

PZN-plus

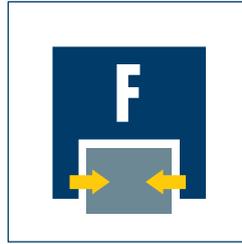
Pneumatic · 3-Finger Centric Gripper · **Universal Gripper**



Sizes
40 .. 300



Weight
0.43 kg .. 43.5 kg



Gripping force
580 N .. 38000 N



Stroke per finger
3 mm .. 35 mm



Workpiece weight
2.9 kg .. 190 kg

Application example



Insertion tool for assembling small to medium-sized axles. Thanks to the rotary feed-through, the axles can be turned several times to an unlimited extent (> 360°). Slip ring contacts integrated in the rotary feed-through reliably supply the gripper with power.

1 PZN-plus 200-1 3-Finger Centric Gripper

2 DDF 125 Rotary Feed-through

Universal Gripper

Universal centric gripper with large gripping force and high maximum moments thanks to multiple-tooth guidance

Area of application

For universal use, including in areas with special gripper requirements (temperature, chemical resistance, dirt, and many more) thanks to the diverse range of accessories available

Your advantages and benefits

Robust multiple-tooth guidance

for precise handling

High maximum load capabilities possible

suitable for the use of long gripper fingers

Wedge-hook design

for high power transmission and synchronized gripping

Air supply via hose-free direct connection or screw connections

for the flexible supply of compressed air in all automation systems

Comprehensive sensor accessories

for diverse monitoring tasks and stroke position monitoring

Diverse options

(dust protection, high temperature, anti-corrosion and many more) for optimization to suit precisely your requirements



General information on the series

Working principle

Wedge-hook kinematics

Housing material

Aluminum alloy, hard-anodized

Base jaw material

Hardened steel

Actuation

Pneumatic, with filtered compressed air (10 µm): Dry, lubricated or non-lubricated
Pressure medium: Requirements on quality of the compressed air according to DIN ISO 8573-1: 6 4 4.

