

Superior Clamping and Gripping



Product Information

Universal gripper PGN-plus 125

Reliable. Robust. Flexible. Universal gripper PGN-plus

Universal 2-finger parallel gripper with a high gripping force and high maximum moments due to the use of a multi-tooth guidance

Field of application

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

Advantages - Your 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 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 querying possibilities and stroke position monitoring

Compact dimensions for minimal interfering contours in handling

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







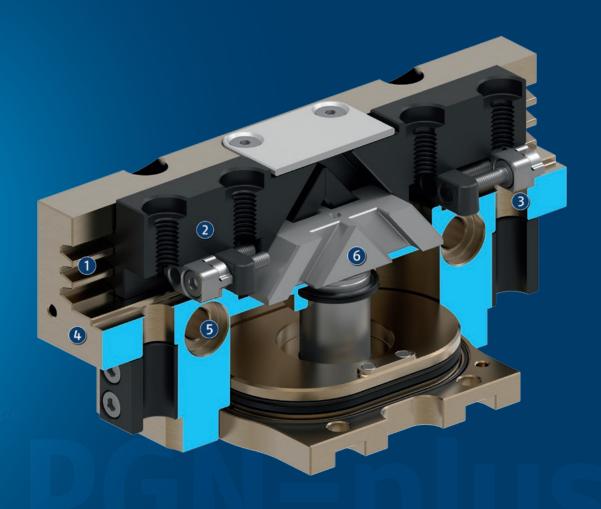






Functional description

The oval piston is moved up or down by compressed air. The angled active surfaces of the wedge-hook produce a synchronized, parallel jaw motion.



- Multi-tooth guidance
 highly loadable, nearly backlash-free base jaw guidance
 for long finger lenghts
- ② Base jaw for the connection of workpiece-specific gripper fingers
- Sensor system
 Brackets for proximity switches and adjustable control cams in the housing
- Housing
 is weight-optimized due to the use of high-strength aluminum alloy
- © Centering and mounting possibilities for universal assembly of the gripper
- Wedge-hook design for high force transmission and centric gripping

General notes about the series

 $\textbf{Operating principle:} \ \mathsf{Wedge} \ \mathsf{gear} \ \mathsf{with} \ \mathsf{surface} \ \mathsf{power}$

transmission

Housing material: Aluminum

Base jaw material: Steel

Actuation: pneumatic, with filtered compressed air as per

ISO 8573-1:2010 [7:4:4].

Warranty: 36 months

Service life characteristics: on request

Scope of delivery: Brackets for proximity switches, centering sleeves, 0-rings for direct connection, assembly instructions (operating manual with declaration of incorporation is available online)

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

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

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

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

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

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

Closing and opening times: are purely the times that the base jaws or fingers are in motion. Valve switching times, hose fill times, or PLC reaction times are not included, and are to be considered when cycle times are calculated.

Cleanroom class ISO 14644-1:1999: 5



Application example

Handling gantry with multiple grippers for simultaneous removal of several workpieces

- 2-finger parallel gripper PGN-plus
- 2 Linear module CLM
- 3 Universal linear module LDN
- Universal linear module Beta

SCHUNK offers more ...

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



① For more information on these products can be found on the following product pages or at schunk.com.

Options and special information

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

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

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

Power booster version KVZ: if higher gripping forces are required

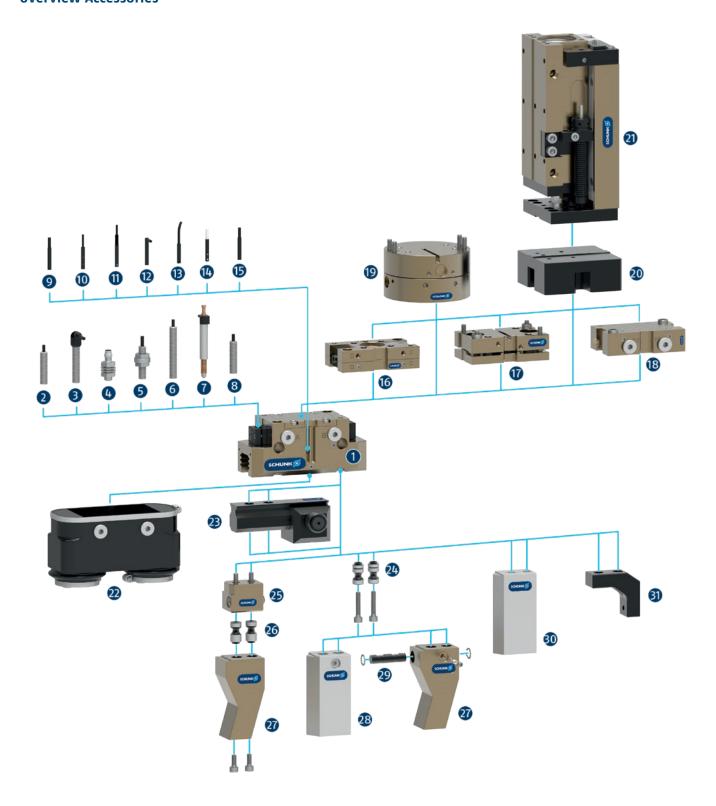
Precision version P: for the highest accuracy **ATEX version EX:** for explosive environments

