

PGN-plus

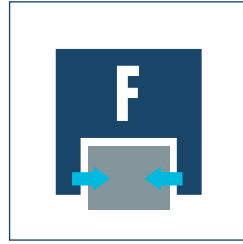
Pneumatic • 2-Finger Parallel Gripper • Universal Gripper



Sizes
40 ... 380



Weight
0.08 kg ... 39.5 kg



Gripping force
123 N ... 21150 N

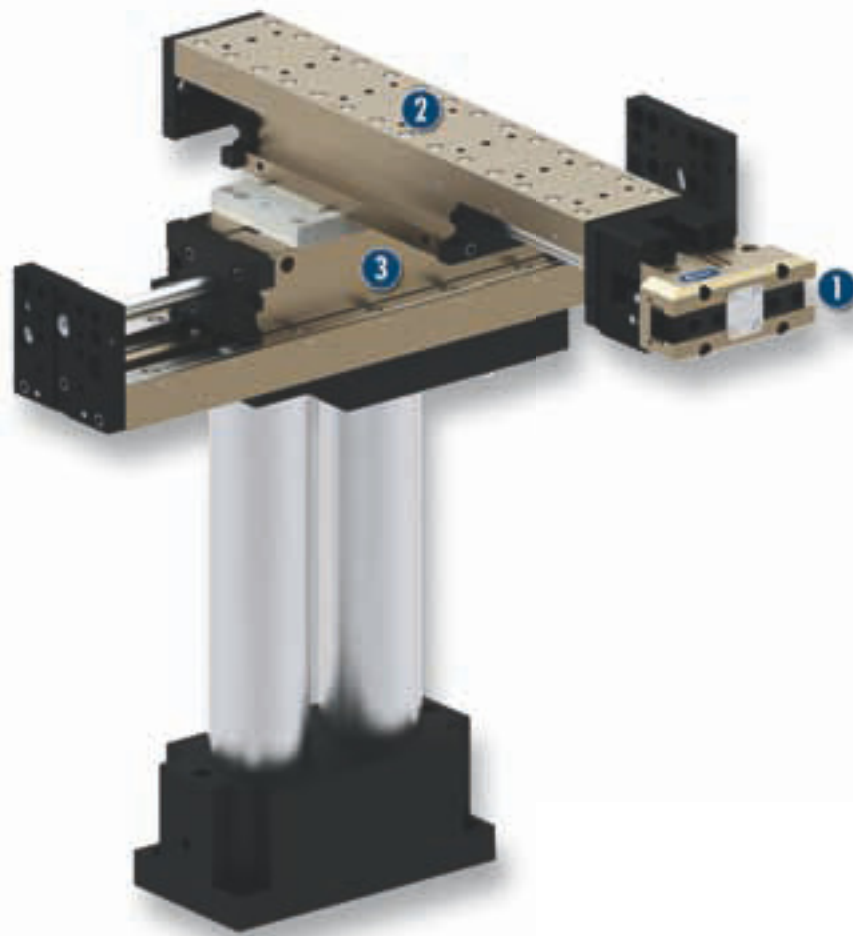


Stroke per finger
2 mm ... 45 mm



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)

