PGN-plus

Sizes
40 ... 380

Weight
0.08 kg ... 39.5 kg

Gripping force
123 N ... 21150 N

Stroke per finger
2 mm ... 45 mm

Workpiece weight
0.62 kg ... 80.5 kg

Application example

Pick-and-place unit for light to medium-weight components

1. 2-Finger Parallel Gripper PGN-plus
2. Linear module LM
3. Linear module LM

Universal Gripper

Universal 2-finger parallel gripper with large gripping force and high maximum moments thanks to multi-tooth guidance.

Field of application

Ideal standard solution for numerous fields of application. For universal use in clean to slightly dirty environments. Special versions available for dirty environments.

Your advantages and benefits

Robust multi-tooth guidance
for precise handling

High maximum moments possible
suitable for using long gripper fingers

Drive concept oval piston
for maximum gripping forces

Mounting from two sides in three screw directions possible
for universal and flexible gripper assembly

Air supply via hose-free direct connection or screw connections
for universal and flexible gripper assembly

Comprehensive sensor accessory program
for versatile interrogation possibilities and control of stroke position

Compact dimensions
for minimal interfering contours in handling

Manifold options
for perfect adaption to your case of application (dust protection, high temperature, anti-corrosion and many more)

General note to the series

Principle of function
Wedge-hook kinematics

Housing material
Aluminum

Base jaw material
Steel

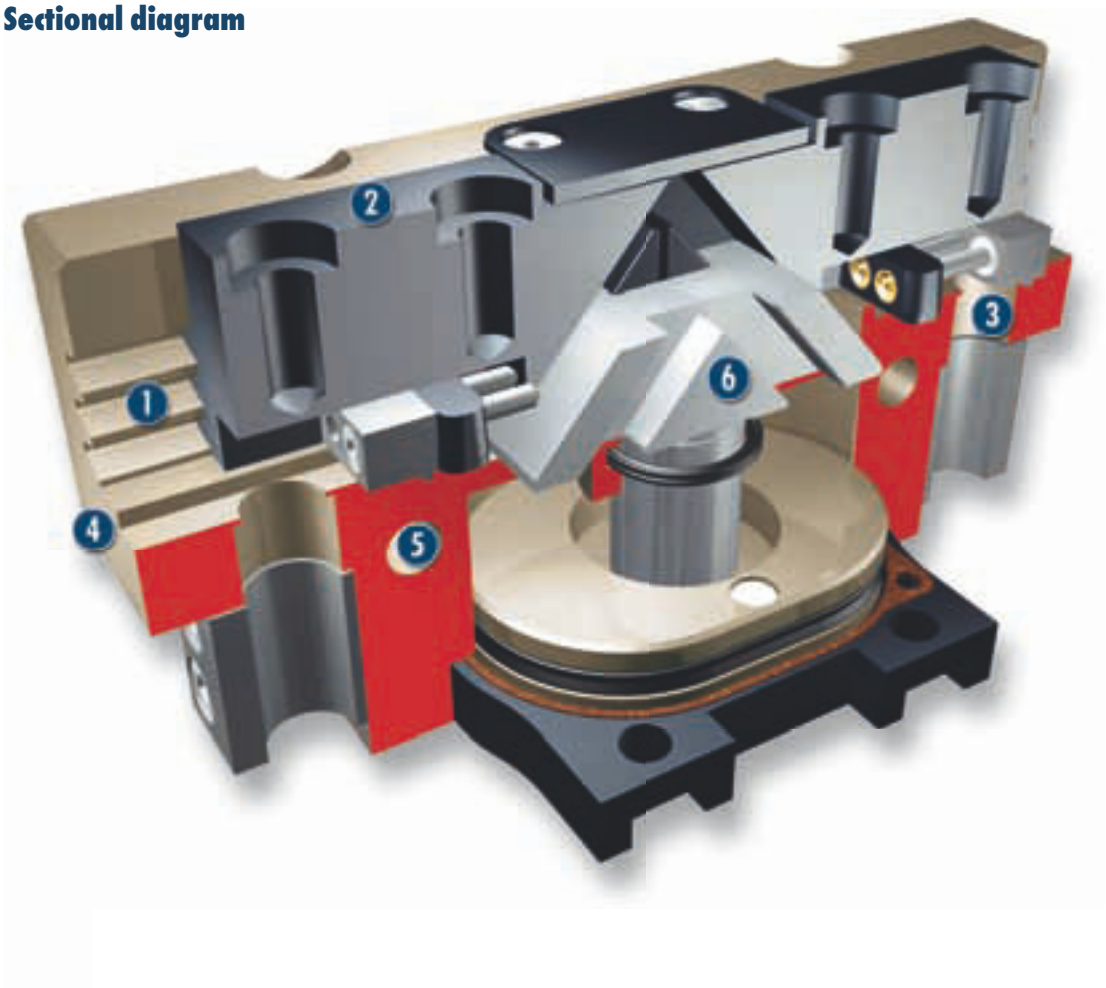
Actuation
pneumatic, with filtered compressed air (10 microns): dry, lubricated or non-lubricated
Pressure medium: Required quality class of compressed air according to DIN ISO 8573-1: 6 4 4

Warranty
36 months (details, general terms and conditions and operation manuals can be downloaded under www.schunk.com)

Scope of delivery
Brackets for proximity switches, centering sleeves, O-rings for direct connection, assembly and operating manual with manufacturer's declaration

Gripping force maintenance device
with either mechanical gripping force maintenance or SDV-P pressure maintenance valve

Sectional diagram



1 Multiple-tooth guidance
high-loadable base jaw guidance with minimum play for long fingers

2 Base jaw
for the connection of workpiece-specific gripper fingers

3 Sensor system
Brackets for proximity switches and adjustable control cams in the housing

4 Housing
weight-optimized through application of hard-anodized, high-strength aluminum alloy

5 Centering and mounting possibilities
for universal assembly of the gripper

6 Wedge-hook design
for high power transmission and centric gripping

Functional description

The oval piston is moved up or down by means of compressed air.
Through its angled active surfaces, the wedge hook transforms this movement into the lateral, synchronous gripping movement of both base jaws.

Options and special information

Dust-protection version
Absolutely sealed, increased degree of protection against the ingress of materials, for use in dusty environments

Anti-corrosion version
for use in corrosion-inducing atmospheres

High-temperature version
for use in hot environments

Force intensified version
if higher gripping forces are required

Precision version
for a higher accuracy

Accessories

Accessories from SCHUNK – the suitable supplement for maximum functionality, reliability and performance of all automation modules.

Sensor system

Fittings

Universal intermediate jaw

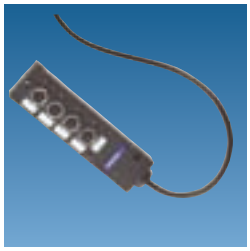
Compensation unit

Protection cover

Sensor cables

Quick-change Jaw System

Sensor Distributor



Pressure maintenance valve

Finger blanks

Force measuring jaws

Analog position sensor

Flexible Position Sensor

ⓘ For the exact size of the required accessories, availability of this size and the designation and ID, please refer to the additional views at the end of the size in question. You will find more detailed information on our accessory range in the “Accessories” catalog section.

General note to the series

Gripping force

is the arithmetic total of the gripping force applied to each finger at distance P (see illustration) measured from the upper edge of the gripper.

Finger length

The finger length is measured from the upper edge of the gripper housing in the direction of the main axis.

Repeat accuracy

is defined as the spread of the limit position after 100 consecutive strokes.

Workpiece weight

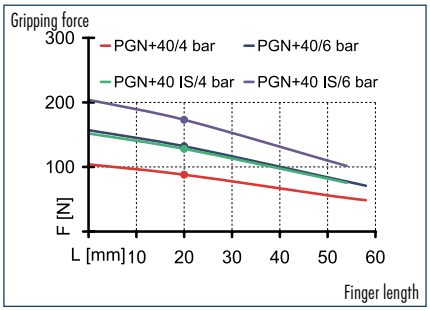
The recommended workpiece weight is calculated for a force-type connection with a coefficient of friction of 0.1 and a safety factor of 2 against slippage of the workpiece on acceleration due to gravity g. Considerably heavier workpiece weights are permitted with form-fit gripping.

Closing and opening times

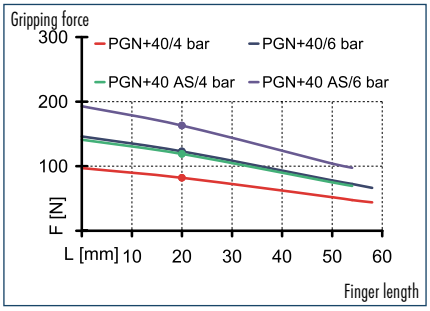
Closing and opening times are purely the times that the base jaws or fingers are in motion. Valve switching times, hose filling times or PLC reaction times are not included in the above times and must be taken into consideration when determining cycle times.

PGN-plus 40

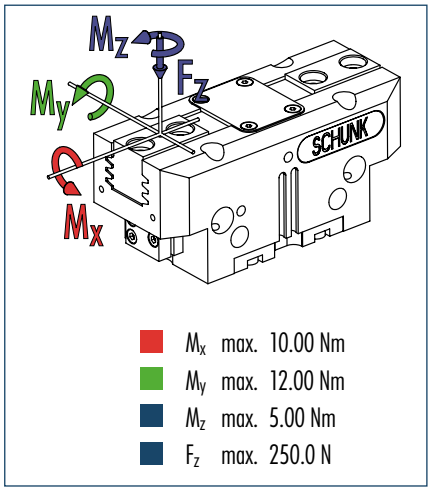
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

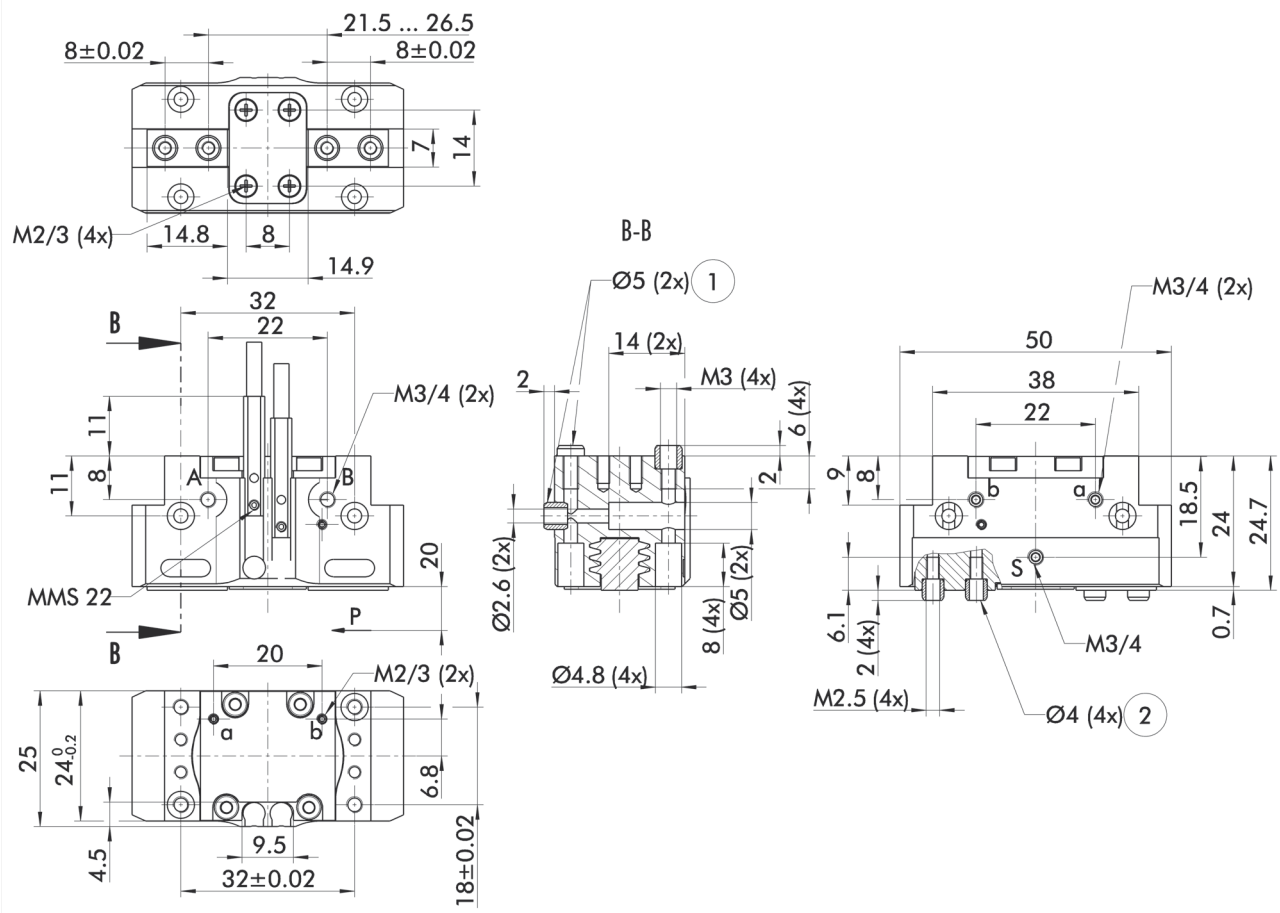


ⓘ The indicated moments and forces are static values, apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement occurs without any hitting or bouncing. Service life may be reduced.

Technical data

Description		PGN-plus 40	PGN-plus 40-AS	PGN-plus 40-IS
ID		**0371080**	**0371082**	**0371084**
Stroke per finger	[mm]	2.5	2.5	2.5
Closing force	[N]	123	163	
Opening force	[N]	132		
Min. spring force	[N]		40	50
Weight	[kg]	0.08	0.1	0.1
Recommended workpiece weight	[kg]	0.62	0.62	0.62
Air consumption per double stroke	[cm³]	2.5	5.5	5.5
Min./max. operating pressure	[bar]	2.5/8	4/6.5	4/6.5
Nominal operating pressure	[bar]	6	6	6
Closing/opening time	[s]	0.02/0.02	0.02/0.03	0.03/0.02
Max. permitted finger length	[mm]	58	54	54
Max. permitted weight per finger	[kg]	0.1	0.1	0.1
IP class		40	40	40
Min./max. ambient temperature	[°C]	-10/90	-10/90	-10/90
Repeat accuracy	[mm]	0.01	0.01	0.01
Cleanroom class ISO-classification 14644-1		5	5	5
OPTIONS and their characteristics				
Dust-protection version		**37371080**	**37371082**	**37371084**
IP class		64	64	64
Weight	[kg]	0.1	0.12	0.12
Anti-corrosion version		**38371080**	**38371082**	**38371084**
High-temperature version		**39371080**	**39371082**	**39371084**
Min./max. ambient temperature	[°C]	-10/130	-10/130	-10/130
Force intensified version		**PGN-plus 40-KVZ**	**PGN-plus 40-AS-KVZ**	**PGN-plus 40-IS-KVZ**
ID		**0372098**	**0372398**	**0372458**
Closing force	[N]	225	265	
Opening force	[N]	235		285
Weight	[kg]	0.11	0.13	0.13
Maximum pressure	[bar]	8	6	6
Max. permitted finger length	[mm]	50	50	50
Precision version		**0371120**	**0371420**	

Main view



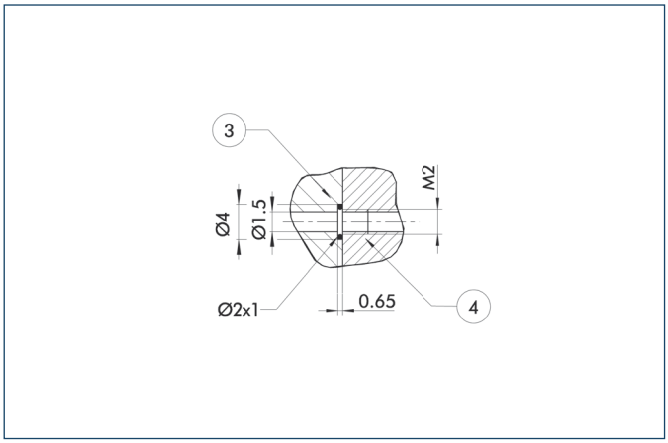
The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

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

A, a Main/direct connection, gripper opening
B, b Main/direct connection, gripper closing
S Air purge connection, or deaeration bore

① Gripper connection
② Finger connection

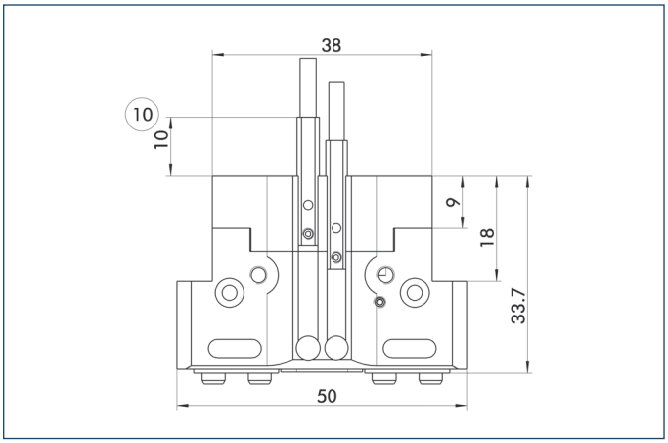
Hose-free direct connection



③ Adapter
④ Gripper

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

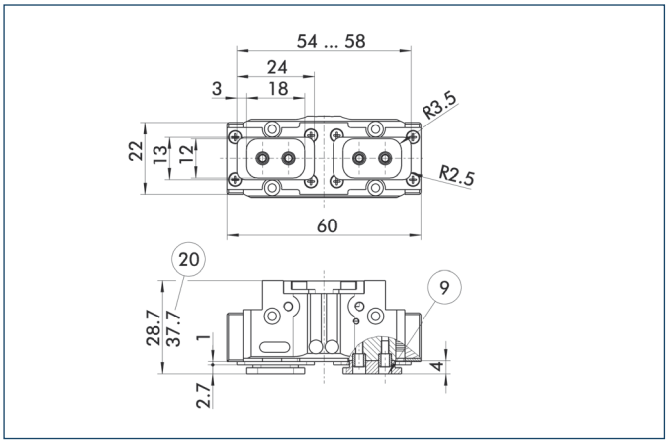
AS/IS gripping force maintenance device



⑩ Projection applies only for AS version

The mechanical gripping force maintenance device ensures a minimum gripping force even in case of pressure drop. This acts as closing force in the AS version, and as opening force in the IS version. In addition, the gripping force maintenance device can also be used for increasing the gripping force or for single-acting gripping.

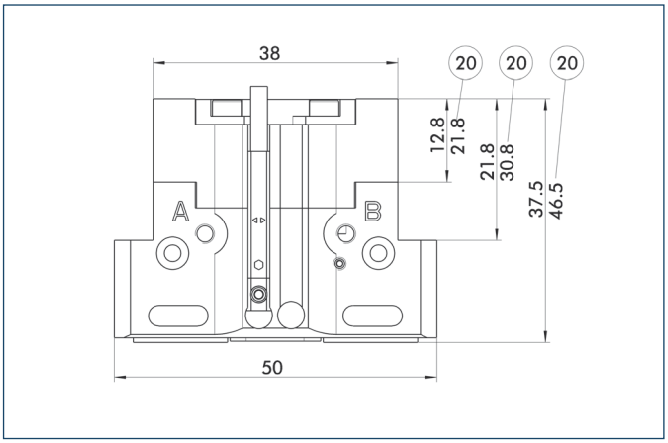
Dust-protection version



⑨ For mounting screw connection diagram, see basic version ⑳ For AS / IS version

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

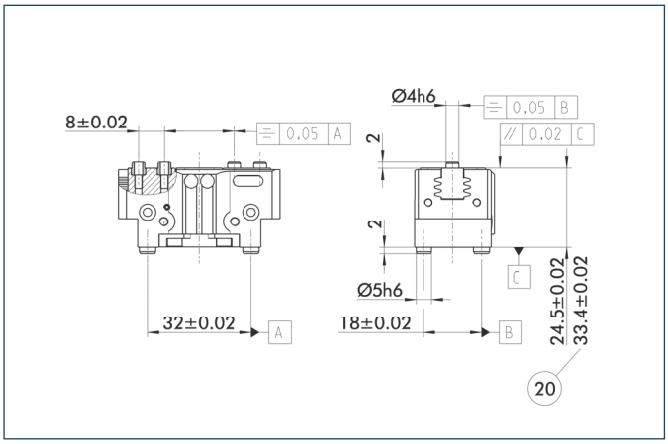
Force intensified version



⑳ For AS / IS 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. The full gripping force shown in the data table is sometimes only reached after a few hundred gripping cycles. Please consider that grippers which are equipped with a gripping force maintenance device (AS / IS) are higher.

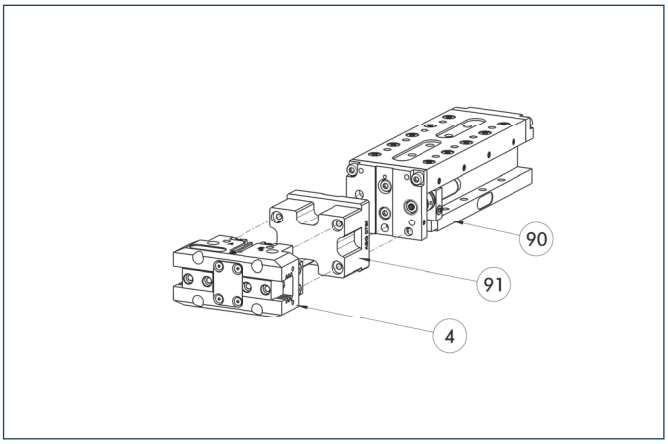
Precision version



⑳ For AS / IS version

The indicated tolerances just refer to the types of precision versions shown in the chart of technical specifications. All other types of precision versions are available on request.

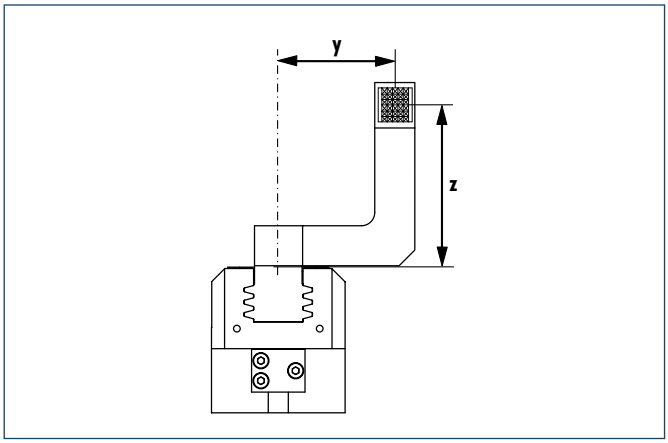
Modular Assembly Automation

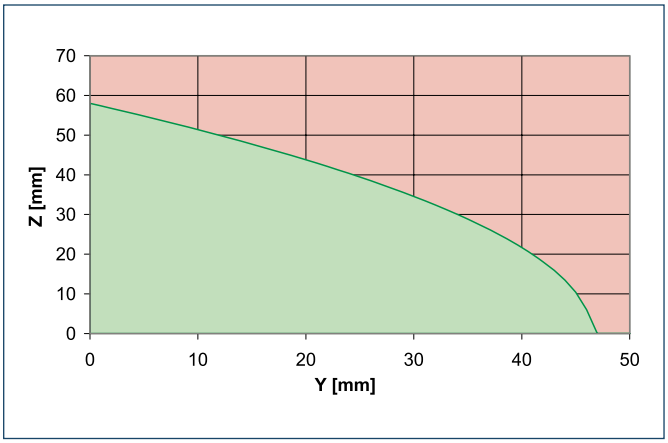


④ Gripper
⑨① ASG
⑨⓪ CLM

This gripper can be combined with the standard linear modules LM, KLM, CLM and ELM of the GEMOTEC modular system. For more information see our main catalog "Modular Assembly Automation".

Maximum permitted finger projection

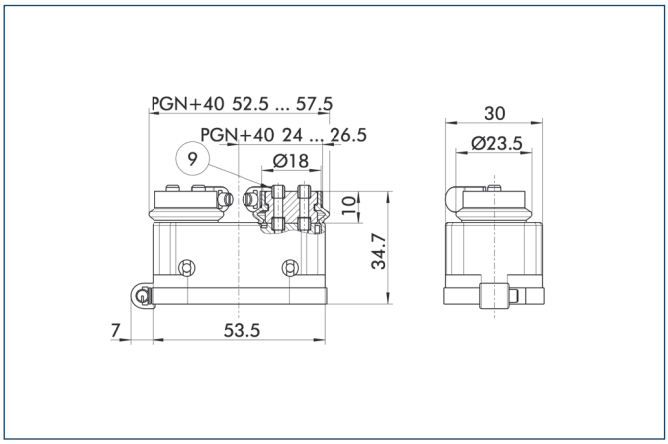




Permitted range
Inadmissible range

The curve applies to the basic version (stroke -1). For other versions, the curve will be parallel but offset in line with the max. permitted finger length.

Protection cover

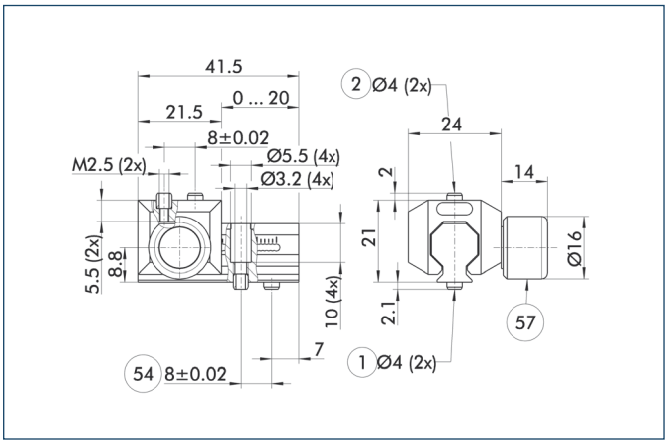


⑨ For mounting screw connection diagram, see basic version

The HUE protective cover completely protects the gripper against external influences up to IP65 if an additional sealing of the cover bottom is provided as part of the application. The mounting diagram shifts by the height of the intermediate jaw.

Description	ID	Cleanroom class ISO-classification 14644-1
Protection cover		
HUE PGN-plus 40	**0371490**	2

Universal intermediate jaw



① Gripper connection
② Finger connection
54 Optional right or left connection
57 Locking

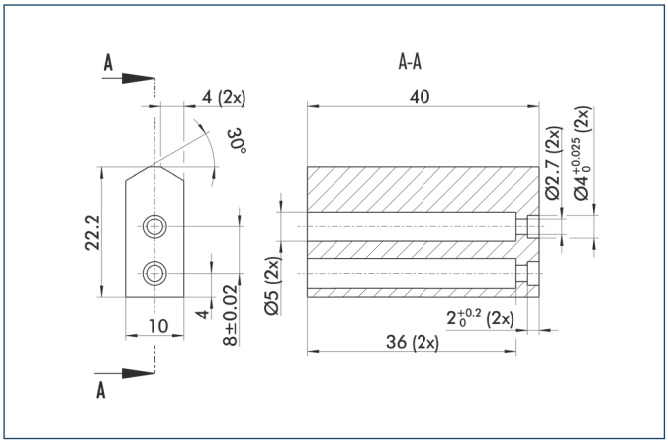
The universal intermediate jaw allows fast tool-free and reliable plugging and shifting of top jaws at the gripper.

Description	ID	Grid dimension
Universal intermediate jaw		
UZB 40	**0300040**	1 mm

ⓘ The slide UZB-S can be removed completely and has to be ordered separately. Moreover, it allows a fast jaw change.

You can find more detailed information and individual parts of the above-mentioned accessories in the "Accessories" catalog section.

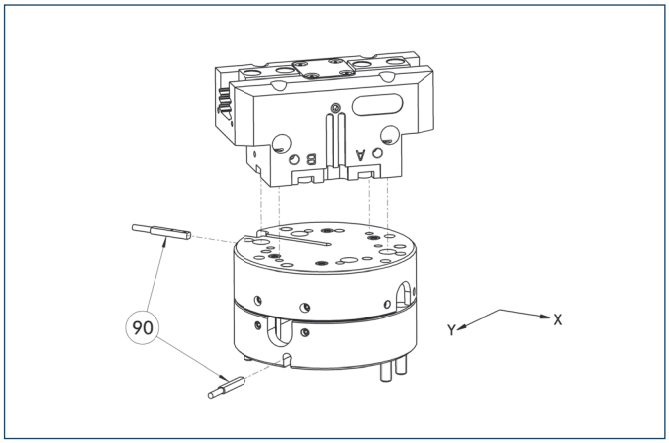
Finger blanks



Finger blanks for customized subsequent machining

Description	ID	Material	Scope of delivery
Finger blanks			
ABR-plus 40	**0300008**	Aluminum	1
SBR-plus 40	**0300018**	16 MnCr 5	1

Compensation unit with spring reset

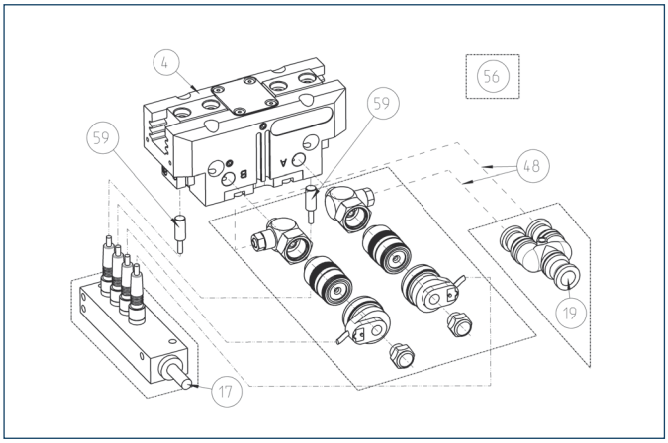


(90) Monitoring

Grippers can be directly mounted without using an adapter plate. For details see our catalog “Robot Accessories”.

Description	ID	Compensation travel	Reset force
Compensation unit			
AGE-F-XY-031-1	**0324900**	±1.5 mm	1 N
AGE-F-XY-031-2	**0324901**	±1.5 mm	2.5 N
AGE-F-XY-031-3	**0324902**	±1.5 mm	3.3 kN

Attachment valves

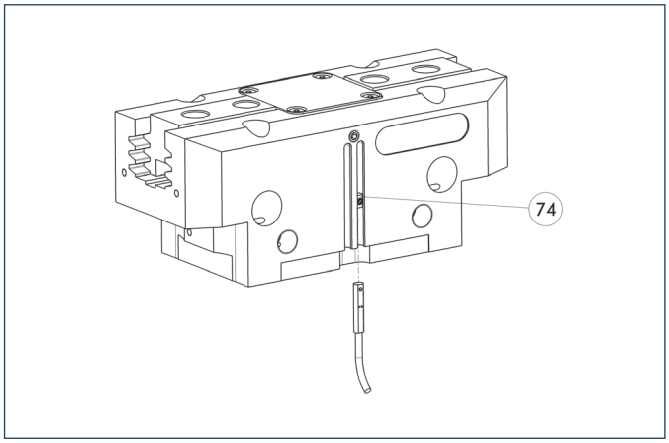


(4) Gripper
(17) Cable outlet
(19) Air connection
(48) Hose
(56) Included in delivery
(59) Monitoring “gripping”

For each gripper one attachment valve ABV is required, optional with distributor for sensors and valves. Attachment valves increase the efficiency, reduce the installation work and air consumption and simplify air supply. For details please refer to the “Accessories” catalog section.

Description	ID
Attachment valves	
ABV-MV15-M3	**0303322**
ABV-MV15-M3-V2-M8	**0303384**
ABV-MV15-M3-V4-M8	**0303354**
ABV-MV15-M3-V8-M8	**0303355**

Programmable magnetic switch



(74) Stop for MMS-P

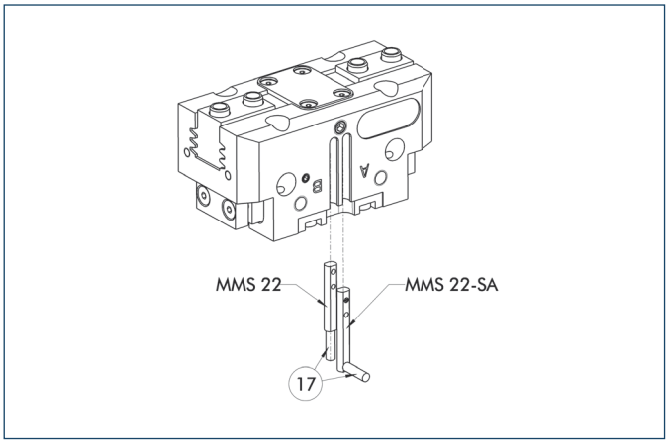
Position monitoring with two programmable positions per sensor. The end position monitoring is mounted in the C-slot.

Description	ID	Recommended product
Programmable magnetic switch		
MMS-P 22-S-M8-PNP	**0301370**	•
MMSK-P 22-S-PNP	**0301371**	
Connection cables		
KA BG08-L 4P-0500	**0307767**	
KA BG08-L 4P-1000	**0307768**	
KA BW08-L 4P-0500	**0307765**	
KA BW08-L 4P-1000	**0307766**	
Sensor Distributor		
V2-M8-4P-2XM8-3P	**0301380**	

ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.
ⓘ Per gripper one sensor (closer/NO) is required, optionally a cable extension.

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Electronic magnetic switches



⑰ Cable outlet

End position monitoring for mounting in the C-slot

Description	ID	Recommended product
Electronic magnetic switches		
MMS 22-S-M5-PNP	**0301438**	
MMS 22-S-M5-NPN	**0301439**	
MMS 22-S-M8-PNP	**0301432**	•
MMS 22-S-M8-NPN	**0301433**	
MMSK 22-S-PNP	**0301434**	
MMSK 22-S-NPN	**0301435**	
Electronic magnetic switches with lateral cable outlet		
MMS 22-S-M5-PNP-SA	**0301448**	
MMS 22-S-M5-NPN-SA	**0301449**	
MMS 22-S-M8-PNP-SA	**0301442**	•
MMS 22-S-M8-NPN-SA	**0301443**	
MMSK 22-S-PNP-SA	**0301444**	
MMSK 22-S-NPN-SA	**0301445**	
Connection cables		
KA BG05-L 3P-0300	**0301652**	
KA BG08-L 3P-0300-PNP	**0301622**	
KA BG08-L 3P-0500-PNP	**0301623**	
KA BW05-L 3P-0300	**0301650**	
KA BW08-L 3P-0300-NPN	**0301602**	
KA BW08-L 3P-0300-PNP	**0301594**	
KA BW08-L 3P-0500-NPN	**9641116**	
KA BW08-L 3P-0500-PNP	**0301502**	
Cable extensions		
KV BW08-SG08 3P-0030-PNP	**0301495**	
KV BW08-SG08 3P-0100-PNP	**0301496**	
KV BW08-SG08 3P-0200-PNP	**0301497**	

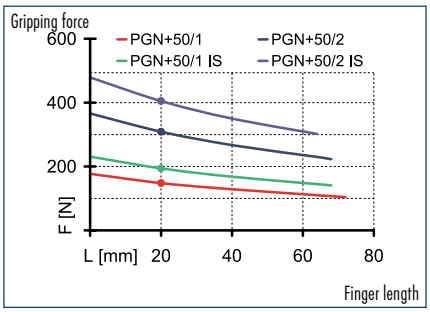
ⓘ Two sensors (closer/NO) are required for each gripper, plus extension cables as an option.

ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

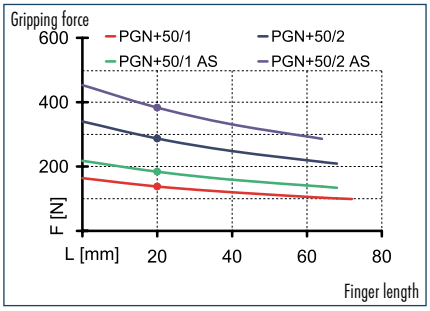
You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

PGN-plus 50

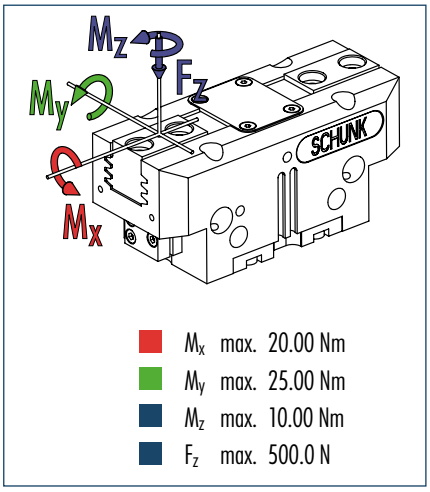
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load



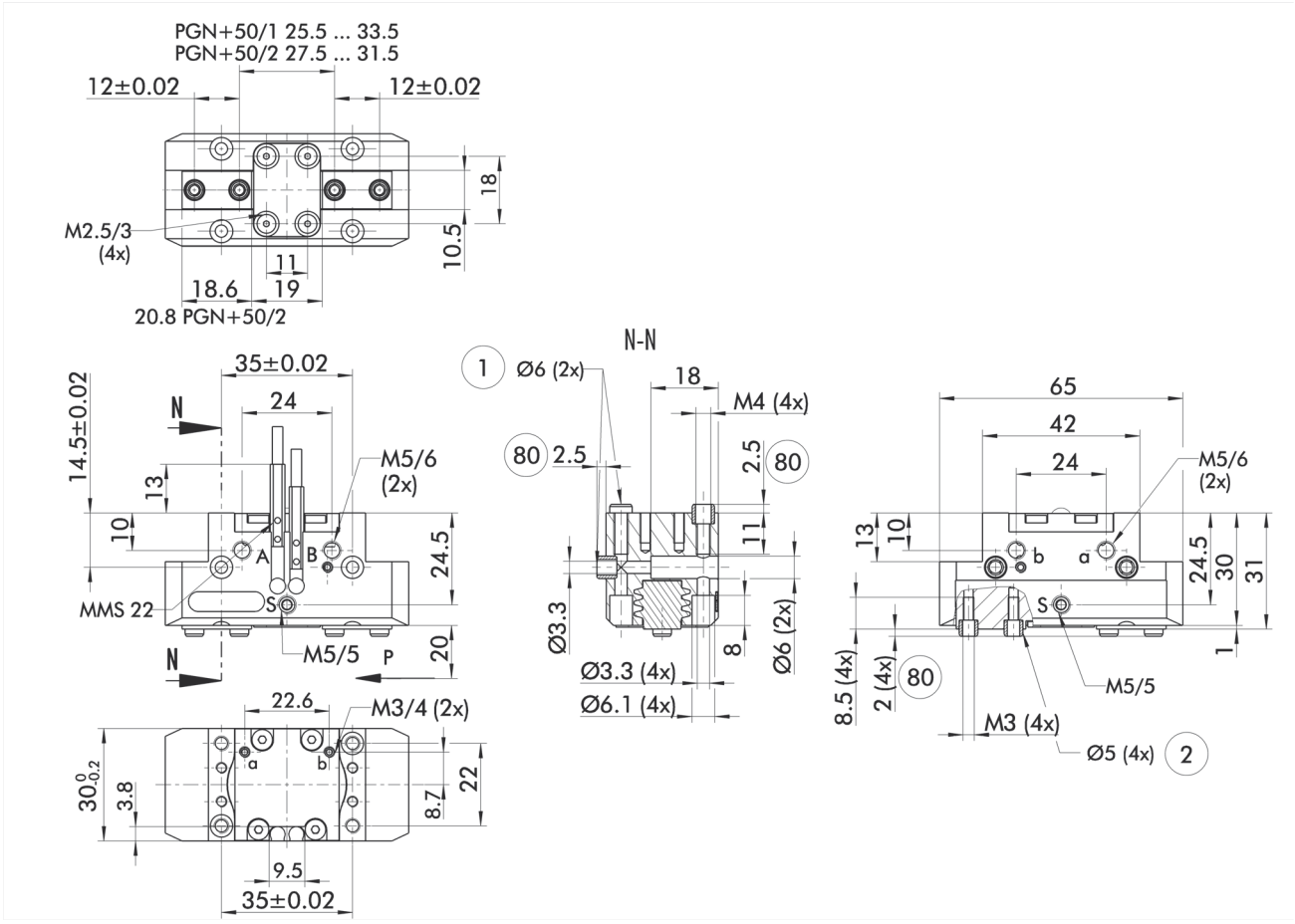
- M_x max. 20.00 Nm
- M_y max. 25.00 Nm
- M_z max. 10.00 Nm
- F_z max. 500.0 N

ⓘ The indicated moments and forces are static values, apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement occurs without any hitting or bouncing. Service life may be reduced.

Technical data

Description		PGN-plus 50-1	PGN-plus 50-2	PGN-plus 50-1-AS	PGN-plus 50-2-AS	PGN-plus 50-1-IS	PGN-plus 50-2-IS
ID		**0371099**	**0371149**	**0371399**	**0371449**	**0371459**	**0371469**
Stroke per finger	[mm]	4	2	4	2	4	2
Closing force	[N]	140	290	185	385		
Opening force	[N]	145	310			190	405
Min. spring force	[N]			45	95	45	95
Weight	[kg]	0.17	0.17	0.21	0.21	0.21	0.21
Recommended workpiece weight	[kg]	0.7	1.45	0.7	1.45	0.7	1.45
Air consumption per double stroke	[cm³]	5	5	12	12	5	12
Min./max. operating pressure	[bar]	2.5/8	2.5/8	4/6.5	4/6.5	4/6.5	4/6.5
Nominal operating pressure	[bar]	6	6	6	6	6	6
Closing/opening time	[s]	0.02/0.02	0.02/0.02	0.02/0.03	0.02/0.03	0.03/0.02	0.03/0.02
Max. permitted finger length	[mm]	72	68	68	68	64	64
Max. permitted weight per finger	[kg]	0.18	0.18	0.18	0.18	0.18	0.18
IP class		40	40	40	40	40	40
Min./max. ambient temperature	[°C]	-10/90	-10/90	-10/90	-10/90	-10/90	-10/90
Repeat accuracy	[mm]	0.01	0.01	0.01	0.01	0.01	0.01
Cleanroom class ISO-classification 14644-1		5	5	5	5	5	5
OPTIONS and their characteristics							
Dust-protection version		**37371099**	**37371149**	**37371399**	**37371449**	**37371459**	**37371469**
IP class		64	64	64	64	64	64
Weight	[kg]	0.2	0.2	0.24	0.24	0.24	0.24
Anti-corrosion version		**38371099**	**38371149**	**38371399**	**38371449**	**38371459**	**38371469**
High-temperature version		**39371099**	**39371149**	**39371399**	**39371449**	**39371459**	**39371469**
Min./max. ambient temperature	[°C]	-10/130	-10/130	-10/130	-10/130	-10/130	-10/130
Force intensified version		PGN-plus 50-1-KVZ	PGN-plus 50-2-KVZ	PGN-plus 50-1-AS-KVZ		PGN-plus 50-1-IS-KVZ	
ID		**0372099**	**0372149**	**0372399**		**0372459**	
Closing force	[N]	250	520	295			
Opening force	[N]	260	560			305	
Weight	[kg]	0.21	0.21	0.26		0.26	
Maximum pressure	[bar]	6	6	6		6	
Max. permitted finger length	[mm]	64	50	50		50	
Precision version		**0371121**	**0371171**	**0371421**	**0371436**		

Main view

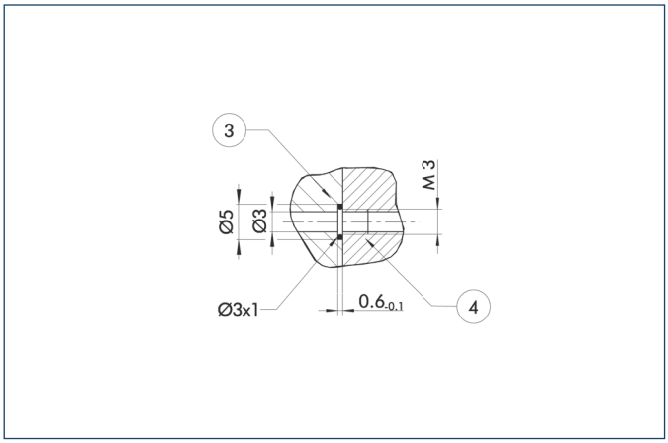


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

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

A, a Main/direct connection, gripper opening
B, b Main/direct connection, gripper closing
S Air purge connection, or deaeration bore
① Gripper connection
② Finger connection
⑧⓪ Depth of the centering sleeve hole in the matching part

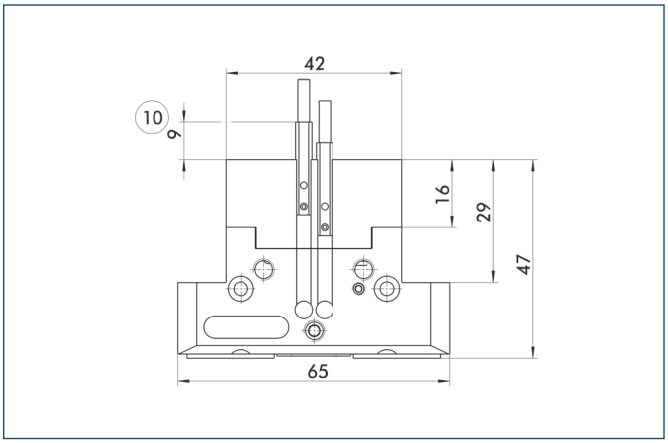
Hose-free direct connection



③ Adapter
④ Gripper

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

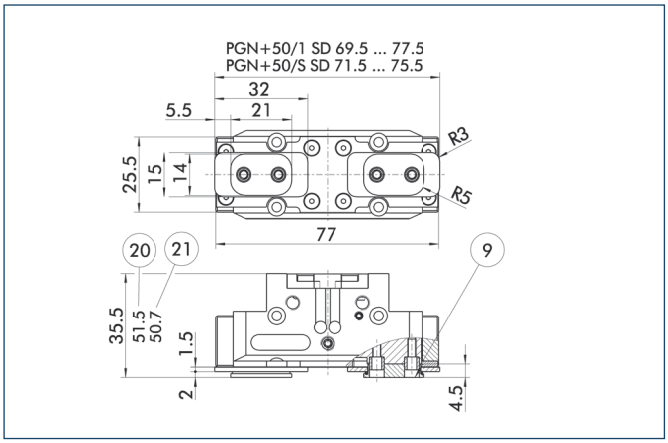
AS/IS gripping force maintenance device



⑩ Projection applies only for AS version

The mechanical gripping force maintenance device ensures a minimum gripping force even in case of pressure drop. This acts as closing force in the AS version, and as opening force in the IS version. In addition, the gripping force maintenance device can also be used for increasing the gripping force or for single-acting gripping.