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

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

SCHUNK gripper PGN-plus

Overview Accessories



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PGN-plus

Universal 2-finger parallel gripper with a high gripping force and high maximum moments due to the use of a multi-tooth guidance

Sensor system

2 IN ...

Inductive proximity switch with molded cable and straight cable outlet

Inductive proximity switch with molded cable and laberal cable outlet

IN-C 80

Inductive proximity switch, directly pluggable

G FPS

Flexible position sensor for monitoring up to five different, freely selectable positions

APS-Z80

Inductive position sensor for precise position detection of the gripper jaws with analog output

APS-M1S

Mechanical measuring system for precise position detaction of the gripper jaw with analog output

RMS 80

Reed switch in round version

MMS 22

Magnetic switch with straight cable outlet for monitoring a position

MMS 22-PI1

Magnetic switch with straight cable outlet for monitoring a freely programmable position

10 MMS 22-PI2

Magnetic switch with straight cable outlet for monitoring two freely programmable position

MMS 22-PI1-HD

MMS 22-PI1 in robust design

MMS 22-PI2-HD

MMS 22-PI2 in robust design

MMS 22-SA

Magnetic switch with lateral cable outlet for monitoring a position

MMS 22-PI1-SA

Magnetic switch with side cable outlet for monitoring a freely programmable position

MMS-P

Magnetic switch with straight cable outlet for monitoring two freely programmable position

MMS 22-A

Analog magnetic switch with straight cable outlet for measuring the gripper jaw position with analog output and teach function

1 RMS 22

Reed switch for direct assembly in the C-slot

Complementary products

6 CWS

Manual change system with integrated air feed-through for simple exchange of the handling components

TCU

Tolerance compensation unit for compensating small tolerances in the plane

® SDV-P-E-P

Pressure maintenance valve for temporary force and position maintenance

AGE

Compensation unit for compensation of large tolerances along the X and Y axes

20 ASG

Adapter plate for combining various automation components in the modular system

CLM

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

2 HUE

Sleeve for protection against dirt

Finger Accessories

UZB

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

BSWS-AR

Adapter pin of the jaw quick-change system for fast, manual change of top jaws

BSWS-B

Locking mechanism of the jaw quick-change system for fast, manual exchange of top jaws

BSWS-A

Adapter pin of the jaw quick-change system for adaptation to the customized finger

Customized fingers

BSWS-ABR

Finger blank made of aluminum with interface to the jaw quick-change system

BSWS-SBR

Finger blank made of steel with interface to the jaw quick-change system

BSWS-UR

Locking mechanism for the integration of the jaw quick-change system into customized fingers

ABR/SBF

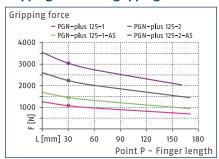
Finger blanks made of steel or aluminum with standardized screw connection diagram

ZBA

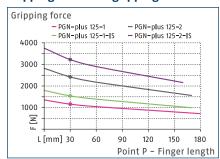
Intermediate jaws for reorientation of the mounting surface



