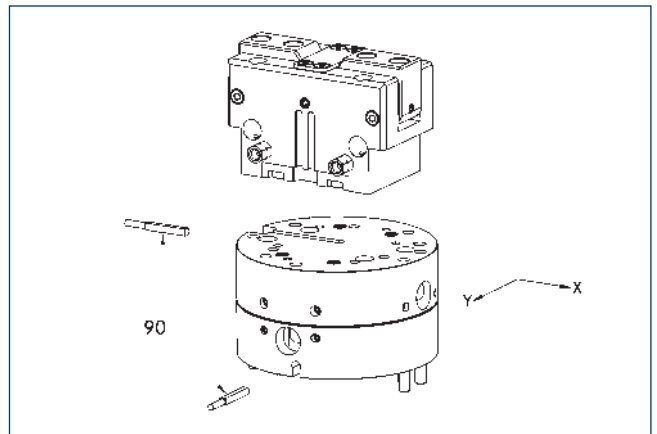


- ⑨① Monitoring of locking

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	Often combined
Compensation unit				
TCU-P-100-2-MV	0324808	yes	$\pm 1^\circ/\pm 1,5^\circ/\pm 1,2^\circ$	●
TCU-P-100-3-0V	0324811	no	$\pm 1^\circ/\pm 1,5^\circ/\pm 1,2^\circ$	

Compensation unit AGE-F

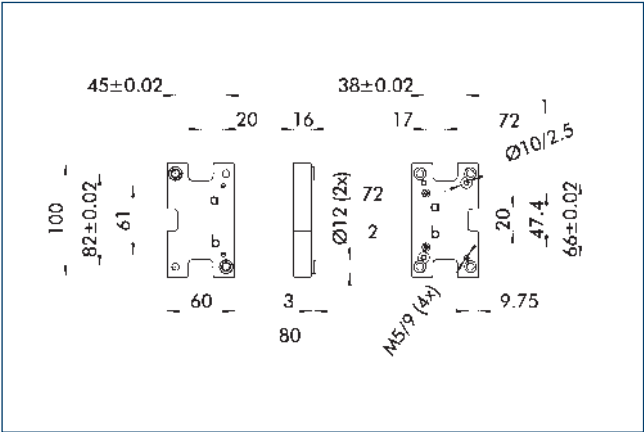


- ⑨① Monitoring

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-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

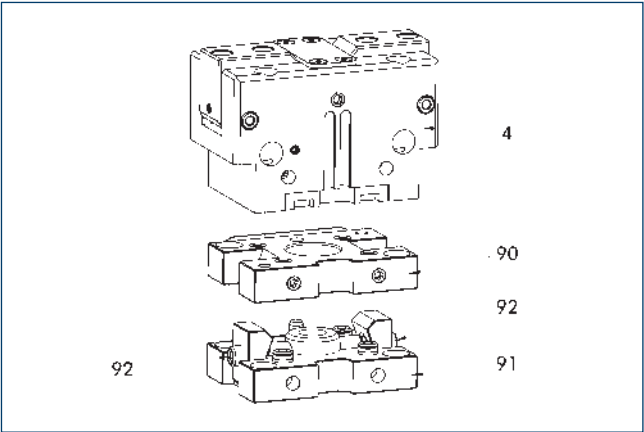


- ① Robot-side connection
- ② Tool-side connection
- ⑦② Fit for centering sleeves
- ⑧⑦② Depth of the centering sleeve hole in the counter part

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-125-100-P	0305829	

Compact change system for grippers

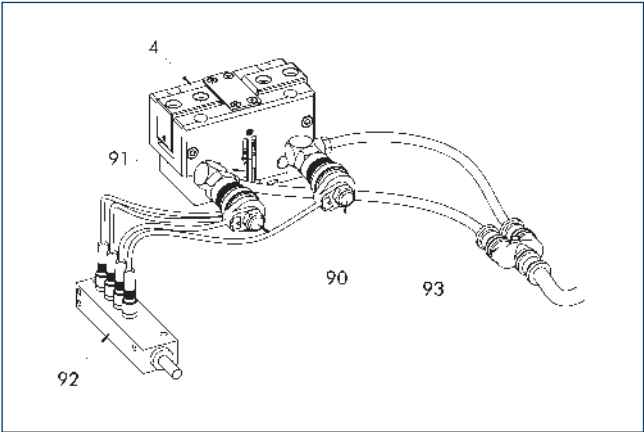


- ④ Grippers
- ⑨① CWK compact change master
- ⑨① CWA compact change adapter
- ⑨② Locking mechanism

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

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

Add-on valves for single grippers



- ④

Grippers
- ⑨②

Sensor distributor
- ⑨①

Micro valves
- ⑨③

Y distributor
- ⑨①

Sensor

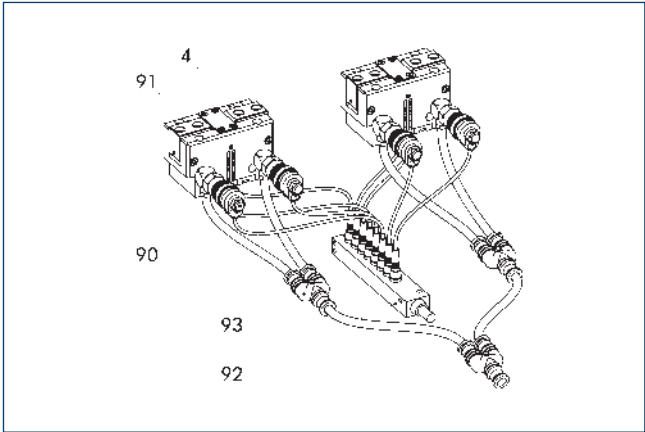
The set of attachment valves reduces the compressed air consumption as there is no need to ventilate or bleed the supply lines. This can also reduce cycle time. The hose-free direct assembly of the micro valves reduces the hosing effort for the gripper. To further simplify electrical connection of the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

Description	ID	Often combined
Add-on valve set		
ABV-MV30-G1/8	0303328	
ABV-MV30-G1/8-V2-M8	0303396	
ABV-MV30-G1/8-V4-M8	0303366	●

- ①

A set of add-on 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 or four inputs or outputs. Sensors for monitoring the gripper need to be ordered separately. Pneumatic hoses are not included in the scope of delivery.

Add-on valves for double grippers



- ④

Grippers
- ⑨②

Sensor distributor
- ⑨①

Micro valves
- ⑨③

Y distributor
- ⑨①

Sensor

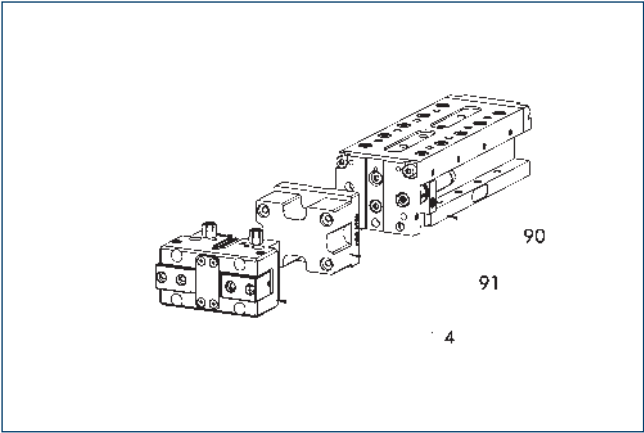
The add-on valve set reduces compressed air consumption as there is no need to ventilate or bleed the supply lines. This can also reduce cycle time. The hose-free direct assembly of the micro valves reduces the hosing effort for the gripper. To further simplify electrical connection of the valves and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

Description	ID	
Add-on valve set		
ABV-MV30-G1/8-V8-M8	0303367	

- ①

A set of add-on valves ABV is required per double gripping unit. The ABV set contains four 3/2 microvalves, three Y-distributors for compressed air supply and a sensor distributor with 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

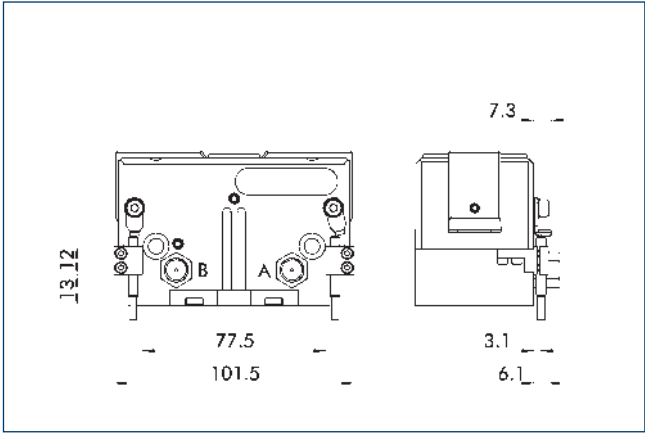
Grippers
- ⑨①

ASG adapter plate
- ⑨①

Linear module CLM/KLM/LM/ELP/
ELM/ELS/HLM

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

Attachment kit for proximity switch IN 40



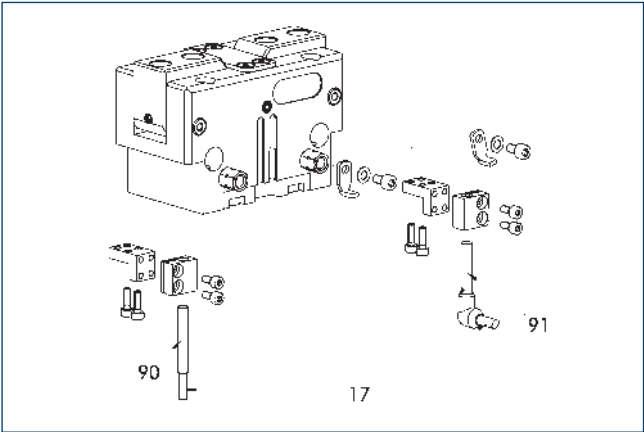
End position monitoring can be mounted with an attachment kit.

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

- ①

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

IN 40 inductive proximity switches



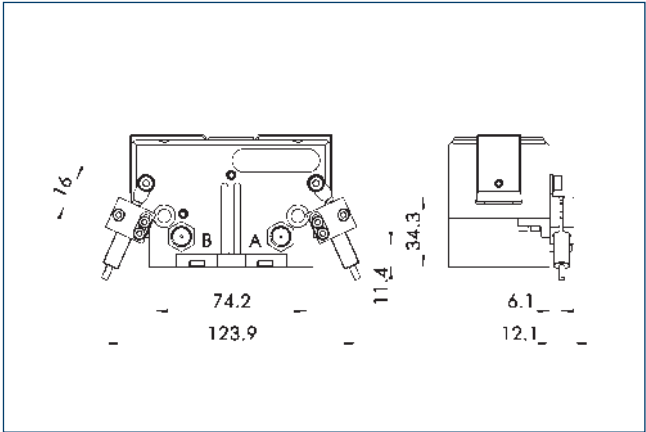
- ①⑦ Cable outlet
- ①⑨ Sensor IN...-SA
- ①⑩ Sensor IN ...

End position monitoring can be mounted with an attachment kit.

Description	ID	Often combined
Attachment kit for proximity switch		
AS-IN40-PWG-plus 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

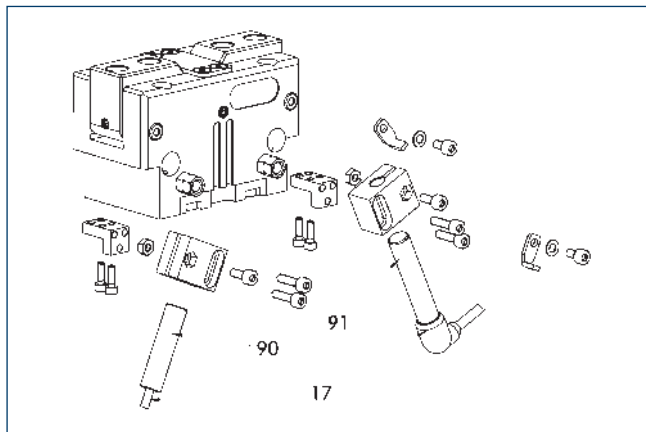


End position monitoring can be mounted with an attachment kit.

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



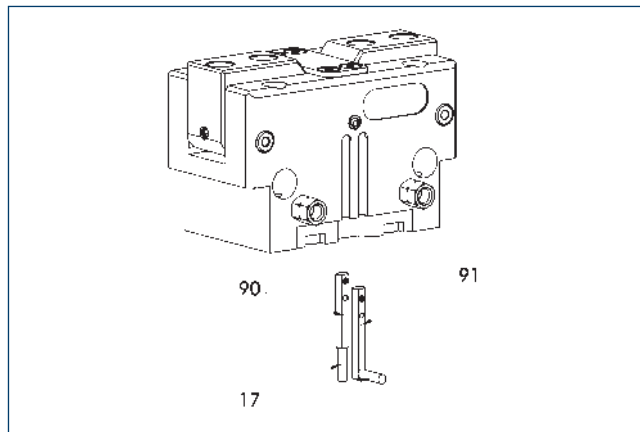
- ① Cable outlet
② Sensor IN...-SA
③ Sensor IN ...

End position monitoring can be mounted with an attachment kit.

Description	ID	Often combined
Attachment kit for proximity switch		
AS-IN80-PWG-plus 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



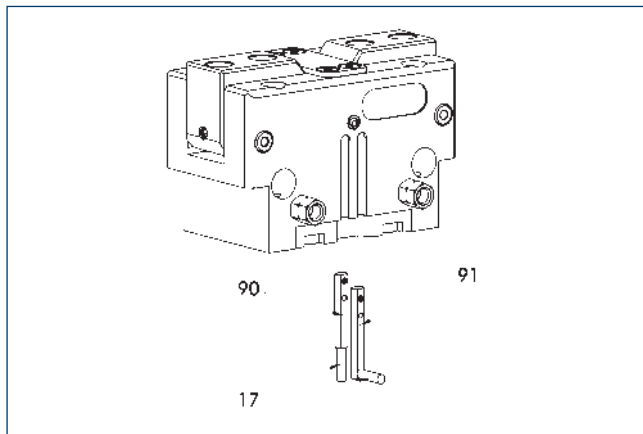
- ① Cable outlet
② Sensor MMS 22...-SA
③ Sensor MMS 22..

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 connector/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



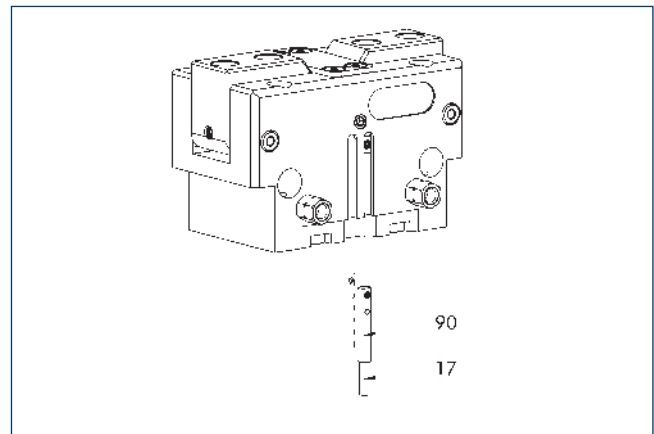
- ①⑦ Cable outlet ①⑨ Sensor MMS 22 ...-PI1-...-SA
①⑩ Sensor MMS 22 PI1-...

