Pneumatic Gripping Modules

Pneumatic • 3-Finger Centric Gripper

3-FINGER CENTRIC GRIPPER

MPZ

Pneumatic • 3-Finger Centric Gripper • Gripper for small components

Sizes
16 ... 45

Weight
0.01 kg ... 0.29 kg

Gripping force
20 N ... 310 N

Stroke per finger
1 mm ... 5 mm

Workpiece weight
0.05 kg ... 1.15 kg

Application example

Handling device for direct mounting to a robot for screwing in sealing plugs

1. 3-Finger Centric Gripper MPZ
2. Rotary feed-through DDF

Gripper for small components

small 3-Finger Centric Gripper with base jaws guided on T-slots

Field of application

for universal use in clean to slightly dirty working environments, especially suitable for gripping small workpieces

Your advantages and benefits

T-slot guidance
for precise gripping at high moment loads

Finger position monitoring
also possible via FPS

Air supply via hose-free direct connection or screw connections
for the flexible supply of compressed air in all automation systems

General note to the series

Principle of function
Wedge-hook kinematics

Housing material
Aluminum alloy, hard-anodized

Base jaw material
Steel

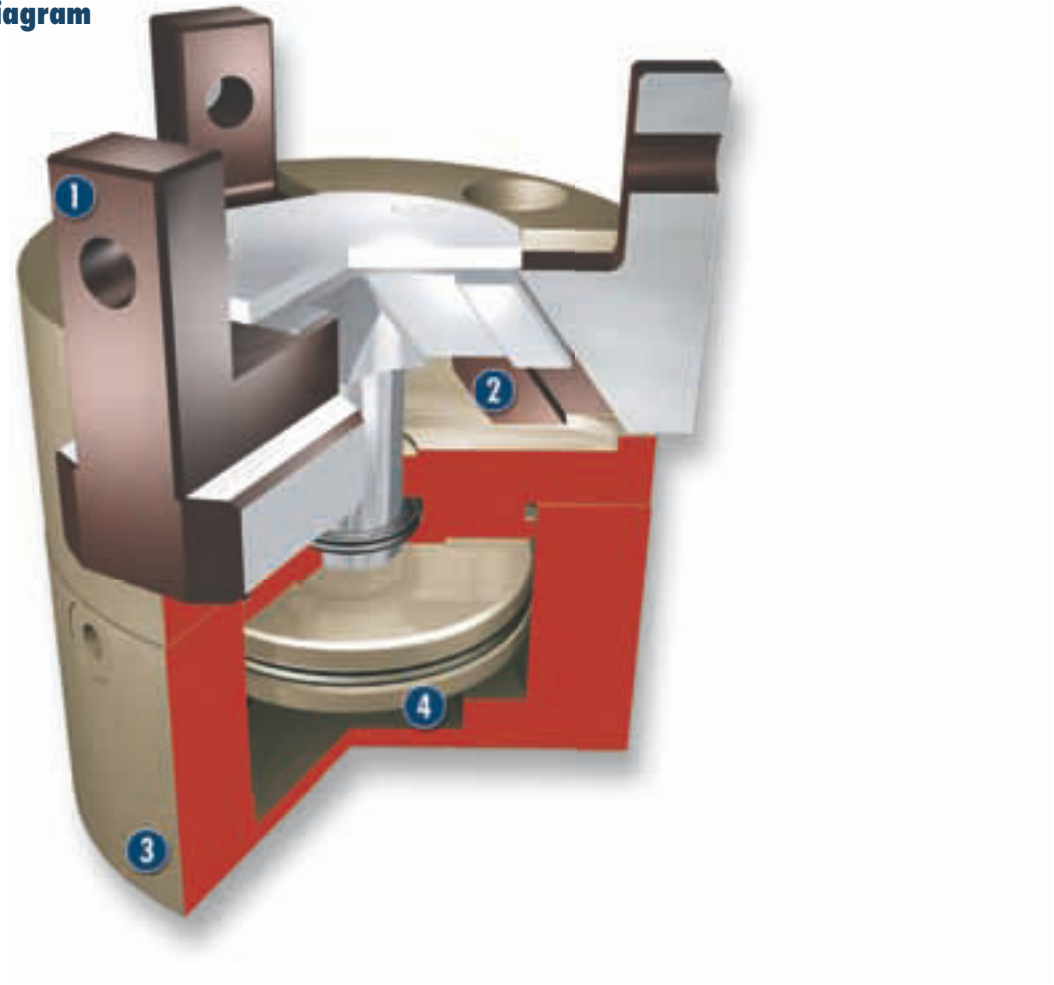
Actuation
pneumatic, with filtered compressed air (10 microns): dry, lubricated or non-lubricated
Pressure medium: Required quality class of compressed air according to DIN ISO 8573-1: 6 4 4

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

Scope of delivery
Centering sleeves, centering pins, 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 **T-slot guidance**
for precise gripping with high moment loads

2 **Wedge-hook design**
for high power transmission and centric gripping

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

4 **Drive**
pneumatic, powerful and easy to handle

Functional description

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

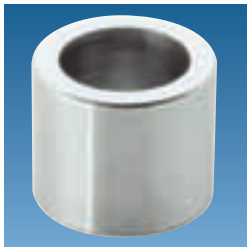
Options and special information

Small and compact 3-Finger Centric Gripper for fast gripping applications. Monitoring of the smallest differences in stroke possible via FPS system.

Accessories

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

Centering sleeves

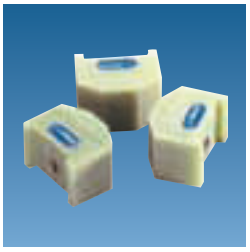


Fittings

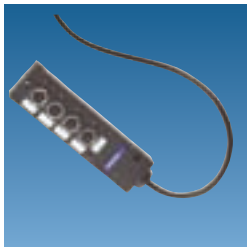
Magnetic Switches

Sensor cables

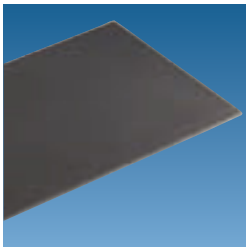
Plastic inserts



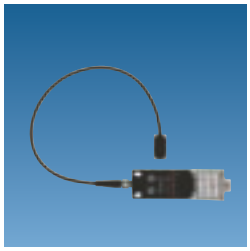
Sensor Distributor



Gripper pads



Flexible Position Sensor



Pressure maintenance valve

Finger blanks

ⓘ 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

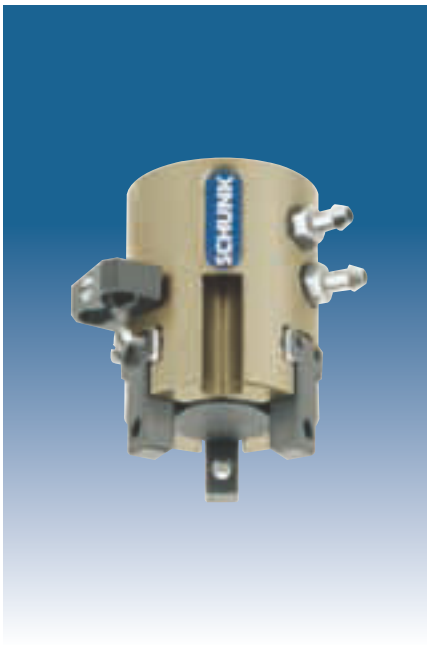
The recommended workpiece weight is calculated for a force-type connection with a coefficient of friction of 0.1 and a safety factor of 2 against slippage of the workpiece on acceleration due to gravity g. Considerably heavier workpiece weights are permitted with form-fit gripping.

Closing and opening times

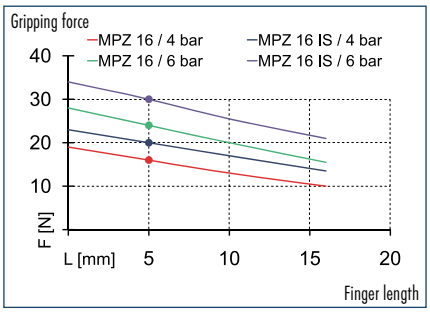
Closing and opening times are purely the times that the base jaws or fingers are in motion. Valve switching times, hose filling times or PLC reaction times are not included in the above times and must be taken into consideration when determining cycle times.

MPZ 16

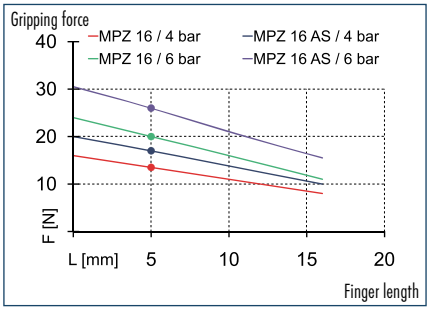
Pneumatic • 3-Finger Centric Gripper • Gripper for small components



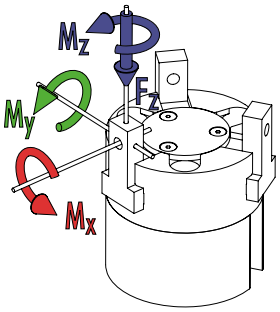
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load



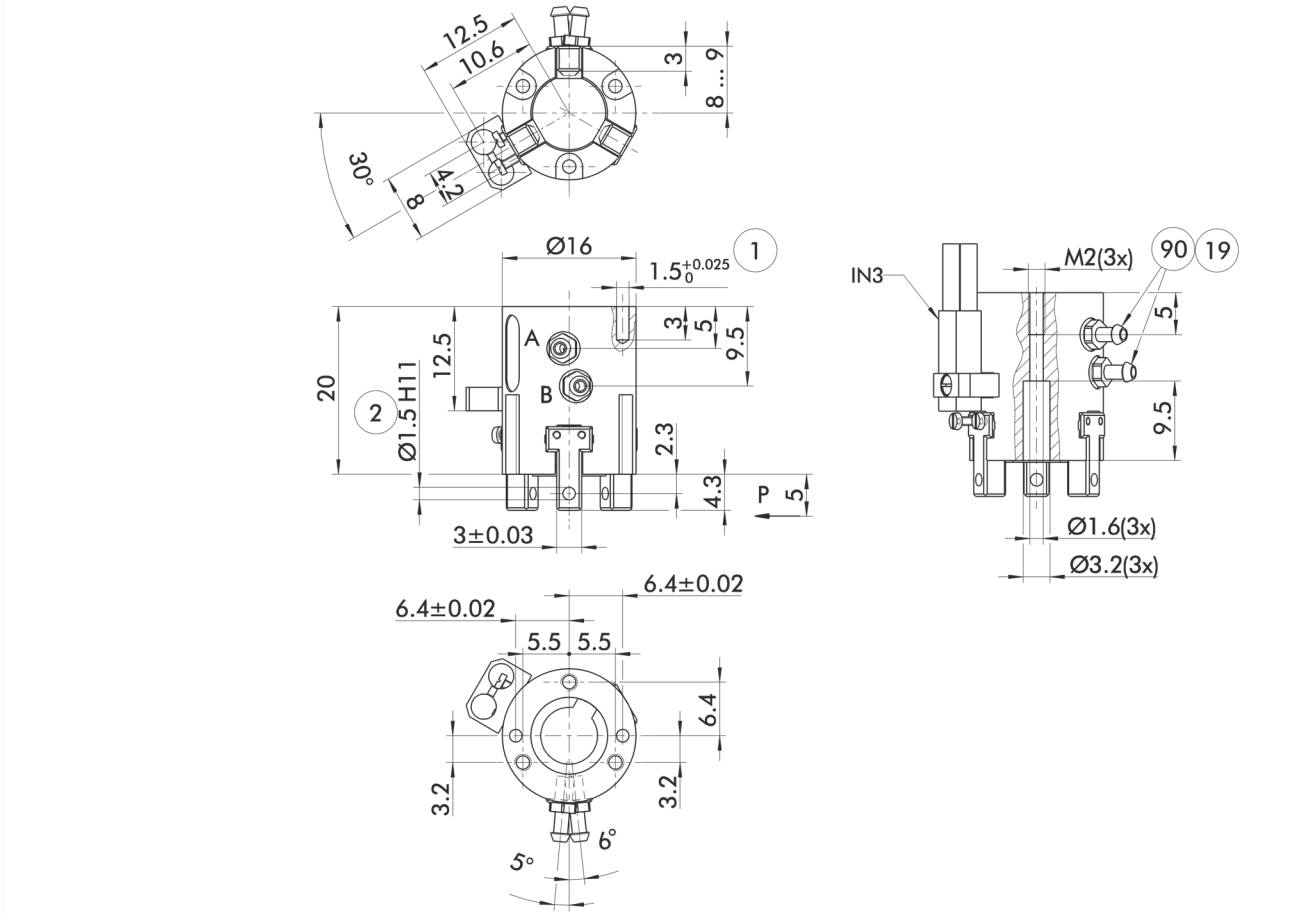
- M_x max. 0.50 Nm
- M_y max. 0.80 Nm
- M_z max. 0.90 Nm
- F_z max. 50.0 N

ⓘ 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		MPZ 16	MPZ 16-AS	MPZ 16-IS
ID		**0340480**	**0340481**	**0340482**
Stroke per finger	[mm]	1	1	1
Closing force	[N]	20	26	
Opening force	[N]	24		30
Min. spring force	[N]		6	6
Weight	[kg]	0.01	0.02	0.02
Recommended workpiece weight	[kg]	0.05	0.05	0.05
Air consumption per double stroke	[cm³]	0.15	0.4	0.4
Min./max. operating pressure	[bar]	2/8	4/6.5	4/6.5
Nominal operating pressure	[bar]	6	6	6
Closing/opening time	[s]	0.02/0.02	0.02/0.04	0.04/0.02
Max. permitted finger length	[mm]	16	16	16
Max. permitted weight per finger	[kg]	0.02	0.02	0.02
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

Main view

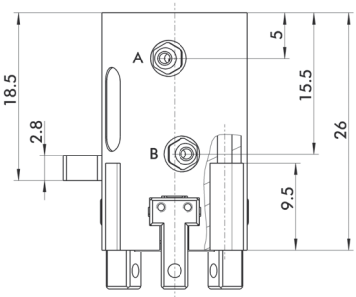


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ 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).

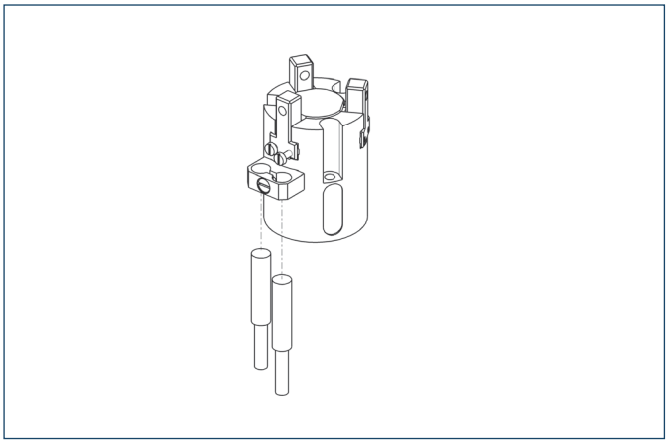
A, a Main/direct connection, gripper opening
B, b Main/direct connection, gripper closing
① Gripper connection
② Finger connection
⑲ Air connection
⑨⓪ Polyurethane hoses with an I.D. of 1.6 mm. Source: AC Aircontrols GmbH, Kempen, Germany

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.

Inductive proximity switches



End position monitoring for direct mounting

Description	ID
Inductive proximity switches	
IN 3-S-M8-PNP	**0301466**
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**
Cable extensions	
KV BW08-SG08 3P-0030-PNP	**0301495**
KV BW08-SG08 3P-0100-PNP	**0301496**
KV BW08-SG08 3P-0200-PNP	**0301497**

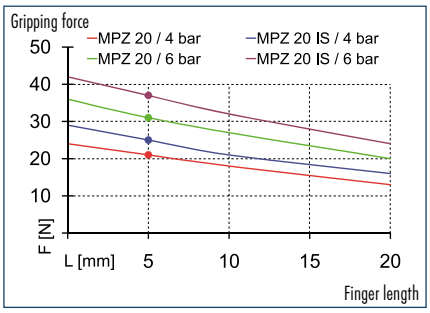
ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

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

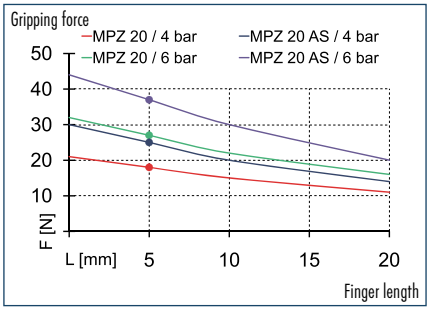
MPZ 20

Pneumatic • 3-Finger Centric Gripper • Gripper for small components

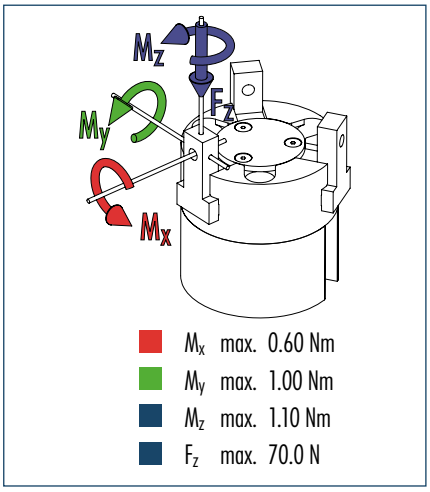
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

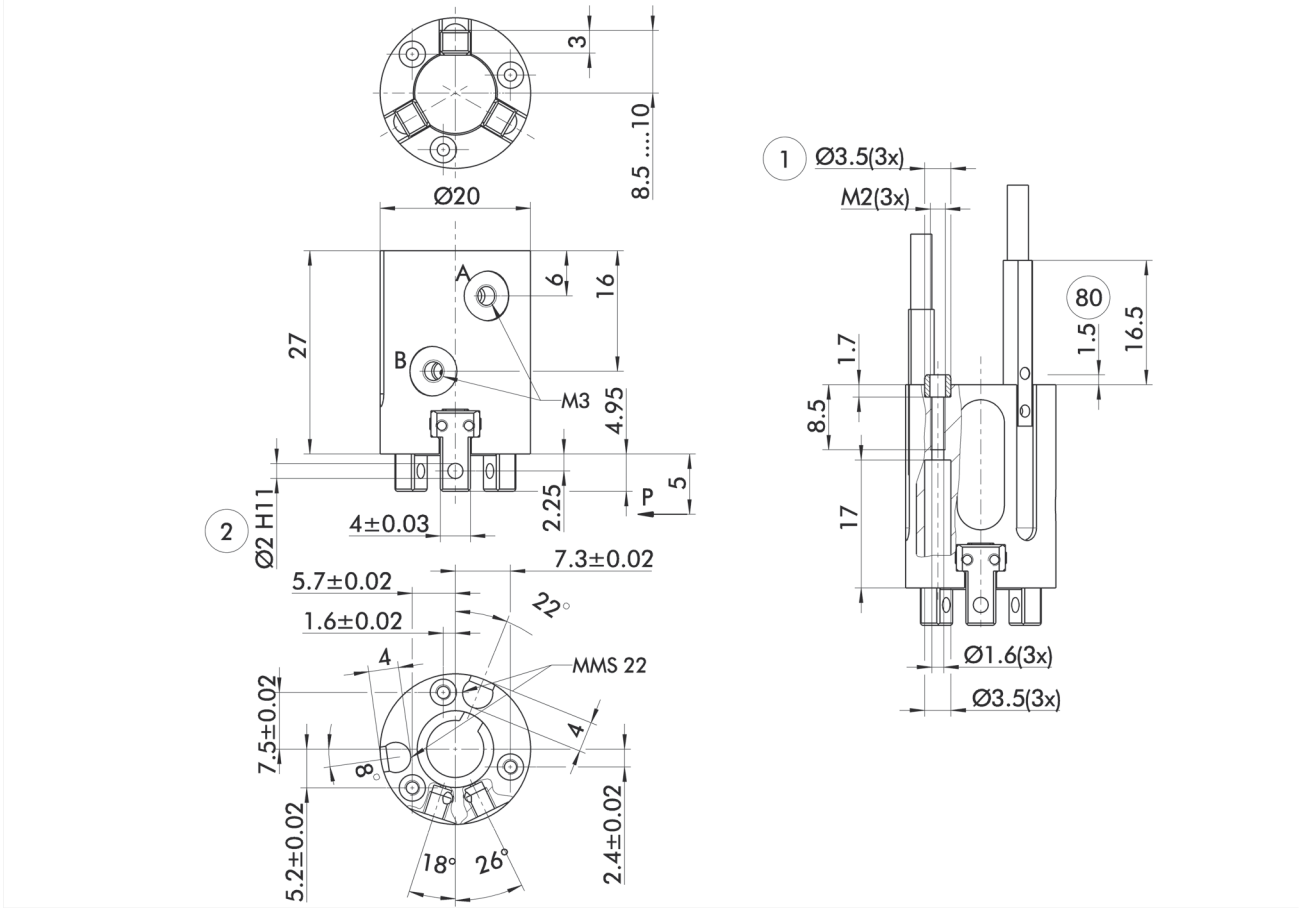


ⓘ The indicated moments and forces are static values, apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement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

Technical data

Description		MPZ 20	MPZ 20-AS	MPZ 20-IS
ID		**0340490**	**0340491**	**0340492**
Stroke per finger	[mm]	1.5	1.5	1.5
Closing force	[N]	26	34	
Opening force	[N]	30		38
Min. spring force	[N]		8	8
Weight	[kg]	0.02	0.03	0.03
Recommended workpiece weight	[kg]	0.1	0.1	0.1
Air consumption per double stroke	[cm³]	0.3	0.7	0.7
Min./max. operating pressure	[bar]	2/8	4/6.5	4/6.5
Nominal operating pressure	[bar]	6	6	6
Closing/opening time	[s]	0.02/0.02	0.02/0.04	0.04/0.02
Max. permitted finger length	[mm]	20	20	20
Max. permitted weight per finger	[kg]	0.03	0.03	0.03
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

Main view

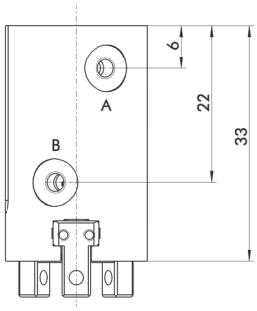


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ 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).

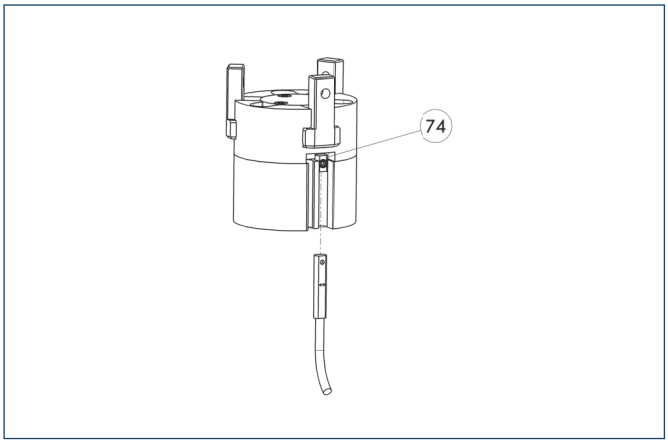
A, a Main/direct connection, gripper opening
B, b Main/direct connection, gripper closing
① Gripper connection
② Finger connection
(80) Depth of the centering sleeve hole in the matching part

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.

Programmable magnetic switch



(74) Stop for MMS-P

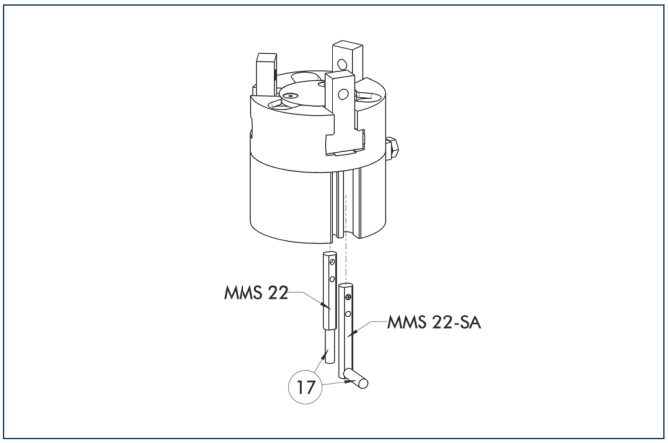
Position monitoring with two programmable positions per sensor. The end position monitoring is mounted in the C-slot.

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**	
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**	

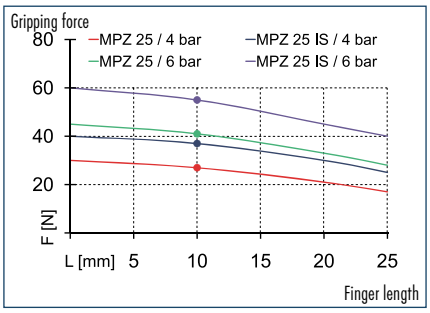
ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

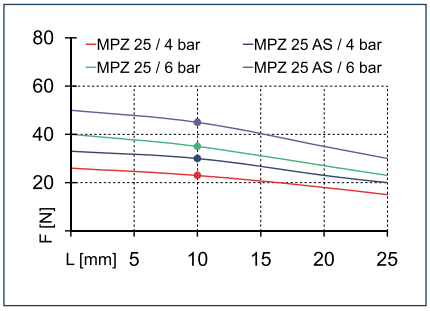
You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

MPZ 25

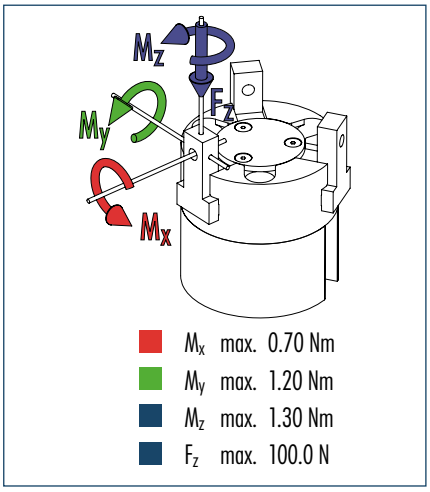
Pneumatic • 3-Finger Centric Gripper • Gripper for small components

Gripping force, O.D. gripping





Finger load

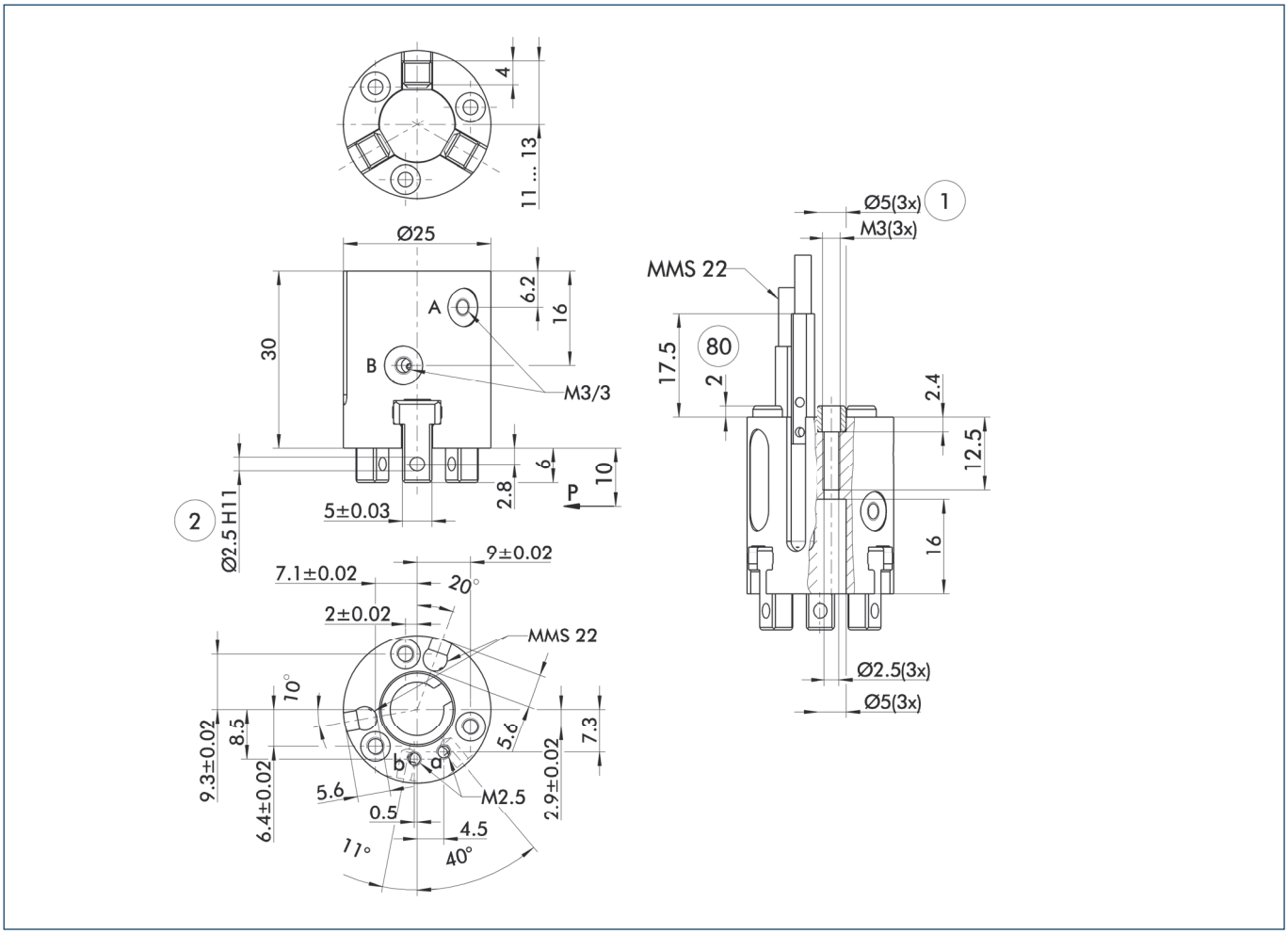


ⓘ The indicated moments and forces are static values, apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement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

Technical data

Description		MPZ 25	MPZ 25-AS	MPZ 25-IS
ID		**0340500**	**0340501**	**0340502**
Stroke per finger	[mm]	2	2	2
Closing force	[N]	35	47	
Opening force	[N]	40		55
Min. spring force	[N]		12	15
Weight	[kg]	0.04	0.06	0.06
Recommended workpiece weight	[kg]	0.2	0.2	0.2
Air consumption per double stroke	[cm³]	0.6	1.8	1.8
Min./max. operating pressure	[bar]	2/8	4/6.5	4/6.5
Nominal operating pressure	[bar]	6	6	6
Closing/opening time	[s]	0.02/0.02	0.02/0.04	0.04/0.02
Max. permitted finger length	[mm]	25	25	25
Max. permitted weight per finger	[kg]	0.03	0.03	0.03
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

Main view

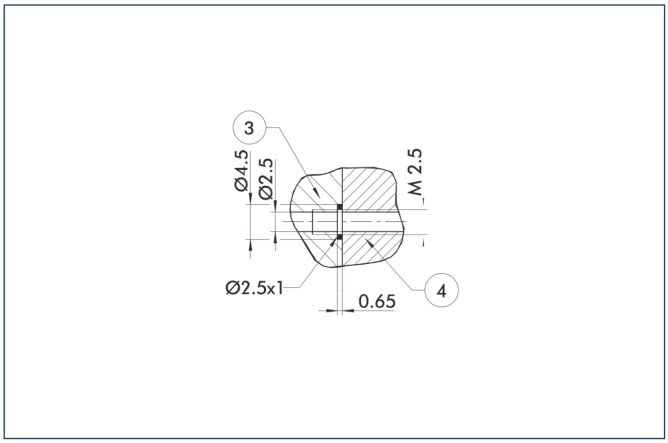


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ 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
① Gripper connection
② Finger connection
(80) Depth of the centering sleeve hole in the matching part

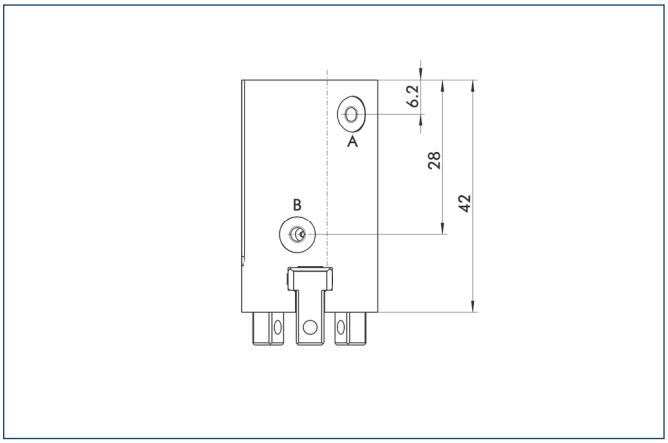
Hose-free direct connection



③ Adapter
④ Gripper

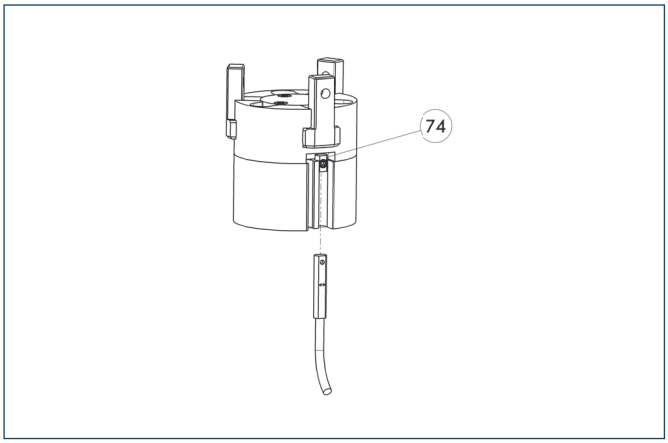
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

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.

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.