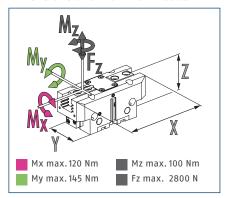
Gripping force O.D. gripping



Gripping force I.D. gripping



Dimensions and maximum loads



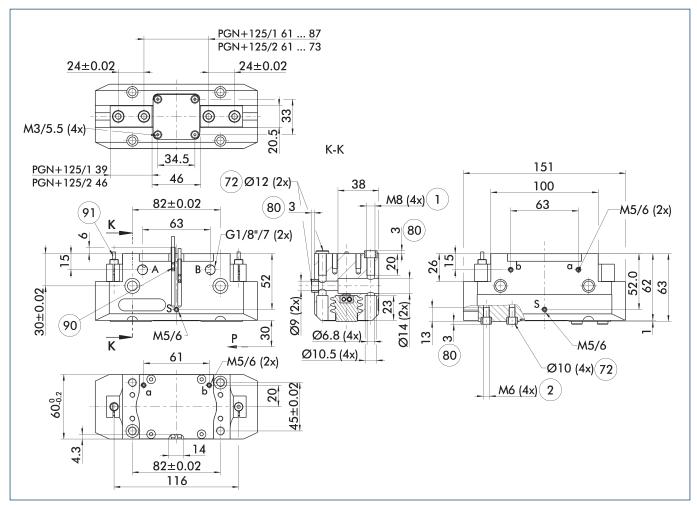
The indicated moments and forces are statical values, apply for each base jaw and may appear simultaneously. Loads may additionally occur to the moment produced by the gripping force itself.

Technical data

Description		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 jaw	[mm]	13	6	13	6	13	6
Closing/opening force	[N]	1080/1170	2240/2420	1470/-	3040/-	-/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
Fluid consumption double stroke	[cm³]	87	87	119	119	166	166
Min./nom./max. operating pressure	[bar]	2.5/6/8	2.5/6/8	4/6/6.5	4/6/6.5	4/6/6.5	4/6/6.5
Min./max. air purge pressure	[bar]	0.5/1	0.5/1	0.5/1	0.5/1	0.5/1	0.5/1
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
Closing/opening time with spring	[s]			0.30	0.30	0.30	0.30
Max. permissible finger length	[mm]	180	170	170	160	170	160
Max. permissible weight per finger	[kg]	2.1	2.1	2.1	2.1	2.1	2.1
IP protection class		40	40	40	40	40	40
Min./max. ambient temperature	[°C]	5/90	5/90	5/90	5/90	5/90	5/90
Repeat accuracy	[mm]	0.01	0.01	0.01	0.01	0.01	0.01
Dimensions X x Y x Z	[mm]	151 x 60 x 63	151 x 60 x 63	151 x 60 x 93			
Options and their characteristics							
Dustproof version		37371103	37371153	37371403	37371453	37371463	37371473
IP protection class		64	64	64	64	64	64
Weight	[kg]	1.55	1.55	2.05	2.05	2.05	2.05
Corrosion-protected version		38371103	38371153	38371403	38371453	38371463	38371473
High-temperature version		39371103	39371153	39371403	39371453	39371463	39371473
Min./max. ambient temperature	[°C]	5/130	5/130	5/130	5/130	5/130	5/130
Power booster version		0372103	0372153	0372403		0372463	
Closing/opening force	[N]	1765/1910	3955/4110	2095/-		-/2960	
Weight	[kg]	1.85	1.85	2.3		2.3	
Maximum pressure	[bar]	6	6	6		6	
Max. permissible finger length	[mm]	160	125	125		125	
Precision version		0371125	0371175	0371425	0371440		

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

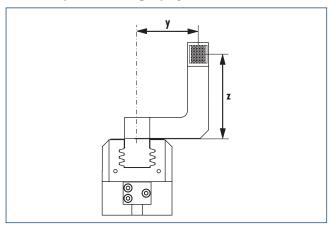
Main view

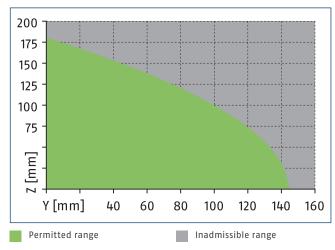


The drawing shows the gripper in the basic version with closed jaws, without dimensional consideration of the options described below.

- As an alternative/in addition to spring-assisted mechanical gripping force maintenance, the SDV-P pressure maintenance valve can be used for I.D. and O.D. gripping (see "Accessories" section of catalog).
- A, a Main / direct connection, gripper opening
- B, b Main / direct connection, gripper closing
- S Air purge connection
- 1 Gripper connection
- (2) Finger connection
- (72) Fit for centering sleeves
- 80 Depth of the centering sleeve hole in the counter part
- 90 Sensor MMS 22..
- (91) Sensor IN ...

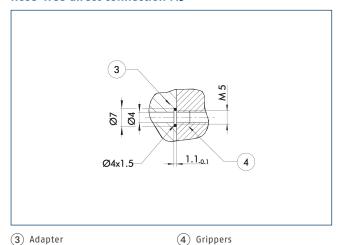
Maximum permitted finger projection





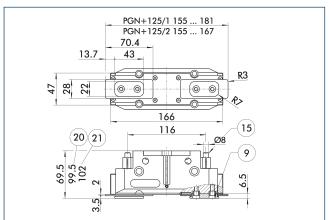
The curve applies for stroke version 1. For other versions, the curve must be parallely off-set to the max. permissible finger length.