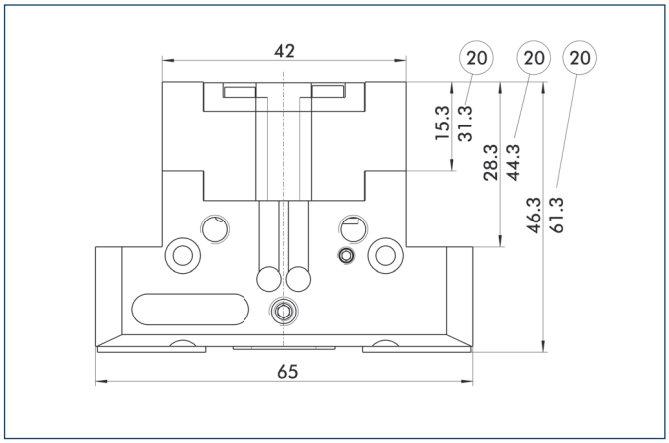
Dust-protection version



(9) For mounting screw connection diagram, see basic version
(21) Applies for KVZ version
(20) For AS / IS version

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

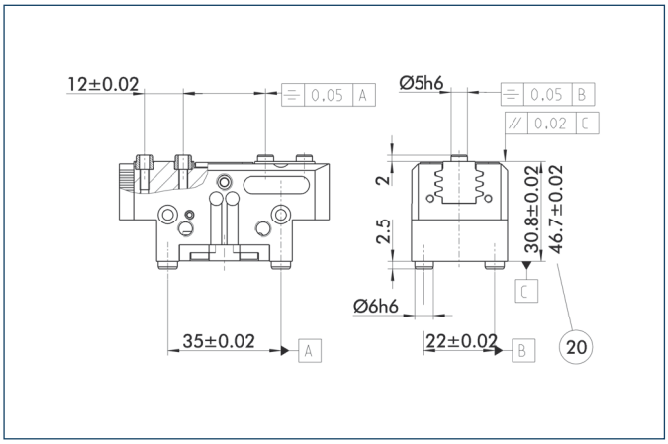
Force intensified version



(20) For AS / IS 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. The full gripping force shown in the data table is sometimes only reached after a few hundred gripping cycles. Please consider that grippers which are equipped with a gripping force maintenance device (AS / IS) are higher.

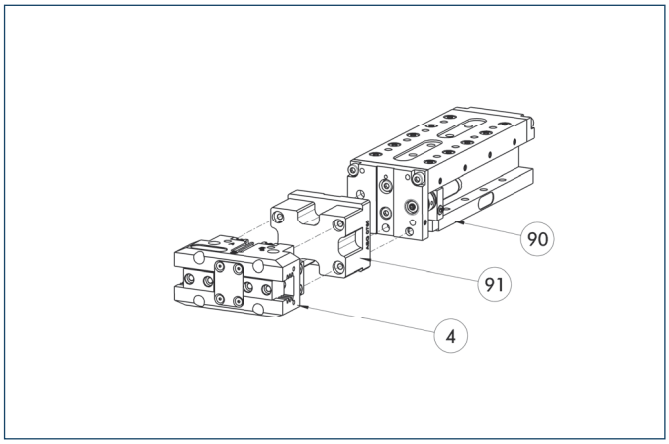
Precision version



(20) For AS / IS version

The indicated tolerances just refer to the types of precision versions shown in the chart of technical specifications. All other types of precision versions are available on request.

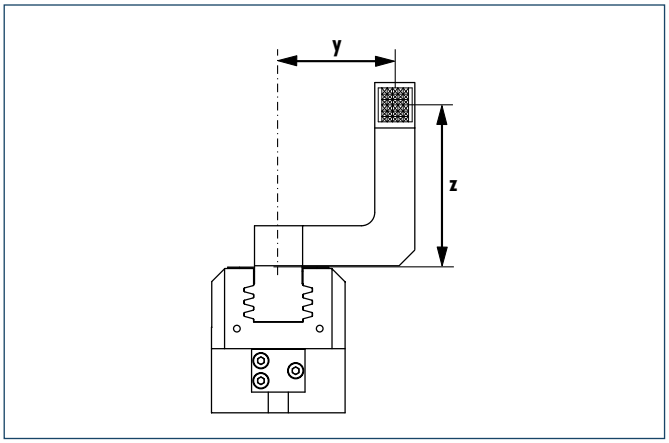
Modular Assembly Automation

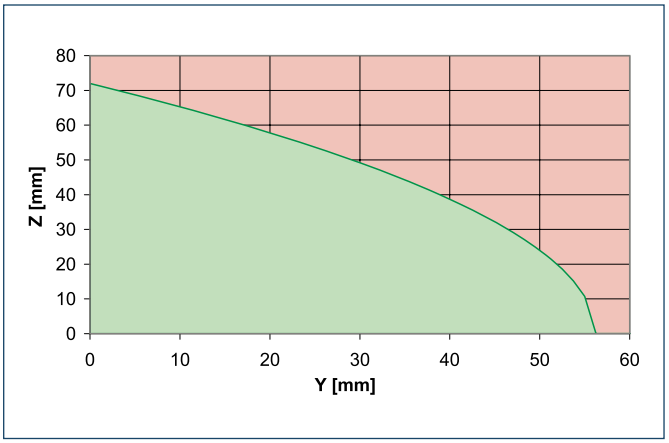


(4) Gripper
(90) CLM
(91) ASG

This gripper can be combined with the standard linear modules LM, KLM, CLM and ELM of the GEMOTEC modular system. For more information see our main catalog "Modular Assembly Automation".

Maximum permitted finger projection

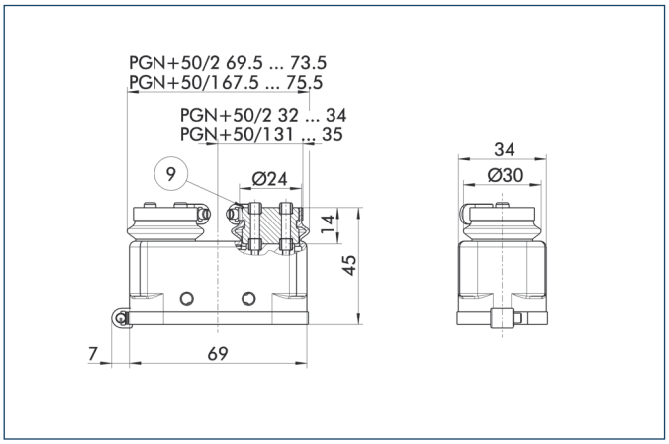




Permitted range
Inadmissible range

The curve applies to the basic version (stroke -1). For other versions, the curve will be parallel but offset in line with the max. permitted finger length.

Protection cover

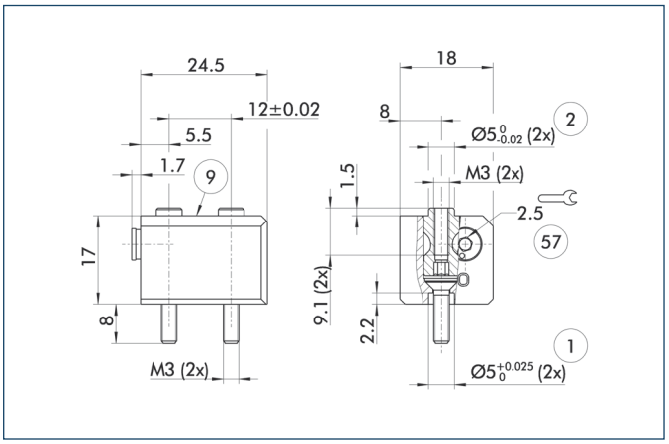


⑨ For mounting screw connection diagram, see basic version

The HUE protective cover completely protects the gripper against external influences up to IP65 if an additional sealing of the cover bottom is provided as part of the application. The mounting diagram shifts by the height of the intermediate jaw.

Description	ID	Cleanroom class ISO-classification 14644-1
Protection cover		
HUE PGN-plus 50	**0371479**	2

Quick-change Jaw System



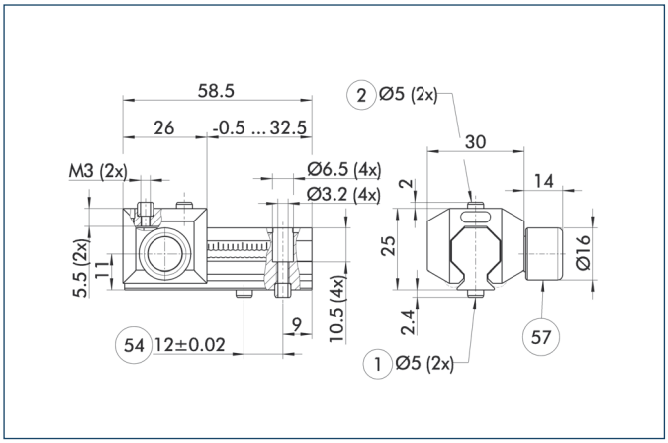
① Gripper connection
② Finger connection
⑨ For mounting screw connection diagram, see basic version
57 Locking

The BSWS quick-change jaw system enables top jaws to be changed on the gripper manually and rapidly. An adapter (BSWS-A) and a base (BSWS-B) are required for each gripper jaw.
For a reverse assembly without height set-up, one adapter (BSWS-A) and a kit (BSWS-U) per gripper jaw are required. Another effect of the BSWS-U is, that there are no disturbing fastening bores in the finger contour.

Description	ID
Quick-change Jaw System adapter	
BSWS-A 50	**0303020**
Quick-change Jaw System base	
BSWS-B 50	**0303021**
Quick-change Jaw System reversed	
BSWS-U 50	**0303040**

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Universal intermediate jaw



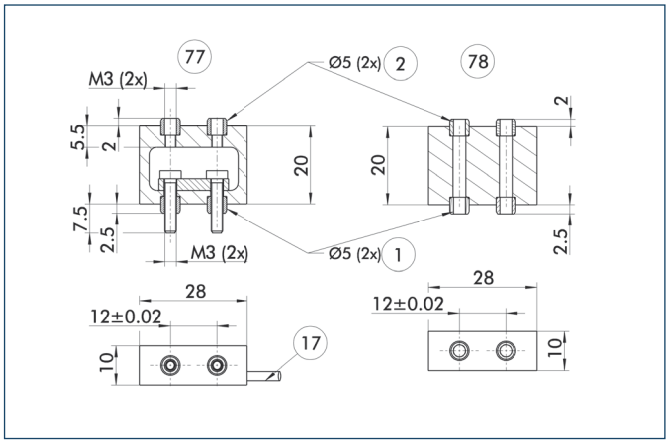
① Gripper connection
② Finger connection
54 Optional right or left connection
57 Locking

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

Description	ID	Grid dimension
Universal intermediate jaw		
UZB 50	**0300041**	1.5 mm

ⓘ The slide UZB-S can be removed completely and has to be ordered separately. Moreover, it allows a fast jaw change.

Force measuring jaws

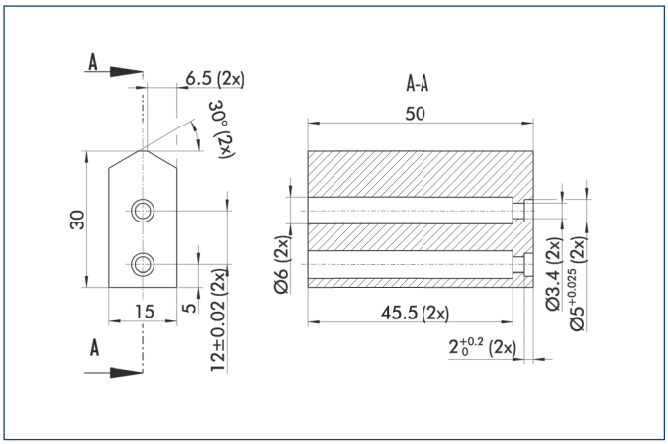


① Gripper connection
② Finger connection
17 Cable outlet
77 Active intermediate jaws
78 Passive intermediate jaws

Force measuring jaws measure gripping forces, but can also determine workpiece weights or dimensional deviations. There are active and passive intermediate jaws (FMS-ZBA or FMS-ZBP). At least one active force measuring jaw is required per gripper, the rest can be passive. For each active jaw, a FMS-A1 control unit and a FMS-A connection cable are required.

Description	ID
Active intermediate jaws	
FMS-ZBA 50	**0301830**
Passive intermediate jaws	
FMS-ZBP 50	**0301831**
Electronic Processor	
FMS-A1	**0301810**
Connection cables	
FMS-AK0200	**0301820**
FMS-AK0500	**0301821**
FMS-AK1000	**0301822**
FMS-AK2000	**0301823**

Finger blanks

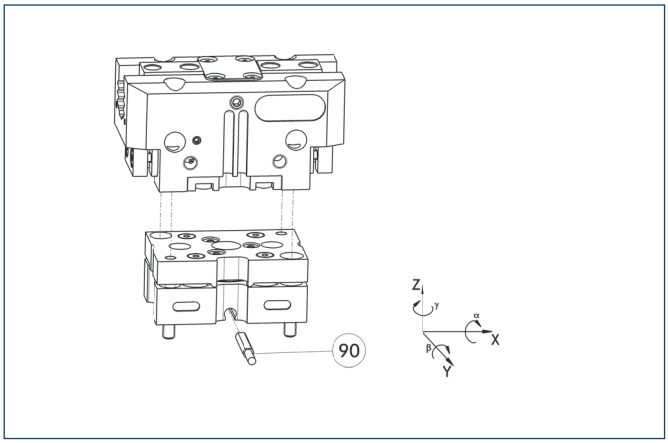


Finger blanks for customized subsequent machining

Description	ID	Material	Scope of delivery
Finger blanks			
ABR-plus 50	**0300009**	Aluminum	1
SBR-plus 50	**0300019**	16 MnCr 5	1

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Tolerance compensation unit

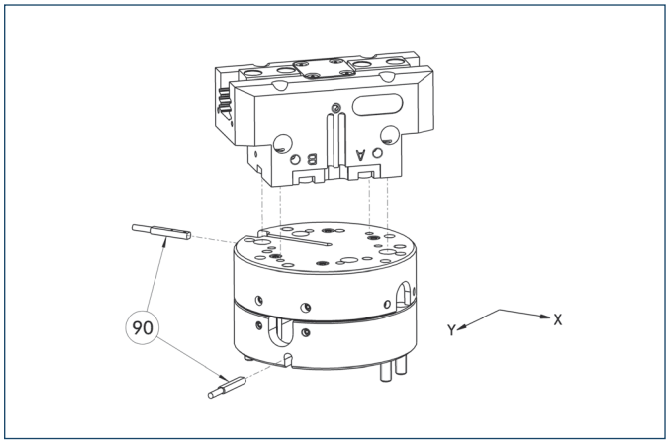


(90) Monitoring of locking

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 see catalog “Robot Accessories”.

Description	ID	Locking	Deflection
Compensation unit			
TCU-050-3-OV-P	**0324757**	No	±0°/±1°/±0°

Compensation unit with spring reset

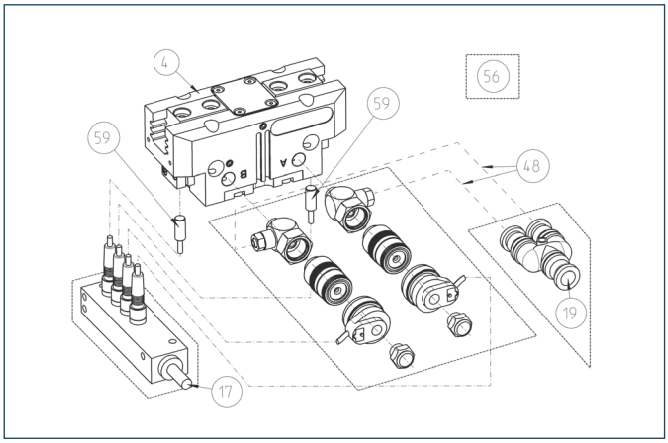


(90) Monitoring

Grippers can be directly mounted without using an adapter plate. For details see our catalog “Robot Accessories”.

Description	ID	Compensation travel	Reset force
Compensation unit			
AGE-F-XY-040-1	**0324920**	±2 mm	1 N
AGE-F-XY-040-2	**0324921**	±2 mm	2.5 N
AGE-F-XY-040-3	**0324922**	±2 mm	3.3 N

Attachment valves

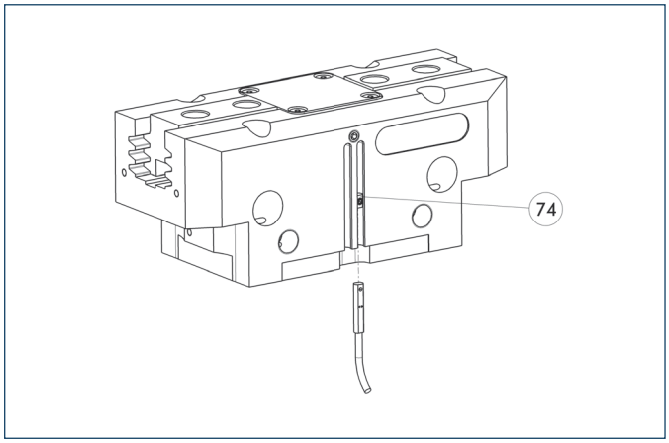


(4) Gripper
(17) Cable outlet
(19) Air connection
(48) Hose
(56) Included in delivery
(59) Monitoring “gripping”

For each gripper one attachment valve ABV is required, optional with distributor for sensors and valves. Attachment valves increase the efficiency, reduce the installation work and air consumption and simplify air supply. For details please refer to the “Accessories” catalog section.

Description	ID
Attachment valves	
ABV-MV15-M5	**0303323**
ABV-MV15-M5-V2-M8	**0303386**
ABV-MV15-M5-V4-M8	**0303356**
ABV-MV15-M5-V8-M8	**0303357**

Programmable magnetic switch



(74) Stop for MMS-P

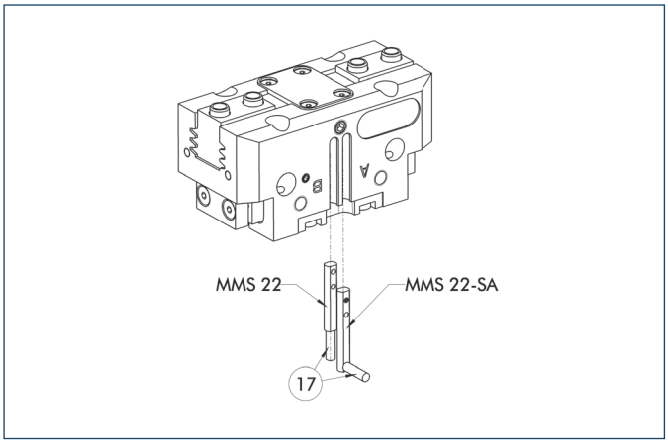
Position monitoring with two programmable positions per sensor. The end position monitoring is mounted in the C-slot.

Description	ID	Recommended product
Programmable magnetic switch		
MMS-P 22-S-M8-PNP	**0301370**	•
MMSK-P 22-S-PNP	**0301371**	
Connection cables		
KA BG08-L 4P-0500	**0307767**	
KA BG08-L 4P-1000	**0307768**	
KA BW08-L 4P-0500	**0307765**	
KA BW08-L 4P-1000	**0307766**	
Sensor Distributor		
V2-M8-4P-2XM8-3P	**0301380**	

ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.
ⓘ Per gripper one sensor (closer/NO) is required, optionally a cable extension.

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Electronic magnetic switches



⑰ Cable outlet

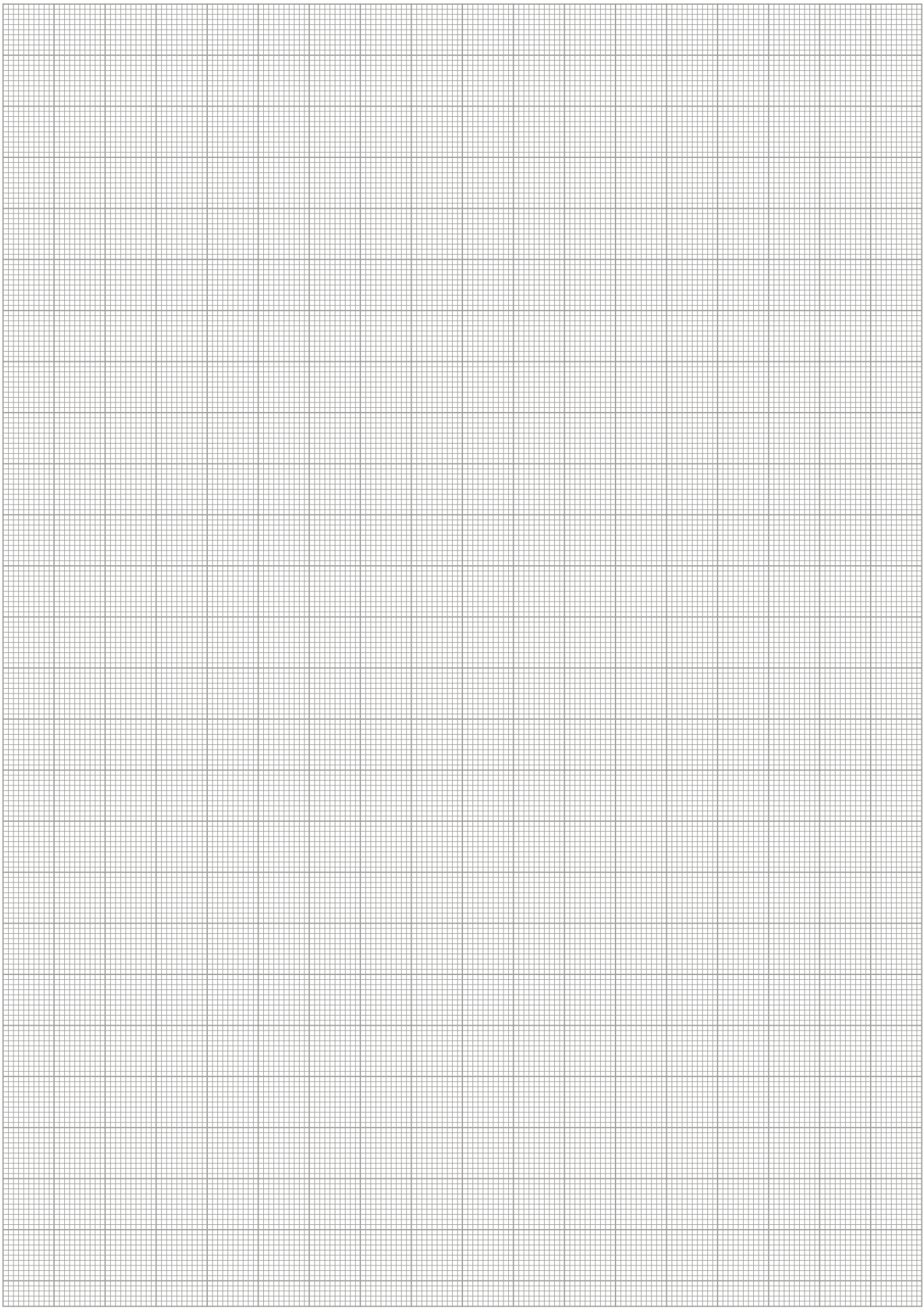
End position monitoring for mounting in the C-slot

Description	ID	Recommended product
Electronic magnetic switches		
MMS 22-S-M5-PNP	0301438	
MMS 22-S-M5-NPN	0301439	
MMS 22-S-M8-PNP	0301432	•
MMS 22-S-M8-NPN	0301433	
MMSK 22-S-PNP	0301434	
MMSK 22-S-NPN	0301435	
Electronic magnetic switches with lateral cable outlet		
MMS 22-S-M5-PNP-SA	0301448	
MMS 22-S-M5-NPN-SA	0301449	
MMS 22-S-M8-PNP-SA	0301442	•
MMS 22-S-M8-NPN-SA	0301443	
MMSK 22-S-PNP-SA	0301444	
MMSK 22-S-NPN-SA	0301445	
Connection cables		
KA BG05-L 3P-0300	0301652	
KA BG08-L 3P-0300-PNP	0301622	
KA BG08-L 3P-0500-PNP	0301623	
KA BW05-L 3P-0300	0301650	
KA BW08-L 3P-0300-NPN	0301602	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-NPN	9641116	
KA BW08-L 3P-0500-PNP	0301502	
Cable extensions		
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	

ⓘ Two sensors (closer/NO) are required for each gripper, plus extension cables as an option.

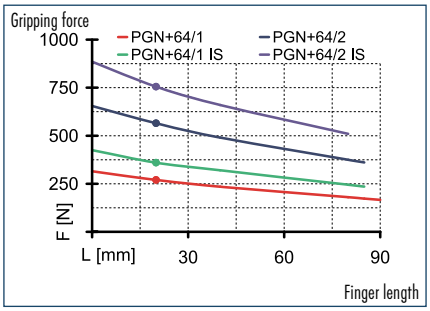
ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

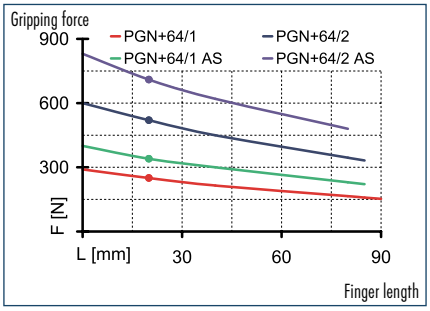


PGN-plus 64

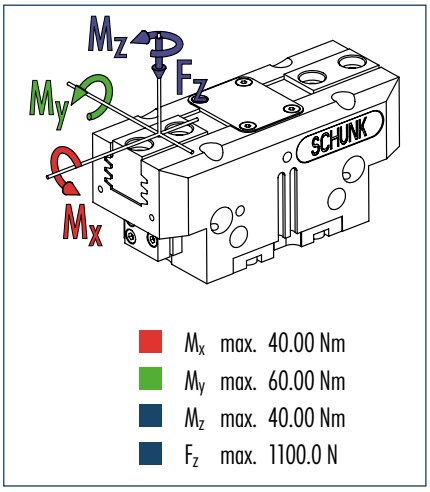
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load



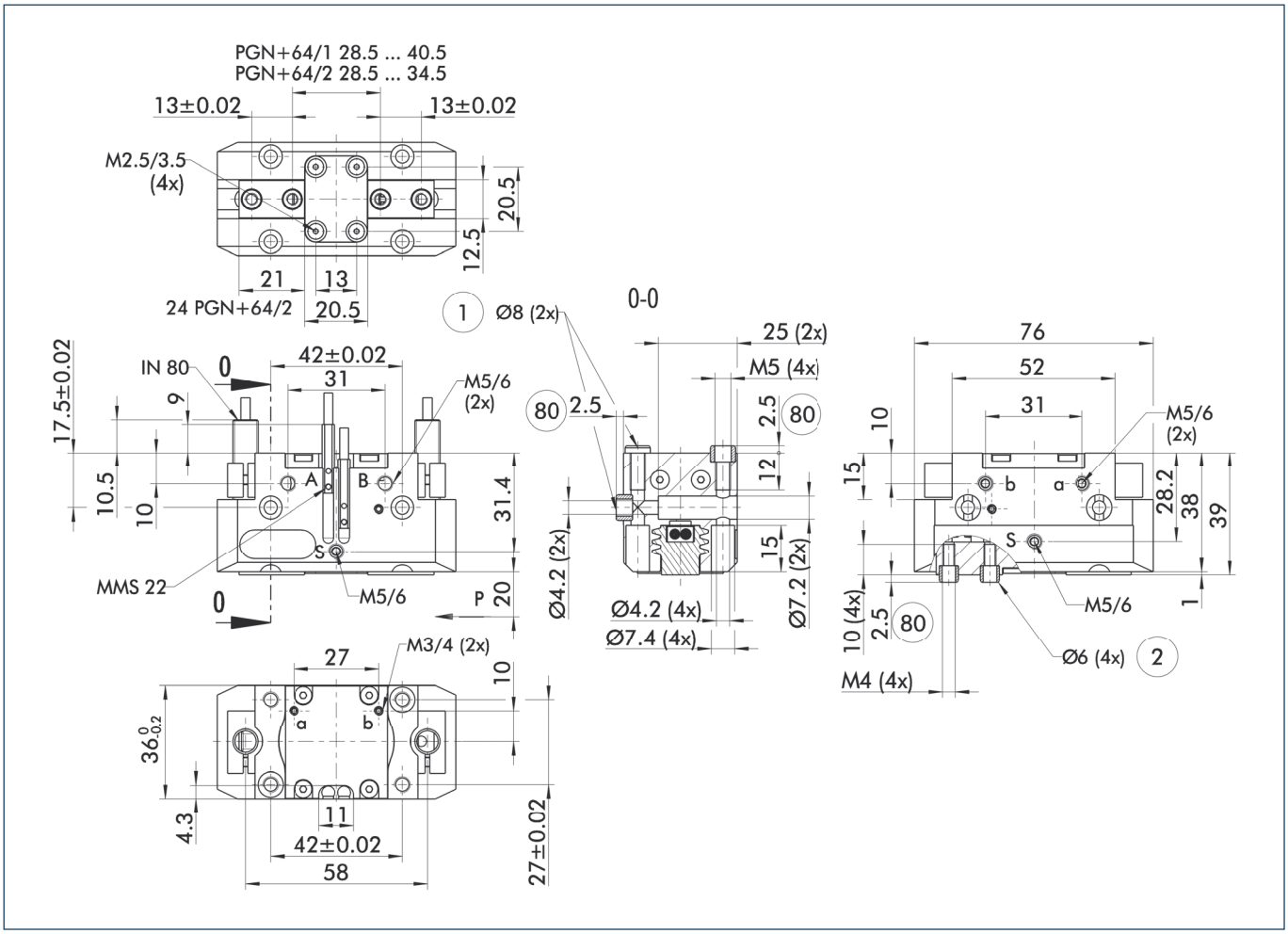
- M_x max. 40.00 Nm
- M_y max. 60.00 Nm
- M_z max. 40.00 Nm
- F_z max. 1100.0 N

ⓘ The indicated moments and forces are static values, apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement occurs without any hitting or bouncing. Service life may be reduced.

Technical data

Description		PGN-plus 64-1	PGN-plus 64-2	PGN-plus 64-1-AS	PGN-plus 64-2-AS	PGN-plus 64-1-IS	PGN-plus 64-2-IS
ID		**0371090**	**0371091**	**0371092**	**0371093**	**0371094**	**0371095**
Stroke per finger	[mm]	6	3	6	3	6	3
Closing force	[N]	250	520	340	710		
Opening force	[N]	270	565			360	755
Min. spring force	[N]			90	190	90	190
Weight	[kg]	0.28	0.28	0.37	0.37	0.37	0.37
Recommended workpiece weight	[kg]	1.25	2.6	1.25	2.6	1.25	2.6
Air consumption per double stroke	[cm³]	9	9	48	48	48	48
Min./max. operating pressure	[bar]	2.5/8	2.5/8	4/6.5	4/6.5	4/6.5	4/6.5
Nominal operating pressure	[bar]	6	6	6	6	6	6
Closing/opening time	[s]	0.03/0.03	0.03/0.03	0.02/0.04	0.02/0.04	0.04/0.02	0.04/0.02
Max. permitted finger length	[mm]	90	85	85	80	85	80
Max. permitted weight per finger	[kg]	0.35	0.35	0.35	0.35	0.35	0.35
IP class		40	40	40	40	40	40
Min./max. ambient temperature	[°C]	-10/90	-10/90	-10/90	-10/90	-10/90	-10/90
Repeat accuracy	[mm]	0.01	0.01	0.01	0.01	0.01	0.01
Cleanroom class ISO-classification 14644-1		5	5	5	5	5	5
OPTIONS and their characteristics							
Dust-protection version		**37371090**	**37371091**	**37371092**	**37371093**	**37371094**	**37371095**
IP class		64	64	64	64	64	64
Weight	[kg]	0.35	0.35	0.44	0.44	0.44	0.44
Anti-corrosion version		**38371090**	**38371091**	**38371092**	**38371093**	**38371094**	**38371095**
High-temperature version		**39371090**	**39371091**	**39371092**	**39371093**	**39371094**	**39371095**
Min./max. ambient temperature	[°C]	-10/130	-10/130	-10/130	-10/130	-10/130	-10/130
Force intensified version		PGN-plus 64-1-KVZ	PGN-plus 64-2-KVZ	PGN-plus 64-1-AS-KVZ		PGN-plus 64-1-IS-KVZ	
ID		**0372090**	**0372091**	**0372092**		**0372093**	
Closing force	[N]	450	520	540			
Opening force	[N]	485	1015			575	
Weight	[kg]	0.35	0.35	0.43		0.43	
Maximum pressure	[bar]	6	6	6		6	
Max. permitted finger length	[mm]	80	64	64		64	
Precision version		**0371122**	**0371172**	**0371422**	**0371437**		

Main view

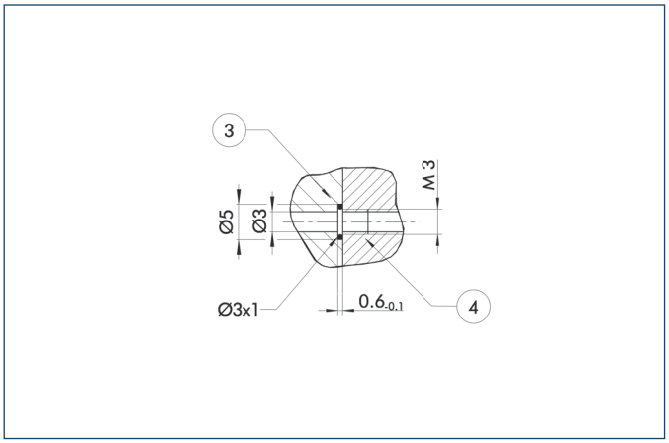


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

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

A, a Main/direct connection, gripper opening
B, b Main/direct connection, gripper closing
S Air purge connection, or deaeration bore
① Gripper connection
② Finger connection
⑧⓪ Depth of the centering sleeve hole in the matching part

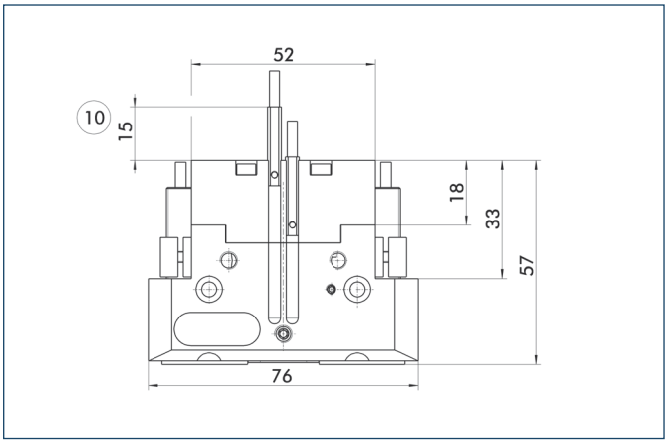
Hose-free direct connection



③ Adapter
④ Gripper

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

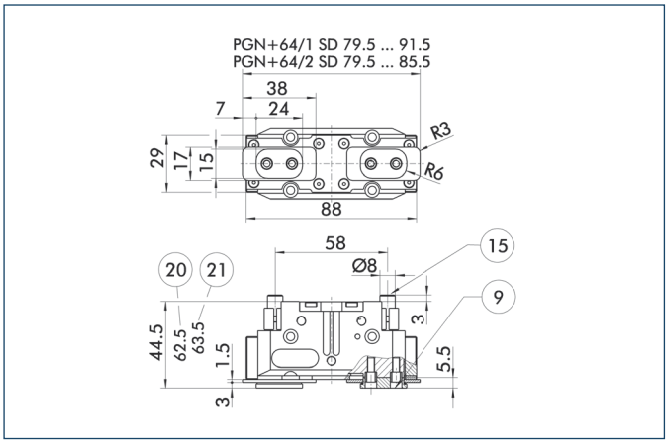
AS/IS gripping force maintenance device



⑩ Projection applies only for AS version

The mechanical gripping force maintenance device ensures a minimum gripping force even in case of pressure drop. This acts as closing force in the AS version, and as opening force in the IS version. In addition, the gripping force maintenance device can also be used for increasing the gripping force or for single-acting gripping.

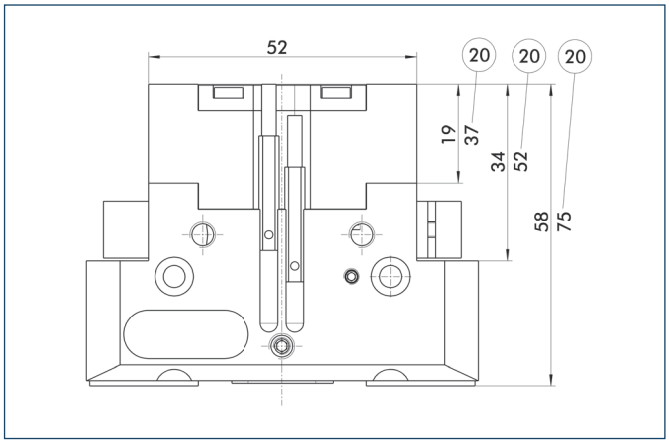
Dust-protection version



⑨ For mounting screw connection diagram, see basic version
⑮ Sealing bolt
⑳ For AS / IS version
㉑ Applies for KVZ version

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

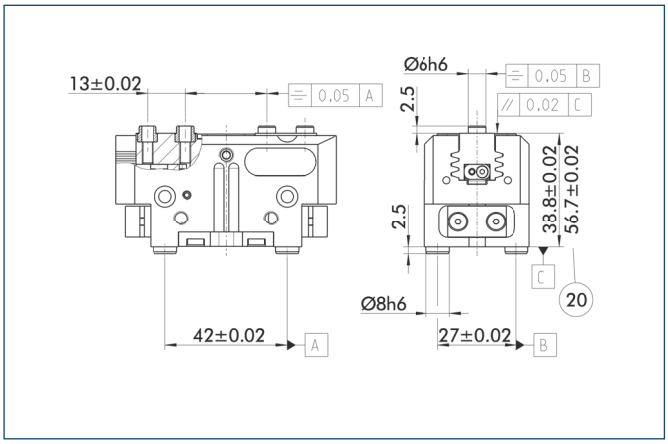
Force intensified version



⑳ For AS / IS 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. The full gripping force shown in the data table is sometimes only reached after a few hundred gripping cycles. Please consider that grippers which are equipped with a gripping force maintenance device (AS / IS) are higher.

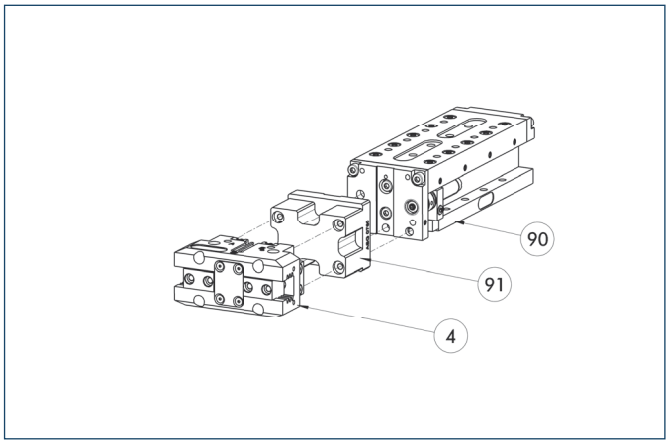
Precision version



⑳ For AS / IS version

The indicated tolerances just refer to the types of precision versions shown in the chart of technical specifications. All other types of precision versions are available on request.

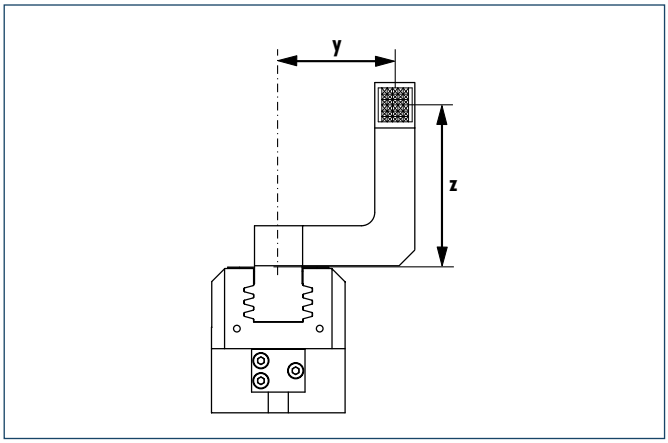
Modular Assembly Automation

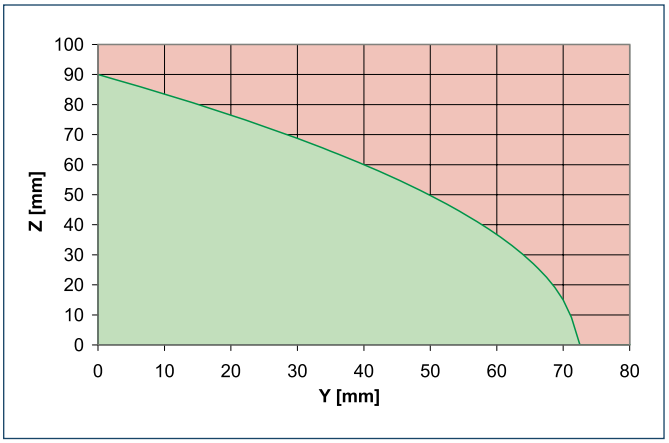


④ Gripper
⑨⓪ CLM
⑨① ASG

This gripper can be combined with the standard linear modules LM, KLM, CLM and ELM of the GEMOTEC modular system. For more information see our main catalog "Modular Assembly Automation".

Maximum permitted finger projection

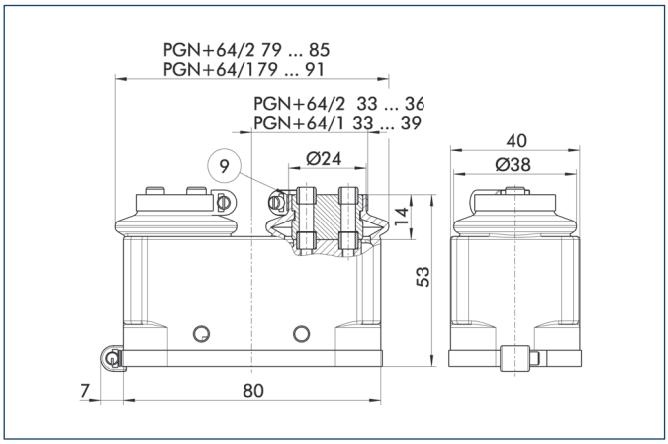




Permitted range
Inadmissible range

The curve applies to the basic version (stroke -1). For other versions, the curve will be parallel but offset in line with the max. permitted finger length.

Protection cover

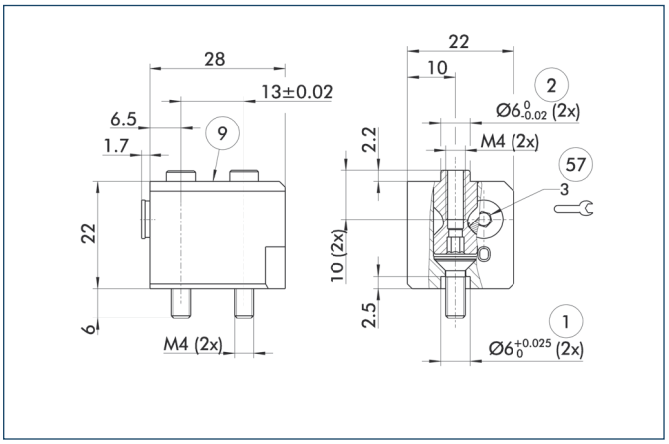


⑨ For mounting screw connection diagram, see basic version

The HUE protective cover completely protects the gripper against external influences up to IP65 if an additional sealing of the cover bottom is provided as part of the application. The mounting diagram shifts by the height of the intermediate jaw.

Description	ID	Cleanroom class ISO-classification 14644-1
Protection cover		
HUE PGN-plus 64	**0371480**	2

Quick-change Jaw System



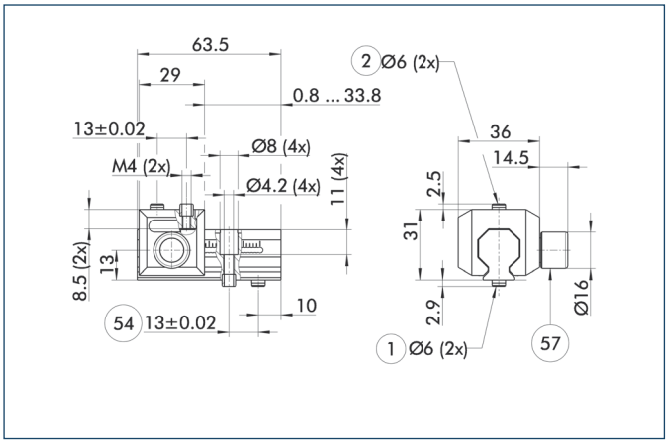
① Gripper connection
② Finger connection
⑨ For mounting screw connection diagram, see basic version
⑰ Locking

The BSWS quick-change jaw system enables top jaws to be changed on the gripper manually and rapidly. An adapter (BSWS-A) and a base (BSWS-B) are required for each gripper jaw.
For a reverse assembly without height set-up, one adapter (BSWS-A) and a kit (BSWS-U) per gripper jaw are required. Another effect of the BSWS-U is, that there are no disturbing fastening bores in the finger contour.

Description	ID
Quick-change Jaw System adapter	
BSWS-A 64	**0303022**
Quick-change Jaw System base	
BSWS-B 64	**0303023**
Quick-change Jaw System reversed	
BSWS-U 64	**0303041**

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Universal intermediate jaw



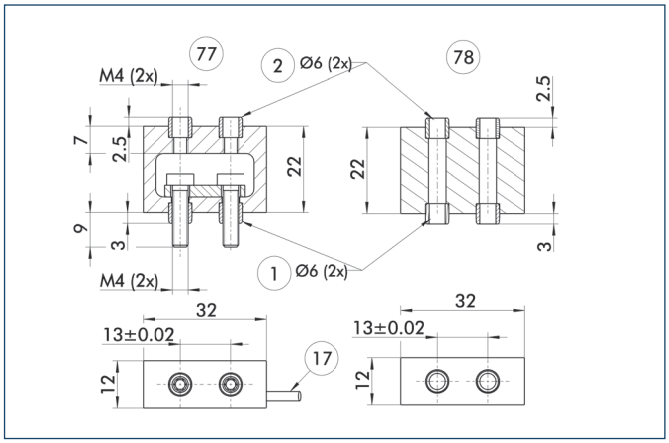
① Gripper connection
② Finger connection
54 Optional right or left connection
57 Locking

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

Description	ID	Grid dimension
Universal intermediate jaw		
UZB 64	**0300042**	1.5 mm

ⓘ The slide UZB-S can be removed completely and has to be ordered separately. Moreover, it allows a fast jaw change.

Force measuring jaws

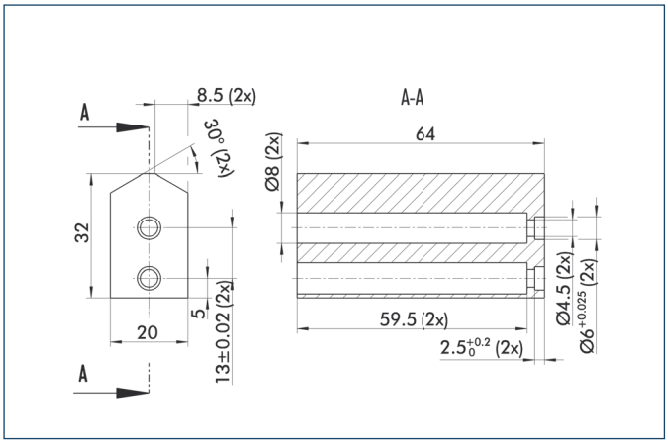


① Gripper connection
② Finger connection
17 Cable outlet
77 Active intermediate jaws
78 Passive intermediate jaws

Force measuring jaws measure gripping forces, but can also determine workpiece weights or dimensional deviations. There are active and passive intermediate jaws (FMS-ZBA or FMS-ZBP). At least one active force measuring jaw is required per gripper, the rest can be passive. For each active jaw, a FMS-A1 control unit and a FMS-A connection cable are required.