Warranty

24 months

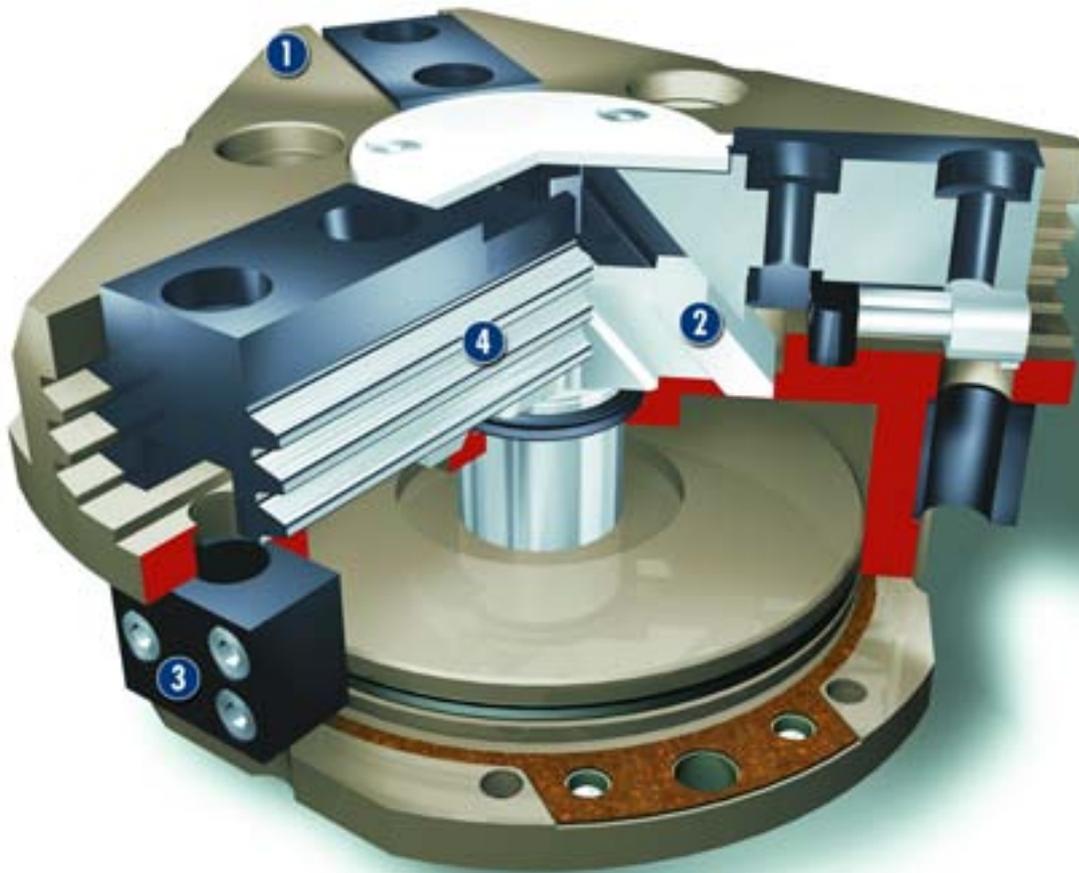
Scope of delivery

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

Gripping force safety device

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

Sectional diagram



- 1 Housing**
weight-reduced through the use of a hard-anodized, high-strength aluminum alloy
- 2 Kinematics**
wedge-hook principle for high power transmission and synchronized gripping

- 3 Sensor system**
brackets for proximity switches and adjustable switch cams in the housing

- 4 Multiple-tooth guidance**
precise gripping through high load-bearing base jaw guide with minimum play

Function description

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

Options and special information

Dust-protection version

Absolutely dust-proof, 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

Increased grip version

When higher gripping forces are required

Accessories

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

Centering sleeves



Fittings



MMS magnetic switches



IN inductive proximity switches



HUE protective cover



BSWS quick-change jaw system



SDV-P pressure maintenance valves



Finger blanks



FMS force measuring system



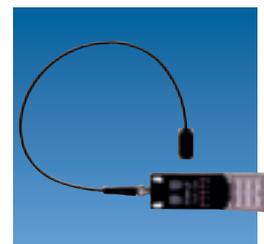
APS analog position sensor



V sensor distributors



FPS 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 information on the series

Gripping force

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

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.

Pressure piece

The pressure piece cannot be combined with the dust-protection version. Please contact us if you require a special pressure piece.

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

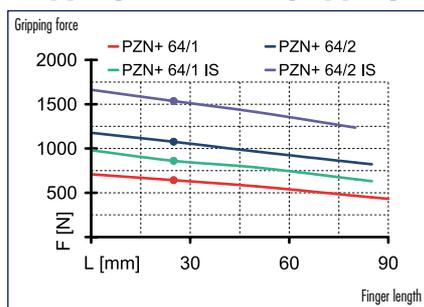
Closing and opening times are purely the times that the base jaws or fingers are in motion. Valve switching times, hose filling times or PLC reaction times are not included in the above times and must be taken into consideration when determining cycle times.

PZN-plus 64

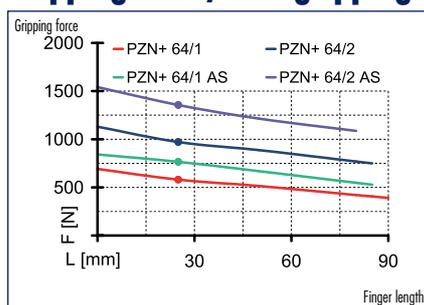
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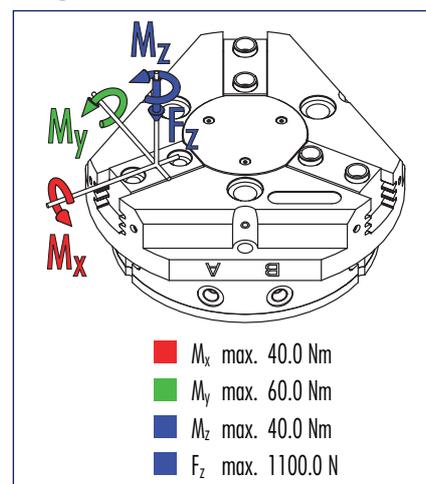
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load



ⓘ Moments and forces 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 reduce.