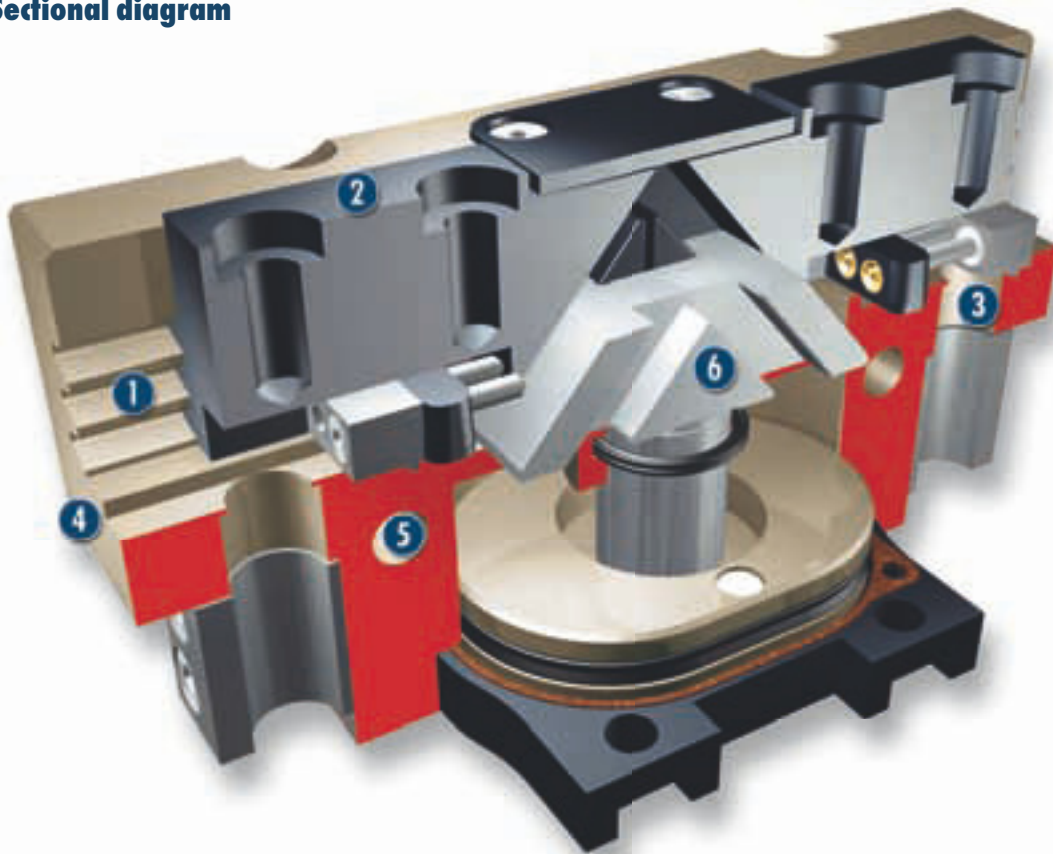
Scope of delivery

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



① 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

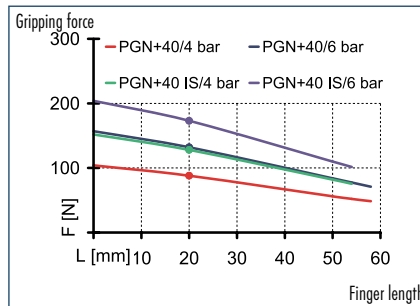
Closing and opening times are purely the times that the base jaws or fingers are in motion. Valve switching times, hose filling times or PLC reaction times are not included in the above times and must be taken into consideration when determining cycle times.

PGN-plus 40

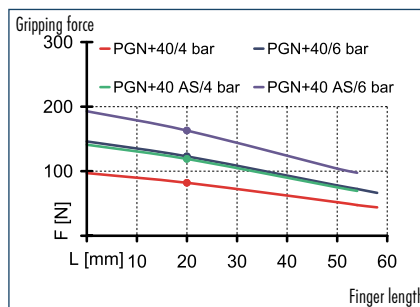
Pneumatic • 2-Finger Parallel Gripper • Universal Gripper



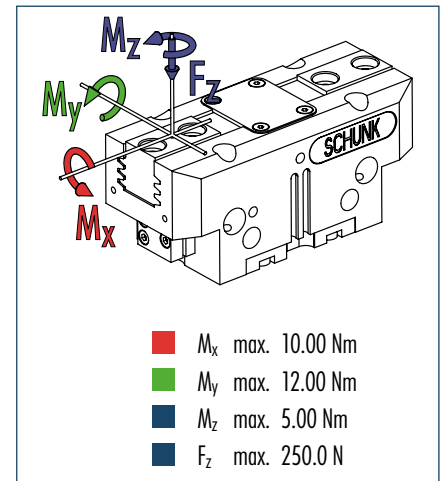
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load



① 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.