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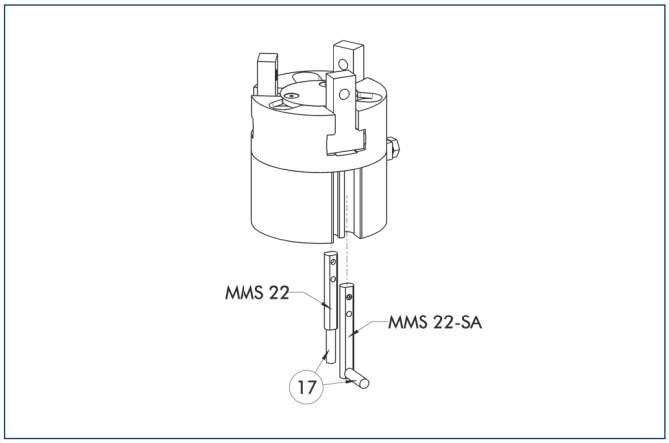
KA BG08-L 4P-1000	**0307768**	
KA BW08-L 4P-0500	**0307765**	
KA BW08-L 4P-1000	**0307766**	
Sensor Distributor		
V2-M8-4P-2XM8-3P	**0301380**	

ⓘ 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**	
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**	

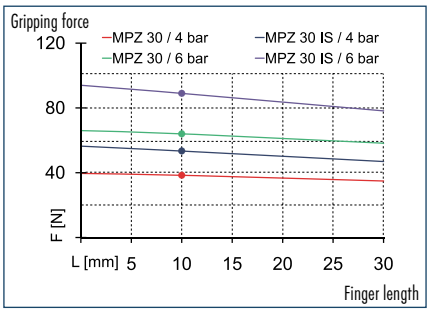
ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

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

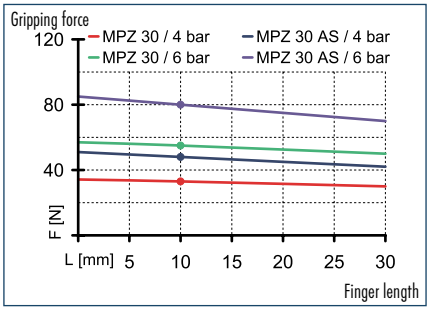
MPZ 30

Pneumatic • 3-Finger Centric Gripper • Gripper for small components

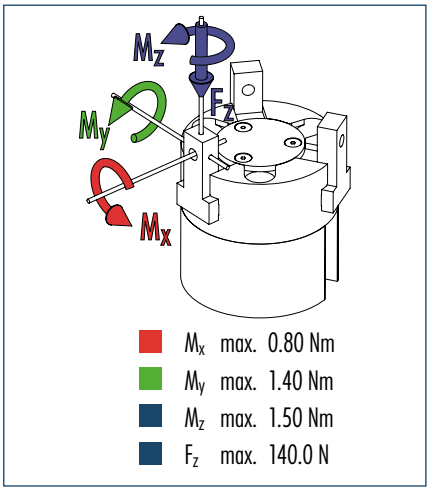
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

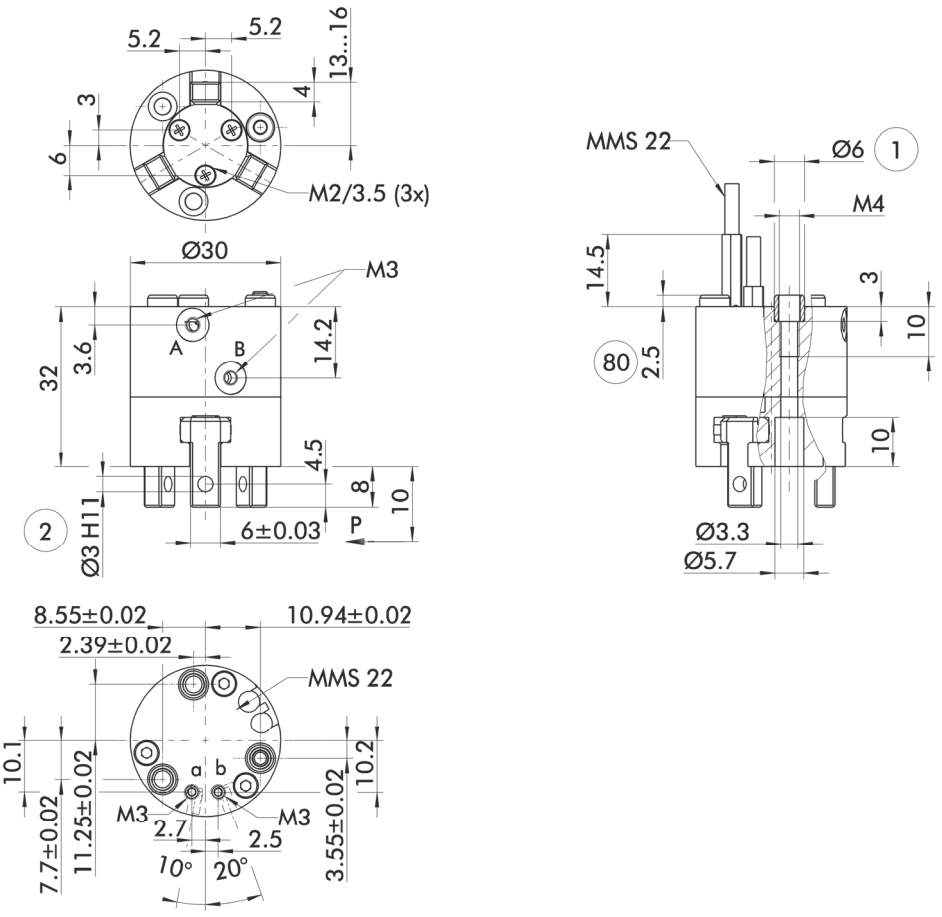


ⓘ The indicated moments and forces are static values, apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement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

Technical data

Description		MPZ 30	MPZ 30 FPS	MPZ 30-AS	MPZ 30-IS
ID		**0340510**	**0340513**	**0340511**	**0340512**
Stroke per finger	[mm]	3	3	3	3
Closing force	[N]	55	55	80	
Opening force	[N]	65	65		90
Min. spring force	[N]			25	25
Weight	[kg]	0.08	0.1	0.09	0.09
Recommended workpiece weight	[kg]	0.28	0.28	0.28	0.28
Air consumption per double stroke	[cm³]	2.01	2.01	2.01	2.01
Min./max. operating pressure	[bar]	2/8	2/8	4/6.5	4/6.5
Nominal operating pressure	[bar]	6	6	6	6
Closing/opening time	[s]	0.02/0.02	0.02/0.02	0.02/0.04	0.04/0.02
Max. permitted finger length	[mm]	30	30	30	30
Max. permitted weight per finger	[kg]	0.03	0.03	0.03	0.03
IP class		40	40	40	40
Min./max. ambient temperature	[°C]	-10/90	-10/90	-10/90	-10/90
Repeat accuracy	[mm]	0.01	0.01	0.01	0.01
Cleanroom class ISO-classification 14644-1		5	5	5	5

Main view

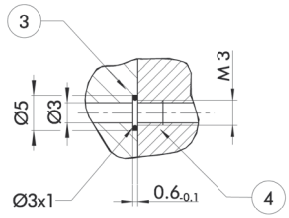


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ 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
1 Gripper connection
2 Finger connection
80 Depth of the centering sleeve hole in the matching part

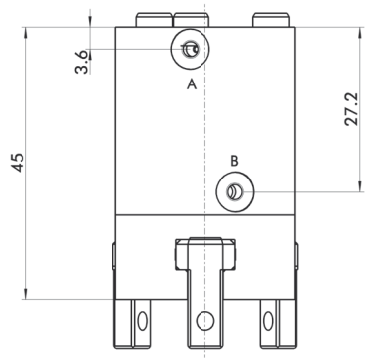
Hose-free direct connection



3 Adapter
4 Gripper

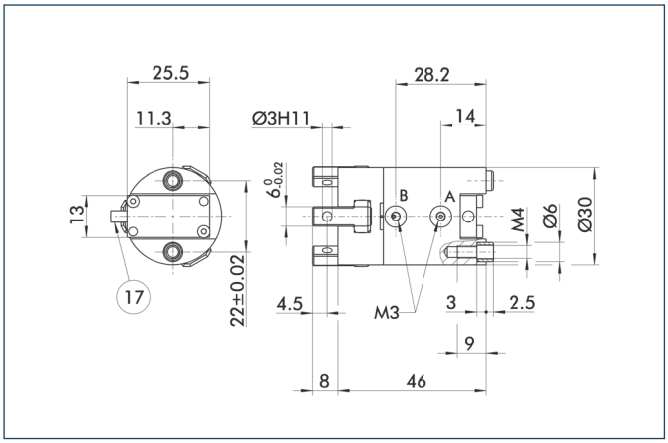
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

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.

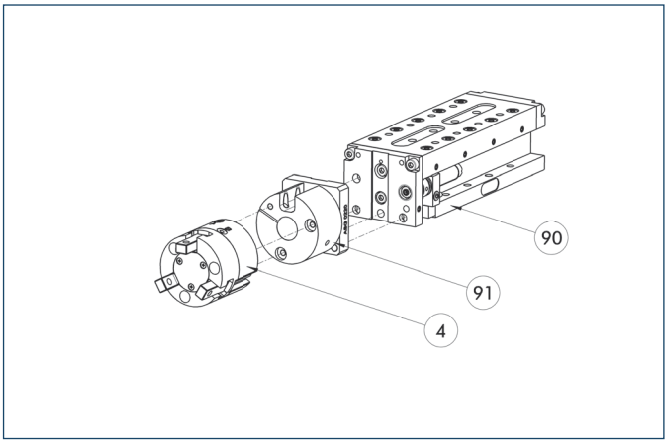
Flexible Position Sensor



⑰ Cable outlet

The FPS flexible position sensor can distinguish between five freely programmable ranges or switching points for the stroke of a gripper and can be used in conjunction with a PC as a measuring system.

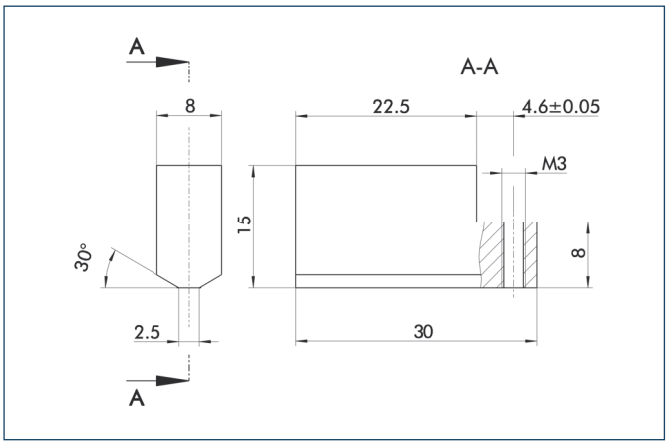
Modular Assembly Automation



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".

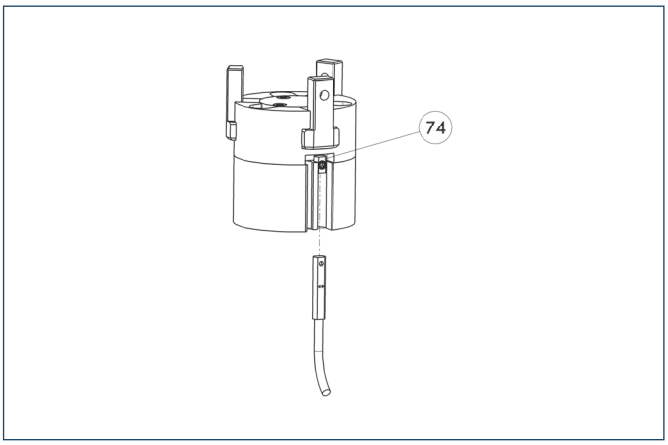
Finger blanks



Finger blanks for customized subsequent machining

Description	ID	Material	Scope of delivery
Finger blanks			
ABR 30	**0340519**	Aluminum	3

Programmable magnetic switch



⑦④ Stop for MMS-P

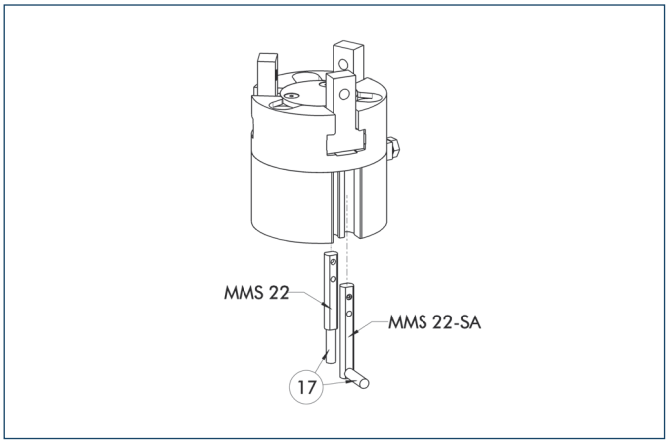
Position monitoring with two programmable positions per sensor. The end position monitoring is mounted in the C-slot.

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



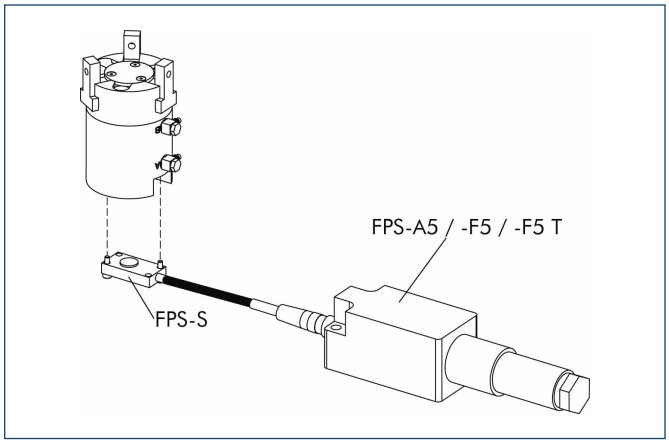
⑰ Cable outlet

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**	

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

Flexible Position Sensor



Flexible position monitoring of up to five positions

Description	ID
Electronic Processor	
FPS-F5	**0301805**
FPS-F5 T	**0301807**
Sensor	
FPS-S 13	**0301705**

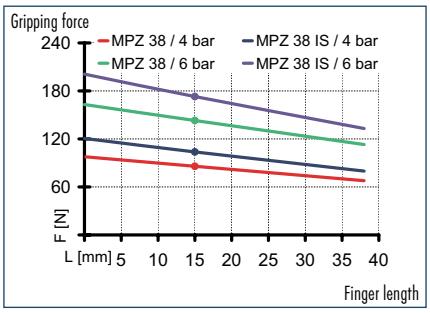
ⓘ When using a FPS system, a FPS sensor (FPS-S) and a control unit (FPS-F5 / F5 T or A5) are required for each gripper as well as a mounting kit (AS), if listed. Cable extensions (KV) are available as options in the “Accessories” catalog section.

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

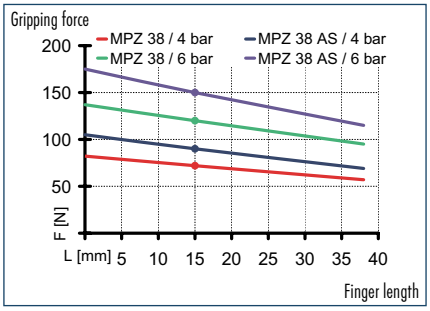
MPZ 38

Pneumatic • 3-Finger Centric Gripper • Gripper for small components

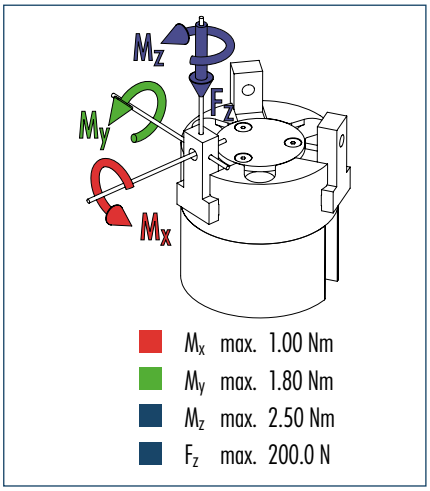
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

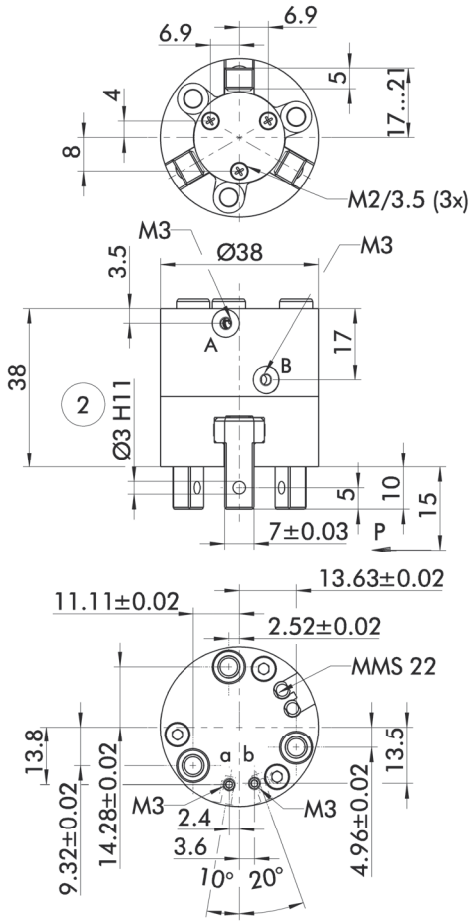


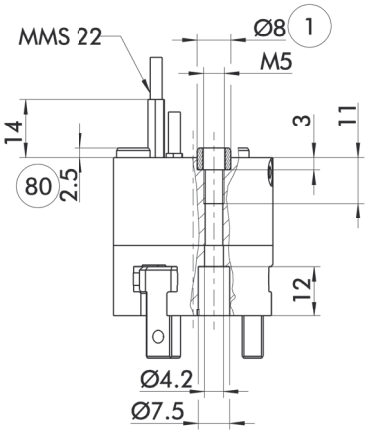
ⓘ The indicated moments and forces are static values, apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement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

Technical data

Description		MPZ 38	MPZ 38 FPS	MPZ 38-AS	MPZ 38-IS
ID		**0340520**	**0340523**	**0340521**	**0340522**
Stroke per finger	[mm]	4	4	4	4
Closing force	[N]	120	120	150	
Opening force	[N]	140	140		180
Min. spring force	[N]			30	40
Weight	[kg]	0.14	0.19	0.19	0.19
Recommended workpiece weight	[kg]	0.6	0.6	0.6	0.6
Air consumption per double stroke	[cm³]	4.08	4.08	4.08	4.08
Min./max. operating pressure	[bar]	2/8	2/8	4/6.5	4/6.5
Nominal operating pressure	[bar]	6	6	6	6
Closing/opening time	[s]	0.02/0.02	0.02/0.02	0.02/0.04	0.04/0.02
Max. permitted finger length	[mm]	38	38	38	38
Max. permitted weight per finger	[kg]	0.05	0.05	0.05	0.05
IP class		40	40	40	40
Min./max. ambient temperature	[°C]	-10/90	-10/90	-10/90	-10/90
Repeat accuracy	[mm]	0.01	0.01	0.01	0.01
Cleanroom class ISO-classification 14644-1		5	5	5	5

Main view



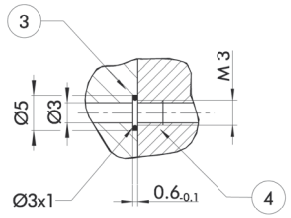


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ 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
① Gripper connection
② Finger connection
(80) Depth of the centering sleeve hole in the matching part

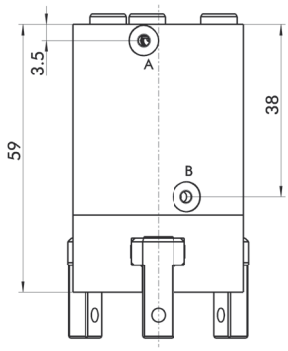
Hose-free direct connection



③ Adapter
④ Gripper

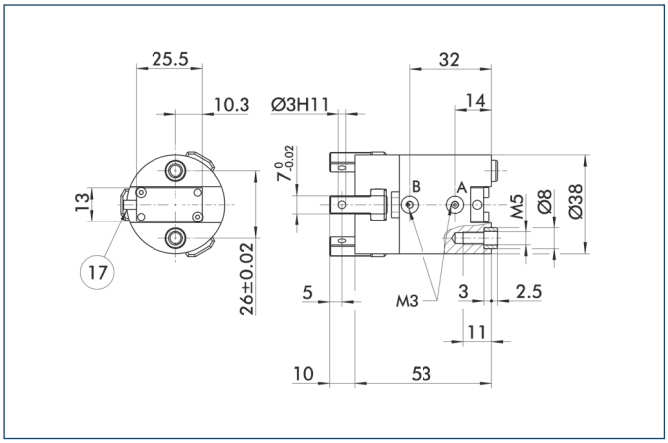
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

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.

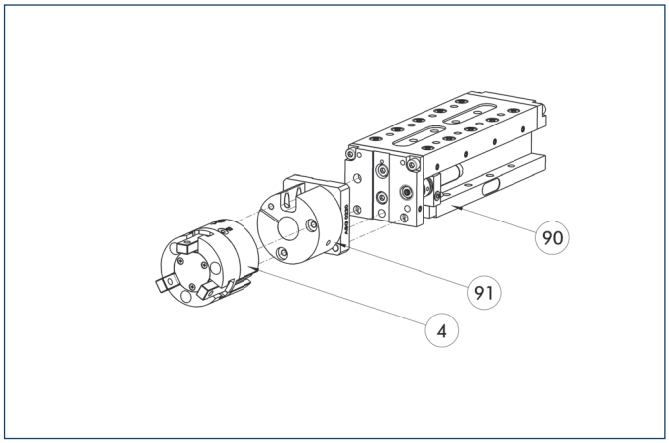
Flexible Position Sensor



⑰ Cable outlet

The FPS flexible position sensor can distinguish between five freely programmable ranges or switching points for the stroke of a gripper and can be used in conjunction with a PC as a measuring system.

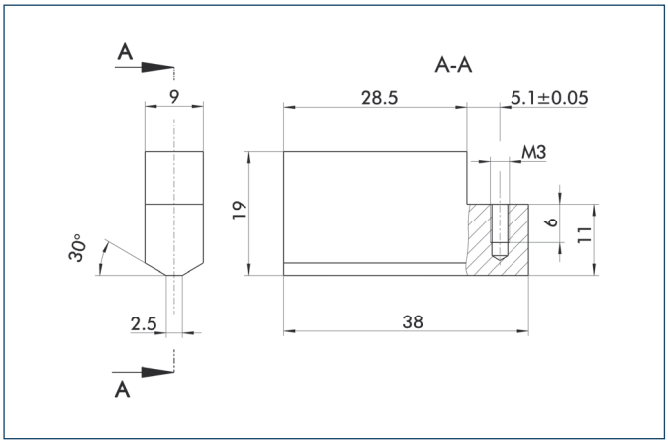
Modular Assembly Automation



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".

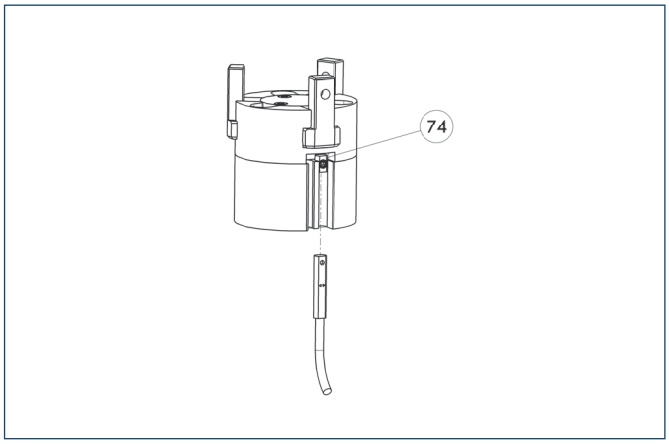
Finger blanks



Finger blanks for customized subsequent machining

Description	ID	Material	Scope of delivery
Finger blanks			
ABR 38	**0340529**	Aluminum	3

Programmable magnetic switch



⑦④ Stop for MMS-P

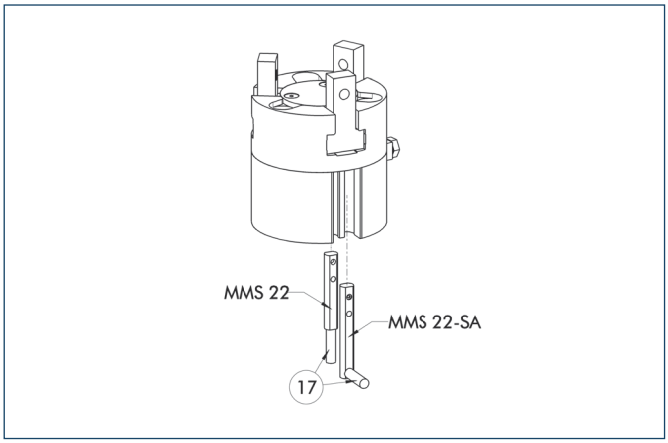
Position monitoring with two programmable positions per sensor. The end position monitoring is mounted in the C-slot.

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



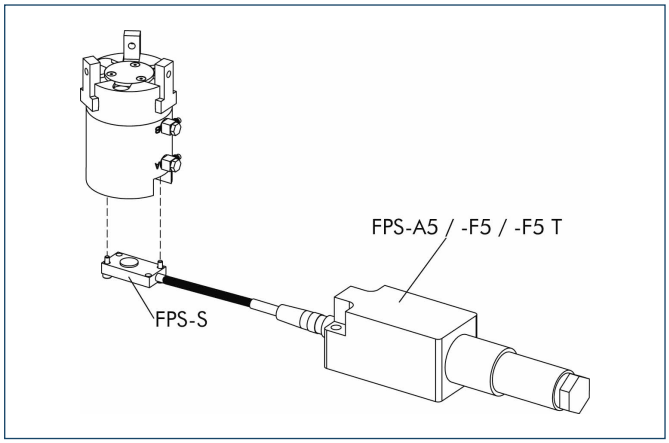
⑰ Cable outlet

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**	

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

Flexible Position Sensor



Flexible position monitoring of up to five positions

Description	ID
Electronic Processor	
FPS-F5	**0301805**
FPS-F5 T	**0301807**
Sensor	
FPS-S 13	**0301705**

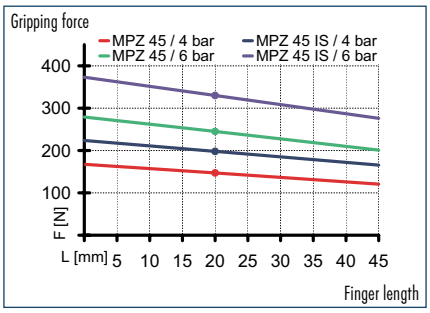
ⓘ When using a FPS system, a FPS sensor (FPS-S) and a control unit (FPS-F5 / F5 T or A5) are required for each gripper as well as a mounting kit (AS), if listed. Cable extensions (KV) are available as options in the “Accessories” catalog section.

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

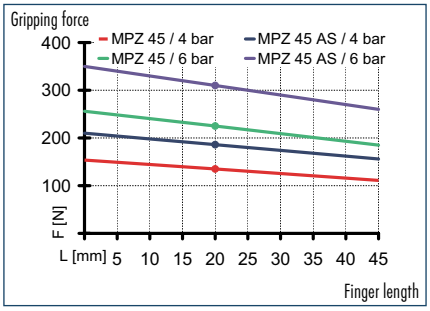
MPZ 45

Pneumatic • 3-Finger Centric Gripper • Gripper for small components

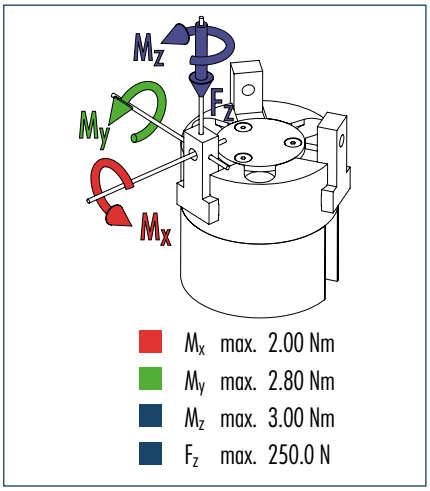
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

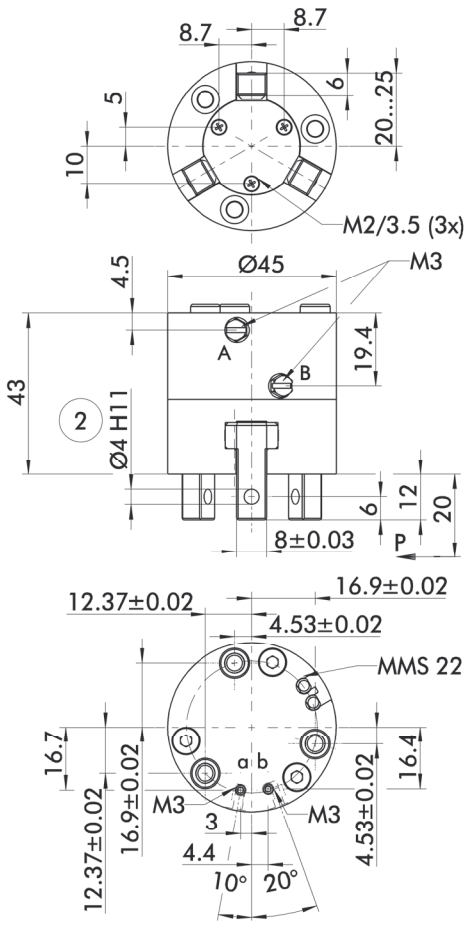


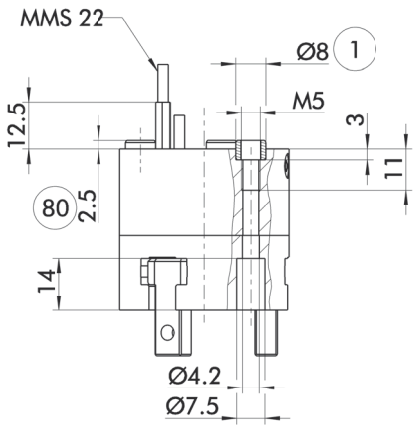
ⓘ The indicated moments and forces are static values, apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement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

Technical data

Description		MPZ 45	MPZ 45 FPS	MPZ 45-AS	MPZ 45-IS
ID		**0340530**	**0340533**	**0340531**	**0340532**
Stroke per finger	[mm]	5	5	5	5
Closing force	[N]	225	225	310	
Opening force	[N]	245	245		340
Min. spring force	[N]			85	95
Weight	[kg]	0.22	0.29	0.28	0.28
Recommended workpiece weight	[kg]	1.15	1.15	1.15	1.15
Air consumption per double stroke	[cm³]	9.85	9.85	9.85	9.85
Min./max. operating pressure	[bar]	2/8	2/8	4/6.5	4/6.5
Nominal operating pressure	[bar]	6	6	6	6
Closing/opening time	[s]	0.05/0.05	0.05/0.05	0.04/0.05	0.05/0.04
Max. permitted finger length	[mm]	45	45	45	45
Max. permitted weight per finger	[kg]	0.08	0.08	0.08	0.08
IP class		40	40	40	40
Min./max. ambient temperature	[°C]	-10/90	-10/90	-10/90	-10/90
Repeat accuracy	[mm]	0.01	0.01	0.01	0.01
Cleanroom class ISO-classification 14644-1		5	5	5	5

Main view



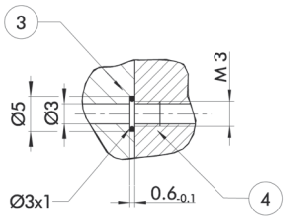


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ 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
① Gripper connection
② Finger connection
(80) Depth of the centering sleeve hole in the matching part

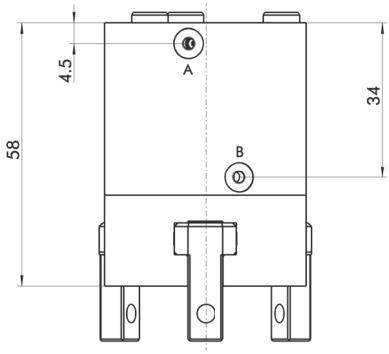
Hose-free direct connection



③ Adapter
④ Gripper

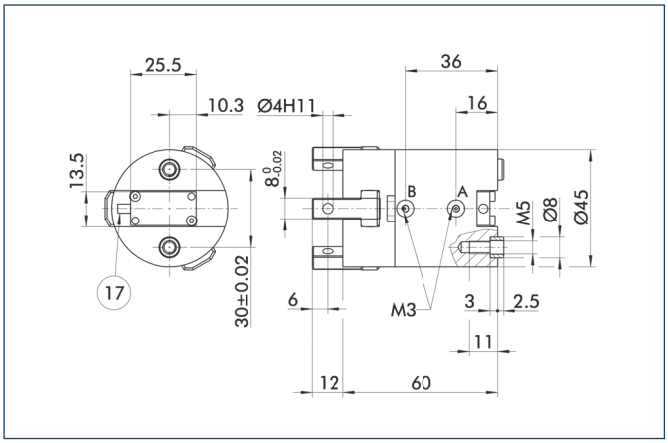
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

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.

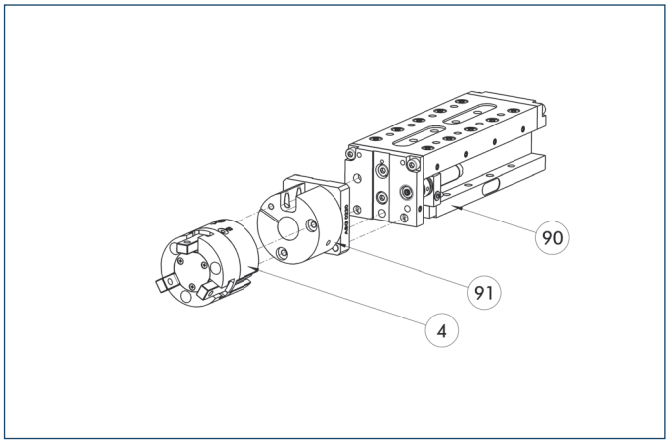
Flexible Position Sensor



⑰ Cable outlet

The FPS flexible position sensor can distinguish between five freely programmable ranges or switching points for the stroke of a gripper and can be used in conjunction with a PC as a measuring system.

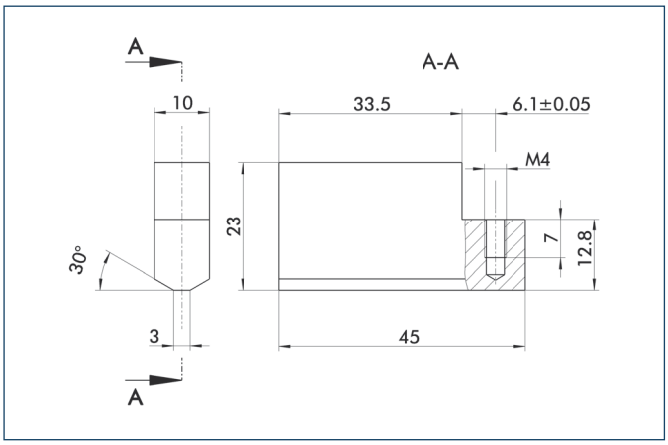
Modular Assembly Automation



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".