Description	ID
Active intermediate jaws	
FMS-ZBA 64	**0301832**
Passive intermediate jaws	
FMS-ZBP 64	**0301833**
Electronic Processor	
FMS-A1	**0301810**
Connection cables	
FMS-AK0200	**0301820**
FMS-AK0500	**0301821**
FMS-AK1000	**0301822**
FMS-AK2000	**0301823**

Finger blanks

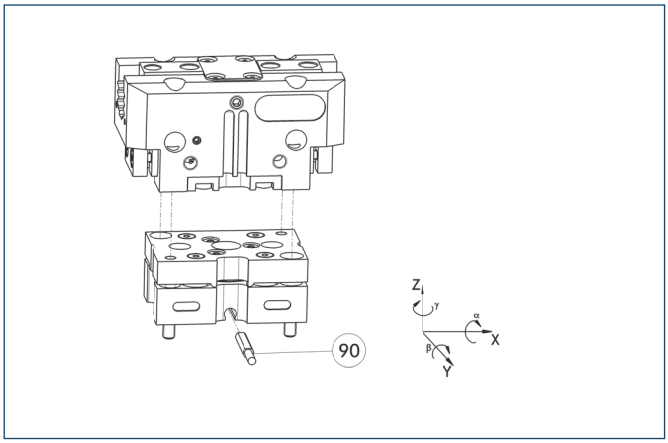


Finger blanks for customized subsequent machining

Description	ID	Material	Scope of delivery
Finger blanks			
ABR-plus 64	**0300010**	Aluminum	1
SBR-plus 64	**0300020**	16 MnCr 5	1

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Tolerance compensation unit

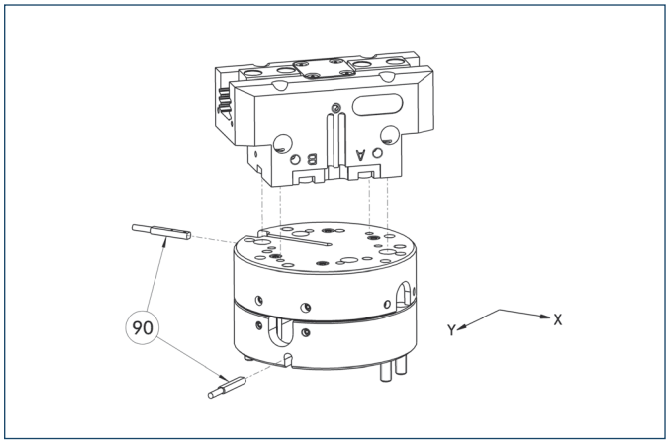


(90) Monitoring of locking

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 see catalog “Robot Accessories”.

Description	ID	Locking	Deflection
Compensation unit			
TCU-064-3-MV-P	**0324774**	Yes	±3°/±1°/±2°
TCU-064-3-OV-P	**0324775**	No	±3°/±1°/±2°

Compensation unit with spring reset

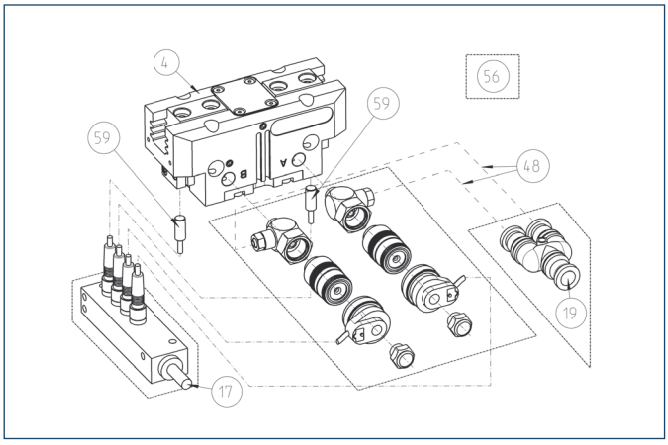


(90) Monitoring

Grippers can be directly mounted without using an adapter plate. For details see our catalog “Robot Accessories”.

Description	ID	Compensation travel	Reset force
Compensation unit			
AGE-F-XY-063-1	**0324940**	±4 mm	9 N
AGE-F-XY-063-2	**0324941**	±4 mm	10 N
AGE-F-XY-063-3	**0324942**	±4 mm	19.3 N

Attachment valves

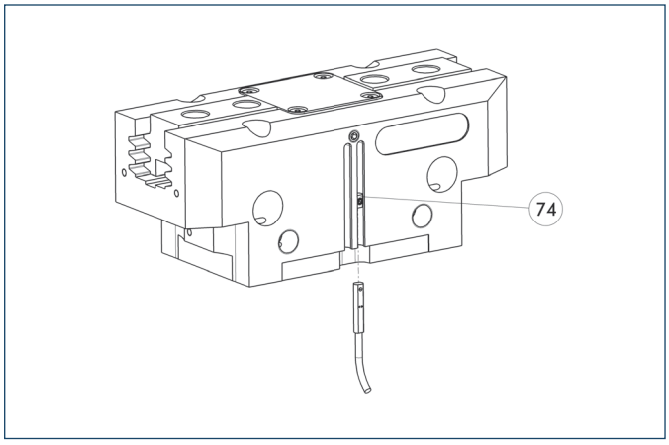


(4) Gripper
(17) Cable outlet
(19) Air connection
(48) Hose
(56) Included in delivery
(59) Monitoring “gripping”

For each gripper one attachment valve ABV is required, optional with distributor for sensors and valves. Attachment valves increase the efficiency, reduce the installation work and air consumption and simplify air supply. For details please refer to the “Accessories” catalog section.

Description	ID
Attachment valves	
ABV-MV15-M5	**0303323**
ABV-MV15-M5-V2-M8	**0303386**
ABV-MV15-M5-V4-M8	**0303356**
ABV-MV15-M5-V8-M8	**0303357**

Programmable magnetic switch



(74) Stop for MMS-P

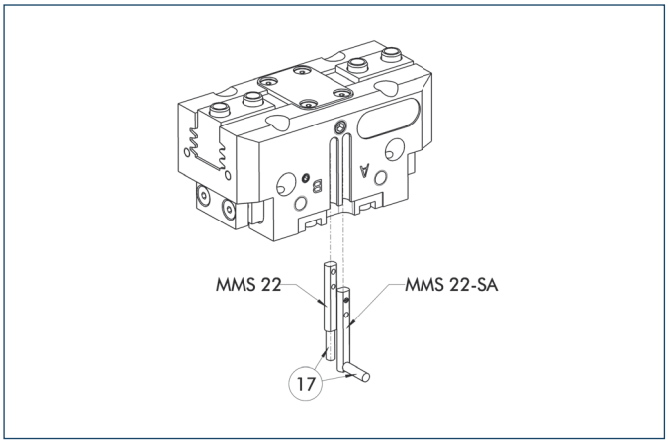
Position monitoring with two programmable positions per sensor. The end position monitoring is mounted in the C-slot.

Description	ID	Recommended product
Programmable magnetic switch		
MMS-P 22-S-M8-PNP	**0301370**	•
MMSK-P 22-S-PNP	**0301371**	
Connection cables		
KA BG08-L 4P-0500	**0307767**	
KA BG08-L 4P-1000	**0307768**	
KA BW08-L 4P-0500	**0307765**	
KA BW08-L 4P-1000	**0307766**	
Sensor Distributor		
V2-M8-4P-2XM8-3P	**0301380**	

ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.
ⓘ Per gripper one sensor (closer/NO) is required, optionally a cable extension.

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Electronic magnetic switches



⑰ Cable outlet

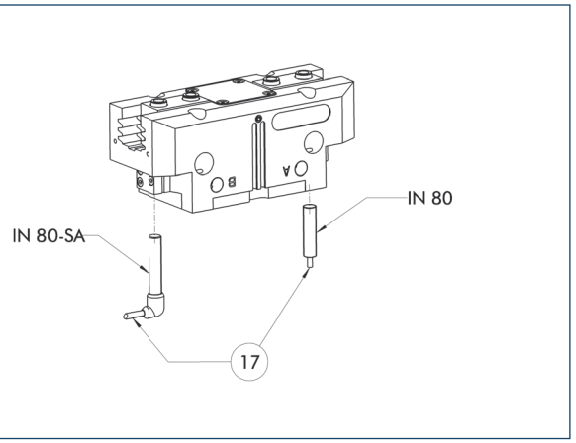
End position monitoring for mounting in the C-slot

Description	ID	Recommended product
Electronic magnetic switches		
MMS 22-S-M5-PNP	0301438	
MMS 22-S-M5-NPN	0301439	
MMS 22-S-M8-PNP	0301432	•
MMS 22-S-M8-NPN	0301433	
MMSK 22-S-PNP	0301434	
MMSK 22-S-NPN	0301435	
Electronic magnetic switches with lateral cable outlet		
MMS 22-S-M5-PNP-SA	0301448	
MMS 22-S-M5-NPN-SA	0301449	
MMS 22-S-M8-PNP-SA	0301442	•
MMS 22-S-M8-NPN-SA	0301443	
MMSK 22-S-PNP-SA	0301444	
MMSK 22-S-NPN-SA	0301445	
Connection cables		
KA BG05-L 3P-0300	0301652	
KA BG08-L 3P-0300-PNP	0301622	
KA BG08-L 3P-0500-PNP	0301623	
KA BW05-L 3P-0300	0301650	
KA BW08-L 3P-0300-NPN	0301602	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-NPN	9641116	
KA BW08-L 3P-0500-PNP	0301502	
Cable extensions		
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	

ⓘ Two sensors (closer/NO) are required for each gripper, plus extension cables as an option.

ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

Inductive proximity switches



⑰ Cable outlet

End position monitoring for direct mounting

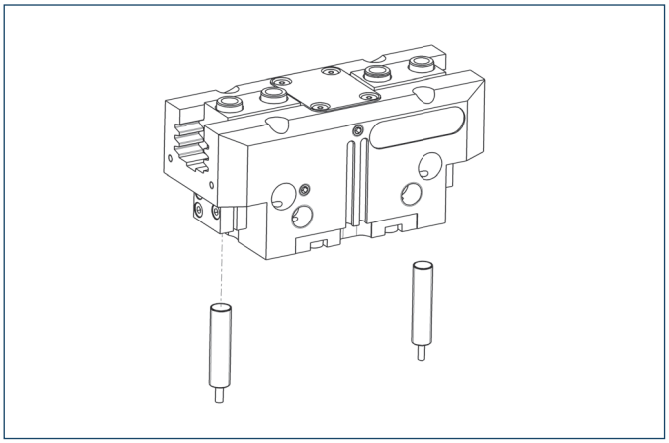
Description	ID	Recommended product
Inductive proximity switches		
IN 80-S-M8	0301478	•
IN 80-S-M12	0301578	
INK 80-S	0301550	
Inductive proximity switch with lateral outlet		
IN 80-S-M12-SA	0301587	
IN 80-S-M8-SA	0301483	•
INK 80-S-SA	0301566	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	
KA BG08-L 3P-0500-PNP	0301623	
KA BG12-L 3P-0500-PNP	30016369	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
KA BW12-L 3P-0300-PNP	0301503	
KA BW12-L 3P-0500-PNP	0301507	
Cable extensions		
KV BG12-SG12 3P-0030-PNP	0301999	
KV BG12-SG12 3P-0060-PNP	0301998	
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	
KV BW12-SG12 3P-0030-PNP	0301595	
KV BW12-SG12 3P-0100-PNP	0301596	
KV BW12-SG12 3P-0200-PNP	0301597	

ⓘ Two sensors (closer/NO) are required for each gripper, plus extension cables as an option.

ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Cylindrical Reed Switches

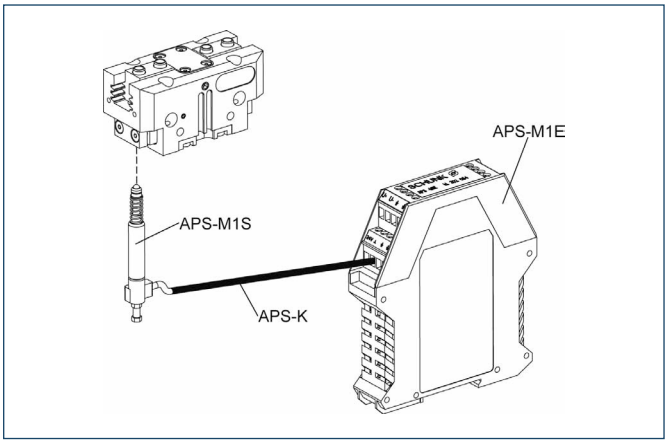


End position monitoring mounted with mounting kit

Description	ID
Mounting kit for proximity switch	
AS-RMS 80 PGN/PZN-plus 64/80	**0377725**
Reed Switches	
RMS 80-S-M8	**0377721**

ⓘ Two sensors (closer/NO) are required for each gripper, plus extension cables as an option.
ⓘ This mounting kit needs to be ordered optionally as an accessory.
ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

Analog position sensor



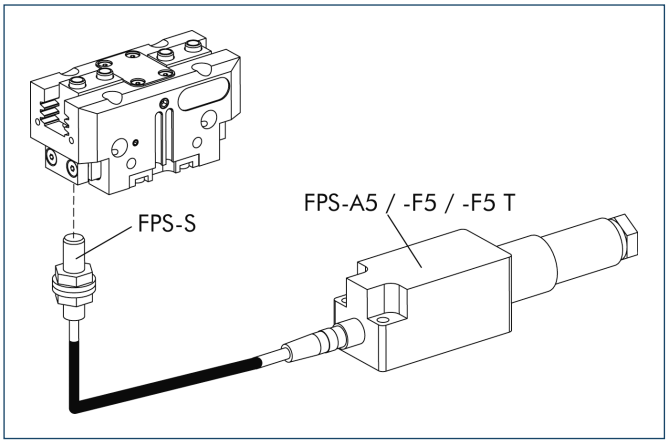
Analog multi position monitoring for any desired positions

Description	ID
Mounting kit	
AS-APS-M1-64/1	**0302075**
AS-APS-M1-64/2	**0302076**
Connection cables	
APS-K0200	**0302066**
APS-K0700	**0302068**
Electronic Processor	
APS-M1E	**0302064**
Sensor	
APS-M1S	**0302062**

ⓘ When using an APS system, for each gripper a mounting kit (AS-APS), an APS sensor (APS-M 1S, incl. 3 m cable) as well as an electronics (APS-M1e) are required.
ⓘ An extension cable (APS-K) can be connected between the sensor and the electronics as an option. The max. cable length between the sensor and the electronics is 10 m, between the electronics and their control unit (PLC) it is max. 1 m.

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Flexible Position Sensor

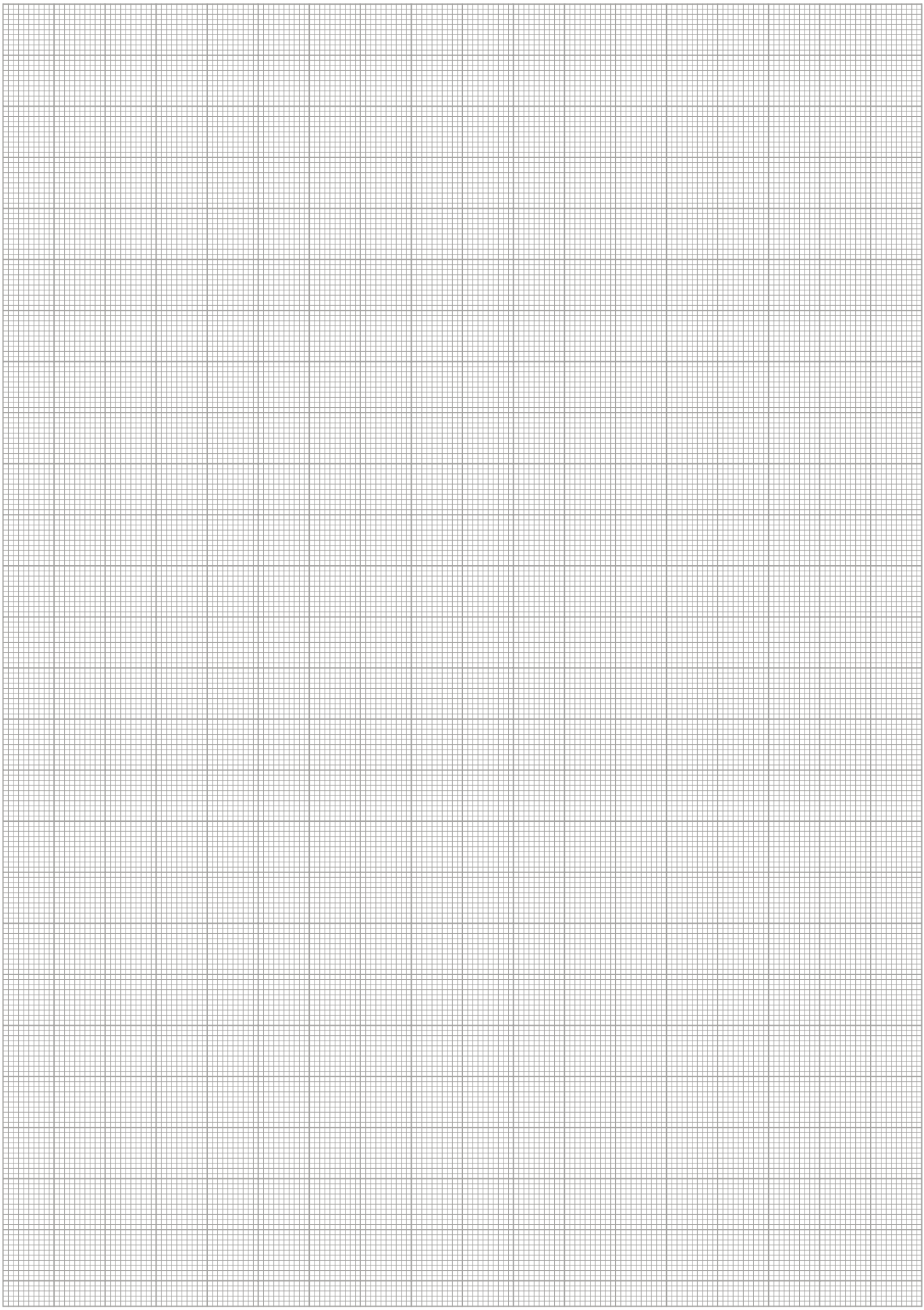


Flexible position monitoring of up to five positions

Description	ID
Mounting kit for FPS	
AS-PGN/PZN-plus 64/1, PGN/PZN-plus 80/2	**0301630**
Electronic Processor	
FPS-F5	**0301805**
FPS-F5 T	**0301807**
Sensor	
FPS-S M8	**0301704**

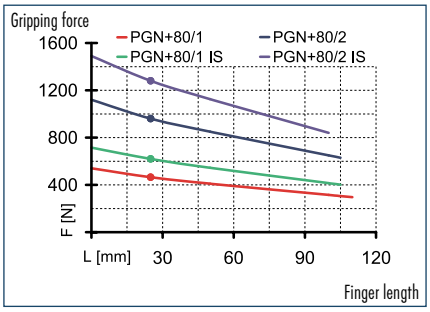
ⓘ When using a FPS system, a FPS sensor (FPS-S) and a control unit (FPS-F5 / F5 T or A5) are required for each gripper as well as a mounting kit (AS), if listed. Cable extensions (KV) are available as options in the “Accessories” catalog section.

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

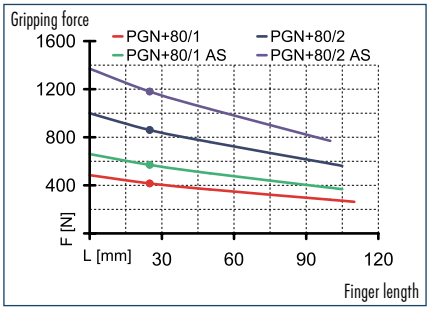


PGN-plus 80

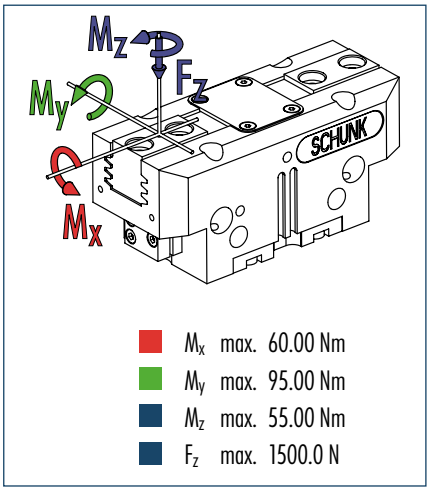
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load



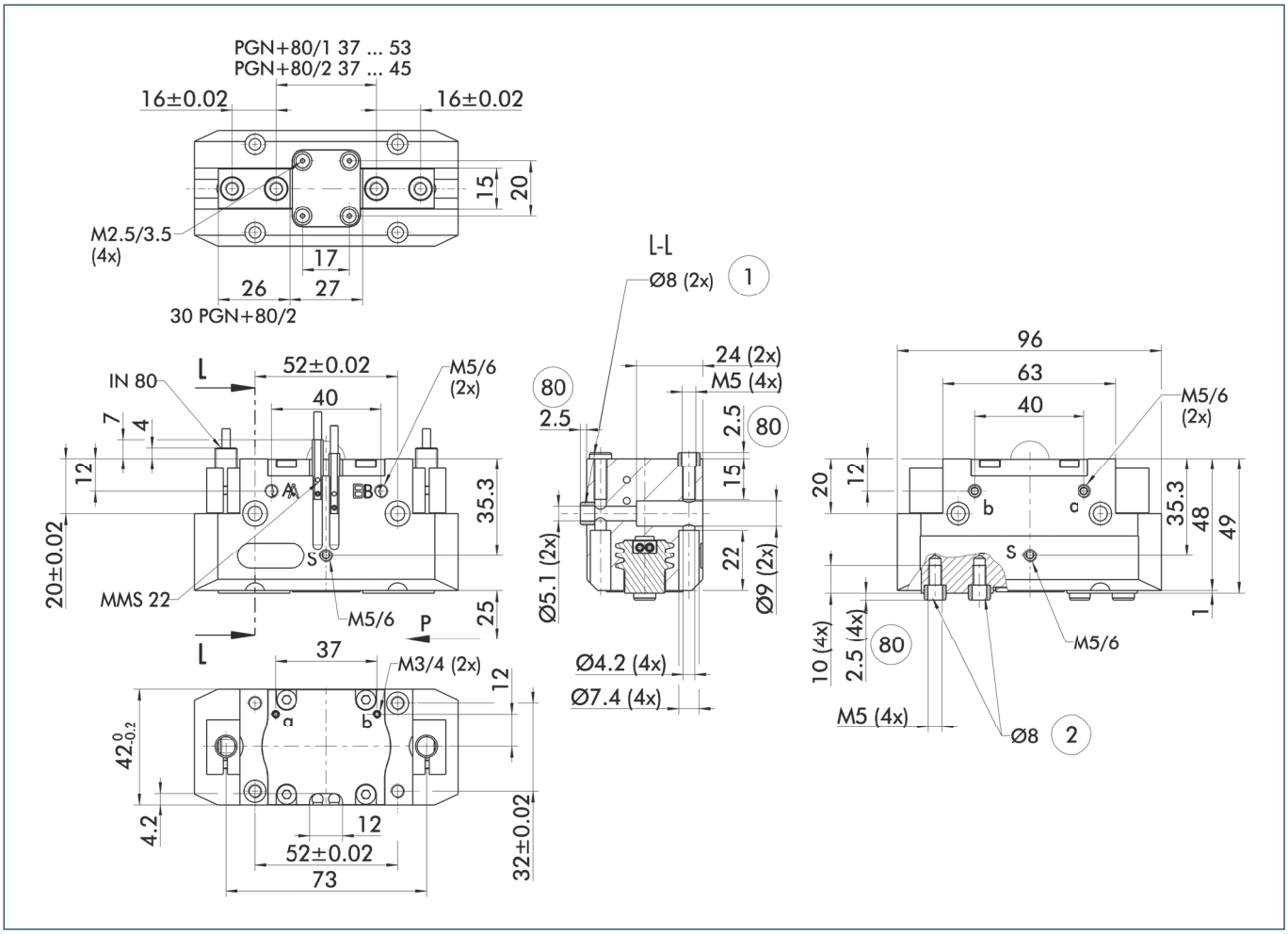
- M_x max. 60.00 Nm
- M_y max. 95.00 Nm
- M_z max. 55.00 Nm
- F_z max. 1500.0 N

ⓘ The indicated moments and forces are static values, apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement occurs without any hitting or bouncing. Service life may be reduced.

Technical data

Description		PGN-plus 80-1	PGN-plus 80-2	PGN-plus 80-1-AS	PGN-plus 80-2-AS	PGN-plus 80-1-IS	PGN-plus 80-2-IS
ID		**0371101**	**0371151**	**0371401**	**0371451**	**0371461**	**0371471**
Stroke per finger	[mm]	8	4	8	4	8	4
Closing force	[N]	415	860	570	1180		
Opening force	[N]	465	960			620	1280
Min. spring force	[N]			155	320	155	320
Weight	[kg]	0.5	0.5	0.6	0.6	0.6	0.6
Recommended workpiece weight	[kg]	2.1	4.3	2.1	4.3	2.1	4.3
Air consumption per double stroke	[cm³]	21	21	45	45	45	45
Min./max. operating pressure	[bar]	2.5/8	2.5/8	4/6.5	4/6.5	4/6.5	4/6.5
Nominal operating pressure	[bar]	6	6	6	6	6	6
Closing/opening time	[s]	0.04/0.04	0.04/0.04	0.03/0.05	0.03/0.05	0.05/0.03	0.05/0.03
Max. permitted finger length	[mm]	110	105	105	100	105	100
Max. permitted weight per finger	[kg]	0.6	0.6	0.6	0.6	0.6	0.6
IP class		40	40	40	40	40	40
Min./max. ambient temperature	[°C]	-10/90	-10/90	-10/90	-10/90	-10/90	-10/90
Repeat accuracy	[mm]	0.01	0.01	0.01	0.01	0.01	0.01
Cleanroom class ISO-classification 14644-1		5	5	5	5	5	5
OPTIONS and their characteristics							
Dust-protection version		**37371101**	**37371151**	**37371401**	**37371451**	**37371461**	**37371471**
IP class		64	64	64	64	64	64
Weight	[kg]	0.6	0.6	0.7	0.7	0.7	0.7
Anti-corrosion version		**38371101**	**38371151**	**38371401**	**38371451**	**38371461**	**38371471**
High-temperature version		**39371101**	**39371151**	**39371401**	**39371451**	**39371461**	**39371471**
Min./max. ambient temperature	[°C]	-10/130	-10/130	-10/130	-10/130	-10/130	-10/130
Force intensified version		PGN-plus 80-1-KVZ	PGN-plus 80-2-KVZ	PGN-plus 80-1-AS-KVZ		PGN-plus 80-1-IS-KVZ	
ID		**0372101**	**0372151**	**0372401**		**0372461**	
Closing force	[N]	745	1550	900			
Opening force	[N]	835	1730			990	
Weight	[kg]	0.65	0.65	0.75		0.75	
Maximum pressure	[bar]	6	6	6		6	
Max. permitted finger length	[mm]	100	80	80		80	
Precision version		**0371123**	**0371173**	**0371423**	**0371438**		

Main view

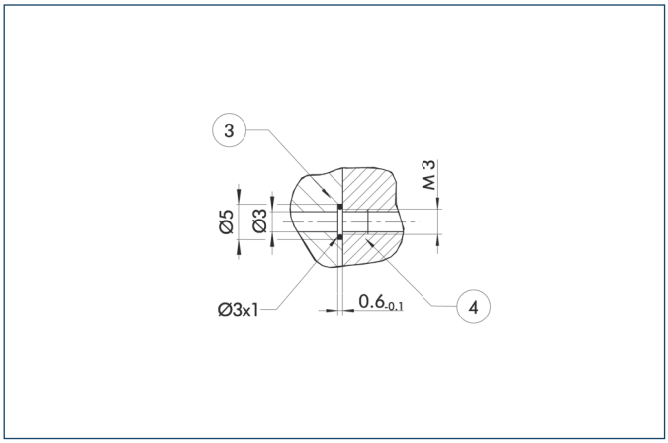


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

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

A, a Main/direct connection, gripper opening
B, b Main/direct connection, gripper closing
S Air purge connection, or deaeration bore
① Gripper connection
② Finger connection
⑧⓪ Depth of the centering sleeve hole in the matching part

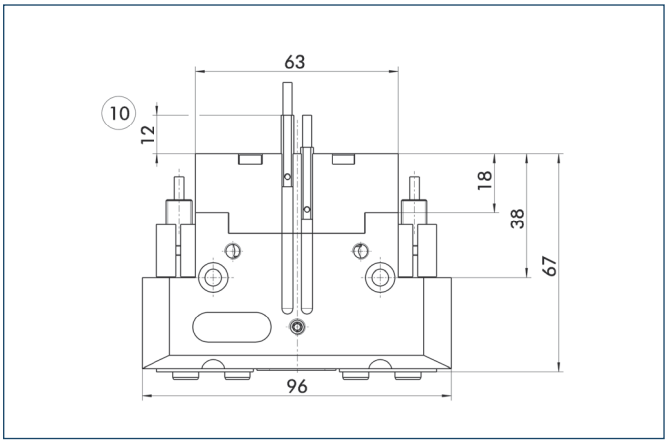
Hose-free direct connection



③ Adapter
④ Gripper

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

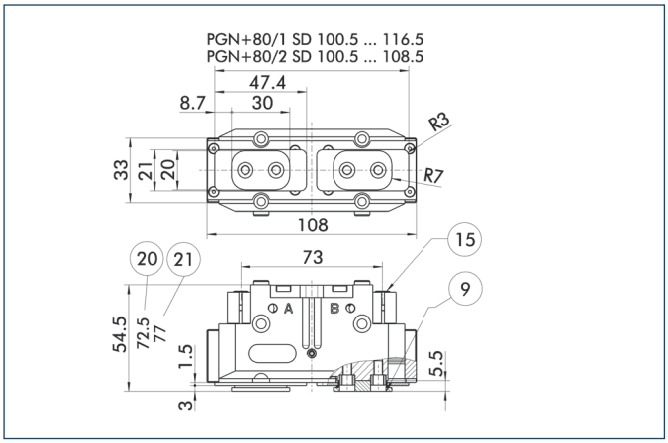
AS/IS gripping force maintenance device



⑩ Projection applies only for AS version

The mechanical gripping force maintenance device ensures a minimum gripping force even in case of pressure drop. This acts as closing force in the AS version, and as opening force in the IS version. In addition, the gripping force maintenance device can also be used for increasing the gripping force or for single-acting gripping.

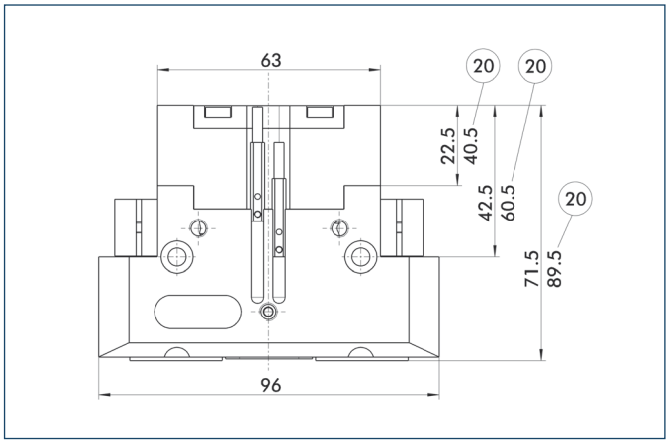
Dust-protection version



⑨ For mounting screw connection diagram, see basic version
⑮ Sealing bolt
⑳ For AS / IS version
㉑ Applies for KVZ version

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

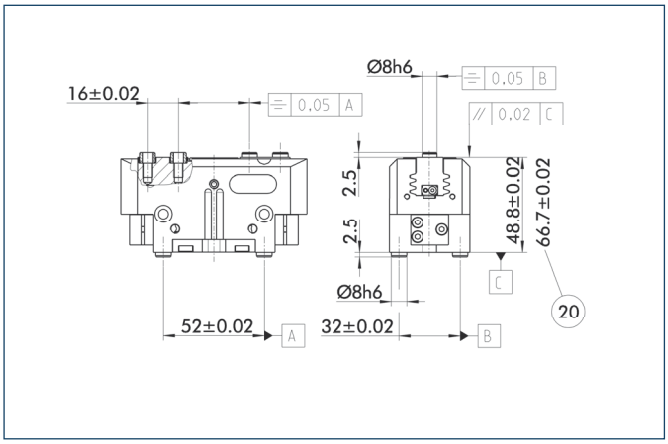
Force intensified version



⑳ For AS / IS 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. The full gripping force shown in the data table is sometimes only reached after a few hundred gripping cycles. Please consider that grippers which are equipped with a gripping force maintenance device (AS / IS) are higher.

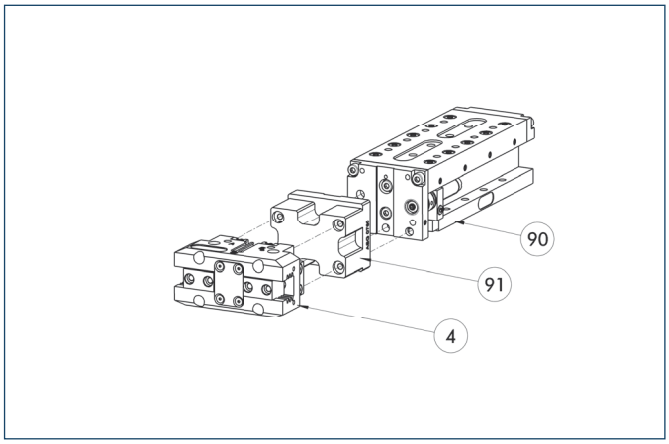
Precision version



⑳ For AS / IS version

The indicated tolerances just refer to the types of precision versions shown in the chart of technical specifications. All other types of precision versions are available on request.

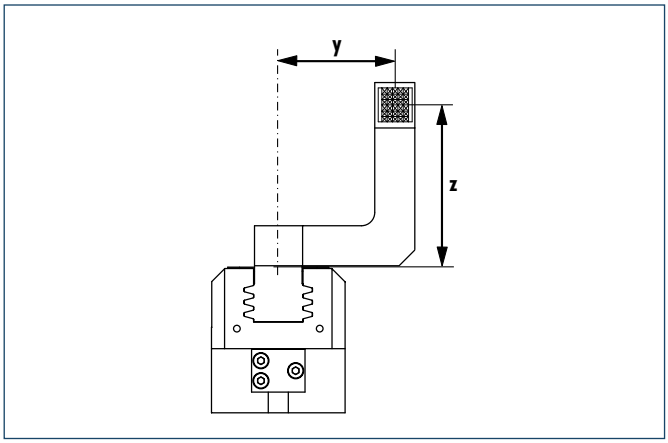
Modular Assembly Automation

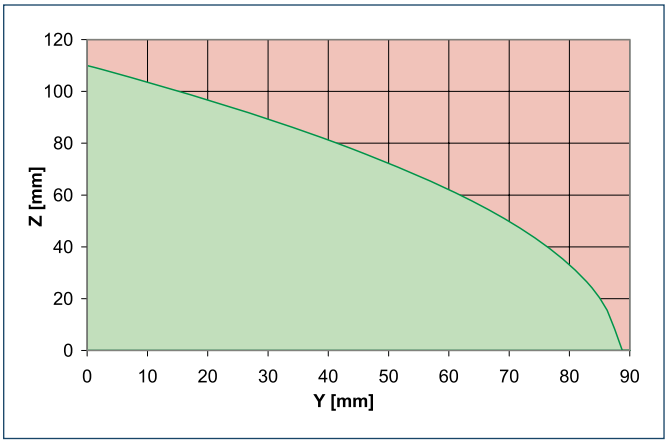


④ Gripper
⑨⓪ CLM
⑨① ASG

This gripper can be combined with the standard linear modules LM, KLM, CLM and ELM of the GEMOTEC modular system. For more information see our main catalog "Modular Assembly Automation".

Maximum permitted finger projection

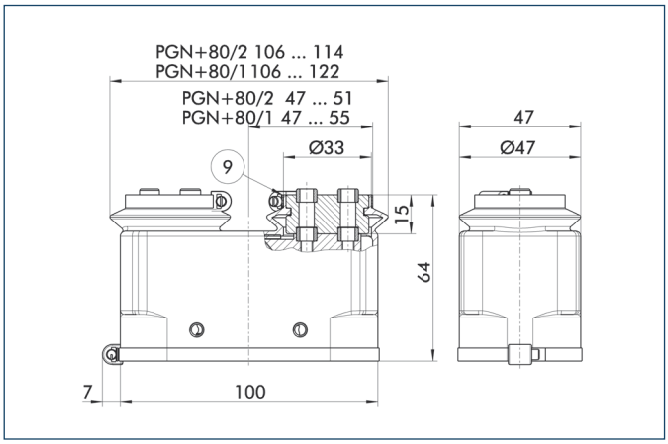




Permitted range
Inadmissible range

The curve applies to the basic version (stroke -1). For other versions, the curve will be parallel but offset in line with the max. permitted finger length.

Protection cover

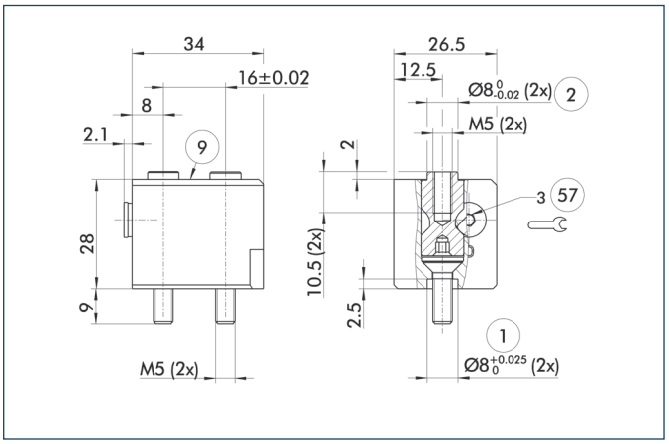


⑨ For mounting screw connection diagram, see basic version

The HUE protective cover completely protects the gripper against external influences up to IP65 if an additional sealing of the cover bottom is provided as part of the application. The mounting diagram shifts by the height of the intermediate jaw.

Description	ID	Cleanroom class ISO-classification 14644-1
Protection cover		
HUE PGN-plus 80	**0371481**	2

Quick-change Jaw System



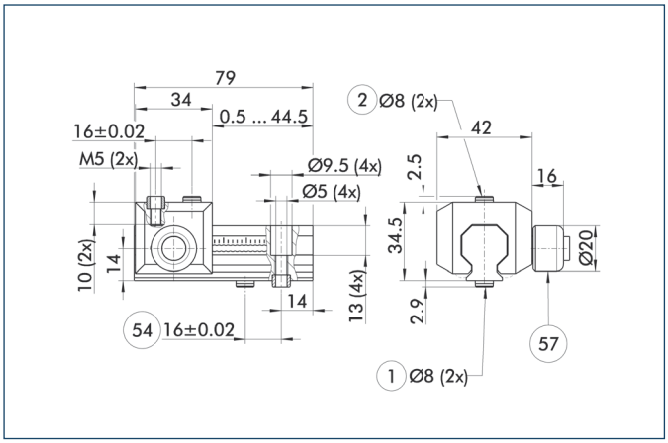
① Gripper connection
② Finger connection
⑨ For mounting screw connection diagram, see basic version
57 Locking

The BSWS quick-change jaw system enables top jaws to be changed on the gripper manually and rapidly. An adapter (BSWS-A) and a base (BSWS-B) are required for each gripper jaw.
For a reverse assembly without height set-up, one adapter (BSWS-A) and a kit (BSWS-U) per gripper jaw are required. Another effect of the BSWS-U is, that there are no disturbing fastening bores in the finger contour.

Description	ID
Quick-change Jaw System adapter	
BSWS-A 80	**0303024**
Quick-change Jaw System base	
BSWS-B 80	**0303025**
Quick-change Jaw System reversed	
BSWS-U 80	**0303042**

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Universal intermediate jaw



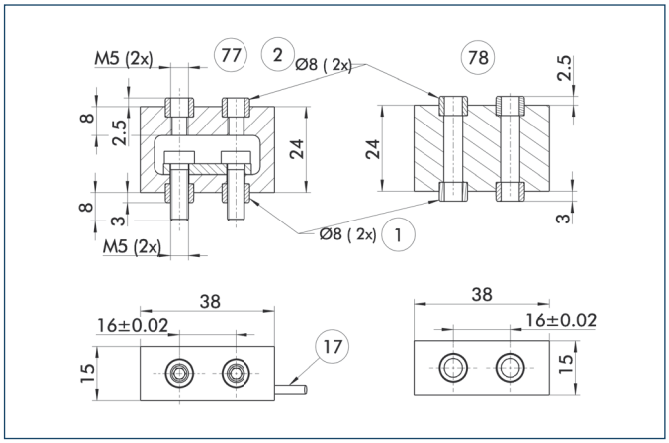
① Gripper connection
② Finger connection
54 Optional right or left connection
57 Locking

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

Description	ID	Grid dimension
Universal intermediate jaw		
UZB 80	**0300043**	2 mm
UZB-S 80	**5518271**	2 mm

ⓘ The slide UZB-S can be removed completely and has to be ordered separately. Moreover, it allows a fast jaw change.

Force measuring jaws

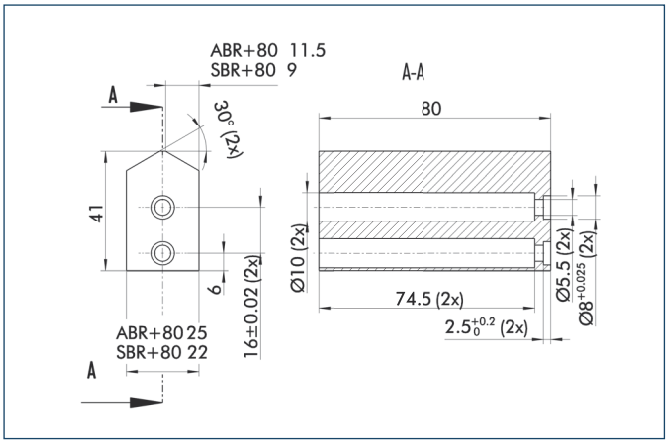


① Gripper connection
② Finger connection
17 Cable outlet
77 Active intermediate jaws
78 Passive intermediate jaws

Force measuring jaws measure gripping forces, but can also determine workpiece weights or dimensional deviations. There are active and passive intermediate jaws (FMS-ZBA or FMS-ZBP). At least one active force measuring jaw is required per gripper, the rest can be passive. For each active jaw, a FMS-A1 control unit and a FMS-A connection cable are required.

Description	ID
Active intermediate jaws	
FMS-ZBA 80	**0301834**
Passive intermediate jaws	
FMS-ZBP 80	**0301835**
Electronic Processor	
FMS-A1	**0301810**
Connection cables	
FMS-AK0200	**0301820**
FMS-AK0500	**0301821**
FMS-AK1000	**0301822**
FMS-AK2000	**0301823**

Finger blanks

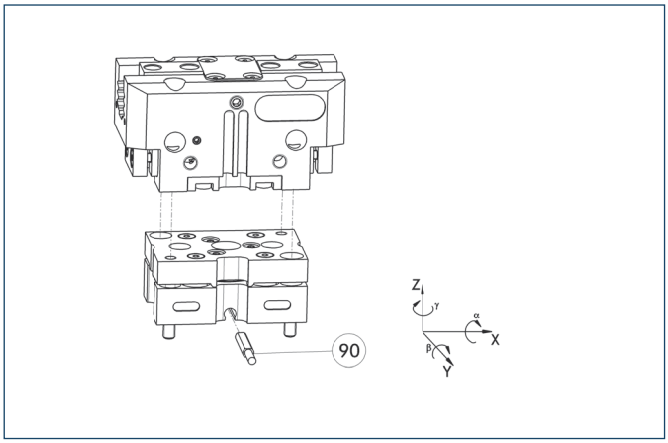


Finger blanks for customized subsequent machining

Description	ID	Material	Scope of delivery
Finger blanks			
ABR-plus 80	**0300011**	Aluminum	1
SBR-plus 80	**0300021**	16 MnCr 5	1

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Tolerance compensation unit

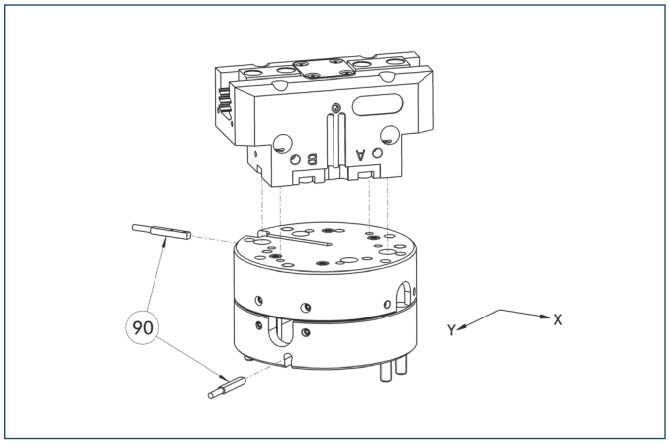


(90) Monitoring of locking

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 see catalog “Robot Accessories”.

Description	ID	Locking	Deflection
Compensation unit			
TCU-080-3-MV-P	**0324792**	Yes	±1.5°/±1°/±2°
TCU-080-3-OV-P	**0324793**	No	±1.5°/±1°/±2°

Compensation unit with spring reset

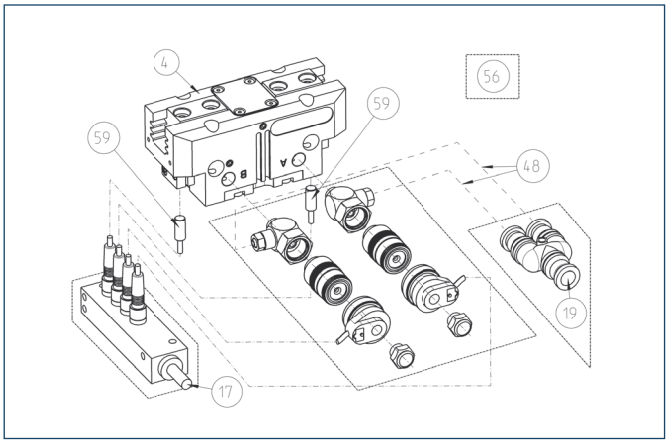


(90) Monitoring

Grippers can be directly mounted without using an adapter plate. For details see our catalog “Robot Accessories”.

Description	ID	Compensation travel	Reset force
Compensation unit			
AGE-F-XY-063-1	**0324940**	±4 mm	9 N
AGE-F-XY-063-2	**0324941**	±4 mm	10 N
AGE-F-XY-063-3	**0324942**	±4 mm	19.3 N

Attachment valves

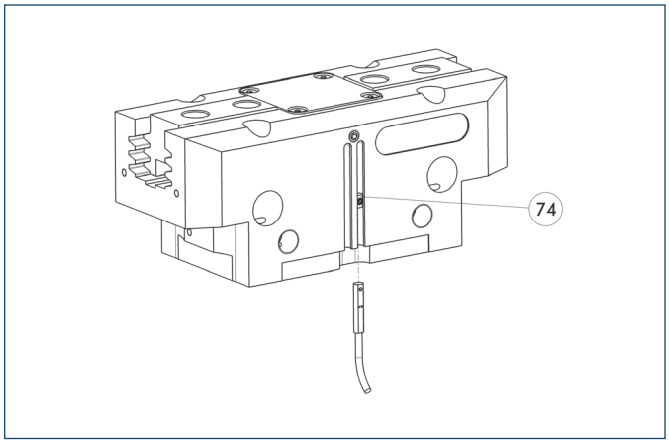


(4) Gripper
(17) Cable outlet
(19) Air connection
(48) Hose
(56) Included in delivery
(59) Monitoring “gripping”

For each gripper one attachment valve ABV is required, optional with distributor for sensors and valves. Attachment valves increase the efficiency, reduce the installation work and air consumption and simplify air supply. For details please refer to the “Accessories” catalog section.