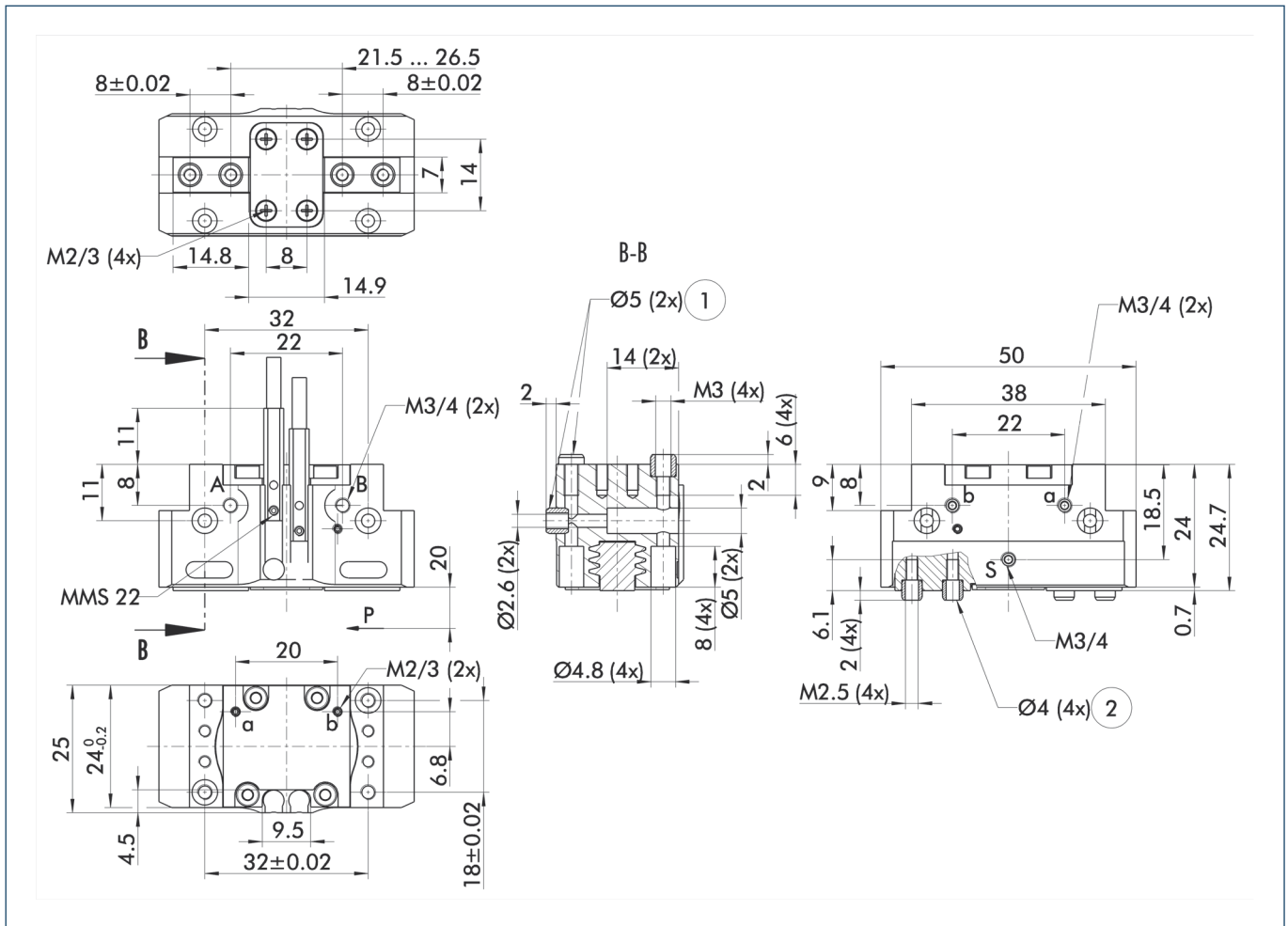
Technical data

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 [cm ³]	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