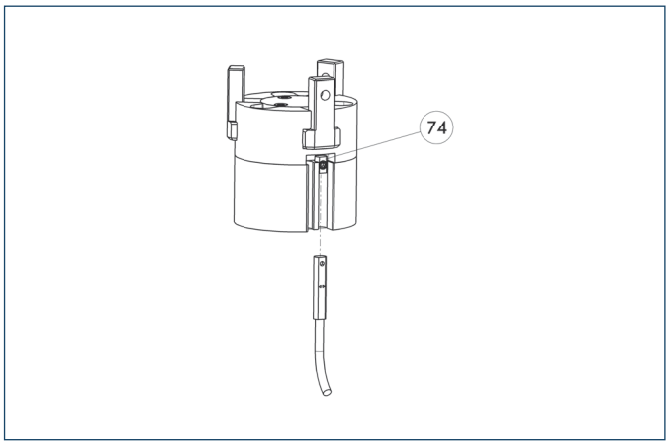
Finger blanks



Finger blanks for customized subsequent machining

Description	ID	Material	Scope of delivery
Finger blanks			
ABR 45	**0340539**	Aluminum	3

Programmable magnetic switch



⑦④ Stop for MMS-P

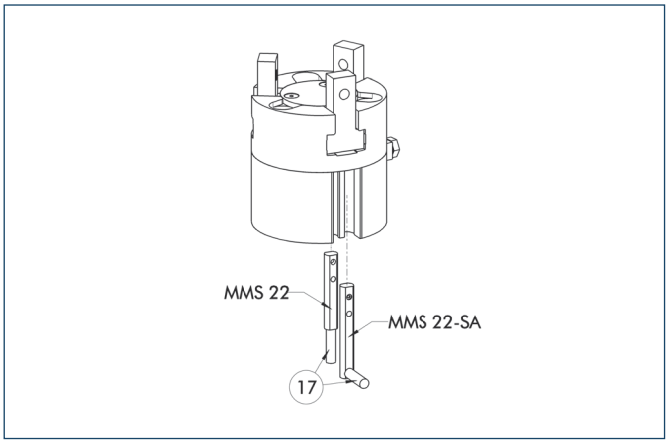
Position monitoring with two programmable positions per sensor. The end position monitoring is mounted in the C-slot.

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



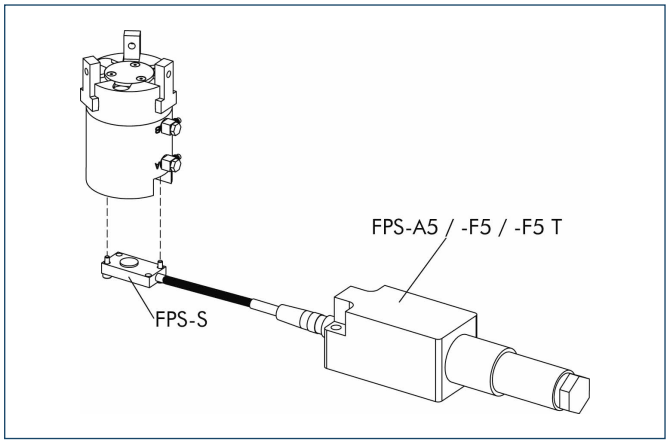
⑰ Cable outlet

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**	

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

Flexible Position Sensor



Flexible position monitoring of up to five positions

Description	ID
Electronic Processor	
FPS-F5	**0301805**
FPS-F5 T	**0301807**
Sensor	
FPS-S 13	**0301705**

ⓘ 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.

LGZ

Pneumatic • 3-Finger Centric Gripper • Universal Gripper

Sizes
16 ... 50

Weight
0.1 kg ... 0.99 kg

Gripping force
120 N ... 1470 N

Stroke per finger
3 mm ... 7 mm

Workpiece weight
0.6 kg ... 5.7 kg

Application example

Pneumatic transfer unit for round components

1. 3-Finger Centric Gripper LGZ
2. Linear module CLM

Universal Gripper
universal 3-Finger Centric Gripper with T-slot slideway and excellent cost-performance ratio

Field of application
for universal use in clean and slightly dirty environments

Your advantages and benefits

Function optimized gripper type
for maximum cost effectiveness

Stable, ground T-groove slideway
for highest precision in handling

Matching SCHUNK C-slot switch
for process reliable position interrogation

Hard-anodized or hardened functional components
for long lifetime

Centering sleeves
for a repeat accurate exchange of grippers and fingers

Compact dimensions
for minimized interfering contours

General note to the series

Principle of function
Wedge-hook kinematics

Housing material
Aluminum alloy, hard-anodized

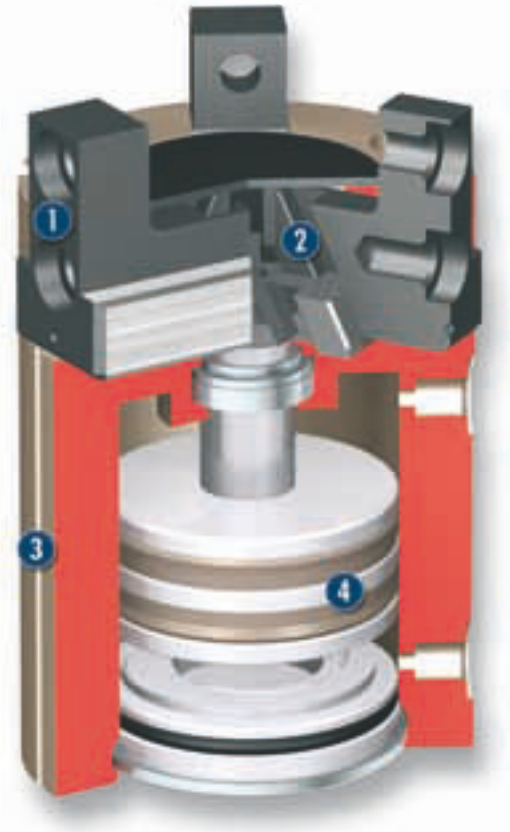
Base jaw material
Steel

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

Scope of delivery
Centering elements, assembly and operating instruction with manufacturer's declaration

Sectional diagram



1 **Base jaw**
for the connection of workpiece-specific gripper fingers

2 **Wedge-hook design**
for high power transmission and centric gripping

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

4 **Drive**
pneumatic, powerful and easy to handle

Functional description

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

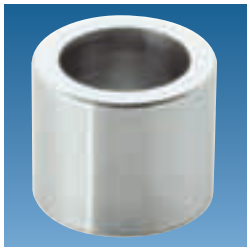
Options and special information

Monitoring with a SCHUNK MMS 22 or RMS 22 sensor is not possible. The use of the recommended sensors MZN and RZN is not compulsory.

Accessories

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

Centering sleeves



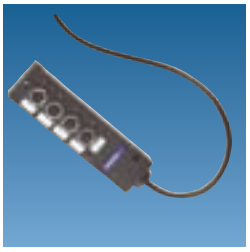
Fittings

Magnetic Switches

Sensor cables

Pressure maintenance valve

Sensor Distributor



ⓘ 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.

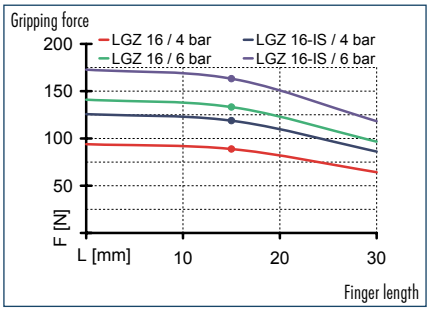
Workpiece weight
The recommended workpiece weight is calculated for a force-type connection with a coefficient of friction of 0.1 and a safety factor of 2 against slippage of the workpiece on acceleration due to gravity g. Considerably heavier workpiece weights are permitted with form-fit gripping.

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.

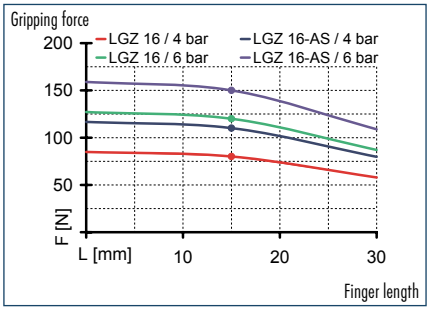
LGZ 16

Pneumatic • 3-Finger Centric Gripper • Universal Gripper

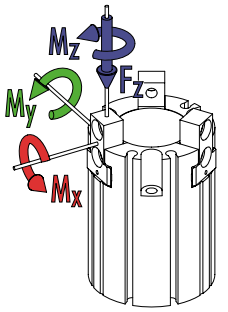
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load



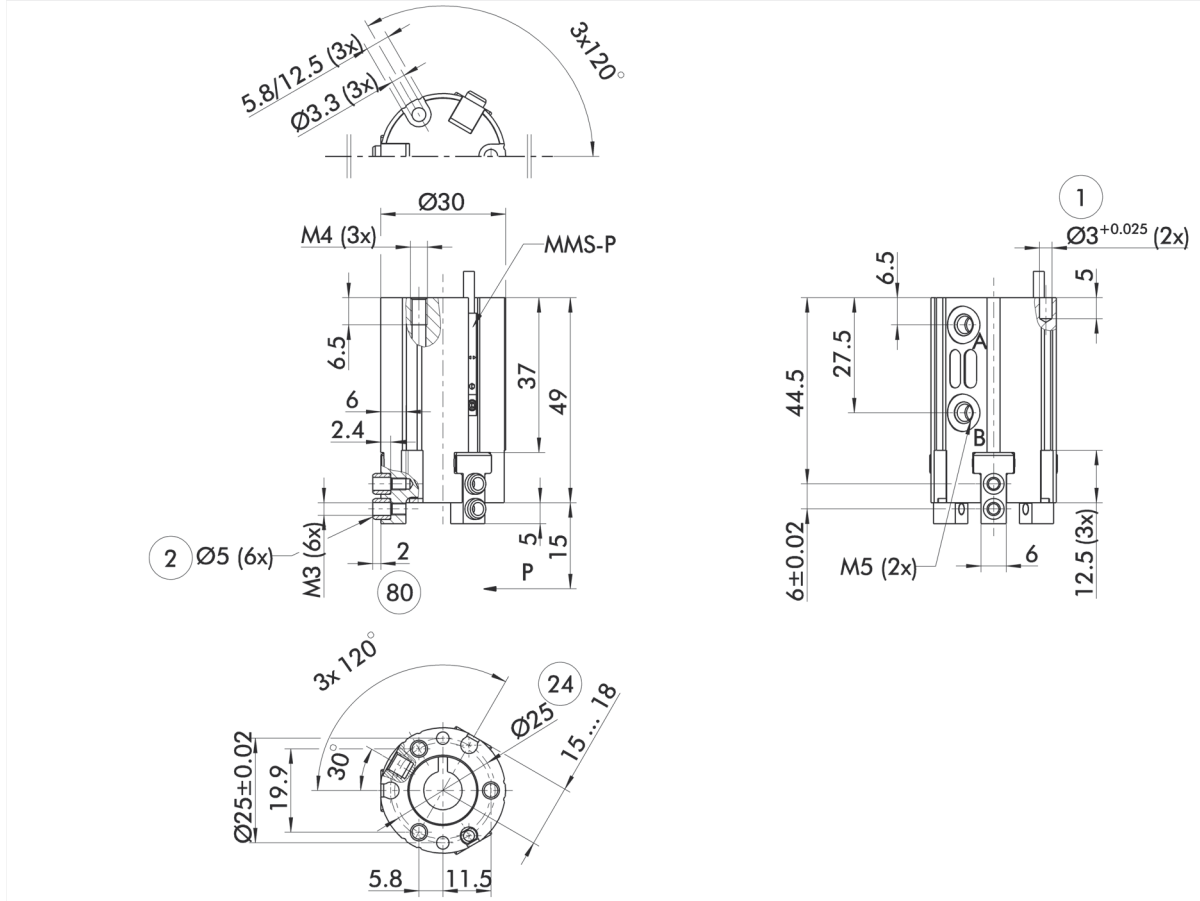
- M_x max. 0.50 Nm
- M_y max. 1.80 Nm
- M_z max. 1.40 Nm
- F_z max. 100.0 N

ⓘ 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		LGZ 16	LGZ 16-AS	LGZ 16-IS
ID		**0312930**	**0312931**	**0312932**
Stroke per finger	[mm]	3	3	3
Closing force	[N]	120	150	
Opening force	[N]	144		174
Min. spring force	[N]		30	30
Weight	[kg]	0.1	0.1	0.1
Recommended workpiece weight	[kg]	0.6	0.6	0.6
Air consumption per double stroke	[cm³]	4	4	4
Min./max. operating pressure	[bar]	2/8	4/6.5	4/6.5
Nominal operating pressure	[bar]	6	6	6
Closing/opening time	[s]	0.02/0.02	0.01/0.04	0.04/0.01
Max. permitted finger length	[mm]	30	30	30
Max. permitted weight per finger	[kg]	0.03	0.03	0.03
IP class		40	40	40
Min./max. ambient temperature	[°C]	-10/90	-10/90	-10/90
Repeat accuracy	[mm]	0.02	0.02	0.02

Main view

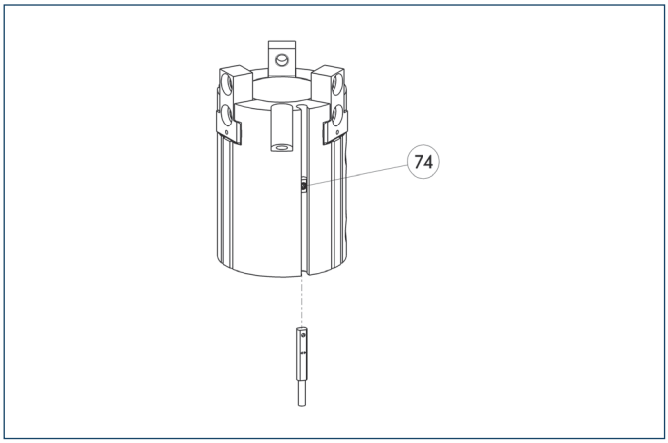


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ 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
① Gripper connection
② Finger connection
㉔ Bolt circle
㊽ Depth of the centering sleeve hole in the matching part

Programmable magnetic switch



㉞ 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**	

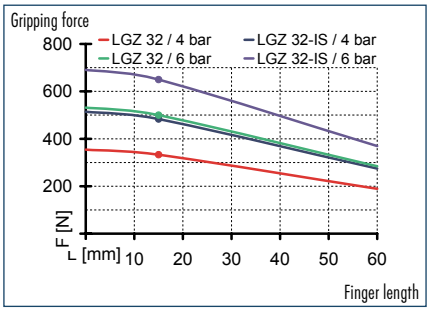
ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.
ⓘ Per gripper one sensor (closer/NO) is required, optionally a cable extension.

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

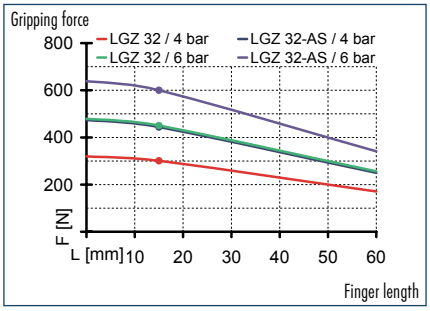
LGZ 32

Pneumatic • 3-Finger Centric Gripper • Universal Gripper

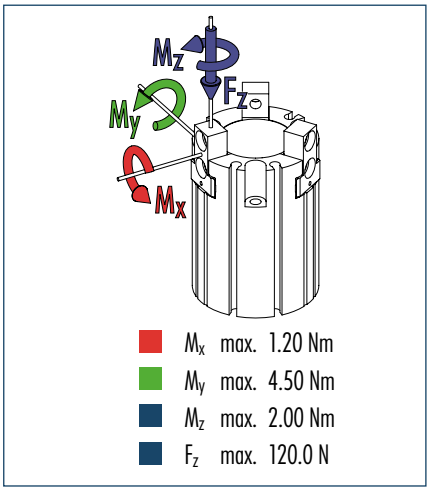
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

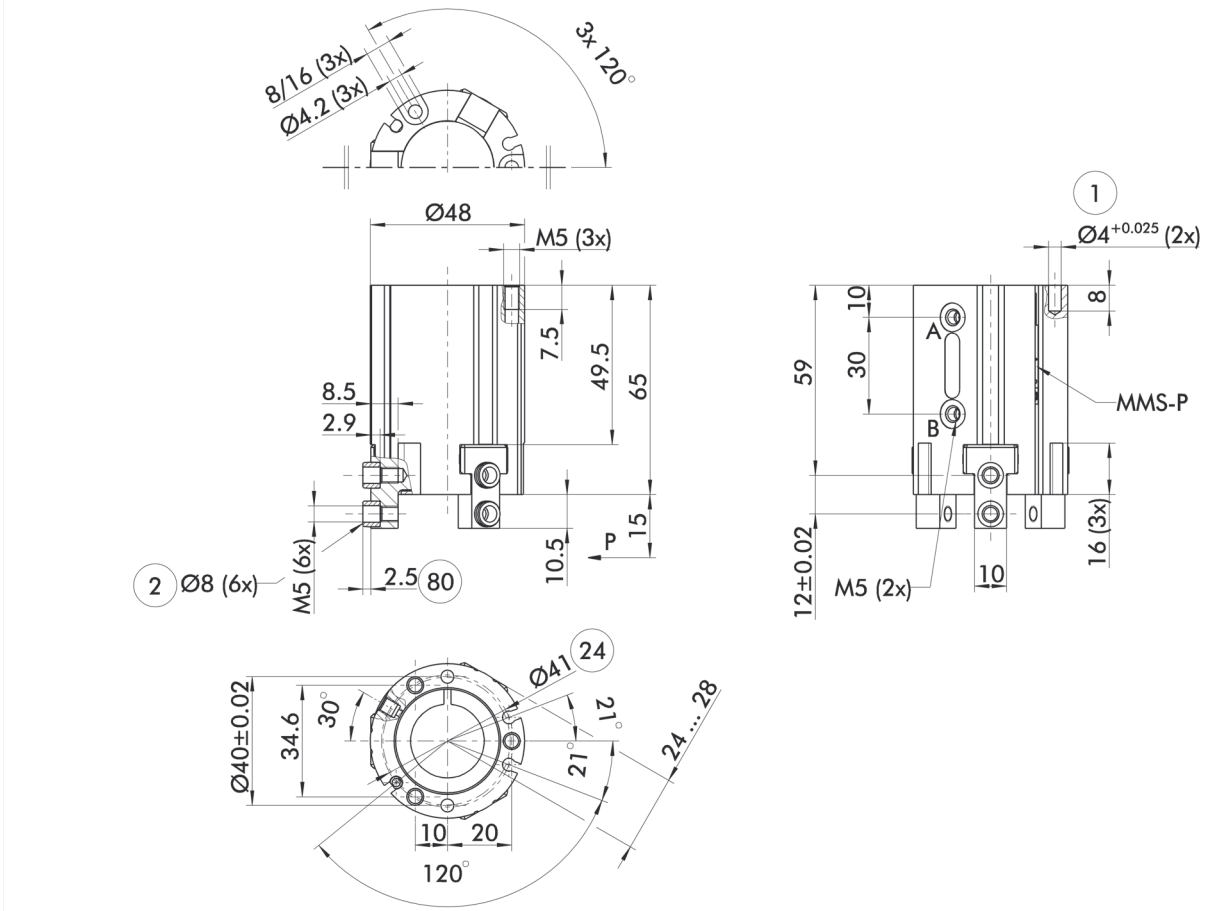


ⓘ The indicated moments and forces are static values, apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement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

Technical data

Description		LGZ 32	LGZ 32-AS	LGZ 32-IS
ID		**0312933**	**0312934**	**0312935**
Stroke per finger	[mm]	4	4	4
Closing force	[N]	450	600	
Opening force	[N]	540		590
Min. spring force	[N]		150	150
Weight	[kg]	0.32	0.35	0.35
Recommended workpiece weight	[kg]	2.25	2.25	2.25
Air consumption per double stroke	[cm³]	21	21	21
Min./max. operating pressure	[bar]	2/8	4/6.5	4/6.5
Nominal operating pressure	[bar]	6	6	6
Closing/opening time	[s]	0.02/0.02	0.01/0.03	0.03/0.01
Max. permitted finger length	[mm]	60	60	60
Max. permitted weight per finger	[kg]	0.08	0.08	0.08
IP class		40	40	40
Min./max. ambient temperature	[°C]	-10/90	-10/90	-10/90
Repeat accuracy	[mm]	0.02	0.02	0.02

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).

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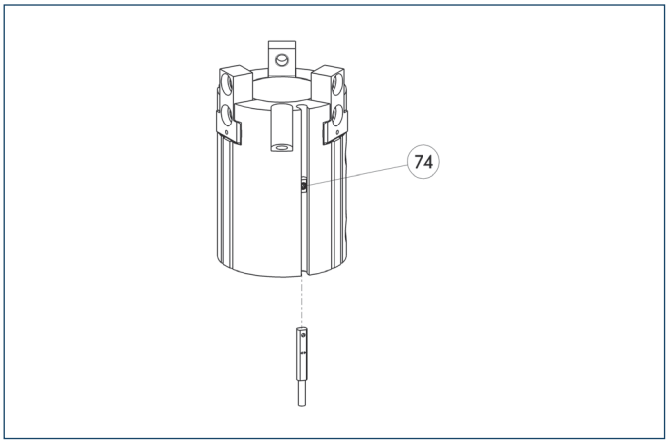
① Gripper connection
② Finger connection
㉔ Bolt circle
㊽ Depth of the centering sleeve hole in the matching part

Programmable magnetic switch



㉞ Stop for MMS-P

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

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MMSK-P 22-S-PNP	**0301371**	
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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**	

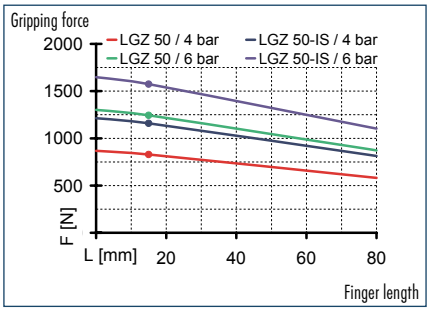
ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.
ⓘ Per gripper one sensor (closer/NO) is required, optionally a cable extension.

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

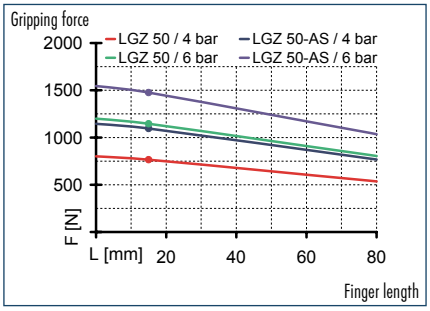
LGZ 50

Pneumatic • 3-Finger Centric Gripper • Universal Gripper

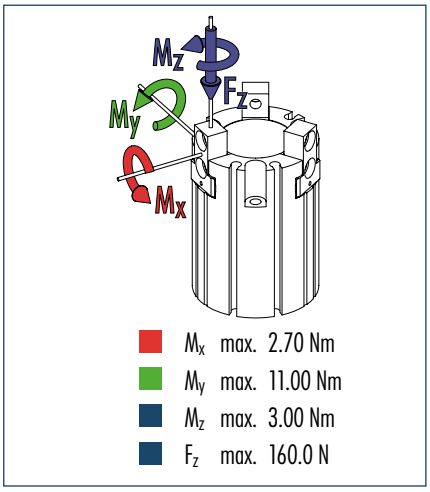
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

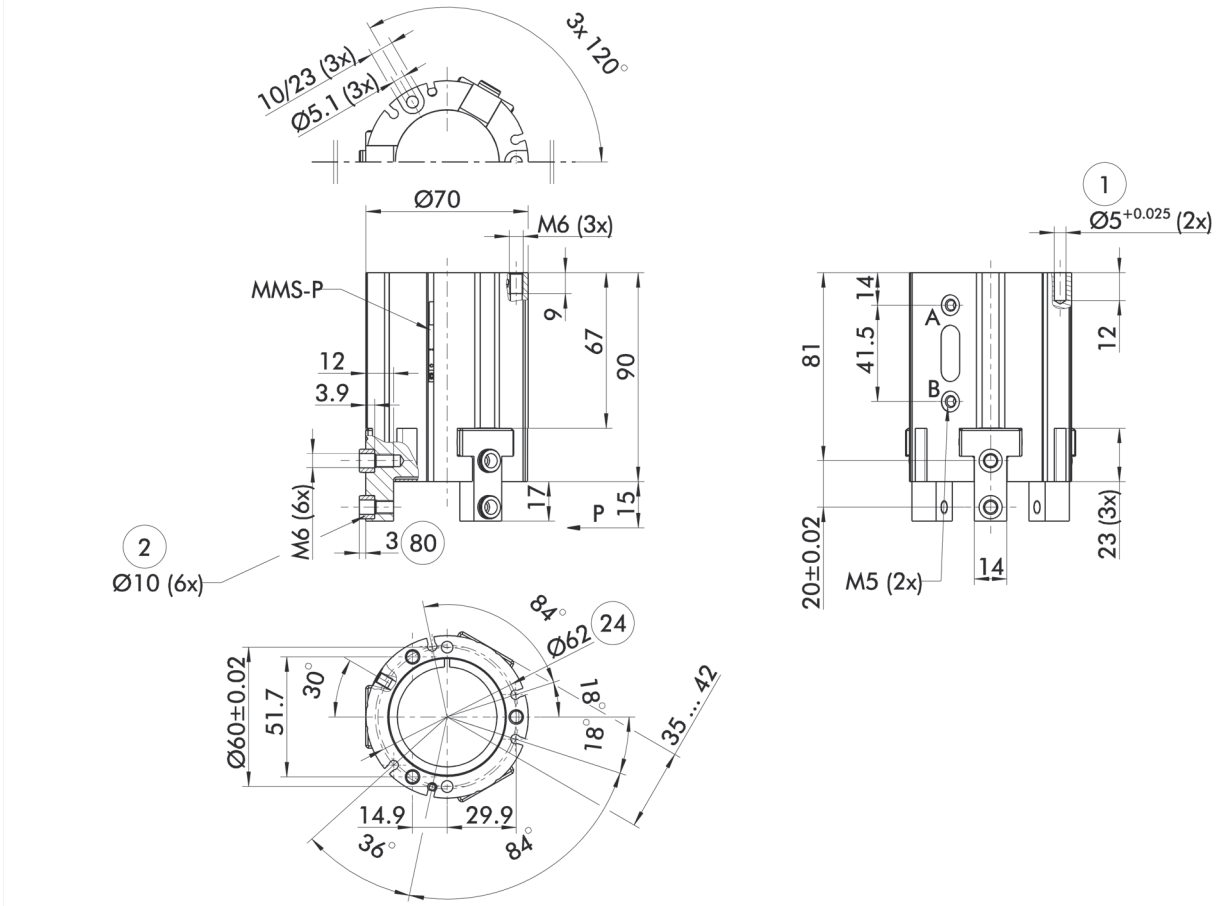


ⓘ The indicated moments and forces are static values, apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement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

Technical data

Description		LGZ 50	LGZ 50-AS	LGZ 50-IS
ID		**0312936**	**0312937**	**0312938**
Stroke per finger	[mm]	7	7	7
Closing force	[N]	1140	1470	
Opening force	[N]	1320		1650
Min. spring force	[N]		330	330
Weight	[kg]	0.95	0.99	0.99
Recommended workpiece weight	[kg]	5.7	5.7	5.7
Air consumption per double stroke	[cm³]	93	93	93
Min./max. operating pressure	[bar]	2/8	4/6.5	4/6.5
Nominal operating pressure	[bar]	6	6	6
Closing/opening time	[s]	0.05/0.05	0.04/0.07	0.07/0.04
Max. permitted finger length	[mm]	80	80	80
Max. permitted weight per finger	[kg]	0.25	0.25	0.25
IP class		40	40	40
Min./max. ambient temperature	[°C]	-10/90	-10/90	-10/90
Repeat accuracy	[mm]	0.02	0.02	0.02

Main view

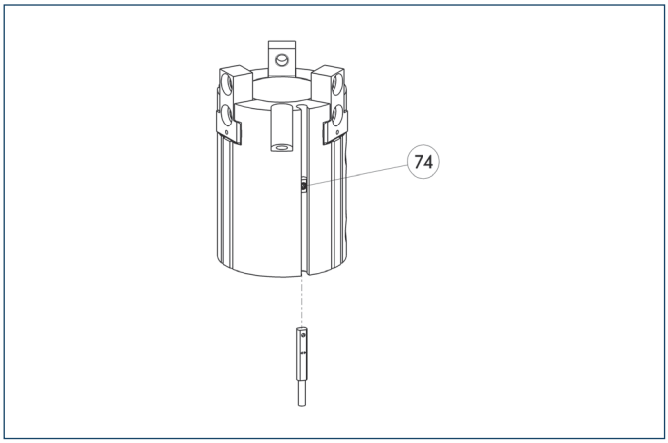


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ 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
① Gripper connection
② Finger connection
㉔ Bolt circle
㉚ Depth of the centering sleeve hole in the matching part

Programmable magnetic switch



㉞ 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.

PZN-plus

Pneumatic • 3-Finger Centric Gripper • Universal Gripper

Sizes
40 ... 300

Weight
0.13 kg ... 46 kg

Gripping force
255 N ... 35500 N

Stroke per finger
2 mm ... 35 mm

Workpiece weight
1.3 kg ... 127.5 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. 3-Finger Centric Gripper PZN-plus
2. Rotary feed-through DDF

Universal Gripper
universal Concentric Gripper with high gripping force and maximum moments thanks to multi-tooth guidance

Field of application
Multi-purpose thanks to the diverse range of accessories. Can also be used in fields of application with special requirements to the gripper (temperature, chemical resistance, dirt, and many more).

Your advantages and benefits

Robust multi-tooth guidance
for precise handling

High maximum moments possible
suitable for using 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 accessory program
for versatile interrogation possibilities and control of stroke position

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 alloy, hard-anodized

Base jaw material
Steel

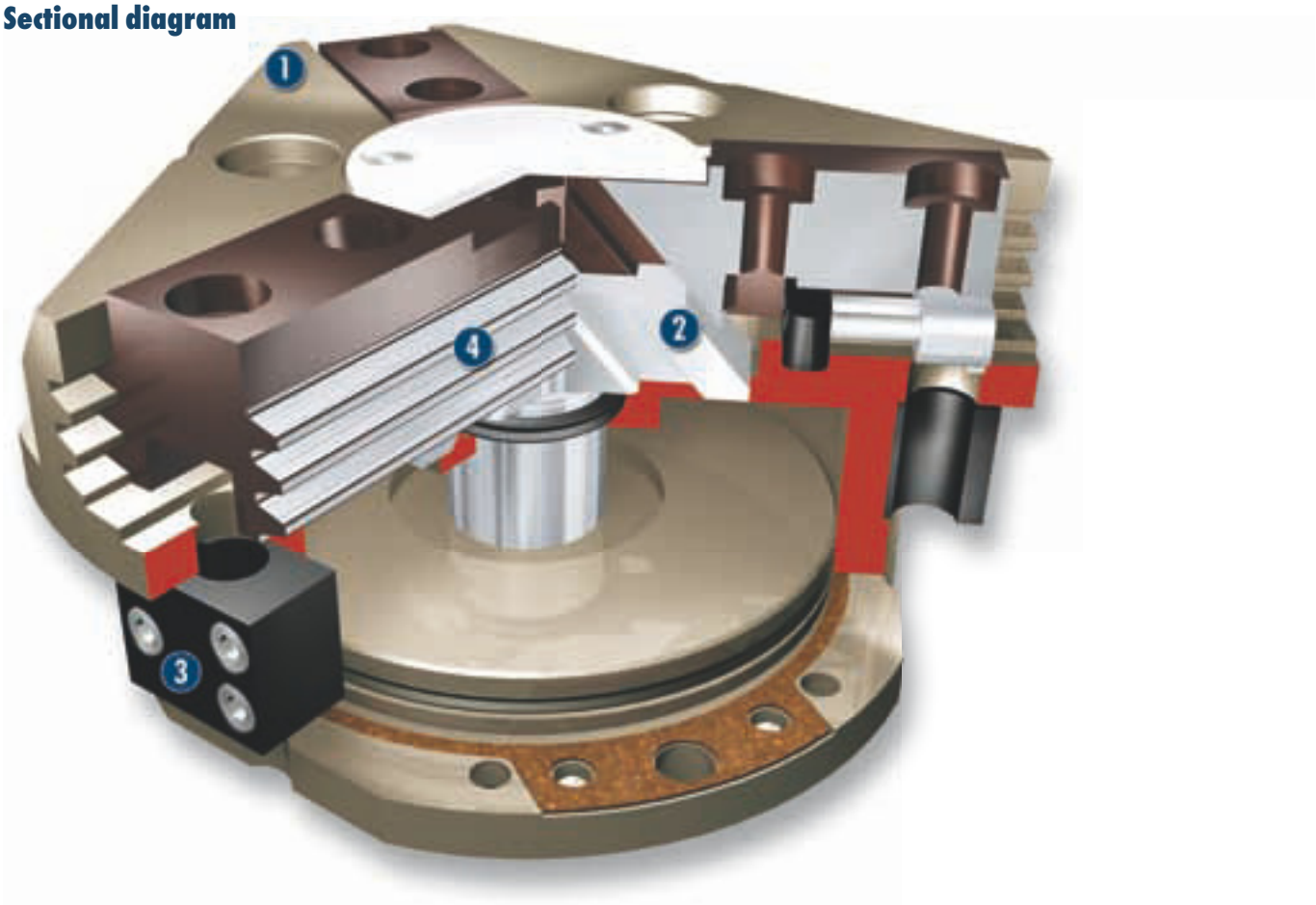
Actuation
pneumatic, with filtered compressed air (10 microns): dry, lubricated or non-lubricated
Pressure medium: Required quality class of compressed air according to DIN ISO 8573-1: 6 4 4

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

PZN-plus

Sectional diagram



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

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

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

4 Multiple-tooth guidance
precise gripping through base jaw guidance with a high load capacity and a minimum play

Functional description

The piston is moved up and down by 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

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.

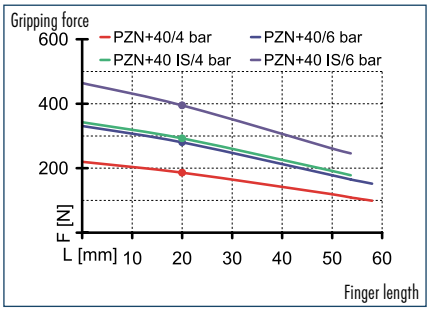
Workpiece weight
The recommended workpiece weight is calculated for a force-type connection with a coefficient of friction of 0.1 and a safety factor of 2 against slippage of the workpiece on acceleration due to gravity g. Considerably heavier workpiece weights are permitted with form-fit gripping.

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.