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

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

- 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



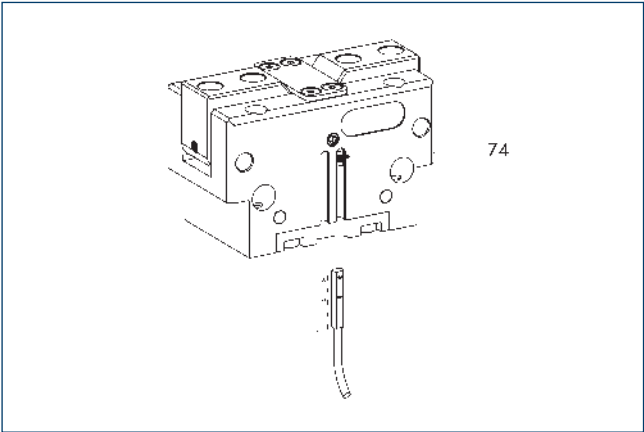
- ①⑦ Cable outlet ①⑩ MMS 22...-PI2-... sensor

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

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

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

MMS-P programmable magnetic switch



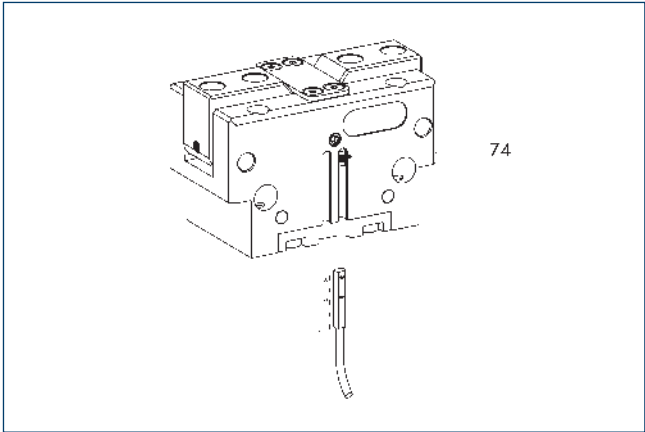
74 Limit stop for sensor

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

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

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

Programmable magnetic switch MMS-IO-Link



74 Limit stop for sensor

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

Description	ID	
Programmable magnetic switch		
MMS 22-IOI-M08	0315830	
MMS 22-IOI-M12	0315835	

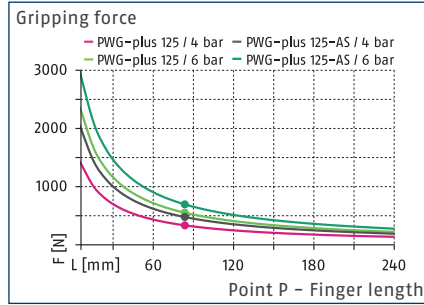
- ① One sensor is required for each gripper. No additional mounting kit is required – the gripper is equipped for use of the sensor by default. Further information and technical data can be found in the catalog chapter sensor systems.

PWG-plus 125

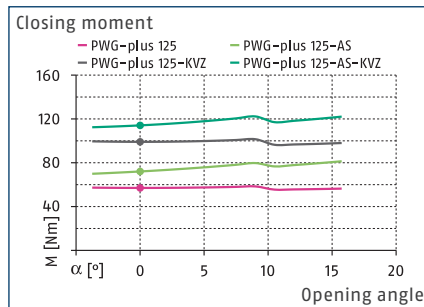
Angular gripper



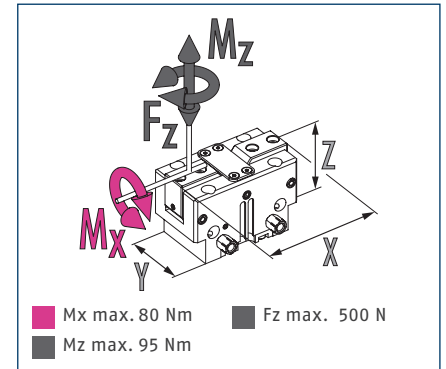
Gripping force O.D. gripping



Closing moment curve



Dimensions and maximum loads

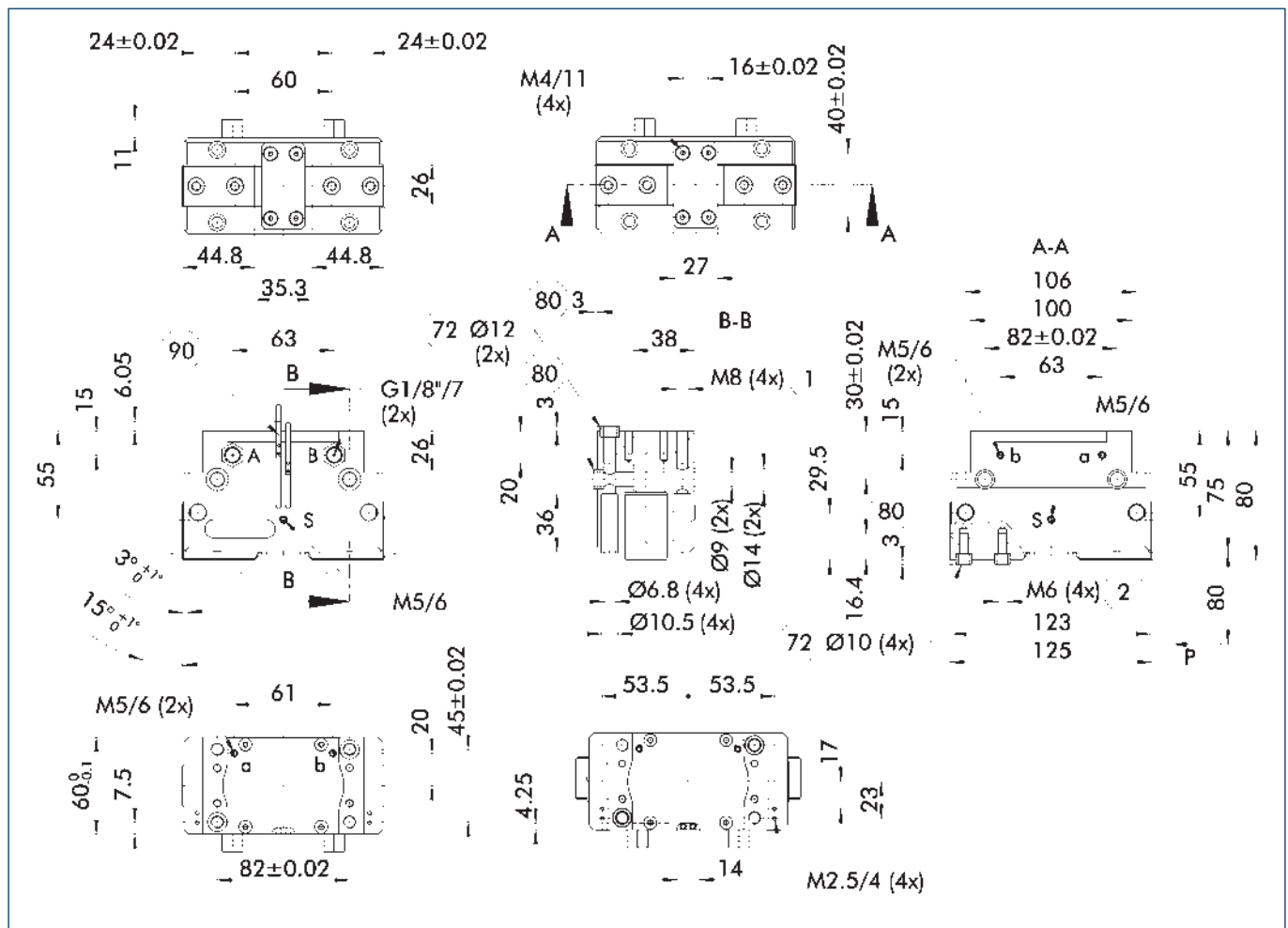


① The indicated torques and forces are static values, apply for each base jaw, and may occur simultaneously.

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

Main view



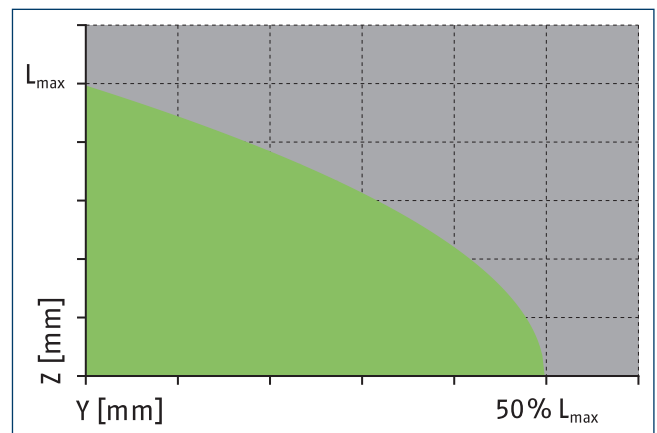
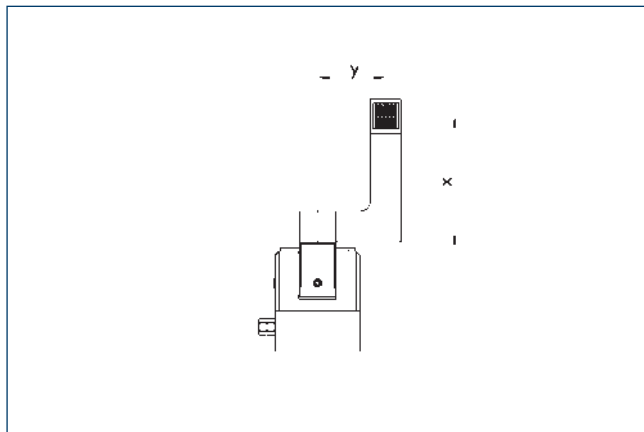
The drawing shows the gripper in the basic version with closed jaws, without dimensional consideration of the options described below.

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

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

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

Maximum permitted finger projection

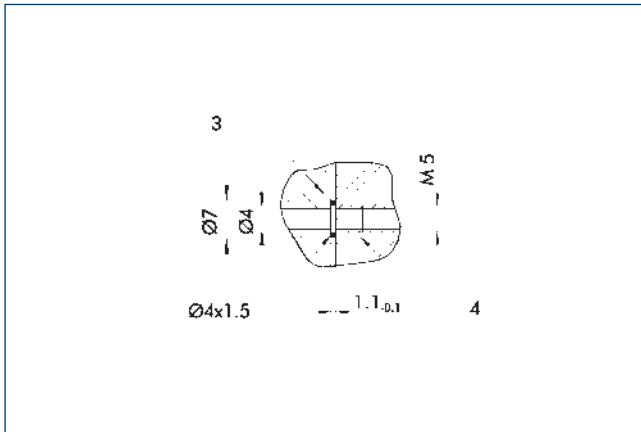


■ Permitted range

■ Inadmissible range

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

Hose-free direct connection M5

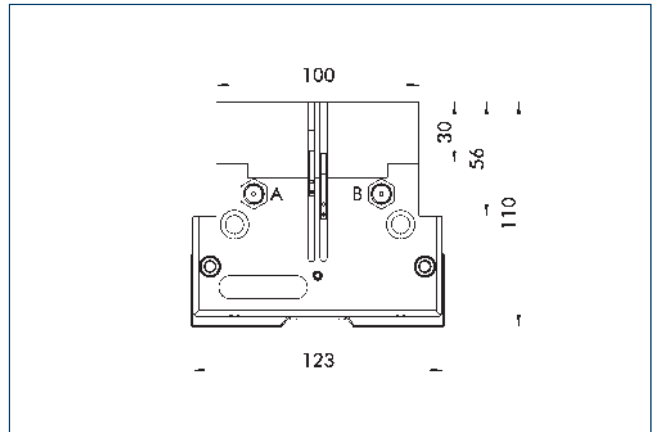


③ Adapter

④ Grippers

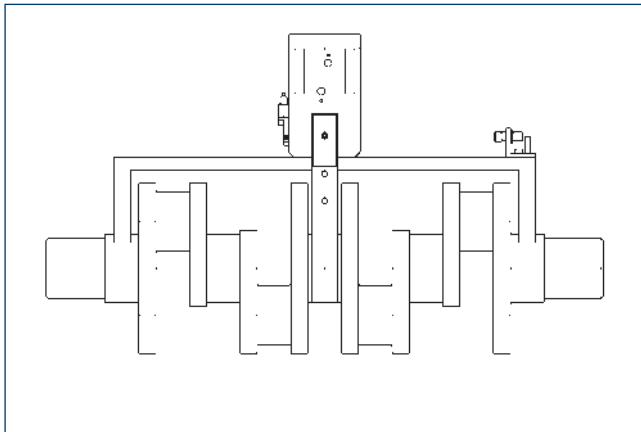
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

Gripping force maintenance device



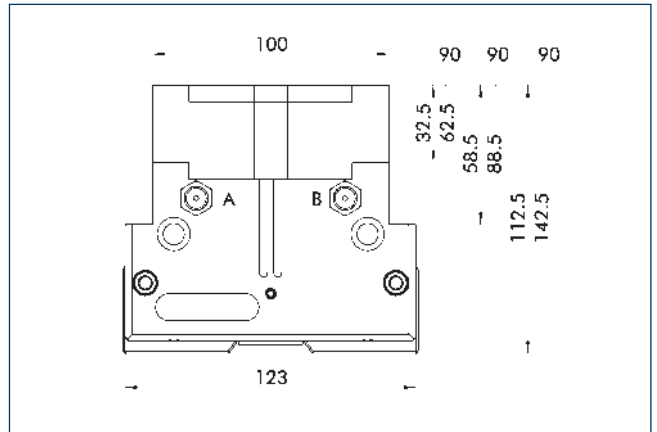
The mechanical gripping force maintenance ensures that a minimum clamping force will be applied even in case of pressure drop. This acts as closing force in the AS version. Besides this, the gripping force maintenance can be used to increase gripping force or for single actuated gripping.

Shaft support



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

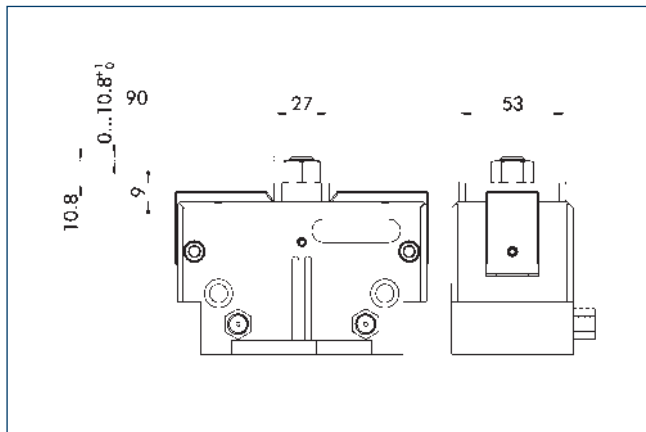
Power booster version



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

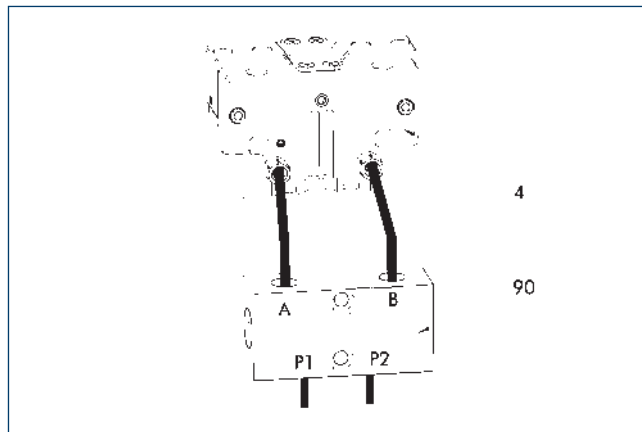


⑨⑩ Max. adjustment travel

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

Description	ID	
Stroke adjustment		
HVE-PWG-plus 125	0311753	

SDV-P pressure maintenance valve



④ Grippers

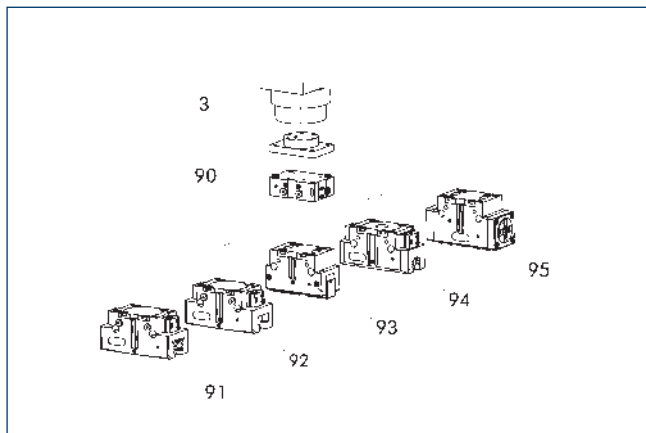
⑨⑩ SDV-P pressure maintenance valve

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.