Hose-free direct connection M5



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

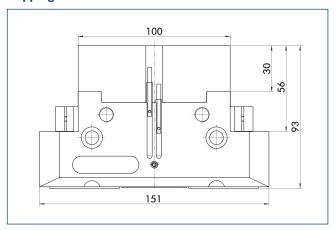
Dustproof version



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

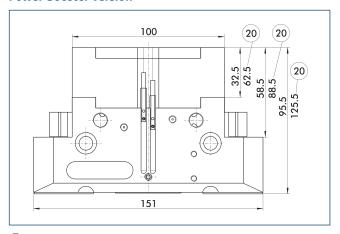
The "dustproof" option increases the degree of protection against penetrating substances. The assembly diagram shifts by the height of the intermediate jaw. The finger length is still measured from the upper edge of the gripper housing.

Gripping force maintenance version AS/IS



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

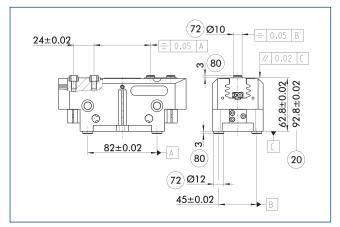
Power booster version



20 For version AS/IS

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

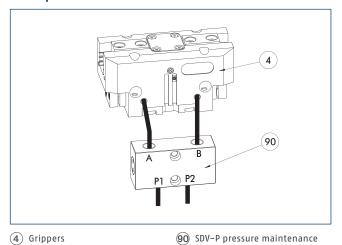
Precision version



- 20 For version AS/IS
- $\overline{(72)}$ Fit for centering sleeves
- 80 Depth of the centering sleeve hole in the counter part

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

SDV-P pressure maintenance valve

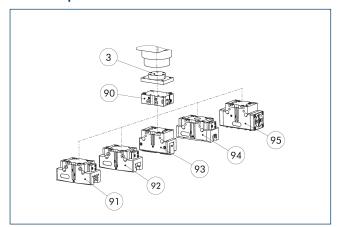


The SDV-P pressure maintenance valve ensures in emergency STOP situations that the pressure in the piston chamber of pneumatic gripper, swivel, linear, and quick-change modules is temporarily maintained.

Description	ID	Recommended hose diameter
		[mm]
Pressure maintenance	e valve	
SDV-P 04	0403130	6
SDV-P 07	0403131	8
Pressure maintenance valve with air bleed screw		
SDV-P 04-E	0300120	6
SDV-P 07-E	0300121	8

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

SDV-P E-P pressure maintenance valve

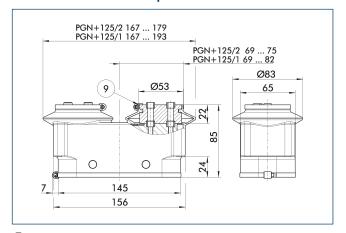


- (3) Adapter
- 90 SDV-P E-P pressure maintenance valve
- 91) 2-finger parallel gripper PGN-plus/PGN-plus-P
- 92 2-finger parallel gripper JGP-P
- 93) 2-finger angular gripper PWG-plus
- (94) 2-finger parallel gripper PGB
- 95) Sealed DPG-plus gripper

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

Description	ID
Pressure maintena	nce valve
SDV-P 125-E-P	0300127

Protective cover HUE PGN-plus 125



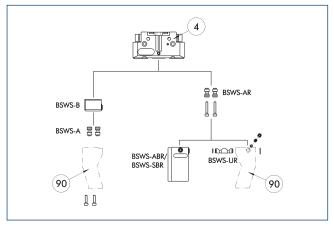
9 For mounting screw connection diagram, see basic version

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

Description	ID	IP protection class
Protection cover		
HUE PGN-plus 125	0371483	65

The HUE protective cover is not suitable for use on grippers with gripping force maintenance. An inductive monitoring of the gripper in connection with the HUE protective cover is not possible. SCHUNK recommends the use of magnetic sensors that are approved for the respective gripper variant.