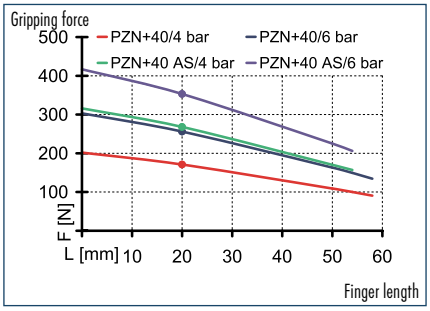
PZN-plus 40

Pneumatic • 3-Finger Centric Gripper • Universal Gripper

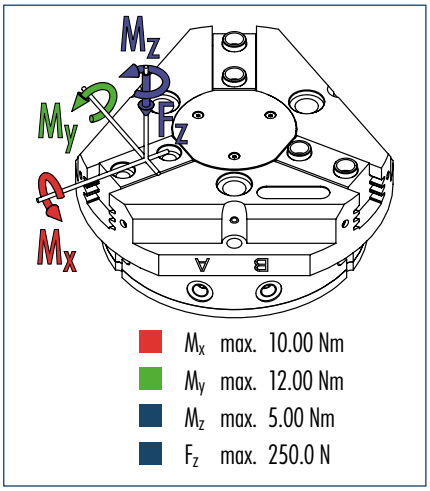
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

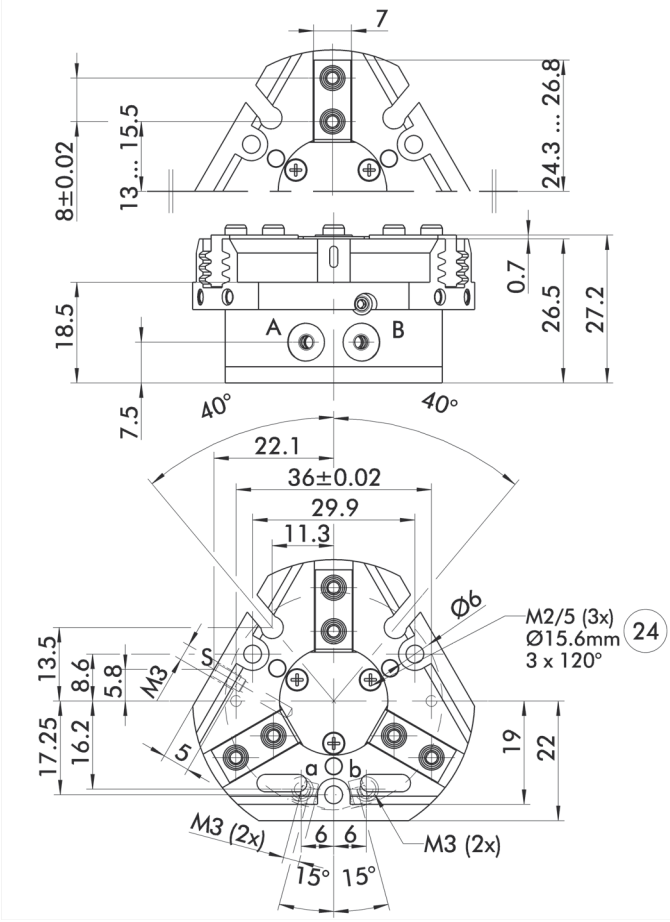


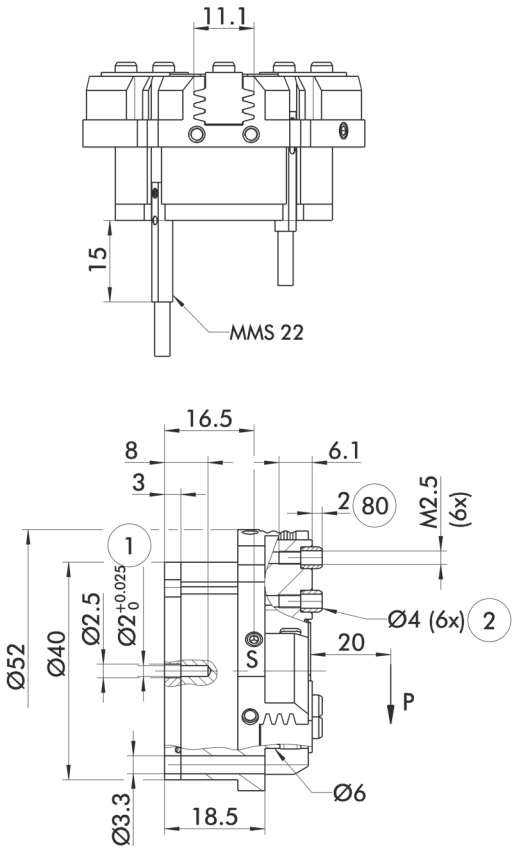
ⓘ The indicated moments and forces are static values, apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement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

Technical data

Description		PZN-plus 40	PZN-plus 40-AS	PZN-plus 40-IS
ID		**0303308**	**0303508**	**0303538**
Stroke per finger	[mm]	2.5	2.5	2.5
Closing force	[N]	255	355	
Opening force	[N]	270		370
Min. spring force	[N]		100	100
Weight	[kg]	0.13	0.15	0.15
Recommended workpiece weight	[kg]	1.3	1.3	1.3
Air consumption per double stroke	[cm³]	5	9	9
Min./max. operating pressure	[bar]	2/8	4/6.5	4/6.5
Nominal operating pressure	[bar]	6	6	6
Closing/opening time	[s]	0.03/0.03	0.02/0.04	0.04/0.02
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		**37303308**	**37303508**	**37303538**
IP class		64	64	64
Weight	[kg]	0.16	0.18	0.18
Anti-corrosion version		**38303308**	**38303508**	**38303538**
High-temperature version		**39303308**	**39303508**	**39303538**
Min./max. ambient temperature	[°C]	-10/130	-10/130	-10/130
Force intensified version		**PZN-plus 40-KVZ**	**PZN-plus 40-AS-KVZ**	**PZN-plus 40-IS-KVZ**
ID		**0372199**	**0372219**	**0372239**
Closing force	[N]	410	510	
Opening force	[N]	432		532
Weight	[kg]	0.19	0.21	0.21
Maximum pressure	[bar]	8	6	6
Max. permitted finger length	[mm]	50	40	40
Precision version		**0303338**	**0303488**	

Main view



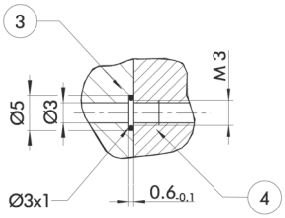


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ 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
㉔ Bolt circle
㉚ Depth of the centering sleeve hole in the matching part

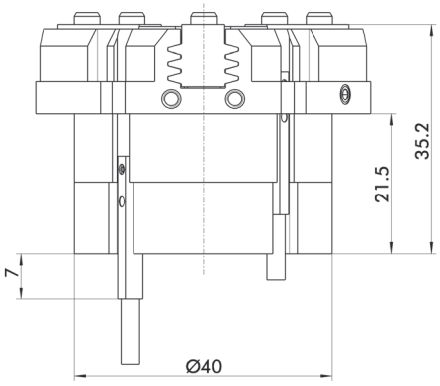
Hose-free direct connection



③ Adapter
④ Gripper

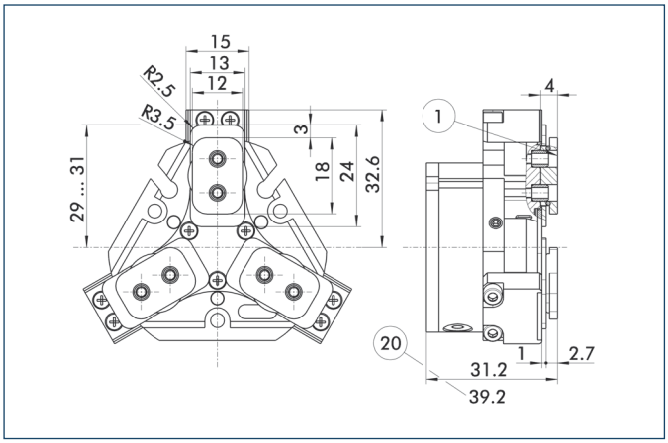
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

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.

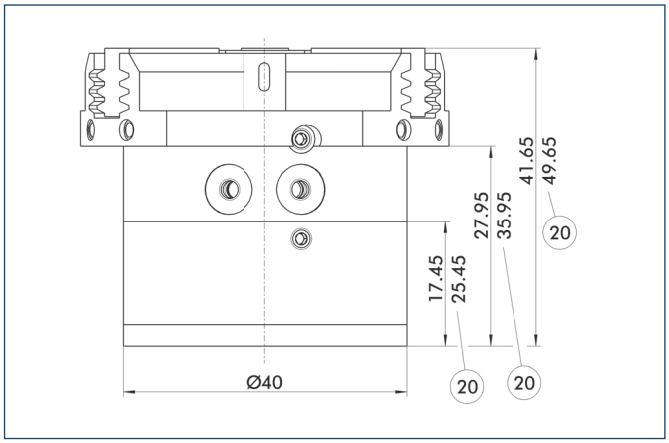
Dust-protection version



(1) Gripper connection
(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.

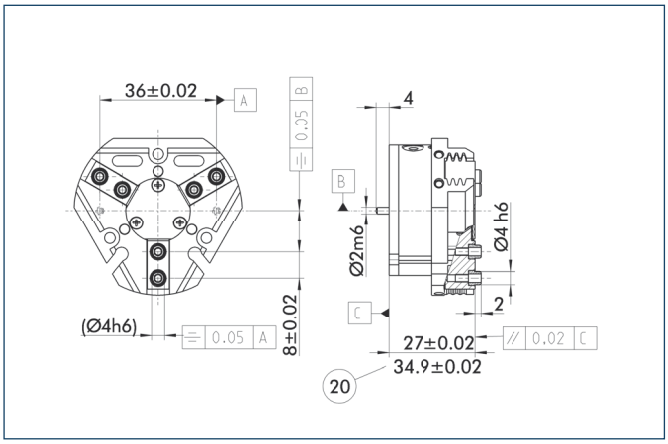
Force intensified version



(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.

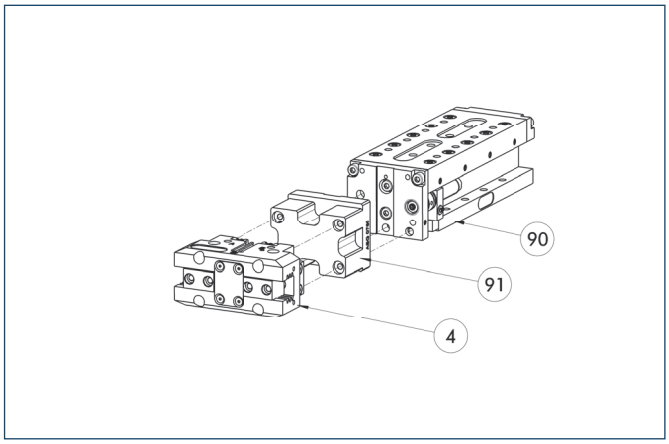
Precision version



(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.

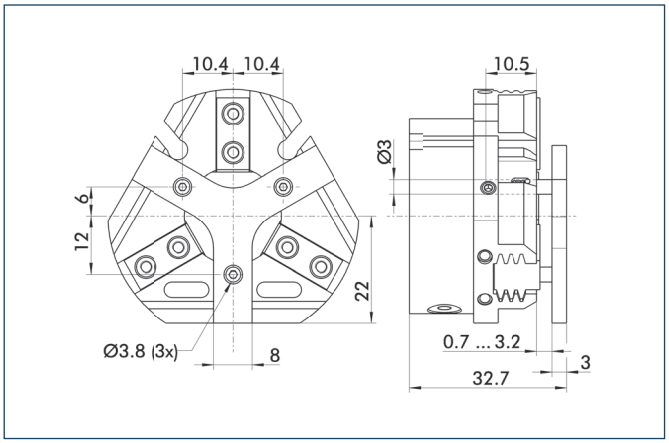
Modular Assembly Automation



(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".

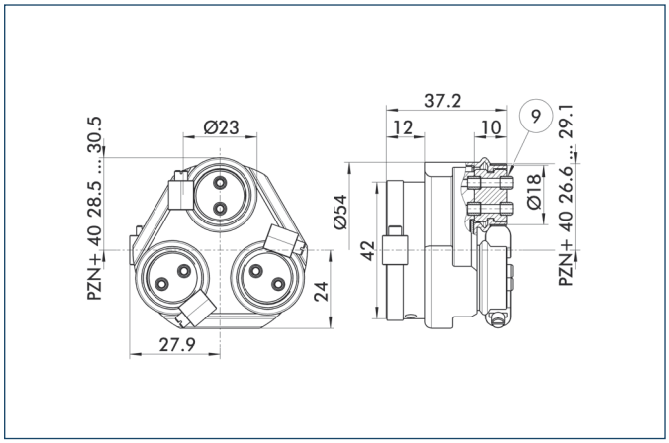
Spring-loaded pressure piece



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

Description	ID	Stroke	Min. force
Spring-loaded pressure piece			
A-PZN-plus 40	**0303718**	2.5 mm	5 N

Protection cover

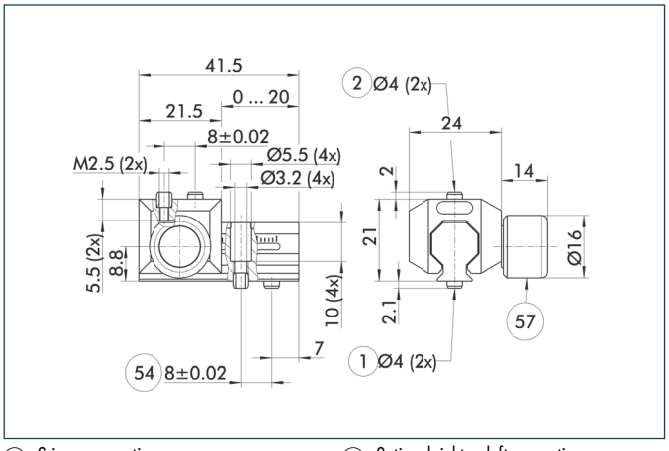


⑨ For mounting screw connection diagram, see basic version

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 PZN-plus 40	**0303478**	2

Universal intermediate jaw



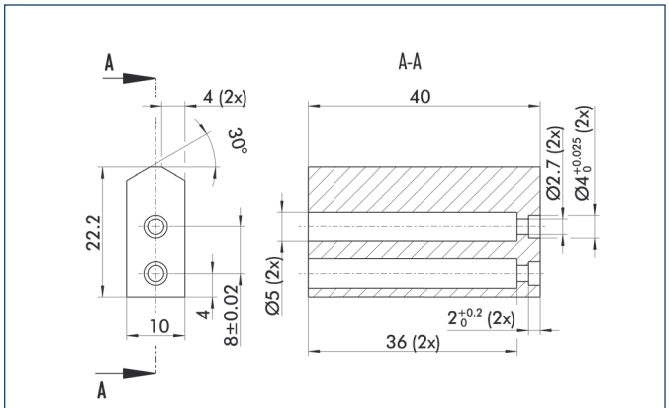
① Gripper connection
② Finger connection
⑤④ Optional right or left connection
⑤⑦ Locking

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.

Finger blanks

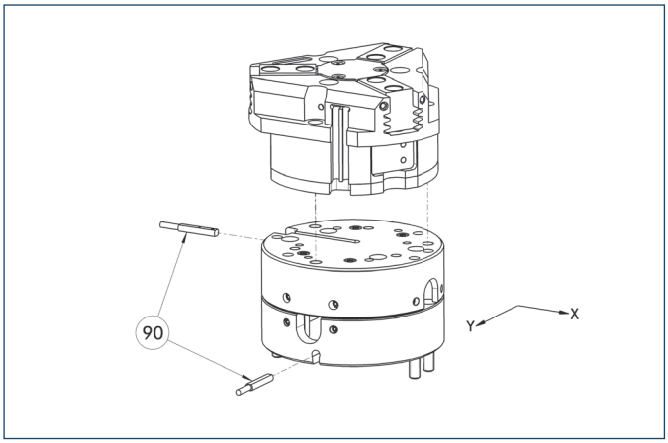


Finger blanks for customized subsequent machining

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

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

Compensation unit with spring reset

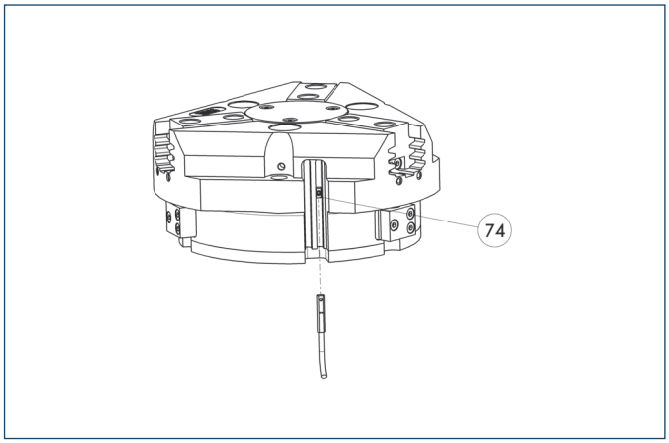


(90) Monitoring

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

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.

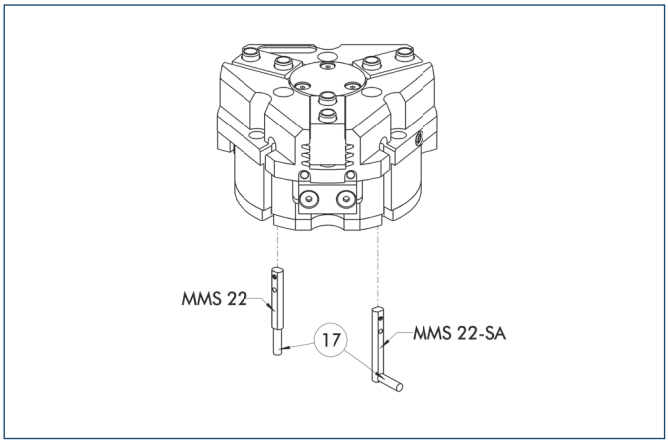
Description	ID	Recommended product
Programmable magnetic switch		
MMS-P 22-S-M8-PNP	**0301370**	•
MMSK-P 22-S-PNP	**0301371**	
Connection cables		
KA BG08-L 4P-0500	**0307767**	
KA BG08-L 4P-1000	**0307768**	
KA BW08-L 4P-0500	**0307765**	
KA BW08-L 4P-1000	**0307766**	
Sensor Distributor		
V2-M8-4P-2XM8-3P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

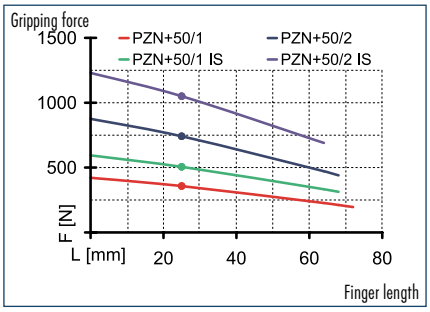
ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

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

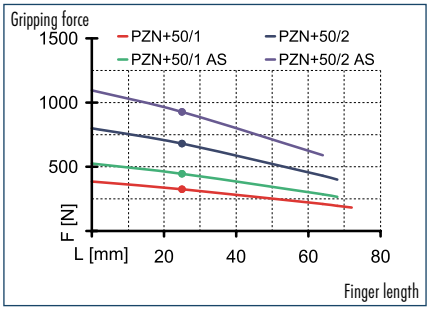
PZN-plus 50

Pneumatic • 3-Finger Centric Gripper • Universal Gripper

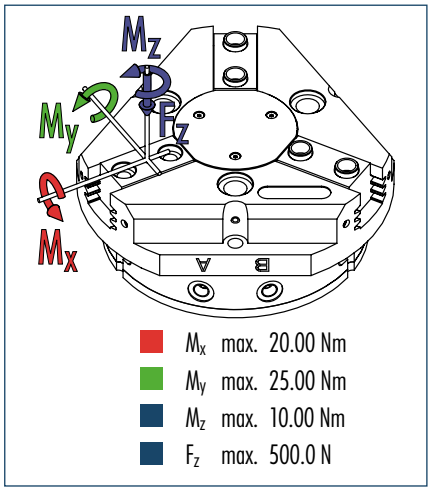
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load



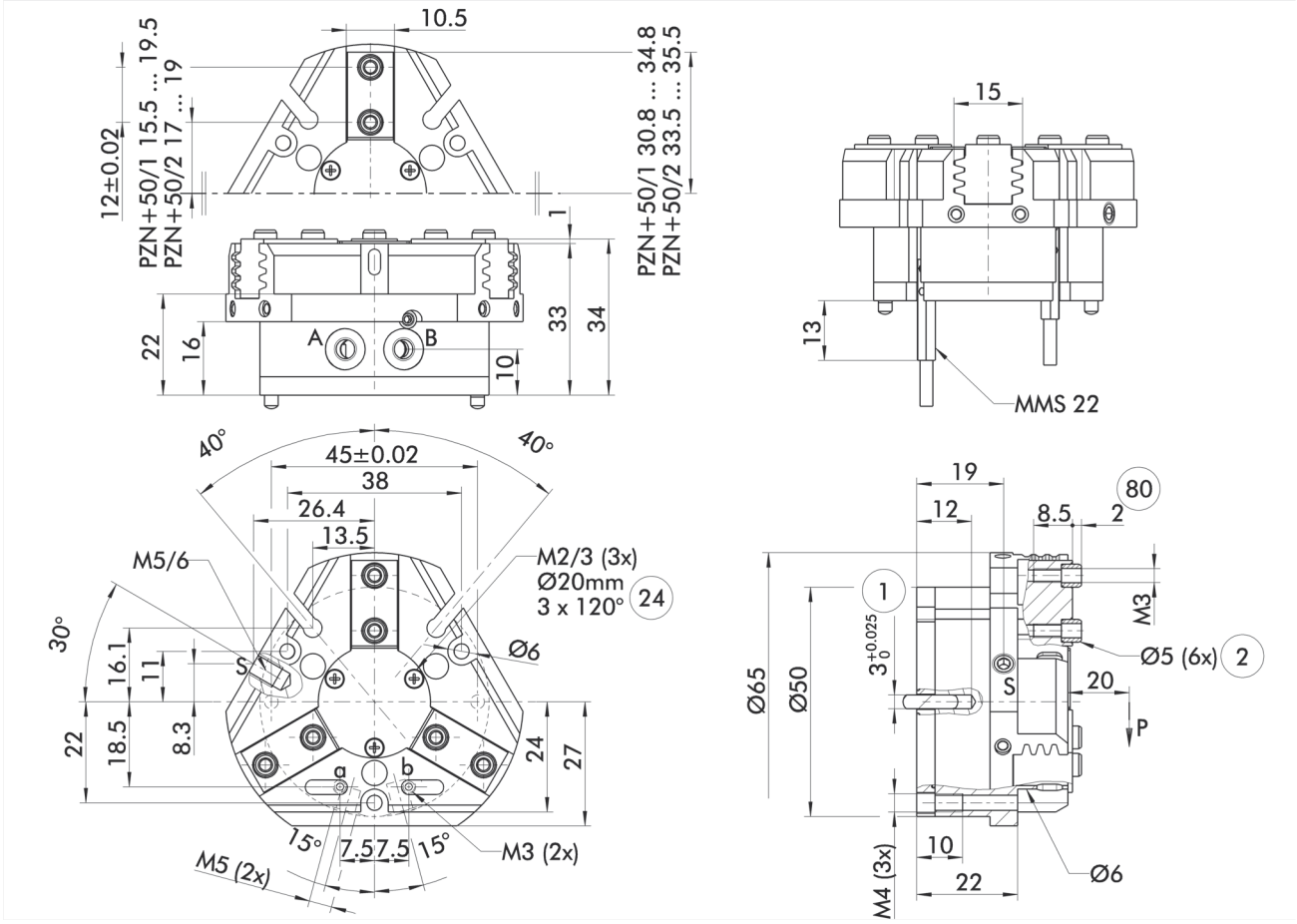
- M_x max. 20.00 Nm
- M_y max. 25.00 Nm
- M_z max. 10.00 Nm
- F_z max. 500.0 N

ⓘ 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		PZN-plus 50-1	PZN-plus 50-2	PZN-plus 50-1-AS	PZN-plus 50-2-AS	PZN-plus 50-1-IS	PZN-plus 50-2-IS
ID		**0303309**	**0303409**	**0303509**	**0303609**	**0303539**	**0303639**
Stroke per finger	[mm]	4	2	4	2	4	2
Closing force	[N]	325	680	445	925		
Opening force	[N]	355	740			505	1050
Min. spring force	[N]			120	245	150	310
Weight	[kg]	0.27	0.27	0.35	0.35	0.35	0.35
Recommended workpiece weight	[kg]	1.65	3.4	1.65	3.4	1.65	3.4
Air consumption per double stroke	[cm³]	9	9	18	18	18	18
Min./max. operating pressure	[bar]	2/8	2/8	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]	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		**37303309**	**37303409**	**37303509**	**37303609**	**37303539**	**37303639**
IP class		64	64	64	64	64	64
Weight	[kg]	0.33	0.33	0.41	0.41	0.41	0.41
Anti-corrosion version		**38303309**	**38303409**	**38303509**	**38303609**	**38303539**	**38303639**
High-temperature version		**39303309**	**39303409**	**39303509**	**39303609**	**39303539**	**39303639**
Min./max. ambient temperature	[°C]	-10/130	-10/130	-10/130	-10/130	-10/130	-10/130
Force intensified version		PZN-plus 50-1-KVZ	PZN-plus 50-2-KVZ	PZN-plus 50-1-AS-KVZ		PZN-plus 50-1-IS-KVZ	
ID		**0372200**	**0372210**	**0372220**		**0372240**	
Closing force	[N]	520	1090	640			
Opening force	[N]	570	1185			720	
Weight	[kg]	0.38	0.38	0.46		0.46	
Maximum pressure	[bar]	8	8	6		6	
Max. permitted finger length	[mm]	64	50	50		50	
Precision version		**0303339**	**0303439**	**0303489**	**0303589**		

Main view

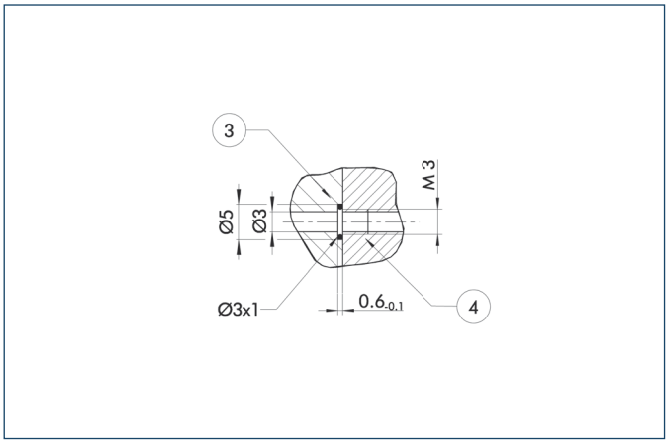


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ 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
㉔ Bolt circle
㉚ Depth of the centering sleeve hole in the matching part

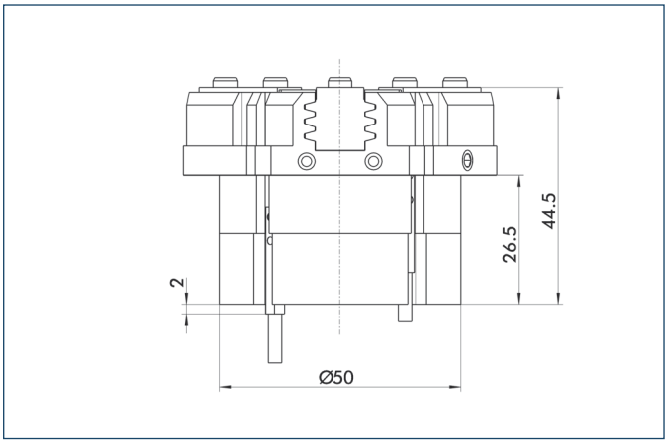
Hose-free direct connection



③ Adapter
④ Gripper

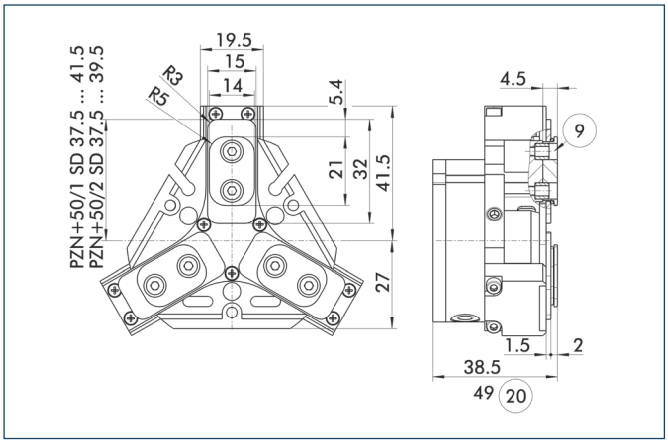
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

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.

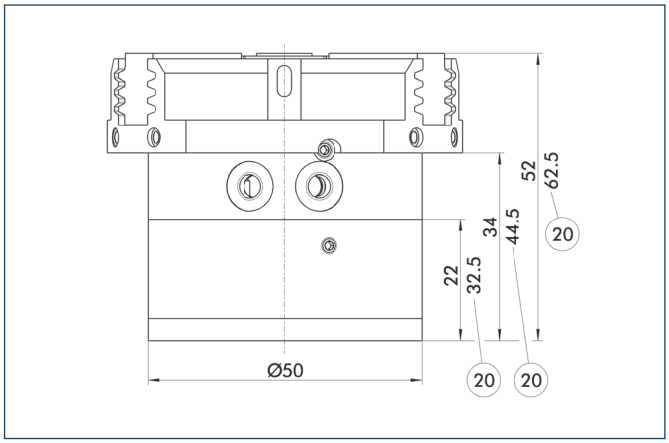
Dust-protection version



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

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.

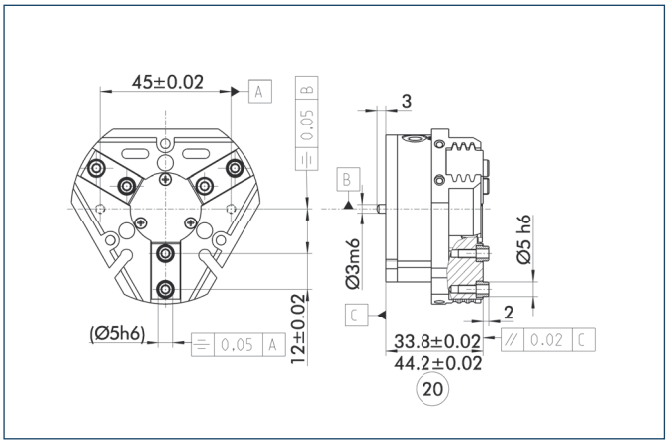
Force intensified version



(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.

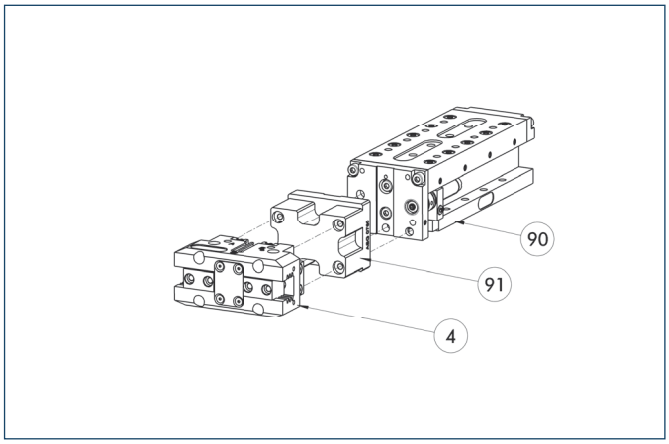
Precision version



(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.

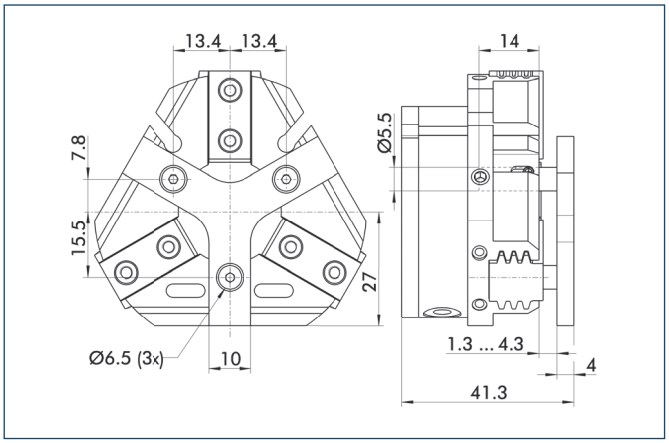
Modular Assembly Automation



(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".

Spring-loaded pressure piece

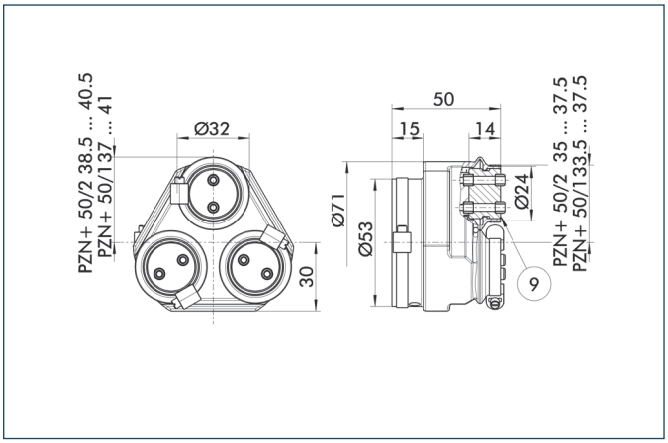


For spring-supported positioning of the workpiece against a stop after the gripper has opened. Especially developed for loading machines.