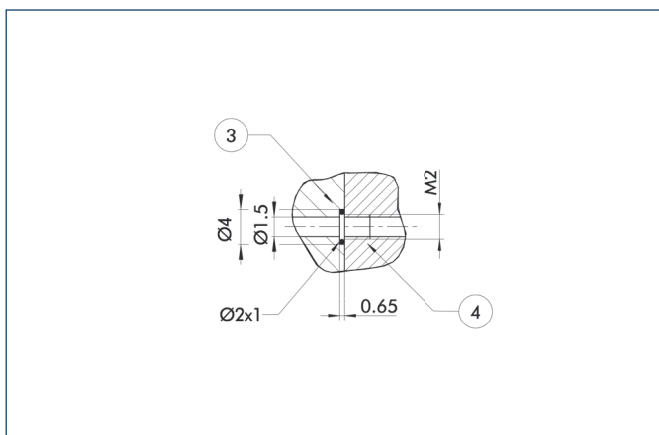
The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

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

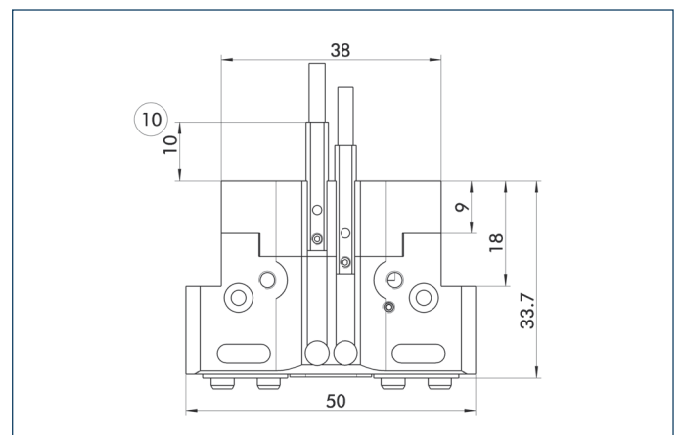
Hose-free direct connection



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.

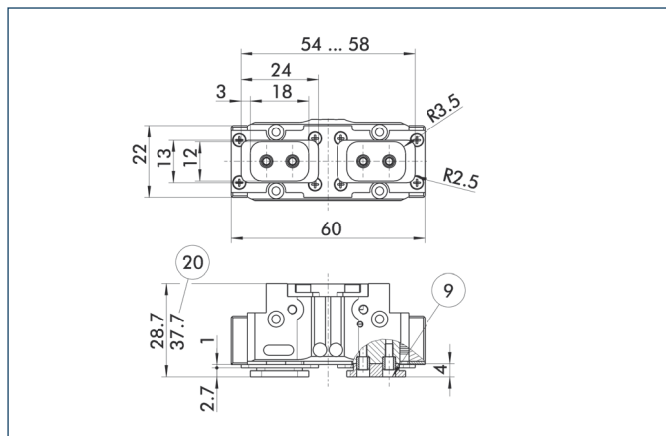
AS/IS gripping force maintenance device



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.

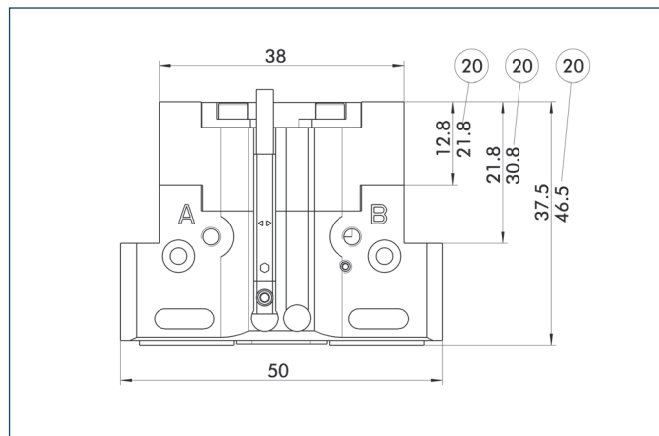
Dust-protection version



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.