Description	ID
Attachment valves	
ABV-MV25-M5	**0303326**
ABV-MV25-M5-V2-M8	**0303392**
ABV-MV25-M5-V4-M8	**0303362**
ABV-MV25-M5-V8-M8	**0303363**

Programmable magnetic switch



(74) Stop for MMS-P

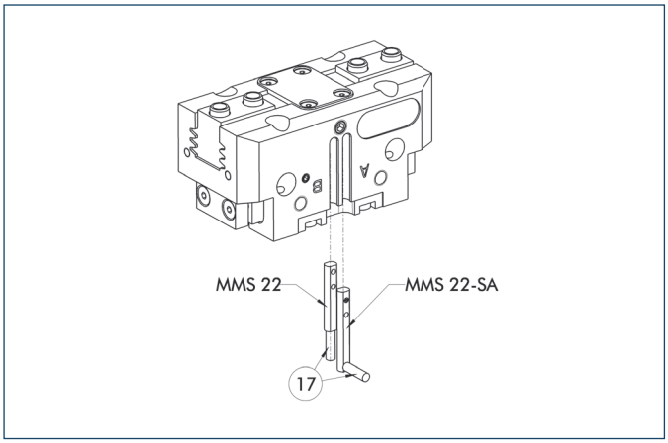
Position monitoring with two programmable positions per sensor. The end position monitoring is mounted in the C-slot.

Description	ID	Recommended product
Programmable magnetic switch		
MMS-P 22-S-M8-PNP	**0301370**	•
MMSK-P 22-S-PNP	**0301371**	
Connection cables		
KA BG08-L 4P-0500	**0307767**	
KA BG08-L 4P-1000	**0307768**	
KA BW08-L 4P-0500	**0307765**	
KA BW08-L 4P-1000	**0307766**	
Sensor Distributor		
V2-M8-4P-2XM8-3P	**0301380**	

ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.
ⓘ Per gripper one sensor (closer/NO) is required, optionally a cable extension.

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Electronic magnetic switches



⑰ Cable outlet

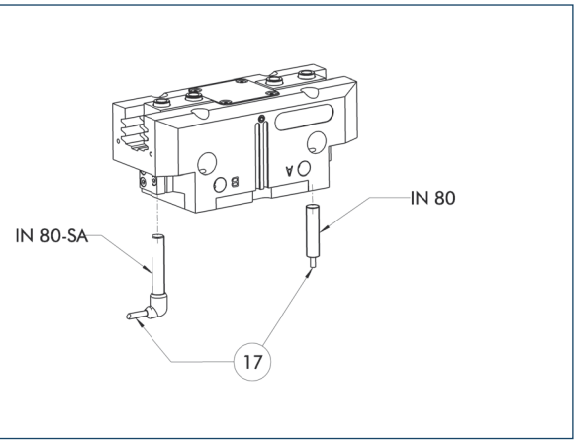
End position monitoring for mounting in the C-slot

Description	ID	Recommended product
Electronic magnetic switches		
MMS 22-S-M5-PNP	0301438	
MMS 22-S-M5-NPN	0301439	
MMS 22-S-M8-PNP	0301432	•
MMS 22-S-M8-NPN	0301433	
MMSK 22-S-PNP	0301434	
MMSK 22-S-NPN	0301435	
Electronic magnetic switches with lateral cable outlet		
MMS 22-S-M5-PNP-SA	0301448	
MMS 22-S-M5-NPN-SA	0301449	
MMS 22-S-M8-PNP-SA	0301442	•
MMS 22-S-M8-NPN-SA	0301443	
MMSK 22-S-PNP-SA	0301444	
MMSK 22-S-NPN-SA	0301445	
Connection cables		
KA BG05-L 3P-0300	0301652	
KA BG08-L 3P-0300-PNP	0301622	
KA BG08-L 3P-0500-PNP	0301623	
KA BW05-L 3P-0300	0301650	
KA BW08-L 3P-0300-NPN	0301602	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-NPN	9641116	
KA BW08-L 3P-0500-PNP	0301502	
Cable extensions		
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	

ⓘ Two sensors (closer/NO) are required for each gripper, plus extension cables as an option.

ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

Inductive proximity switches



⑰ Cable outlet

End position monitoring for direct mounting

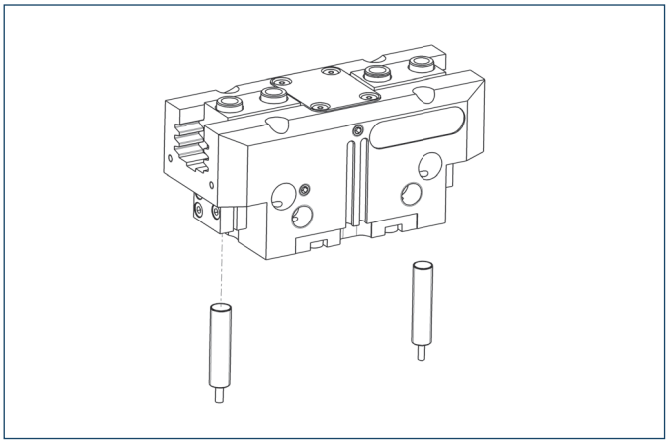
Description	ID	Recommended product
Inductive proximity switches		
IN 80-S-M8	0301478	•
IN 80-S-M12	0301578	
INK 80-S	0301550	
IN-C 80-S-M8	0301475	
Inductive proximity switch with lateral outlet		
IN 80-S-M12-SA	0301587	
IN 80-S-M8-SA	0301483	•
INK 80-S-SA	0301566	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	
KA BG08-L 3P-0500-PNP	0301623	
KA BG12-L 3P-0500-PNP	30016369	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
KA BW12-L 3P-0300-PNP	0301503	
KA BW12-L 3P-0500-PNP	0301507	
Cable extensions		
KV BG12-SG12 3P-0030-PNP	0301999	
KV BG12-SG12 3P-0060-PNP	0301998	
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	
KV BW12-SG12 3P-0030-PNP	0301595	
KV BW12-SG12 3P-0100-PNP	0301596	
KV BW12-SG12 3P-0200-PNP	0301597	

ⓘ Two sensors (closer/NO) are required for each gripper, plus extension cables as an option.

ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Cylindrical Reed Switches

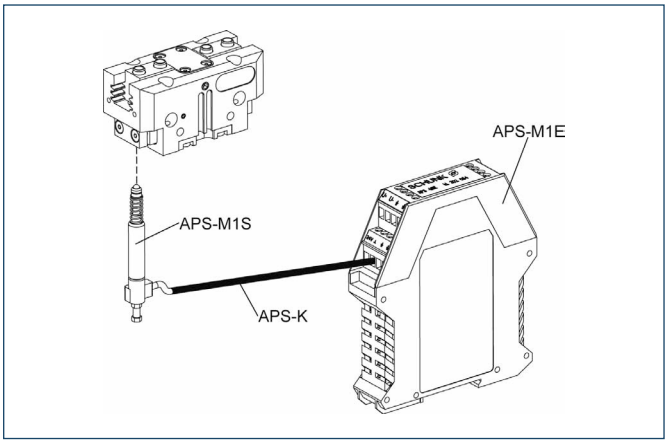


End position monitoring mounted with mounting kit

Description	ID
Mounting kit for proximity switch	
AS-RMS 80 PGN/PZN-plus 64/80	**0377725**
Reed Switches	
RMS 80-S-M8	**0377721**

ⓘ Two sensors (closer/NO) are required for each gripper, plus extension cables as an option.
ⓘ This mounting kit needs to be ordered optionally as an accessory.
ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

Analog position sensor



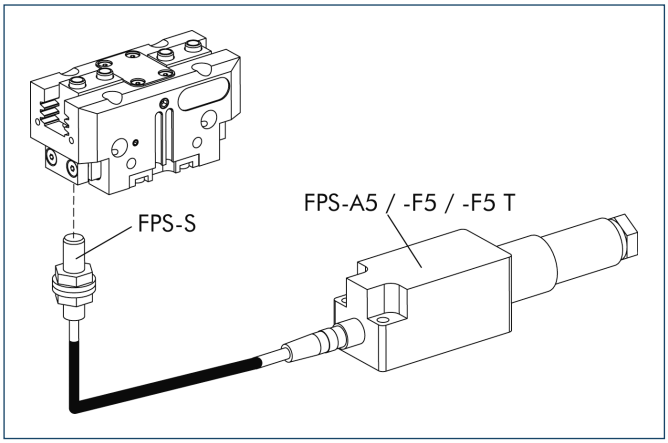
Analog multi position monitoring for any desired positions

Description	ID
Mounting kit	
AS-APS-M1-80/1	**0302077**
AS-APS-M1-80/2	**0302078**
Connection cables	
APS-K0200	**0302066**
APS-K0700	**0302068**
Electronic Processor	
APS-M1E	**0302064**
Sensor	
APS-M1S	**0302062**

ⓘ When using an APS system, for each gripper a mounting kit (AS-APS), an APS sensor (APS-M 1S, incl. 3 m cable) as well as an electronics (APS-M1e) are required.
ⓘ An extension cable (APS-K) can be connected between the sensor and the electronics as an option. The max. cable length between the sensor and the electronics is 10 m, between the electronics and their control unit (PLC) it is max. 1 m.

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Flexible Position Sensor



Flexible position monitoring of up to five positions

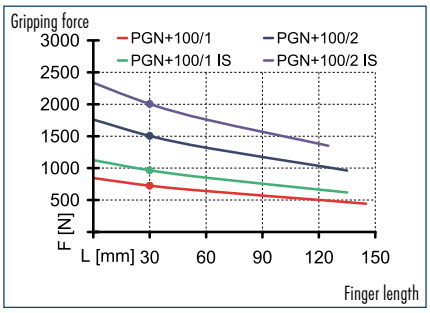
Description	ID
Mounting kit for FPS	
AS-PGN/PZN-plus 64/1, PGN/PZN-plus 80/2	**0301630**
AS-PGN-plus/PZN-plus 80/1, PZB 80/100	**0301632**
Electronic Processor	
FPS-F5	**0301805**
FPS-F5 T	**0301807**
Sensor	
FPS-S M8	**0301704**

ⓘ When using a FPS system, a FPS sensor (FPS-S) and a control unit (FPS-F5 / F5 T or A5) are required for each gripper as well as a mounting kit (AS), if listed. Cable extensions (KV) are available as options in the “Accessories” catalog section.

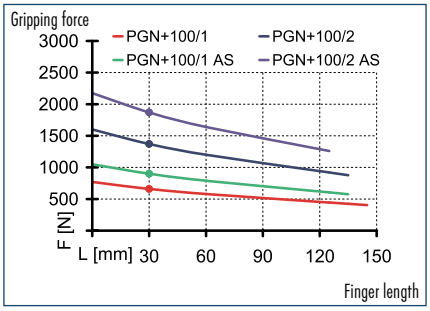
You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

PGN-plus 100

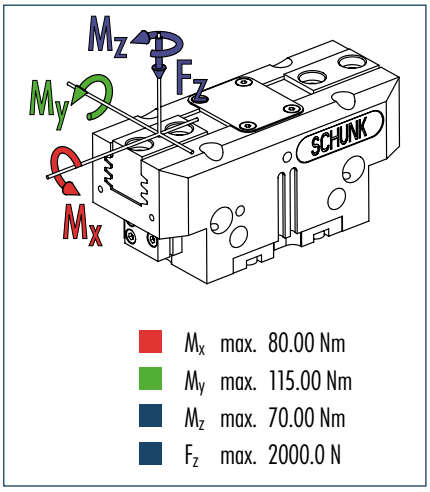
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load



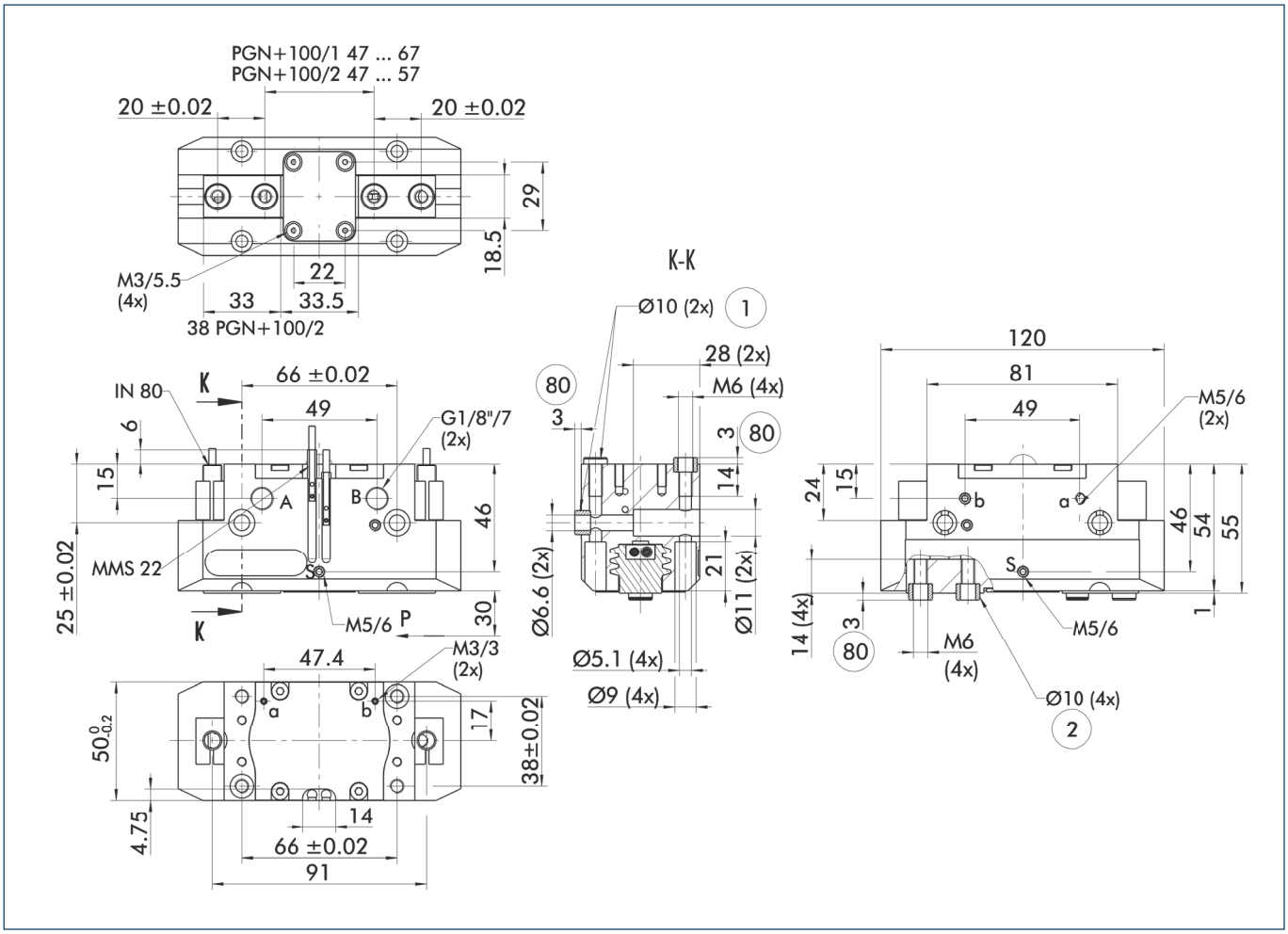
- M_x max. 80.00 Nm
- M_y max. 115.00 Nm
- M_z max. 70.00 Nm
- F_z max. 2000.0 N

ⓘ The indicated moments and forces are static values, apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement occurs without any hitting or bouncing. Service life may be reduced.

Technical data

Description		PGN-plus 100-1	PGN-plus 100-2	PGN-plus 100-1-AS	PGN-plus 100-2-AS	PGN-plus 100-1-IS	PGN-plus 100-2-IS
ID		**0371102**	**0371152**	**0371402**	**0371452**	**0371462**	**0371472**
Stroke per finger	[mm]	10	5	10	5	10	5
Closing force	[N]	660	1370	900	1870		
Opening force	[N]	725	1500			965	1740
Min. spring force	[N]			240	500	240	500
Weight	[kg]	0.81	0.81	1	1	1	1
Recommended workpiece weight	[kg]	3.3	6.85	3.3	6.85	3.3	6.85
Air consumption per double stroke	[cm³]	40	40	85	85	85	85
Min./max. operating pressure	[bar]	2.5/8	2.5/8	4/6.5	4/6.5	4/6.5	4/6.5
Nominal operating pressure	[bar]	6	6	6	6	6	6
Closing/opening time	[s]	0.07/0.07	0.07/0.07	0.05/0.09	0.05/0.09	0.09/0.05	0.09/0.05
Max. permitted finger length	[mm]	145	135	135	125	135	125
Max. permitted weight per finger	[kg]	1.1	1.1	1.1	1.1	1.1	1.1
IP class		40	40	40	40	40	40
Min./max. ambient temperature	[°C]	-10/90	-10/90	-10/90	-10/90	-10/90	-10/90
Repeat accuracy	[mm]	0.01	0.01	0.01	0.01	0.01	0.01
Cleanroom class ISO-classification 14644-1		5	5	5	5	5	5
OPTIONS and their characteristics							
Dust-protection version		**37371102**	**37371152**	**37371402**	**37371452**	**37371462**	**37371472**
IP class		64	64	64	64	64	64
Weight	[kg]	0.99	0.99	1.18	1.18	1.18	1.18
Anti-corrosion version		**38371102**	**38371152**	**38371402**	**38371452**	**38371462**	**38371472**
High-temperature version		**39371102**	**39371152**	**39371402**	**39371452**	**39371462**	**39371472**
Min./max. ambient temperature	[°C]	-10/130	-10/130	-10/130	-10/130	-10/130	-10/130
Force intensified version		**PGN-plus 100-1-KVZ**	**PGN-plus 100-2-KVZ**	**PGN-plus 100-1-AS-KVZ**		**PGN-plus 100-1-IS-KVZ**	
ID		**0372102**	**0372152**	**0372402**		**0372462**	
Closing force	[N]	1190	2465	1430			
Opening force	[N]	1305	2700			1545	
Weight	[kg]	1.05	1.05	1.3		1.3	
Maximum pressure	[bar]	6	6	6		6	
Max. permitted finger length	[mm]	125	100	100		100	
Precision version		**0371124**	**0371174**	**0371424**	**0371439**		

Main view

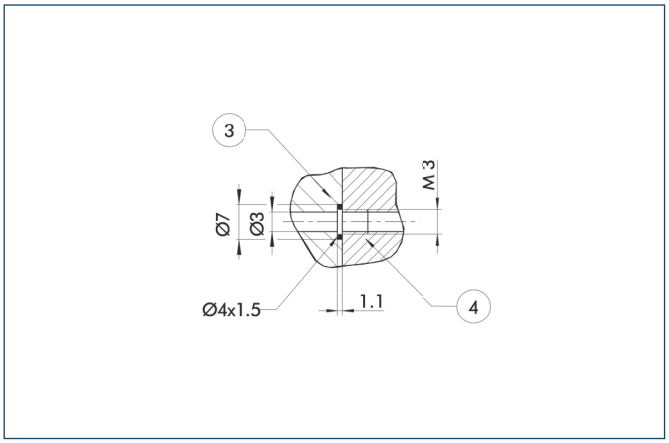


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

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

A, a Main/direct connection, gripper opening
B, b Main/direct connection, gripper closing
S Air purge connection
① Gripper connection
② Finger connection
⑧⓪ Depth of the centering sleeve hole in the matching part

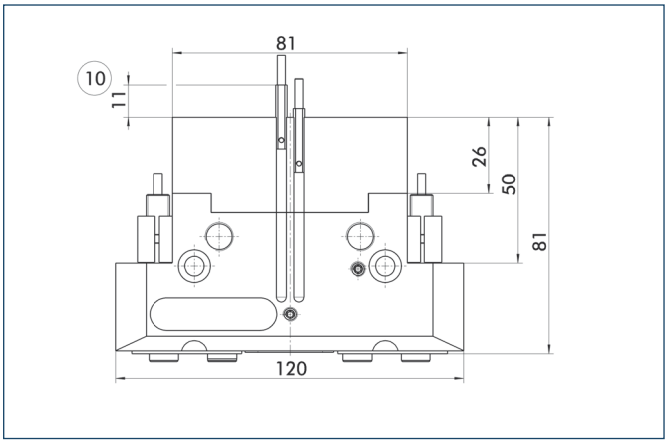
Hose-free direct connection



③ Adapter
④ Gripper

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

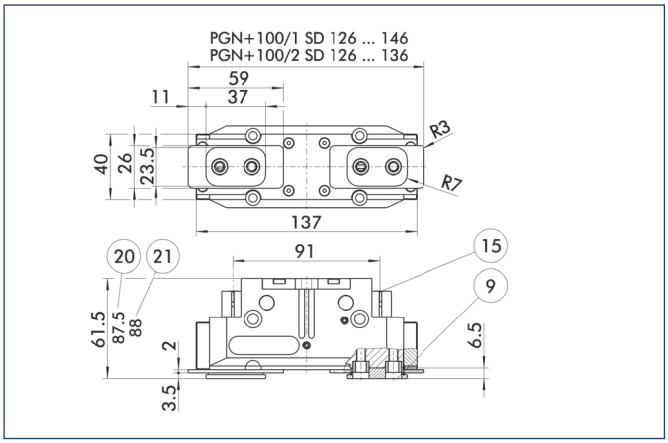
AS/IS gripping force maintenance device



⑩ Projection applies only for AS version

The mechanical gripping force maintenance device ensures a minimum gripping force even in case of pressure drop. This acts as closing force in the AS version, and as opening force in the IS version. In addition, the gripping force maintenance device can also be used for increasing the gripping force or for single-acting gripping.

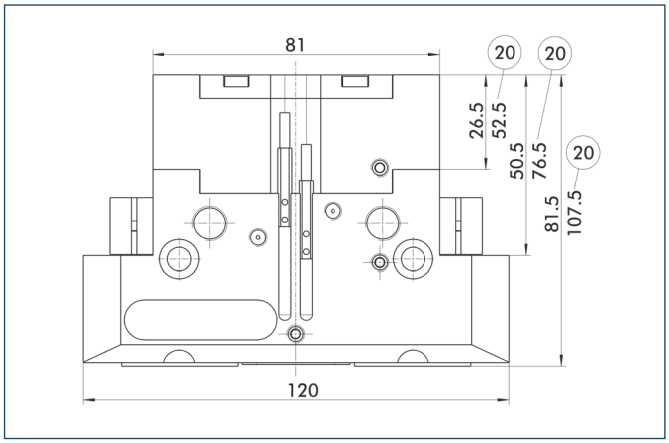
Dust-protection version



⑨ For mounting screw connection diagram, see basic version
⑮ Sealing bolt
⑳ For AS / IS version
㉑ Applies for KVZ version

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

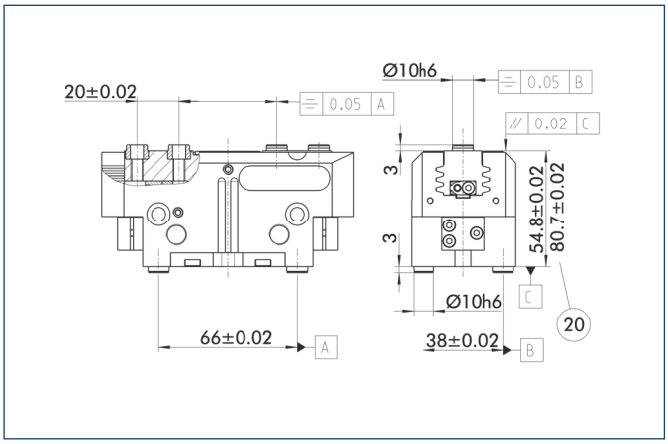
Force intensified version



⑳ For AS / IS 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. The full gripping force shown in the data table is sometimes only reached after a few hundred gripping cycles. Please consider that grippers which are equipped with a gripping force maintenance device (AS / IS) are higher.

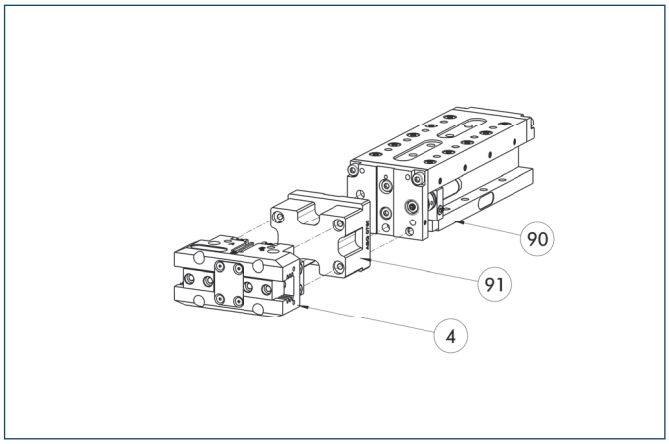
Precision version



⑳ For AS / IS version

The indicated tolerances just refer to the types of precision versions shown in the chart of technical specifications. All other types of precision versions are available on request.

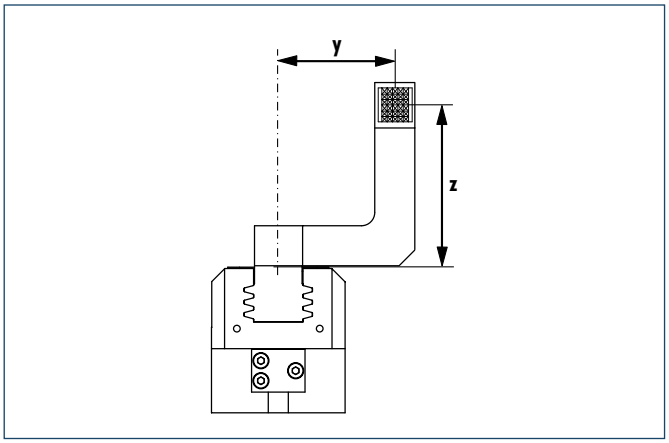
Modular Assembly Automation

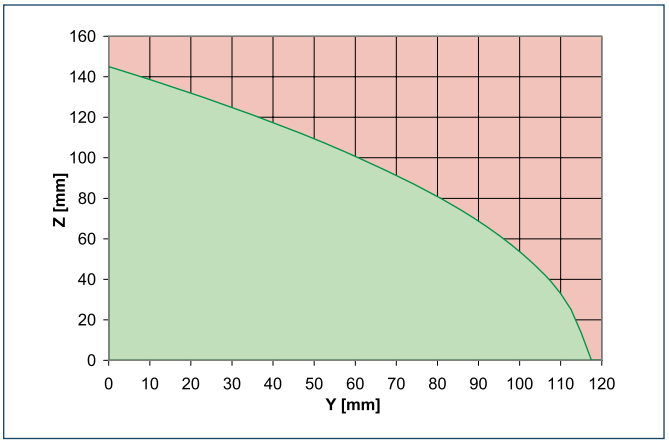


④ Gripper
⑨⓪ CLM
⑨① ASG

This gripper can be combined with the standard linear modules LM, KLM, CLM and ELM of the GEMOTEC modular system. For more information see our main catalog "Modular Assembly Automation".

Maximum permitted finger projection

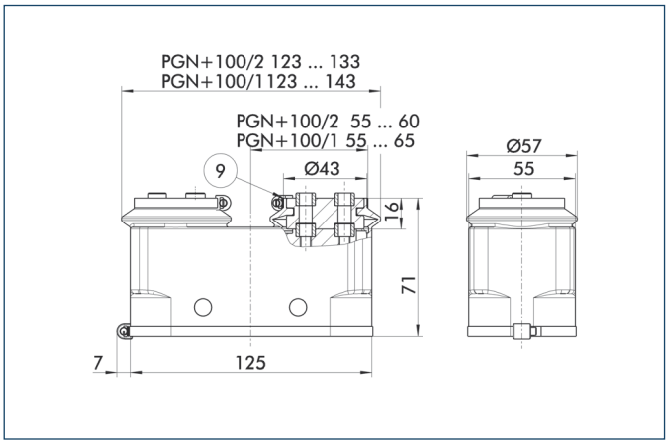




Permitted range
Inadmissible range

The curve applies to the basic version (stroke -1). For other versions, the curve will be parallel but offset in line with the max. permitted finger length.

Protection cover

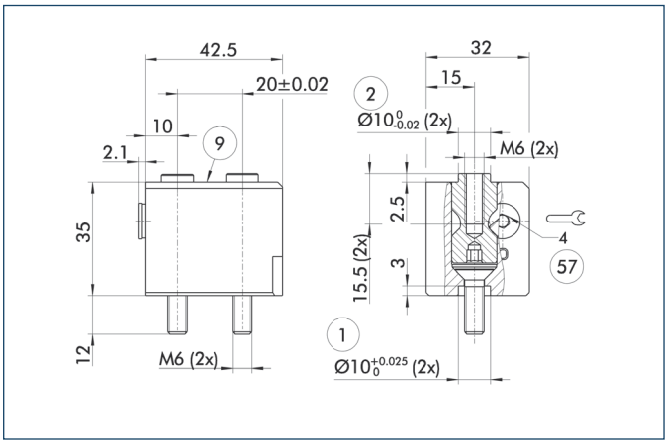


⑨ For mounting screw connection diagram, see basic version

The HUE protective cover completely protects the gripper against external influences up to IP65 if an additional sealing of the cover bottom is provided as part of the application. The mounting diagram shifts by the height of the intermediate jaw.

Description	ID	Cleanroom class ISO-classification 14644-1
Protection cover		
HUE PGN-plus 100	**0371482**	2

Quick-change Jaw System



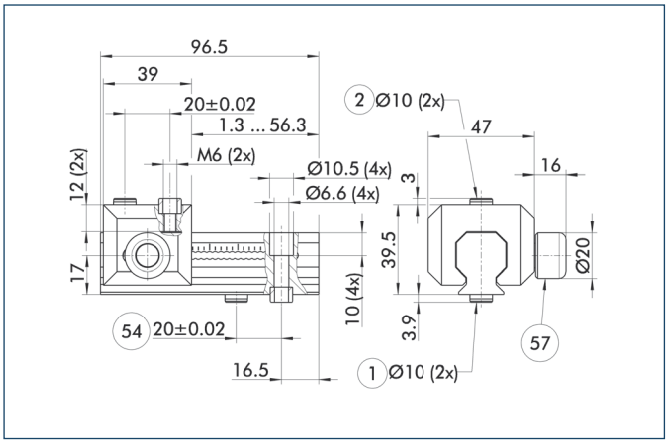
① Gripper connection
② Finger connection
⑨ For mounting screw connection diagram, see basic version
57 Locking

The BSWS quick-change jaw system enables top jaws to be changed on the gripper manually and rapidly. An adapter (BSWS-A) and a base (BSWS-B) are required for each gripper jaw.
For a reverse assembly without height set-up, one adapter (BSWS-A) and a kit (BSWS-U) per gripper jaw are required. Another effect of the BSWS-U is, that there are no disturbing fastening bores in the finger contour.

Description	ID
Quick-change Jaw System adapter	
BSWS-A 100	**0303026**
Quick-change Jaw System base	
BSWS-B 100	**0303027**
Quick-change Jaw System reversed	
BSWS-U 100	**0303043**

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Universal intermediate jaw



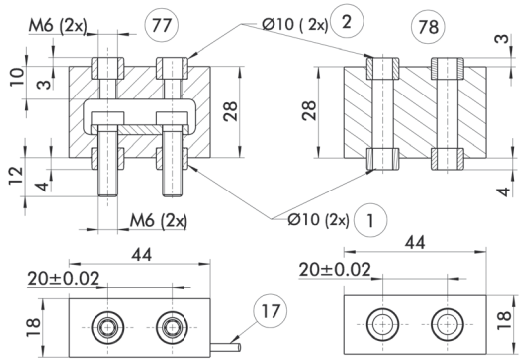
① Gripper connection
② Finger connection
54 Optional right or left connection
57 Locking

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

Description	ID	Grid dimension
Universal intermediate jaw		
UZB 100	**0300044**	2.5 mm
UZB-S 100	**5518272**	2.5 mm

ⓘ The slide UZB-S can be removed completely and has to be ordered separately. Moreover, it allows a fast jaw change.

Force measuring jaws

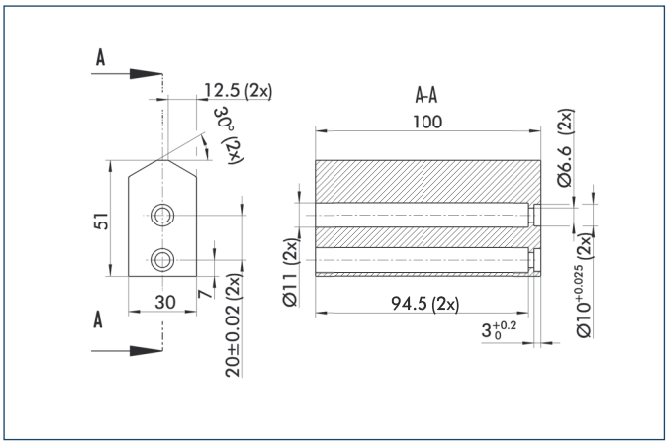


① Gripper connection
② Finger connection
17 Cable outlet
77 Active intermediate jaws
78 Passive intermediate jaws

Force measuring jaws measure gripping forces, but can also determine workpiece weights or dimensional deviations. There are active and passive intermediate jaws (FMS-ZBA or FMS-ZBP). At least one active force measuring jaw is required per gripper, the rest can be passive. For each active jaw, a FMS-A1 control unit and a FMS-A connection cable are required.

Description	ID
Active intermediate jaws	
FMS-ZBA 100	**0301836**
Passive intermediate jaws	
FMS-ZBP 100	**0301837**
Electronic Processor	
FMS-A1	**0301810**
Connection cables	
FMS-AK0200	**0301820**
FMS-AK0500	**0301821**
FMS-AK1000	**0301822**
FMS-AK2000	**0301823**

Finger blanks

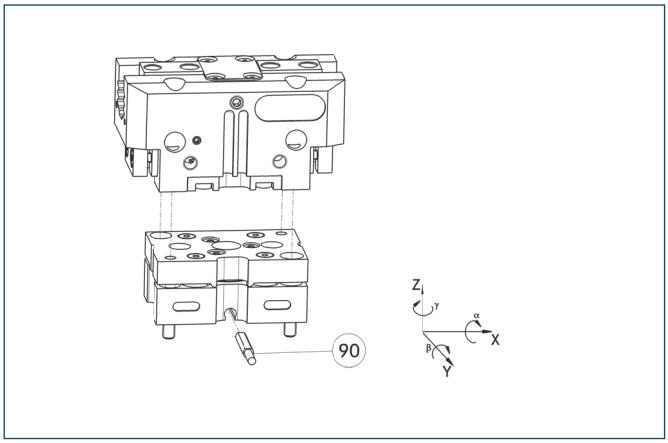


Finger blanks for customized subsequent machining

Description	ID	Material	Scope of delivery
Finger blanks			
ABR-plus 100	**0300012**	Aluminum	1
SBR-plus 100	**0300022**	16 MnCr 5	1

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Tolerance compensation unit

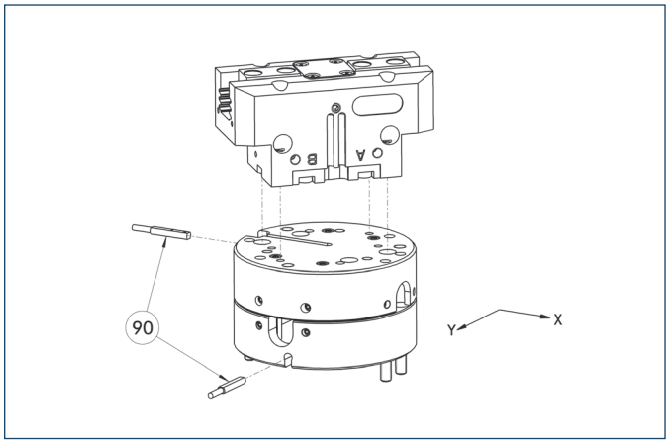


(90) Monitoring of locking

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 see catalog “Robot Accessories”.

Description	ID	Locking	Deflection
Compensation unit			
TCU-100-2-MV-P	**0324808**	Yes	±1.5°/±1°/±1.2°
TCU-100-3-OV-P	**0324811**	No	±1.5°/±1°/±1.2°

Compensation unit with spring reset

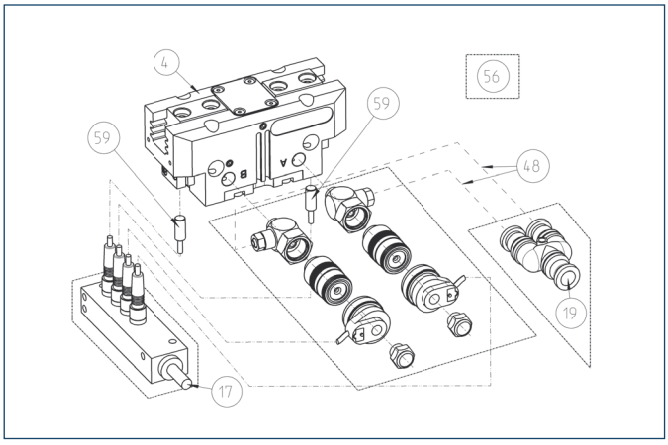


(90) Monitoring

Grippers can be directly mounted without using an adapter plate. For details see our catalog “Robot Accessories”.

Description	ID	Compensation travel	Reset force
Compensation unit			
AGE-F-XY-080-1	**0324960**	±5 mm	28.3 N
AGE-F-XY-080-2	**0324961**	±5 mm	42.5 N
AGE-F-XY-080-3	**0324962**	±5 mm	47.6 N

Attachment valves

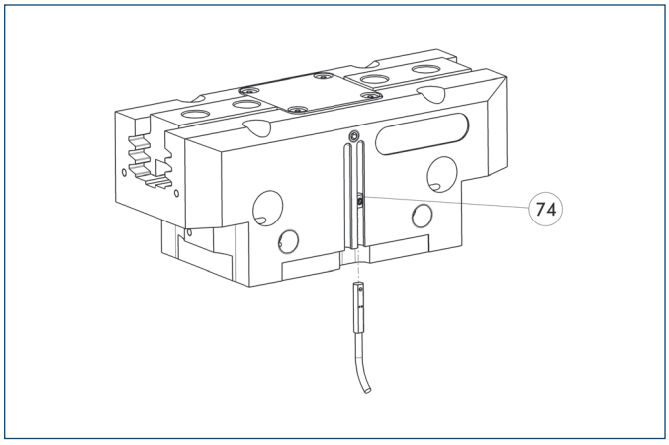


(4) Gripper
(17) Cable outlet
(19) Air connection
(48) Hose
(56) Included in delivery
(59) Monitoring “gripping”

For each gripper one attachment valve ABV is required, optional with distributor for sensors and valves. Attachment valves increase the efficiency, reduce the installation work and air consumption and simplify air supply. For details please refer to the “Accessories” catalog section.

Description	ID
Attachment valves	
ABV-MV30-G1/8	**0303328**
ABV-MV30-G1/8-V2-M8	**0303396**
ABV-MV30-G1/8-V4-M8	**0303366**
ABV-MV30-G1/8-V8-M8	**0303367**

Programmable magnetic switch



(74) Stop for MMS-P

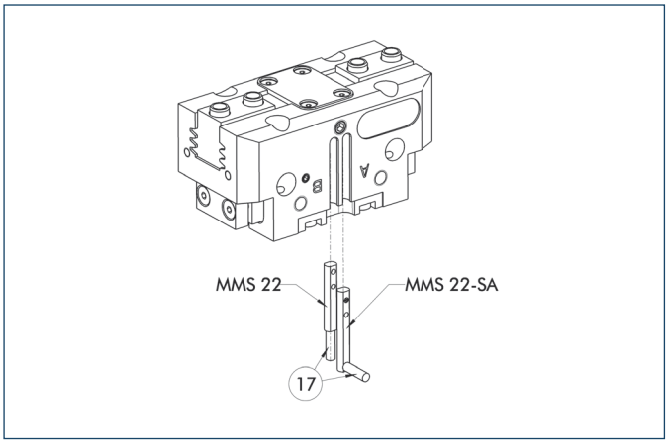
Position monitoring with two programmable positions per sensor. The end position monitoring is mounted in the C-slot.

Description	ID	Recommended product
Programmable magnetic switch		
MMS-P 22-S-M8-PNP	**0301370**	•
MMSK-P 22-S-PNP	**0301371**	
Connection cables		
KA BG08-L 4P-0500	**0307767**	
KA BG08-L 4P-1000	**0307768**	
KA BW08-L 4P-0500	**0307765**	
KA BW08-L 4P-1000	**0307766**	
Sensor Distributor		
V2-M8-4P-2XM8-3P	**0301380**	

ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.
ⓘ Per gripper one sensor (closer/NO) is required, optionally a cable extension.

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Electronic magnetic switches



⑰ Cable outlet

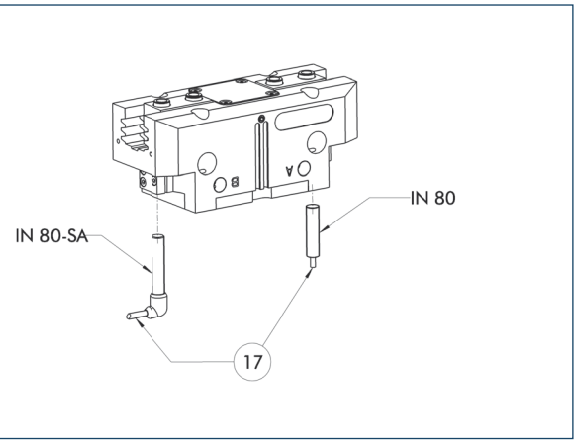
End position monitoring for mounting in the C-slot

Description	ID	Recommended product
Electronic magnetic switches		
MMS 22-S-M5-PNP	0301438	
MMS 22-S-M5-NPN	0301439	
MMS 22-S-M8-PNP	0301432	•
MMS 22-S-M8-NPN	0301433	
MMSK 22-S-PNP	0301434	
MMSK 22-S-NPN	0301435	
Electronic magnetic switches with lateral cable outlet		
MMS 22-S-M5-PNP-SA	0301448	
MMS 22-S-M5-NPN-SA	0301449	
MMS 22-S-M8-PNP-SA	0301442	•
MMS 22-S-M8-NPN-SA	0301443	
MMSK 22-S-PNP-SA	0301444	
MMSK 22-S-NPN-SA	0301445	
Reed Switches		
RMS 22-S-M8	0377720	•
Connection cables		
KA BG05-L 3P-0300	0301652	
KA BG08-L 3P-0300-PNP	0301622	
KA BG08-L 3P-0500-PNP	0301623	
KA BW05-L 3P-0300	0301650	
KA BW08-L 3P-0300-NPN	0301602	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-NPN	9641116	
KA BW08-L 3P-0500-PNP	0301502	
Cable extensions		
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	

ⓘ Two sensors (closer/NO) are required for each gripper, plus extension cables as an option.

ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

Inductive proximity switches



⑰ Cable outlet

End position monitoring for direct mounting

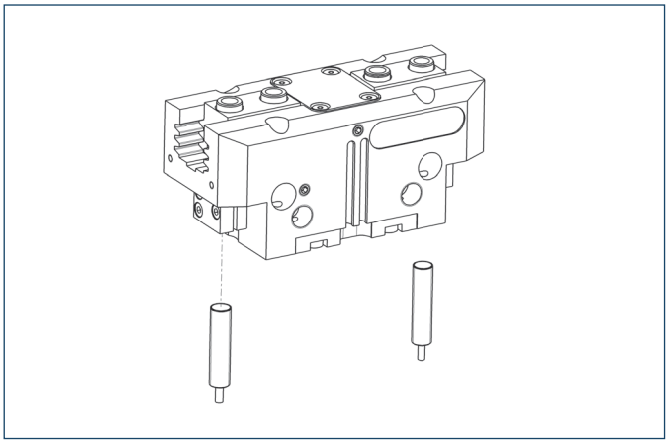
Description	ID	Recommended product
Inductive proximity switches		
IN 80-S-M8	0301478	•
IN 80-S-M12	0301578	
INK 80-S	0301550	
IN-C 80-S-M8	0301475	
Inductive proximity switch with lateral outlet		
IN 80-S-M8-SA	0301483	•
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	
KA BG08-L 3P-0500-PNP	0301623	
KA BG12-L 3P-0500-PNP	30016369	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
KA BW12-L 3P-0300-PNP	0301503	
KA BW12-L 3P-0500-PNP	0301507	
Cable extensions		
KV BG12-SG12 3P-0030-PNP	0301999	
KV BG12-SG12 3P-0060-PNP	0301998	
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	
KV BW12-SG12 3P-0030-PNP	0301595	
KV BW12-SG12 3P-0100-PNP	0301596	
KV BW12-SG12 3P-0200-PNP	0301597	

ⓘ Two sensors (closer/NO) are required for each gripper, plus extension cables as an option.

ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Cylindrical Reed Switches

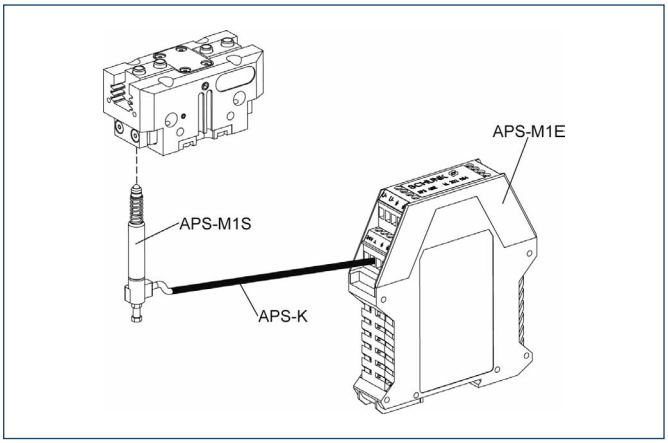


End position monitoring mounted with mounting kit

Description	ID
Mounting kit for proximity switch	
AS-RMS 80 PGN/PZN-plus 100/125	**0377726**
Reed Switches	
RMS 80-S-M8	**0377721**

ⓘ Two sensors (closer/NO) are required for each gripper, plus extension cables as an option.
ⓘ This mounting kit needs to be ordered optionally as an accessory.
ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

Analog position sensor



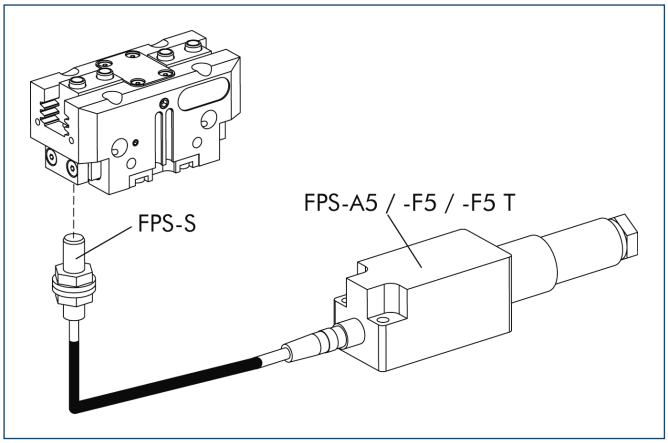
Analog multi position monitoring for any desired positions

Description	ID
Mounting kit	
AS-APS-M1-100/1	**0302079**
AS-APS-M1-100/2	**0302080**
Connection cables	
APS-K0200	**0302066**
APS-K0700	**0302068**
Electronic Processor	
APS-M1E	**0302064**
Sensor	
APS-M1S	**0302062**

ⓘ When using an APS system, for each gripper a mounting kit (AS-APS), an APS sensor (APS-M 1S, incl. 3 m cable) as well as an electronics (APS-M1e) are required.
ⓘ An extension cable (APS-K) can be connected between the sensor and the electronics as an option. The max. cable length between the sensor and the electronics is 10 m, between the electronics and their control unit (PLC) it is max. 1 m.