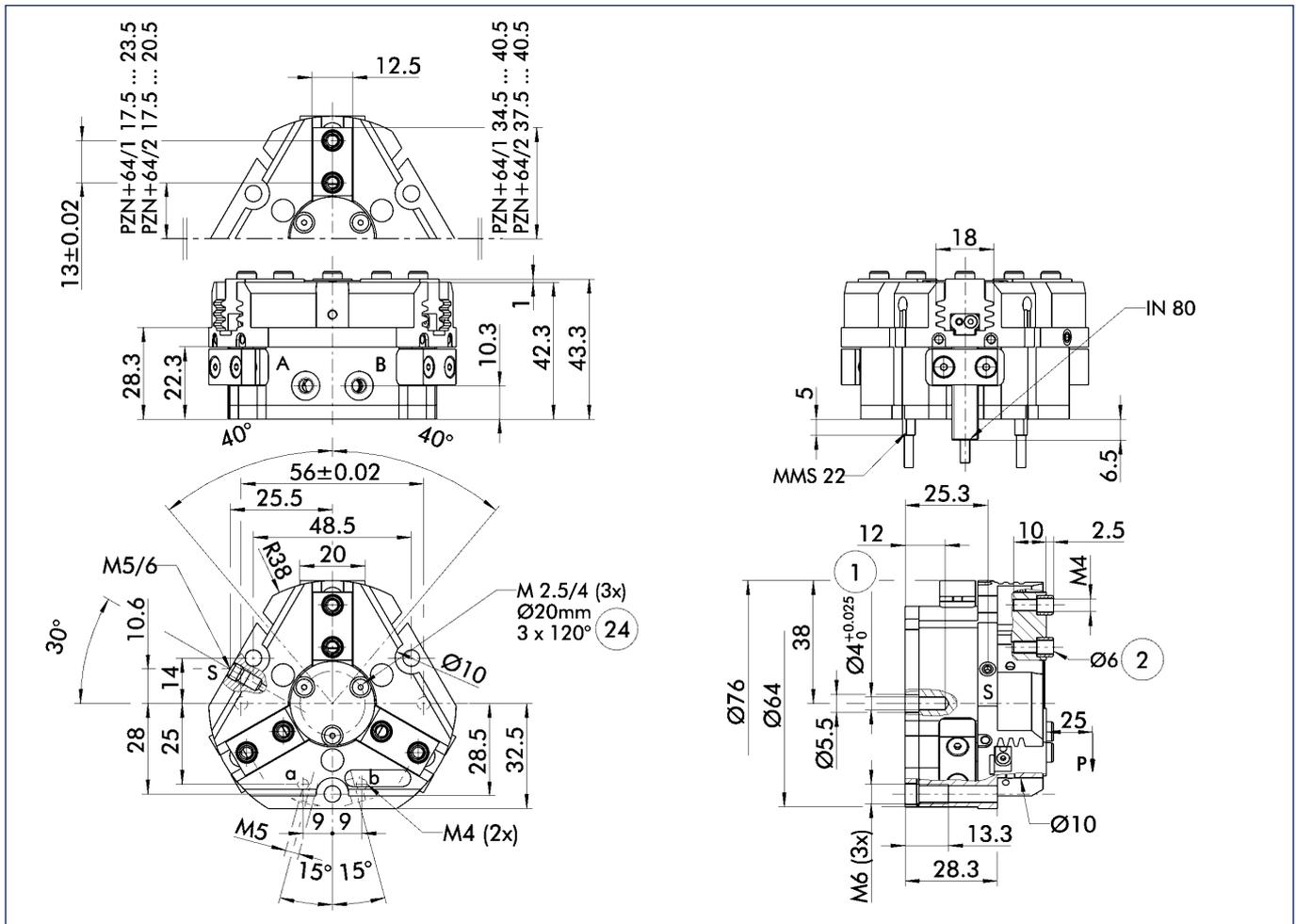
Technical data

Description		PZN-plus 64-1	PZN-plus 64-2	PZN-plus 64-1-AS	PZN-plus 64-2-AS	PZN-plus 64-1-IS	PZN-plus 64-2-IS
	ID	0303310	0303410	0303510	0303610	0303540	0303640
Stroke per jaw	[mm]	6.0	3.0	6.0	3.0	6.0	3.0
Closing force	[N]	580.0	970.0	765.0	1285.0		
Opening force	[N]	640.0	1075.0			860.0	1535.0
Min. spring force	[N]			185.0	315.0	220.0	460.0
Weight	[kg]	0.43	0.43	0.54	0.54	0.54	0.54
Recommended workpiece weight	[kg]	2.9	4.85	2.9	4.85	2.9	4.85
Air consumption per double stroke	[cm ³]	25.0	25.0	25.0	25.0	25.0	25.0
Minimum pressure	[bar]	2.0	2.0	4.0	4.0	4.0	4.0
Maximum pressure	[bar]	8.0	8.0	6.5	6.5	6.5	6.5
Nominal operating pressure	[bar]	6.0	6.0	6.0	6.0	6.0	6.0
Closing time	[s]	0.03	0.03	0.02	0.02	0.04	0.04
Opening time	[s]	0.03	0.03	0.04	0.04	0.02	0.02
Max. permitted finger length	[mm]	90.0	85.0	85.0	80.0	85.0	80.0
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. ambient temperature	[°C]	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
Max. ambient temperature	[°C]	90.0	90.0	90.0	90.0	90.0	90.0
Repeat accuracy	[mm]	0.01	0.01	0.01	0.01	0.01	0.01

OPTIONS and their characteristics