Description	ID	Stroke	Min. force
Spring-loaded pressure piece			
A-PZN-plus 50	**0303719**	3 mm	12 N

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

Protection cover

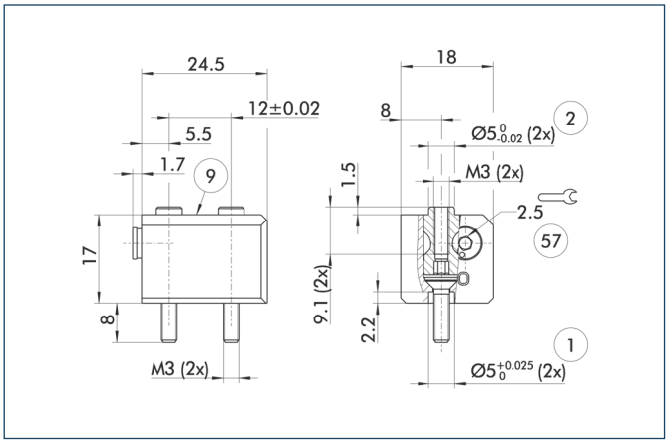


⑨ For mounting screw connection diagram, see basic version

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 PZN-plus 50	**0303479**	2

Quick-change Jaw System

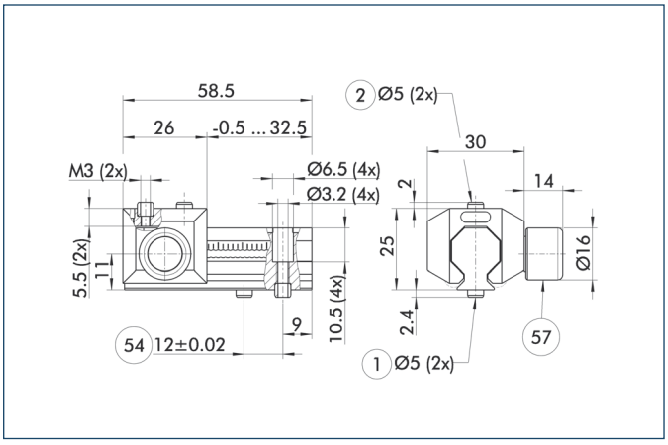


① Gripper connection
② Finger connection
⑨ For mounting screw connection diagram, see basic version
57 Locking

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**

Universal intermediate jaw



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

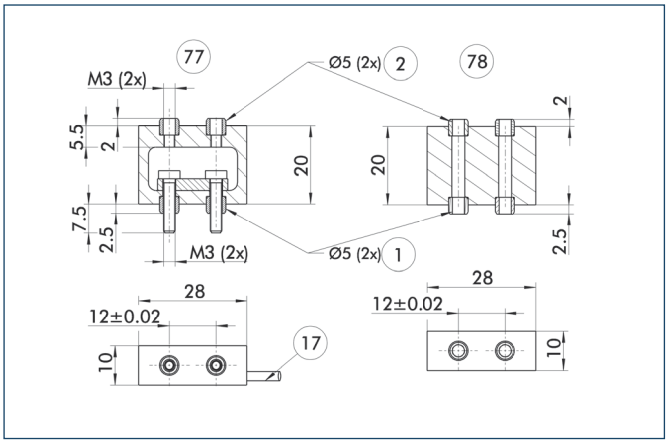
The universal intermediate jaw allows fast tool-free and reliable plugging and shifting of top jaws at the gripper.

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.

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

Force measuring jaws

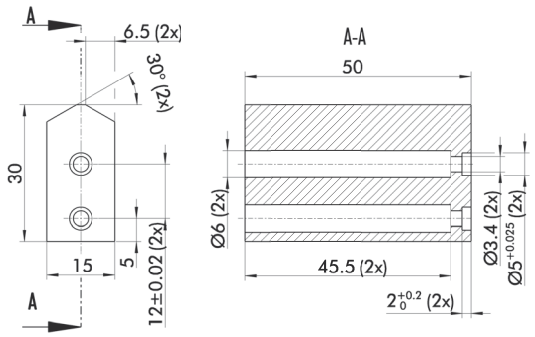


① Gripper connection
② Finger connection
⑰ Cable outlet
⑦⑦ Active intermediate jaws
⑦⑧ Passive intermediate jaws

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 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

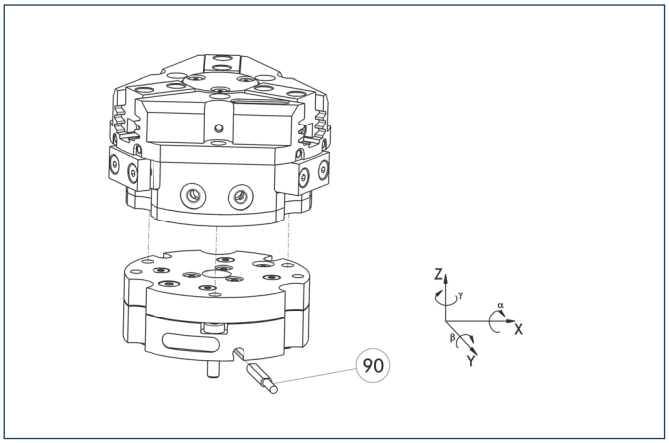


Finger blanks for customized subsequent machining

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

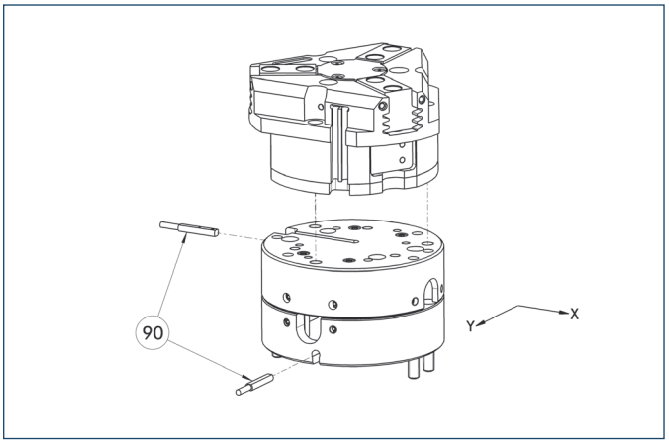


(90) Monitoring of locking

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-Z	**0324749**	No	

Compensation unit with spring reset

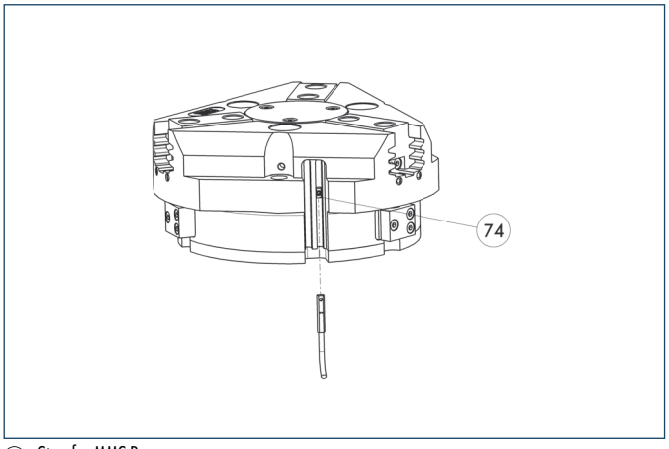


(90) Monitoring

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

Programmable magnetic switch



(74) Stop for MMS-P

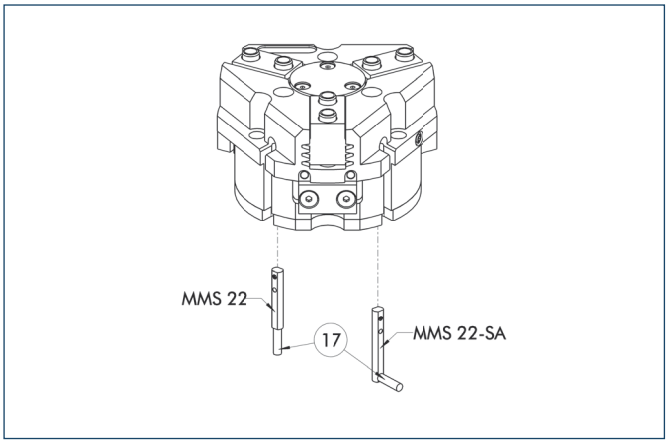
Position monitoring with two programmable positions per sensor. The end position monitoring is mounted in the C-slot.

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**	
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.

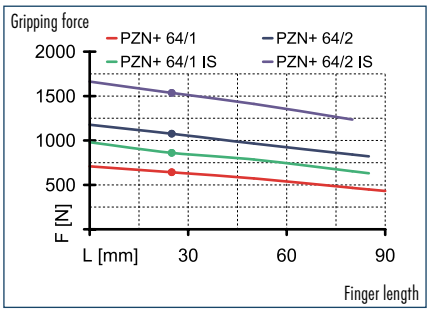
ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

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

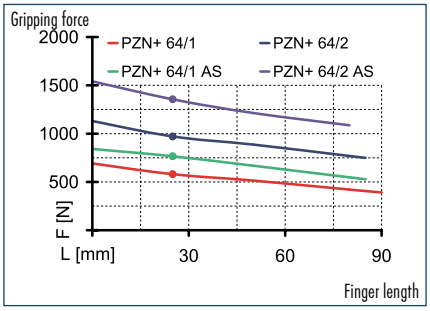
PZN-plus 64

Pneumatic • 3-Finger Centric Gripper • Universal Gripper

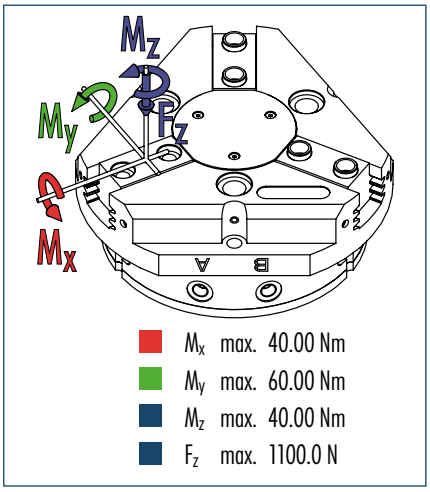
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

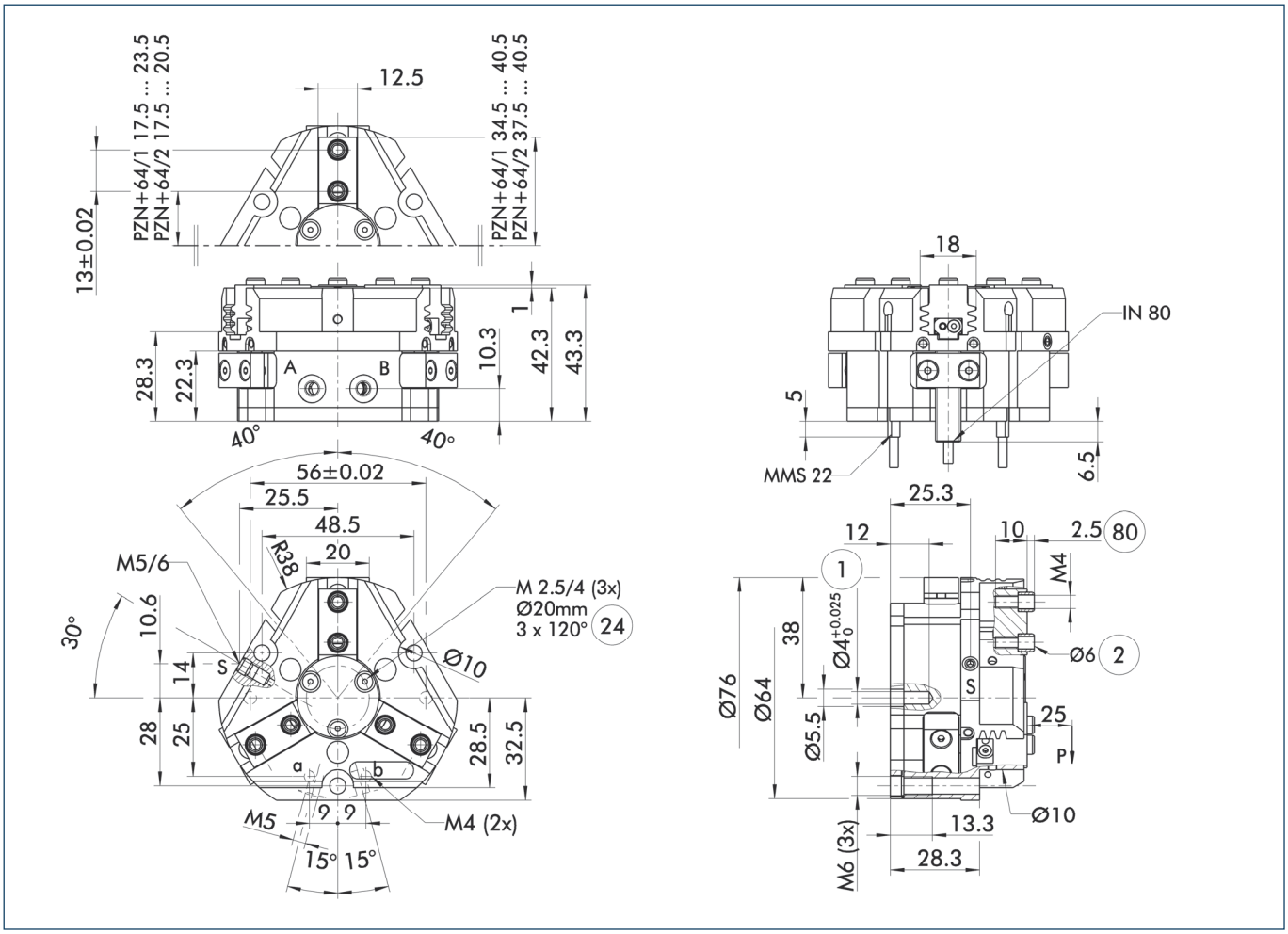


ⓘ The indicated moments and forces are static values, apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement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

Technical data

Description		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 finger	[mm]	6	3	6	3	6	3
Closing force	[N]	580	970	765	1285		
Opening force	[N]	640	1075			860	1535
Min. spring force	[N]			185	315	220	460
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	[cm³]	25	25	48	48	48	25
Min./max. operating pressure	[bar]	2/8	2/8	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		**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		**38303310**	**38303410**	**38303510**	**38303610**	**38303540**	**38303640**
High-temperature version		**39303310**	**39303410**	**39303510**	**39303610**	**39303540**	**39303640**
Min./max. ambient temperature	[°C]	-10/130	-10/130	-10/130	-10/130	-10/130	-10/130
Force intensified version		**PZN-plus 64-1-KVZ**	**PZN-plus 64-2-KVZ**	**PZN-plus 64-1-AS-KVZ**		**PZN-plus 64-1-IS-KVZ**	
ID		**0372201**	**0372211**	**0372221**		**0372241**	
Closing force	[N]	1045	1745	1230			
Opening force	[N]	1150	1935			1370	
Weight	[kg]	0.7	0.7	0.8		0.8	
Maximum pressure	[bar]	8	8	6		6	
Max. permitted finger length	[mm]	80	64	64		64	
Precision version		**0303340**	**0303440**	**0303490**	**0303590**		

Main view

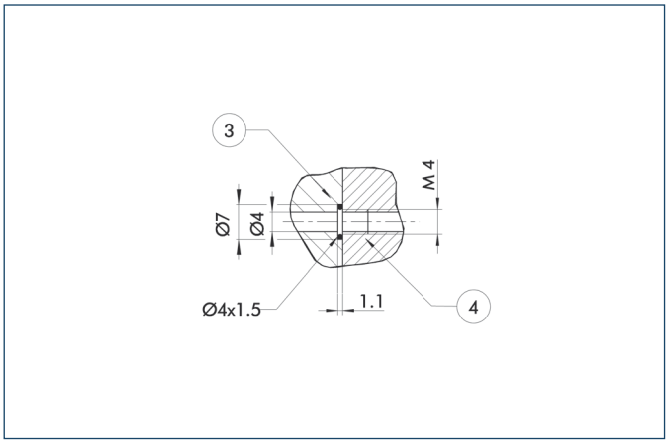


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ 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
㉔ Bolt circle
㊽ Depth of the centering sleeve hole in the matching part

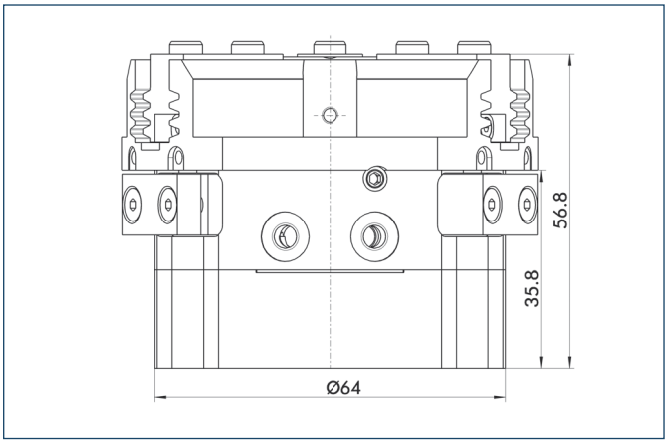
Hose-free direct connection



③ Adapter
④ Gripper

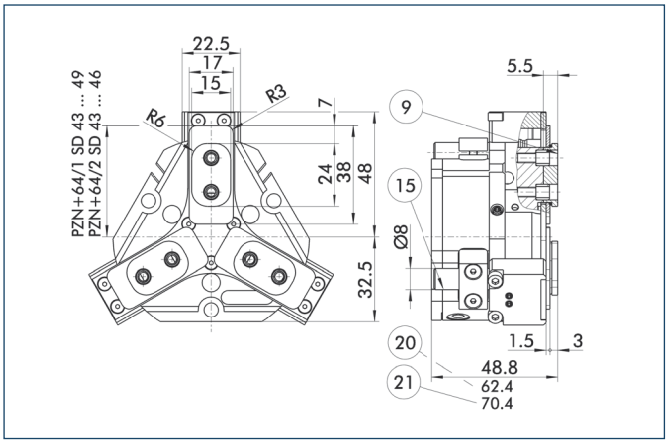
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

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.

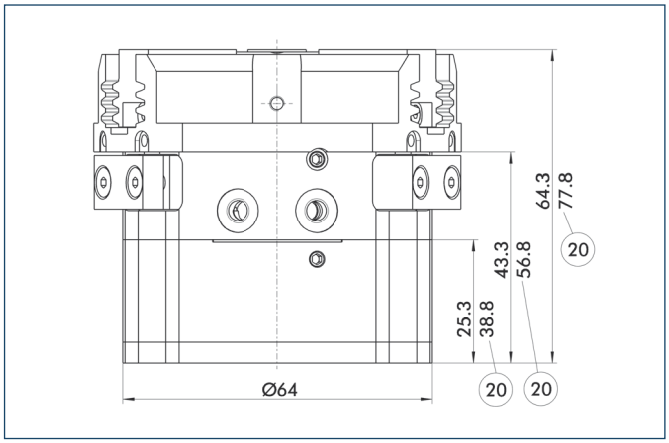
Dust-protection version



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.

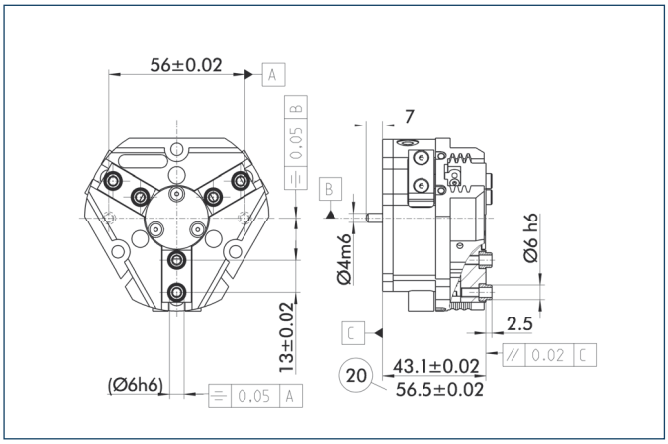
Force intensified version



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.

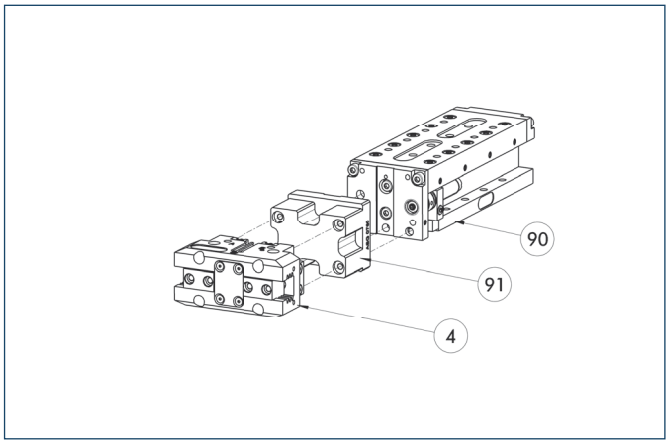
Precision version



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.

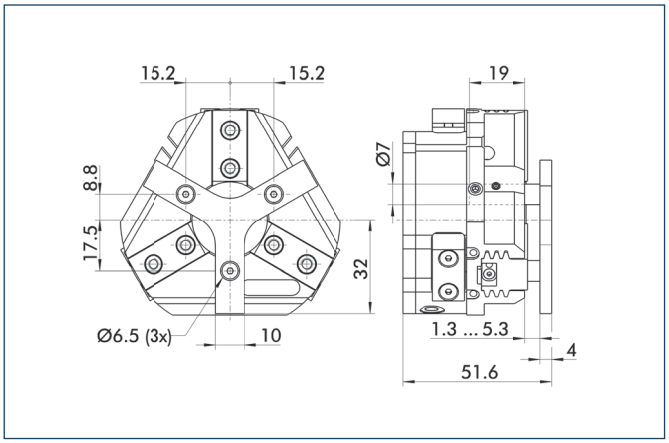
Modular Assembly Automation



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".

Spring-loaded pressure piece

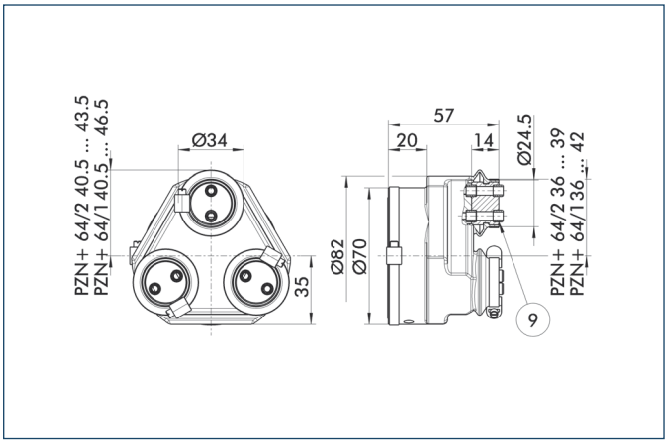


For spring-supported positioning of the workpiece against a stop after the gripper has opened. Especially developed for loading machines.

Description	ID	Stroke	Min. force
Spring-loaded pressure piece			
A-PZN-plus/DPZ-plus 64	**0303720**	4 mm	11 N

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

Protection cover

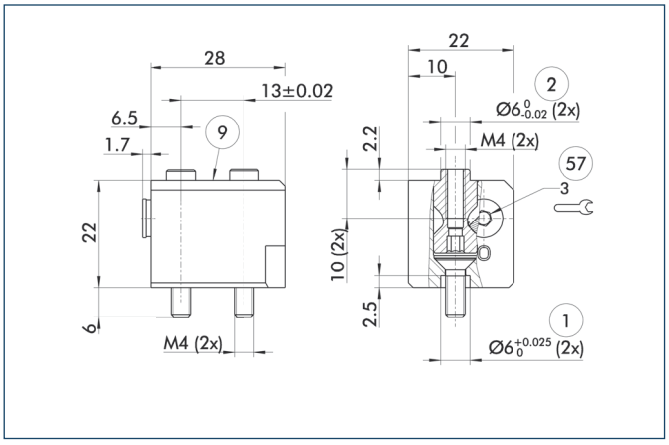


⑨ For mounting screw connection diagram, see basic version

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 PZN-plus 64	**0303480**	2

Quick-change Jaw System

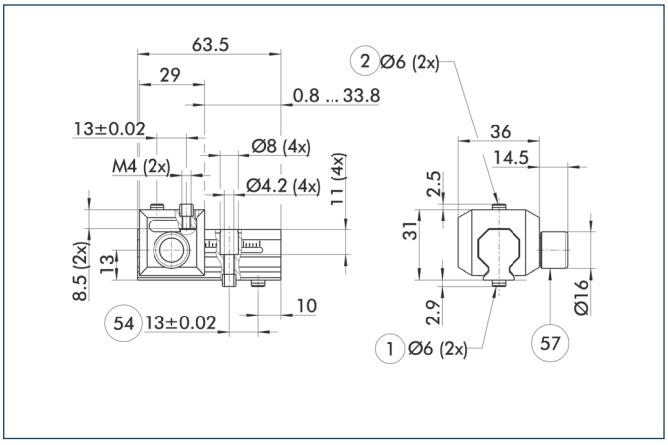


① Gripper connection
② Finger connection
⑨ For mounting screw connection diagram, see basic version
㊼ Locking

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 64	**0303022**
Quick-change Jaw System base	
BSWS-B 64	**0303023**
Quick-change Jaw System reversed	
BSWS-U 64	**0303041**

Universal intermediate jaw



① Gripper connection
② Finger connection
㊹ Optional right or left connection
㊼ Locking

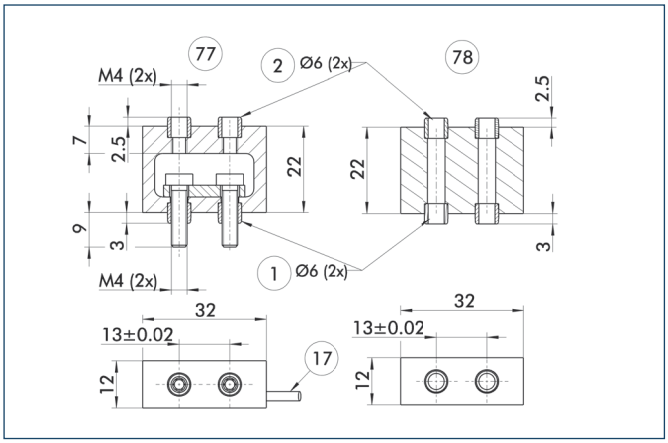
The universal intermediate jaw allows fast tool-free and reliable plugging and shifting of top jaws at the gripper.

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.

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

Force measuring jaws

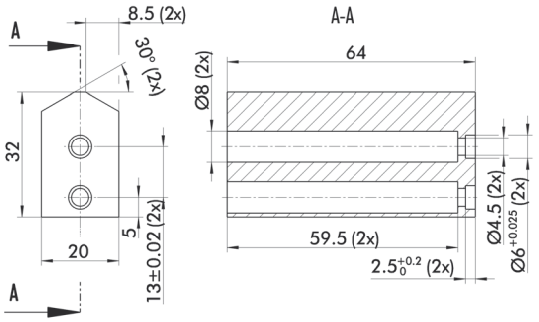


① Gripper connection
② Finger connection
⑰ Cable outlet
⑦⑦ Active intermediate jaws
⑦⑧ Passive intermediate jaws

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 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

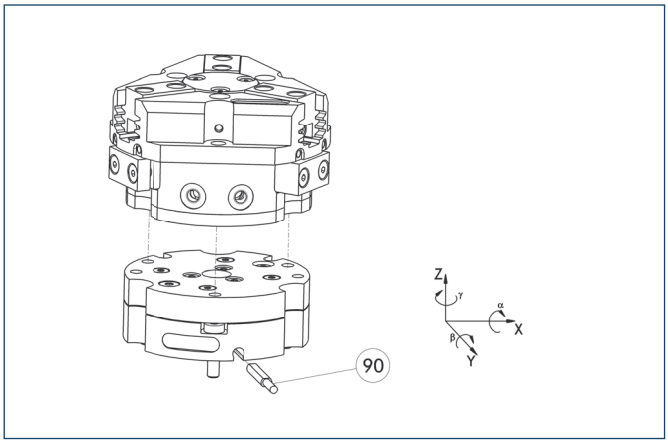


Finger blanks for customized subsequent machining

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

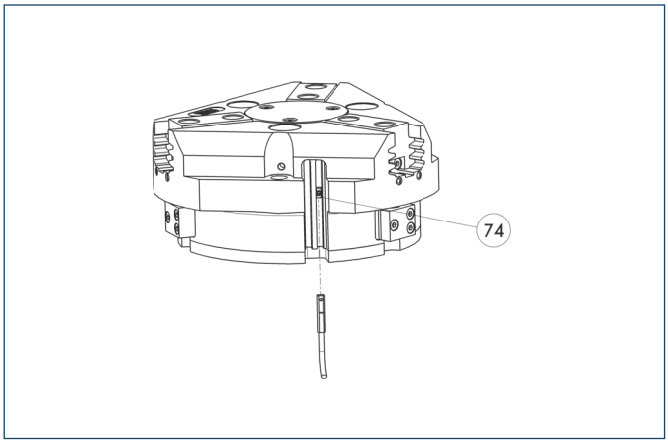


90 Monitoring of locking

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-Z	**0324766**	Yes	
TCU-064-3-OV-Z	**0324767**	No	

Programmable magnetic switch



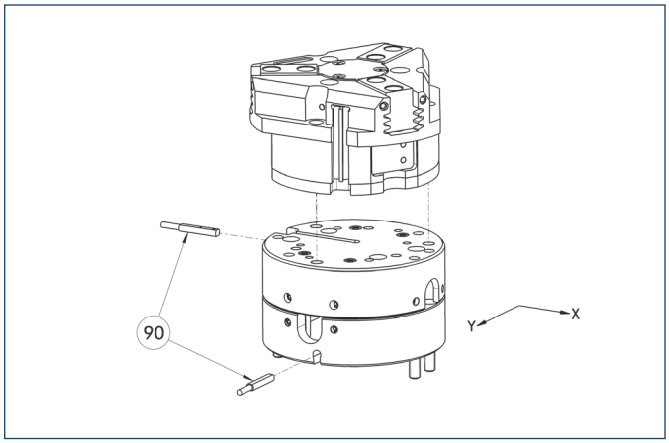
74 Stop for MMS-P

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.

Compensation unit with spring reset

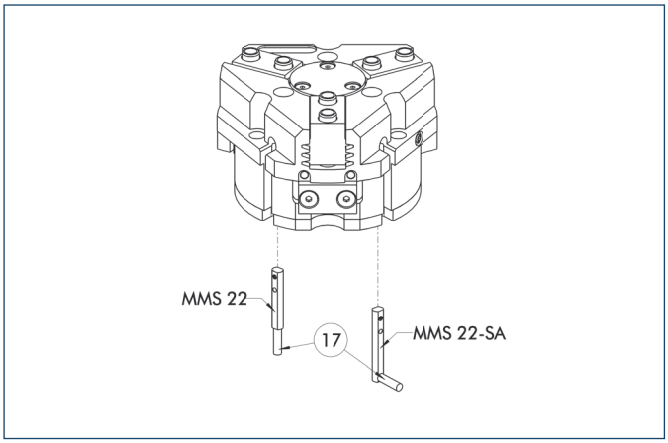


90 Monitoring

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

Electronic magnetic switches



⑰ Cable outlet

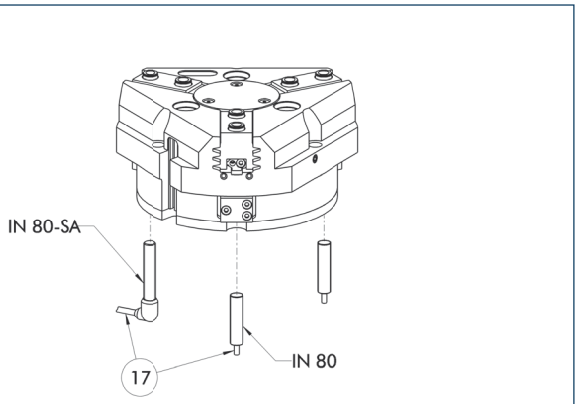
End position monitoring for mounting in the C-slot

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

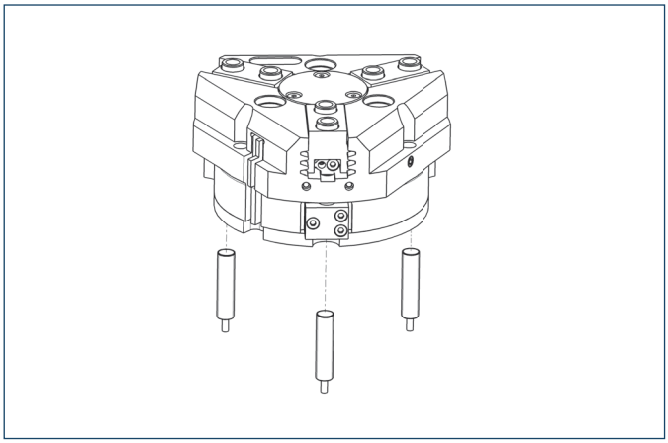
Description	ID	Recommended product
Inductive proximity switches		
IN 80-S-M8	**0301478**	•
IN 80-S-M12	**0301578**	
INK 80-S	**0301550**	
IN-C 80-S-M8	**0301475**	
Inductive proximity switch with lateral outlet		
IN 80-S-M12-SA	**0301587**	
IN 80-S-M8-SA	**0301483**	•
INK 80-S-SA	**0301566**	
Connection 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

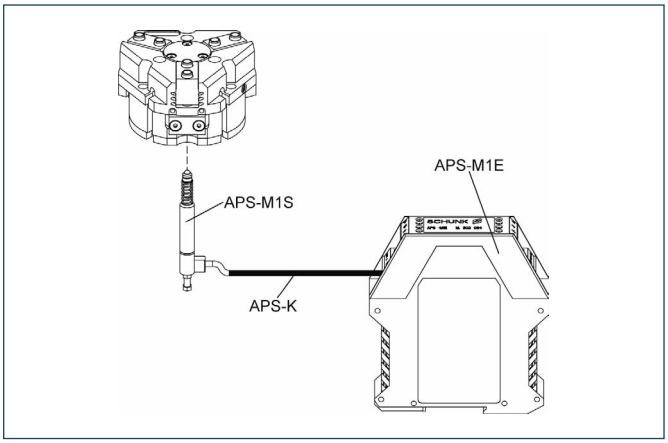


End position monitoring mounted with mounting kit

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



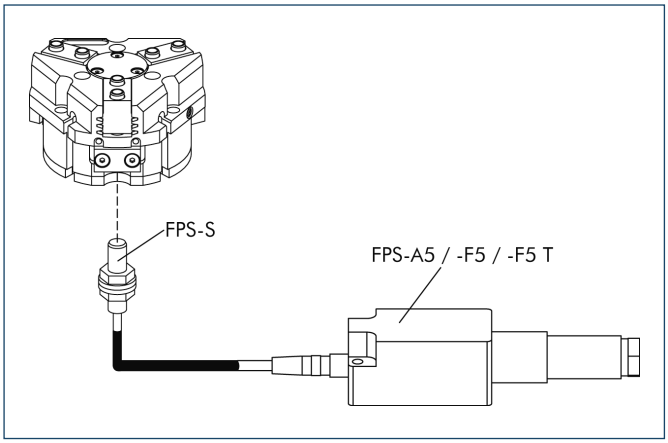
Analog multi position monitoring for any desired positions

Description	ID
Mounting kit	
AS-APS-M1-64/1	**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**

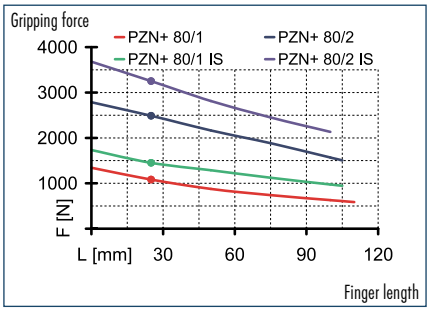
ⓘ When using a FPS system, a FPS sensor (FPS-S) and a control unit (FPS-F5 / F5 T or A5) are required for each gripper as well as a mounting kit (AS), if listed. Cable extensions (KV) are available as options in the “Accessories” catalog section.