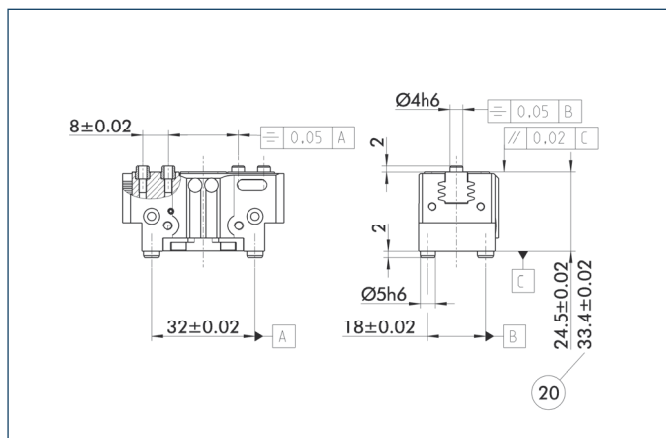
Force intensified version



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.

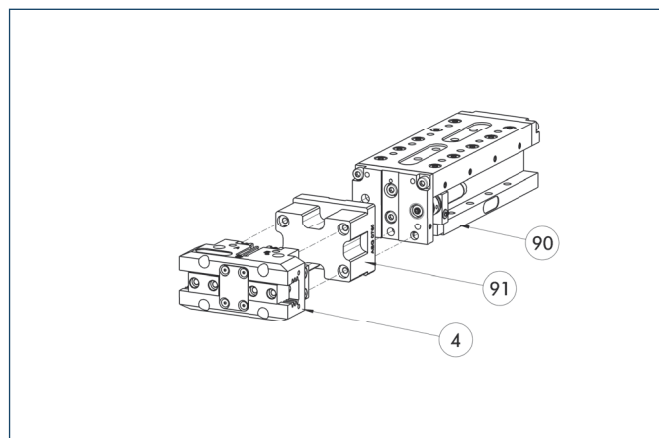
Precision version



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

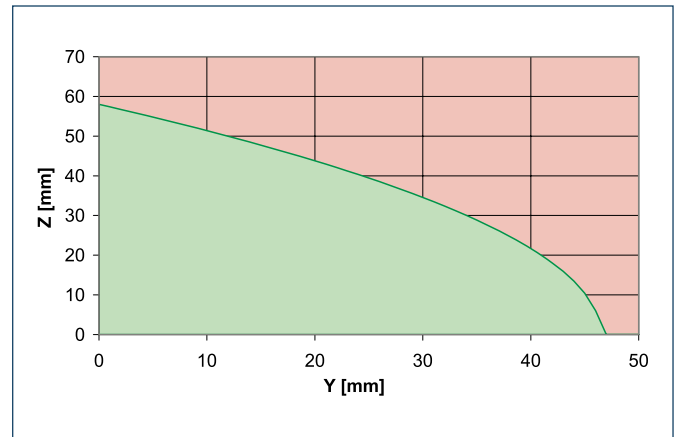
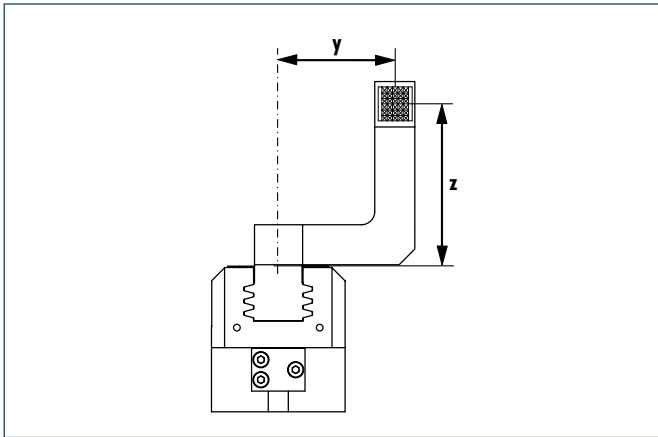


④ Gripper
⑨⑩ CLM

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".