Dust-protection version	ID	37303310	37303410	37303510	37303610	37303540	37303640
IP class		64	64	64	64	64	64
Weight	[kg]	0.6	0.6	0.71	0.71	0.71	0.71
Anti-corrosion version	ID	38303310	38303410	38303510	38303610	38303540	38303640
High-temperature version	ID	39303310	39303410	39303510	39303610	39303540	39303640
Min. ambient temperature	[°C]	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
Max. ambient temperature	[°C]	130.0	130.0	130.0	130.0	130.0	130.0
KVZ for increased grip force	ID	0372201	0372211	0372221		0372241	
Description		PZN-plus 64-1-KVZ	PZN-plus 64-2-KVZ	PZN-plus 64-1-AS-KVZ		PZN-plus 64-1-IS-KVZ	
Closing force	[N]	1045.0	1745.0	1230.0			
Opening force	[N]	1150.0	1935.0			1370.0	
Weight	[kg]	0.7	0.7	0.8		0.8	
Maximum pressure	[bar]	6.0	6.0	6.0		6.0	
Max. permitted finger length	[mm]	80.0	64.0	64.0		64.0	

Main views

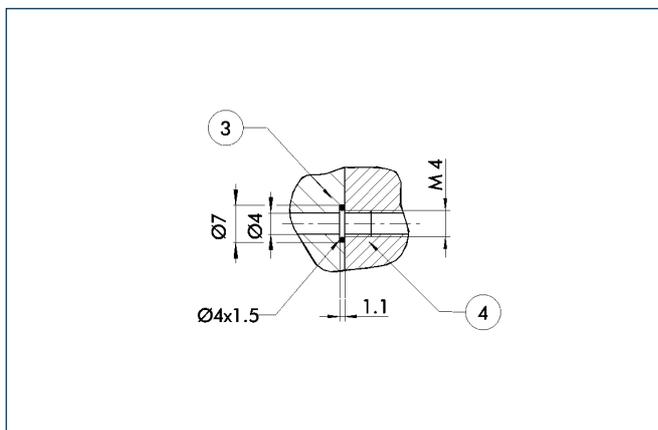


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

① The SDV-P pressure maintenance valve can also be used (see „Accessories“ catalog section) for I.D. or O.D. gripping as an alternative or in addition to the spring-loaded, mechanical gripping force safety device.