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Flexible Position Sensor



Flexible position monitoring of up to five positions

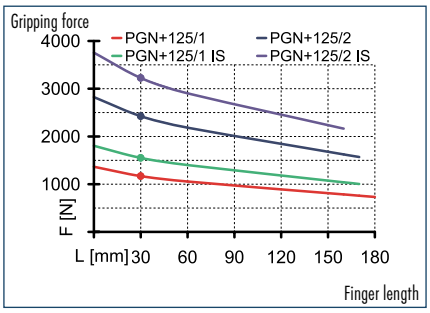
Description	ID
Mounting kit for FPS	
AS-PGN/PZN-plus 100/1	**0301634**
AS-PGN/PZN-plus 100/2, PZB 125	**0301635**
Electronic Processor	
FPS-F5	**0301805**
FPS-F5 T	**0301807**
Sensor	
FPS-S M8	**0301704**

ⓘ When using a FPS system, a FPS sensor (FPS-S) and a control unit (FPS-F5 / F5 T or A5) are required for each gripper as well as a mounting kit (AS), if listed. Cable extensions (KV) are available as options in the “Accessories” catalog section.

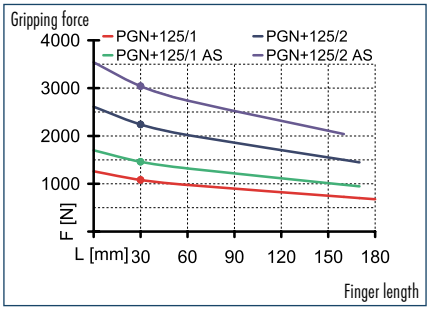
You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

PGN-plus 125

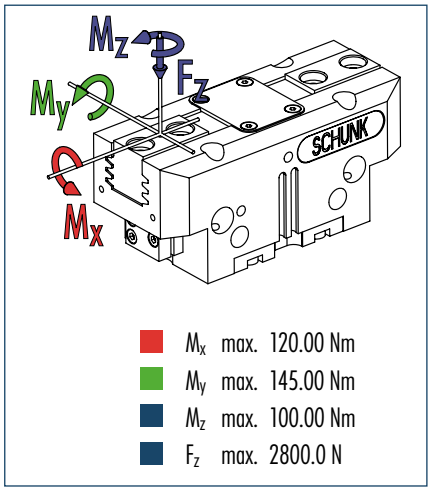
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

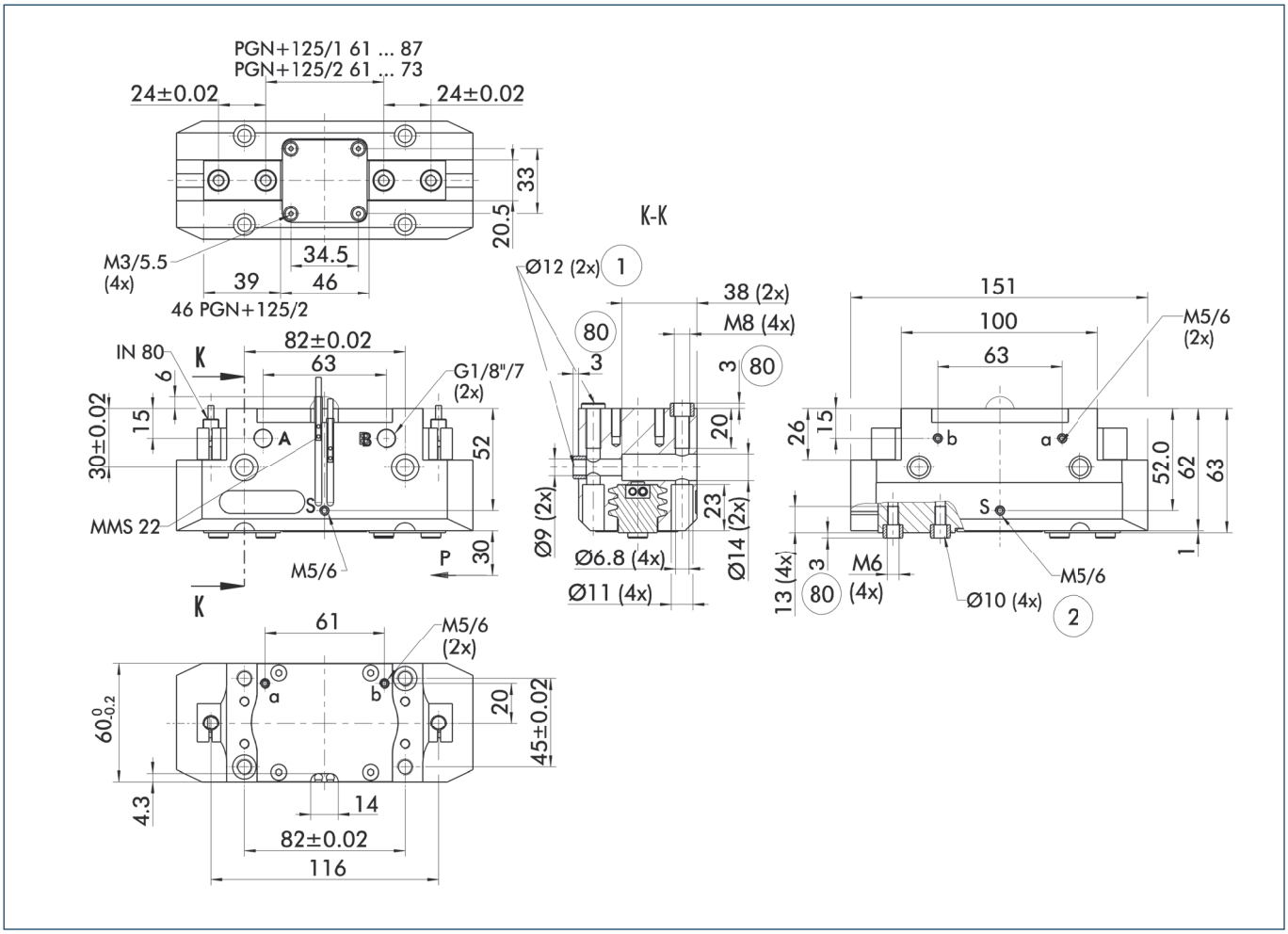


ⓘ The indicated moments and forces are static values, apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement occurs without any hitting or bouncing. Service life may be reduced.

Technical data

Description		PGN-plus 125-1	PGN-plus 125-2	PGN-plus 125-1-AS	PGN-plus 125-2-AS	PGN-plus 125-1-IS	PGN-plus 125-2-IS
ID		**0371103**	**0371153**	**0371403**	**0371453**	**0371463**	**0371473**
Stroke per finger	[mm]	13	6	13	6	13	6
Closing force	[N]	1080	2240	1470	3040		
Opening force	[N]	1170	2420			1560	3220
Min. spring force	[N]			390	800	390	800
Weight	[kg]	1.35	1.35	1.85	1.85	1.85	1.85
Recommended workpiece weight	[kg]	5.4	11.2	5.4	11.2	5.4	11.2
Air consumption per double stroke	[cm³]	81	81	158	158	158	158
Min./max. operating pressure	[bar]	2.5/8	2.5/8	4/6.5	4/6.5	4/6.5	4/6.5
Nominal operating pressure	[bar]	6	6	6	6	6	6
Closing/opening time	[s]	0.1/0.1	0.1/0.1	0.08/0.12	0.08/0.12	0.12/0.08	0.12/0.08
Max. permitted finger length	[mm]	180	170	170	160	170	160
Max. permitted weight per finger	[kg]	2.1	2.1	2.1	2.1	2.1	2.1
IP class		40	40	40	40	40	40
Min./max. ambient temperature	[°C]	-10/90	-10/90	-10/90	-10/90	-10/90	-10/90
Repeat accuracy	[mm]	0.01	0.01	0.01	0.01	0.01	0.01
Cleanroom class ISO-classification 14644-1		5	5	5	5	5	5
OPTIONS and their characteristics							
Dust-protection version		**37371103**	**37371153**	**37371403**	**37371453**	**37371463**	**37371473**
IP class		64	64	64	64	64	64
Weight	[kg]	1.55	1.55	2.05	2.05	2.05	2.05
Anti-corrosion version		**38371103**	**38371153**	**38371403**	**38371453**	**38371463**	**38371473**
High-temperature version		**39371103**	**39371153**	**39371403**	**39371453**	**39371463**	**39371473**
Min./max. ambient temperature	[°C]	-10/130	-10/130	-10/130	-10/130	-10/130	-10/130
Force intensified version		PGN-plus 125-1-KVZ	PGN-plus 125-2-KVZ	PGN-plus 125-1-AS-KVZ		PGN-plus 125-1-IS-KVZ	
ID		**0372103**	**0372153**	**0372403**		**0372463**	
Closing force	[N]	1945	4030	2335			
Opening force	[N]	2105	4355			2495	
Weight	[kg]	1.85	1.85	2.3		2.3	
Maximum pressure	[bar]	6	6	6		6	
Max. permitted finger length	[mm]	180	125	125		125	
Precision version		**0371125**	**0371175**	**0371425**	**0371440**		

Main view

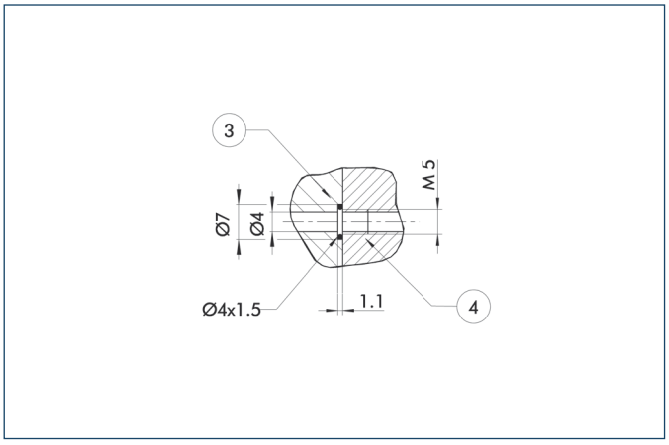


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

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

A, a Main/direct connection, gripper opening
B, b Main/direct connection, gripper closing
S Air purge connection, or deaeration bore
① Gripper connection
② Finger connection
(80) Depth of the centering sleeve hole in the matching part

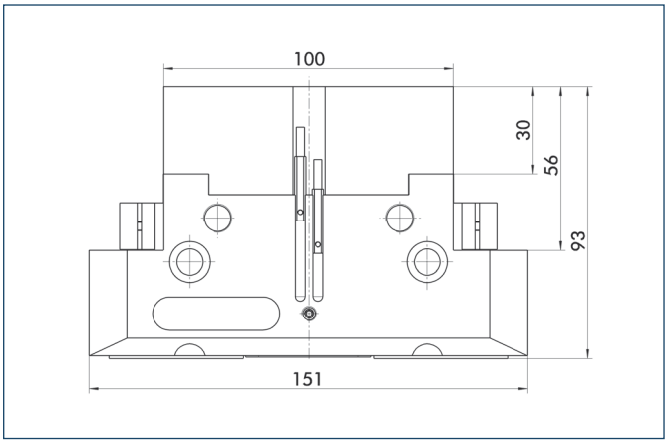
Hose-free direct connection



③ Adapter
④ Gripper

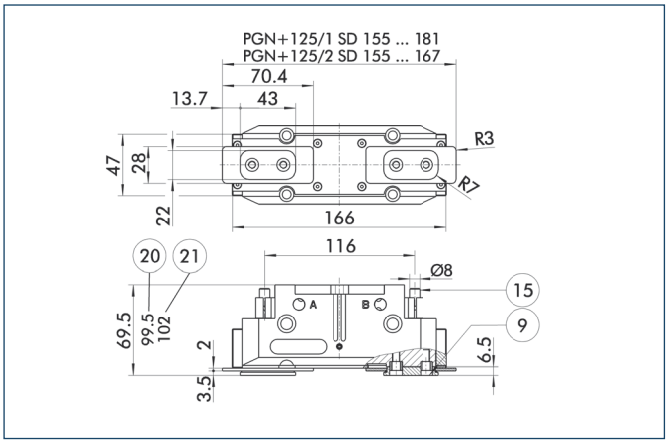
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

AS/IS gripping force maintenance device



The mechanical gripping force maintenance device ensures a minimum gripping force even in case of pressure drop. This acts as closing force in the AS version, and as opening force in the IS version. In addition, the gripping force maintenance device can also be used for increasing the gripping force or for single-acting gripping.

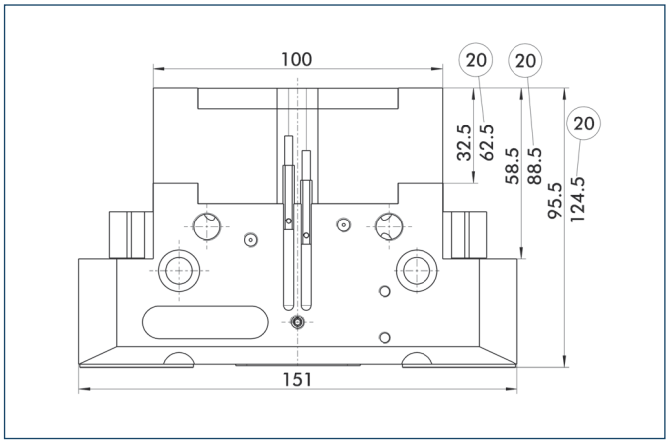
Dust-protection version



(9) For mounting screw connection diagram, see basic version
(15) Sealing bolt
(20) For AS / IS version
(21) Applies for KVZ version

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

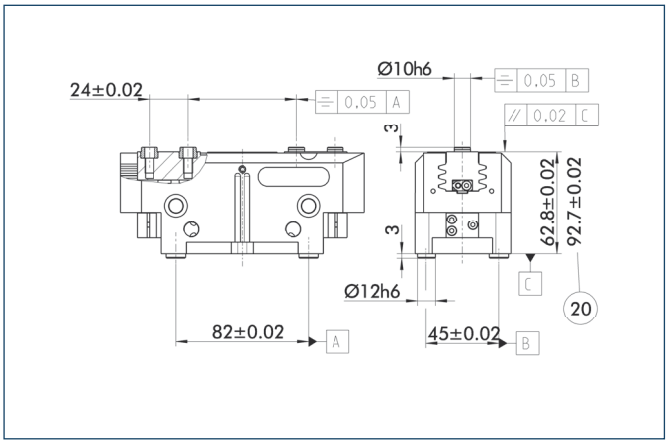
Force intensified version



(20) For AS / IS 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. The full gripping force shown in the data table is sometimes only reached after a few hundred gripping cycles. Please consider that grippers which are equipped with a gripping force maintenance device (AS / IS) are higher.

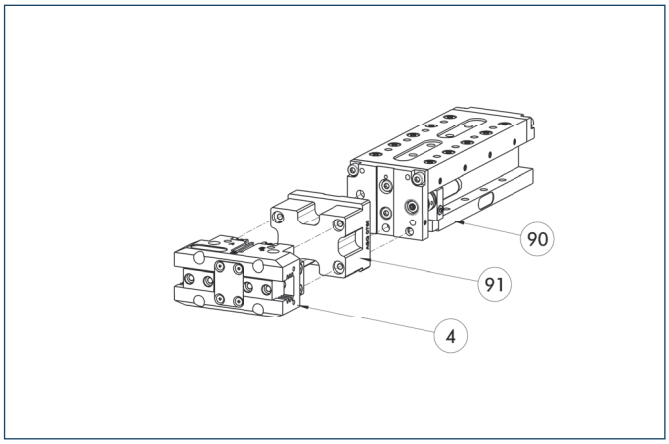
Precision version



(20) For AS / IS version

The indicated tolerances just refer to the types of precision versions shown in the chart of technical specifications. All other types of precision versions are available on request.

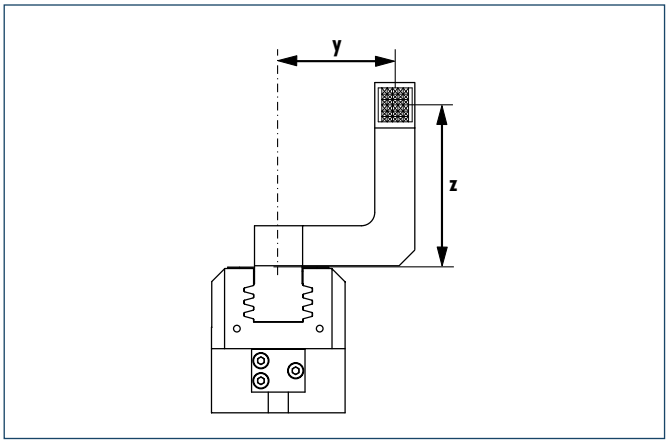
Modular Assembly Automation

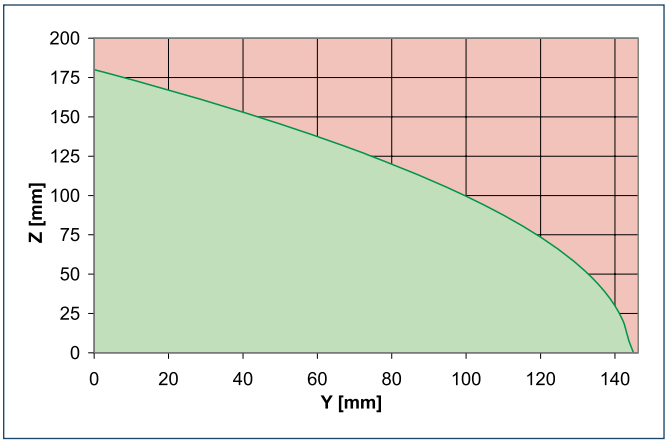


(4) Gripper
(90) CLM
(91) ASG

This gripper can be combined with the standard linear modules LM, KLM, CLM and ELM of the GEMOTEC modular system. For more information see our main catalog "Modular Assembly Automation".

Maximum permitted finger projection

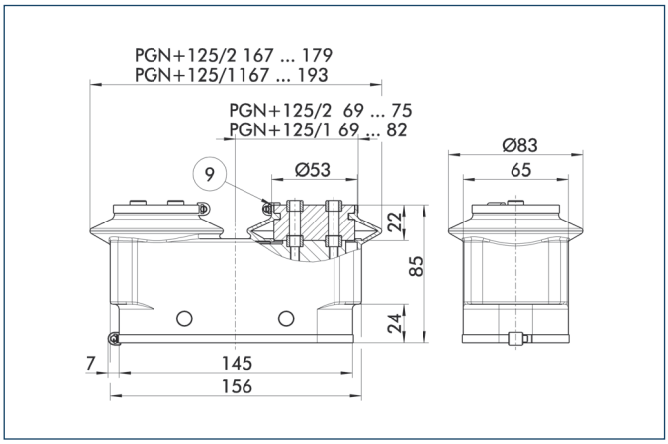




Permitted range
Inadmissible range

The curve applies to the basic version (stroke -1). For other versions, the curve will be parallel but offset in line with the max. permitted finger length.

Protection cover

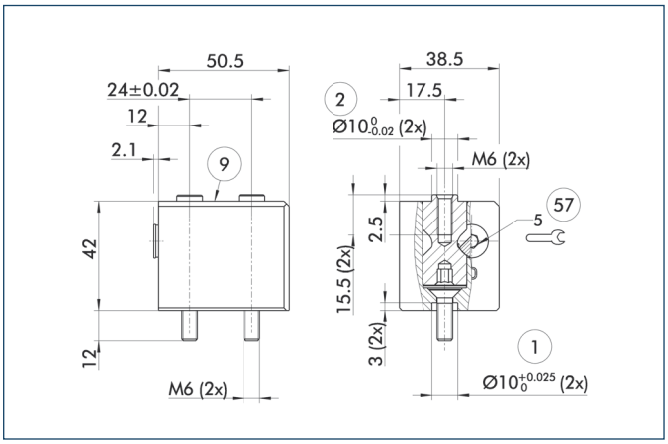


⑨ For mounting screw connection diagram, see basic version

The HUE protective cover completely protects the gripper against external influences up to IP65 if an additional sealing of the cover bottom is provided as part of the application. The mounting diagram shifts by the height of the intermediate jaw.

Description	ID	Cleanroom class ISO-classification 14644-1
Protection cover		
HUE PGN-plus 125	**0371483**	2

Quick-change Jaw System



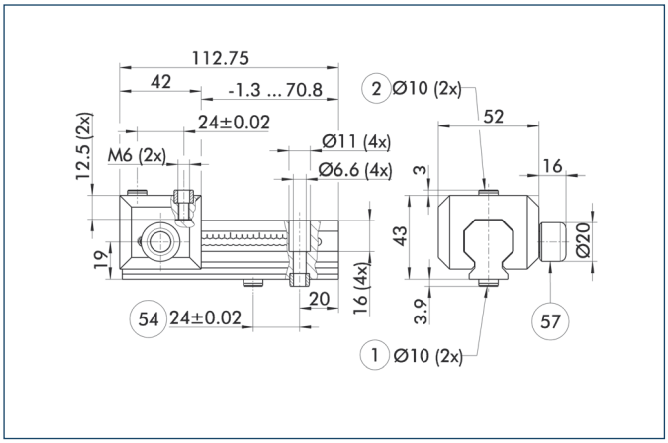
① Gripper connection
② Finger connection
⑨ For mounting screw connection diagram, see basic version
⑰ Locking

The BSWS quick-change jaw system enables top jaws to be changed on the gripper manually and rapidly. An adapter (BSWS-A) and a base (BSWS-B) are required for each gripper jaw.
For a reverse assembly without height set-up, one adapter (BSWS-A) and a kit (BSWS-U) per gripper jaw are required. Another effect of the BSWS-U is, that there are no disturbing fastening bores in the finger contour.

Description	ID
Quick-change Jaw System adapter	
BSWS-A 125	**0303028**
Quick-change Jaw System base	
BSWS-B 125	**0303029**
Quick-change Jaw System reversed	
BSWS-U 125	**0303044**

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Universal intermediate jaw



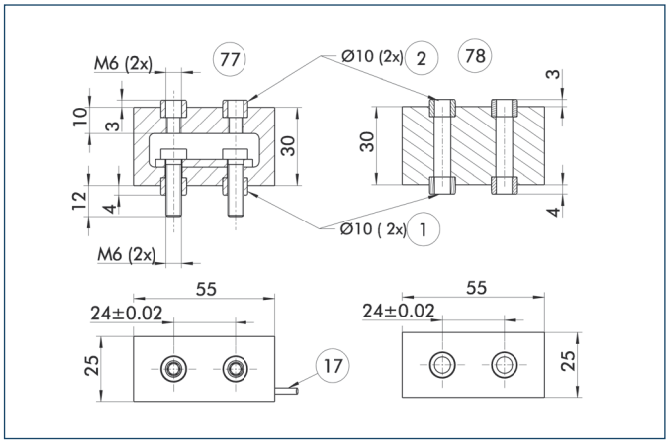
① Gripper connection
② Finger connection
54 Optional right or left connection
57 Locking

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

Description	ID	Grid dimension
Universal intermediate jaw		
UZB 125	**0300045**	3 mm
UZB-S 125	**5518273**	3 mm

ⓘ The slide UZB-S can be removed completely and has to be ordered separately. Moreover, it allows a fast jaw change.

Force measuring jaws

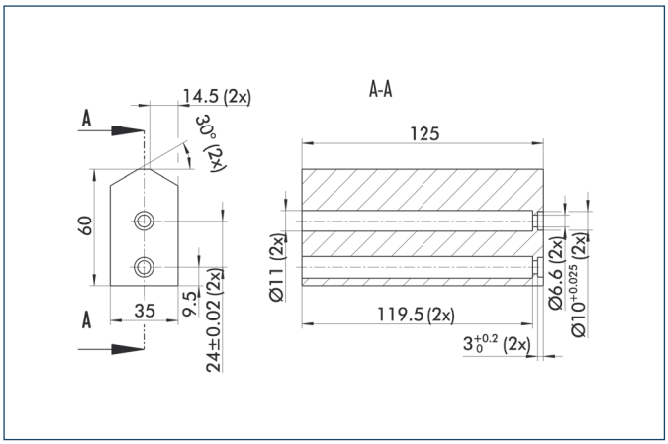


① Gripper connection
② Finger connection
17 Cable outlet
77 Active intermediate jaws
78 Passive intermediate jaws

Force measuring jaws measure gripping forces, but can also determine workpiece weights or dimensional deviations. There are active and passive intermediate jaws (FMS-ZBA or FMS-ZBP). At least one active force measuring jaw is required per gripper, the rest can be passive. For each active jaw, a FMS-A1 control unit and a FMS-A connection cable are required.

Description	ID
Active intermediate jaws	
FMS-ZBA 125	**0301838**
Passive intermediate jaws	
FMS-ZBP 125	**0301839**
Electronic Processor	
FMS-A1	**0301810**
Connection cables	
FMS-AK0200	**0301820**
FMS-AK0500	**0301821**
FMS-AK1000	**0301822**
FMS-AK2000	**0301823**

Finger blanks

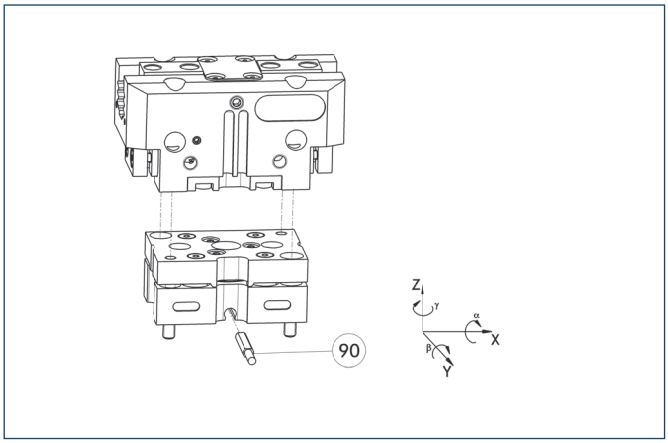


Finger blanks for customized subsequent machining

Description	ID	Material	Scope of delivery
Finger blanks			
ABR-plus 125	**0300013**	Aluminum	1
SBR-plus 125	**0300023**	16 MnCr 5	1

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Tolerance compensation unit

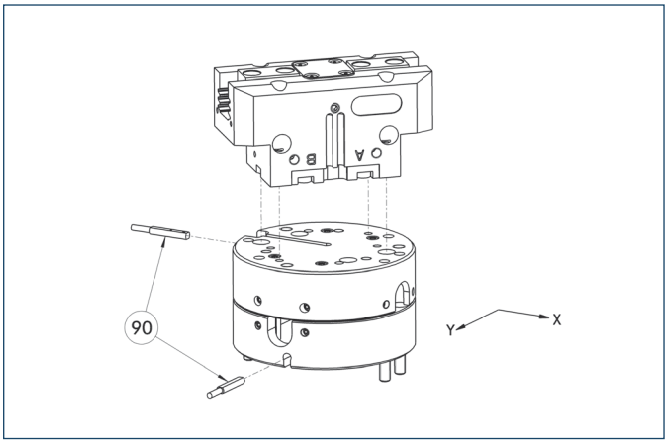


(90) Monitoring of locking

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 see catalog “Robot Accessories”.

Description	ID	Locking	Deflection
Compensation unit			
TCU-125-3-MV-P	**0324828**	Yes	±1.5°/±1°/±1.5°
TCU-125-3-OV-P	**0324829**	No	±1.5°/±1°/±1.5°

Compensation unit with spring reset

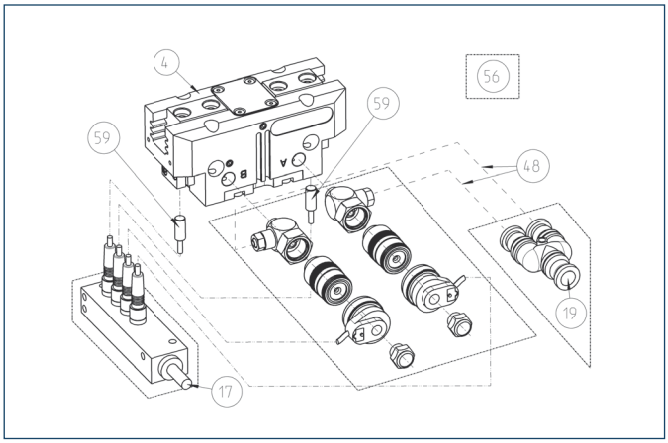


(90) Monitoring

Grippers can be directly mounted without using an adapter plate. For details see our catalog “Robot Accessories”.

Description	ID	Compensation travel	Reset force
Compensation unit			
AGE-F-XY-080-1	**0324960**	±5 mm	28.3 N
AGE-F-XY-080-2	**0324961**	±5 mm	42.5 N
AGE-F-XY-080-3	**0324962**	±5 mm	47.6 N

Attachment valves

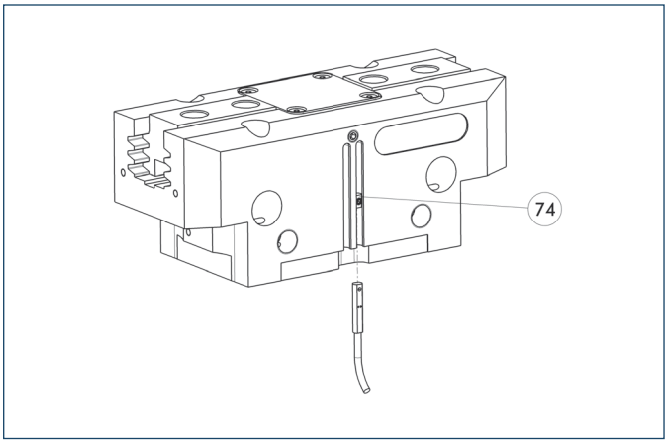


(4) Gripper
(17) Cable outlet
(19) Air connection
(48) Hose
(56) Included in delivery
(59) Monitoring “gripping”

For each gripper one attachment valve ABV is required, optional with distributor for sensors and valves. Attachment valves increase the efficiency, reduce the installation work and air consumption and simplify air supply. For details please refer to the “Accessories” catalog section.

Description	ID
Attachment valves	
ABV-MV30-G1/8	**0303328**
ABV-MV30-G1/8-V2-M8	**0303396**
ABV-MV30-G1/8-V4-M8	**0303366**
ABV-MV30-G1/8-V8-M8	**0303367**

Programmable magnetic switch



(74) Stop for MMS-P

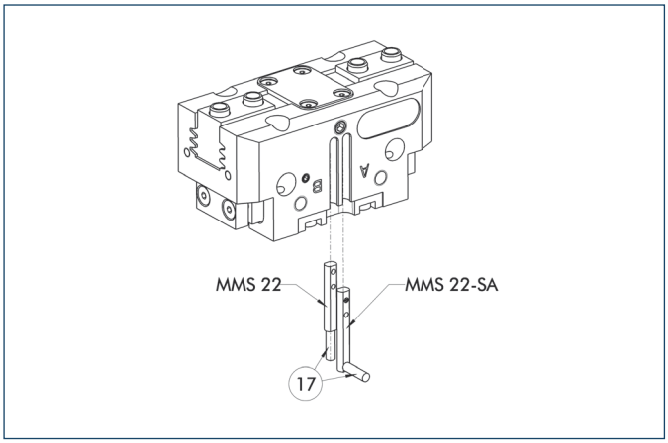
Position monitoring with two programmable positions per sensor. The end position monitoring is mounted in the C-slot.

Description	ID	Recommended product
Programmable magnetic switch		
MMS-P 22-S-M8-PNP	**0301370**	•
MMSK-P 22-S-PNP	**0301371**	
Connection cables		
KA BG08-L 4P-0500	**0307767**	
KA BG08-L 4P-1000	**0307768**	
KA BW08-L 4P-0500	**0307765**	
KA BW08-L 4P-1000	**0307766**	
Sensor Distributor		
V2-M8-4P-2XM8-3P	**0301380**	

ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.
ⓘ Per gripper one sensor (closer/NO) is required, optionally a cable extension.

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Electronic magnetic switches



⑰ Cable outlet

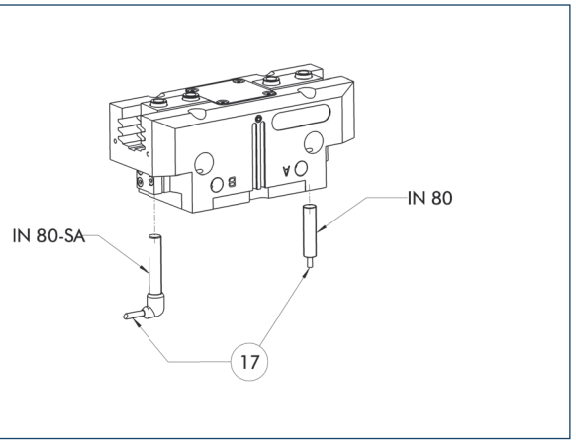
End position monitoring for mounting in the C-slot

Description	ID	Recommended product
Electronic magnetic switches		
MMS 22-S-M5-PNP	0301438	
MMS 22-S-M5-NPN	0301439	
MMS 22-S-M8-PNP	0301432	•
MMS 22-S-M8-NPN	0301433	
MMSK 22-S-PNP	0301434	
MMSK 22-S-NPN	0301435	
Electronic magnetic switches with lateral cable outlet		
MMS 22-S-M5-PNP-SA	0301448	
MMS 22-S-M5-NPN-SA	0301449	
MMS 22-S-M8-PNP-SA	0301442	•
MMS 22-S-M8-NPN-SA	0301443	
MMSK 22-S-PNP-SA	0301444	
MMSK 22-S-NPN-SA	0301445	
Reed Switches		
RMS 22-S-M8	0377720	•
Connection cables		
KA BG05-L 3P-0300	0301652	
KA BG08-L 3P-0300-PNP	0301622	
KA BG08-L 3P-0500-PNP	0301623	
KA BW05-L 3P-0300	0301650	
KA BW08-L 3P-0300-NPN	0301602	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-NPN	9641116	
KA BW08-L 3P-0500-PNP	0301502	
Cable extensions		
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	

ⓘ Two sensors (closer/NO) are required for each gripper, plus extension cables as an option.

ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

Inductive proximity switches



⑰ Cable outlet

End position monitoring for direct mounting

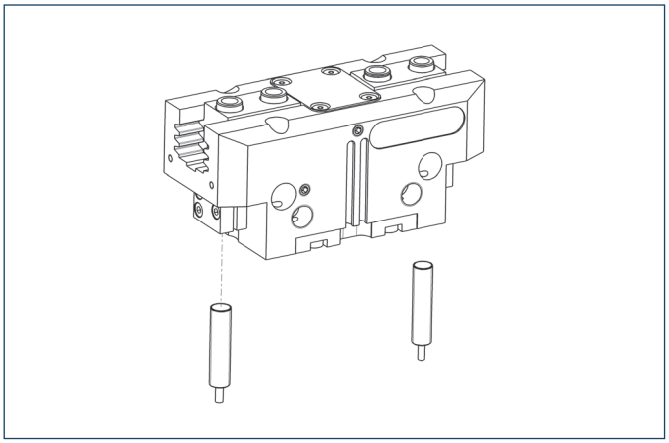
Description	ID	Recommended product
Inductive proximity switches		
IN 80-S-M8	0301478	•
IN 80-S-M12	0301578	
INK 80-S	0301550	
Inductive proximity switch with lateral outlet		
IN 80-S-M12-SA	0301587	
IN 80-S-M8-SA	0301483	•
INK 80-S-SA	0301566	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	
KA BG08-L 3P-0500-PNP	0301623	
KA BG12-L 3P-0500-PNP	30016369	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
KA BW12-L 3P-0300-PNP	0301503	
KA BW12-L 3P-0500-PNP	0301507	
Cable extensions		
KV BG12-SG12 3P-0030-PNP	0301999	
KV BG12-SG12 3P-0060-PNP	0301998	
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	
KV BW12-SG12 3P-0030-PNP	0301595	
KV BW12-SG12 3P-0100-PNP	0301596	
KV BW12-SG12 3P-0200-PNP	0301597	

ⓘ Two sensors (closer/NO) are required for each gripper, plus extension cables as an option.

ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Cylindrical Reed Switches

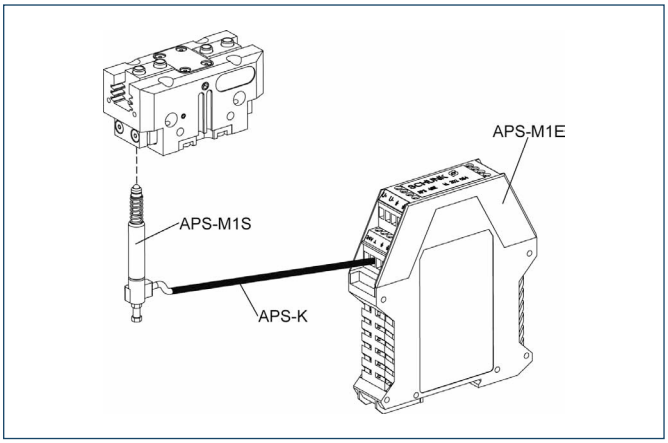


End position monitoring mounted with mounting kit

Description	ID
Mounting kit for proximity switch	
AS-RMS 80 PGN/PZN-plus 100/125	**0377726**
Reed Switches	
RMS 80-S-M8	**0377721**

ⓘ Two sensors (closer/NO) are required for each gripper, plus extension cables as an option.
ⓘ This mounting kit needs to be ordered optionally as an accessory.
ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

Analog position sensor



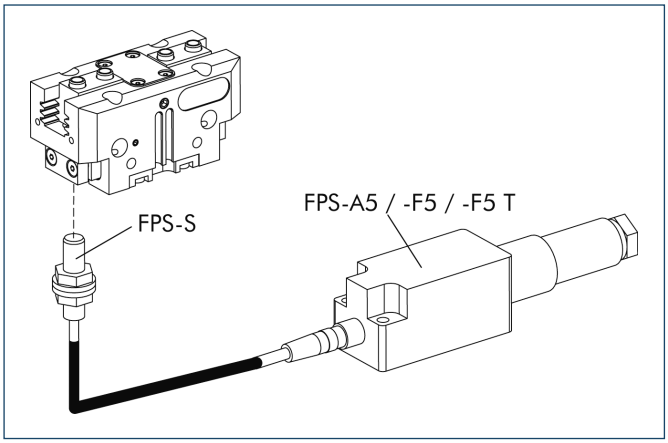
Analog multi position monitoring for any desired positions

Description	ID
Mounting kit	
AS-APS-M1-125/1	**0302081**
AS-APS-M1-125/2	**0302082**
Connection cables	
APS-K0200	**0302066**
APS-K0700	**0302068**
Electronic Processor	
APS-M1E	**0302064**
Sensor	
APS-M1S	**0302062**

ⓘ When using an APS system, for each gripper a mounting kit (AS-APS), an APS sensor (APS-M 1S, incl. 3 m cable) as well as an electronics (APS-M1e) are required.
ⓘ An extension cable (APS-K) can be connected between the sensor and the electronics as an option. The max. cable length between the sensor and the electronics is 10 m, between the electronics and their control unit (PLC) it is max. 1 m.

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Flexible Position Sensor



Flexible position monitoring of up to five positions

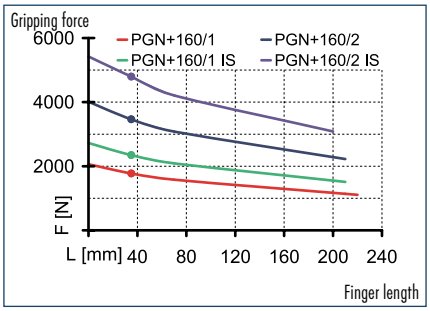
Description	ID
Mounting kit for FPS	
AS-PGN/PZN-plus 125/1, PZB 160	**0301636**
AS-PGN/PZN-plus 125/2	**0301637**
Electronic Processor	
FPS-F5	**0301805**
FPS-F5 T	**0301807**
Sensor	
FPS-S M8	**0301704**

ⓘ When using a FPS system, a FPS sensor (FPS-S) and a control unit (FPS-F5 / F5 T or A5) are required for each gripper as well as a mounting kit (AS), if listed. Cable extensions (KV) are available as options in the “Accessories” catalog section.

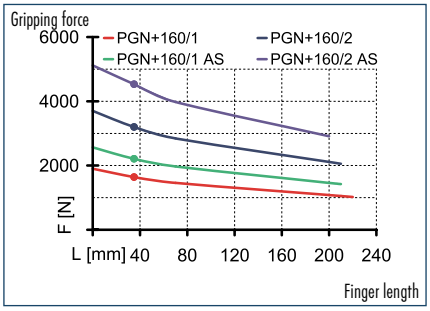
You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

PGN-plus 160

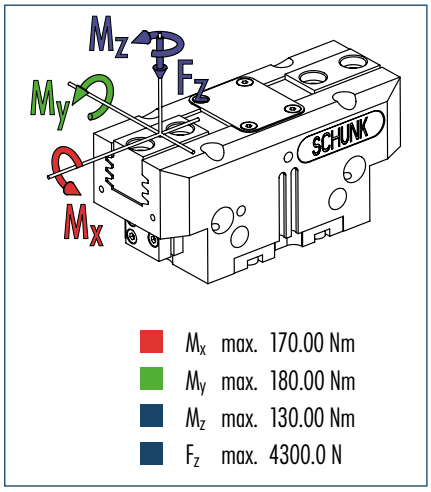
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load



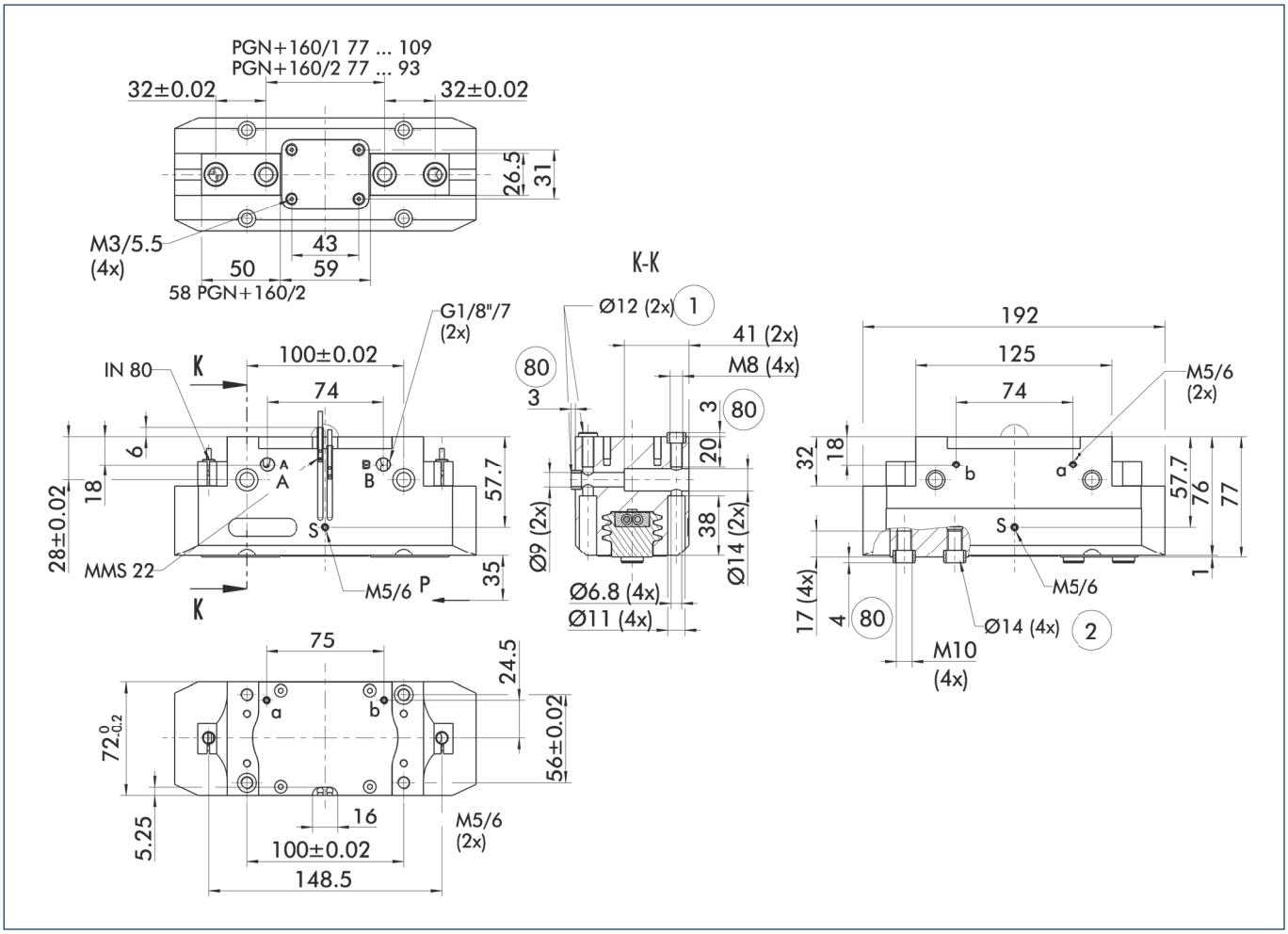
- M_x max. 170.00 Nm
- M_y max. 180.00 Nm
- M_z max. 130.00 Nm
- F_z max. 4300.0 N

ⓘ The indicated moments and forces are static values, apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement occurs without any hitting or bouncing. Service life may be reduced.