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

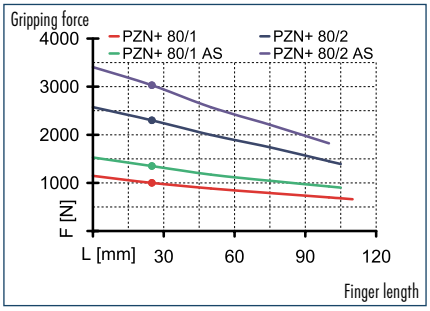
PZN-plus 80

Pneumatic • 3-Finger Centric Gripper • Universal Gripper

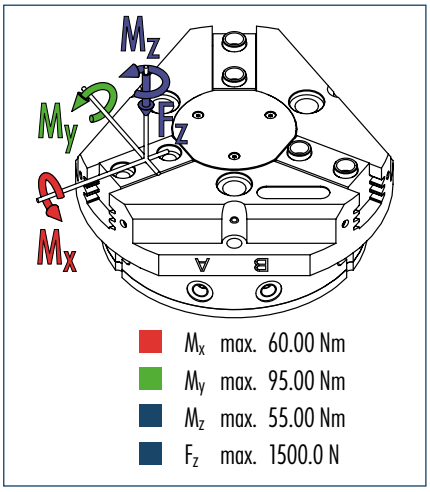
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load



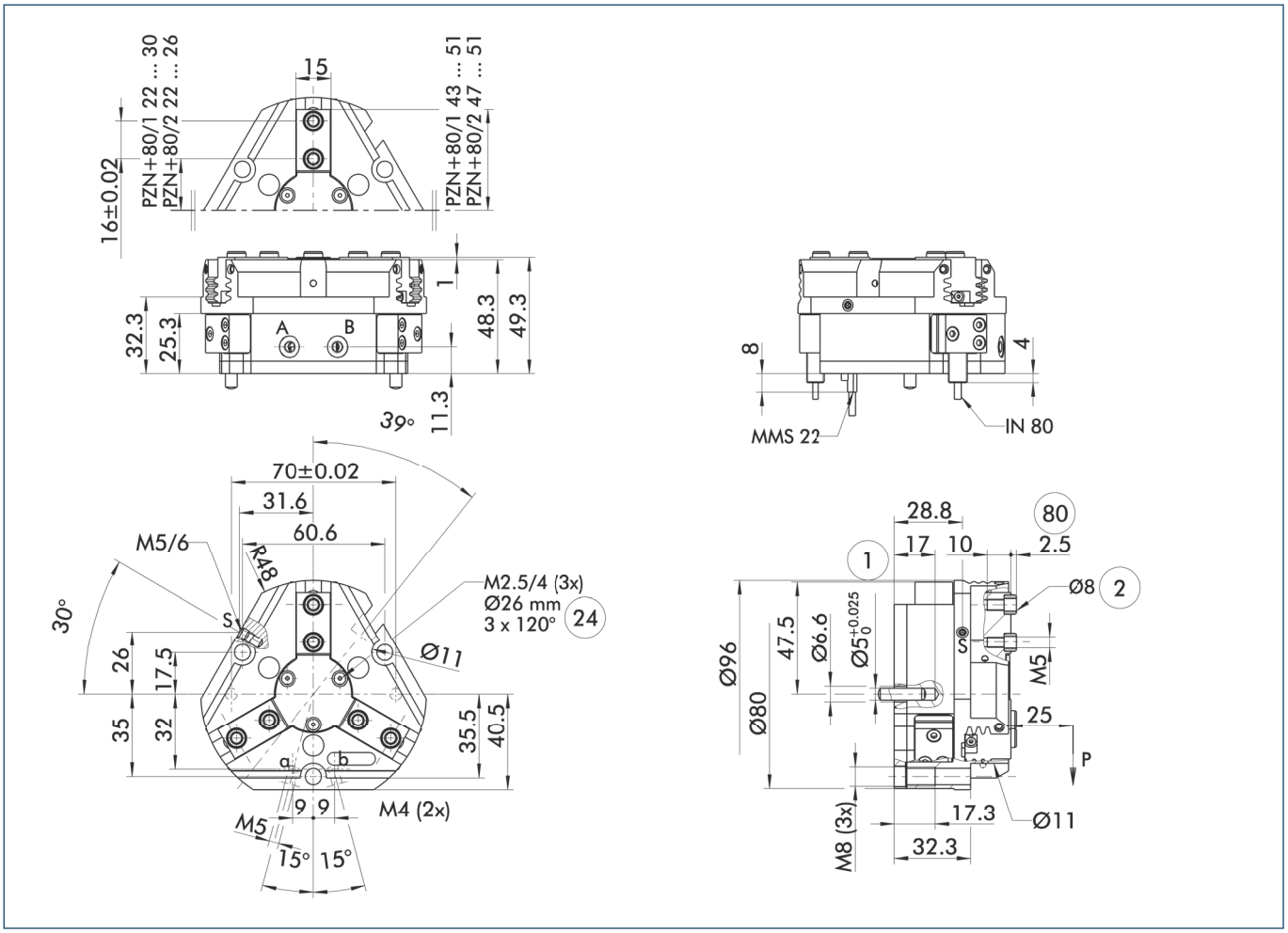
- M_x max. 60.00 Nm
- M_y max. 95.00 Nm
- M_z max. 55.00 Nm
- F_z max. 1500.0 N

ⓘ 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		PZN-plus 80-1	PZN-plus 80-2	PZN-plus 80-1-AS	PZN-plus 80-2-AS	PZN-plus 80-1-IS	PZN-plus 80-2-IS
ID		**0303311**	**0303411**	**0303511**	**0303611**	**0303541**	**0303641**
Stroke per finger	[mm]	8	4	8	4	8	4
Closing force	[N]	1000	2300	1350	3030		
Opening force	[N]	1080	2490			1450	3250
Min. spring force	[N]			350	730	370	760
Weight	[kg]	0.79	0.79	0.96	0.96	0.96	0.96
Recommended workpiece weight	[kg]	5	11.5	5	11.5	5	11.5
Air consumption per double stroke	[cm³]	60	60	108	108	108	108
Min./max. operating pressure	[bar]	2/8	2/8	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]	0.05/0.05	0.05/0.05	0.03/0.05	0.03/0.05	0.06/0.04	0.06/0.04
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		**37303311**	**37303411**	**37303511**	**37303611**	**37303541**	**37303641**
IP class		64	64	64	64	64	64
Weight	[kg]	1	1	1.17	1.17	1.17	1.17
Anti-corrosion version		**38303311**	**38303411**	**38303511**	**38303611**	**38303541**	**38303641**
High-temperature version		**39303311**	**39303411**	**39303511**	**39303611**	**39303541**	**39303641**
Min./max. ambient temperature	[°C]	-10/130	-10/130	-10/130	-10/130	-10/130	-10/130
Force intensified version		**PZN-plus 80-1-KVZ**	**PZN-plus 80-2-KVZ**	**PZN-plus 80-1-AS-KVZ**		**PZN-plus 80-1-IS-KVZ**	
ID		**0372202**	**0372212**	**0372222**		**0372242**	
Closing force	[N]	1000	4140	2150			
Opening force	[N]	1945	4480			2315	
Weight	[kg]	1.2	1.2	1.4		1.4	
Maximum pressure	[bar]	8	8	6		6	
Max. permitted finger length	[mm]	100	80	80		80	
Precision version		**0303341**	**0303441**	**0303491**	**0303591**		

Main view

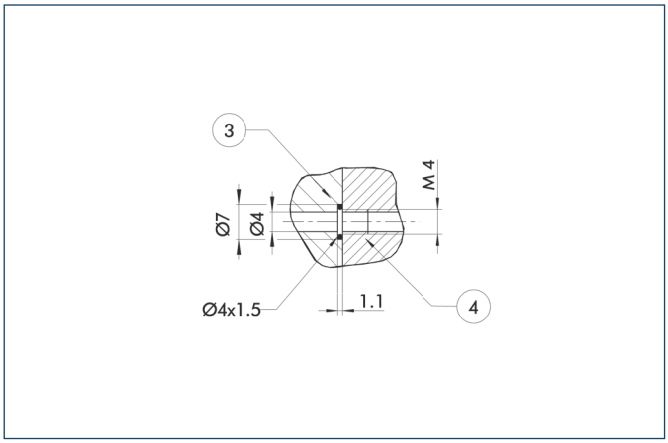


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ 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
㉔ Bolt circle
㊽ Depth of the centering sleeve hole in the matching part

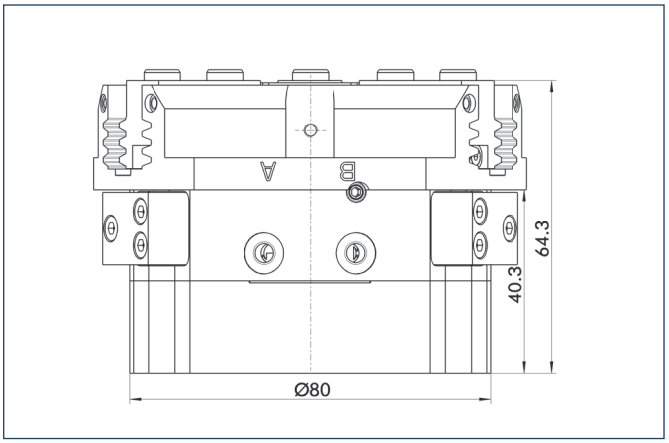
Hose-free direct connection



③ Adapter
④ Gripper

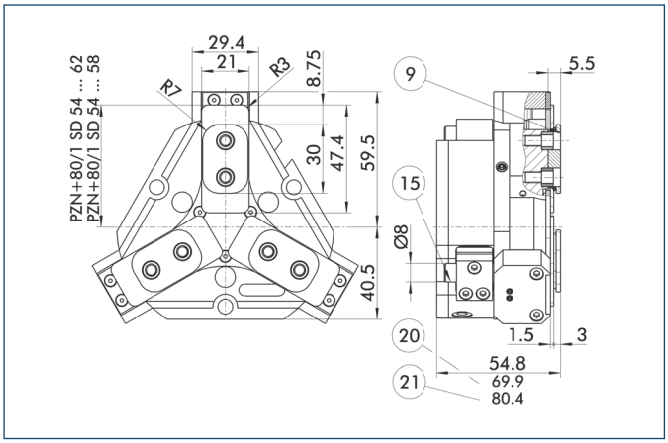
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

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.

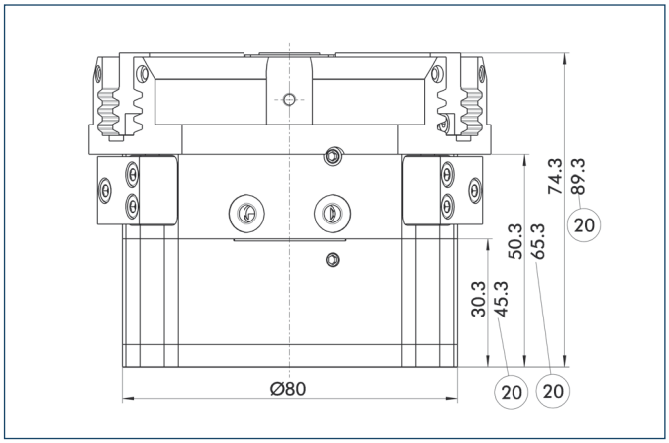
Dust-protection version



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.

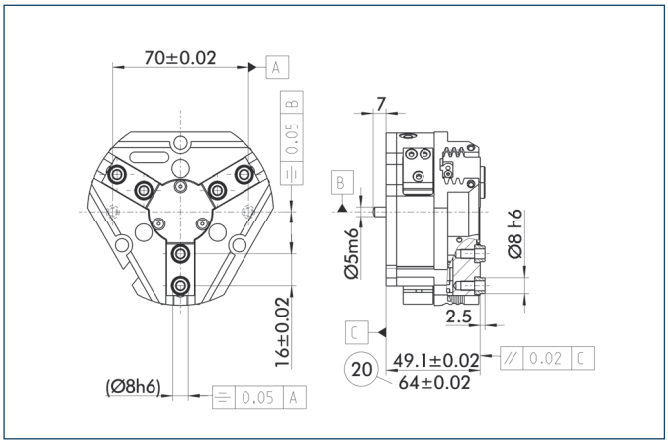
Force intensified version



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.

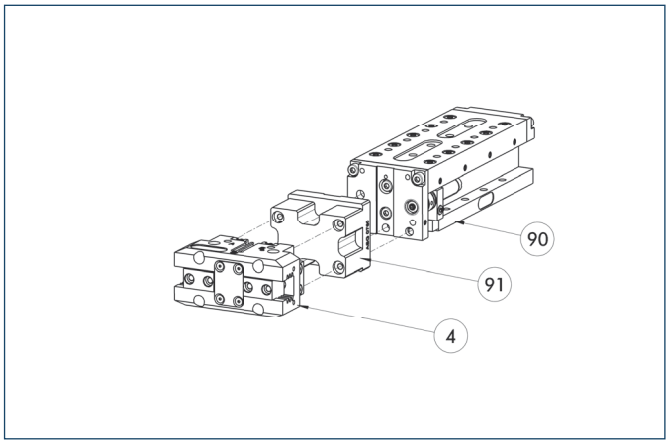
Precision version



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.

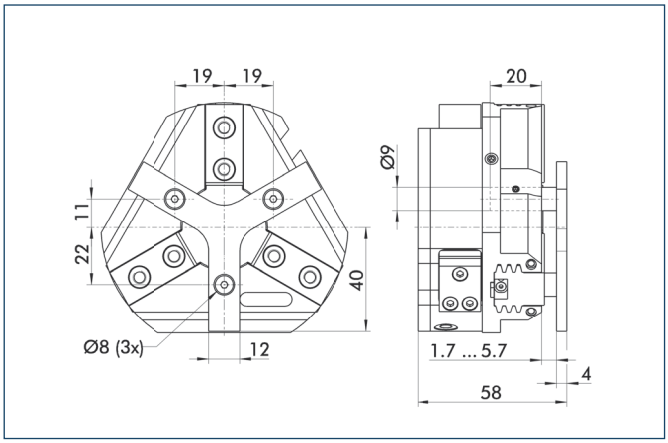
Modular Assembly Automation



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".

Spring-loaded pressure piece

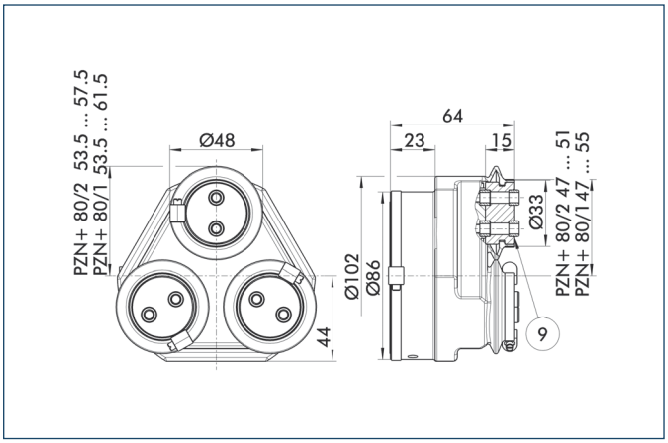


For spring-supported positioning of the workpiece against a stop after the gripper has opened. Especially developed for loading machines.

Description	ID	Stroke	Min. force
Spring-loaded pressure piece			
A-PZN-plus/DPZ-plus 80	**0303721**	4 mm	18 N

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

Protection cover

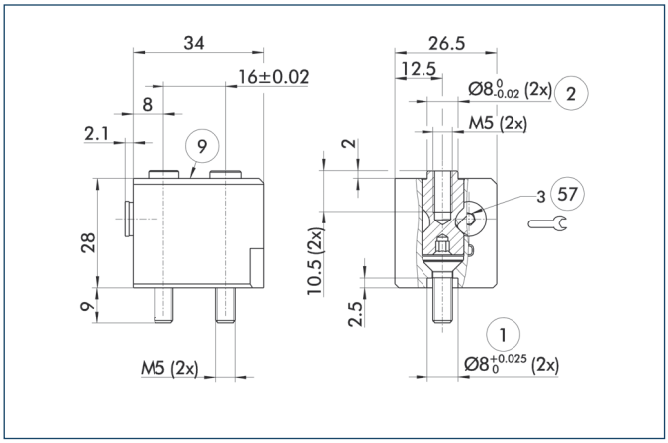


⑨ For mounting screw connection diagram, see basic version

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 PZN-plus 80	**0303481**	2

Quick-change Jaw System

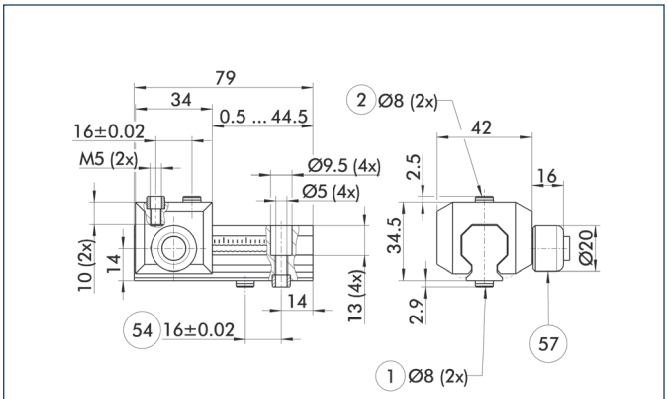


① Gripper connection
② Finger connection
⑨ For mounting screw connection diagram, see basic version
㊼ Locking

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 80	**0303024**
Quick-change Jaw System base	
BSWS-B 80	**0303025**
Quick-change Jaw System reversed	
BSWS-U 80	**0303042**

Universal intermediate jaw



① Gripper connection
② Finger connection
㊹ Optional right or left connection
㊼ Locking

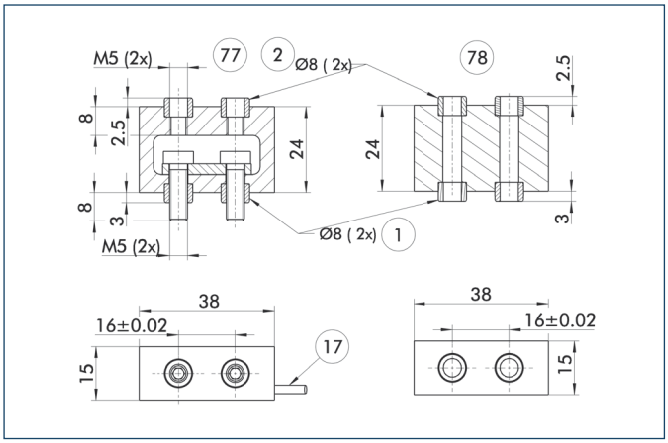
The universal intermediate jaw allows fast tool-free and reliable plugging and shifting of top jaws at the gripper.

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.

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

Force measuring jaws

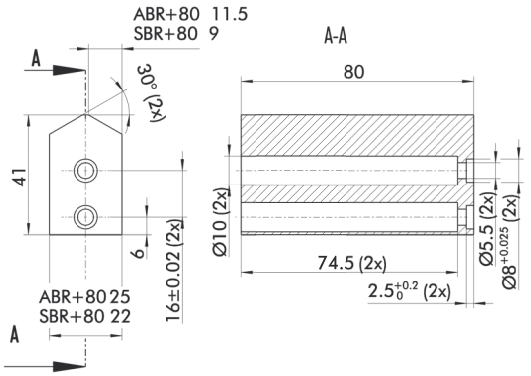


① Gripper connection
② Finger connection
⑰ Cable outlet
⑦⑦ Active intermediate jaws
⑦⑧ Passive intermediate jaws

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 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

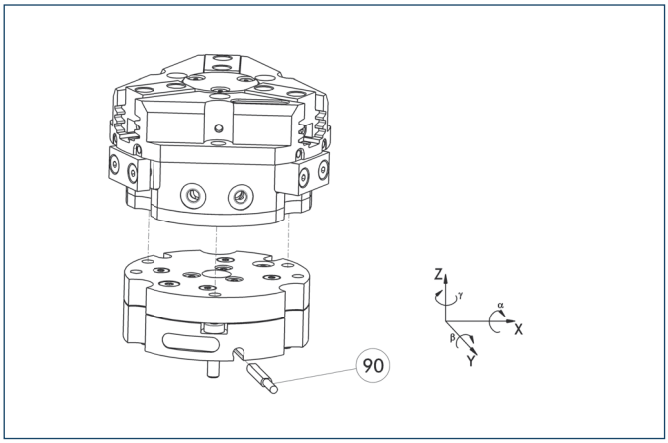


Finger blanks for customized subsequent machining

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

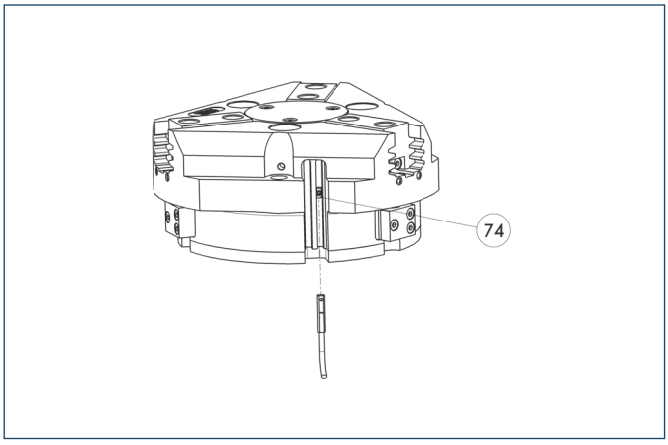


(90) Monitoring of locking

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-Z	**0324784**	Yes	
TCU-080-3-OV-Z	**0324785**	No	

Programmable magnetic switch



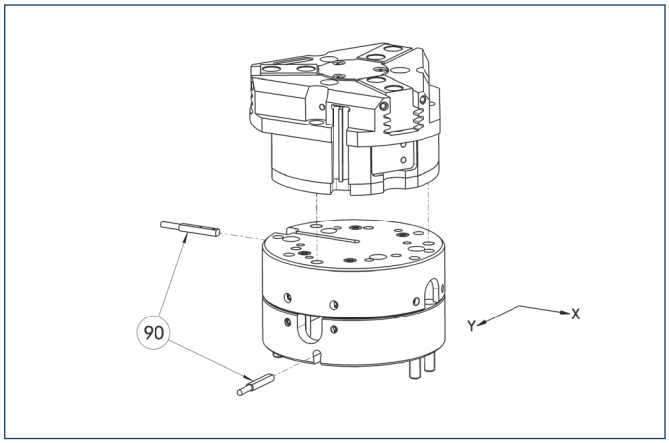
(74) Stop for MMS-P

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.

Compensation unit with spring reset

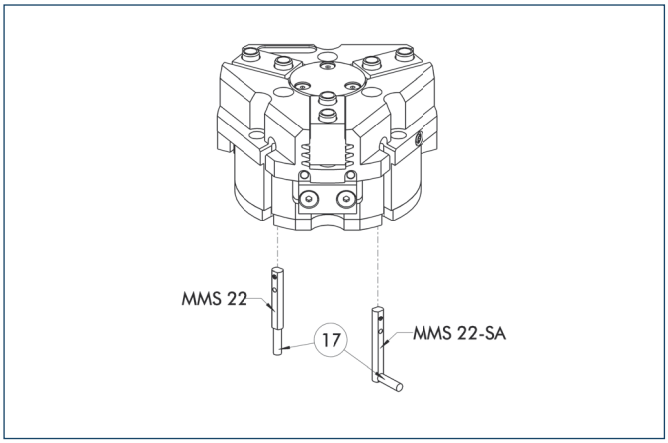


(90) Monitoring

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

Electronic magnetic switches



⑰ Cable outlet

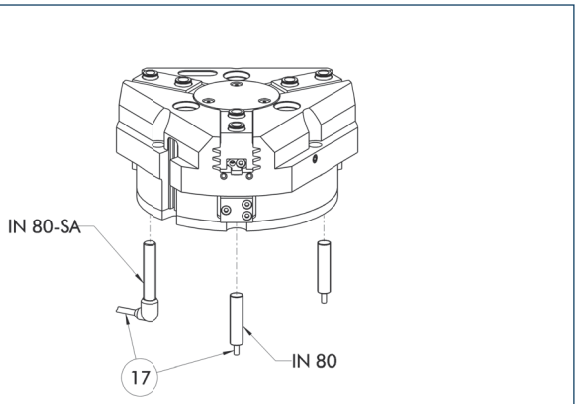
End position monitoring for mounting in the C-slot

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

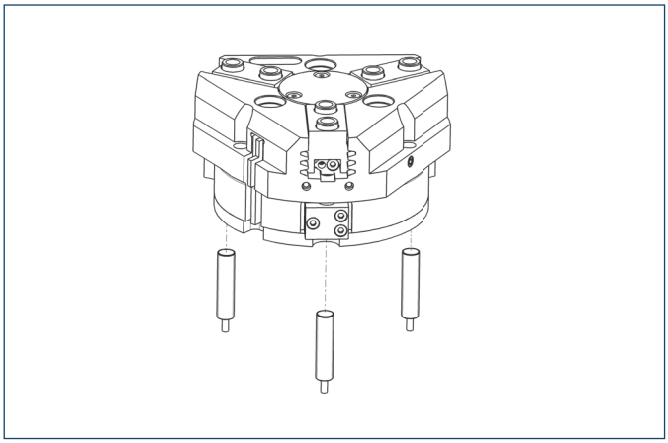
Description	ID	Recommended product
Inductive proximity switches		
IN 80-S-M8	**0301478**	•
IN 80-S-M12	**0301578**	
INK 80-S	**0301550**	
IN-C 80-S-M8	**0301475**	
Inductive proximity switch with lateral outlet		
IN 80-S-M12-SA	**0301587**	
IN 80-S-M8-SA	**0301483**	•
INK 80-S-SA	**0301566**	
Connection 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

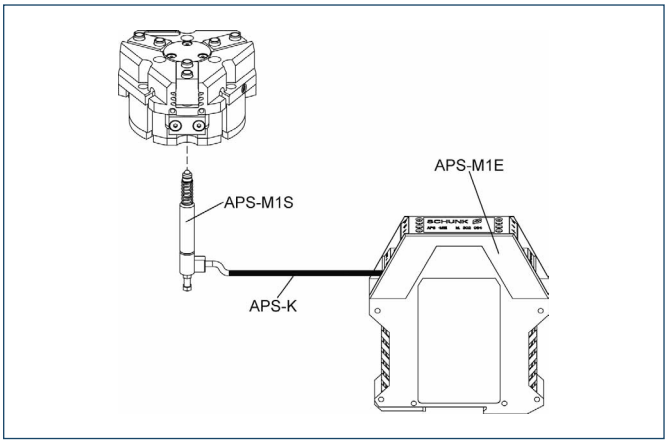


End position monitoring mounted with mounting kit

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



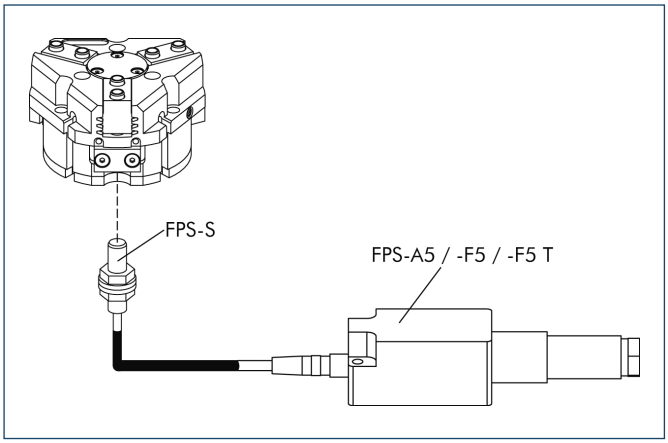
Analog multi position monitoring for any desired positions

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

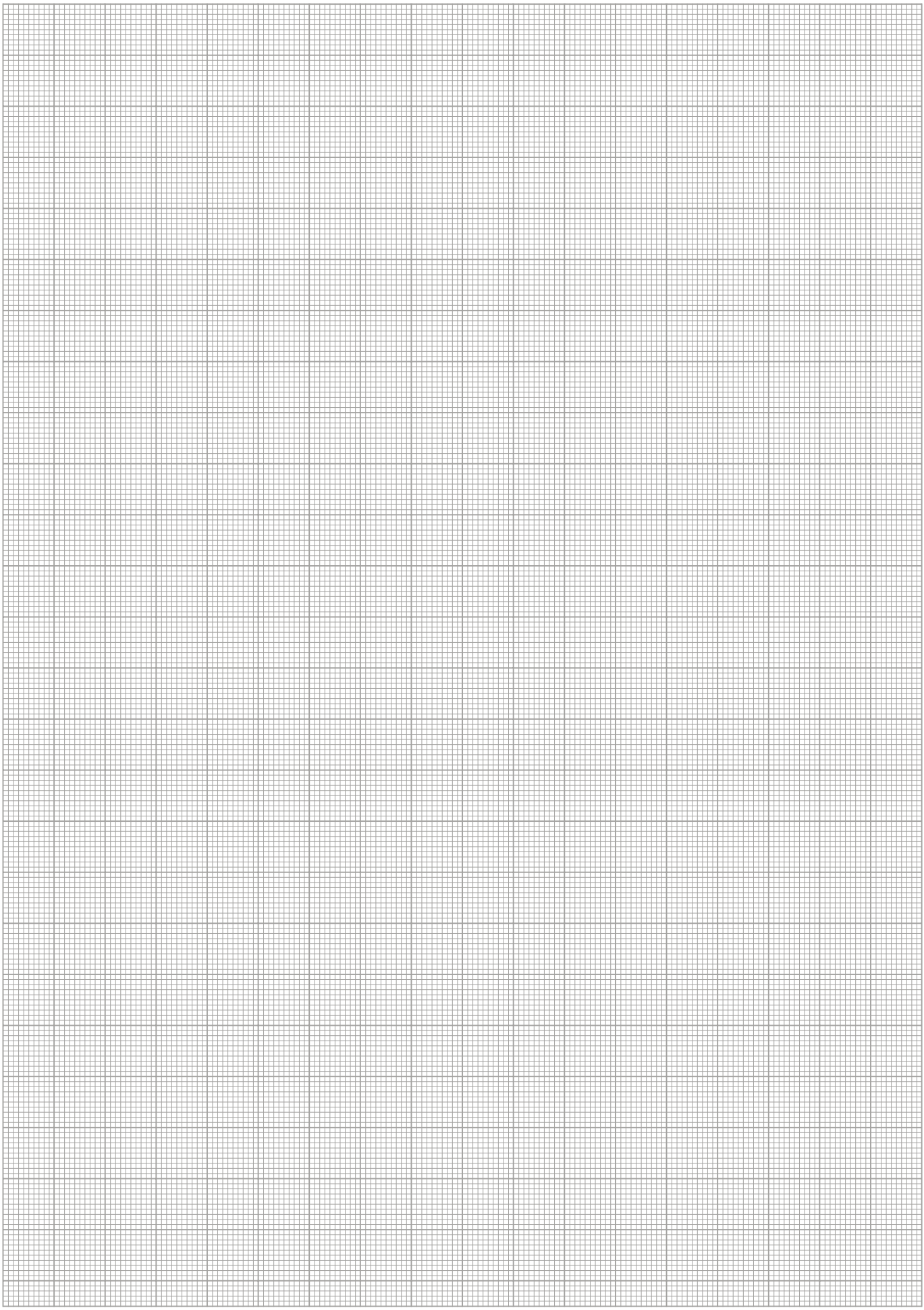


Flexible position monitoring of up to five positions

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.

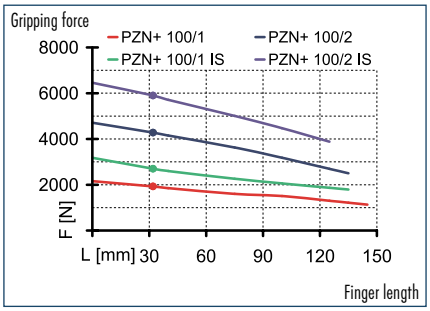
You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.