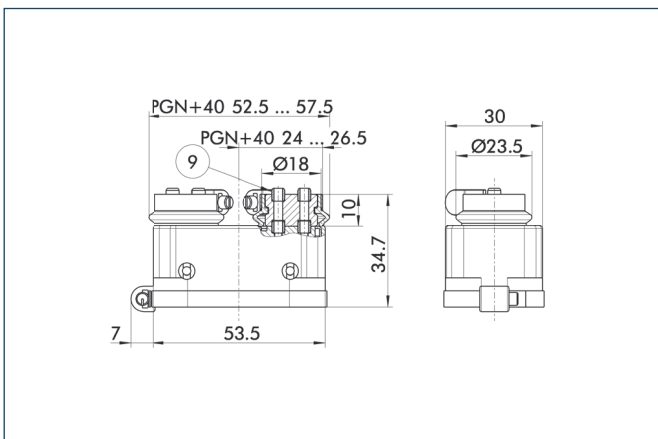
Maximum permitted finger projection



■ 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

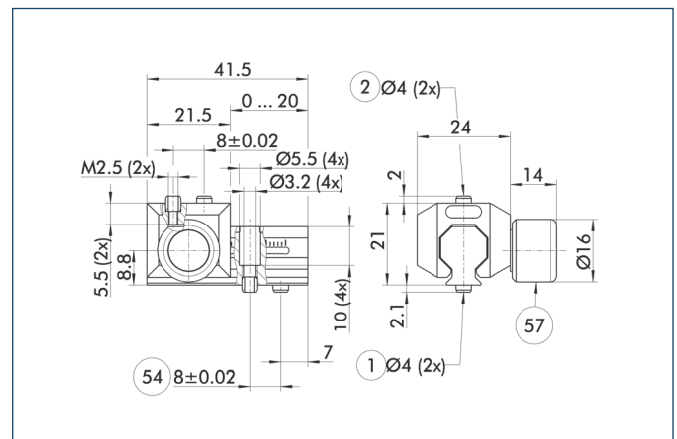


⑨ For mounting screw connection diagram, see basic version

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 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.

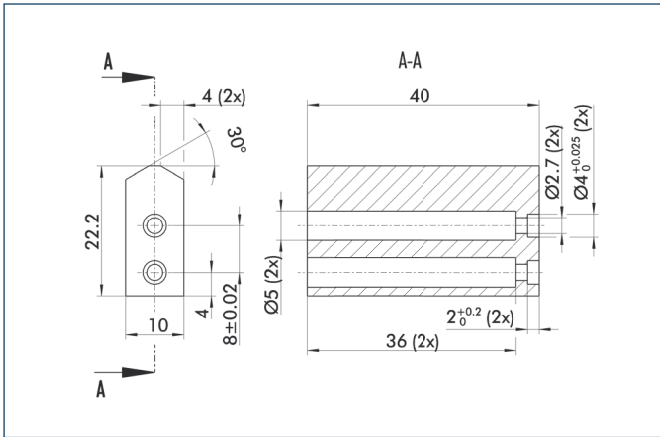
Description	ID	Grid dimension
Universal intermediate jaw		
UZB 40	0300040	1 mm

① 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.