SDV-P E-P pressure maintenance valve

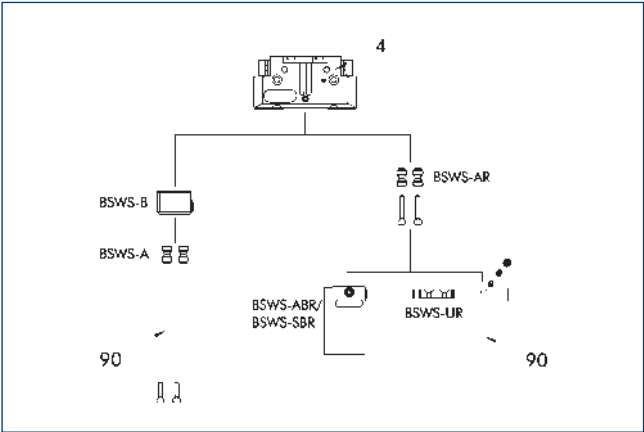


- ③ Adapter
- ⑨⑩ SDV-P E-P pressure maintenance valve
- ⑨① 2-finger parallel gripper PGN-plus/PGN-plus-P
- ⑨② 2-finger parallel gripper JGP-P
- ⑨③ 2-finger angular gripper PWG-plus
- ⑨④ 2-finger parallel gripper PGB
- ⑨⑤ Sealed DPG-plus gripper

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

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

BSWS jaw quick-change jaw systems



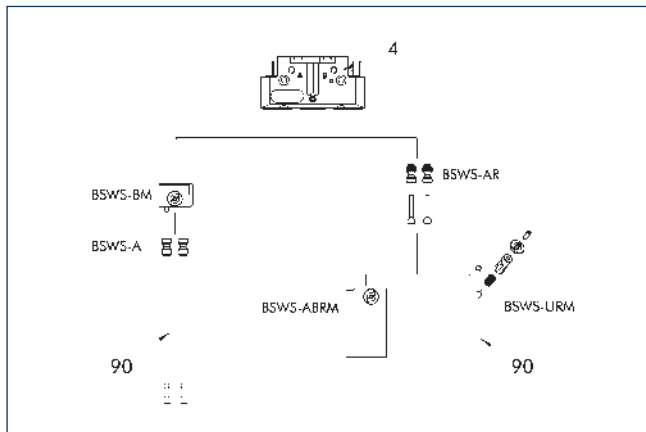
- ④ Grippers
- ⑨⑩ Customized gripper fingers

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

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

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

Jaw quick-change system BSWS-M



④ Grippers

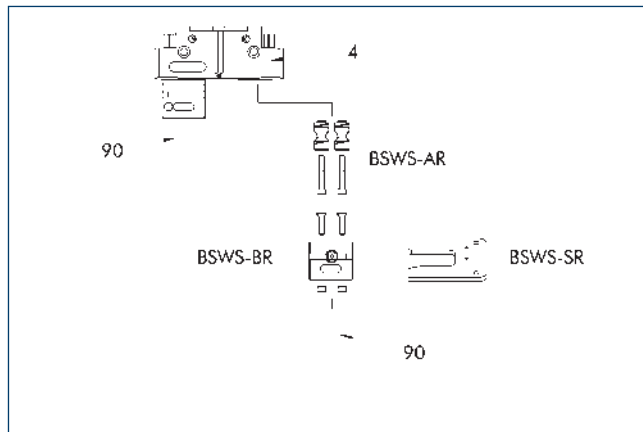
⑨ Customized gripper fingers

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

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

Jaw quick-change system BSWS-R



④ Grippers

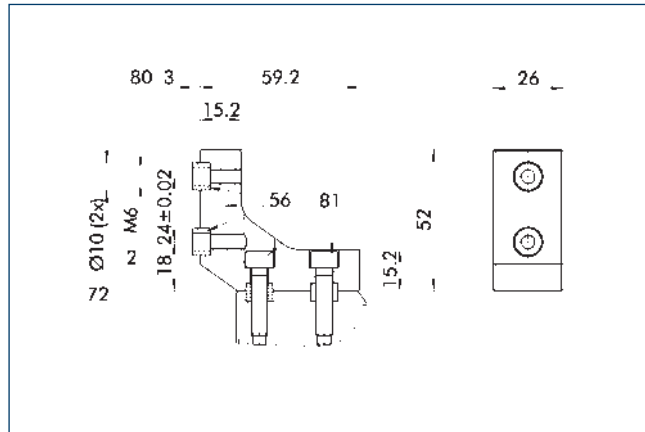
⑨ Customized gripper fingers

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

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

ZBA-L-plus 125 intermediate jaws

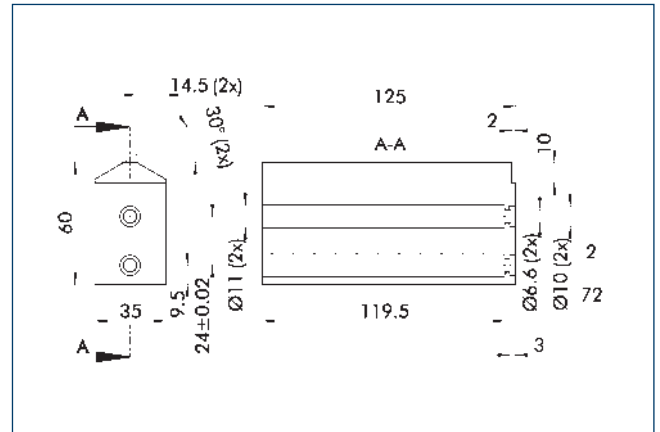


- ② Finger connection
- ⑤6 Included in the scope of delivery
- ⑦2 Fit for centering sleeves
- ⑧0 Depth of the centering sleeve hole in the counter part
- ⑧1 Not included in the scope of delivery

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



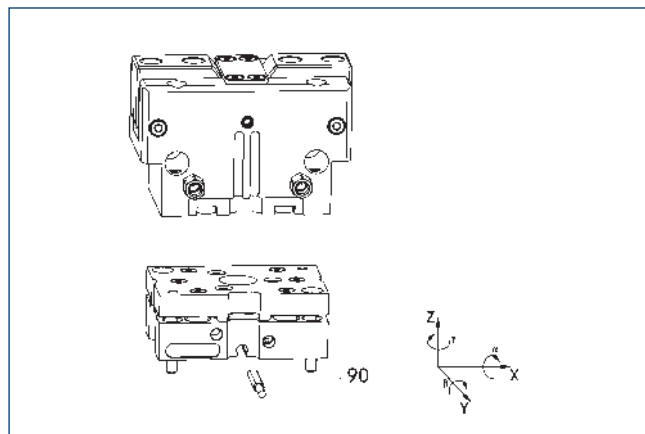
- ② Finger connection
- ⑦2 Fit for centering sleeves

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 (3.4365)	1
SBR-PGZN-plus 125	0300023	Steel (1.7131)	1

- ① In the PGL-plus-P gripper series, the use of finger blanks results in a limitation of the closing stroke. Please check this in detail in advance using the CAD data and adjust the reworking of the fingers accordingly.

Tolerance compensation unit TCU

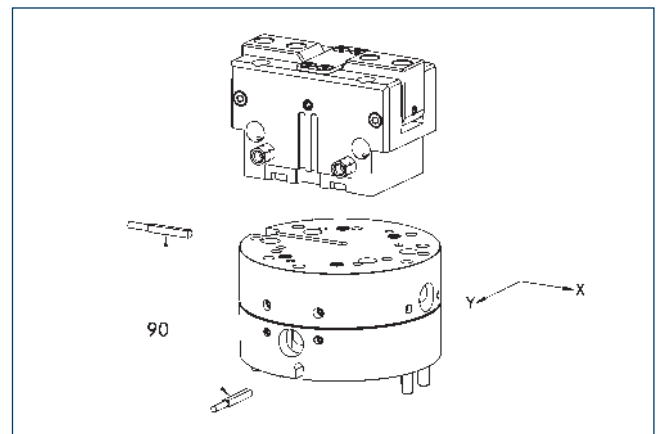


- ⑨0 Monitoring of locking

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°	

Compensation unit AGE-F

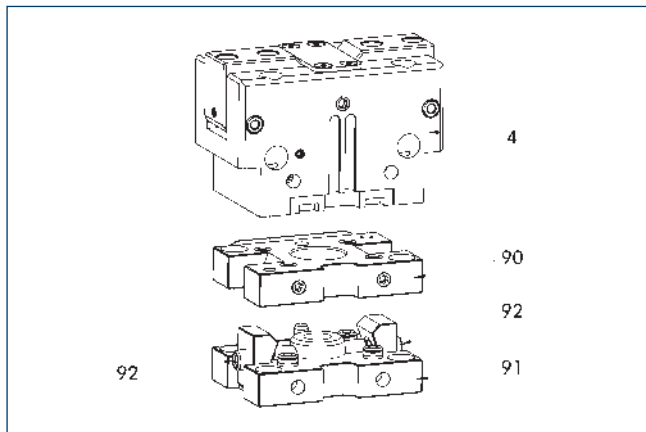


- ⑨0 Monitoring

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

Compact change system for grippers

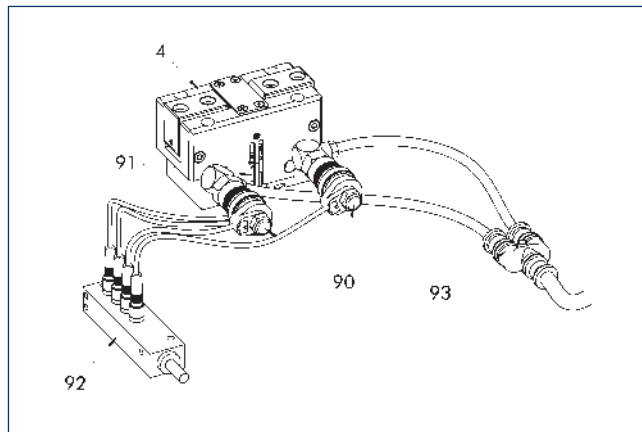


- ④ Grippers
- ⑨① CWK compact change master
- ⑨① CWA compact change adapter
- ⑨② Locking mechanism

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

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

Add-on valves for single grippers



- 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.

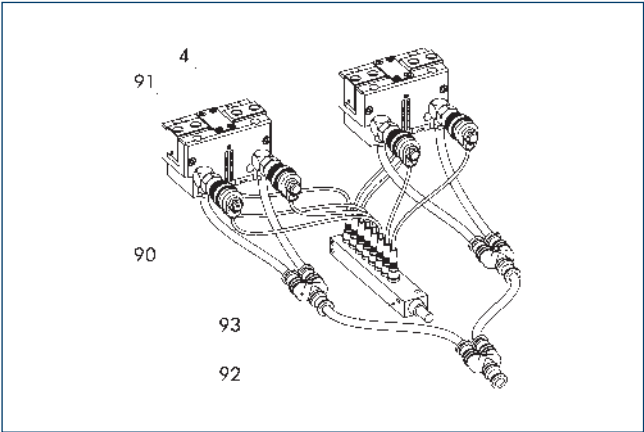
Description	ID	Often combined
Add-on valve set		
ABV-MV30-G1/8	0303328	
ABV-MV30-G1/8-V2-M8	0303396	
ABV-MV30-G1/8-V4-M8	0303366	●

- ① A set of add-on 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 or four inputs or outputs. Sensors for monitoring the gripper need to be ordered separately. Pneumatic hoses are not included in the scope of delivery.

PWG-plus 125

Angular gripper

Add-on valves for double grippers



- ④

Grippers
- ⑨②

Sensor distributor
- ⑨①

Micro valves
- ⑨③

Y distributor
- ⑨④

Sensor

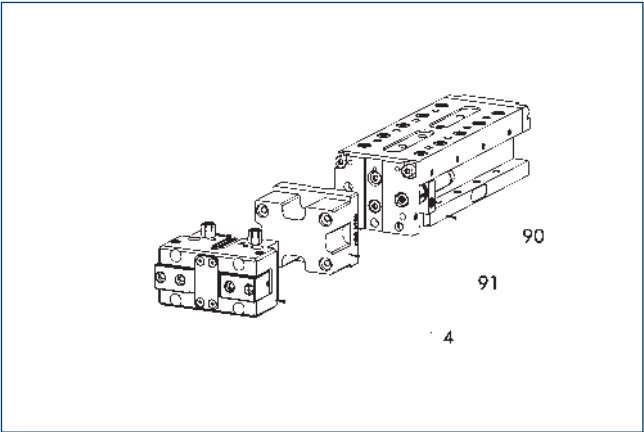
The add-on valve set reduces compressed air consumption as there is no need to ventilate or bleed the supply lines. This can also reduce cycle time. The hose-free direct assembly of the micro valves reduces the hosing effort for the gripper. To further simplify electrical connection of the valves and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

Description	ID	
Add-on valve set		
ABV-MV30-G1/8-V8-M8	0303367	

- ①

A set of add-on valves ABV is required per double gripping unit. The ABV set contains four 3/2 microvalves, three Y-distributors for compressed air supply and a sensor distributor with 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

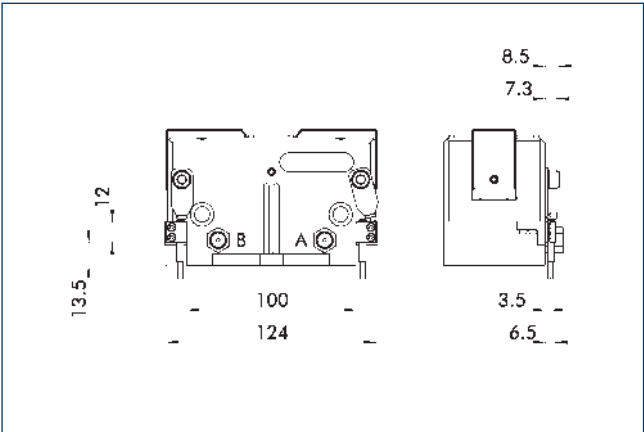
Grippers
- ⑨①

ASG adapter plate
- ⑨②

Linear module CLM/KLM/LM/ELP/ELM/ELS/HLM

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

Attachment kit for proximity switch IN 40



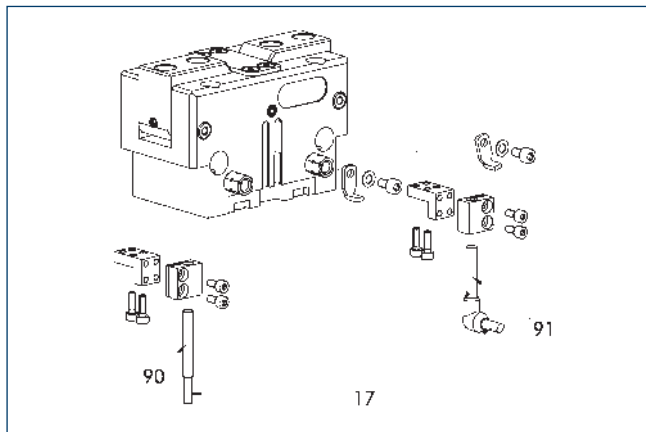
End position monitoring can be mounted with an attachment kit.

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

- ①

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

IN 40 inductive proximity switches



① Cable outlet

② Sensor IN..-SA

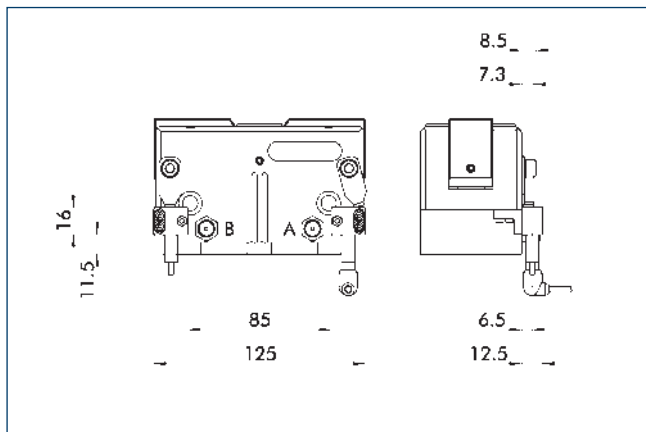
③ Sensor IN ...