BSWS jaw quick-change jaw systems



(4) Grippers

90 Customized gripper fingers

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

		- · · · · · · · · · · · · · · · · · · ·
Description	ID	Scope of delivery
Jaw quick-change system adapt	ter pin	
BSWS-A 125	0303028	2
BSWS-AR 125	0300095	2
Quick-change jaw system base		
BSWS-B 125	0303029	1
Jaw quick-change system finge	r blank	
BSWS-ABR-PGZN-plus 125	0300075	1
BSWS-SBR-PGZN-plus 125	0300085	1
Jaw quick-change system lockir	ng mechanism	
BSWS-UR 125	0302994	1

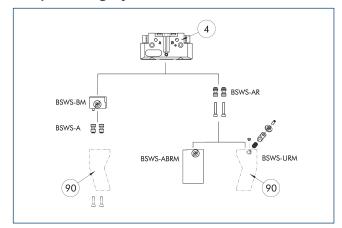
① If the operating pressure is higher than 6 bar, suitability for use beyond the application limits must be checked. Only systems that are listed in the table, can be used.

Fields of application

Series	Size	Variant	Suitability	
PGN-plus	125	-1 (6 bar)		
PGN-plus	125	-1-AS/1-IS (6 bar)		
PGN-plus	125	-2 (6 bar)		
PGN-plus	125	-2-AS/2-IS (6 bar)		
PGN-plus	125	KVZ (6 bar)		
Legend	gend			
	Can be combined without restrictions			
	Use with restrictions (see loading limits)			
0000	cannot be combined			

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

Jaw quick-change system BSWS-M



(4) Grippers

90 Customized gripper fingers

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

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

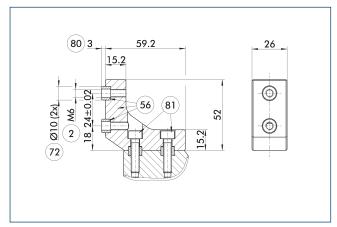
① If the operating pressure is higher than 6 bar, suitability for use beyond the application limits must be checked. Only systems that are listed in the table, can be used.

Fields of application

Series	Size	Variant	Suitability	
PGN-plus	125	-1 (6 bar)		
PGN-plus	125	-1-AS/1-IS (6 bar)		
PGN-plus	125	-2 (6 bar)		
PGN-plus	125	-2-AS/2-IS (6 bar)		
PGN-plus	125	KVZ (6 bar)		
Legend				
	Can be combined without restrictions Use with restrictions (see loading limits) cannot be combined			
0000				

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

ZBA-L-plus 125 intermediate jaws

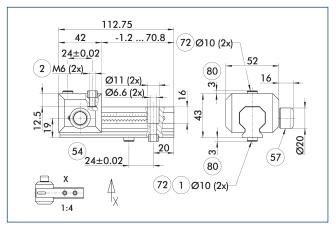


- 2 Finger connection
- 66 Included in the scope of delivery
- 72) Fit for centering sleeves
- 80 Depth of the centering sleeve hole in the counter part
- 81) Not included in the scope of delivery

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

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

UZB 125 universal intermediate jaw



- 1 Gripper connection
- Finger connection
- (54) Optional right or left connection
- 57 Locking
- (72) Fit for centering sleeves
- 80 Depth of the centering sleeve hole in the counter part

The drawing shows the UZB universal intermediate jaw. The fully removable UZB-S slide (can also be ordered separately) allows for a quick jaw change.

Description	ID	Grid dimension
		[mm]
Universal intermediate j	aw	
UZB 125	0300045	3
Finger blank		
ABR-PGZN-plus 125	0300013	
SBR-PGZN-plus 125	0300023	
Slide for universal intermediate jaw		
UZB-S 125	5518273	3

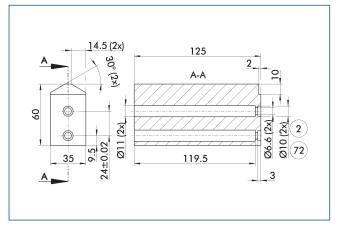
① If the operating pressure is higher than 6 bar, suitability for use beyond the application limits must be checked.

Fields of application

Series	Size	Variant	Suitability
PGN-plus	125	-1 (6 bar)	
PGN-plus	125	-1-AS/1-IS (6 bar)	
PGN-plus	125	-2 (6 bar)	
PGN-plus	125	-2-AS/2-IS (6 bar)	
PGN-plus	125	KVZ (6 bar)	0000
Legend			
	Can be combined without restrictions Use with restrictions (see loading limits)		
0000	cannot be combined		

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

Finger blanks ABR/SBR-PGZN-plus 125



(2) Finger connection

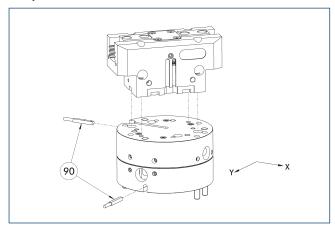
(72) Fit for centering sleeves

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

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

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

Compensation unit AGE-F



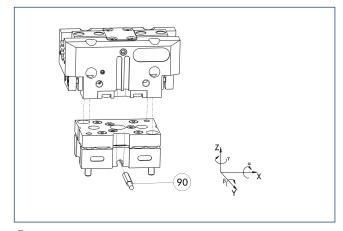
90 Monitoring

The unit has direct connection possibilities for different grippers of the PGN-plus, PGN-plus-P and PZN-plus series. For more detailed information, please refer to the main view.