- A,a Main/direct connection, gripper opening
- B,b Main/direct connection, gripper closing
- S,s Air purge or ventilation hole
- ① Gripper connection
- ② Finger connection
- ②④ Bolt circle

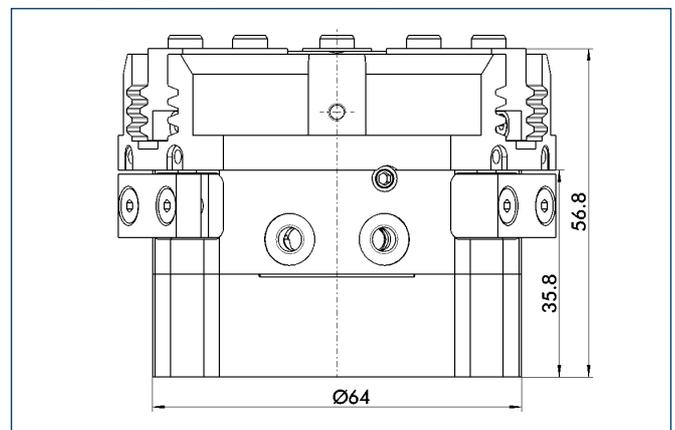
Hose-free direct connection



- ③ Adapter
- ④ Gripper

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

AS/IS gripping force safety device

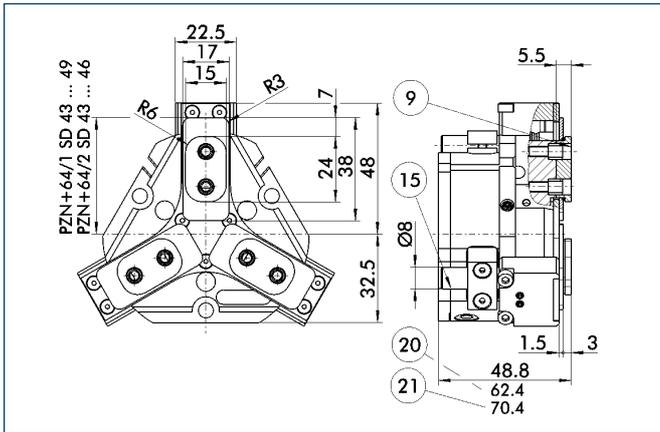


The mechanical gripping force safety device ensures a minimum gripping force even if there is a drop in pressure. This acts as closing force in the AS version, and as opening force in the IS version. In addition, the gripping force safety device can also be employed as a gripping force booster or for single-acting gripping.

PZN-plus 64

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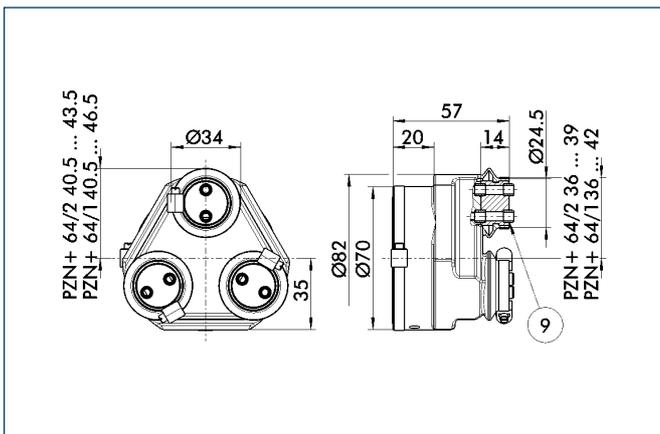
Dust protection



- ⑨ For screw connection diagram, see basic version
- 15 Sealing bolt
- 20 With AS / IS version
- 21 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.