End position monitoring can be mounted with an attachment kit.

Description	ID	Often combined
Attachment kit for proximity switch		
AS-IN40-PWG-plus 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

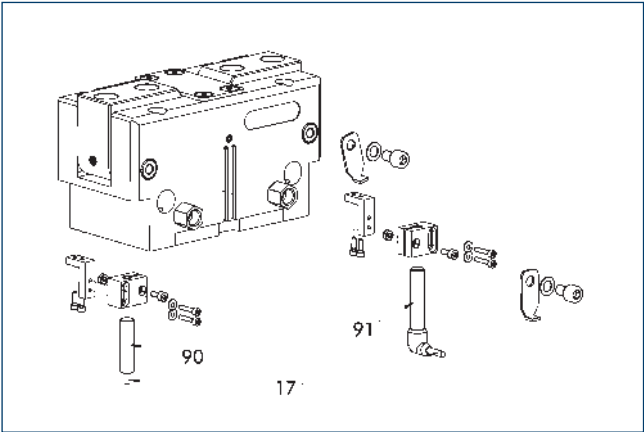


End position monitoring can be mounted with an attachment kit.

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



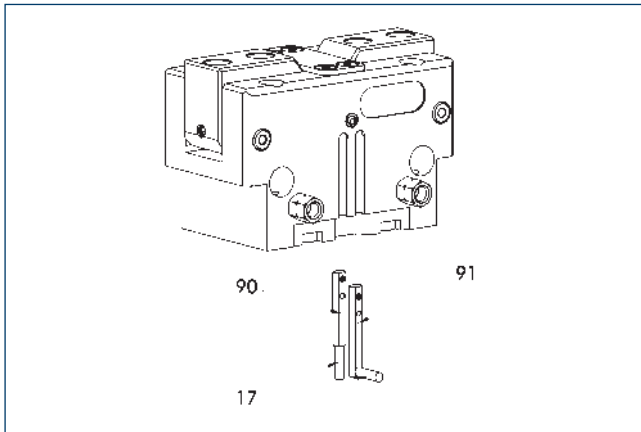
- 17 Cable outlet
- 91 Sensor IN..-SA
- 90 Sensor IN ...

End position monitoring can be mounted with an attachment kit.

Description	ID	Often combined
Attachment kit for proximity switch		
AS-IN80-PWG-plus 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.

Electronic magnetic switch MMS



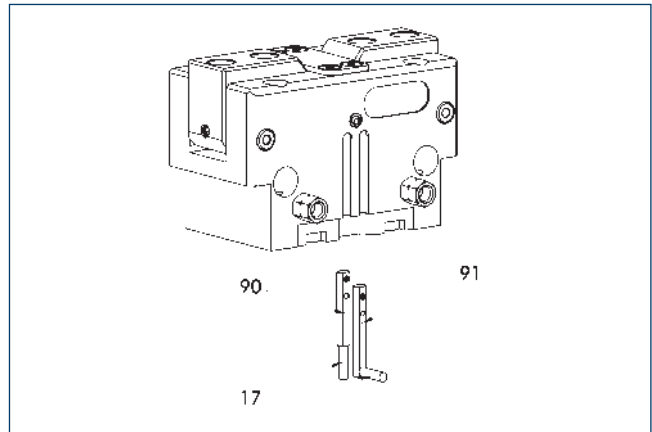
- ① Cable outlet
② Sensor MMS 22..

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 connector/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



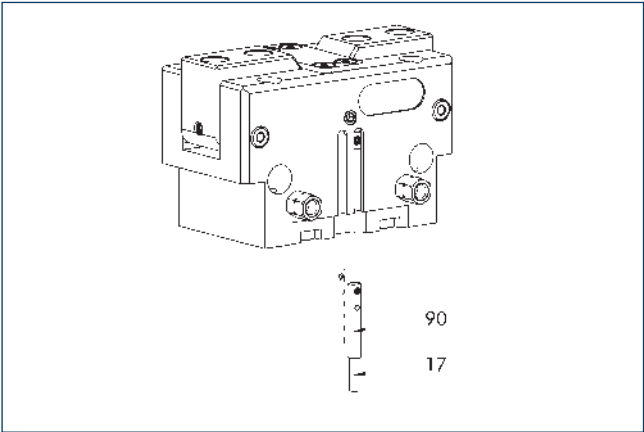
- ① Cable outlet
② Sensor MMS 22 ..-PI1-...-SA

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, ID 0301030) or ST plug teaching tool (optional). End position monitoring for mounting in the C-slot. If the ST plug teaching tools are listed in the table provided, teaching is only possible with the ST teaching tools.

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

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

Programmable magnetic switch MMS 22-PI2



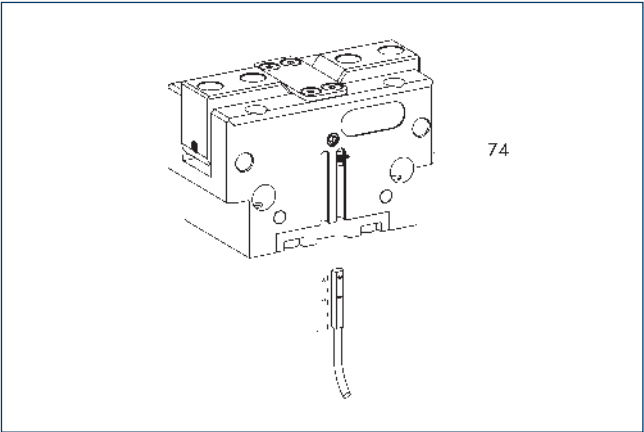
17 Cable outlet 90 MMS 22...-PI2-... sensor

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

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

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

MMS-P programmable magnetic switch



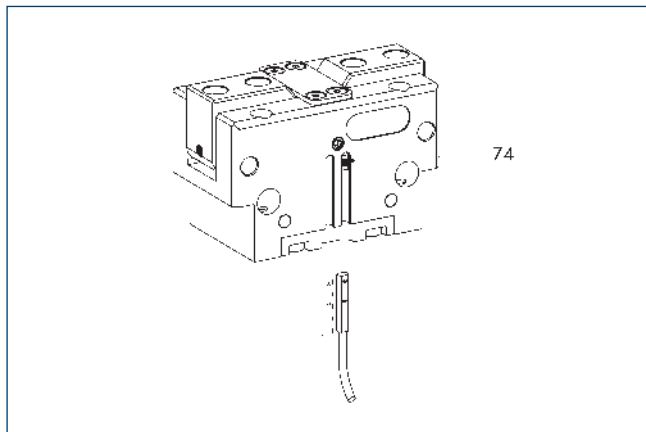
74 Limit stop for sensor

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

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

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

Programmable magnetic switch MMS-IO-Link



74 Limit stop for sensor

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

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

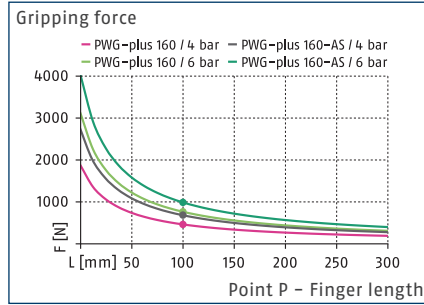
- ① One sensor is required for each gripper. No additional mounting kit is required – the gripper is equipped for use of the sensor by default. Further information and technical data can be found in the catalog chapter sensor systems.

PWG-plus 160

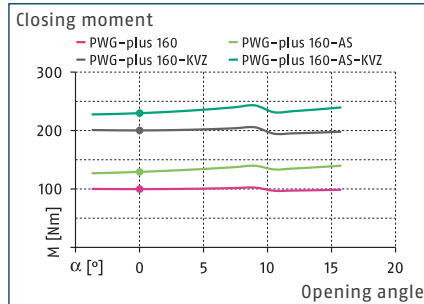
Angular gripper



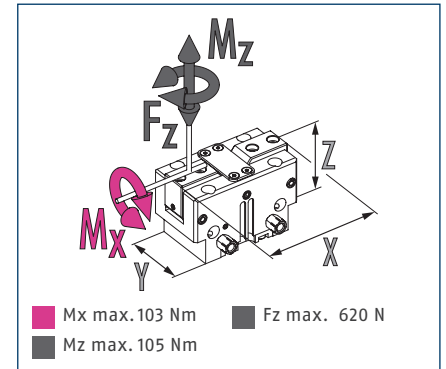
Gripping force O.D. gripping



Closing moment curve



Dimensions and maximum loads



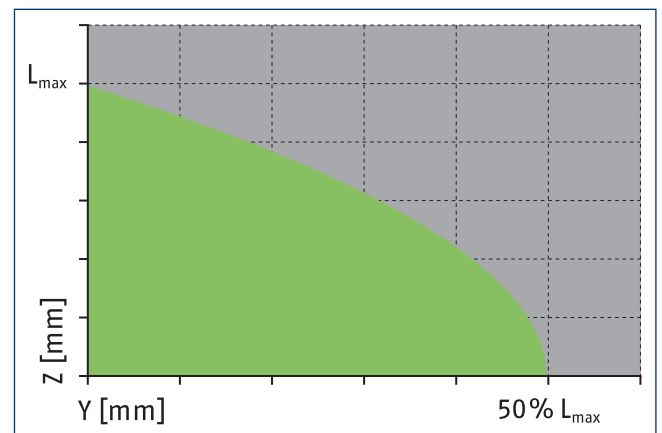
① The indicated torques and forces are static values, apply for each base jaw, and may occur simultaneously.

Technical data

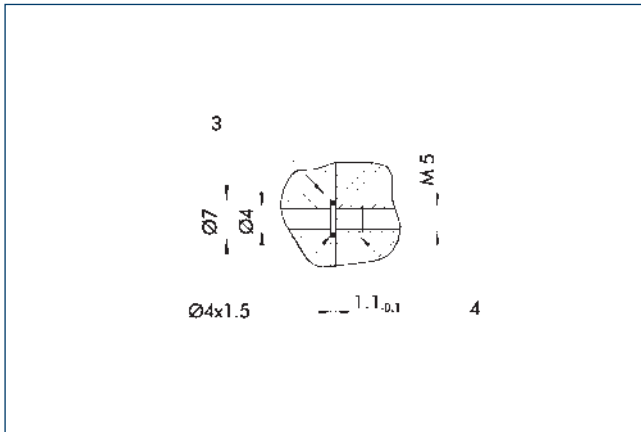
Description		PWG-plus 160	PWG-plus 160-AS
ID		0311660	0311661
Opening angle per jaw	[°]	15	15
Closed angle per jaw	[°]	3	3
Closing moment	[Nm]	100	129.5
Closing moment generated by spring	[Nm]		29.5
Weight	[kg]	2.12	3.12
Recommended workpiece weight	[kg]	3.86	3.86
Cylinder volume per double stroke	[cm³]	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 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
Options and their characteristics			
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

[illegible]

⑨0 Sensor MMS 22..



Hose-free direct connection M5

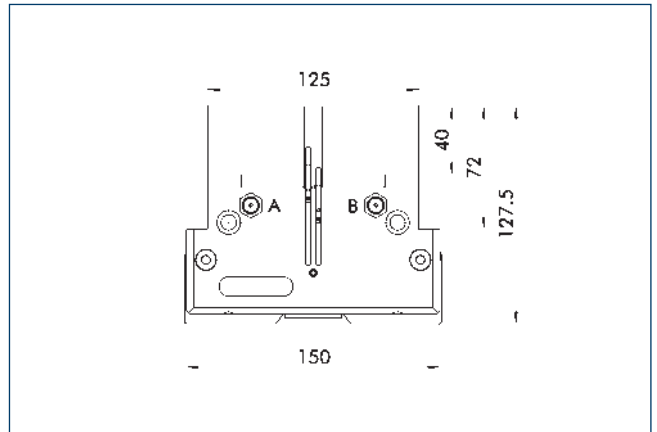


③ Adapter

④ Grippers

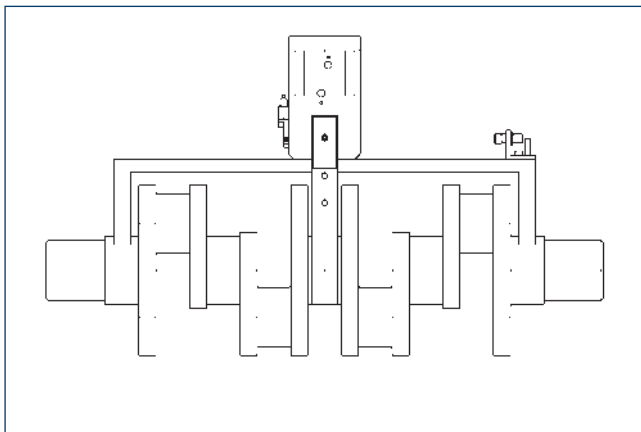
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

Gripping force maintenance device



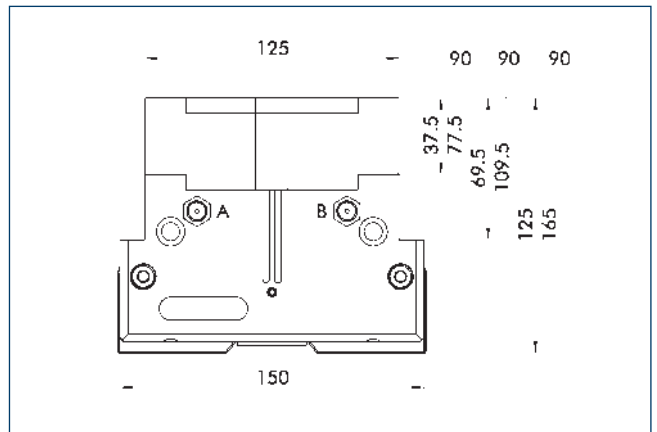
The mechanical gripping force maintenance ensures that a minimum clamping force will be applied even in case of pressure drop. This acts as closing force in the AS version. Besides this, the gripping force maintenance can be used to increase gripping force or for single actuated gripping.

Shaft support



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

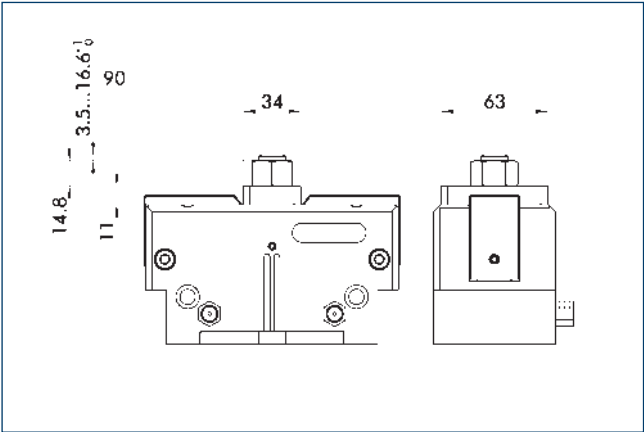
Power booster version



⑨0 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

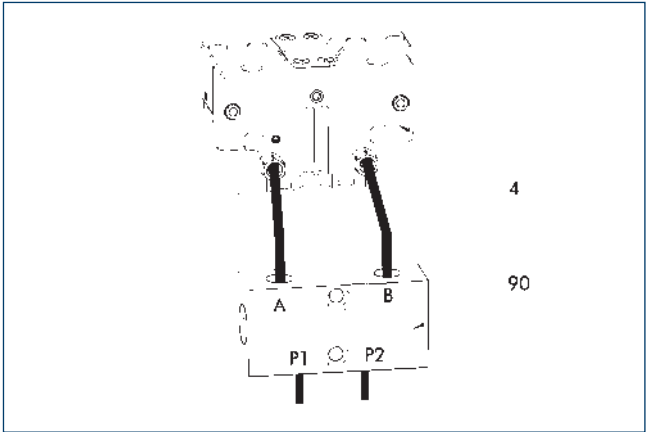


90 Max. adjustment travel

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

Description	ID	
Stroke adjustment		
HVE-PWG-plus 160	0311763	

SDV-P pressure maintenance valve



4 Grippers

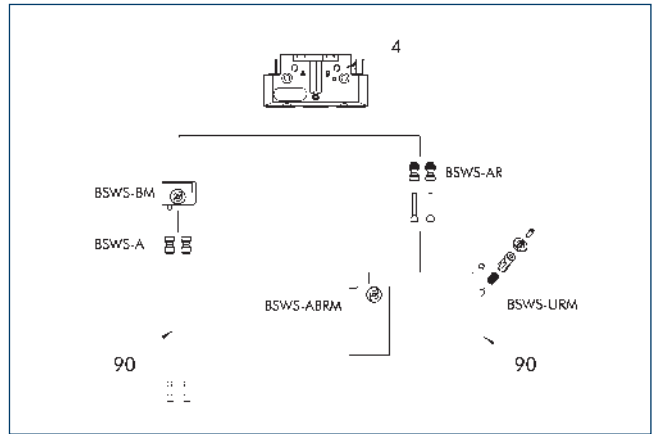
90 SDV-P pressure maintenance valve

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.