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

① Due to the interfering contour, monitoring of the gripper is not possible.

Tolerance compensation unit TCU

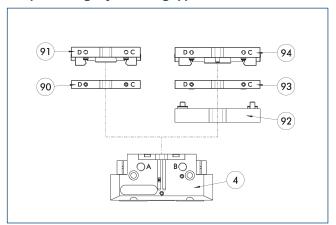


90 Monitoring of locking

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

Description	ID	Locking	Deflection	Often combined
Compensation unit				
TCU-P-125-3-MV	0324828	yes	±1°/±1,5°/±1,5°	•
TCU-P-125-3-0V	0324829	no	±1°/±1,5°/±1,5°	

Compact change system for grippers



(4) Grippers

(92) A-CWA adapter plate

(90) CWA compact change adapter(91) CWK compact change master

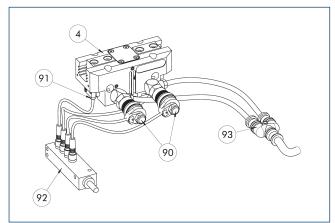
93 CWA compact change adapter

94) CWK compact change master

The CWS is a manual change system with integrated air feed-through for simple exchange of the handling components. The gripper can either be attached directly to a change system of the same size or mounted to a change system one size larger via an adapter plate. The adapter plate also has integrated air feed-throughs.

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

Add-on valves for single grippers



- (4) Grippers
- 90 Micro valves
- 90 MICIO Valve
- (91) Sensor

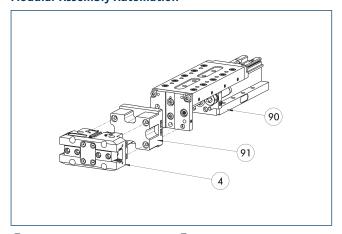
- **92** Sensor distributor
- 93 Y distributor

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

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

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

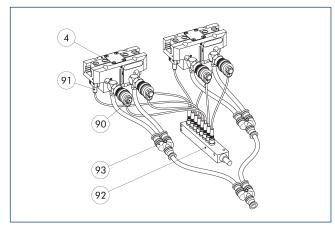
Modular Assembly Automation



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

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

Add-on valves for double grippers



- (4) Grippers
- 90 Micro valves
- 91) Sensor

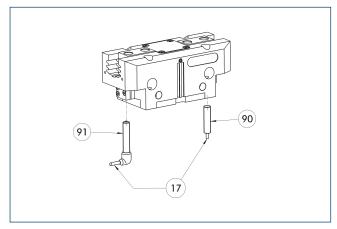
- 92 Sensor distributor
- 93 Y distributor

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

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

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

Inductive proximity switches



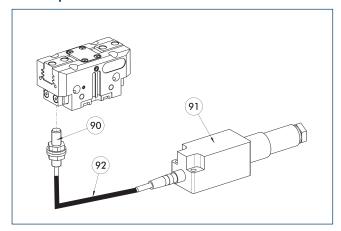
- 17) Cable outlet
- 91) Sensor IN..-SA
- 90 Sensor IN ...

Directly mounted end position monitoring.

Description	ID	Often combined
Inductive proximity switches		
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	•
INK 80-S	0301550	
Inductive proximity switch with la	teral cable ou	tlet
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	
Clip for connector/socket		
CLI-M12	0301464	
CLI-M8	0301463	
Cable extension		
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	
Sensor distributor		
V2-M12	0301776	•
V2-M8	0301775	•
V4-M8	0301746	
V8-M8	0301751	
@ T		

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

Flexible position sensor



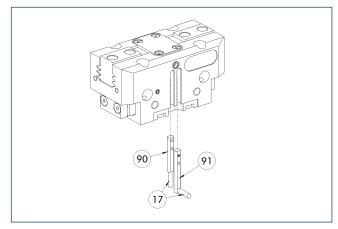
- 90 FPS-S sensor
- 92 Cable extension
- (91) FPS-F5 evaluation electronic

Flexible position monitoring of up to five positions.