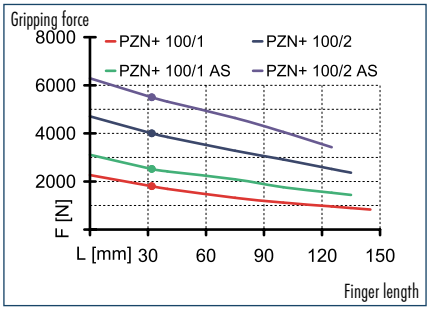
PZN-plus 100

Pneumatic • 3-Finger Centric Gripper • Universal Gripper

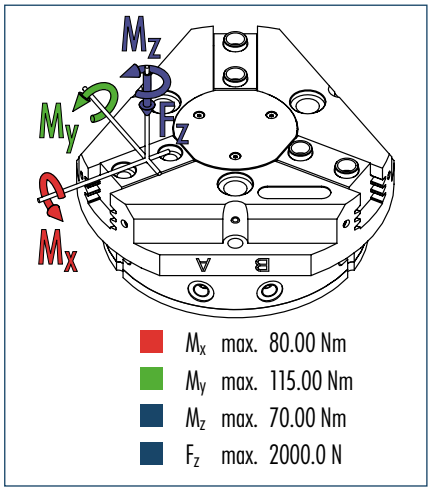
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load



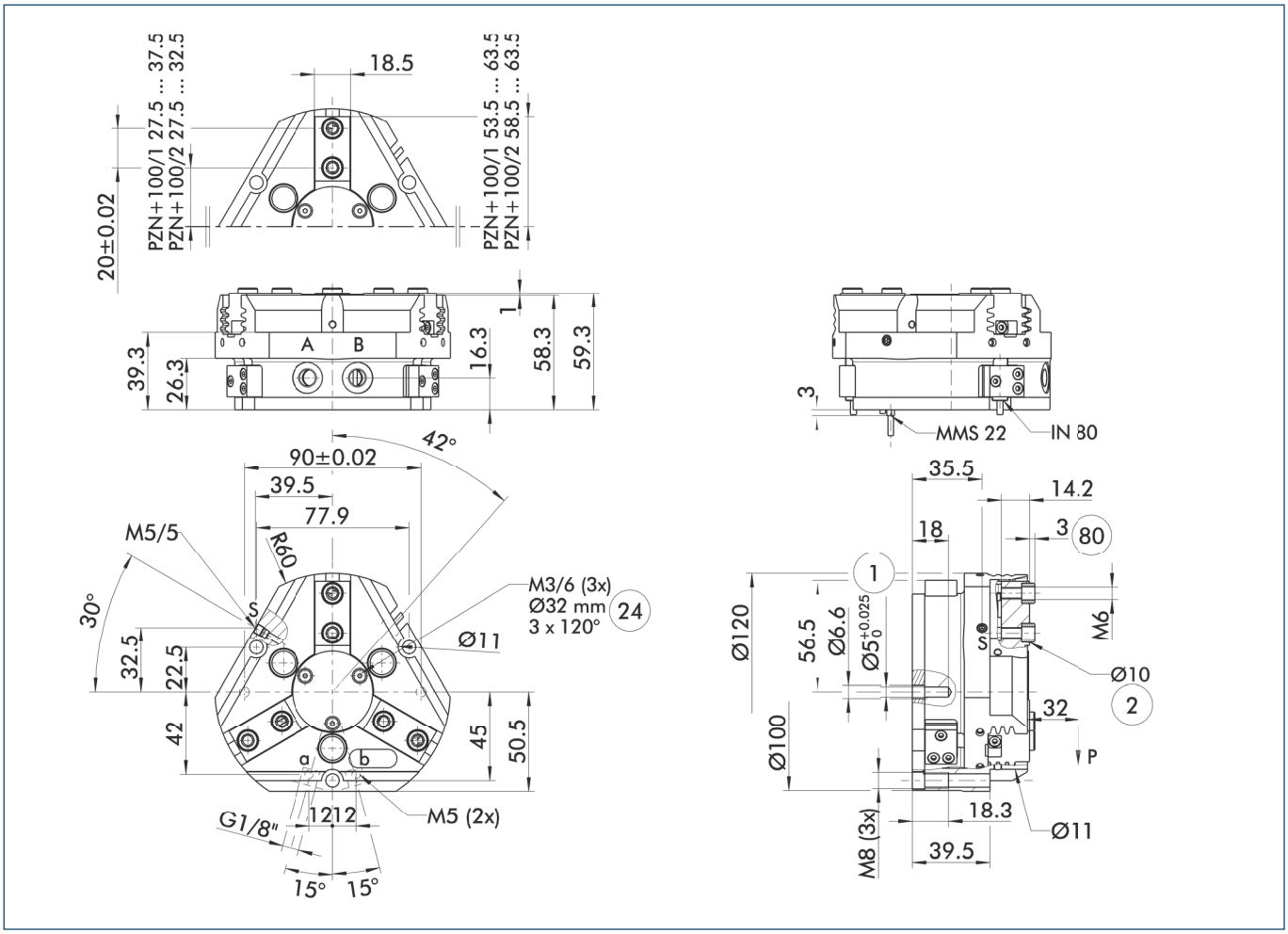
- M_x max. 80.00 Nm
- M_y max. 115.00 Nm
- M_z max. 70.00 Nm
- F_z max. 2000.0 N

ⓘ 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		PZN-plus 100-1	PZN-plus 100-2	PZN-plus 100-1-AS	PZN-plus 100-2-AS	PZN-plus 100-1-IS	PZN-plus 100-2-IS
ID		**0303312**	**0303412**	**0303512**	**0303612**	**0303542**	**0303642**
Stroke per finger	[mm]	10	5	10	5	10	5
Closing force	[N]	1800	4000	2520	5500		
Opening force	[N]	1920	4280			2700	5900
Min. spring force	[N]			720	1500	780	1620
Weight	[kg]	1.41	1.41	1.95	1.95	1.95	1.95
Recommended workpiece weight	[kg]	9	20	9	20	9	20
Air consumption per double stroke	[cm³]	120	120	210	210	210	210
Min./max. operating pressure	[bar]	2/8	2/8	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	0.1/0.2	0.1/0.2	0.2/0.1	0.2/0.1
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		**37303312**	**37303412**	**37303512**	**37303612**	**37303542**	**37303642**
IP class		64	64	64	64	64	64
Weight	[kg]	1.9	1.9	2.44	2.44	2.44	2.44
Anti-corrosion version		**38303312**	**38303412**	**38303512**	**38303612**	**38303542**	**38303642**
High-temperature version		**39303312**	**39303412**	**39303512**	**39303612**	**39303542**	**39303642**
Min./max. ambient temperature	[°C]	-10/130	-10/130	-10/130	-10/130	-10/130	-10/130
Force intensified version		PZN-plus 100-1-KVZ	PZN-plus 100-2-KVZ	PZN-plus 100-1-AS-KVZ		PZN-plus 100-1-IS-KVZ	
ID		**0372203**	**0372213**	**0372223**		**0372243**	
Closing force	[N]	3240	7200	3960			
Opening force	[N]	3455	7705			4235	
Weight	[kg]	2.3	2.3	2.7		2.7	
Maximum pressure	[bar]	8	8	6		6	
Max. permitted finger length	[mm]	100	80	80		80	
Precision version		**0303342**	**0303442**	**0303492**	**0303592**		

Main view

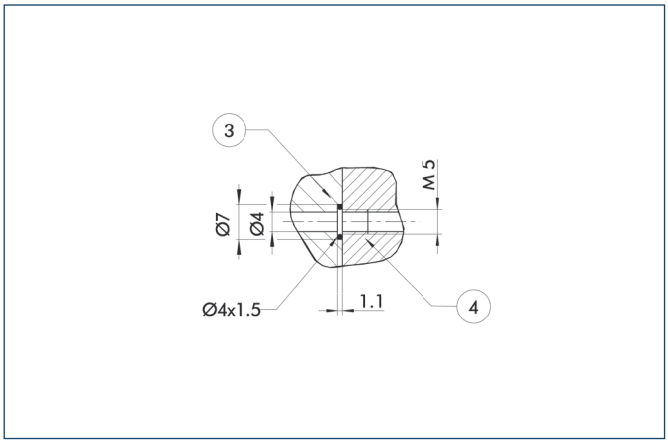


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ 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
㉔ Bolt circle
㊽ Depth of the centering sleeve hole in the matching part

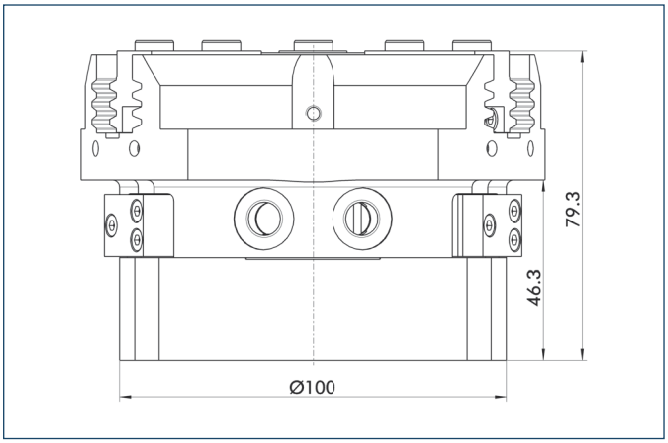
Hose-free direct connection



③ Adapter
④ Gripper

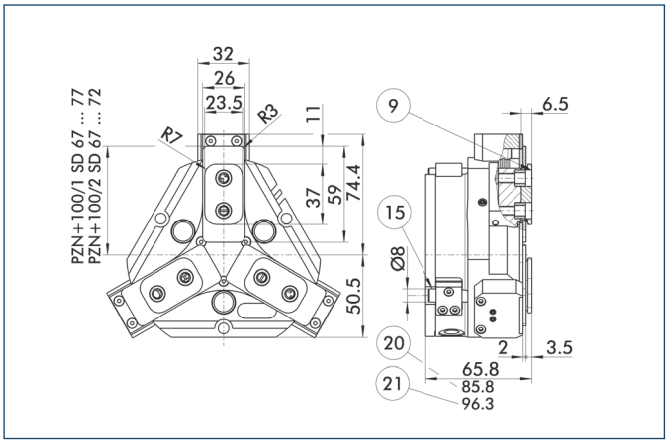
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

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.

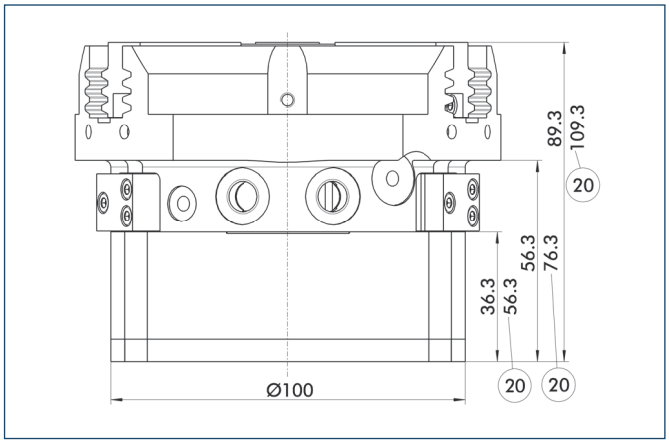
Dust-protection version



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.

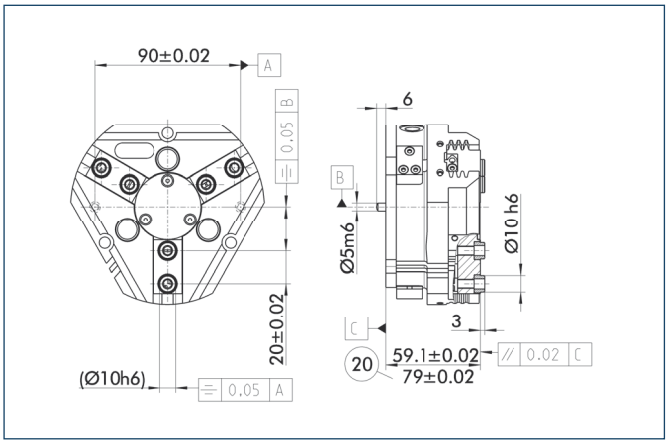
Force intensified version



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.

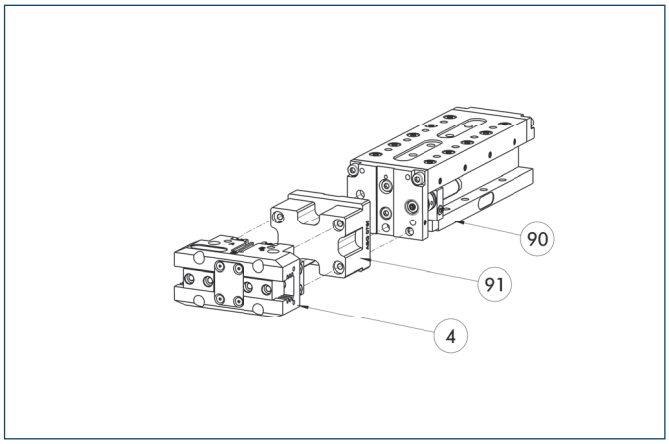
Precision version



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.

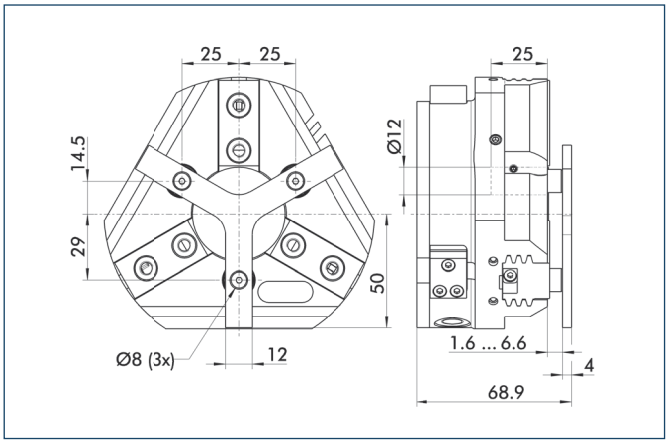
Modular Assembly Automation



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".

Spring-loaded pressure piece

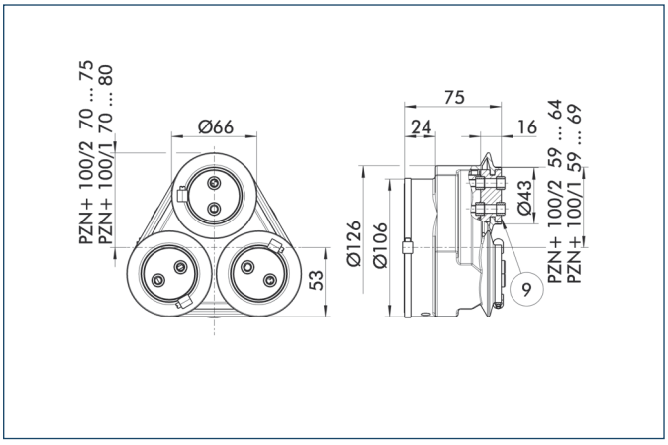


For spring-supported positioning of the workpiece against a stop after the gripper has opened. Especially developed for loading machines.

Description	ID	Stroke	Min. force
Spring-loaded pressure piece			
A-PZN-plus/DPZ-plus 100	**0303722**	5 mm	35 N

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

Protection cover

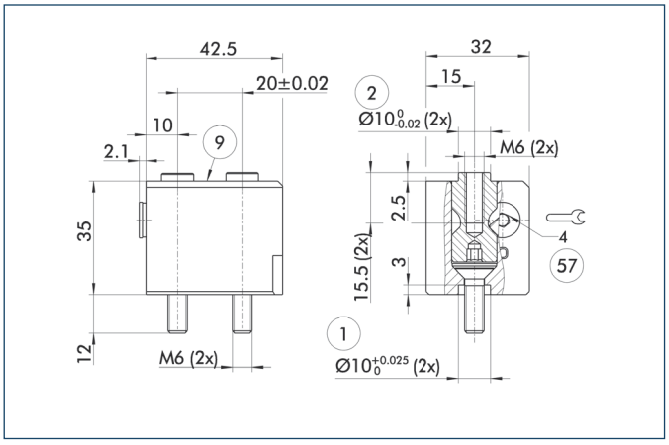


⑨ For mounting screw connection diagram, see basic version

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 PZN-plus 100	**0303482**	2

Quick-change Jaw System

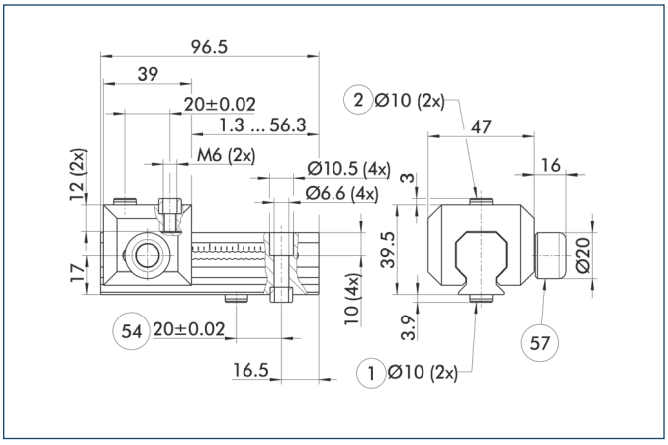


① Gripper connection
② Finger connection
⑨ For mounting screw connection diagram, see basic version
㊼ Locking

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 100	**0303026**
Quick-change Jaw System base	
BSWS-B 100	**0303027**
Quick-change Jaw System reversed	
BSWS-U 100	**0303043**

Universal intermediate jaw



① Gripper connection
② Finger connection
㊹ Optional right or left connection
㊼ Locking

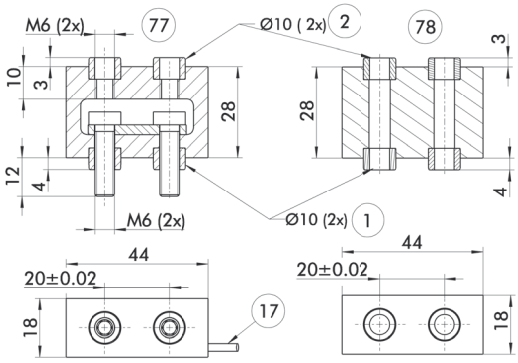
The universal intermediate jaw allows fast tool-free and reliable plugging and shifting of top jaws at the gripper.

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.

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

Force measuring jaws

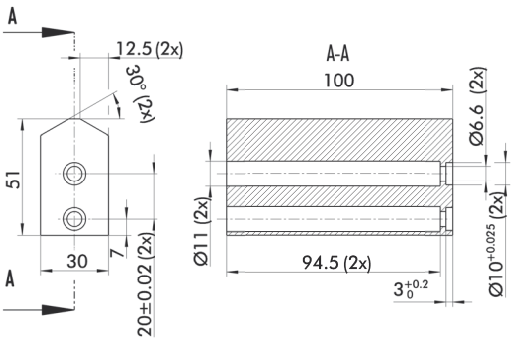


① Gripper connection
② Finger connection
⑰ Cable outlet
⑦⑦ Active intermediate jaws
⑦⑧ Passive intermediate jaws

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 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

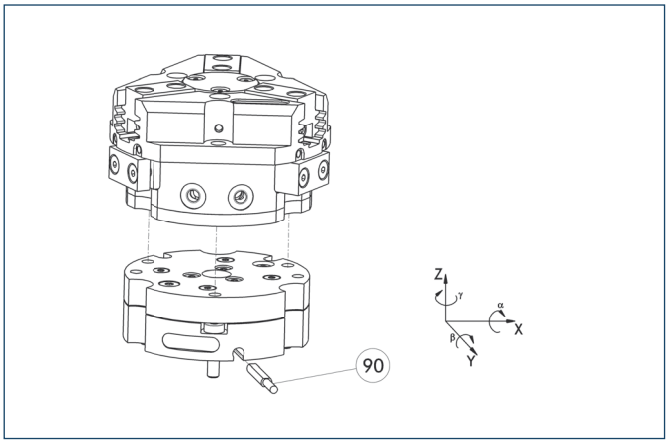


Finger blanks for customized subsequent machining

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

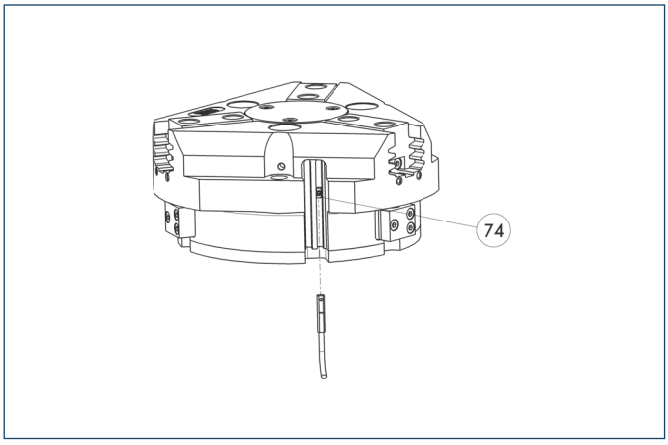


90 Monitoring of locking

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-Z	**0324794**	Yes	
TCU-100-2-OV-Z	**0324799**	No	

Programmable magnetic switch



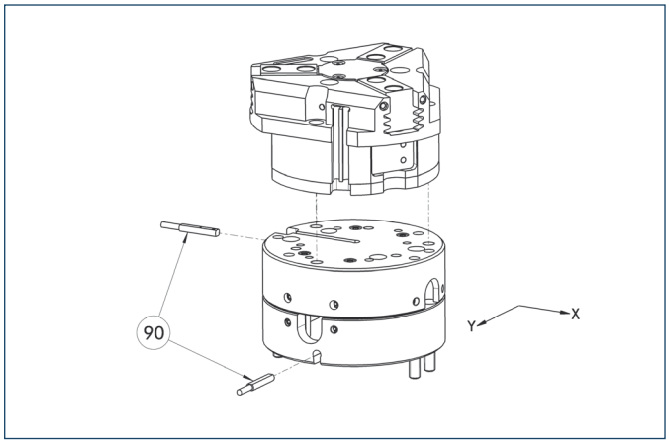
74 Stop for MMS-P

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.

Compensation unit with spring reset

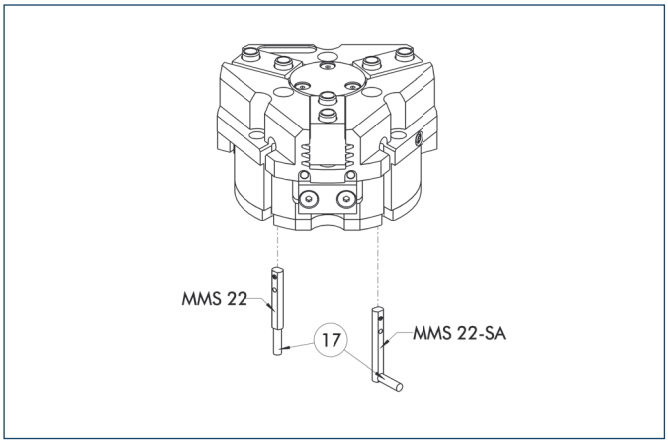


90 Monitoring

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

Electronic magnetic switches



⑰ Cable outlet

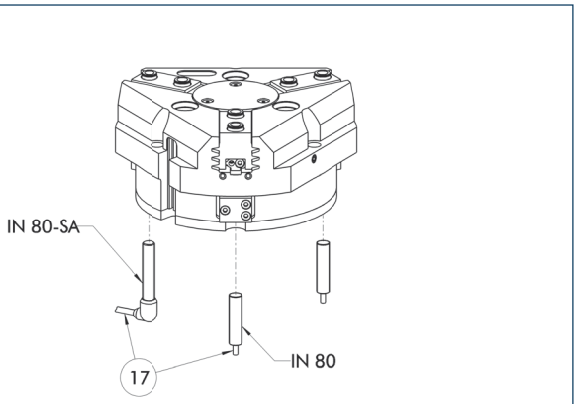
End position monitoring for mounting in the C-slot

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

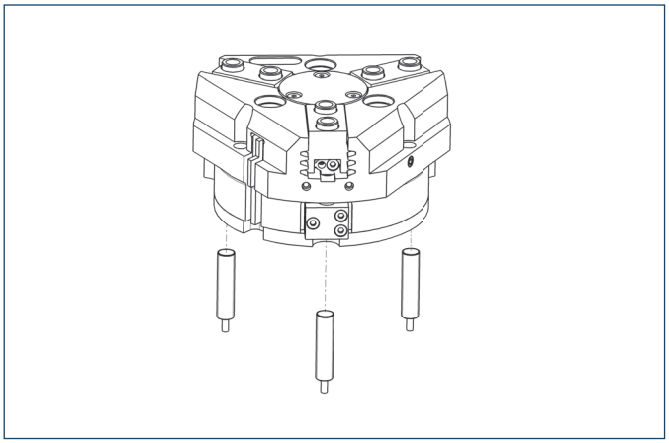
Description	ID	Recommended product
Inductive proximity switches		
IN 80-S-M8	**0301478**	•
IN 80-S-M12	**0301578**	
INK 80-S	**0301550**	
Inductive proximity switch with lateral outlet		
IN 80-S-M12-SA	**0301587**	
IN 80-S-M8-SA	**0301483**	•
INK 80-S-SA	**0301566**	
Connection cables		
KA BG08-L 3P-0300-PNP	**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

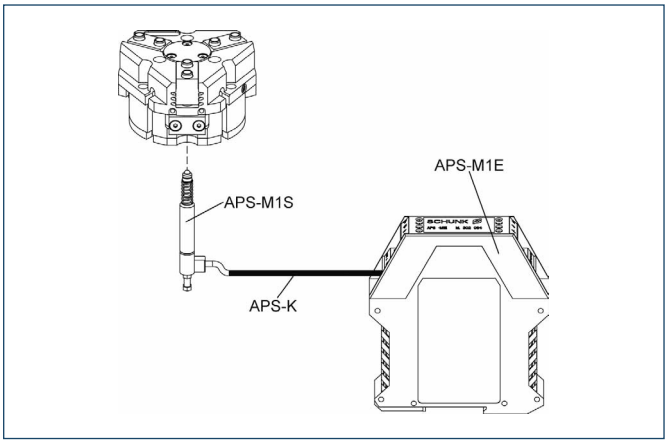


End position monitoring mounted with mounting kit

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



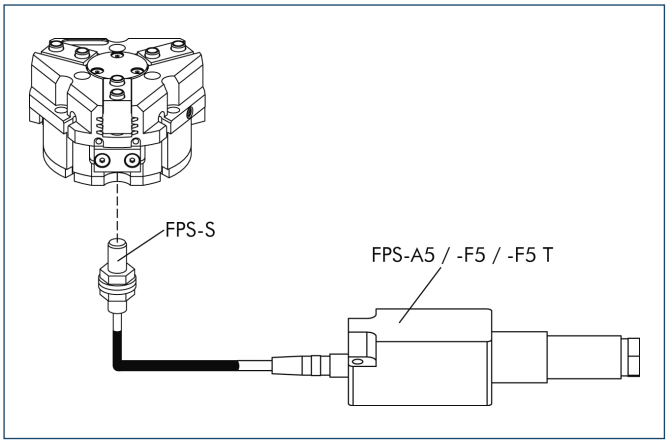
Analog multi position monitoring for any desired positions

Description	ID
Mounting kit	
AS-APS-M1-100/1	**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**

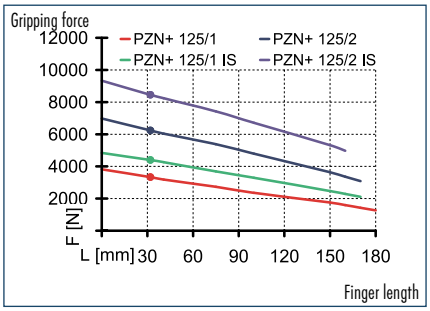
ⓘ When using a FPS system, a FPS sensor (FPS-S) and a control unit (FPS-F5 / F5 T or A5) are required for each gripper as well as a mounting kit (AS), if listed. Cable extensions (KV) are available as options in the “Accessories” catalog section.

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

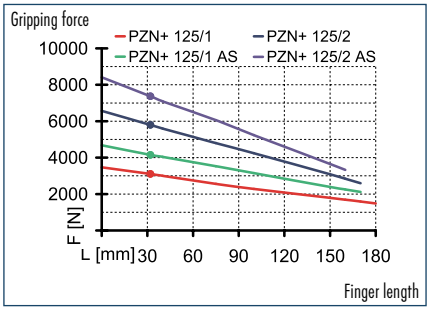
PZN-plus 125

Pneumatic • 3-Finger Centric Gripper • Universal Gripper

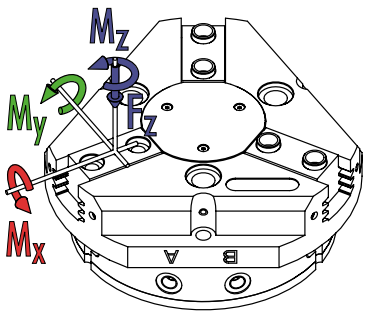
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load



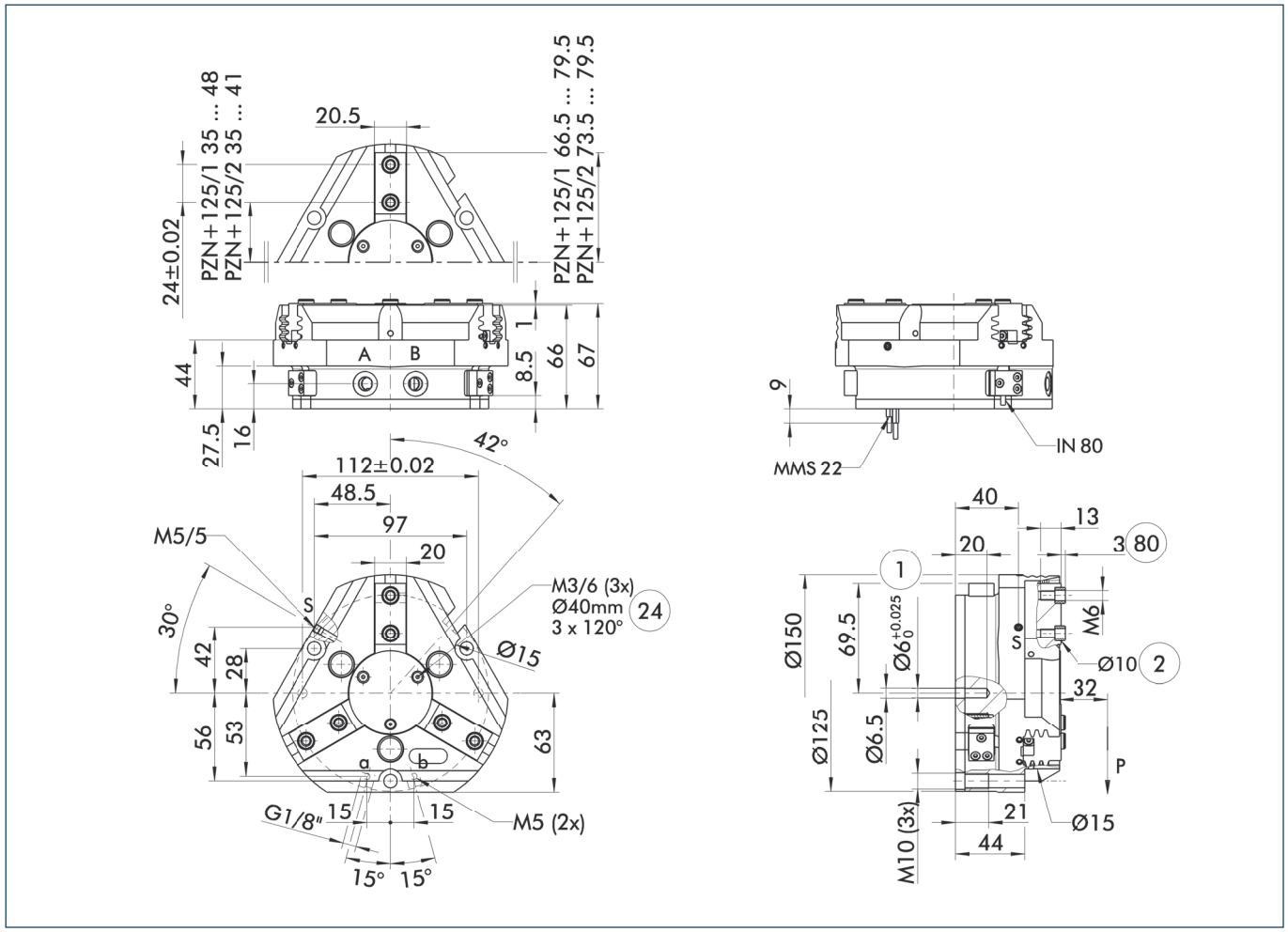
- M_x max. 120.00 Nm
- M_y max. 145.00 Nm
- M_z max. 100.00 Nm
- F_z max. 2800.0 N

ⓘ 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		PZN-plus 125-1	PZN-plus 125-2	PZN-plus 125-1-AS	PZN-plus 125-2-AS	PZN-plus 125-1-IS	PZN-plus 125-2-IS
ID		**0303313**	**0303413**	**0303513**	**0303613**	**0303543**	**0303643**
Stroke per finger	[mm]	13	6	13	6	13	6
Closing force	[N]	3100	5800	4150	7970		
Opening force	[N]	3330	6240			4400	8450
Min. spring force	[N]			1050	2170	1070	2210
Weight	[kg]	2.47	2.47	3.34	3.34	3.34	3.34
Recommended workpiece weight	[kg]	15.5	29	15.5	29	15.5	29
Air consumption per double stroke	[cm³]	230	230	383	383	383	383
Min./max. operating pressure	[bar]	2/8	2/8	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]	0.2/0.2	0.2/0.2	0.17/0.35	0.17/0.35	0.35/0.17	0.35/0.17
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		**37303313**	**37303413**	**37303513**	**37303613**	**37303543**	**37303643**
IP class		64	64	64	64	64	64
Weight	[kg]	2.9	2.9	3.7	3.7	3.7	3.7
Anti-corrosion version		**38303313**	**38303413**	**38303513**	**38303613**	**38303543**	**38303643**
High-temperature version		**39303313**	**39303413**	**39303513**	**39303613**	**39303543**	**39303643**
Min./max. ambient temperature	[°C]	-10/130	-10/130	-10/130	-10/130	-10/130	-10/130
Force intensified version		PZN-plus 125-1-KVZ	PZN-plus 125-2-KVZ	PZN-plus 125-1-AS-KVZ		PZN-plus 125-1-IS-KVZ	
ID		**0372204**	**0372214**	**0372224**		**0372244**	
Closing force	[N]	5580	10440	6630			
Opening force	[N]	5935	11230			7005	
Weight	[kg]	3.7	3.7	4.5		4.5	
Maximum pressure	[bar]	8	8	6		6	
Max. permitted finger length	[mm]	125	100	100		100	
Precision version		**0303343**	**0303443**	**0303493**	**0303593**		

Main view

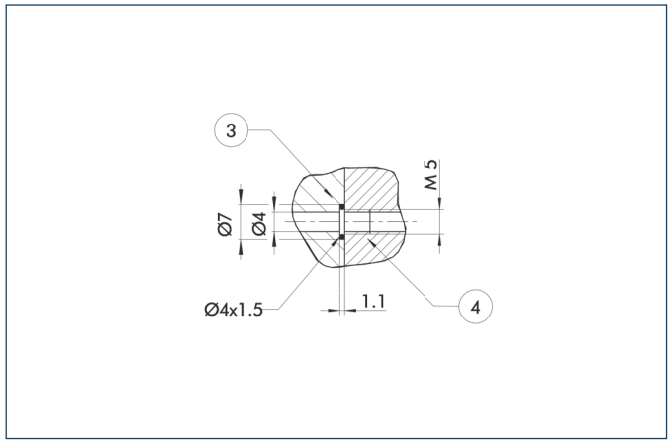


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ 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
㉔ Bolt circle
㊽ Depth of the centering sleeve hole in the matching part

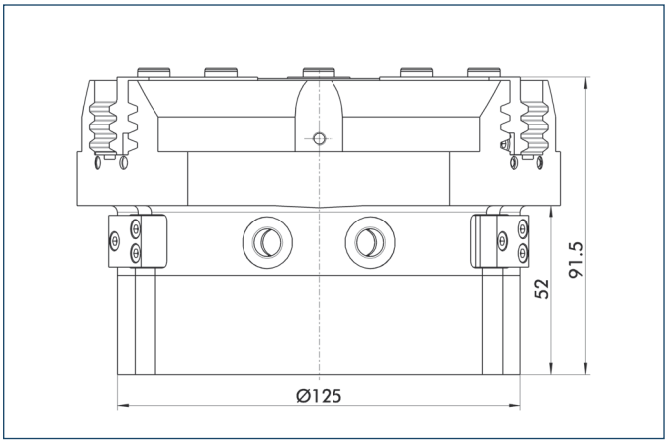
Hose-free direct connection



③ Adapter
④ Gripper

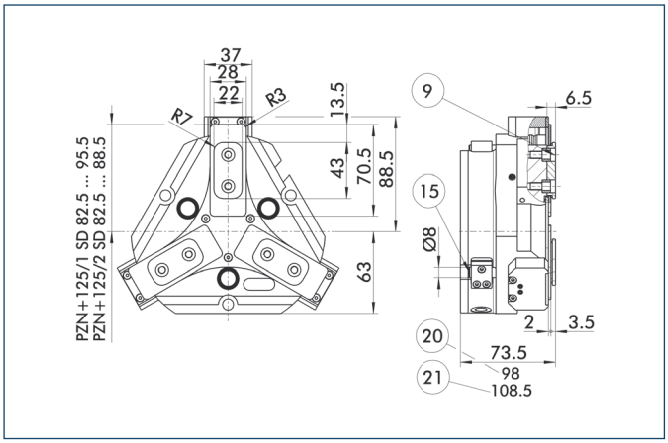
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

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.