Jaw quick-change system BSWS-M



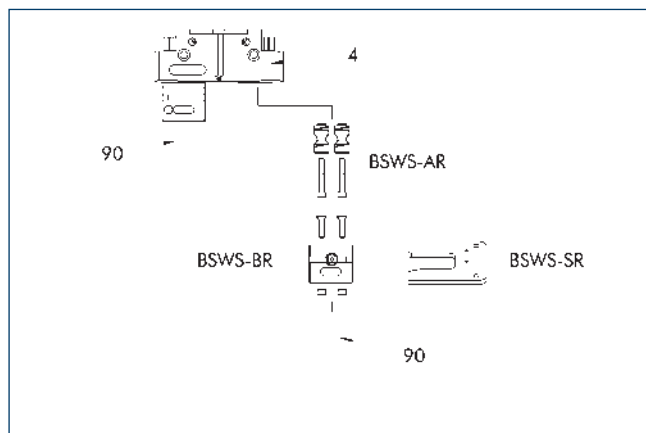
⑨⑩ Customized gripper fingers

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 160	0303030	2
BSWS-AR 160	0300096	2
Quick-change jaw system base		
BSWS-BM 160	1418962	1
Jaw quick-change system finger blank		
BSWS-ABRM-PGZN-plus 160	1420855	1
Jaw quick-change system locking mechanism		
BSWS-URM 160	1420541	1

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

Jaw quick-change system BSWS-R



④ Grippers

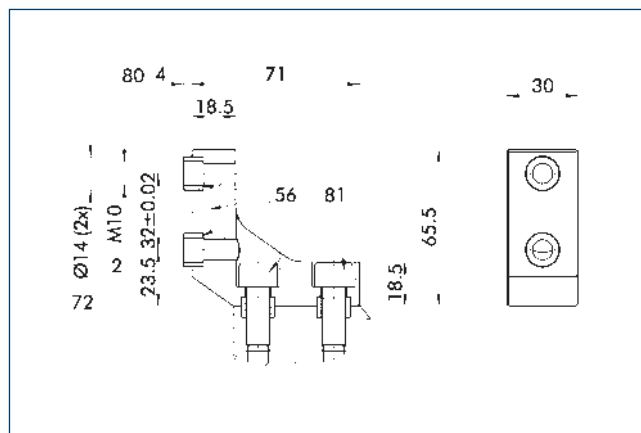
⑨ Customized gripper fingers

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
Jaw quick-change system adapter pin		
BSWS-AR 160	0300096	2
Quick-change jaw system base		
BSWS-BR 160	1555940	1
Storage system		
BSWS-SR 160	1555974	1
Attachment kit for proximity switch		
AS-IN80-BSWS-SR 125/160	1561467	1
Inductive proximity switches		
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	
INK 80-S	0301550	

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

ZBA-L-plus 160 intermediate jaws



② Finger connection

⑤ Included in the scope of delivery

⑦ Fit for centering sleeves

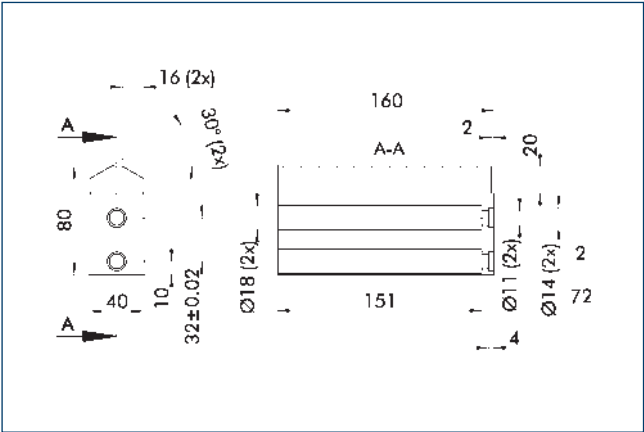
⑧ Depth of the centering sleeve hole in the counter part

⑧ 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



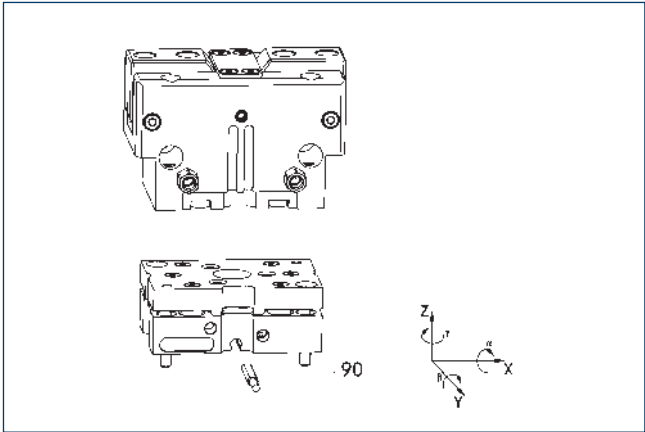
② Finger connection 72 Fit for centering sleeves

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 (3.4365)	1
SBR-PGZN-plus 160	0300024	Steel (1.7131)	1

① In the PGL-plus-P gripper series, the use of finger blanks results in a limitation of the closing stroke. Please check this in detail in advance using the CAD data and adjust the reworking of the fingers accordingly.

Tolerance compensation unit TCU

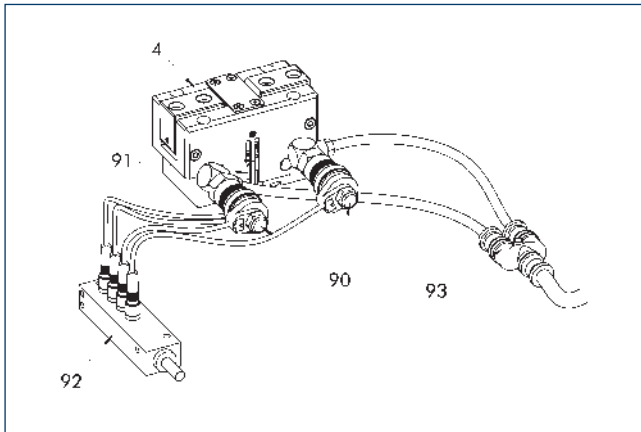


90 Monitoring of locking

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-160-3-MV	0324846	yes	±1°/±2°/±1,5°	●
TCU-P-160-3-OV	0324847	no	±1°/±2°/±1,5°	

Add-on valves for single grippers



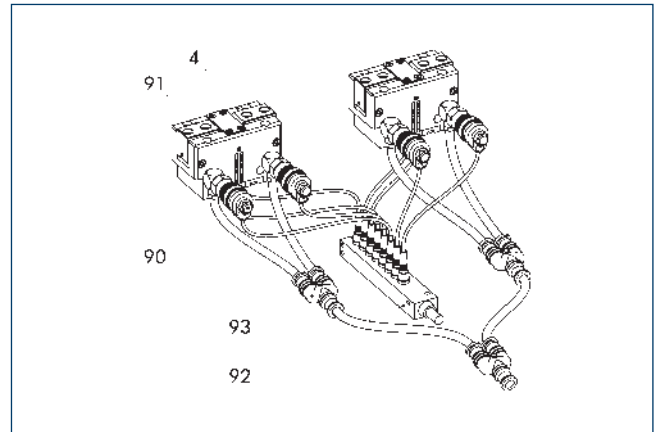
- ④ Grippers
- ⑨② Sensor distributor
- ⑨① Micro valves
- ⑨③ Y distributor
- ⑨① Sensor

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
Add-on valve set		
ABV-MV30-G1/8	0303328	
ABV-MV30-G1/8-V2-M8	0303396	
ABV-MV30-G1/8-V4-M8	0303366	●

- ① A set of add-on 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 or four inputs or outputs. Sensors for monitoring the gripper need to be ordered separately. Pneumatic hoses are not included in the scope of delivery.

Add-on valves for double grippers



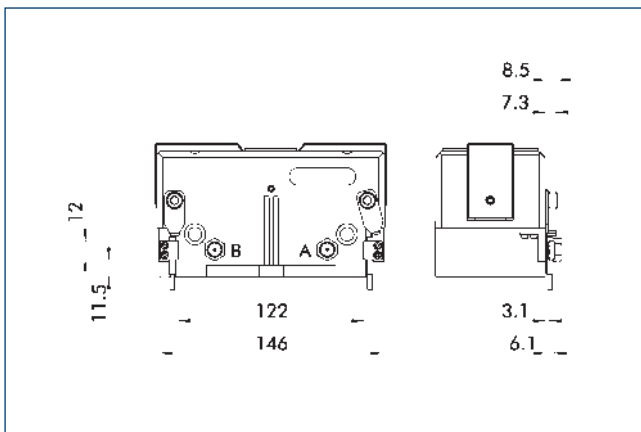
- ④ Grippers
- ⑨② Sensor distributor
- ⑨① Micro valves
- ⑨③ Y distributor
- ⑨① Sensor

The add-on valve set reduces 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 a distributor.

Description	ID	
Add-on valve set		
ABV-MV30-G1/8-V8-M8	0303367	

- ① A set of add-on valves ABV is required per double gripping unit. The ABV set contains four 3/2 microvalves, three Y-distributors for compressed air supply and a sensor distributor with eight inputs or 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

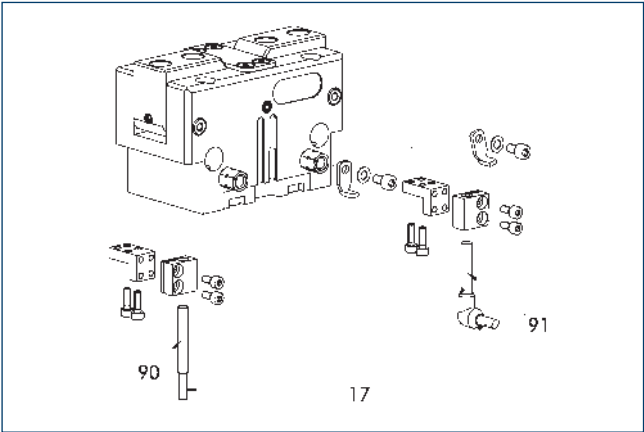


End position monitoring can be mounted with an attachment kit.

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

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

IN 40 inductive proximity switches



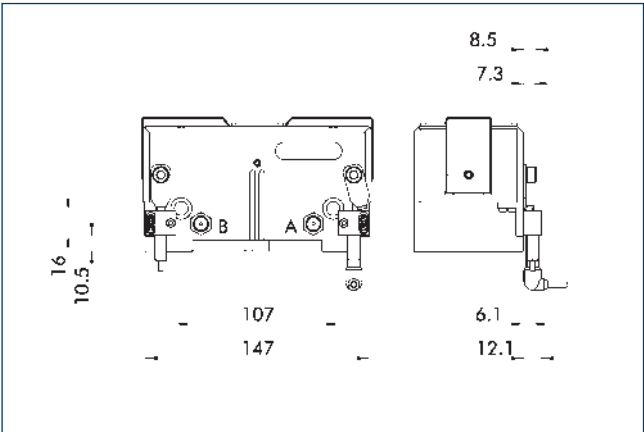
- 17 Cable outlet
- 91 Sensor IN..-SA
- 90 Sensor IN ...

End position monitoring can be mounted with an attachment kit.

Description	ID	Often combined
Attachment kit for proximity switch		
AS-IN40-PWG-plus 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

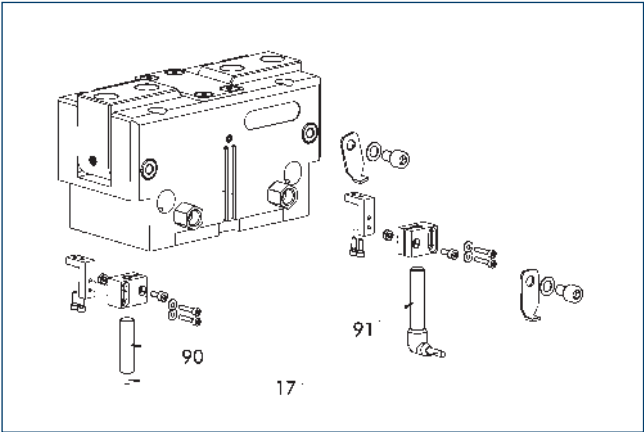


End position monitoring can be mounted with an attachment kit.

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.

IN 80 inductive proximity switches



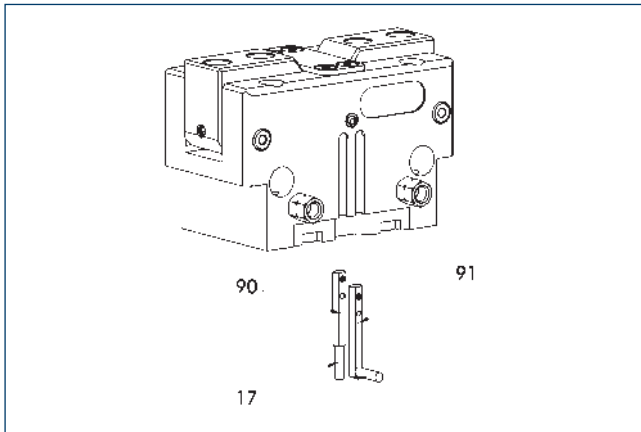
- 17 Cable outlet
- 91 Sensor IN..-SA
- 90 Sensor IN ...

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	

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



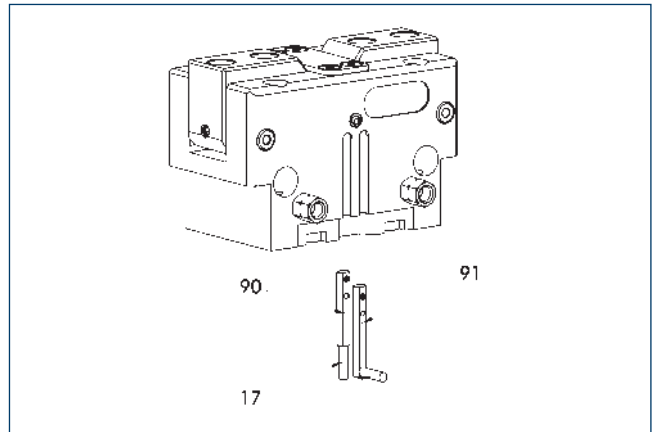
- ① Cable outlet
② Sensor MMS 22..

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 connector/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



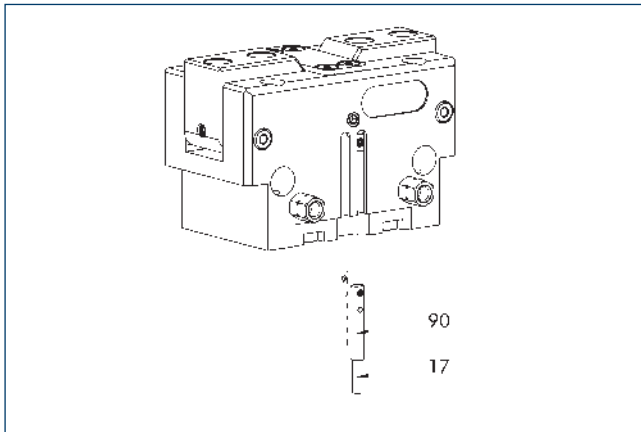
- ① Cable outlet
② Sensor MMS 22 ..-PI1-...-SA

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, ID 0301030) or ST plug teaching tool (optional). End position monitoring for mounting in the C-slot. If the ST plug teaching tools are listed in the table provided, teaching is only possible with the ST teaching tools.