Technical data

Description		PGN-plus 160-1	PGN-plus 160-2	PGN-plus 160-1-AS	PGN-plus 160-2-AS	PGN-plus 160-1-IS	PGN-plus 160-2-IS
ID		**0371104**	**0371154**	**0371404**	**0371454**	**0371464**	**0371474**
Stroke per finger	[mm]	16	8	16	8	16	8
Closing force	[N]	1640	3200	2210	4420		
Opening force	[N]	1770	3460			2340	
Min. spring force	[N]			570	1220	570	1220
Weight	[kg]	2.6	2.6	3.3	3.3	3.3	3.3
Recommended workpiece weight	[kg]	8.2	16	8.2	16	8.2	16
Air consumption per double stroke	[cm³]	157	157	265	265	265	265
Min./max. operating pressure	[bar]	2.5/8	2.5/8	4/6.5	4/6.5	4/6.5	4/6.5
Nominal operating pressure	[bar]	6	6	6	6	6	6
Closing/opening time	[s]	0.15/0.15	0.15/0.15	0.12/0.25	0.12/0.25	0.25/0.12	0.25/0.12
Max. permitted finger length	[mm]	220	210	210	200	210	200
Max. permitted weight per finger	[kg]	3.5	3.5	3.5	3.5	3.5	3.5
IP class		40	40	40	40	40	40
Min./max. ambient temperature	[°C]	-10/90	-10/90	-10/90	-10/90	-10/90	-10/90
Repeat accuracy	[mm]	0.01	0.01	0.01	0.01	0.01	0.01
Cleanroom class ISO-classification 14644-1		5	5	5	5	5	5
OPTIONS and their characteristics							
Dust-protection version		**37371104**	**37371154**	**37371404**	**37371454**	**37371464**	**37371474**
IP class		64	64	64	64	64	64
Weight	[kg]	3	3	3.7	3.7	3.7	3.7
Anti-corrosion version		**38371104**	**38371154**	**38371404**	**38371454**	**38371464**	**38371474**
High-temperature version		**39371104**	**39371154**	**39371404**	**39371454**	**39371464**	**39371474**
Min./max. ambient temperature	[°C]	-10/130	-10/130	-10/130	-10/130	-10/130	-10/130
Force intensified version		PGN-plus 160-1-KVZ	PGN-plus 160-2-KVZ	PGN-plus 160-1-AS-KVZ		PGN-plus 160-1-IS-KVZ	
ID		**0372104**	**0372154**	**0372404**		**0372464**	
Closing force	[N]	2950	5760	3520			
Opening force	[N]	3185	6230			3755	
Weight	[kg]	3.4	3.4	4.4		4.4	
Maximum pressure	[bar]	6	6	6		6	
Max. permitted finger length	[mm]	160	125	125		125	
Precision version		**0371126**	**0371176**	**0371426**	**0371441**		

Main view

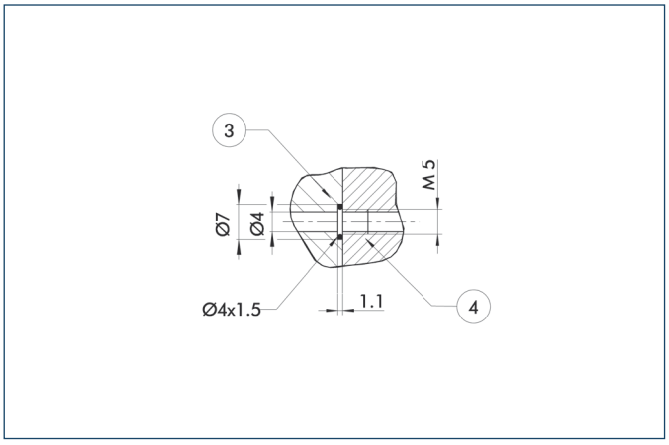


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

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

A, a Main/direct connection, gripper opening
B, b Main/direct connection, gripper closing
S Air purge connection
① Gripper connection
② Finger connection
80 Depth of the centering sleeve hole in the matching part

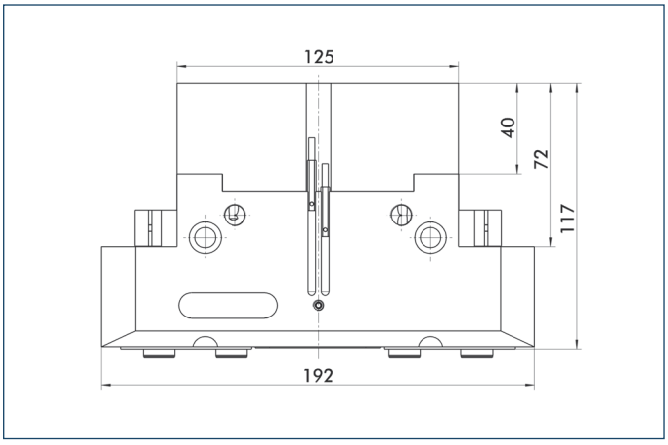
Hose-free direct connection



③ Adapter
④ Gripper

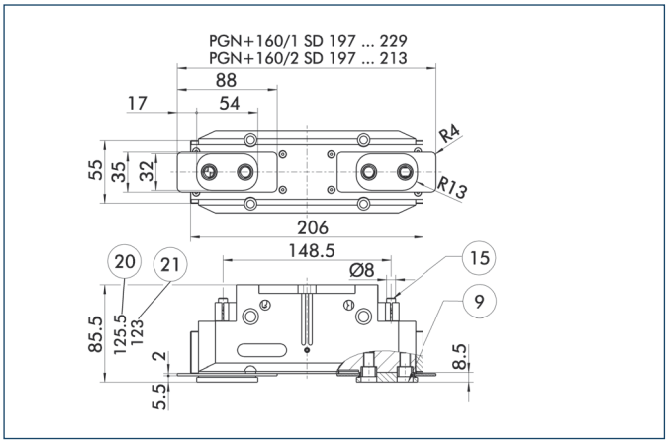
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

AS/IS gripping force maintenance device



The mechanical gripping force maintenance device ensures a minimum gripping force even in case of pressure drop. This acts as closing force in the AS version, and as opening force in the IS version. In addition, the gripping force maintenance device can also be used for increasing the gripping force or for single-acting gripping.

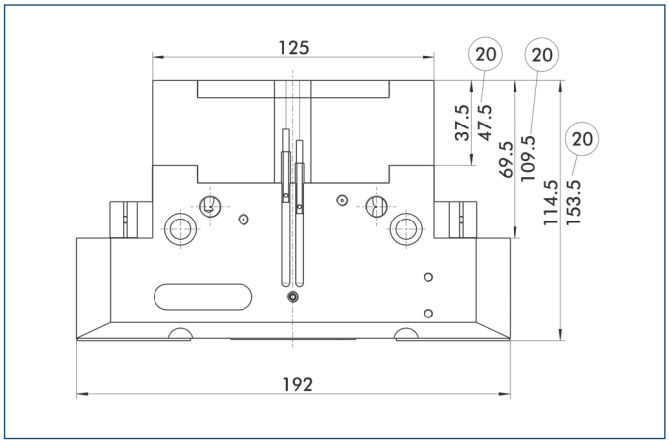
Dust-protection version



⑨ For mounting screw connection diagram, see basic version
⑮ Sealing bolt
⑳ For AS / IS version
㉑ Applies for KVZ version

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

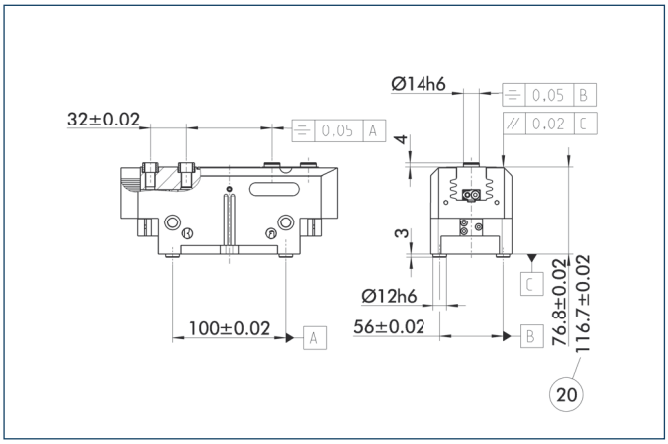
Force intensified version



⑳ For AS / IS 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. The full gripping force shown in the data table is sometimes only reached after a few hundred gripping cycles. Please consider that grippers which are equipped with a gripping force maintenance device (AS / IS) are higher.

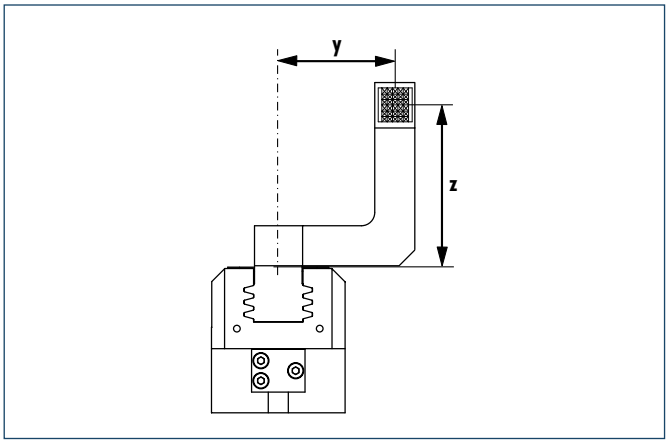
Precision version

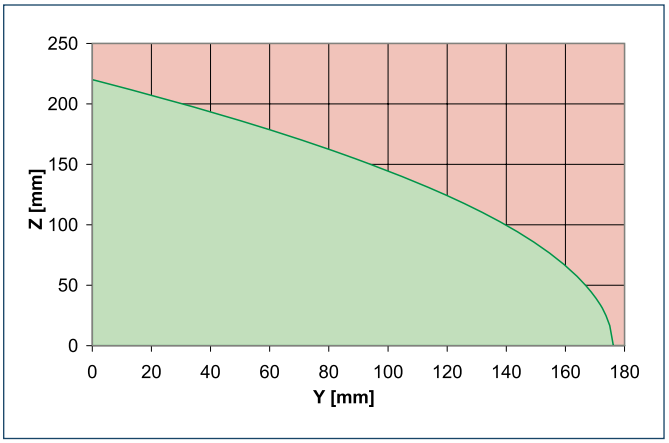


⑳ For AS / IS version

The indicated tolerances just refer to the types of precision versions shown in the chart of technical specifications. All other types of precision versions are available on request.

Maximum permitted finger projection

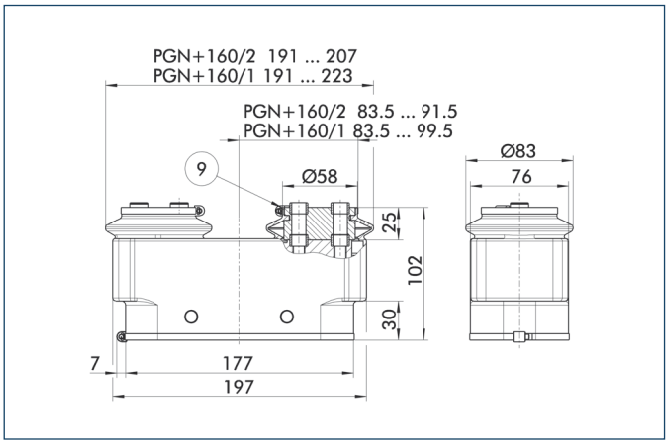




Permitted range
Inadmissible range

The curve applies to the basic version (stroke -1). For other versions, the curve will be parallel but offset in line with the max. permitted finger length.

Protection cover

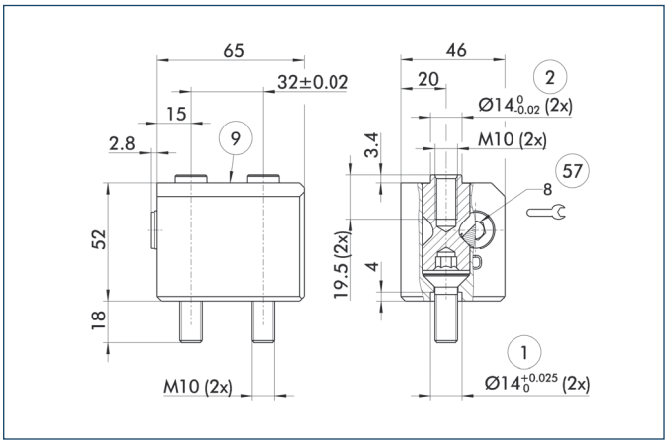


⑨ For mounting screw connection diagram, see basic version

The HUE protective cover completely protects the gripper against external influences up to IP65 if an additional sealing of the cover bottom is provided as part of the application. The mounting diagram shifts by the height of the intermediate jaw.

Description	ID	Cleanroom class ISO-classification 14644-1
Protection cover		
HUE PGN-plus 160	**0371484**	2

Quick-change Jaw System



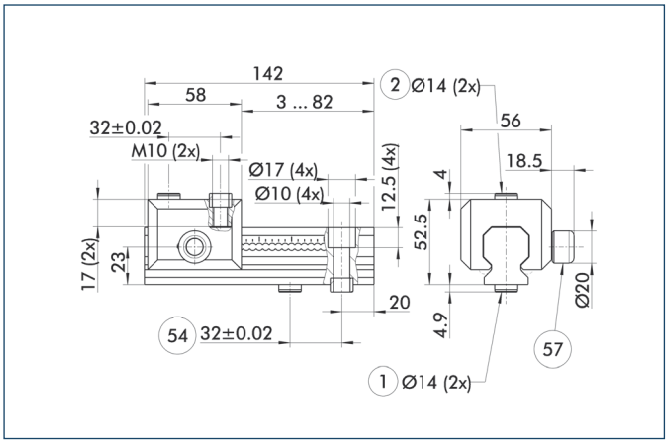
① Gripper connection
② Finger connection
⑨ For mounting screw connection diagram, see basic version
57 Locking

The BSWS quick-change jaw system enables top jaws to be changed on the gripper manually and rapidly. An adapter (BSWS-A) and a base (BSWS-B) are required for each gripper jaw.
For a reverse assembly without height set-up, one adapter (BSWS-A) and a kit (BSWS-U) per gripper jaw are required. Another effect of the BSWS-U is, that there are no disturbing fastening bores in the finger contour.

Description	ID
Quick-change Jaw System adapter	
BSWS-A 160	**0303030**
Quick-change Jaw System base	
BSWS-B 160	**0303031**
Quick-change Jaw System reversed	
BSWS-U 160	**0303045**

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Universal intermediate jaw



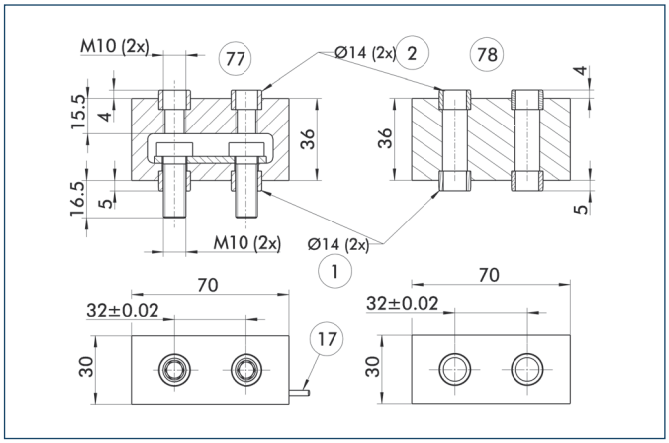
① Gripper connection
② Finger connection
54 Optional right or left connection
57 Locking

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

Description	ID	Grid dimension
Universal intermediate jaw		
UZB 160	**0300046**	4 mm
UZB-S 160	**5518274**	4 mm

ⓘ The slide UZB-S can be removed completely and has to be ordered separately. Moreover, it allows a fast jaw change.

Force measuring jaws

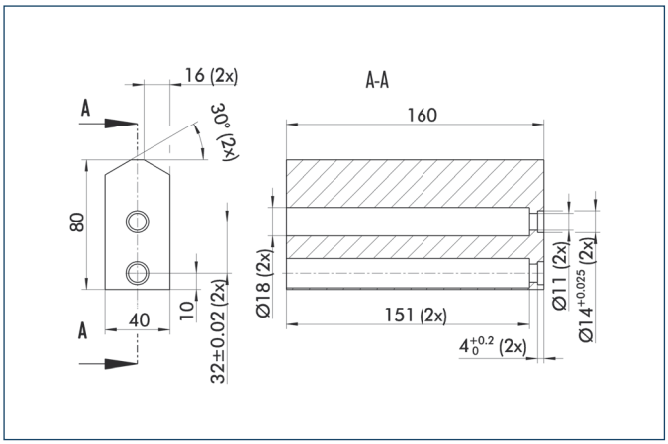


① Gripper connection
② Finger connection
17 Cable outlet
77 Active intermediate jaws
78 Passive intermediate jaws

Force measuring jaws measure gripping forces, but can also determine workpiece weights or dimensional deviations. There are active and passive intermediate jaws (FMS-ZBA or FMS-ZBP). At least one active force measuring jaw is required per gripper, the rest can be passive. For each active jaw, a FMS-A1 control unit and a FMS-A connection cable are required.

Description	ID
Active intermediate jaws	
FMS-ZBA 160	**0301840**
Passive intermediate jaws	
FMS-ZBP 160	**0301841**
Electronic Processor	
FMS-A2	**0301811**
Connection cables	
FMS-AK0200	**0301820**
FMS-AK0500	**0301821**
FMS-AK1000	**0301822**
FMS-AK2000	**0301823**

Finger blanks

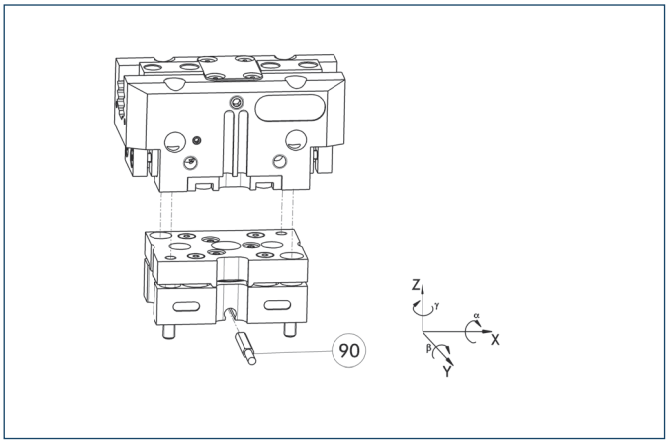


Finger blanks for customized subsequent machining

Description	ID	Material	Scope of delivery
Finger blanks			
ABR-plus 160	**0300014**	Aluminum	1
SBR-plus 160	**0300024**	16 MnCr 5	1

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Tolerance compensation unit

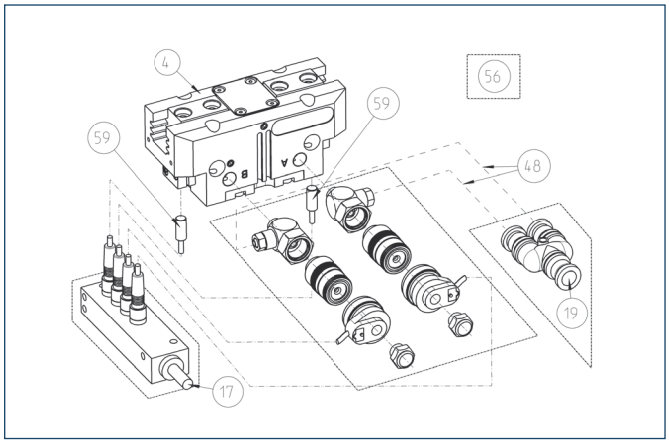


(90) Monitoring of locking

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 see catalog “Robot Accessories”.

Description	ID	Locking	Deflection
Compensation unit			
TCU-160-3-MV-P	**0324846**	Yes	±2°/±1°/±1.5°
TCU-160-3-OV-P	**0324847**	No	±2°/±1°/±1.5°

Attachment valves



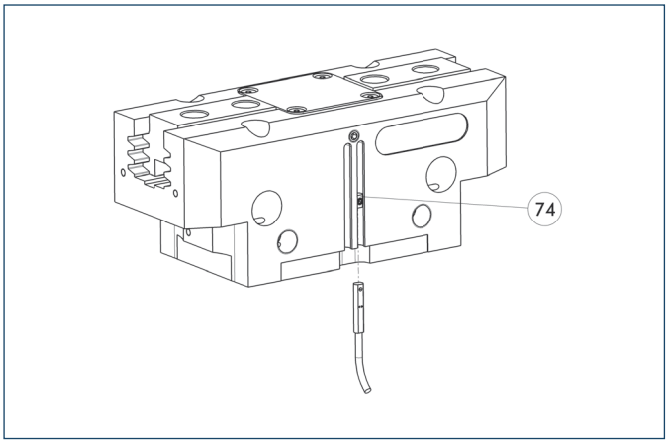
(4) Gripper
(17) Cable outlet
(19) Air connection
(48) Hose
(56) Included in delivery
(59) Monitoring “gripping”

For each gripper one attachment valve ABV is required, optional with distributor for sensors and valves. Attachment valves increase the efficiency, reduce the installation work and air consumption and simplify air supply. For details please refer to the “Accessories” catalog section.

Description	ID
Attachment valves	
ABV-MV30-G1/8	**0303328**
ABV-MV30-G1/8-V2-M8	**0303396**
ABV-MV30-G1/8-V4-M8	**0303366**
ABV-MV30-G1/8-V8-M8	**0303367**

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Programmable magnetic switch



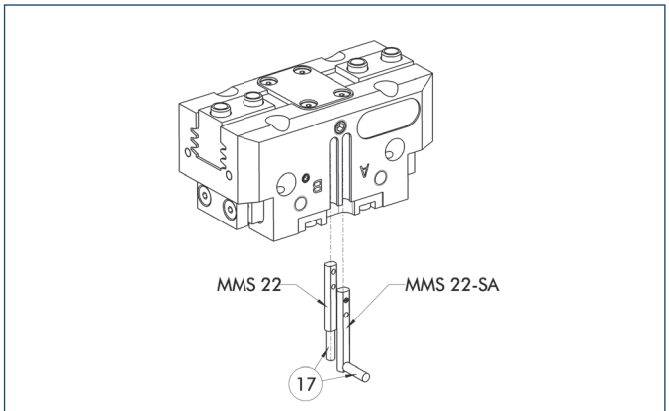
(74) Stop for MMS-P

Position monitoring with two programmable positions per sensor. The end position monitoring is mounted in the C-slot.

Description	ID	Recommended product
Programmable magnetic switch		
MMS-P 22-S-M8-PNP	**0301370**	•
MMSK-P 22-S-PNP	**0301371**	
Connection cables		
KA BG08-L 4P-0500	**0307767**	
KA BG08-L 4P-1000	**0307768**	
KA BW08-L 4P-0500	**0307765**	
KA BW08-L 4P-1000	**0307766**	
Sensor Distributor		
V2-M8-4P-2XM8-3P	**0301380**	

ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.
ⓘ Per gripper one sensor (closer/NO) is required, optionally a cable extension.

Electronic magnetic switches



(17) Cable outlet

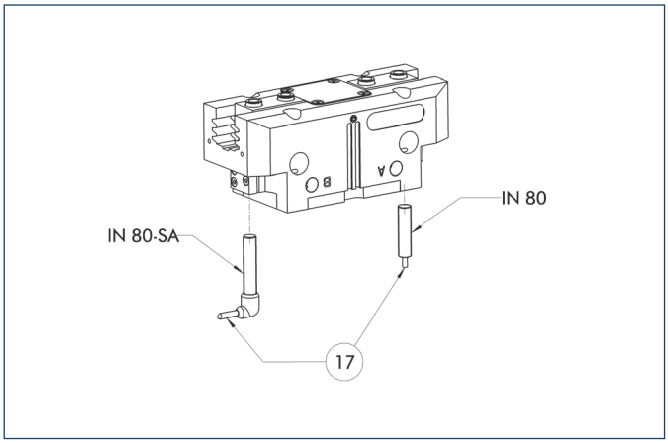
End position monitoring for mounting in the C-slot

Description	ID	Recommended product
Electronic magnetic switches		
MMS 22-S-M5-PNP	**0301438**	
MMS 22-S-M5-NPN	**0301439**	
MMS 22-S-M8-PNP	**0301432**	•
MMS 22-S-M8-NPN	**0301433**	
MMSK 22-S-PNP	**0301434**	
MMSK 22-S-NPN	**0301435**	
Electronic magnetic switches with lateral cable outlet		
MMS 22-S-M5-PNP-SA	**0301448**	
MMS 22-S-M5-NPN-SA	**0301449**	
MMS 22-S-M8-PNP-SA	**0301442**	•
MMS 22-S-M8-NPN-SA	**0301443**	
MMSK 22-S-PNP-SA	**0301444**	
MMSK 22-S-NPN-SA	**0301445**	
Reed Switches		
RMS 22-S-M8	**0377720**	•
Connection cables		
KA BG05-L 3P-0300	**0301652**	
KA BG08-L 3P-0300-PNP	**0301622**	
KA BG08-L 3P-0500-PNP	**0301623**	
KA BW05-L 3P-0300	**0301650**	
KA BW08-L 3P-0300-NPN	**0301602**	
KA BW08-L 3P-0300-PNP	**0301594**	
KA BW08-L 3P-0500-NPN	**9641116**	
KA BW08-L 3P-0500-PNP	**0301502**	
Cable extensions		
KV BW08-SG08 3P-0030-PNP	**0301495**	
KV BW08-SG08 3P-0100-PNP	**0301496**	
KV BW08-SG08 3P-0200-PNP	**0301497**	

ⓘ Two sensors (closer/NO) are required for each gripper, plus extension cables as an option.
ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Inductive proximity switches



⑰ Cable outlet

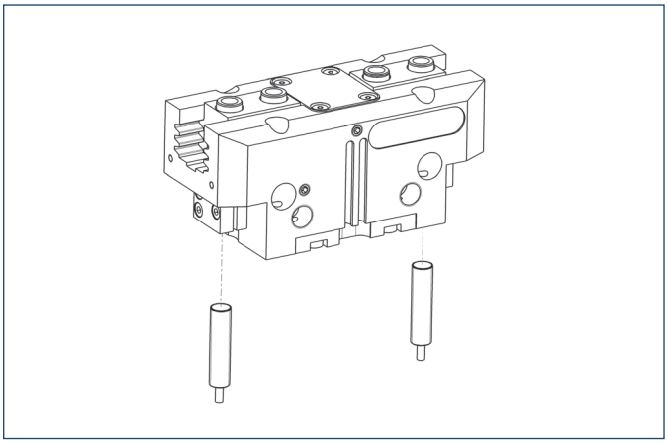
End position monitoring for direct mounting

Description	ID	Recommended product
Inductive proximity switches		
IN 80-S-M8	**0301478**	•
IN 80-S-M12	**0301578**	
INK 80-S	**0301550**	
Inductive proximity switch with lateral outlet		
IN 80-S-M12-SA	**0301587**	
IN 80-S-M8-SA	**0301483**	•
INK 80-S-SA	**0301566**	
Connection cables		
KA BG08-L 3P-0300-PNP	**0301622**	
KA BG08-L 3P-0500-PNP	**0301623**	
KA BG12-L 3P-0500-PNP	**30016369**	
KA BW08-L 3P-0300-PNP	**0301594**	
KA BW08-L 3P-0500-PNP	**0301502**	
KA BW12-L 3P-0300-PNP	**0301503**	
KA BW12-L 3P-0500-PNP	**0301507**	
Cable extensions		
KV BG12-SG12 3P-0030-PNP	**0301999**	
KV BG12-SG12 3P-0060-PNP	**0301998**	
KV BW08-SG08 3P-0030-PNP	**0301495**	
KV BW08-SG08 3P-0100-PNP	**0301496**	
KV BW08-SG08 3P-0200-PNP	**0301497**	
KV BW12-SG12 3P-0030-PNP	**0301595**	
KV BW12-SG12 3P-0100-PNP	**0301596**	
KV BW12-SG12 3P-0200-PNP	**0301597**	

ⓘ Two sensors (closer/NO) are required for each gripper, plus extension cables as an option.

ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

Cylindrical Reed Switches



End position monitoring mounted with mounting kit

Description	ID
Mounting kit for proximity switch	
AS-RMS 80 PGN/PZN-plus 160-380	**0377727**
Reed Switches	
RMS 80-S-M8	**0377721**

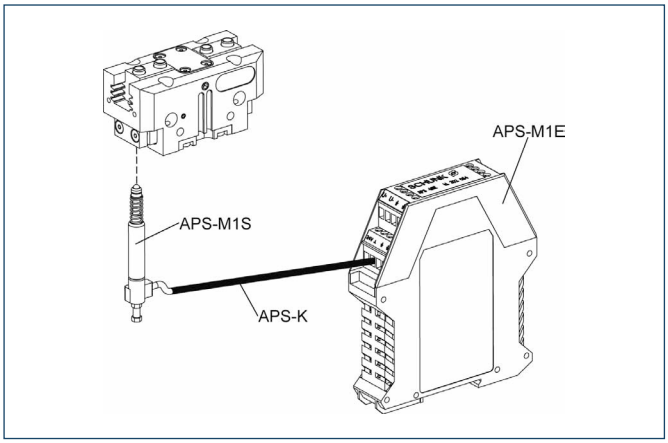
ⓘ Two sensors (closer/NO) are required for each gripper, plus extension cables as an option.

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

ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Analog position sensor



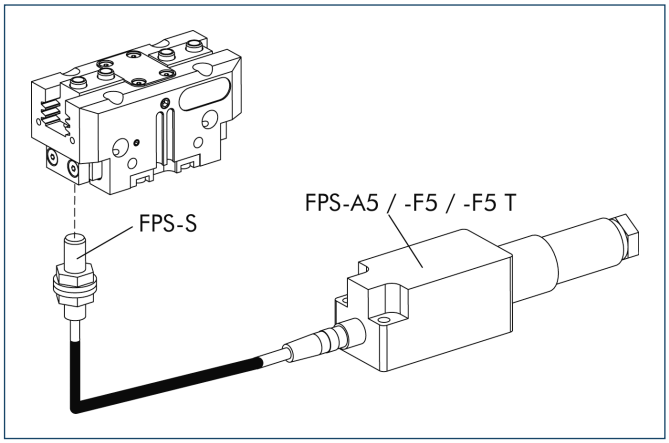
Analog multi position monitoring for any desired positions

Description	ID
Mounting kit	
AS-APS-M1-160/1 and 240/2	**0302083**
AS-APS-M1-160/2	**0302084**
Connection cables	
APS-K0200	**0302066**
APS-K0700	**0302068**
Electronic Processor	
APS-M1E	**0302064**
Sensor	
APS-M1S	**0302062**

ⓘ When using an APS system, for each gripper a mounting kit (AS-APS), an APS sensor (APS-M 1S, incl. 3 m cable) as well as an electronics (APS-M1e) are required.

ⓘ An extension cable (APS-K) can be connected between the sensor and the electronics as an option. The max. cable length between the sensor and the electronics is 10 m, between the electronics and their control unit (PLC) it is max. 1 m.

Flexible Position Sensor



Flexible position monitoring of up to five positions

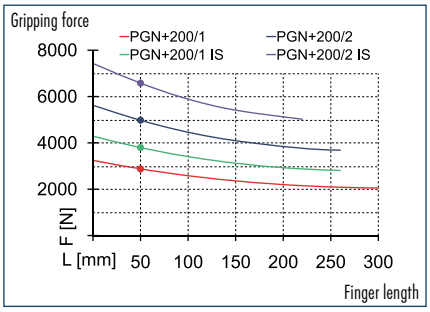
Description	ID
Mounting kit for FPS	
AS-PGN/PZN-plus 160/1	**0301638**
AS-PGN/PZN-plus 160/2	**0301639**
Electronic Processor	
FPS-F5	**0301805**
FPS-F5 T	**0301807**
Sensor	
FPS-S M8	**0301704**

ⓘ When using a FPS system, a FPS sensor (FPS-S) and a control unit (FPS-F5 / F5 T or A5) are required for each gripper as well as a mounting kit (AS), if listed. Cable extensions (KV) are available as options in the "Accessories" catalog section.

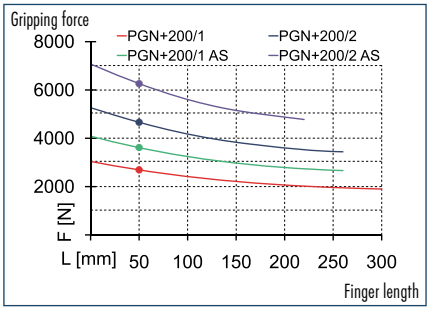
You can find more detailed information and individual parts of the above-mentioned accessories in the "Accessories" catalog section.

PGN-plus 200

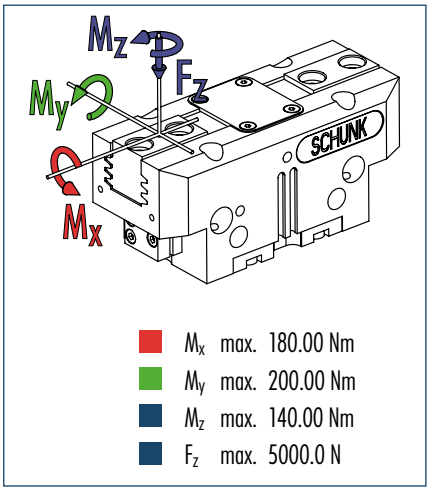
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

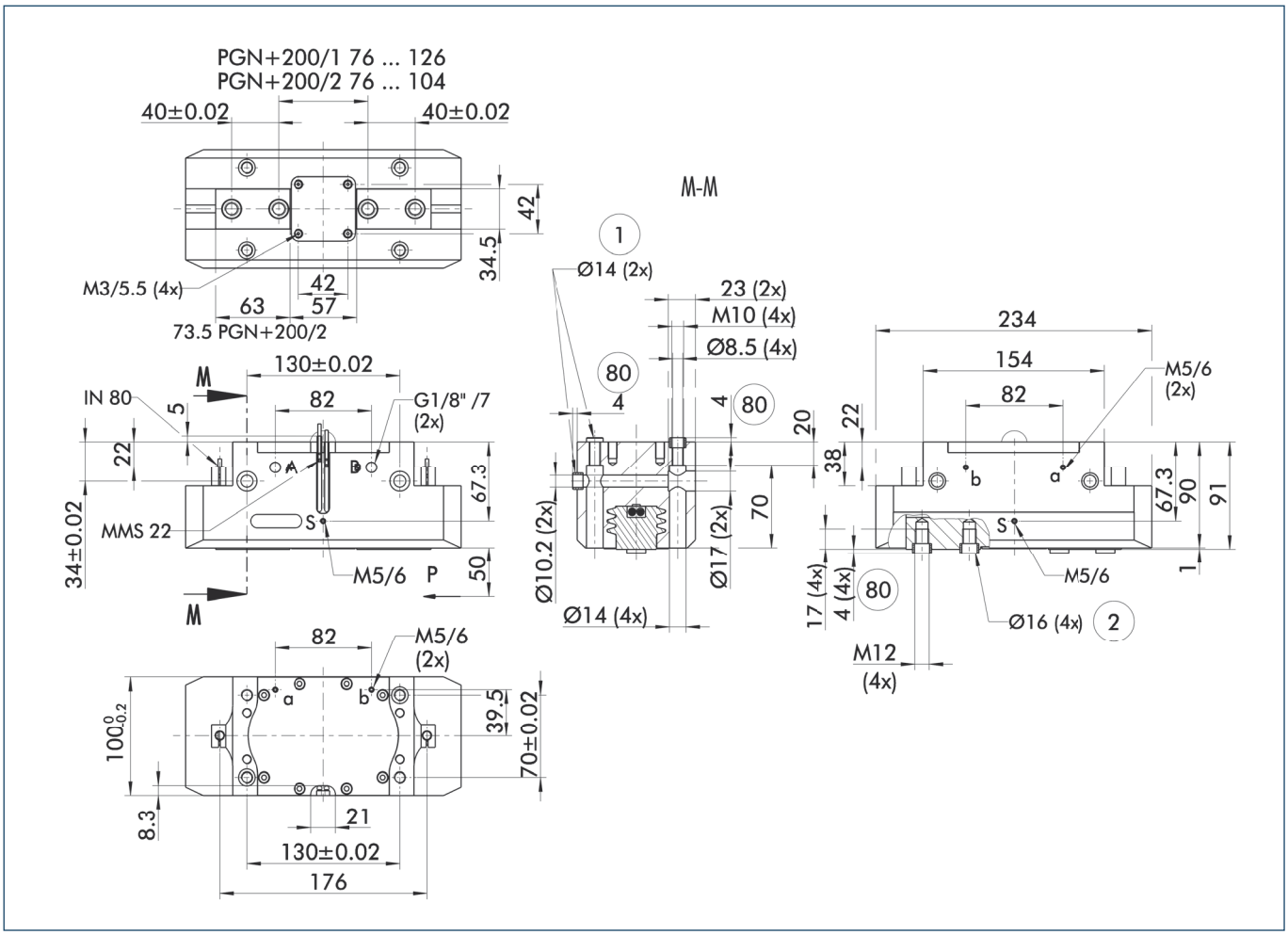


ⓘ The indicated moments and forces are static values, apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement occurs without any hitting or bouncing. Service life may be reduced.

Technical data

Description		PGN-plus 200-1	PGN-plus 200-2	PGN-plus 200-1-AS	PGN-plus 200-2-AS	PGN-plus 200-1-IS	PGN-plus 200-2-IS
ID		**0371105**	**0371155**	**0371405**	**0371455**	**0371465**	**0371475**
Stroke per finger	[mm]	25	14	25	14	25	14
Closing force	[N]	2700	4650	3610	6250		
Opening force	[N]	2870	4980			3780	6580
Min. spring force	[N]			910	1600	910	1600
Weight	[kg]	5.4	5.4	7.5	7.5	7.5	7.5
Recommended workpiece weight	[kg]	13.5	23.5	13.5	23.5	13.5	23.5
Air consumption per double stroke	[cm³]	390	390	635	635	635	635
Min./max. operating pressure	[bar]	2.5/8	2.5/8	4/6.5	4/6.5	4/6.5	4/6.5
Nominal operating pressure	[bar]	6	6	6	6	6	6
Closing/opening time	[s]	0.35/0.35	0.35/0.35	0.3/0.6	0.3/0.6	0.6/0.3	0.6/0.3
Max. permitted finger length	[mm]	280	240	240	200	240	200
Max. permitted weight per finger	[kg]	6.5	6.5	6.5	6.5	6.5	6.5
IP class		40	40	40	40	40	40
Min./max. ambient temperature	[°C]	-10/90	-10/90	-10/90	-10/90	-10/90	-10/90
Repeat accuracy	[mm]	0.02	0.02	0.02	0.02	0.02	0.02
Cleanroom class ISO-classification 14644-1		5	5	5	5	5	5
OPTIONS and their characteristics							
Dust-protection version		**37371105**	**37371155**	**37371405**	**37371455**	**37371465**	**37371475**
IP class		64	64	64	64	64	64
Weight	[kg]	6	6	8.1	8.1	8.1	8.1
Anti-corrosion version		**38371105**	**38371155**	**38371405**	**38371455**	**38371465**	**38371475**
High-temperature version		**39371105**	**39371155**	**39371405**	**39371455**	**39371465**	**39371475**
Min./max. ambient temperature	[°C]	-10/130	-10/130	-10/130	-10/130	-10/130	-10/130
Force intensified version		PGN-plus 200-1-KVZ	PGN-plus 200-2-KVZ	PGN-plus 200-1-AS-KVZ		PGN-plus 200-1-IS-KVZ	
ID		**0372105**	**0372155**	**0372405**		**0372465**	
Closing force	[N]	4860	8370	5770			
Opening force	[N]	5165	8965			6075	
Weight	[kg]	6.7	6.7	9		9	
Maximum pressure	[bar]	6	6	6		6	
Max. permitted finger length	[mm]	200	160	160		160	
Precision version		**0371127**	**0371177**	**0371427**	**0371442**		

Main view

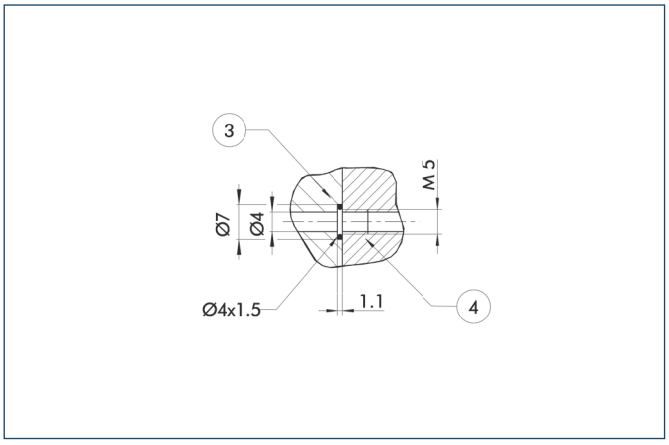


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

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

A, a Main/direct connection, gripper opening
B, b Main/direct connection, gripper closing
S Air purge connection
① Gripper connection
② Finger connection
(80) Depth of the centering sleeve hole in the matching part

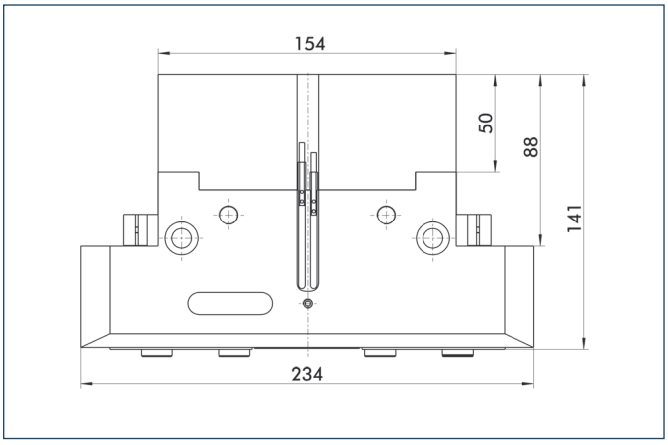
Hose-free direct connection



③ Adapter
④ Gripper

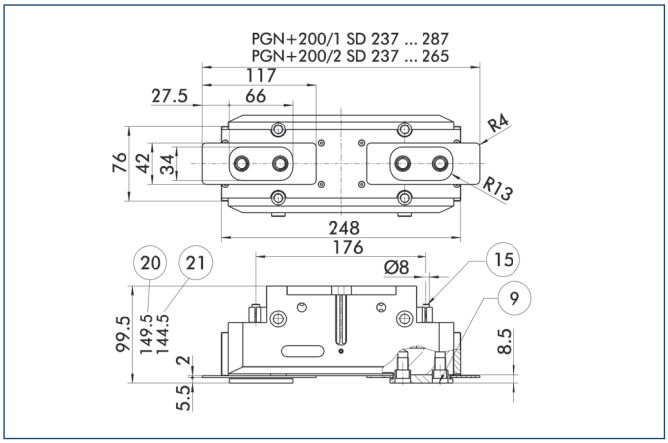
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

AS/IS gripping force maintenance device



The mechanical gripping force maintenance device ensures a minimum gripping force even in case of pressure drop. This acts as closing force in the AS version, and as opening force in the IS version. In addition, the gripping force maintenance device can also be used for increasing the gripping force or for single-acting gripping.

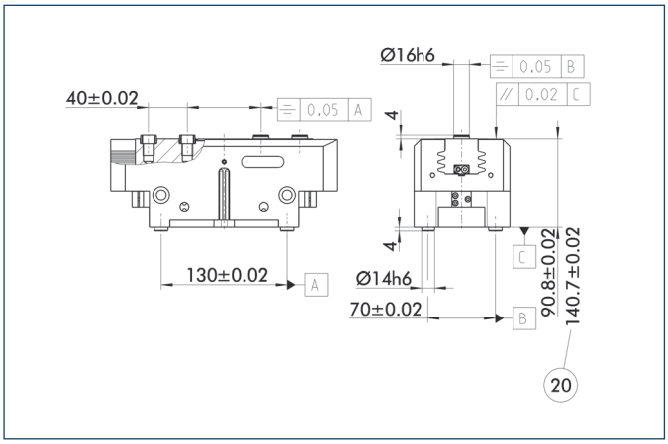
Dust-protection version



⑨ For mounting screw connection diagram, see basic version
⑮ Sealing bolt
⑳ For AS / IS version
㉑ Applies for KVZ version

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

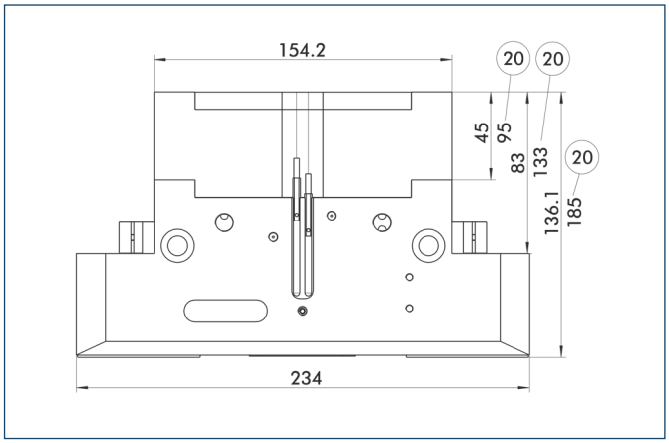
Precision version



⑳ For AS / IS version

The indicated tolerances just refer to the types of precision versions shown in the chart of technical specifications. All other types of precision versions are available on request.

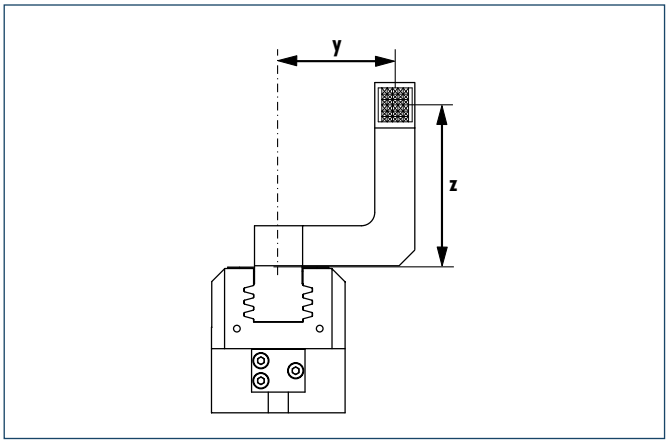
Force intensified version

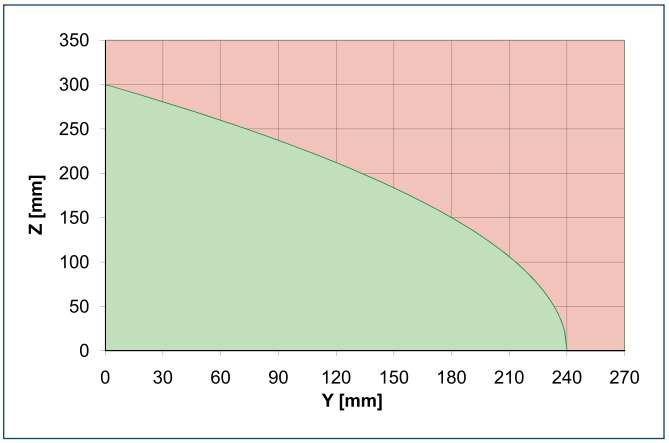


⑳ For AS / IS version

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. The full gripping force shown in the data table is sometimes only reached after a few hundred gripping cycles. Please consider that grippers which are equipped with a gripping force maintenance device (AS / IS) are higher.

Maximum permitted finger projection

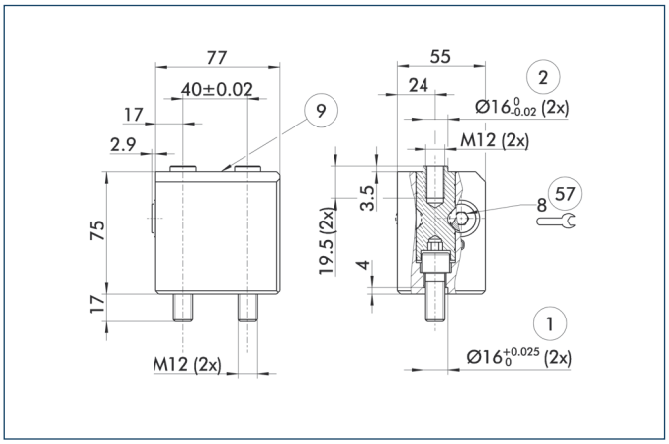




Permitted range
Inadmissible range

The curve applies to the basic version (stroke -1). For other versions, the curve will be parallel but offset in line with the max. permitted finger length.

Quick-change Jaw System

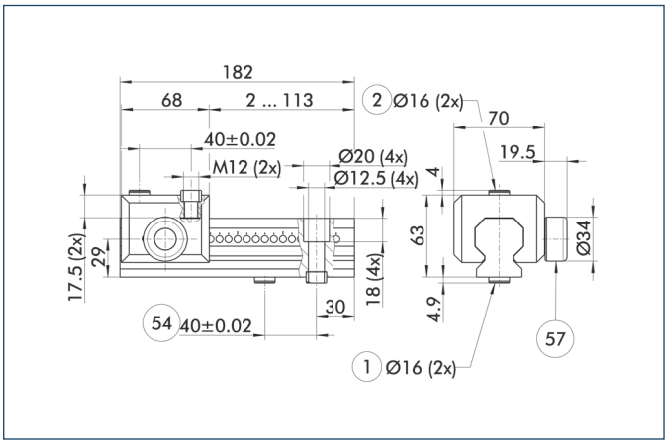


① Gripper connection
② Finger connection
⑨ For mounting screw connection diagram, see basic version
57 Locking

The BSWS quick-change jaw system enables top jaws to be changed on the gripper manually and rapidly. An adapter (BSWS-A) and a base (BSWS-B) are required for each gripper jaw.
For a reverse assembly without height set-up, one adapter (BSWS-A) and a kit (BSWS-U) per gripper jaw are required. Another effect of the BSWS-U is, that there are no disturbing fastening bores in the finger contour.