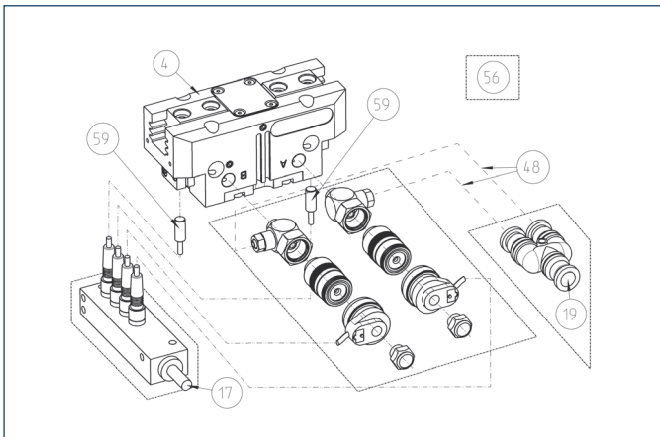
Finger blanks



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

Attachment valves

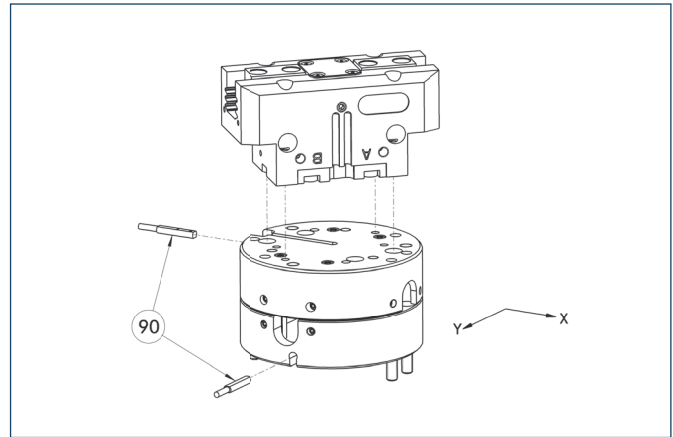


- ④ Gripper
- ①⑦ Cable outlet
- ①⑨ Air connection
- ④⑧ Hose
- ⑤⑥ Included in delivery
- ⑤⑨ Monitoring "gripping"

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

Compensation unit with spring reset

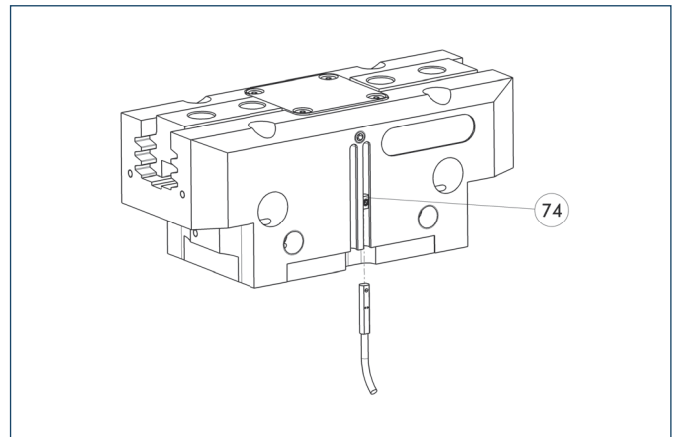


⑨⑩ Monitoring

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

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.

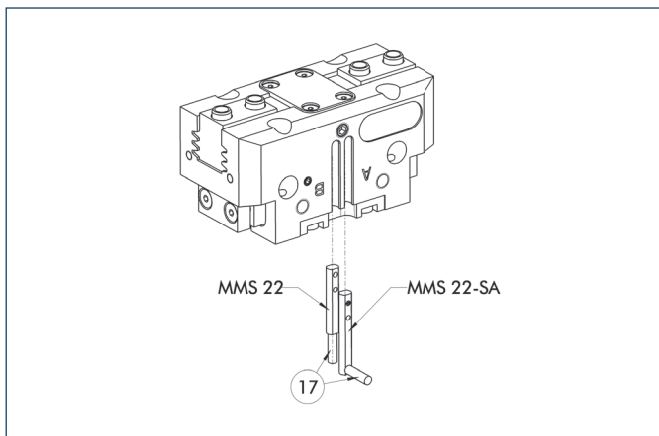
Description	ID	Recommended product
Programmable magnetic switch		
MMS-P 22-S-M8-PNP	0301370	•
MMSK-P 22-S-PNP	0301371	
Connection cables		
KA BG08-L 4P-0500	0307767	
KA BG08-L 4P-1000	0307768	
KA BW08-L 4P-0500	0307765	
KA BW08-L 4P-1000	0307766	
Sensor Distributor		
V2-M8-4P-2XM8-3P	0301380	

- ① Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.
- ① 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	

① Two sensors (closer/NO) are required for each gripper, plus extension cables as an option.

① 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.