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

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

Programmable magnetic switch MMS 22-PI2



17 Cable outlet

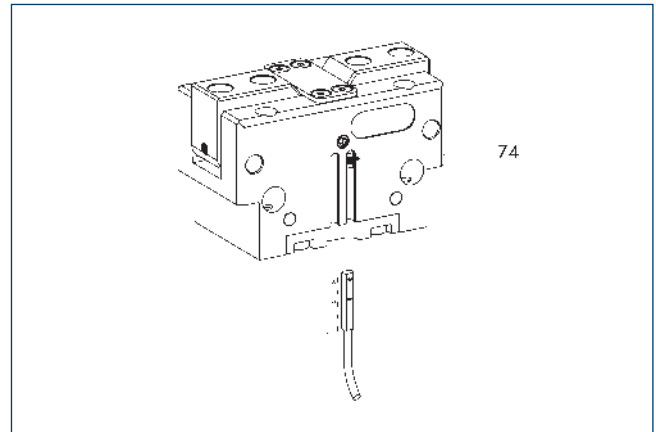
90 MMS 22...-PI2-... sensor

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

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

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

MMS-P programmable magnetic switch



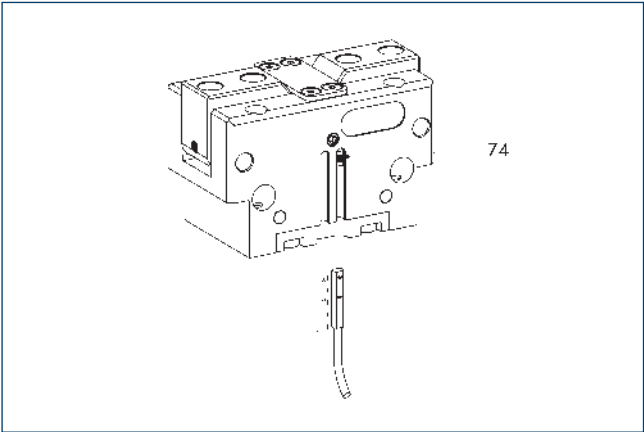
74 Limit stop for sensor

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

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

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

Programmable magnetic switch MMS-I0-Link



74 Limit stop for sensor

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

Description	ID	
Programmable magnetic switch		
MMS 22-I0L-M08	0315830	
MMS 22-I0L-M12	0315835	

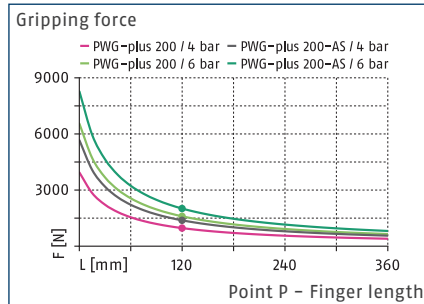
- ① One sensor is required for each gripper. No additional mounting kit is required – the gripper is equipped for use of the sensor by default. Further information and technical data can be found in the catalog chapter sensor systems.

PWG-plus 200

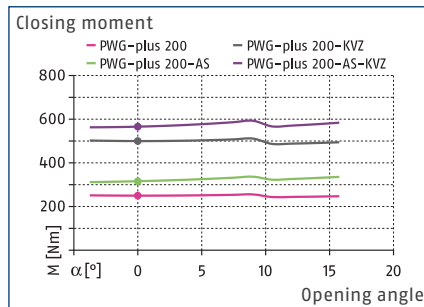
Angular gripper



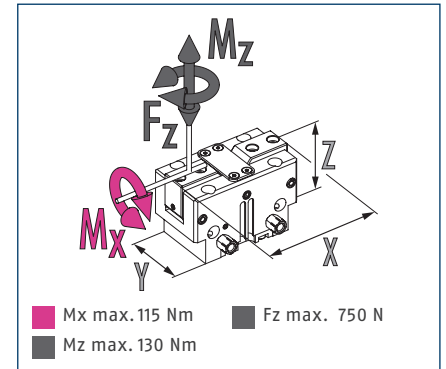
Gripping force O.D. gripping



Closing moment curve



Dimensions and maximum loads

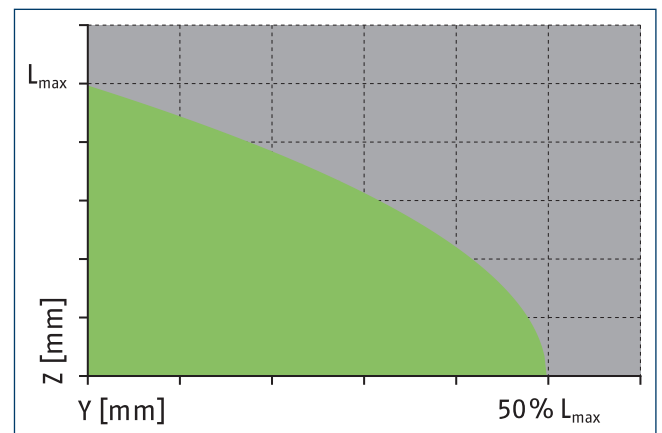


① The indicated torques and forces are static values, apply for each base jaw, and may occur simultaneously.

Technical data

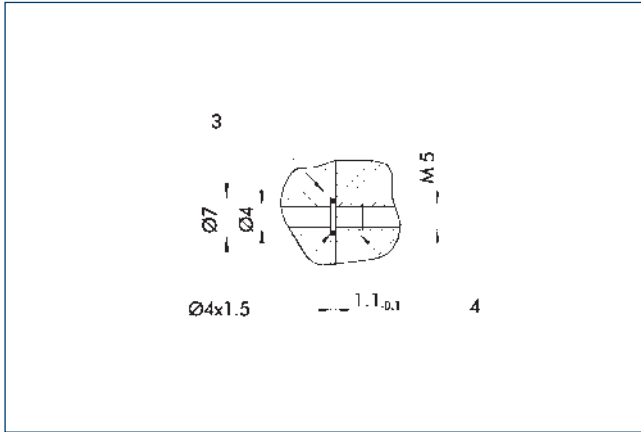
Description		PWG-plus 200	PWG-plus 200-AS
ID		0311670	0311671
Opening angle per jaw	[°]	15	15
Closed angle per jaw	[°]	3	3
Closing moment	[Nm]	250	316
Closing moment generated by spring	[Nm]		66
Weight	[kg]	4.9	7
Recommended workpiece weight	[kg]	8.06	8.06
Cylinder volume per double stroke	[cm³]	338	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 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
Options and their characteristics			
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

⑨0 Sensor MMS 22..



Lmax is equivalent to the maximum permitted finger length, see the technical data table.

Hose-free direct connection M5

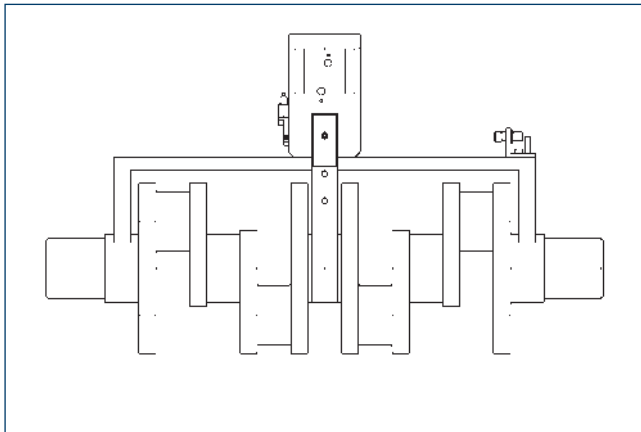


③ Adapter

④ Grippers

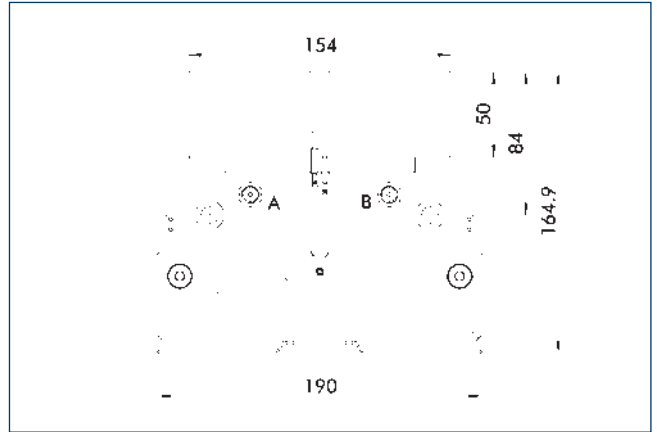
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

Shaft support



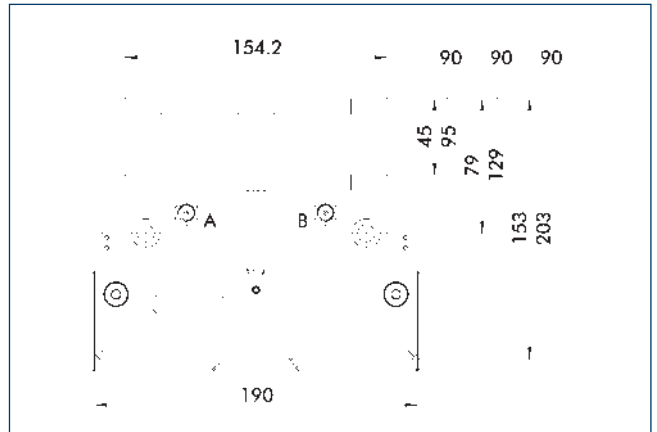
The complete assembly group for handling of cranks and cam shafts can be supplied on request.

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.

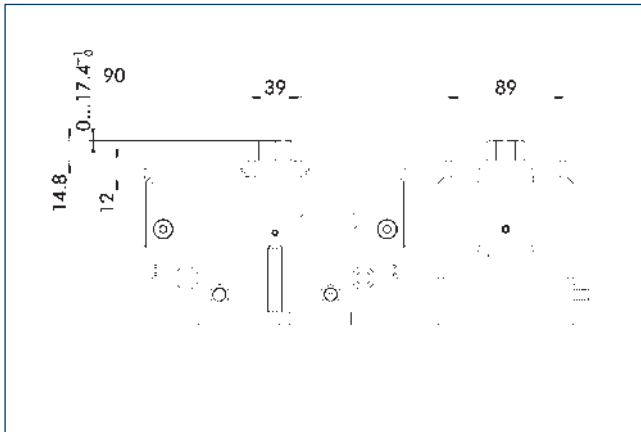
Power booster version



⑨0 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

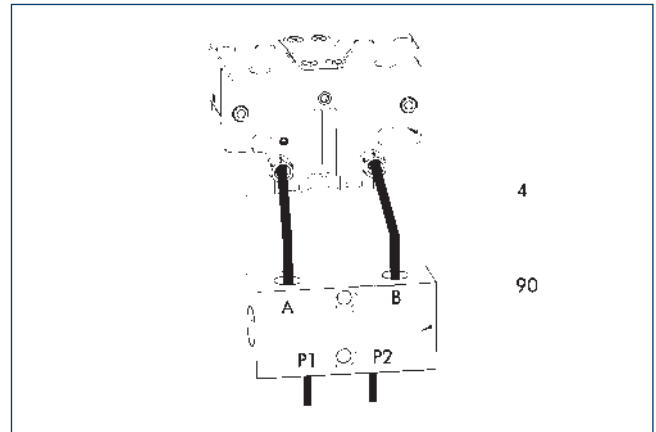


⑨⑩ Max. adjustment travel

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

Description	ID	
Stroke adjustment		
HVE-PWG-plus 200	0311773	

SDV-P pressure maintenance valve



④ Grippers

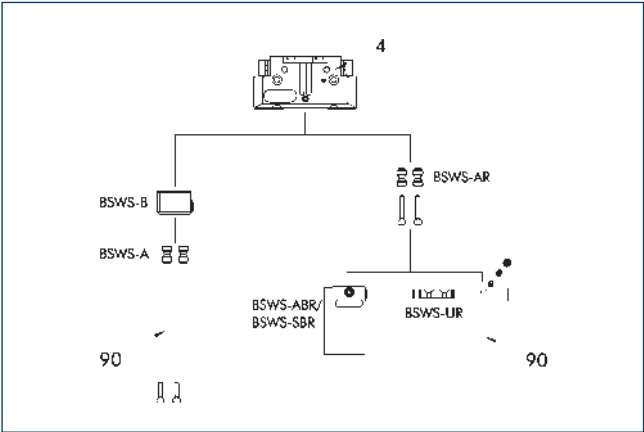
⑨⑩ SDV-P pressure maintenance valve

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

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



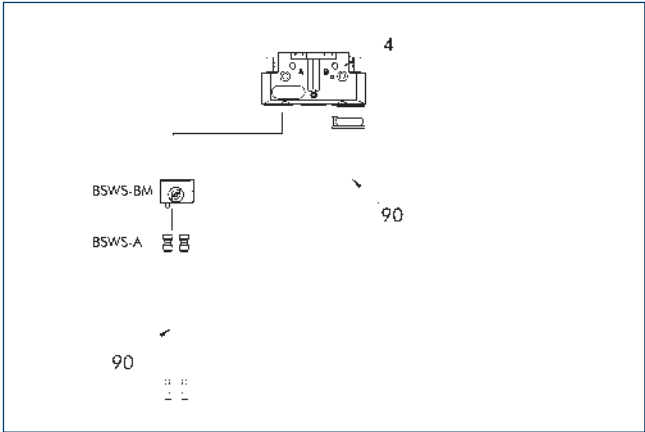
④ Grippers ⑨⑩ Customized gripper fingers

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 200	0303032	2
BSWS-AR 200	1453341	2
Quick-change jaw system base		
BSWS-B 200	0303033	1
Jaw quick-change system		
BSWS-ABR-PGZN-plus 200	1453347	1
BSWS-UR 200	1451606	1

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

Jaw quick-change system BSWS-M



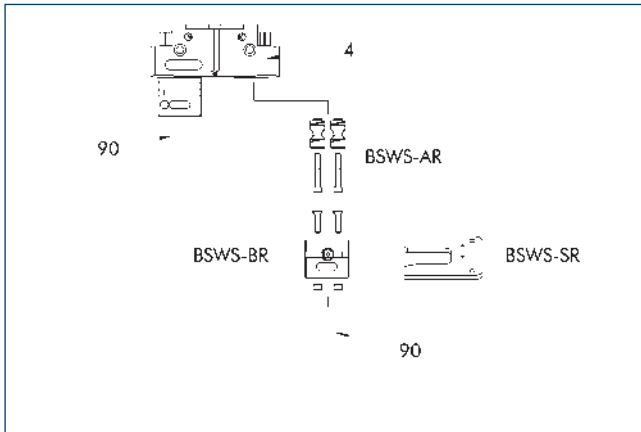
④ Grippers ⑨⑩ Customized gripper fingers

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

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

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

Jaw quick-change system BSWS-R



④ Grippers

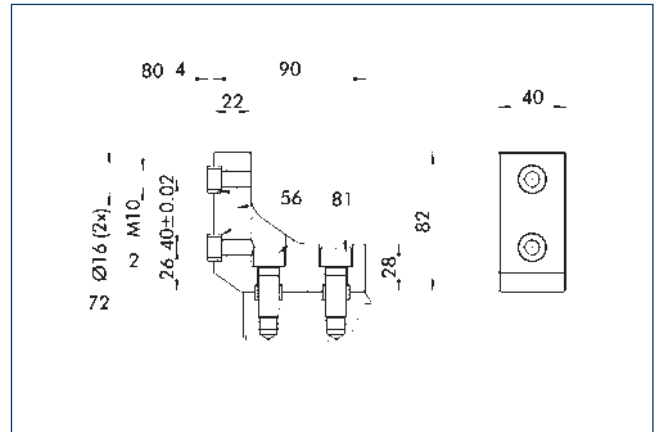
⑨ Customized gripper fingers

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
Jaw quick-change system adapter pin		
BSWS-AR 200	1453341	2
Quick-change jaw system base		
BSWS-BR 200	1555942	1
Storage system		
BSWS-SR 200	1555976	1
Attachment kit for proximity switch		
AS-IN80-BSWS-SR 200	1561469	1
Inductive proximity switches		
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	
INK 80-S	0301550	

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

ZBA-L-plus 200 intermediate jaws



② Finger connection

⑤ Included in the scope of delivery

⑦ Fit for centering sleeves

⑧ Depth of the centering sleeve hole in the counter part

⑧ Not included in the scope of delivery

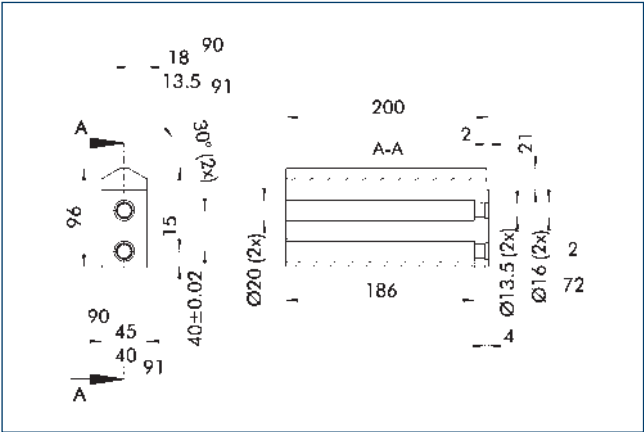
Optionally intermediate jaws can be used, enabling direct connection and alignment of top jaws and various standard accessories in Z-direction.