HUE protective cover

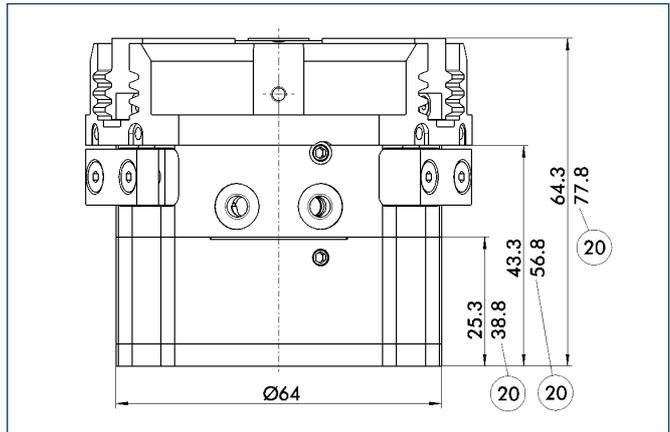


- ⑨ For screw connection diagram, see basic version

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	ISO-Classification 14644-1
HUE PZN-plus 64	0303480	2

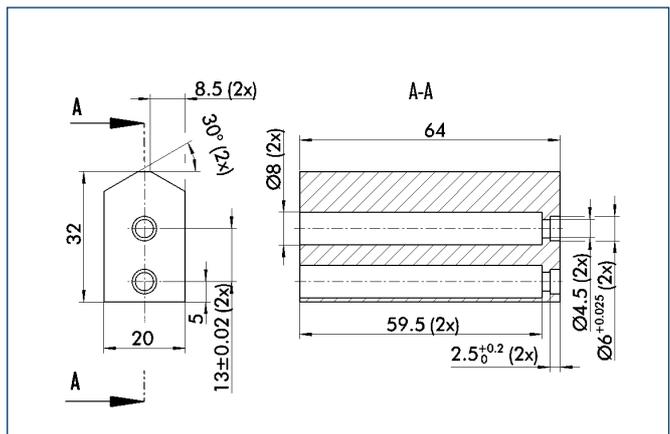
KVZ for increased grip force



- 20 With 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 safety device (AS / IS) are higher

Finger blanks



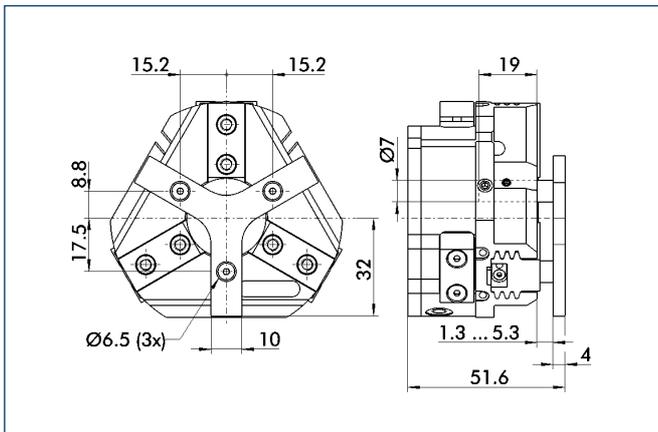
Finger blanks for customized subsequent machining

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



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

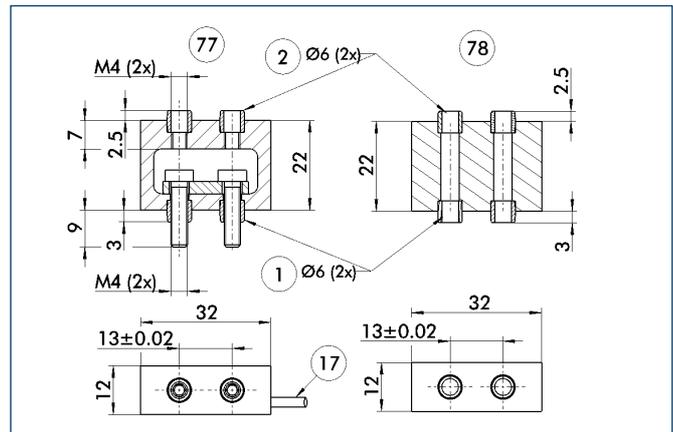
Spring-loaded pressure piece



For spring-assisted positioning of the workpiece against a stop after the gripper has opened. Especially developed for loading machines.