Description	ID
Quick-change Jaw System adapter	
BSWS-A 200	**0303032**
Quick-change Jaw System base	
BSWS-B 200	**0303033**
Quick-change Jaw System reversed	
BSWS-U 200	**0303046**

Universal intermediate jaw



① Gripper connection
② Finger connection
54 Optional right or left connection
57 Locking

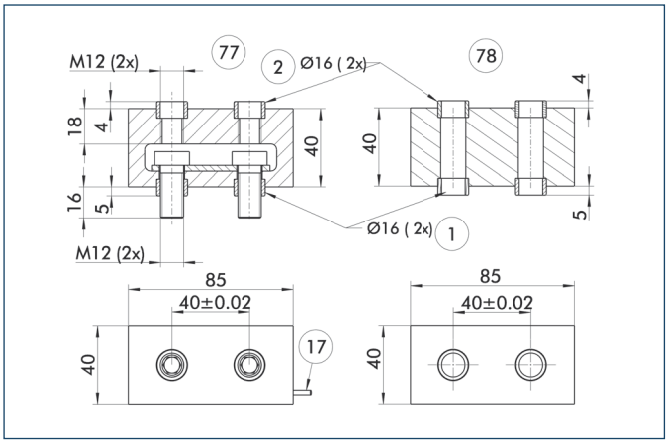
The universal intermediate jaw allows fast tool-free and reliable plugging and shifting of top jaws at the gripper.

Description	ID	Grid dimension
Universal intermediate jaw		
UZB 200	**0300047**	7 mm
UZB-S 200	**5518275**	7 mm

ⓘ The slide UZB-S can be removed completely and has to be ordered separately. Moreover, it allows a fast jaw change.

You can find more detailed information and individual parts of the above-mentioned accessories in the "Accessories" catalog section.

Force measuring jaws

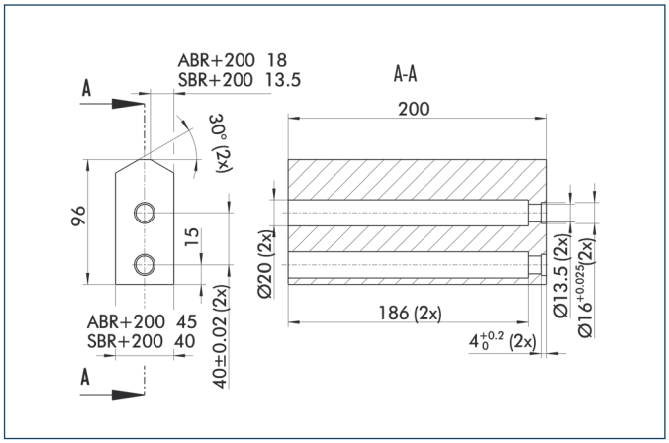


① Gripper connection
② Finger connection
⑰ Cable outlet
⑦⑦ Active intermediate jaws
⑦⑧ Passive intermediate jaws

Force measuring jaws measure gripping forces, but can also determine workpiece weights or dimensional deviations. There are active and passive intermediate jaws (FMS-ZBA or FMS-ZBP). At least one active force measuring jaw is required per gripper, the rest can be passive. For each active jaw, a FMS-A1 control unit and a FMS-A connection cable are required.

Description	ID
Active intermediate jaws	
FMS-ZBA 200	**0301842**
Passive intermediate jaws	
FMS-ZBP 200	**0301843**
Electronic Processor	
FMS-A2	**0301811**
Connection cables	
FMS-AK0200	**0301820**
FMS-AK0500	**0301821**
FMS-AK1000	**0301822**
FMS-AK2000	**0301823**

Finger blanks

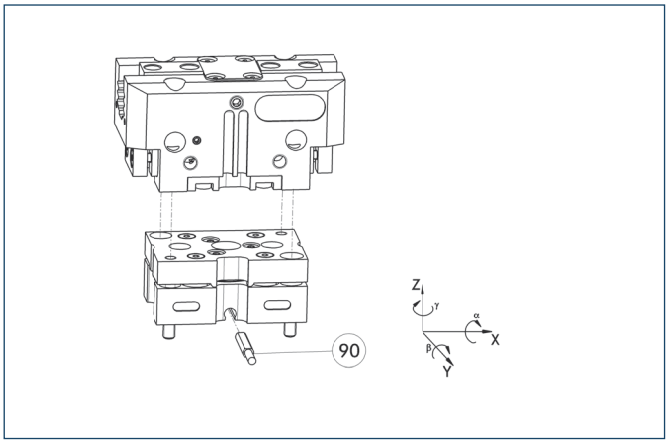


Finger blanks for customized subsequent machining

Description	ID	Material	Scope of delivery
Finger blanks			
ABR-plus 200	**0300015**	Aluminum	1
SBR-plus 200	**0300025**	16 MnCr 5	1

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Tolerance compensation unit

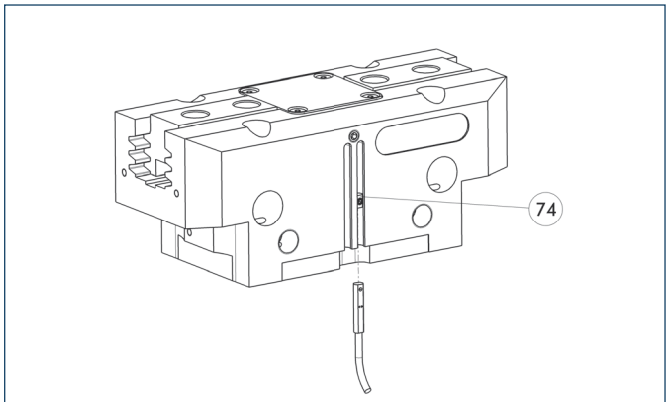


(90) Monitoring of locking

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 see catalog “Robot Accessories”.

Description	ID	Locking	Deflection
Compensation unit			
TCU-200-3-MV-P	**0324864**	Yes	±2°/±1°/±1.5°
TCU-200-3-OV-P	**0324865**	No	±2°/±1°/±1.5°

Programmable magnetic switch



(74) Stop for MMS-P

Position monitoring with two programmable positions per sensor. The end position monitoring is mounted in the C-slot.

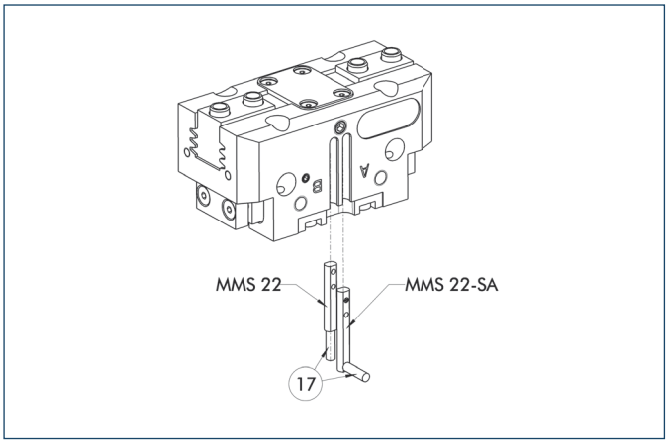
Description	ID	Recommended product
Programmable magnetic switch		
MMS-P 22-S-M8-PNP	**0301370**	•
MMSK-P 22-S-PNP	**0301371**	
Connection cables		
KA BG08-L 4P-0500	**0307767**	
KA BG08-L 4P-1000	**0307768**	
KA BW08-L 4P-0500	**0307765**	
KA BW08-L 4P-1000	**0307766**	
Sensor Distributor		
V2-M8-4P-2XM8-3P	**0301380**	

ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

ⓘ Per gripper one sensor (closer/NO) is required, optionally a cable extension.

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Electronic magnetic switches



⑰ Cable outlet

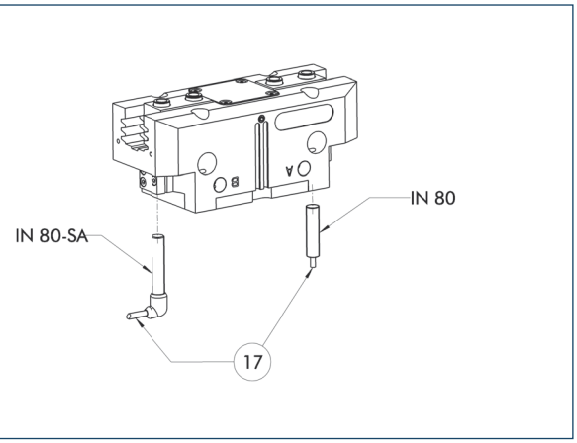
End position monitoring for mounting in the C-slot

Description	ID	Recommended product
Electronic magnetic switches		
MMS 22-S-M5-PNP	0301438	
MMS 22-S-M5-NPN	0301439	
MMS 22-S-M8-PNP	0301432	•
MMS 22-S-M8-NPN	0301433	
MMSK 22-S-PNP	0301434	
MMSK 22-S-NPN	0301435	
Electronic magnetic switches with lateral cable outlet		
MMS 22-S-M5-PNP-SA	0301448	
MMS 22-S-M5-NPN-SA	0301449	
MMS 22-S-M8-PNP-SA	0301442	•
MMS 22-S-M8-NPN-SA	0301443	
MMSK 22-S-PNP-SA	0301444	
MMSK 22-S-NPN-SA	0301445	
Reed Switches		
RMS 22-S-M8	0377720	•
Connection cables		
KA BG05-L 3P-0300	0301652	
KA BG08-L 3P-0300-PNP	0301622	
KA BG08-L 3P-0500-PNP	0301623	
KA BW05-L 3P-0300	0301650	
KA BW08-L 3P-0300-NPN	0301602	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-NPN	9641116	
KA BW08-L 3P-0500-PNP	0301502	
Cable extensions		
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	

ⓘ Two sensors (closer/NO) are required for each gripper, plus extension cables as an option.

ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

Inductive proximity switches



⑰ Cable outlet

End position monitoring for direct mounting

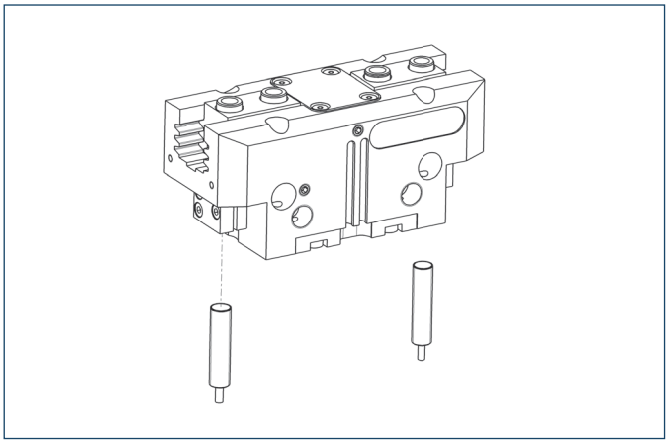
Description	ID	Recommended product
Inductive proximity switches		
IN 80-S-M8	0301478	•
IN 80-S-M12	0301578	
INK 80-S	0301550	
Inductive proximity switch with lateral outlet		
IN 80-S-M12-SA	0301587	
IN 80-S-M8-SA	0301483	•
INK 80-S-SA	0301566	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	
KA BG08-L 3P-0500-PNP	0301623	
KA BG12-L 3P-0500-PNP	30016369	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
KA BW12-L 3P-0300-PNP	0301503	
KA BW12-L 3P-0500-PNP	0301507	
Cable extensions		
KV BG12-SG12 3P-0030-PNP	0301999	
KV BG12-SG12 3P-0060-PNP	0301998	
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	
KV BW12-SG12 3P-0030-PNP	0301595	
KV BW12-SG12 3P-0100-PNP	0301596	
KV BW12-SG12 3P-0200-PNP	0301597	

ⓘ Two sensors (closer/NO) are required for each gripper, plus extension cables as an option.

ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Cylindrical Reed Switches

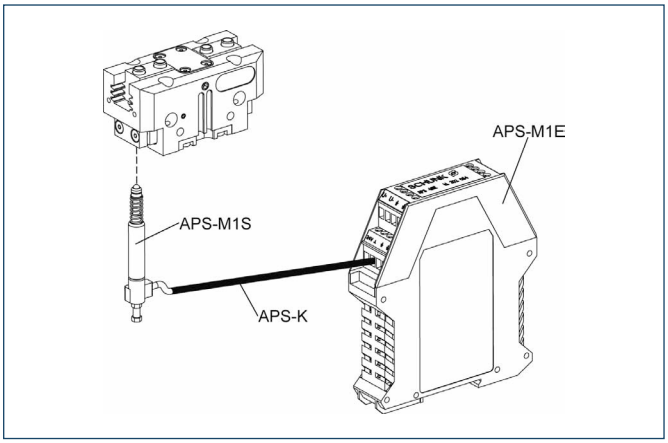


End position monitoring mounted with mounting kit

Description	ID
Mounting kit for proximity switch	
AS-RMS 80 PGN/PZN-plus 160-380	**0377727**
Reed Switches	
RMS 80-S-M8	**0377721**

ⓘ Two sensors (closer/NO) are required for each gripper, plus extension cables as an option.
ⓘ This mounting kit needs to be ordered optionally as an accessory.
ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

Analog position sensor



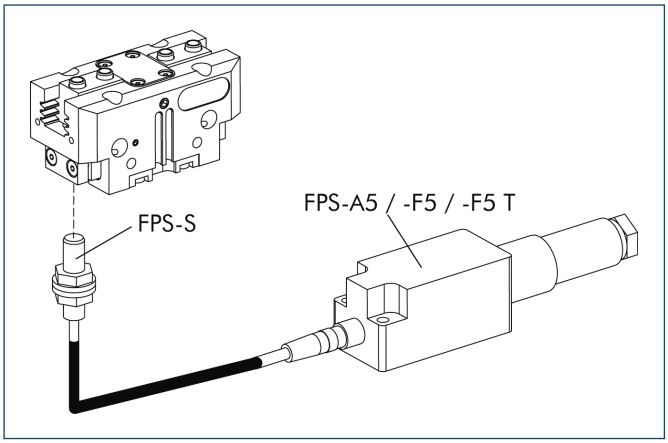
Analog multi position monitoring for any desired positions

Description	ID
Mounting kit	
AS-APS-M1-200/1 and 380/2	**0302085**
AS-APS-M1-200/2	**0302086**
Connection cables	
APS-K0200	**0302066**
APS-K0700	**0302068**
Electronic Processor	
APS-M1E	**0302064**
Sensor	
APS-M1S	**0302062**

ⓘ When using an APS system, for each gripper a mounting kit (AS-APS), an APS sensor (APS-M 1S, incl. 3 m cable) as well as an electronics (APS-M1e) are required.
ⓘ An extension cable (APS-K) can be connected between the sensor and the electronics as an option. The max. cable length between the sensor and the electronics is 10 m, between the electronics and their control unit (PLC) it is max. 1 m.

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Flexible Position Sensor



Flexible position monitoring of up to five positions

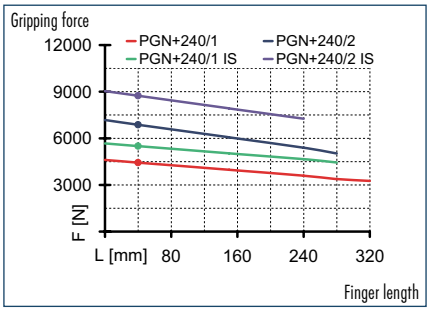
Description	ID
Mounting kit for FPS	
AS-PGN/PZN-plus 200/1	**0301640**
AS-PGN/PZN-plus 200/2	**0301641**
Electronic Processor	
FPS-F5	**0301805**
FPS-F5 T	**0301807**
Sensor	
FPS-S M8	**0301704**

ⓘ When using a FPS system, a FPS sensor (FPS-S) and a control unit (FPS-F5 / F5 T or A5) are required for each gripper as well as a mounting kit (AS), if listed. Cable extensions (KV) are available as options in the “Accessories” catalog section.

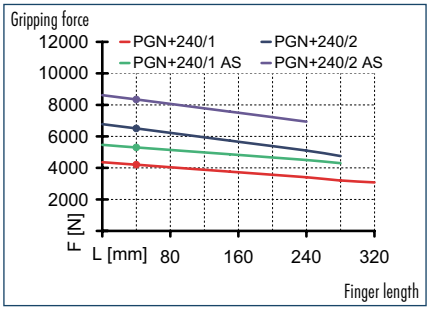
You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

PGN-plus 240

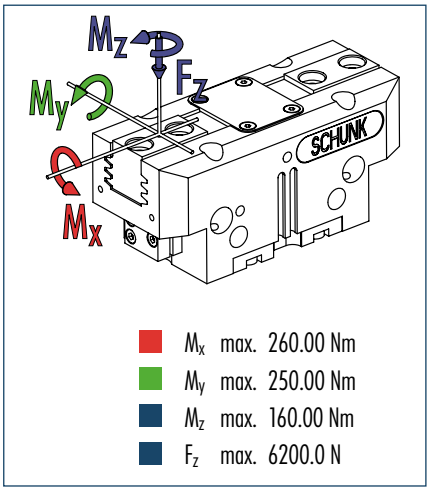
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load



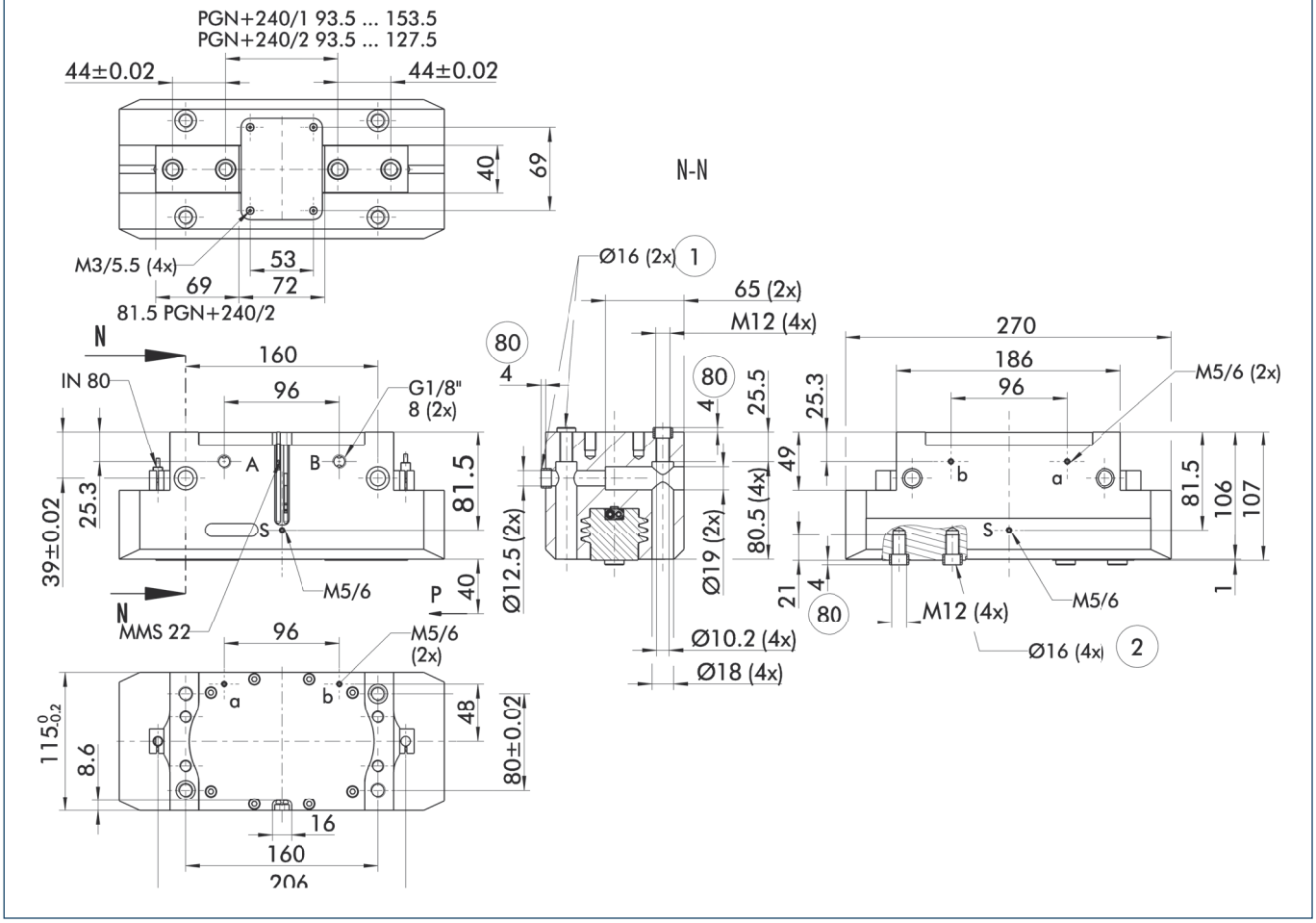
- M_x max. 260.00 Nm
- M_y max. 250.00 Nm
- M_z max. 160.00 Nm
- F_z max. 6200.0 N

ⓘ The indicated moments and forces are static values, apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement occurs without any hitting or bouncing. Service life may be reduced.

Technical data

Description		PGN-plus 240-1	PGN-plus 240-2	PGN-plus 240-1-AS	PGN-plus 240-2-AS	PGN-plus 240-1-IS	PGN-plus 240-2-IS
ID		**0371108**	**0371158**	**0371408**	**0371458**	**0371468**	**0371478**
Stroke per finger	[mm]	30	17	30	17	30	17
Closing force	[N]	4200	6500	5300	8340		
Opening force	[N]	4440	6870			5540	8710
Min. spring force	[N]			1100	1840	1100	1840
Weight	[kg]	8.5	8.5	12	12	12	12
Recommended workpiece weight	[kg]	21.5	33	21.5	33	21.5	33
Air consumption per double stroke	[cm³]	646	646	1026	1026	1026	1026
Min./max. operating pressure	[bar]	2.5/8	2.5/8	4/6.5	4/6.5	4/6.5	4/6.5
Nominal operating pressure	[bar]	6	6	6	6	6	6
Closing/opening time	[s]	0.45/0.45	0.45/0.45	0.35/0.65	0.35/0.65	0.65/0.35	0.65/0.35
Max. permitted finger length	[mm]	320	280	280	240	280	240
Max. permitted weight per finger	[kg]	8.5	8.5	8.5	8.5	8.5	8.5
IP class		40	40	40	40	40	40
Min./max. ambient temperature	[°C]	-10/90	-10/90	-10/90	-10/90	-10/90	-10/90
Repeat accuracy	[mm]	0.04	0.04	0.04	0.04	0.04	0.04
Cleanroom class ISO-classification 14644-1		5	5	5	5	5	5
OPTIONS and their characteristics							
Dust-protection version		**37371108**	**37371158**	**37371408**	**37371458**	**37371468**	**37371478**
IP class		64	64	64	64	64	64
Weight	[kg]	11.4	11.4	14.4	14.4	14.4	14.4
Anti-corrosion version		**38371108**	**38371158**	**38371408**	**38371458**	**38371468**	**38371478**
High-temperature version		**39371108**	**39371158**	**39371408**	**39371458**	**39371468**	**39371478**
Min./max. ambient temperature	[°C]	-10/130	-10/130	-10/130	-10/130	-10/130	-10/130
Precision version		**0371128**	**0371178**	**0371428**	**0371443**		

Main view

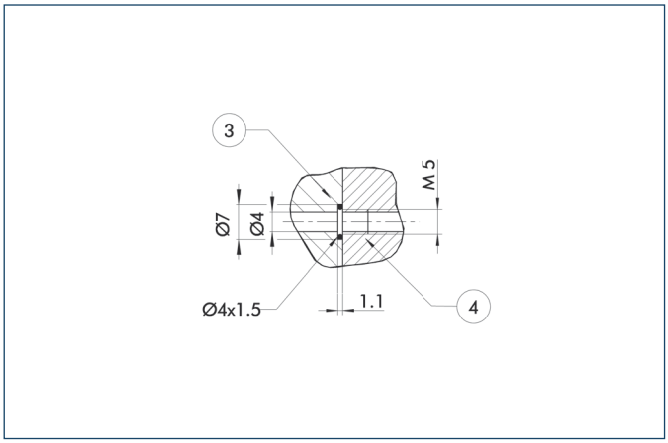


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

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

A, a Main/direct connection, gripper opening
B, b Main/direct connection, gripper closing
S Air purge connection
① Gripper connection
② Finger connection
80 Depth of the centering sleeve hole in the matching part

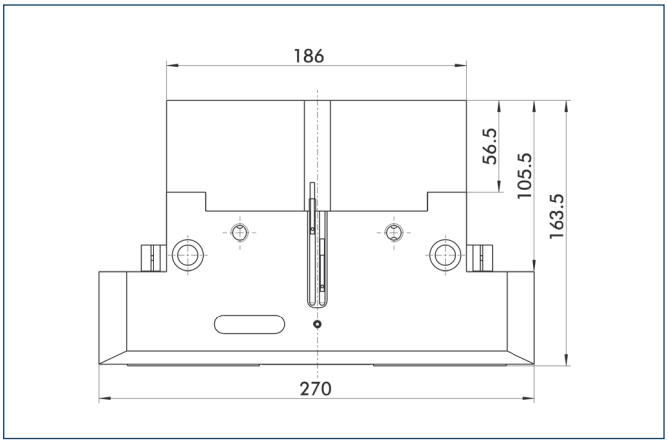
Hose-free direct connection



③ Adapter
④ Gripper

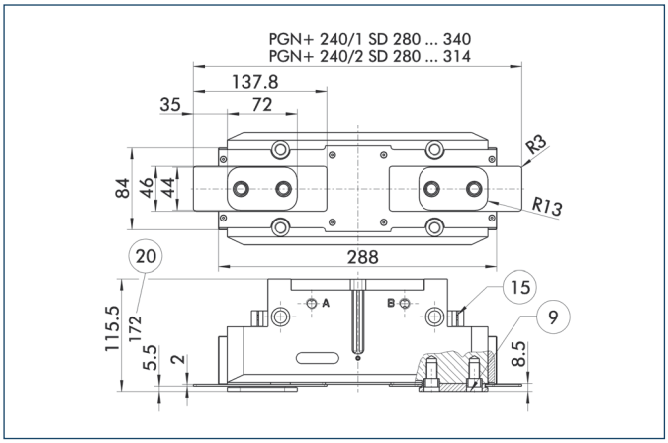
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

AS/IS gripping force maintenance device



The mechanical gripping force maintenance device ensures a minimum gripping force even in case of pressure drop. This acts as closing force in the AS version, and as opening force in the IS version. In addition, the gripping force maintenance device can also be used for increasing the gripping force or for single-acting gripping.

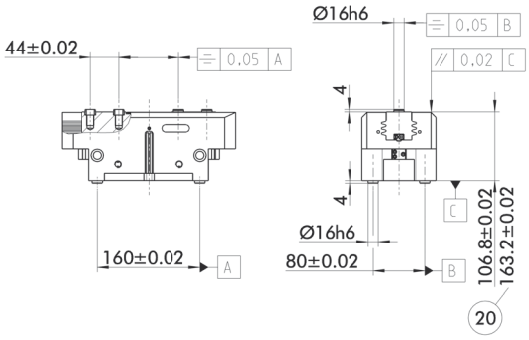
Dust-protection version



⑨ For mounting screw connection diagram, see basic version
⑳ For AS / IS version
⑮ Sealing bolt

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

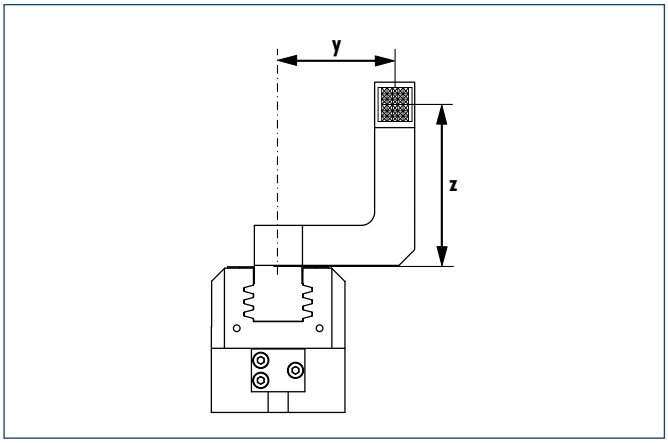
Precision version

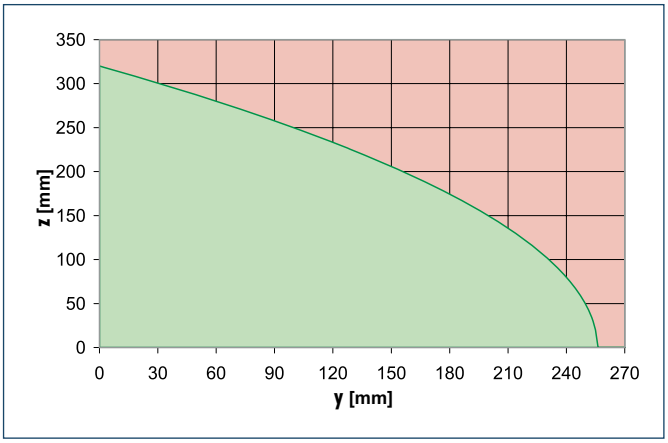


⑳ For AS / IS version

The indicated tolerances just refer to the types of precision versions shown in the chart of technical specifications. All other types of precision versions are available on request.

Maximum permitted finger projection

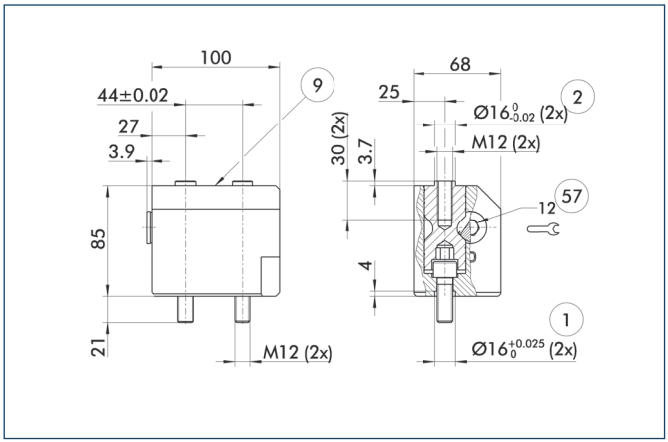




Permitted range
Inadmissible range

The curve applies to the basic version (stroke -1). For other versions, the curve will be parallel but offset in line with the max. permitted finger length.

Quick-change Jaw System

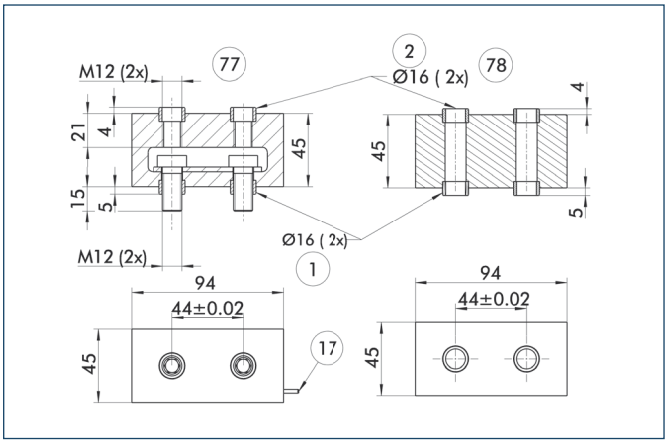


① Gripper connection
② Finger connection
⑨ For mounting screw connection diagram, see basic version
㊼ Locking

The BSWS quick-change jaw system enables top jaws to be changed on the gripper manually and rapidly. An adapter (BSWS-A) and a base (BSWS-B) are required for each gripper jaw.
For a reverse assembly without height set-up, one adapter (BSWS-A) and a kit (BSWS-U) per gripper jaw are required. Another effect of the BSWS-U is, that there are no disturbing fastening bores in the finger contour.

Description	ID
Quick-change Jaw System adapter	
BSWS-A 240	**0303034**
Quick-change Jaw System base	
BSWS-B 240	**0303035**
Quick-change Jaw System reversed	
BSWS-U 240	**0303047**

Force measuring jaws

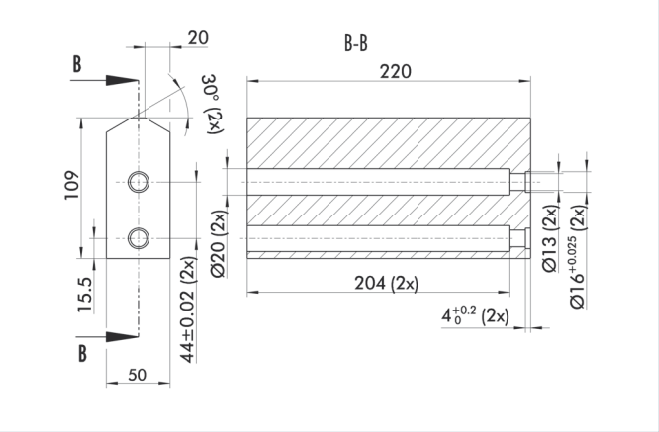


① Gripper connection
② Finger connection
⑰ Cable outlet
㊼ Active intermediate jaws
㊽ Passive intermediate jaws

Force measuring jaws measure gripping forces, but can also determine workpiece weights or dimensional deviations. There are active and passive intermediate jaws (FMS-ZBA or FMS-ZBP). At least one active force measuring jaw is required per gripper, the rest can be passive. For each active jaw, a FMS-A1 control unit and a FMS-A connection cable are required.

Description	ID
Active intermediate jaws	
FMS-ZBA 240	**0301844**
Passive intermediate jaws	
FMS-ZBP 240	**0301845**
Electronic Processor	
FMS-A2	**0301811**
Connection cables	
FMS-AK0200	**0301820**
FMS-AK0500	**0301821**
FMS-AK1000	**0301822**
FMS-AK2000	**0301823**

Finger blanks

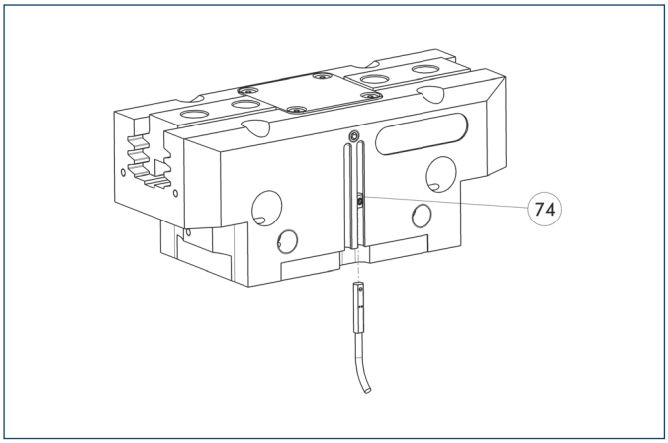


Finger blanks for customized subsequent machining

Description	ID	Material	Scope of delivery
Finger blanks			
ABR-plus 240	**0300017**	Aluminum	1
SBR-plus 240	**0300027**	16 MnCr 5	1

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Programmable magnetic switch



(74) Stop for MMS-P

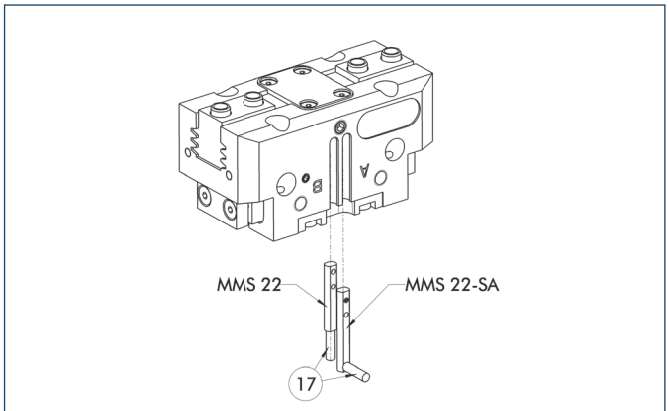
Position monitoring with two programmable positions per sensor. The end position monitoring is mounted in the C-slot.

Description	ID	Recommended product
Programmable magnetic switch		
MMS-P 22-S-M8-PNP	**0301370**	•
MMSK-P 22-S-PNP	**0301371**	
Connection cables		
KA BG08-L 4P-0500	**0307767**	
KA BG08-L 4P-1000	**0307768**	
KA BW08-L 4P-0500	**0307765**	
KA BW08-L 4P-1000	**0307766**	
Sensor Distributor		
V2-M8-4P-2XM8-3P	**0301380**	

ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

ⓘ Per gripper one sensor (closer/NO) is required, optionally a cable extension.

Electronic magnetic switches



(17) Cable outlet

End position monitoring for mounting in the C-slot

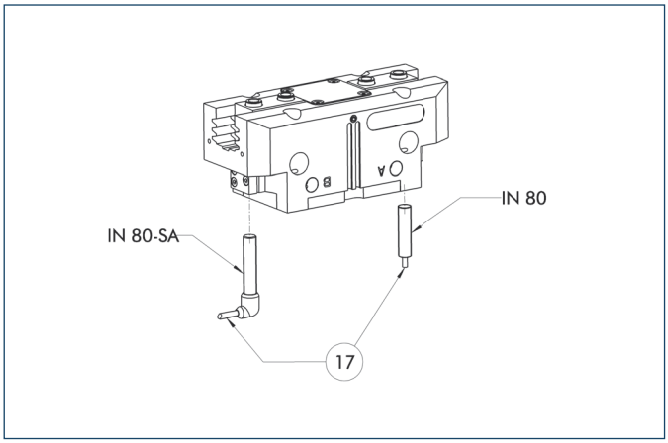
Description	ID	Recommended product
Electronic magnetic switches		
MMS 22-S-M5-PNP	**0301438**	
MMS 22-S-M5-NPN	**0301439**	
MMS 22-S-M8-PNP	**0301432**	•
MMS 22-S-M8-NPN	**0301433**	
MMSK 22-S-PNP	**0301434**	
MMSK 22-S-NPN	**0301435**	
Electronic magnetic switches with lateral cable outlet		
MMS 22-S-M5-PNP-SA	**0301448**	
MMS 22-S-M5-NPN-SA	**0301449**	
MMS 22-S-M8-PNP-SA	**0301442**	•
MMS 22-S-M8-NPN-SA	**0301443**	
MMSK 22-S-PNP-SA	**0301444**	
MMSK 22-S-NPN-SA	**0301445**	
Reed Switches		
RMS 22-S-M8	**0377720**	•
Connection cables		
KA BG05-L 3P-0300	**0301652**	
KA BG08-L 3P-0300-PNP	**0301622**	
KA BG08-L 3P-0500-PNP	**0301623**	
KA BW05-L 3P-0300	**0301650**	
KA BW08-L 3P-0300-NPN	**0301602**	
KA BW08-L 3P-0300-PNP	**0301594**	
KA BW08-L 3P-0500-NPN	**9641116**	
KA BW08-L 3P-0500-PNP	**0301502**	
Cable extensions		
KV BW08-SG08 3P-0030-PNP	**0301495**	
KV BW08-SG08 3P-0100-PNP	**0301496**	
KV BW08-SG08 3P-0200-PNP	**0301497**	

ⓘ Two sensors (closer/NO) are required for each gripper, plus extension cables as an option.

ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Inductive proximity switches



⑰ Cable outlet

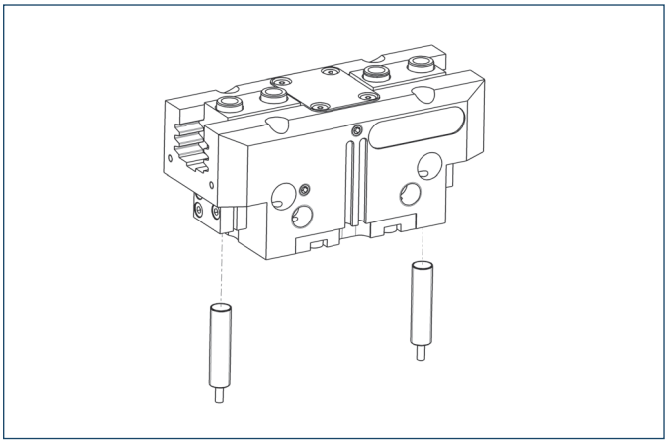
End position monitoring for direct mounting

Description	ID	Recommended product
Inductive proximity switches		
IN 80-S-M8	**0301478**	•
IN 80-S-M12	**0301578**	
INK 80-S	**0301550**	
Inductive proximity switch with lateral outlet		
IN 80-S-M12-SA	**0301587**	
IN 80-S-M8-SA	**0301483**	•
INK 80-S-SA	**0301566**	
Connection cables		
KA BG08-L 3P-0300-PNP	**0301622**	
KA BG08-L 3P-0500-PNP	**0301623**	
KA BG12-L 3P-0500-PNP	**30016369**	
KA BW08-L 3P-0300-PNP	**0301594**	
KA BW08-L 3P-0500-PNP	**0301502**	
KA BW12-L 3P-0300-PNP	**0301503**	
KA BW12-L 3P-0500-PNP	**0301507**	
Cable extensions		
KV BG12-SG12 3P-0030-PNP	**0301999**	
KV BG12-SG12 3P-0060-PNP	**0301998**	
KV BW08-SG08 3P-0030-PNP	**0301495**	
KV BW08-SG08 3P-0100-PNP	**0301496**	
KV BW08-SG08 3P-0200-PNP	**0301497**	
KV BW12-SG12 3P-0030-PNP	**0301595**	
KV BW12-SG12 3P-0100-PNP	**0301596**	
KV BW12-SG12 3P-0200-PNP	**0301597**	

ⓘ Two sensors (closer/NO) are required for each gripper, plus extension cables as an option.

ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

Cylindrical Reed Switches



End position monitoring mounted with mounting kit

Description	ID
Mounting kit for proximity switch	
AS-RMS 80 PGN/PZN-plus 160-380	**0377727**
Reed Switches	
RMS 80-S-M8	**0377721**

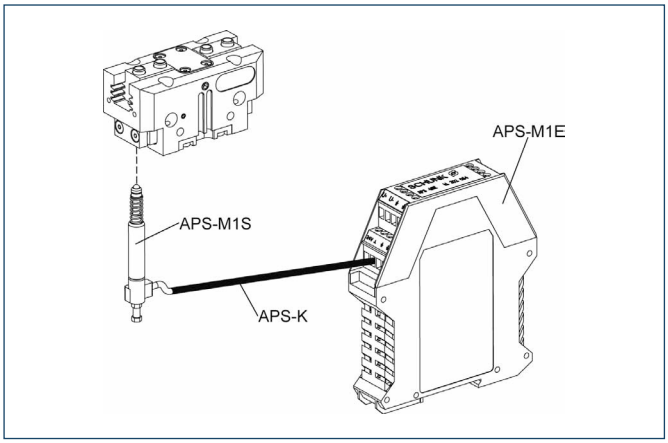
ⓘ Two sensors (closer/NO) are required for each gripper, plus extension cables as an option.

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

ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Analog position sensor



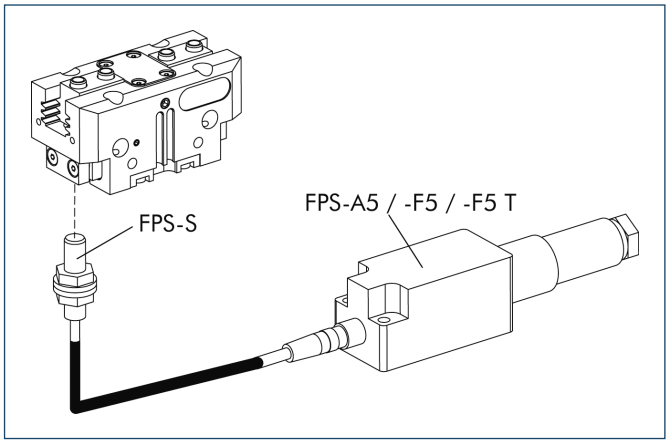
Analog multi position monitoring for any desired positions

Description	ID
Mounting kit	
AS-APS-M1-160/1 and 240/2	**0302083**
AS-APS-M1-240/1	**0302087**
Connection cables	
APS-K0200	**0302066**
APS-K0700	**0302068**
Electronic Processor	
APS-M1E	**0302064**
Sensor	
APS-M1S	**0302062**

ⓘ When using an APS system, for each gripper a mounting kit (AS-APS), an APS sensor (APS-M 1S, incl. 3 m cable) as well as an electronics (APS-M1e) are required.

ⓘ An extension cable (APS-K) can be connected between the sensor and the electronics as an option. The max. cable length between the sensor and the electronics is 10 m, between the electronics and their control unit (PLC) it is max. 1 m.

Flexible Position Sensor



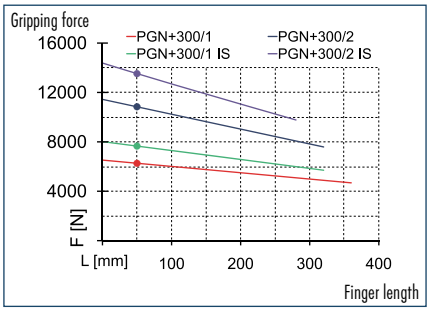
Flexible position monitoring of up to five positions

Description	ID
Mounting kit for FPS	
AS-PGN/PZN-plus 240/1	**0301643**
AS-PGN/PZN-plus 240/2	**0301644**
Electronic Processor	
FPS-F5	**0301805**
FPS-F5 T	**0301807**
Sensor	
FPS-S M8	**0301704**

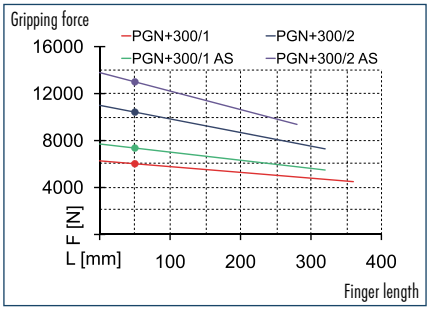
ⓘ When using a FPS system, a FPS sensor (FPS-S) and a control unit (FPS-F5 / F5 T or A5) are required for each gripper as well as a mounting kit (AS), if listed. Cable extensions (KV) are available as options in the “Accessories” catalog section.

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

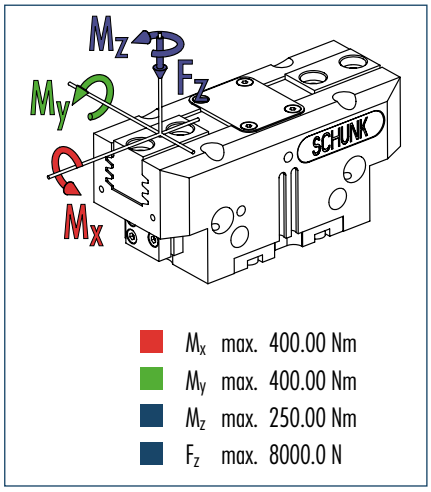
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

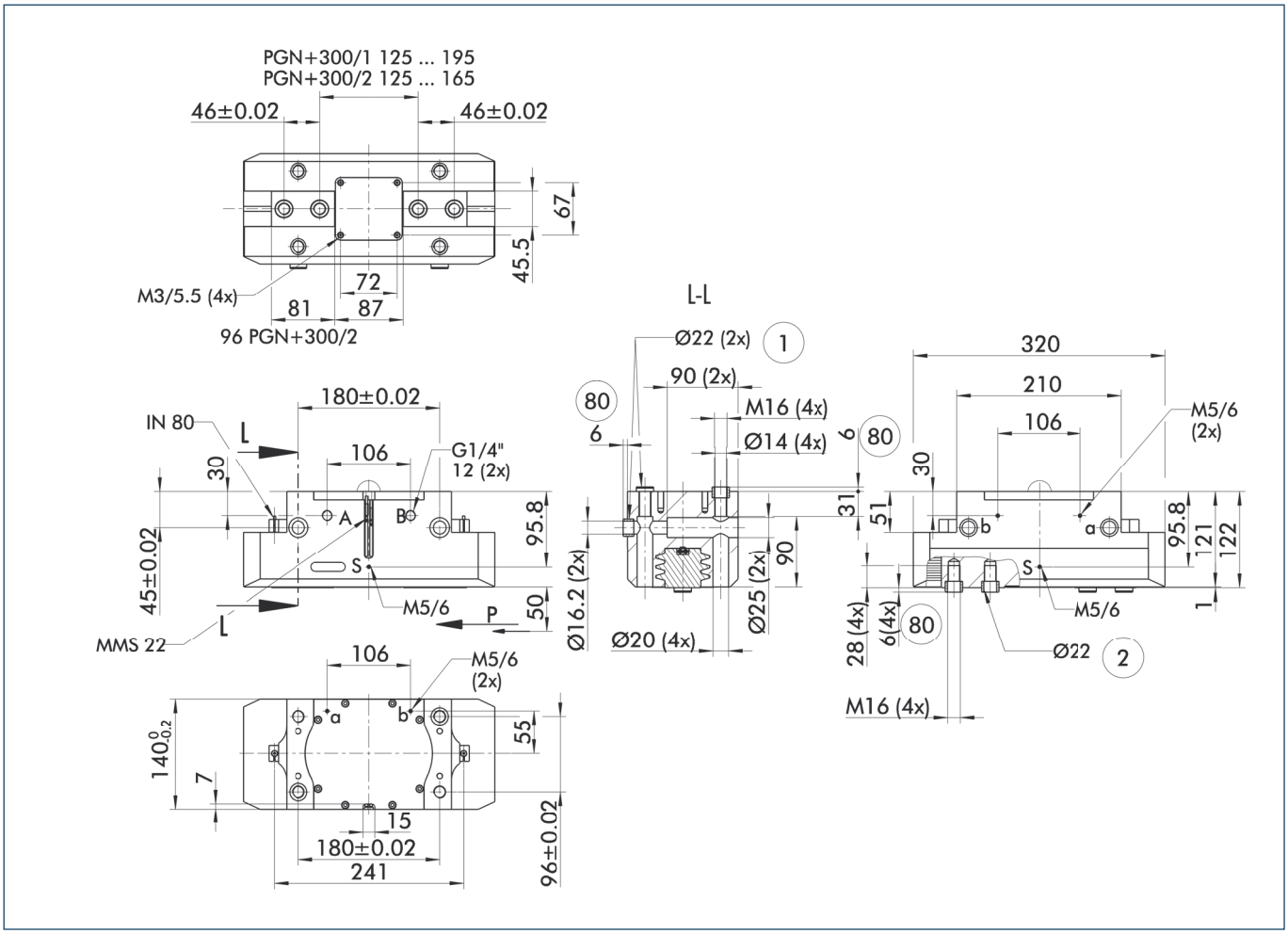


ⓘ The indicated moments and forces are static values, apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement occurs without any hitting or bouncing. Service life may be reduced.