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

PWG-plus 200

Angular gripper

Finger blanks ABR/SBR-PGZN-plus 200

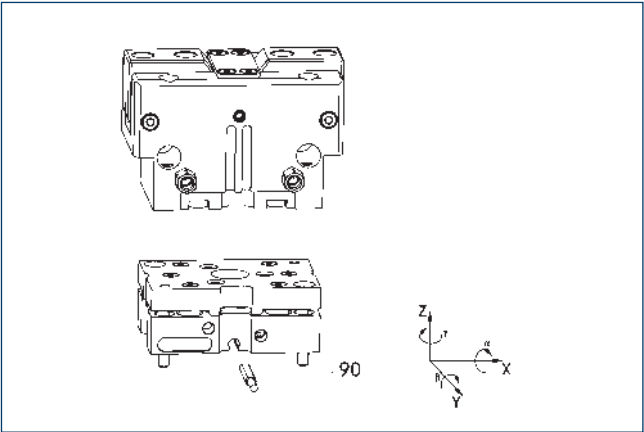


- ② Finger connection
- ⑦ Fit for centering sleeves
- ⑨ ABR-PGZN-plus
- ⑨ SBR-PGZN-plus

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 (3.4365)	1
SBR-PGZN-plus 200	0300025	Steel (1.7131)	1

Tolerance compensation unit TCU

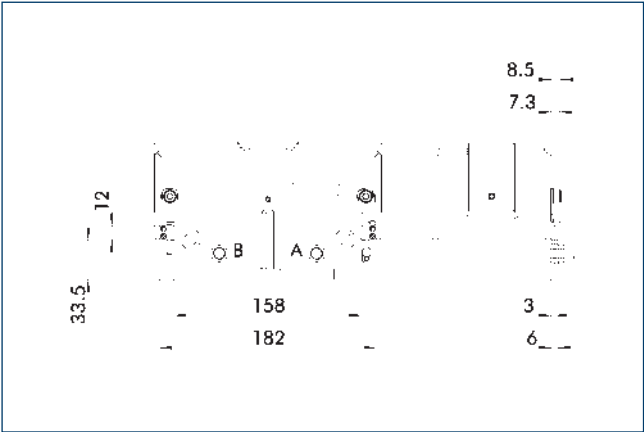


- ⑨ Monitoring of locking

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

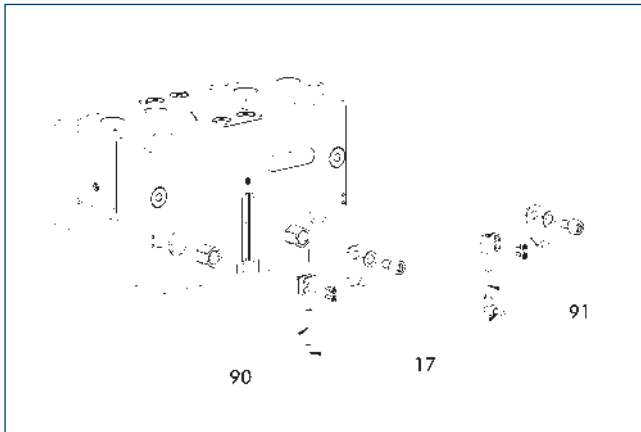


End position monitoring can be mounted with an attachment kit.

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

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

IN 40 inductive proximity switches



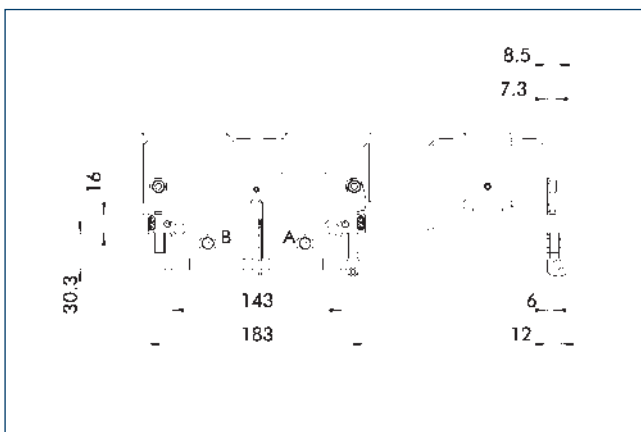
- ① Cable outlet
- ② Sensor IN...-SA
- ③ Sensor IN ...

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	

- 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

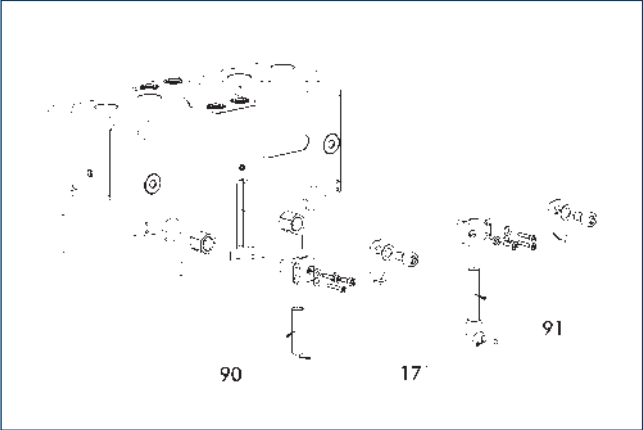


End position monitoring can be mounted with an attachment kit.

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

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

IN 80 inductive proximity switches



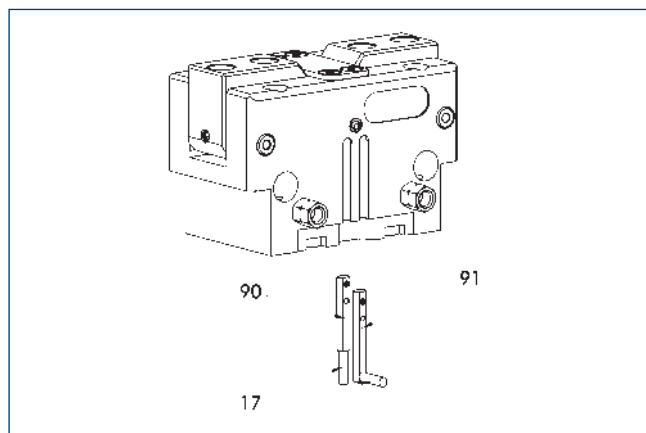
- 17 Cable outlet
- 91 Sensor IN..-SA
- 90 Sensor IN ...

End position monitoring can be mounted with an attachment kit.

Description	ID	Often combined
Attachment kit for proximity switch		
AS-IN80-PWG-plus 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	

- 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



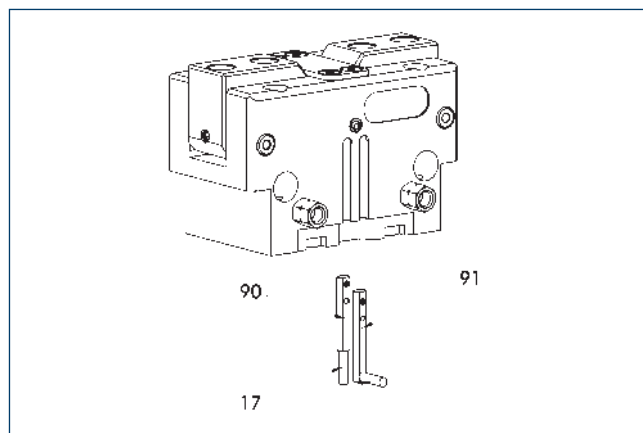
- ① Cable outlet
② Sensor MMS 22..

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 connector/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



- ① Cable outlet
② 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, ID 0301030) or ST plug teaching tool (optional). End position monitoring for mounting in the C-slot. If the ST plug teaching tools are listed in the table provided, teaching is only possible with the ST teaching tools.

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

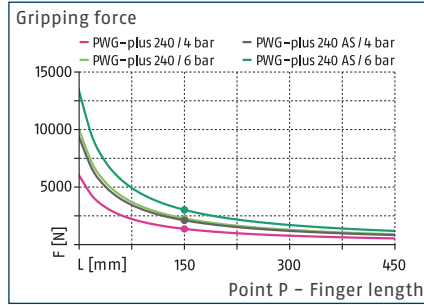
- ① Two sensors are required per unit for monitoring two positions. On option, extension cables and sensor distributors are available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor system.

PWG-plus 240

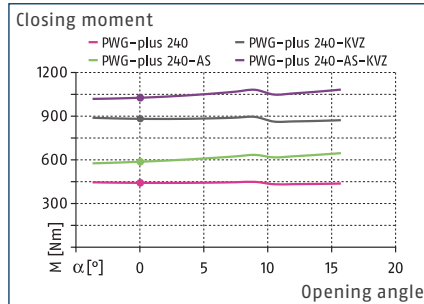
Angular gripper



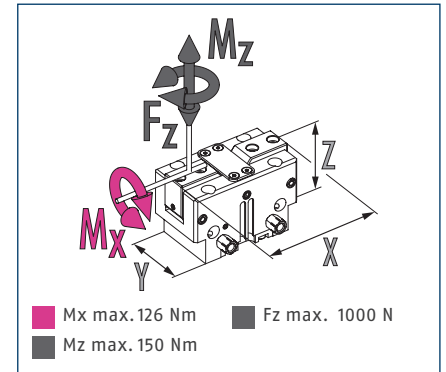
Gripping force O.D. gripping



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

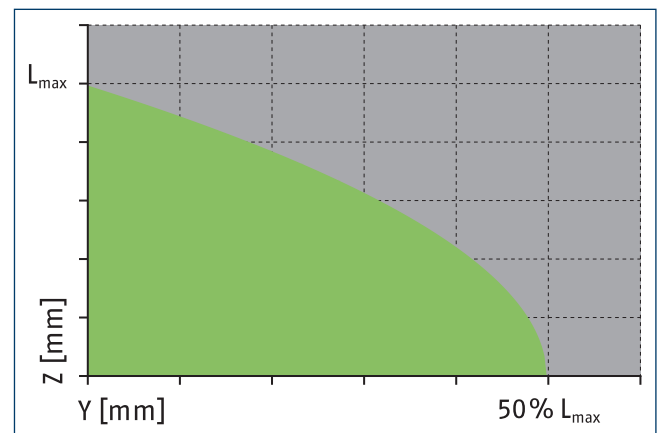
Description		PWG-plus 240	PWG-plus 240-AS
ID		0311680	0311681
Opening angle per jaw	[°]	15	15
Closed angle per jaw	[°]	3	3
Closing moment	[Nm]	440	585
Closing moment generated by spring	[Nm]		145
Weight	[kg]	7.8	11.3
Recommended workpiece weight	[kg]	11.57	11.57
Cylinder volume per double stroke	[cm³]	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 inertia per chuck jaw	[kgcm²]	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
Options and their characteristics			
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

Technical drawing of a mechanical assembly, showing multiple views and dimensions. The drawing includes the following details:

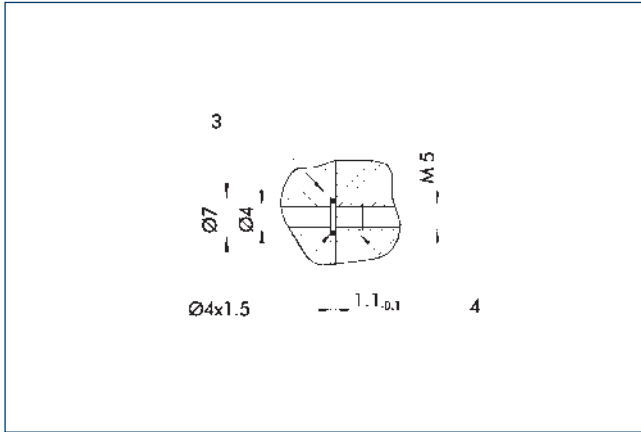
- Top View (Left):** Dimensions include 44 ± 0.02 , 108 , 44 ± 0.02 , 50 , 95 , 46 , and 95 .
- Top View (Right):** Dimensions include $M6/12$ (4x), 30 ± 0.02 , 80 ± 0.02 , 46 , and section line A-A.
- Front View (Left):** Dimensions include 81.5 , 25.3 , 8.5 , 90 , 96 , 43 , $15^\circ \pm 0.5^\circ$, $3^\circ \pm 0.5^\circ$, $M5/6$ (2x), 96 , and $M5/6$.
- Front View (Right):** Dimensions include $M5/6$ (2x), 39 ± 0.02 , 25.3 , 51 , 26 , 4 , 80 , $M12$ (4x), 72 , $M5/6$, 150 , 236 , $\varnothing 16$ (4x), 127 , 134.1 , and 81.5 .
- Section View B-B (Center):** Dimensions include 72 , $\varnothing 16$ (2x), 4 , 80 , 101.5 , 4 , 80 , $M12$ (4x), 1 , $\varnothing 12.5$ (2x), $\varnothing 19$ (2x), 65 , and 16 .
- Bottom View (Left):** Dimensions include $115_{0,1}^0$, 17.5 , 160 ± 0.02 , 48 , and 80 ± 0.02 .
- Bottom View (Right):** Dimensions include 16 .

⑨0 Sensor MMS 22..

The diagram illustrates a vertical lathe machine (VL) setup. A rectangular workpiece is mounted on a rotating table. A tool is positioned to machine the top surface of the workpiece. A coordinate system is defined with the origin at the center of the workpiece. The vertical axis is labeled 'y' and the horizontal axis is labeled 'x'. The tool's position is indicated by a vertical line with a small square at the top, representing the tool tip.