Description	Stroke	Min. total force	ID
A-PZN-plus/DPZ-plus 64	4 mm	11 N	0303720

FMS force measuring jaws

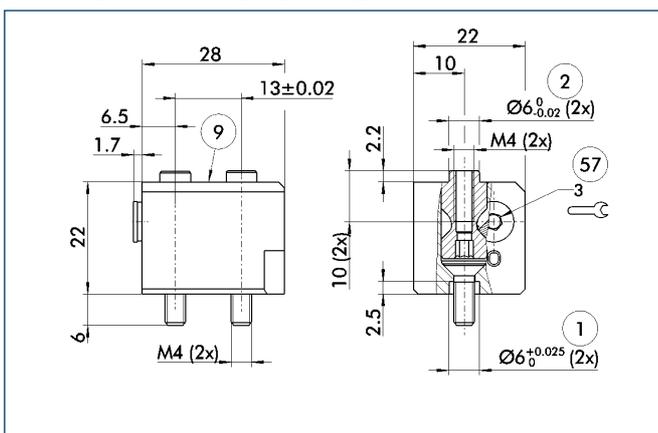


- ① Gripper connection
- ② Finger connection
- ⑰ Cable outlet
- ⑦⑦ Active intermediate jaws
- ⑦⑧ Passiv intermediate jaws

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, an FMS-A1 control unit and an FMS-A connection cable are required.

Description	ID
FMS-A1	0301810
FMS-AK0200	0301820
FMS-AK0500	0301821
FMS-AK1000	0301822
FMS-AK2000	0301823
FMS-ZBA 64	0301832
FMS-ZBP 64	0301833

BSWS quick-change jaw system



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

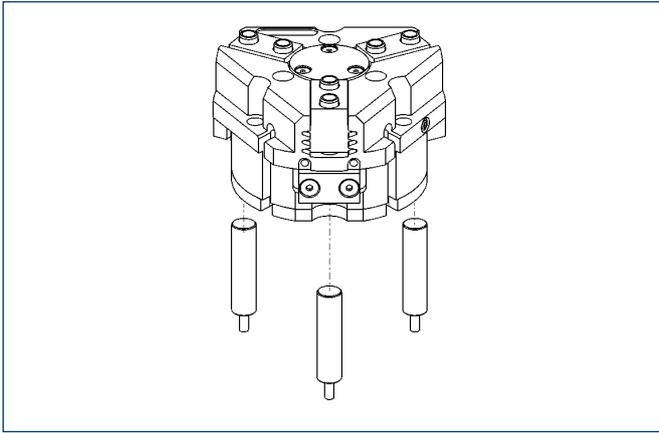
The BSWS quick-change jaw system enables top jaws to be changed on the gripper manually and rapidly. An adapter (BSWS-A) and a base (BSWS-B) are required for each gripper jaw.

Description	ID
BSWS-A 64	0303022
BSWS-B 64	0303023



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

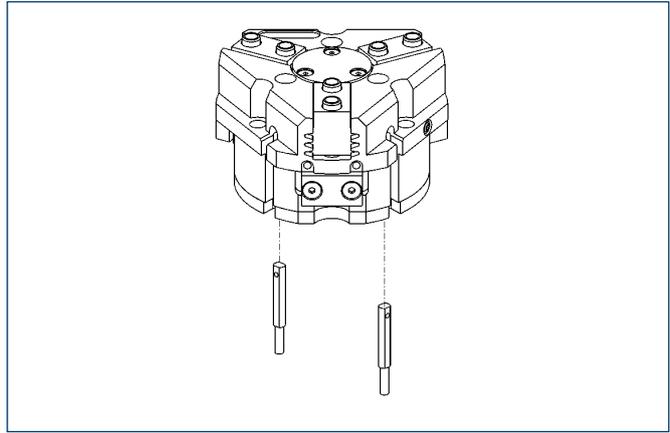
Sensor system



End position monitoring:
Inductive proximity switches, for direct mounting

Description	ID	Recommended product
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	•
IN-C 80-S-M8	0301475	
INK 80-S	0301550	