Technical data

Description		PGN-plus 300-1	PGN-plus 300-2	PGN-plus 300-1-AS	PGN-plus 300-2-AS	PGN-plus 300-1-IS	PGN-plus 300-2-IS
ID		**0371106**	**0371156**	**0371406**	**0371456**	**0371466**	**0371476**
Stroke per finger	[mm]	35	20	35	20	35	20
Closing force	[N]	6000	10300	7400	12500		
Opening force	[N]	6260	10800			7660	13000
Min. spring force	[N]			1400	2200	1400	2200
Weight	[kg]	13.9	13.9	17.2	17.2	17.2	17.2
Recommended workpiece weight	[kg]	30	51.5	30	51.5	30	51.5
Air consumption per double stroke	[cm³]	1030	1030	1585	1585	1585	1585
Min./max. operating pressure	[bar]	2.5/8	2.5/8	4/6.5	4/6.5	4/6.5	4/6.5
Nominal operating pressure	[bar]	6	6	6	6	6	6
Closing/opening time	[s]	0.5/0.5	0.5/0.5	0.4/0.7	0.4/0.7	0.7/0.4	0.7/0.4
Max. permitted finger length	[mm]	350	300	300	250	300	250
Max. permitted weight per finger	[kg]	11.5	11.5	11.5	11.5	11.5	11.5
IP class		40	40	40	40	40	40
Min./max. ambient temperature	[°C]	-10/90	-10/90	-10/90	-10/90	-10/90	-10/90
Repeat accuracy	[mm]	0.05	0.05	0.05	0.05	0.05	0.05
Cleanroom class ISO-classification 14644-1		5	5	5	5	5	5
OPTIONS and their characteristics							
Dust-protection version		**37371106**	**37371156**	**37371406**	**37371456**	**37371466**	**37371476**
IP class		64	64	64	64	64	64
Weight	[kg]	17.6	17.6	21.3	21.3	21.3	21.3
Anti-corrosion version		**38371106**	**38371156**	**38371406**	**38371456**	**38371466**	**38371476**
High-temperature version		**39371106**	**39371156**	**39371406**	**39371456**	**39371466**	**39371476**
Min./max. ambient temperature	[°C]	-10/130	-10/130	-10/130	-10/130	-10/130	-10/130
Precision version		**0371129**	**0371179**	**0371429**	**0371444**		

Main view

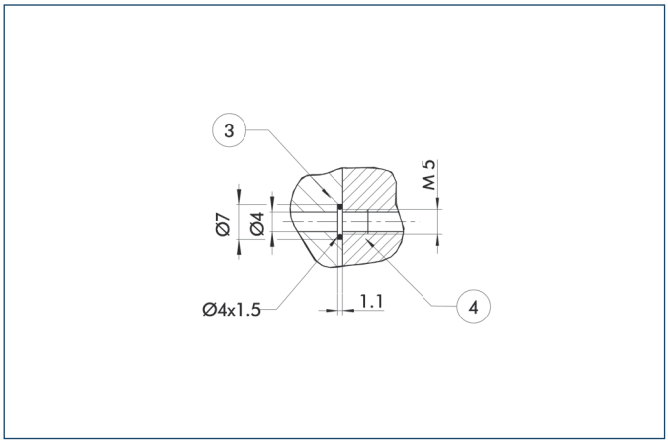


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

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

A, a Main/direct connection, gripper opening
B, b Main/direct connection, gripper closing
S Air purge connection
① Gripper connection
② Finger connection
80 Depth of the centering sleeve hole in the matching part

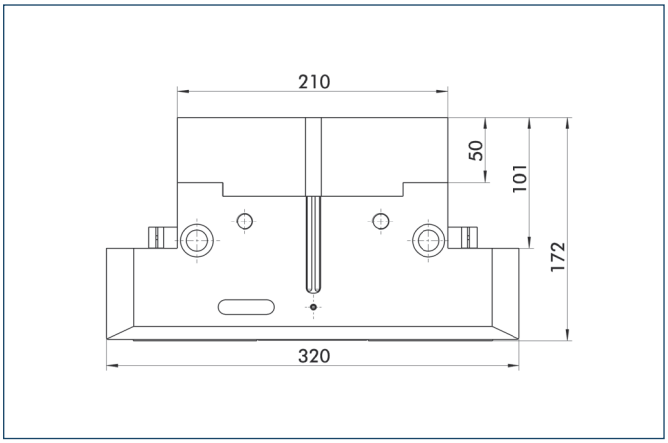
Hose-free direct connection



③ Adapter
④ Gripper

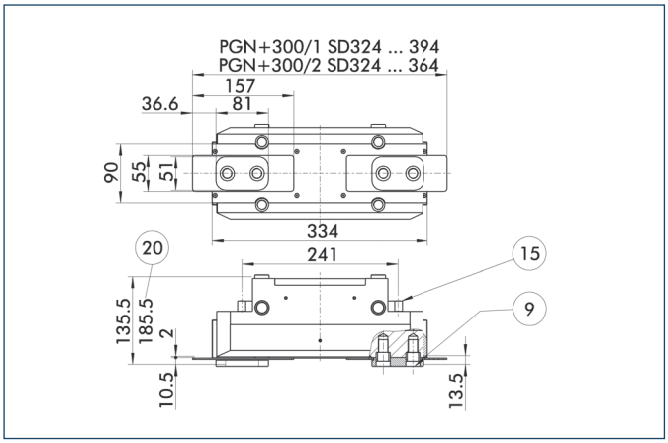
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

AS/IS gripping force maintenance device



The mechanical gripping force maintenance device ensures a minimum gripping force even in case of pressure drop. This acts as closing force in the AS version, and as opening force in the IS version. In addition, the gripping force maintenance device can also be used for increasing the gripping force or for single-acting gripping.

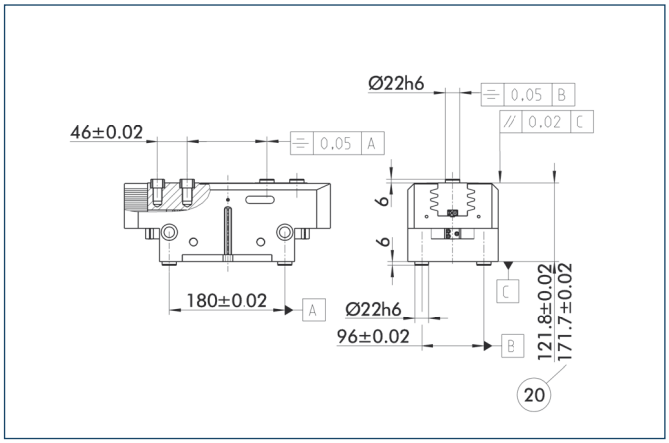
Dust-protection version



⑨ For mounting screw connection diagram, see basic version
⑮ Sealing bolt
⑳ For AS / IS version

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

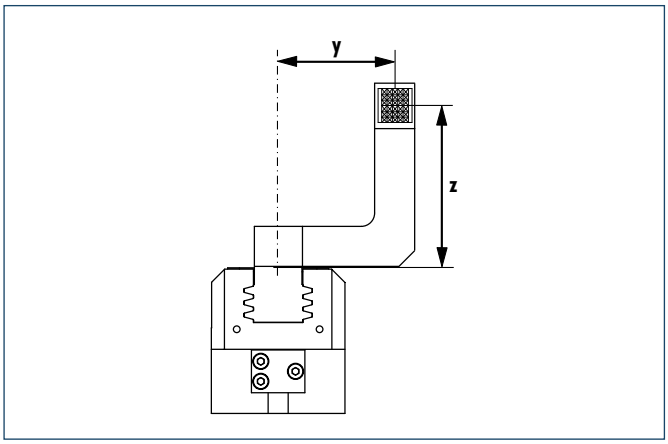
Precision version

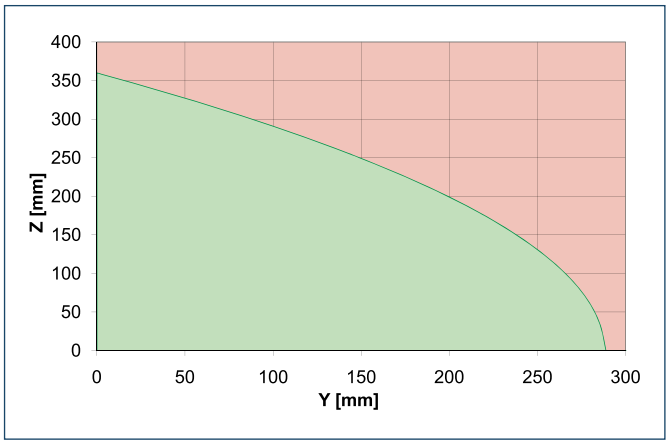


⑳ For AS / IS version

The indicated tolerances just refer to the types of precision versions shown in the chart of technical specifications. All other types of precision versions are available on request.

Maximum permitted finger projection

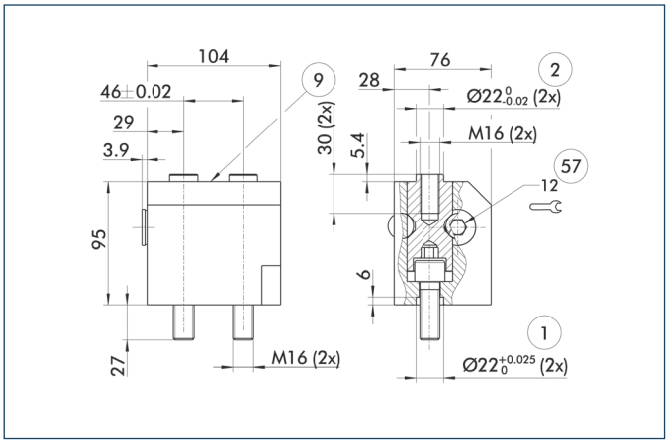




Permitted range
Inadmissible range

The curve applies to the basic version (stroke -1). For other versions, the curve will be parallel but offset in line with the max. permitted finger length.

Quick-change Jaw System

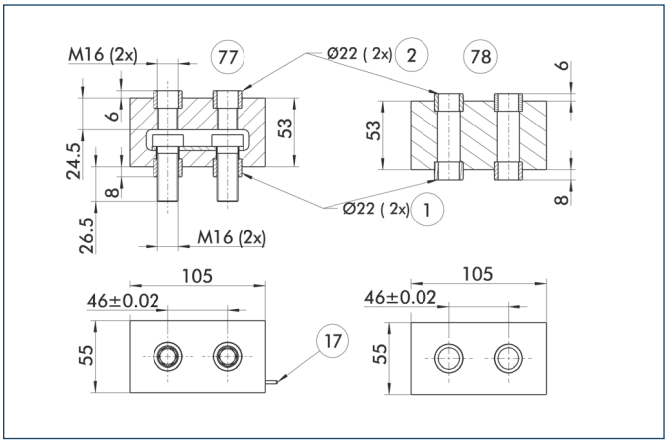


① Gripper connection
② Finger connection
⑨ For mounting screw connection diagram, see basic version
㊼ Locking

The BSWS quick-change jaw system enables top jaws to be changed on the gripper manually and rapidly. An adapter (BSWS-A) and a base (BSWS-B) are required for each gripper jaw.
For a reverse assembly without height set-up, one adapter (BSWS-A) and a kit (BSWS-U) per gripper jaw are required. Another effect of the BSWS-U is, that there are no disturbing fastening bores in the finger contour.

Description	ID
Quick-change Jaw System adapter	
BSWS-A 300	**0303036**
Quick-change Jaw System base	
BSWS-B 300	**0303037**
Quick-change Jaw System reversed	
BSWS-U 300	**0303048**

Force measuring jaws

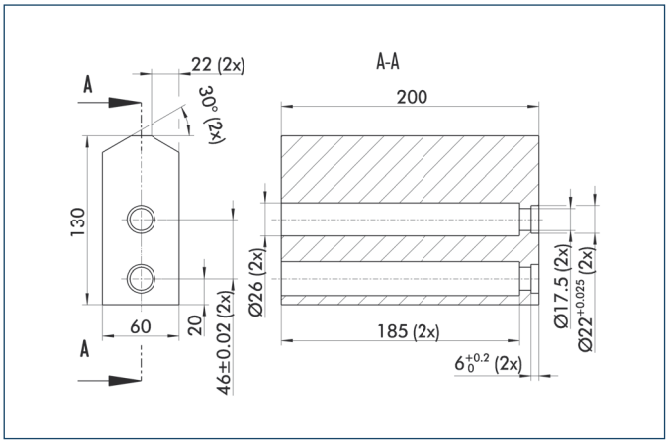


① Gripper connection
② Finger connection
⑰ Cable outlet
㊼ Active intermediate jaws
㊽ Passive intermediate jaws

Force measuring jaws measure gripping forces, but can also determine workpiece weights or dimensional deviations. There are active and passive intermediate jaws (FMS-ZBA or FMS-ZBP). At least one active force measuring jaw is required per gripper, the rest can be passive. For each active jaw, a FMS-A1 control unit and a FMS-A connection cable are required.

Description	ID
Active intermediate jaws	
FMS-ZBA 300	**0301846**
Passive intermediate jaws	
FMS-ZBP 300	**0301847**
Electronic Processor	
FMS-A2	**0301811**
Connection cables	
FMS-AK0200	**0301820**
FMS-AK0500	**0301821**
FMS-AK1000	**0301822**
FMS-AK2000	**0301823**

Finger blanks

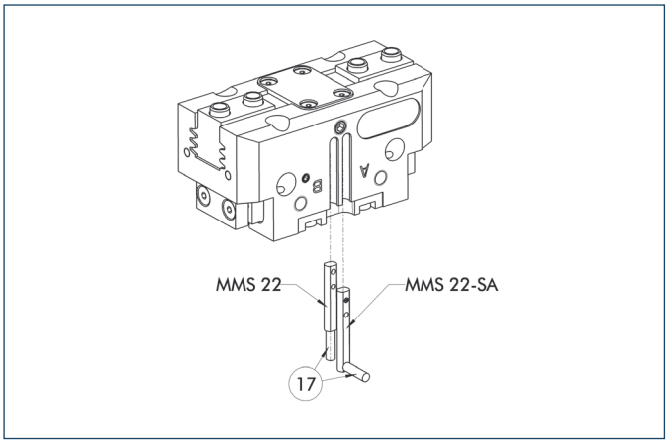


Finger blanks for customized subsequent machining

Description	ID	Material	Scope of delivery
Finger blanks			
ABR-plus 300	**0300016**	Aluminum	1
SBR-plus 300	**0300026**	16 MnCr 5	1

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Electronic magnetic switches



⑰ Cable outlet

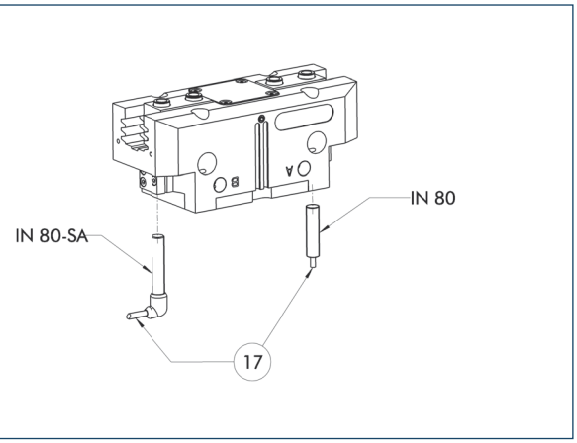
End position monitoring for mounting in the C-slot

Description	ID	Recommended product
Electronic magnetic switches		
MMS 22-S-M5-PNP	0301438	
MMS 22-S-M5-NPN	0301439	
MMS 22-S-M8-PNP	0301432	•
MMS 22-S-M8-NPN	0301433	
MMSK 22-S-PNP	0301434	
MMSK 22-S-NPN	0301435	
Electronic magnetic switches with lateral cable outlet		
MMS 22-S-M5-PNP-SA	0301448	
MMS 22-S-M5-NPN-SA	0301449	
MMS 22-S-M8-PNP-SA	0301442	•
MMS 22-S-M8-NPN-SA	0301443	
MMSK 22-S-PNP-SA	0301444	
MMSK 22-S-NPN-SA	0301445	
Reed Switches		
RMS 22-S-M8	0377720	•
Connection cables		
KA BG05-L 3P-0300	0301652	
KA BG08-L 3P-0300-PNP	0301622	
KA BG08-L 3P-0500-PNP	0301623	
KA BW05-L 3P-0300	0301650	
KA BW08-L 3P-0300-NPN	0301602	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-NPN	9641116	
KA BW08-L 3P-0500-PNP	0301502	
Cable extensions		
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	

ⓘ Two sensors (closer/NO) are required for each gripper, plus extension cables as an option.

ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

Inductive proximity switches



⑰ Cable outlet

End position monitoring for direct mounting

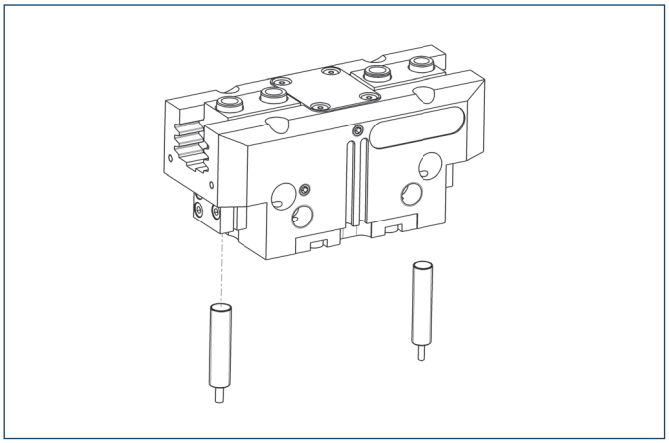
Description	ID	Recommended product
Inductive proximity switches		
IN 80-S-M8	0301478	•
IN 80-S-M12	0301578	
INK 80-S	0301550	
Inductive proximity switch with lateral outlet		
IN 80-S-M12-SA	0301587	
IN 80-S-M8-SA	0301483	•
INK 80-S-SA	0301566	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	
KA BG08-L 3P-0500-PNP	0301623	
KA BG12-L 3P-0500-PNP	30016369	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
KA BW12-L 3P-0300-PNP	0301503	
KA BW12-L 3P-0500-PNP	0301507	
Cable extensions		
KV BG12-SG12 3P-0030-PNP	0301999	
KV BG12-SG12 3P-0060-PNP	0301998	
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	
KV BW12-SG12 3P-0030-PNP	0301595	
KV BW12-SG12 3P-0100-PNP	0301596	
KV BW12-SG12 3P-0200-PNP	0301597	

ⓘ Two sensors (closer/NO) are required for each gripper, plus extension cables as an option.

ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Cylindrical Reed Switches

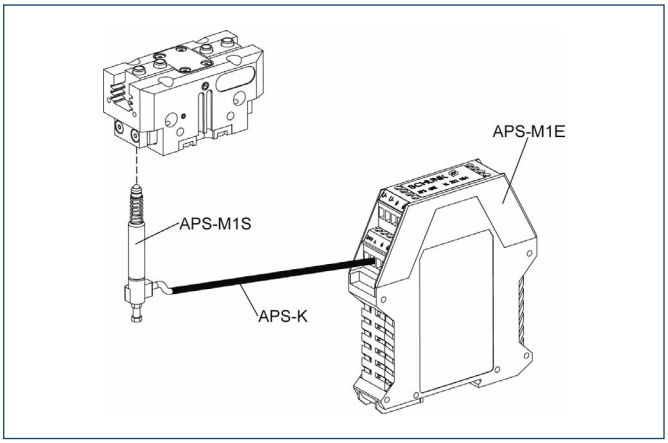


End position monitoring mounted with mounting kit

Description	ID
Mounting kit for proximity switch	
AS-RMS 80 PGN/PZN-plus 160-380	**0377727**
Reed Switches	
RMS 80-S-M8	**0377721**

ⓘ Two sensors (closer/NO) are required for each gripper, plus extension cables as an option.
ⓘ This mounting kit needs to be ordered optionally as an accessory.
ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

Analog position sensor



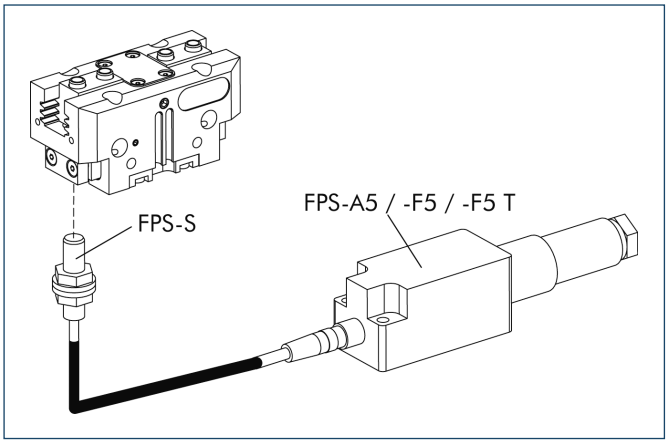
Analog multi position monitoring for any desired positions

Description	ID
Mounting kit	
AS-APS-M1-300/1	**0302088**
AS-APS-M1-300/2	**0302089**
Connection cables	
APS-K0200	**0302066**
APS-K0700	**0302068**
Electronic Processor	
APS-M1E	**0302064**
Sensor	
APS-M1S	**0302062**

ⓘ When using an APS system, for each gripper a mounting kit (AS-APS), an APS sensor (APS-M 1S, incl. 3 m cable) as well as an electronics (APS-M1e) are required.
ⓘ An extension cable (APS-K) can be connected between the sensor and the electronics as an option. The max. cable length between the sensor and the electronics is 10 m, between the electronics and their control unit (PLC) it is max. 1 m.

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Flexible Position Sensor



Flexible position monitoring of up to five positions

Description	ID
Mounting kit for FPS	
AS-PGN/PZN-plus 300-2	**0301642**
Electronic Processor	
FPS-F5	**0301805**
FPS-F5 T	**0301807**
Sensor	
FPS-S M8	**0301704**

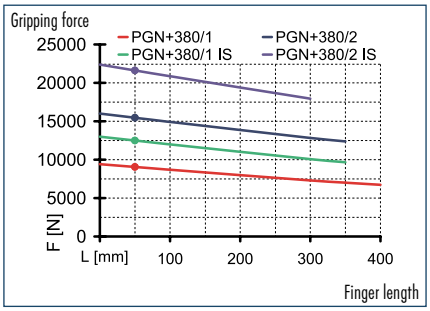
ⓘ When using a FPS system, a FPS sensor (FPS-S) and a control unit (FPS-F5 / F5 T or A5) are required for each gripper as well as a mounting kit (AS), if listed. Cable extensions (KV) are available as options in the “Accessories” catalog section.

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

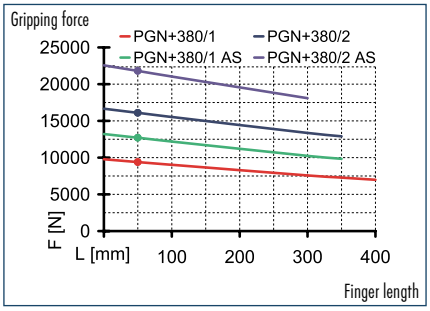
PGN-plus 380

Pneumatic • 2-Finger Parallel Gripper • Universal Gripper

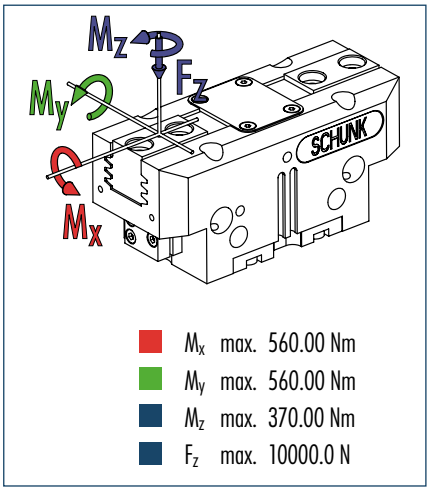
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load



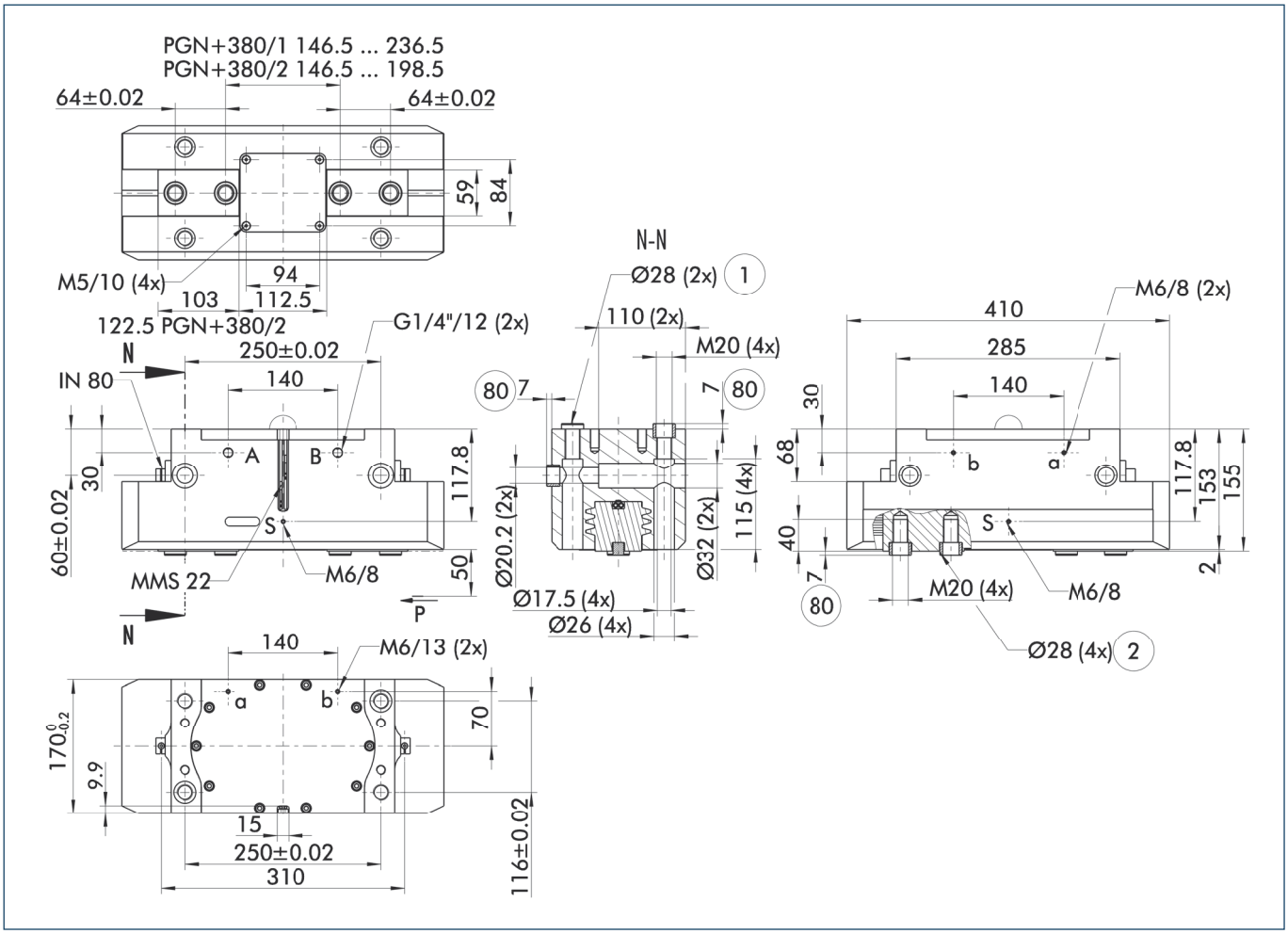
- M_x max. 560.00 Nm
- M_y max. 560.00 Nm
- M_z max. 370.00 Nm
- F_z max. 10000.0 N

ⓘ The indicated moments and forces are static values, apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement occurs without any hitting or bouncing. Service life may be reduced.

Technical data

Description		PGN-plus 380-1	PGN-plus 380-2	PGN-plus 380-1-AS	PGN-plus 380-2-AS	PGN-plus 380-1-IS	PGN-plus 380-2-IS
ID		**0371107**	**0371157**	**0371407**	**0371457**	**0371467**	**0371477**
Stroke per finger	[mm]	45	26	45	26	45	26
Closing force	[N]	9050	15450	12350	21150		
Opening force	[N]	9400	16100			12700	21800
Min. spring force	[N]			3300	5700	3300	5700
Weight	[kg]	28	29	36.5	37.5	36.5	37.5
Recommended workpiece weight	[kg]	47	80.5	47	80.5	47	80.5
Air consumption per double stroke	[cm³]	1714	1714	1714	1714	1714	1714
Min./max. operating pressure	[bar]	2.5/8	2.5/8	4/6.5	4/6.5	4/6.5	4/6.5
Nominal operating pressure	[bar]	6	6	6	6	6	6
Closing/opening time	[s]	0.6/0.6	0.6/0.6	0.5/0.8	0.5/0.8	0.8/0.5	0.8/0.5
Max. permitted finger length	[mm]	400	350	350	300	350	300
Max. permitted weight per finger	[kg]	17	17	17	17	17	17
IP class		40	40	40	40	40	40
Min./max. ambient temperature	[°C]	-10/90	-10/90	-10/90	-10/90	-10/90	-10/90
Repeat accuracy	[mm]	0.05	0.05	0.05	0.05	0.05	0.05
Cleanroom class ISO-classification 14644-1		5	5	5	5	5	5
OPTIONS and their characteristics							
Dust-protection version		**37371107**	**37371157**	**37371407**	**37371457**	**37371467**	**37371477**
IP class		64	64	64	64	64	64
Weight	[kg]	30	31	38.5	39.5	38.5	39.5
Anti-corrosion version		**38371107**	**38371157**	**38371407**	**38371457**	**38371467**	**38371477**
High-temperature version		**39371107**	**39371157**	**39371407**	**39371457**	**39371467**	**39371477**
Min./max. ambient temperature	[°C]	-10/130	-10/130	-10/130	-10/130	-10/130	-10/130
Precision version		**0371130**	**0371180**	**0371430**	**0371445**		

Main view

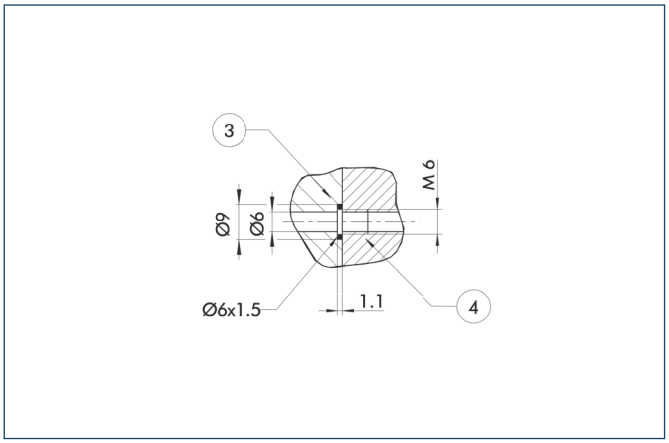


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

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

A, a Main/direct connection, gripper opening
B, b Main/direct connection, gripper closing
S Air purge connection
① Gripper connection
② Finger connection
⑧⓪ Depth of the centering sleeve hole in the matching part

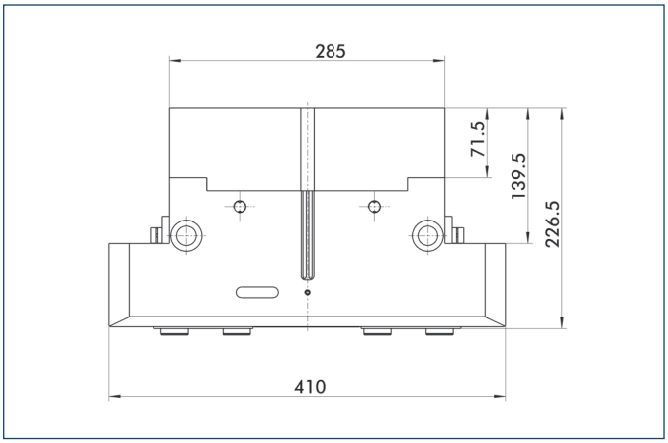
Hose-free direct connection



③ Adapter
④ Gripper

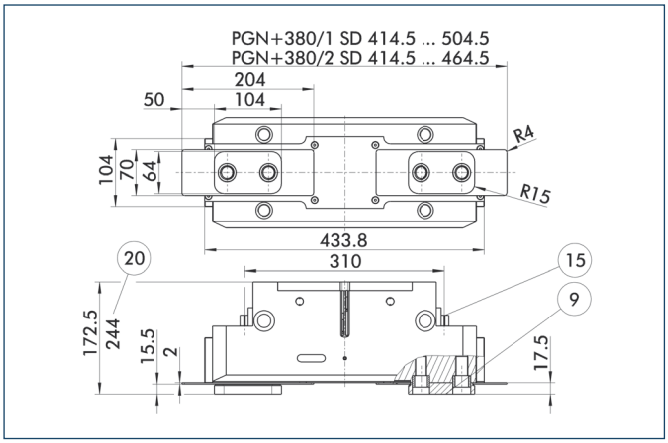
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

AS/IS gripping force maintenance device



The mechanical gripping force maintenance device ensures a minimum gripping force even in case of pressure drop. This acts as closing force in the AS version, and as opening force in the IS version. In addition, the gripping force maintenance device can also be used for increasing the gripping force or for single-acting gripping.

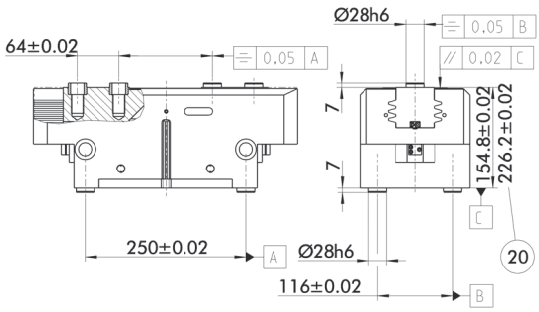
Dust-protection version



⑨ For mounting screw connection diagram, see basic version
⑳ For AS / IS version
⑮ Sealing bolt

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

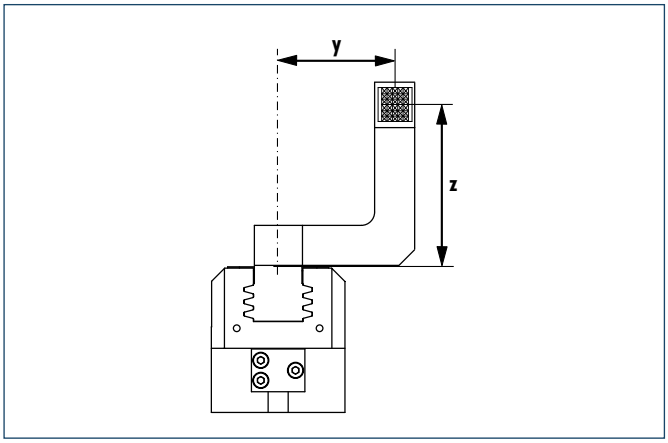
Precision version

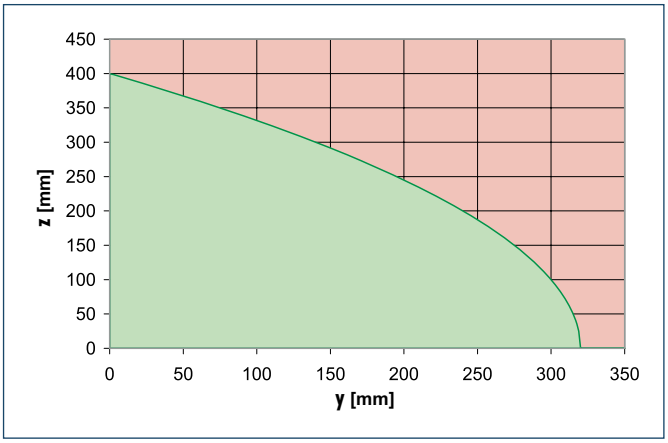


⑳ For AS / IS version

The indicated tolerances just refer to the types of precision versions shown in the chart of technical specifications. All other types of precision versions are available on request.

Maximum permitted finger projection

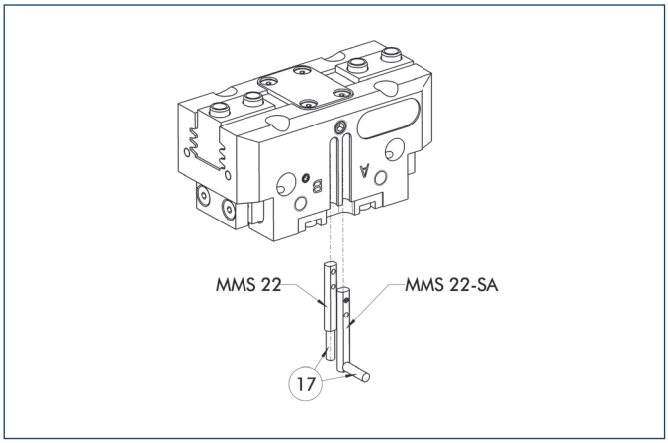




Permitted range
Inadmissible range

The curve applies to the basic version (stroke -1). For other versions, the curve will be parallel but offset in line with the max. permitted finger length.

Electronic magnetic switches



⑰ Cable outlet

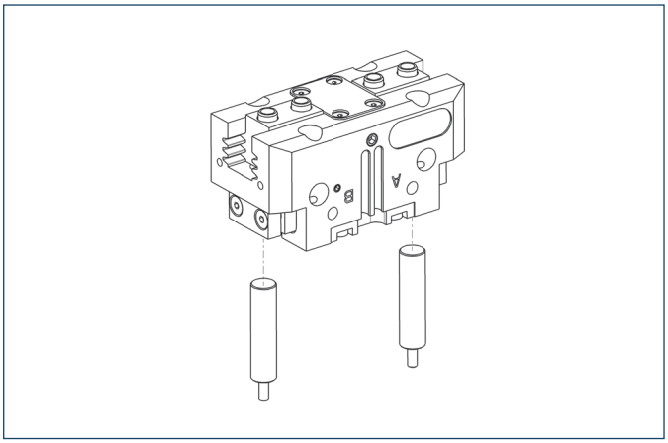
End position monitoring for mounting in the C-slot

Description	ID	Recommended product
Electronic magnetic switches		
MMS 22-S-M5-PNP	**0301438**	
MMS 22-S-M5-NPN	**0301439**	
MMS 22-S-M8-PNP	**0301432**	•
MMS 22-S-M8-NPN	**0301433**	
MMSK 22-S-PNP	**0301434**	
MMSK 22-S-NPN	**0301435**	
Electronic magnetic switches with lateral cable outlet		
MMS 22-S-M5-PNP-SA	**0301448**	
MMS 22-S-M5-NPN-SA	**0301449**	
MMS 22-S-M8-PNP-SA	**0301442**	•
MMS 22-S-M8-NPN-SA	**0301443**	
MMSK 22-S-PNP-SA	**0301444**	
MMSK 22-S-NPN-SA	**0301445**	
Reed Switches		
RMS 22-S-M8	**0377720**	•
Connection cables		
KA BG05-L 3P-0300	**0301652**	
KA BG08-L 3P-0300-PNP	**0301622**	
KA BG08-L 3P-0500-PNP	**0301623**	
KA BW05-L 3P-0300	**0301650**	
KA BW08-L 3P-0300-NPN	**0301602**	
KA BW08-L 3P-0300-PNP	**0301594**	
KA BW08-L 3P-0500-NPN	**9641116**	
KA BW08-L 3P-0500-PNP	**0301502**	
Cable extensions		
KV BW08-SG08 3P-0030-PNP	**0301495**	
KV BW08-SG08 3P-0100-PNP	**0301496**	
KV BW08-SG08 3P-0200-PNP	**0301497**	

ⓘ Two sensors (closer/NO) are required for each gripper, plus extension cables as an option.

ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

Inductive proximity switches



End position monitoring for direct mounting

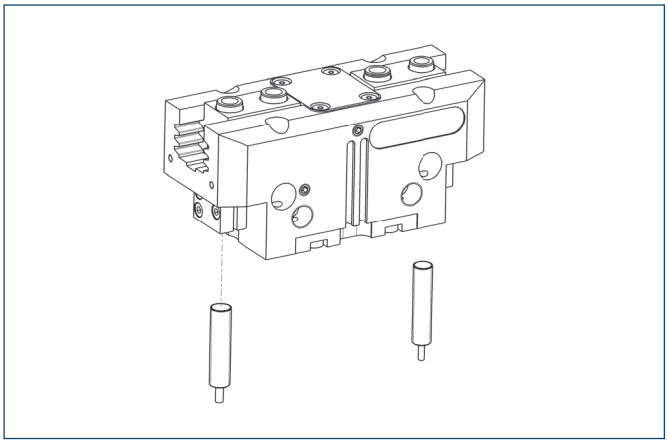
Description	ID	Recommended product
Inductive proximity switches		
IN 80-S-M8	**0301478**	•
IN 80-S-M12	**0301578**	
INK 80-S	**0301550**	
Connection cables		
KA BG08-L 3P-0300-PNP	**0301622**	
KA BG08-L 3P-0500-PNP	**0301623**	
KA BG12-L 3P-0500-PNP	**30016369**	
KA BW08-L 3P-0300-PNP	**0301594**	
KA BW08-L 3P-0500-PNP	**0301502**	
KA BW12-L 3P-0300-PNP	**0301503**	
KA BW12-L 3P-0500-PNP	**0301507**	
Cable extensions		
KV BG12-SG12 3P-0030-PNP	**0301999**	
KV BG12-SG12 3P-0060-PNP	**0301998**	
KV BW08-SG08 3P-0030-PNP	**0301495**	
KV BW08-SG08 3P-0100-PNP	**0301496**	
KV BW08-SG08 3P-0200-PNP	**0301497**	
KV BW12-SG12 3P-0030-PNP	**0301595**	
KV BW12-SG12 3P-0100-PNP	**0301596**	
KV BW12-SG12 3P-0200-PNP	**0301597**	

ⓘ Two sensors (closer/NO) are required for each gripper, plus extension cables as an option.

ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Cylindrical Reed Switches

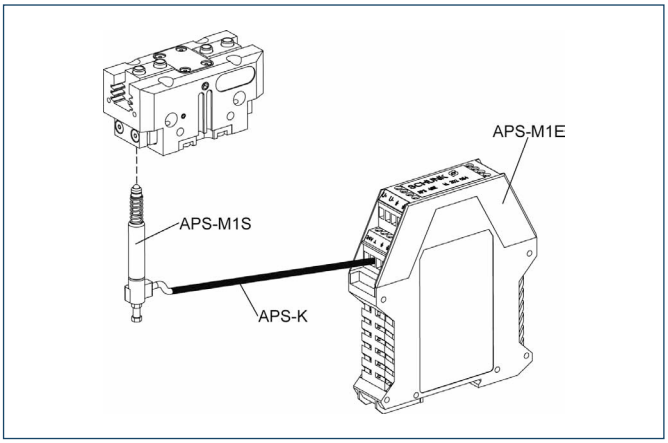


End position monitoring mounted with mounting kit

Description	ID
Mounting kit for proximity switch	
AS-RMS 80 PGN/PZN-plus 160-380	**0377727**
Reed Switches	
RMS 80-S-M8	**0377721**

ⓘ Two sensors (closer/NO) are required for each gripper, plus extension cables as an option.
ⓘ This mounting kit needs to be ordered optionally as an accessory.
ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

Analog position sensor



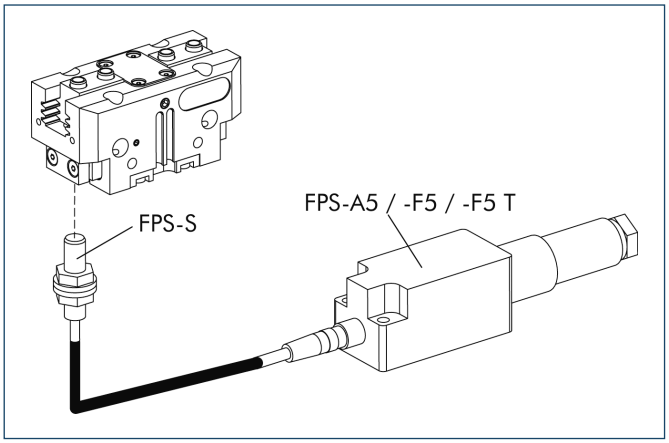
Analog multi position monitoring for any desired positions

Description	ID
Mounting kit	
AS-APS-M1-200/1 and 380/2	**0302085**
AS-APS-M1-380/1	**0302090**
Connection cables	
APS-K0200	**0302066**
APS-K0700	**0302068**
Electronic Processor	
APS-M1E	**0302064**
Sensor	
APS-M1S	**0302062**

ⓘ When using an APS system, for each gripper a mounting kit (AS-APS), an APS sensor (APS-M 1S, incl. 3 m cable) as well as an electronics (APS-M1e) are required.
ⓘ An extension cable (APS-K) can be connected between the sensor and the electronics as an option. The max. cable length between the sensor and the electronics is 10 m, between the electronics and their control unit (PLC) it is max. 1 m.

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

Flexible Position Sensor



Flexible position monitoring of up to five positions

Description	ID
Mounting kit for FPS	
AS-PGN-plus 380-2	**0301645**
Electronic Processor	
FPS-F5	**0301805**
FPS-F5 T	**0301807**
Sensor	
FPS-S M8	**0301704**

ⓘ When using a FPS system, a FPS sensor (FPS-S) and a control unit (FPS-F5 / F5 T or A5) are required for each gripper as well as a mounting kit (AS), if listed. Cable extensions (KV) are available as options in the “Accessories” catalog section.

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.