Hose-free direct connection M5

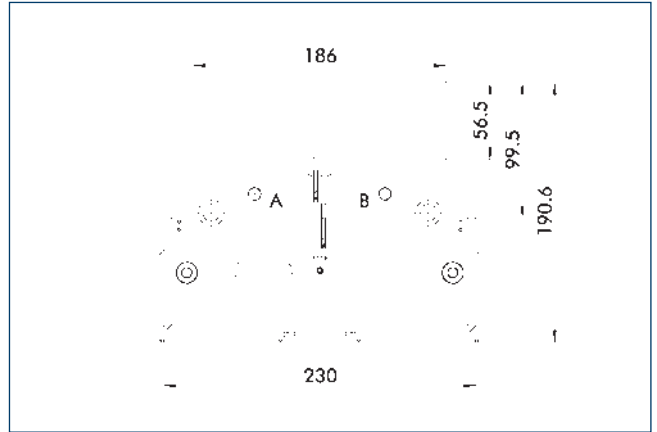


③ Adapter

④ Grippers

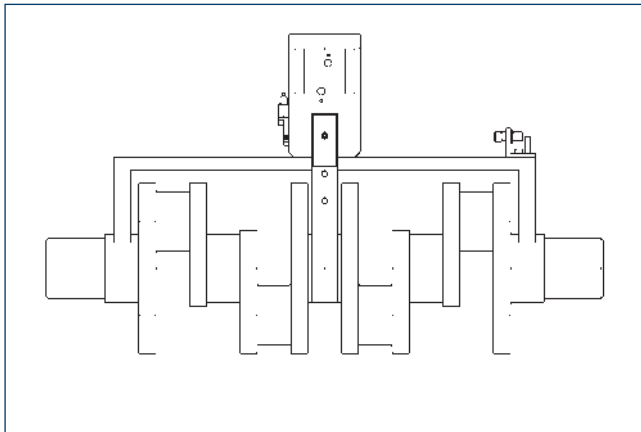
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

Gripping force maintenance device



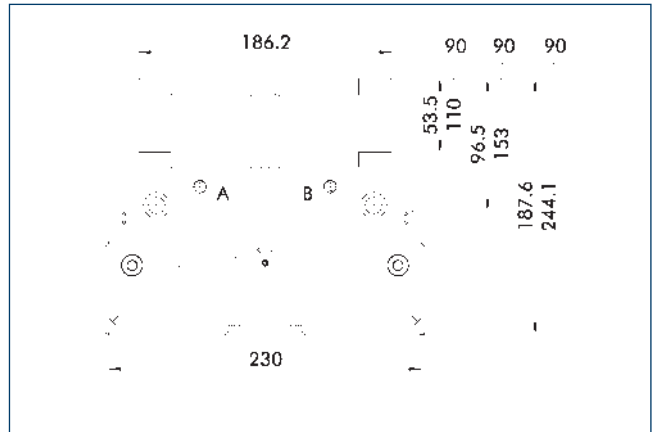
The mechanical gripping force maintenance ensures that a minimum clamping force will be applied even in case of pressure drop. This acts as closing force in the AS version. Besides this, the gripping force maintenance can be used to increase gripping force or for single actuated gripping.

Shaft support



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

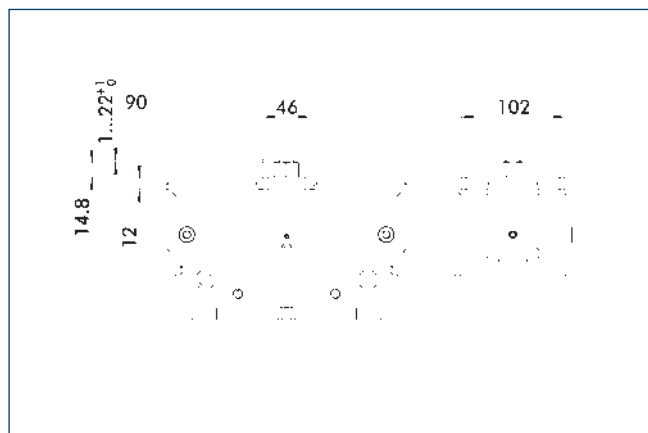
Power booster version



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

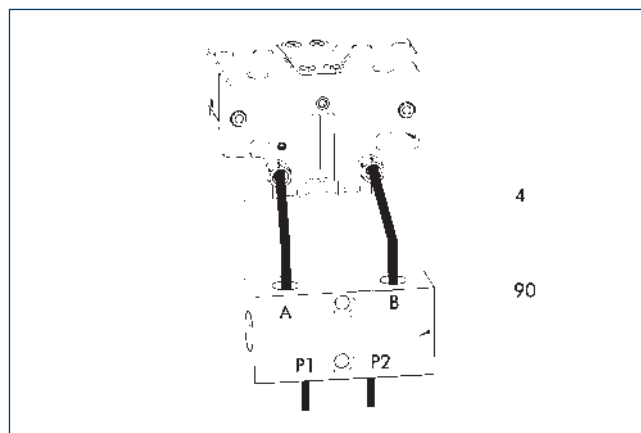


⑨⑩ Max. adjustment travel

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.

Angular gripper

⑨⑩ Customized gripper fingers

Description	ID	Scope of delivery
Jaw quick-change system adapter pin		
BSWS-A 240	0303034	2
BSWS-AR 240	1453342	2
Quick-change jaw system base		
BSWS-B 240	0303035	1
Jaw quick-change system		
BSWS-ABR-PGZN-plus 240	1453348	1
BSWS-UR 240	1451607	1

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

4

BSW5-BM

BSW5-A

90

90

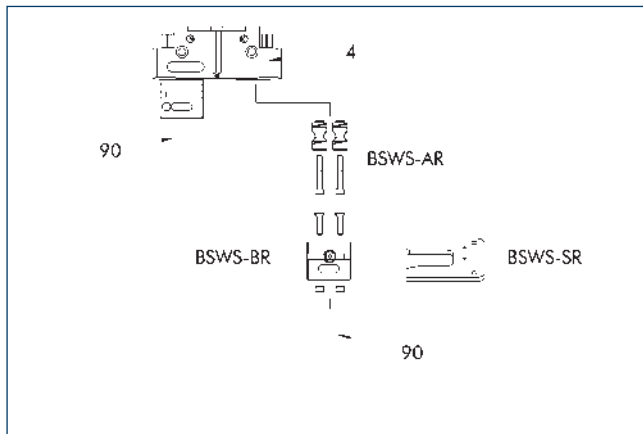
11 11
11 11

⑨⑩ Customized gripper fingers

Description	ID	Scope of delivery
Jaw quick-change system		
BSWS-BM 240	1470901	1
Jaw quick-change system adapter pin		
BSWS-A 240	0303034	2

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

Jaw quick-change system BSWS-R



④ Grippers

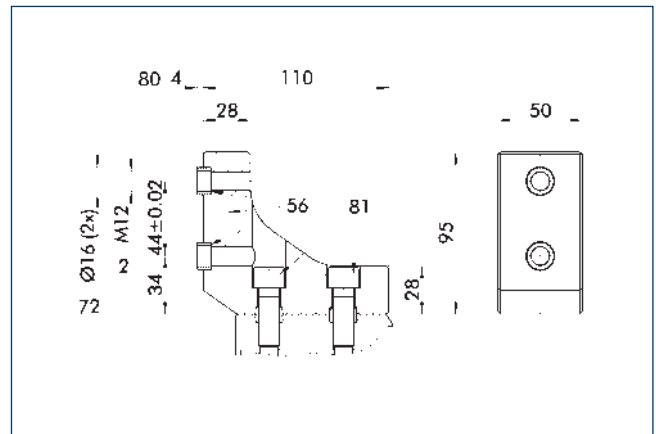
⑨⑩ Customized gripper fingers

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

Description	ID	Scope of delivery
Jaw quick-change system adapter pin		
BSWS-AR 240	1453342	2
Storage system		
BSWS-SR 240	1555978	1
Quick-change jaw system base		
BSWS-BR 240	1555943	1
Attachment kit for proximity switch		
AS-IN80-BSWS-SR 240/300	1561481	
Inductive proximity switches		
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	
INK 80-S	0301550	

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

ZBA-L-plus 240 intermediate jaws



② Finger connection

⑤⑥ Included in the scope of delivery

⑦② Fit for centering sleeves

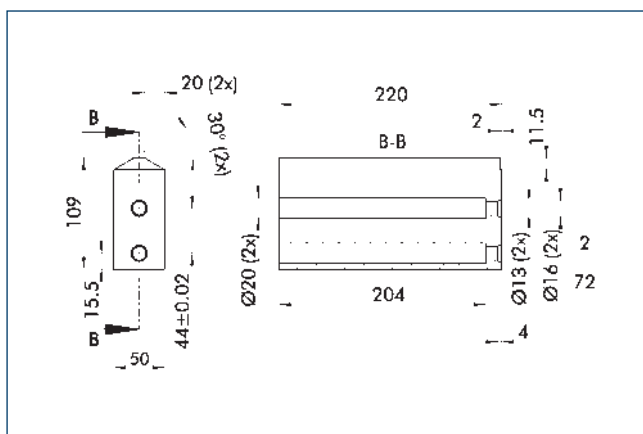
⑧⑩ Depth of the centering sleeve hole in the counter part

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



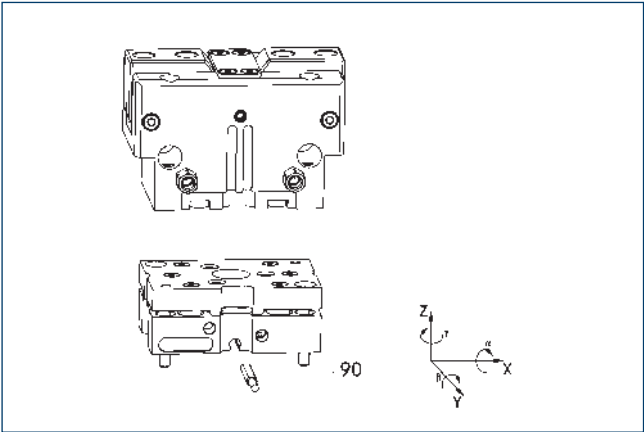
② Finger connection

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 (3.4365)	1
SBR-PGZN-plus 240	0300027	Steel (1.7131)	1

Tolerance compensation unit TCU

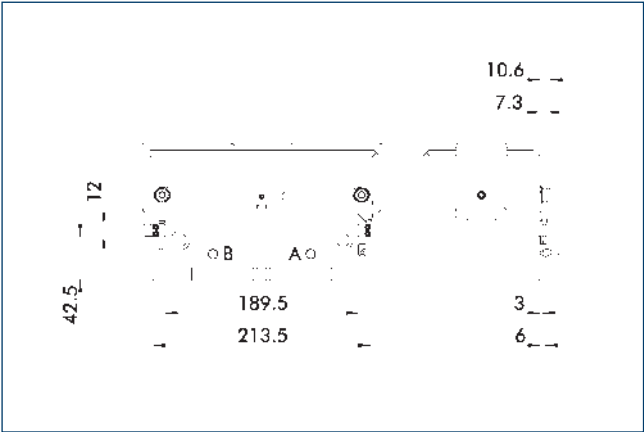


Monitoring of locking

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	$\pm 1^\circ/\pm 1,5^\circ/\pm 1^\circ$	●
TCU-P-240-3-0V	0324731	no	$\pm 1^\circ/\pm 1,5^\circ/\pm 1^\circ$	

Attachment kit for proximity switch IN 40

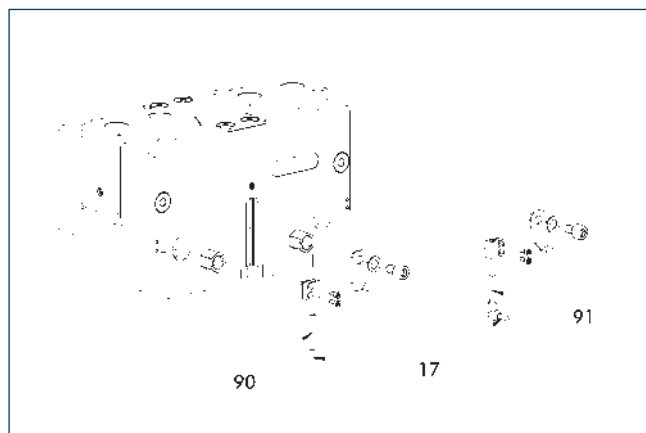


End position monitoring can be mounted with an attachment kit.

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



① Cable outlet

② Sensor IN..-SA

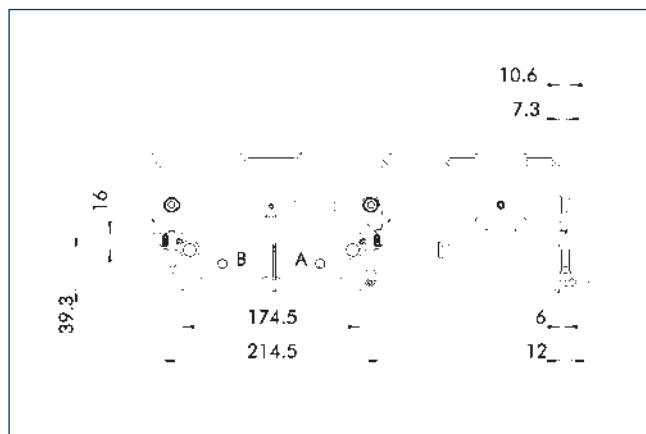
③ Sensor IN ...

End position monitoring can be mounted with an attachment kit.

Description	ID	Often combined
Attachment kit for proximity switch		
AS-IN40-PWG-plus 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

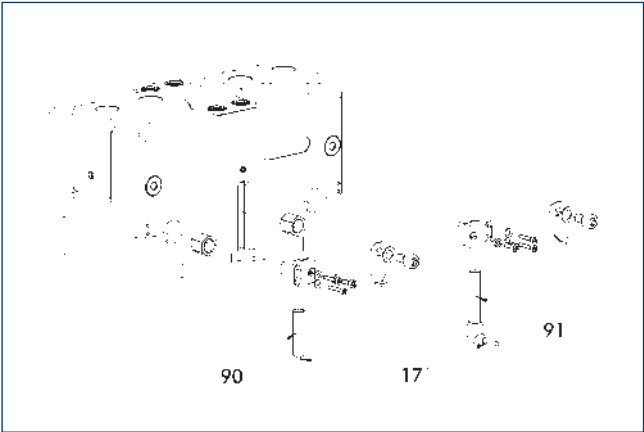


End position monitoring can be mounted with an attachment kit.

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.

IN 80 inductive proximity switches



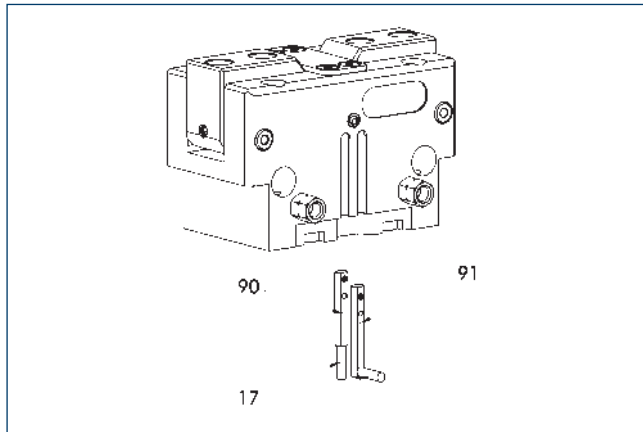
- 17 Cable outlet
- 91 Sensor IN..-SA
- 90 Sensor IN ...

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	

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



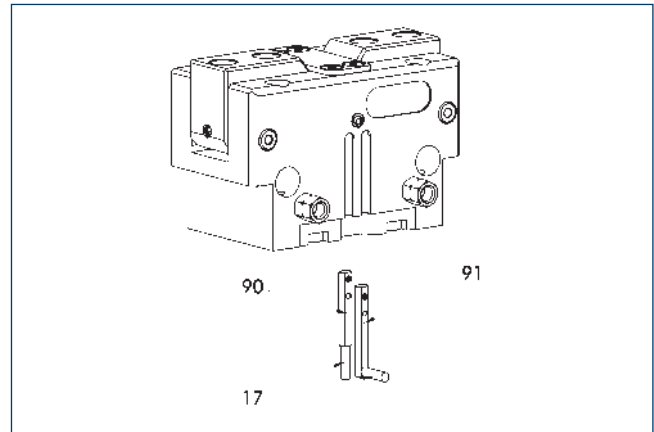
- ① Cable outlet
② Sensor MMS 22-...-SA

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 connector/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



- ① Cable outlet
② 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, ID 0301030) or ST plug teaching tool (optional). End position monitoring for mounting in the C-slot. If the ST plug teaching tools are listed in the table provided, teaching is only possible with the ST teaching tools.

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

- 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.



SCHUNK GmbH & Co. KG
Spann- und Greiftechnik

Bahnhofstr. 106 - 134
D-74348 Lauffen/Neckar
Tel. +49-7133-103-0
Fax +49-7133-103-2399
info@de.schunk.com
schunk.com

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