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



End position monitoring:
Electronic magnetic switches, for mounting in C-slot

Description	ID	Recommended product
MMS 22-S-M5-NPN	0301439	
MMS 22-S-M5-NPN-SA	0301449	
MMS 22-S-M5-PNP	0301438	
MMS 22-S-M5-PNP-SA	0301448	
MMS 22-S-M8-NPN	0301433	
MMS 22-S-M8-NPN-SA	0301443	
MMS 22-S-M8-PNP	0301432	•
MMS 22-S-M8-PNP-SA	0301442	
MMSK 22-S-NPN	0301435	
MMSK 22-S-NPN-SA	0301445	
MMSK 22-S-PNP	0301434	
MMSK 22-S-PNP-SA	0301444	

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

Extension cables for proximity switches/magnetic switches

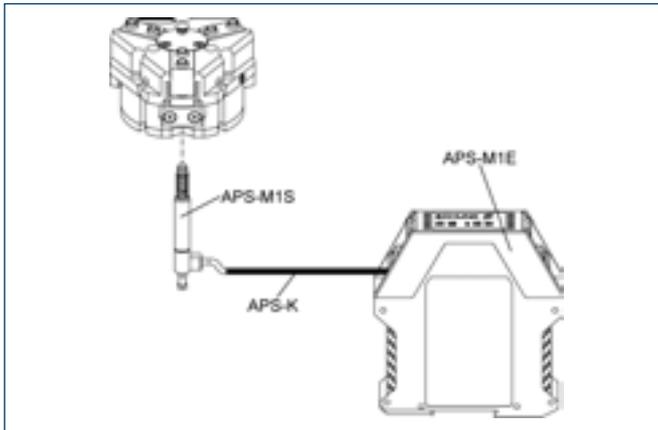
Description	ID
KA BG05-L 3P-0300	0301652
KA BG08-L 3P-0300-PNP	0301622
KA BW05-L 3P-0300	0301650
KA BW08-L 3P-0300-NPN	0301602
KA BW08-L 3P-0300-PNP	0301594
KA BW08-L 3P-0500-NPN	9641116
KA BW08-L 3P-0500-PNP	0301502
KA BW12-L 3P-0300-PNP	0301503
KA BW12-L 3P-0500-PNP	0301507
KV BW08-SG08 3P-0030-PNP	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

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.

Sensor system

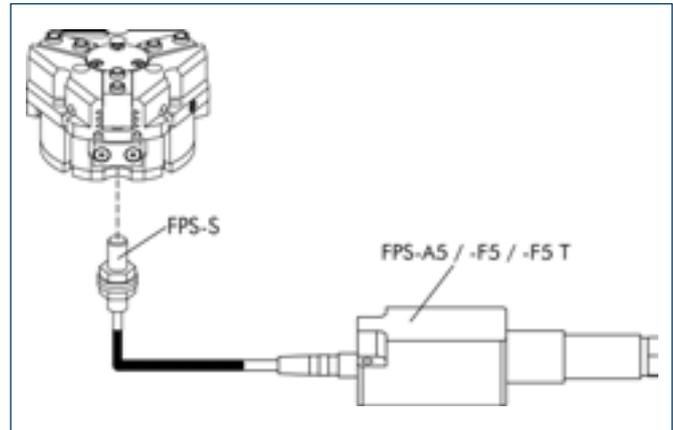


Measuring system:

APS Analog position sensor

Description	ID
APS-K0200	0302066
APS-K0700	0302068
APS-M1E	0302064
APS-M1S	0302062
AS-APS-M1-64/1	0302075
AS-APS-M1-64/2	0302076

- ① When using an APS system, a mounting kit (AS-APS, incl. 3 m cable), an APS sensor (APS-M1S) and electronics (APS-M1E) are required for each gripper. 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.



Measuring system:

FPS Flexible position sensor

Description	ID
AS-PGN/PZN-plus 64/1, PGN/PZN-plus 80/2	0301630
FPS-F5	0301805
FPS-F5 T	0301807
FPS-S M8	0301704

- ① When using an FPS system, an 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.