Description	ID
Attachment kit for FPS	
AS-FPS-PGZN-plus 125-1/PZB 160	0301636
AS-FPS-PGZN-plus 125-2	0301637
Sensor	
FPS-S M8	0301704
Evaluation electronics	
FPS-F5	0301805
Cable extension	
KV BG08-SG08 3P-0050	0301598
KV BG08-SG08 3P-0100	0301599

When using an FPS system, an FPS sensor (FPS-S) as well as an electronic processor (FPS-F5 / F5 T) are required for each gripper as well as a mounting kit (AS), if listed. Cable extensions (KV) are optionally available – see catalog chapter "Accessories."

Electronic magnetic switch MMS



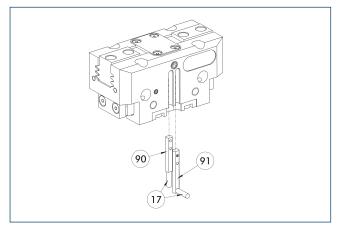
- 17) Cable outlet
- 91) Sensor MMS 22...-SA
- 90 Sensor MMS 22..

End position monitoring for mounting in the C-slot.

Description	ID	Often combined
Electronic magnetic switch		
MMS 22-S-M8-PNP	0301032	•
MMSK 22-S-PNP	0301034	
Electronic magnetic switches wit	h lateral cable	outlet
MMS 22-S-M8-PNP-SA	0301042	•
MMSK 22-S-PNP-SA	0301044	
Reed Switches		
RMS 22-S-M8	0377720	•
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	•
KA BG08-L 3P-0500-PNP	0301623	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
Clip for connector/socket		
CLI-M8	0301463	
Cable extension		
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	•
Sensor distributor		
V2-M8	0301775	•
V4-M8	0301746	
V8-M8	0301751	

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

Programmable magnetic switch MMS 22-PI1



(17) Cable outlet

(91) Sensor MMS 22 ..-PI1-...-SA

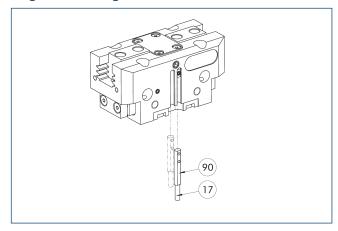
90 Sensor MMS 22 PI1-...

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

Description	ID	Often combined
Programmable magnetic switch		
MMS 22-PI1-S-M8-PNP	0301160	•
MMSK 22-PI1-S-PNP	0301162	
Programmable magnetic switch	with lateral c	able outlet
MMS 22-PI1-S-M8-PNP-SA	0301166	•
MMSK 22-PI1-S-PNP-SA	0301168	
Programmable magnetic switch	with stainles	s steel housing
MMS 22-PI1-S-M8-PNP-HD	0301110	•
MMSK 22-PI1-S-PNP-HD	0301112	

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

Programmable magnetic switch MMS 22-PI2



(17) Cable outlet

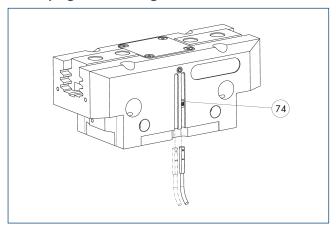
90 MMS 22...-PI2-... sensor

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

Description	ID	Often combined
Programmable magnetic switch		
MMS 22-PI2-S-M8-PNP	0301180	•
MMSK 22-PI2-S-PNP	0301182	
Programmable magnetic switch	with lateral c	able outlet
MMS 22-PI2-S-M8-PNP-SA	0301186	•
MMSK 22-PI2-S-PNP-SA	0301188	
Programmable magnetic switch	with stainles	s steel housing
MMS 22-PI2-S-M8-PNP-HD	0301130	•
MMSK 22-PI2-S-PNP-HD	0301132	

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

MMS-P programmable magnetic switch



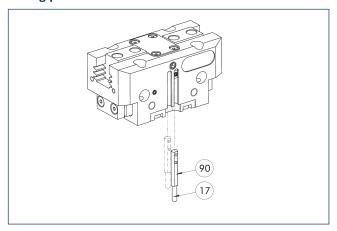
(74) Limit stop for sensor

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

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

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

Analog position sensor MMS-A



(17) Cable outlet

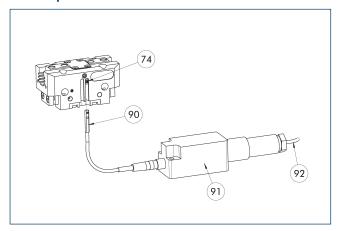
90 MMS 22-A-... sensor

Non-contact measuring, analog multi-position monitoring for any number of positions, easy to assemble in the C-slot. Can be programmed using MT magnetic teaching tool (included in the scope of delivery, ID 0301030) or ST plug teaching tool (optional). End position monitoring for mounting in the C-slot. If the ST plug teaching tools are listed in the chart provided, teaching is only possible with the ST teaching tools.

Description	ID
Analog position sensor	
MMS 22-A-10V-M08	0315825
MMS 22-A-10V-M12	0315828

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

Flexible position sensor with MMS-A



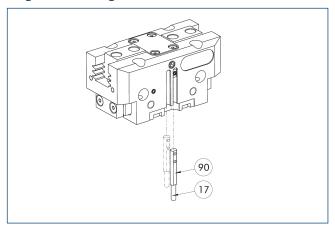
- (74) Limit stop for sensor
- (91) FPS-F5 evaluation electronic
- 90 MMS 22-A-... sensor
- 92 Connection cables

Flexible position monitoring of up to five positions. Sensor can be taught using MT magnetic teaching tool (included in the scope of delivery, ID 0301030) or ST plug teaching tool (optional). If the ST plug teaching tools are listed in the table provided, teaching is only possible with the ST teaching tools.

Description	ID
Analog position sensor	
MMS 22-A-05V-M08	0315805
Evaluation electronics	
FPS-F5	0301805
Sensor Teaching Tool	
MT-MMS 22-PI	0301030
Connection cables	
KA BG16-L 12P-1000	0301801

When using an FPS system, one MMS 22-A-05V and one evaluation electronics (FPS-F5) are required per each gripper, as well as an attachment kit (AS), if listed. On option, cable extensions (KV) are available - see catalog chapter "Accessories."

Programmable magnetic switch MMS-I0-Link



(17) Cable outlet

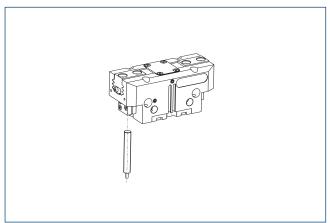
90 Sensor MMS 22-I0L-...

Sensor zur Multi-Positionsabfrage durch Erfassung des kompletten Greiferhubs. Der Sensor wird direkt in der C-Nut des Greifers montiert. Die Programmierung des Sensors auf den Greifer erfolgt via IO-Link-Schnittstelle, Magnetteachtool MT (im Lieferumfang enthalten; Ident.-Nr.: 0301030) oder Steckerteachwerkzeug ST (optional). Sind die Steckerteachwerkzeuge ST in der aufgeführten Tabelle gelistet, kann nicht mit dem Magnetteachtool MT geteacht werden. Zum Betrieb ist ein IO-Link-Master notwendig.

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

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

APS-Z80 analog position sensor

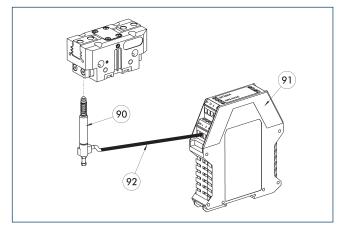


Non-contact measuring, analog multi-position monitoring for any number of positions.

Description	ID	Often combined
Mounting kit for APS-Z80		
AS-APS-Z80-PGZN-plus 125-1	0302111	
AS-APS-Z80-PGZN-plus 125-2	0302112	
Analog position sensor		
APS-Z80-K	0302072	
APS-Z80-M8	0302070	•

When using an APS system, one mounting kit (AS-APS-Z80) and one APS-Z80 sensor is required per gripper. The resolution of the sensor can be lower in the peripheral areas of the gripper. You can find further information on the product in the operating manual.

APS-M1 analog position sensor



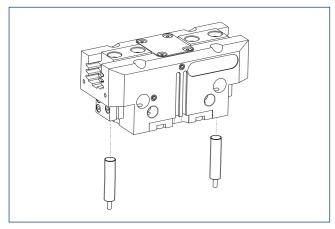
- 90 APS-M1S sensor
- **92** APS-K extension cable
- 91) APS-M1E electronic processor

Analog multi position monitoring for any desired positions

Description	ID
Mounting kit for APS-M1	
AS-APS-M1-PGZN-plus 125-1	0302081
AS-APS-M1-PGZN-plus 125-2	0302082
Analog position sensor	
APS-M1S	0302062
Connection cables	
APS-K0200	0302066
APS-K0700	0302068
Evaluation electronics	
APS-M1E	0302064

When using an APS system, for each gripper an attachment kit (AS-APS-M1), an APS-M1S sensor (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.

Cylindrical reed switches



End position monitoring can be mounted with an attachment kit.

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

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



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