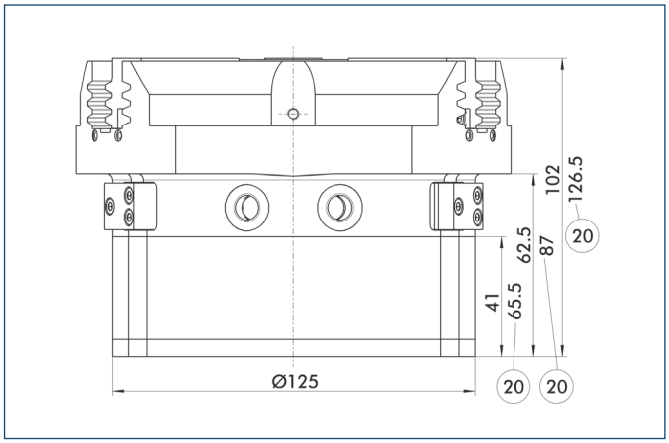
Dust-protection version



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.

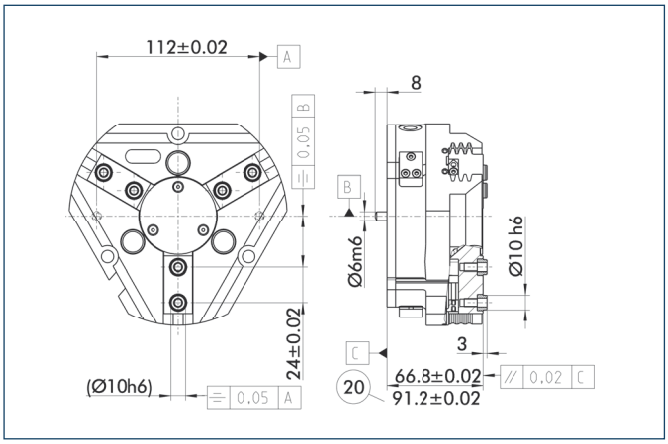
Force intensified version



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.

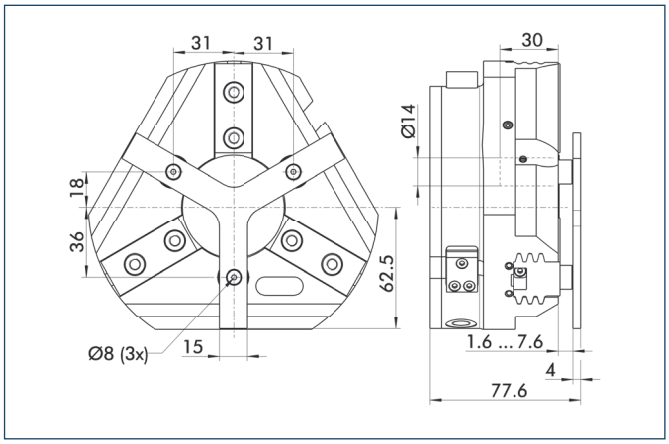
Precision version



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.

Spring-loaded pressure piece



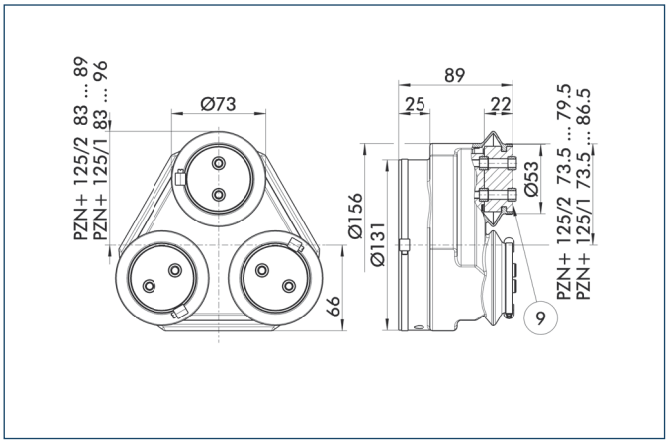
For spring-supported positioning of the workpiece against a stop after the gripper has opened. Especially developed for loading machines.

Description	ID	Stroke	Min. force
Spring-loaded pressure piece			
A-PZN-plus/DPZ-plus 125	**0303723**	6 mm	105 N

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

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

Protection cover

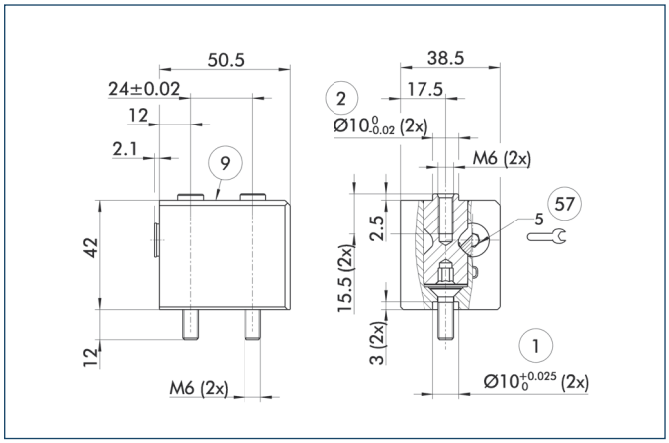


⑨ For mounting screw connection diagram, see basic version

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 PZN-plus 125	**0303483**	2

Quick-change Jaw System



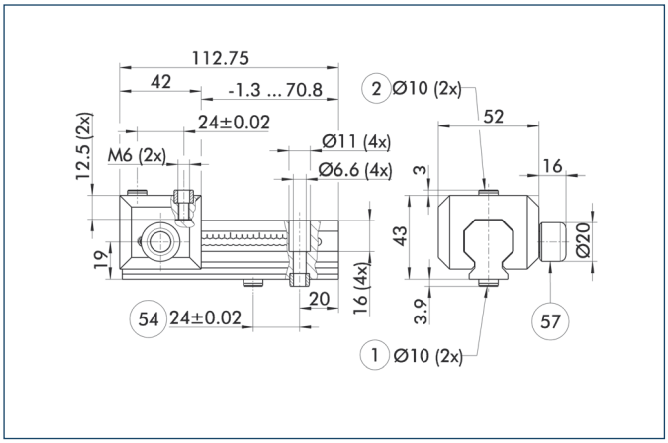
① Gripper connection
② Finger connection
⑨ For mounting screw connection diagram, see basic version
⑤⑦ Locking

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 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



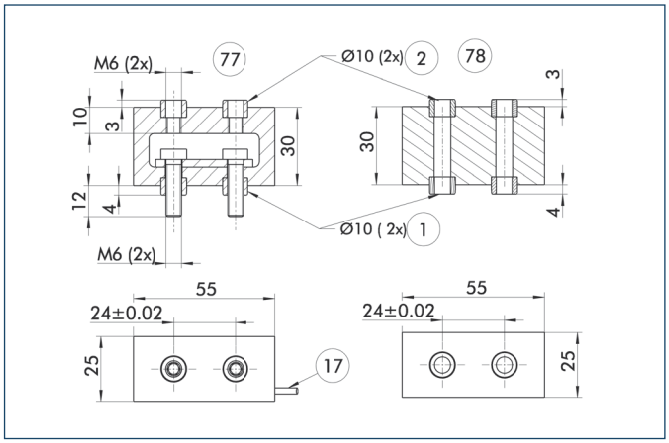
① Gripper connection
② Finger connection
54 Optional right or left connection
57 Locking

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

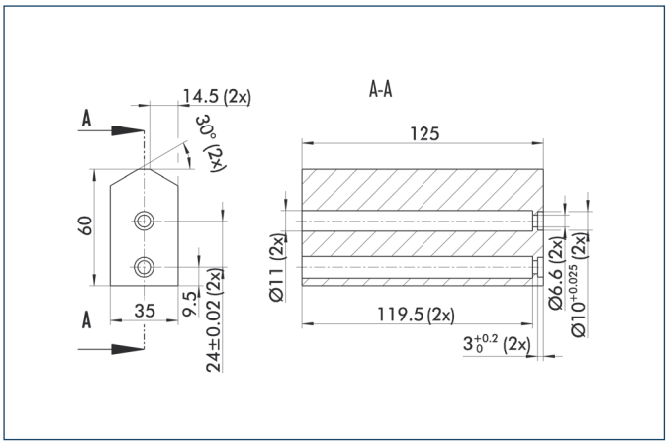


① Gripper connection
② Finger connection
17 Cable outlet
77 Active intermediate jaws
78 Passive intermediate jaws

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

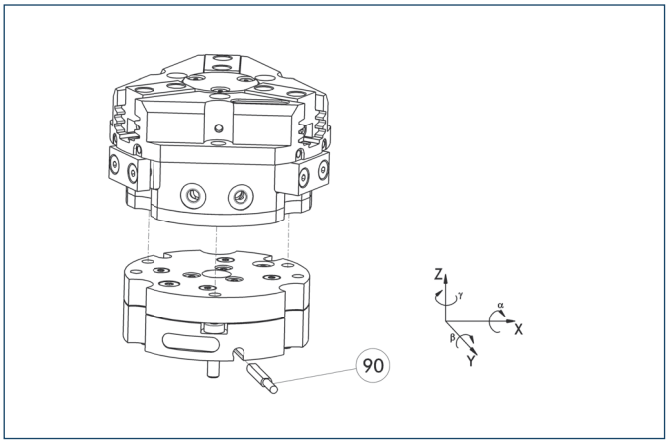


Finger blanks for customized subsequent machining

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

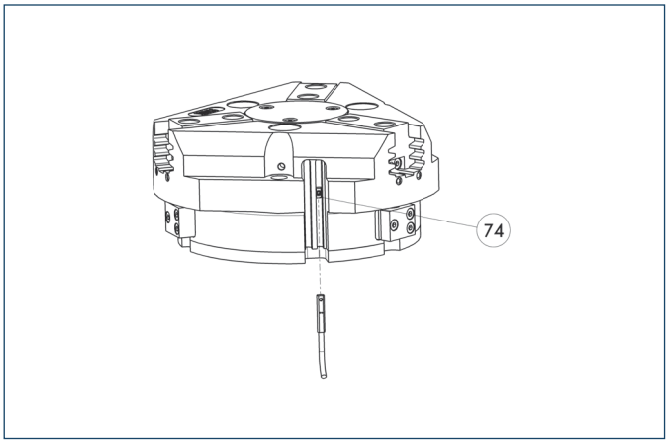


(90) Monitoring of locking

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-Z	**0324820**	Yes	
TCU-125-3-OV-Z	**0324821**	No	

Programmable magnetic switch



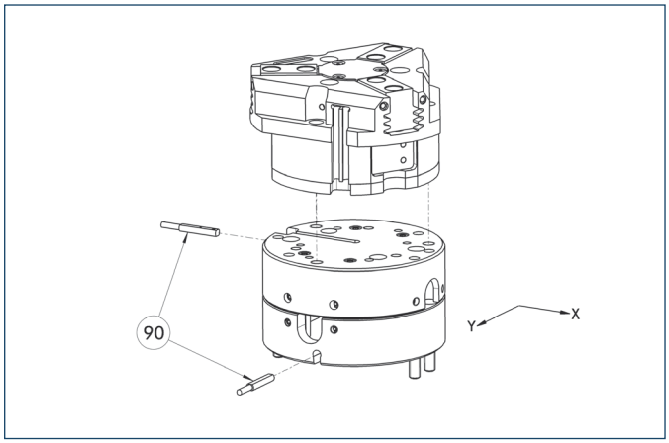
(74) Stop for MMS-P

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.

Compensation unit with spring reset

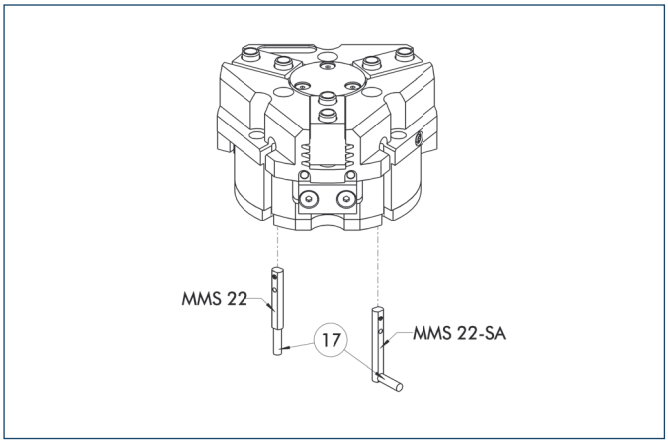


(90) Monitoring

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

Electronic magnetic switches



⑰ Cable outlet

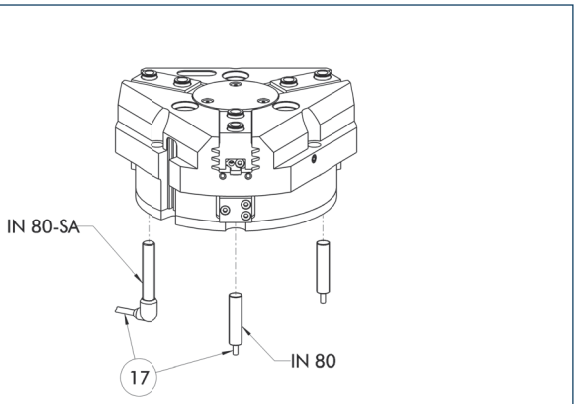
End position monitoring for mounting in the C-slot

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

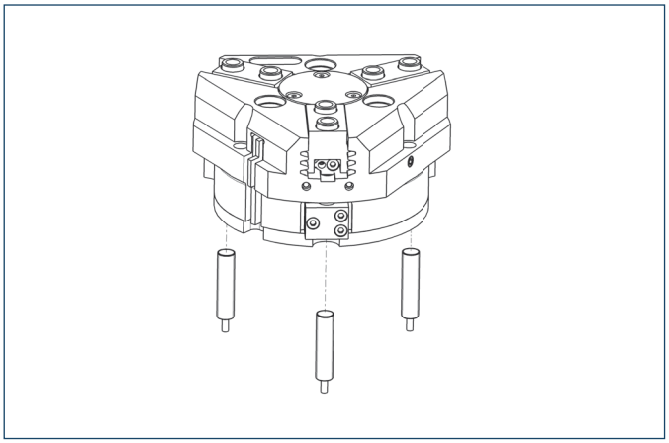
Description	ID	Recommended product
Inductive proximity switches		
IN 80-S-M8	0301478	•
IN 80-S-M12	0301578	
INK 80-S	0301550	
Inductive proximity switch with lateral outlet		
IN 80-S-M12-SA	0301587	
IN 80-S-M8-SA	0301483	•
INK 80-S-SA	0301566	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	
KA BG08-L 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

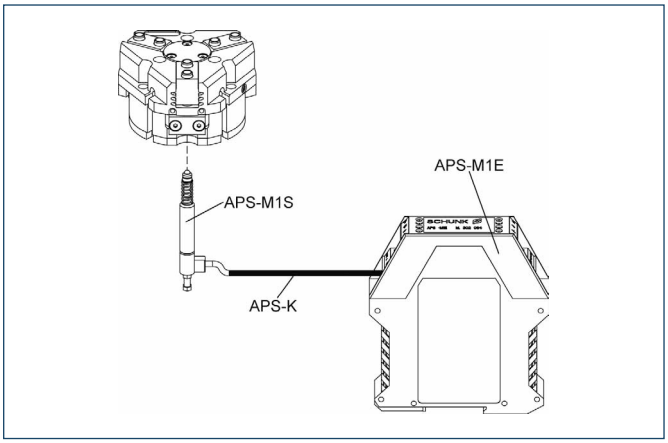


End position monitoring mounted with mounting kit

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



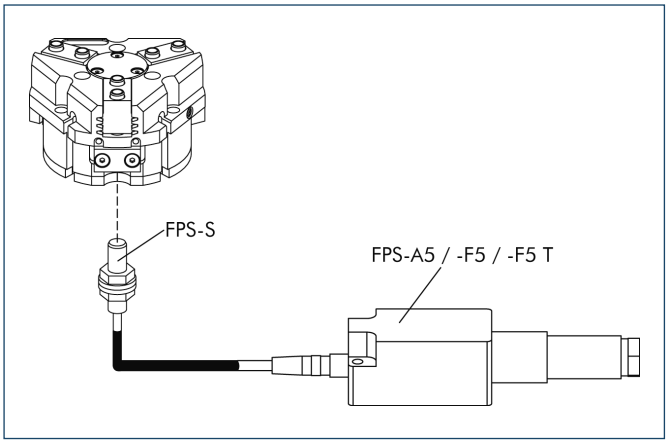
Analog multi position monitoring for any desired positions

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**

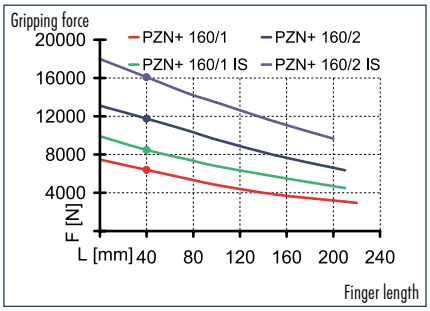
ⓘ When using a FPS system, a FPS sensor (FPS-S) and a control unit (FPS-F5 / F5 T or A5) are required for each gripper as well as a mounting kit (AS), if listed. Cable extensions (KV) are available as options in the “Accessories” catalog section.

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

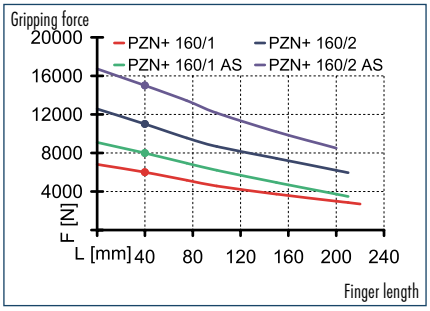
PZN-plus 160

Pneumatic • 3-Finger Centric Gripper • Universal Gripper

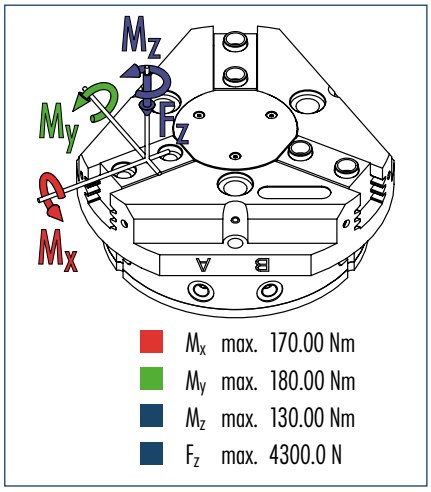
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load



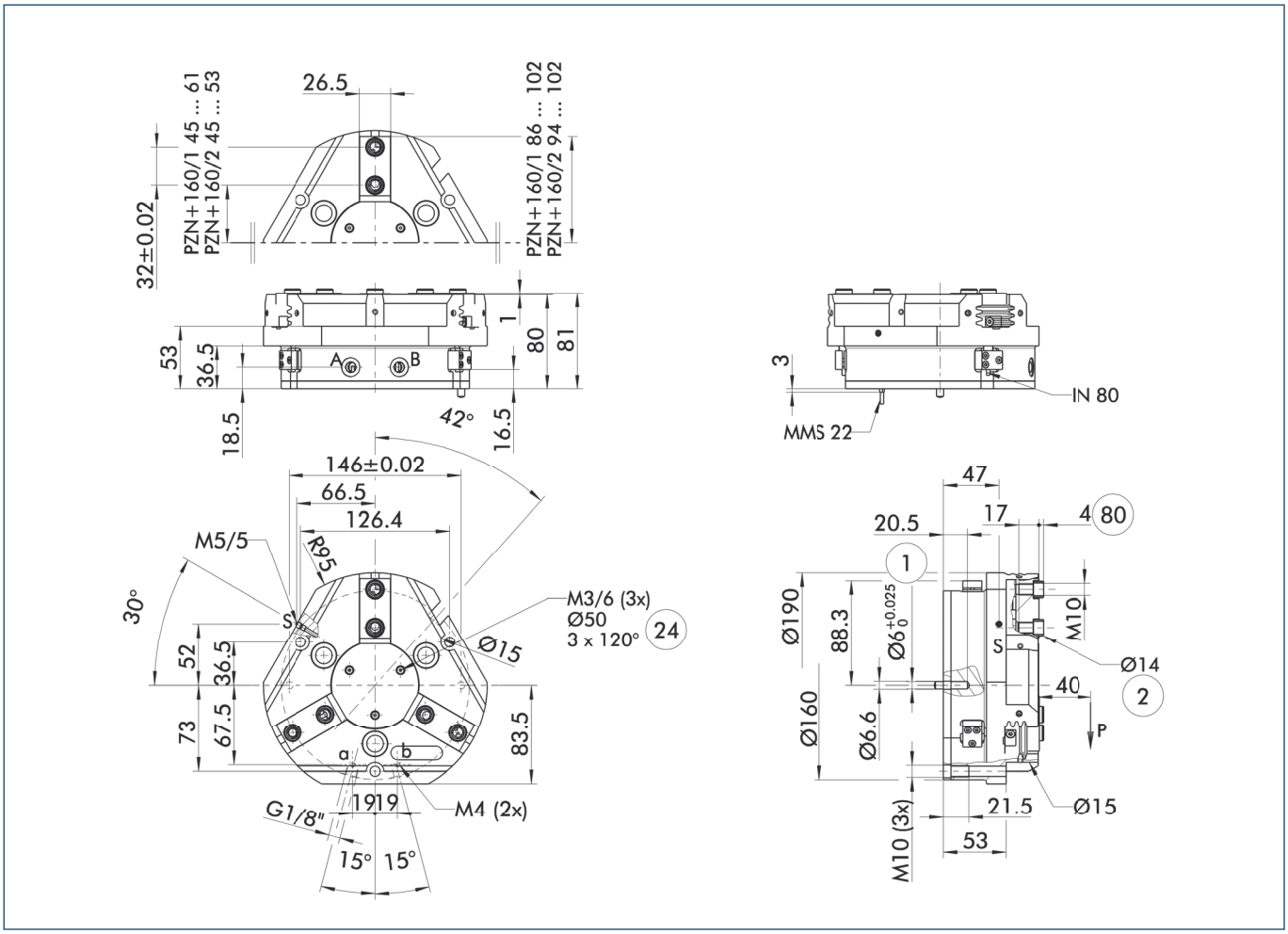
- M_x max. 170.00 Nm
- M_y max. 180.00 Nm
- M_z max. 130.00 Nm
- F_z max. 4300.0 N

ⓘ 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		PZN-plus 160-1	PZN-plus 160-2	PZN-plus 160-1-AS	PZN-plus 160-2-AS	PZN-plus 160-1-IS	PZN-plus 160-2-IS
ID		**0303314**	**0303414**	**0303514**	**0303614**	**0303544**	**0303644**
Stroke per finger	[mm]	16	8	16	8	16	8
Closing force	[N]	6000	11000	7990	15010		
Opening force	[N]	6390	11750			8480	16090
Min. spring force	[N]			1990	4010	2090	4340
Weight	[kg]	5.6	5.6	8	8	8	8
Recommended workpiece weight	[kg]	30	55	30	55	30	55
Air consumption per double stroke	[cm³]	520	520	875	875	875	875
Min./max. operating pressure	[bar]	2/8	2/8	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	0.4/0.8	0.4/0.8	0.8/0.4	0.8/0.4
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]	0.02	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		**37303314**	**37303414**	**37303514**	**37303614**	**37303544**	**37303644**
IP class		64	64	64	64	64	64
Weight	[kg]	6.5	6.5	8.9	8.9	8.9	8.9
Anti-corrosion version		**38303314**	**38303414**	**38303514**	**38303614**	**38303544**	**38303644**
High-temperature version		**39303314**	**39303414**	**39303514**	**39303614**	**39303544**	**39303644**
Min./max. ambient temperature	[°C]	-10/130	-10/130	-10/130	-10/130	-10/130	-10/130
Force intensified version		PZN-plus 160-1-KVZ	PZN-plus 160-2-KVZ	PZN-plus 160-1-AS-KVZ		PZN-plus 160-1-IS-KVZ	
ID		**0372205**	**0372215**	**0372225**		**0372245**	
Closing force	[N]	10800	19800	12730			
Opening force	[N]	11500	21150			13590	
Weight	[kg]	7.8	7.8	9.6		9.6	
Maximum pressure	[bar]	8	8	6		6	
Max. permitted finger length	[mm]	125	100	100		100	
Precision version		**0303344**	**0303444**	**0303494**	**0303594**		

Main view

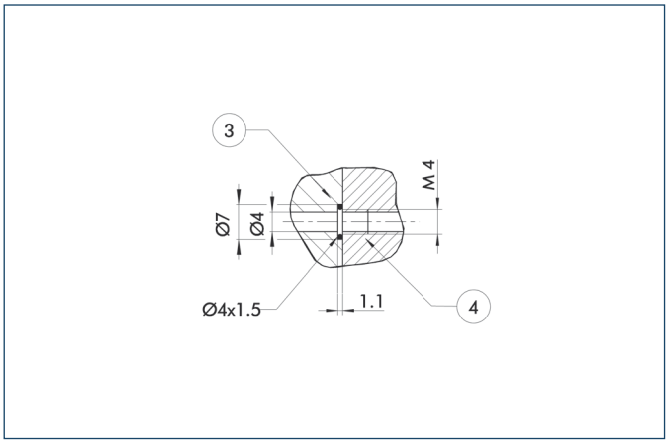


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ 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
㉔ Bolt circle
㊽ Depth of the centering sleeve hole in the matching part

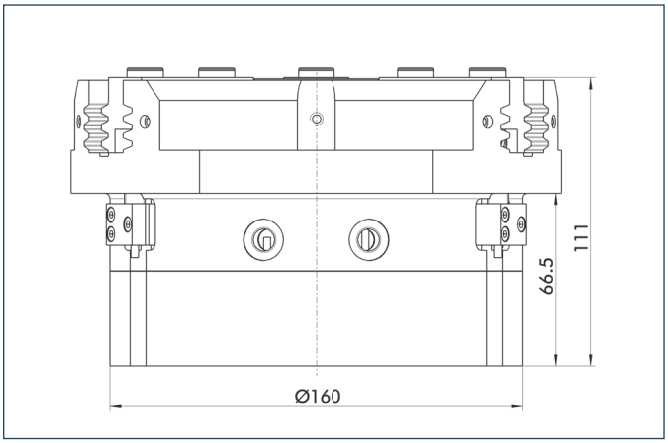
Hose-free direct connection



③ Adapter
④ Gripper

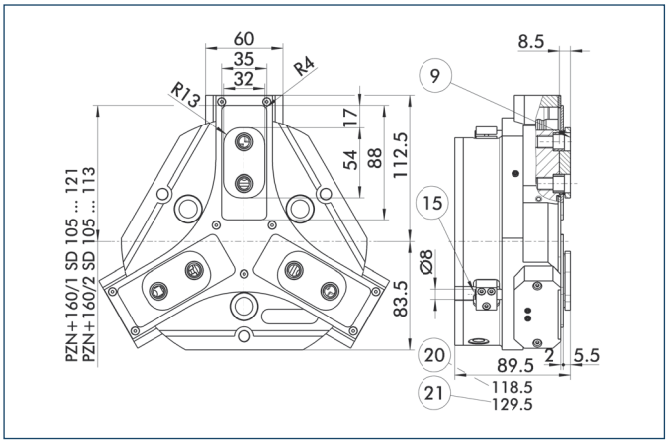
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

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.

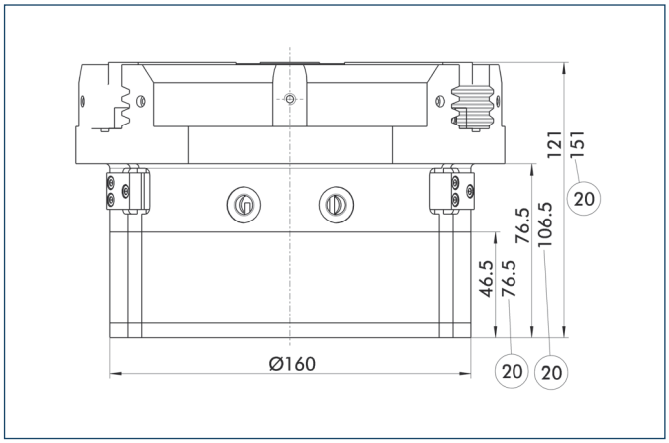
Dust-protection version



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.

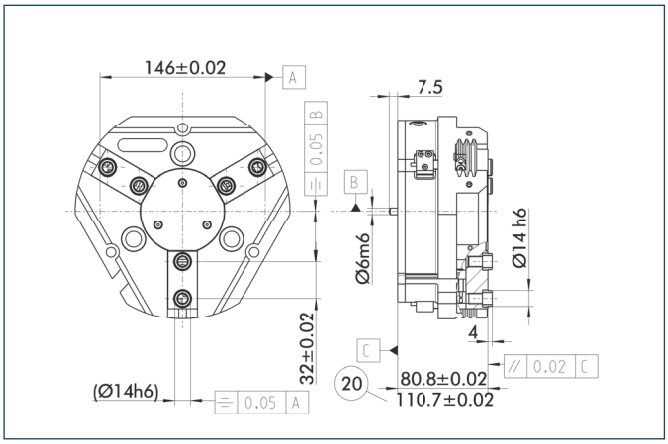
Force intensified version



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.

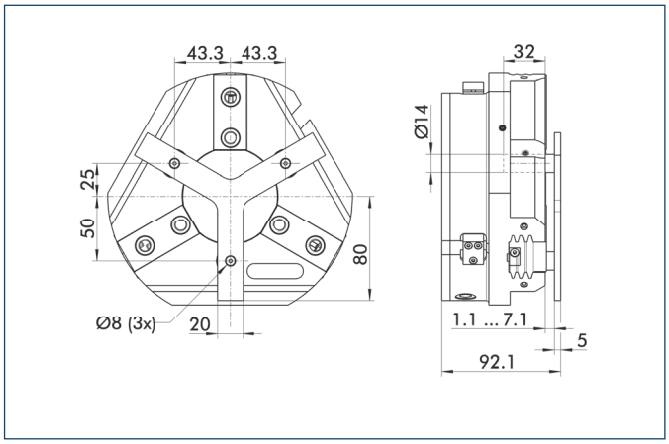
Precision version



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.

Spring-loaded pressure piece



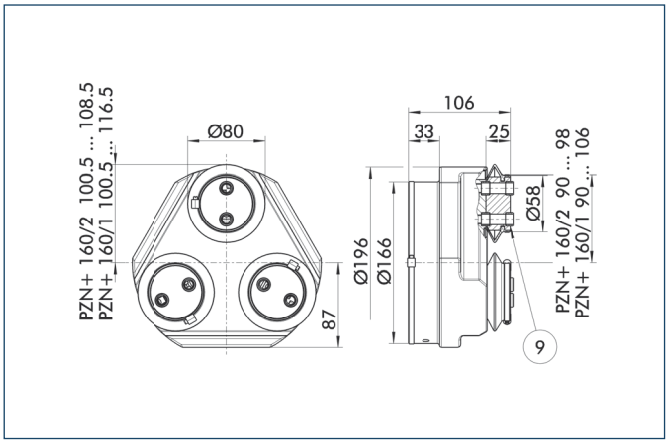
For spring-supported positioning of the workpiece against a stop after the gripper has opened. Especially developed for loading machines.

Description	ID	Stroke	Min. force
Spring-loaded pressure piece			
A-PZN-plus/DPZ-plus 160	**0303724**	6 mm	205 N

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

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

Protection cover

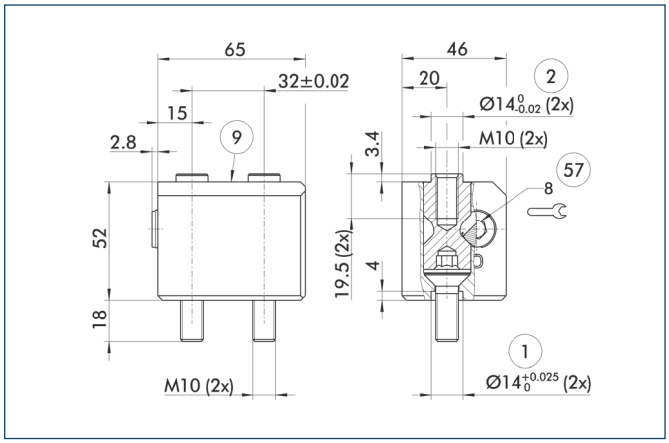


⑨ For mounting screw connection diagram, see basic version

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 PZN-plus 160	**0303484**	2

Quick-change Jaw System



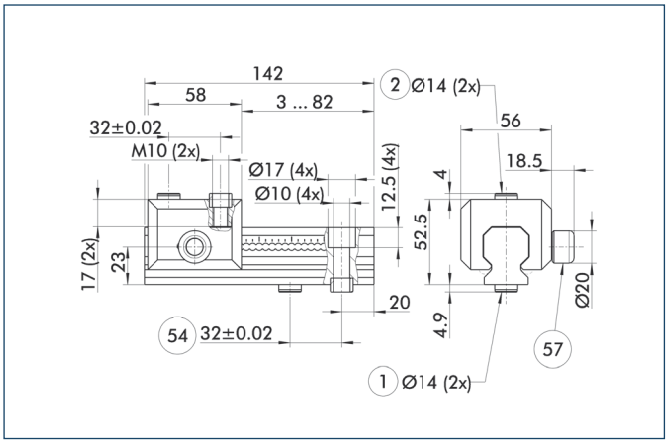
① Gripper connection
② Finger connection
⑨ For mounting screw connection diagram, see basic version
57 Locking

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



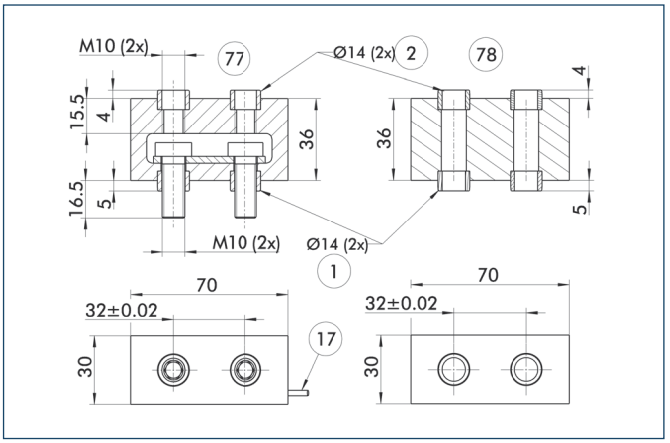
① Gripper connection
② Finger connection
⑤④ Optional right or left connection
⑤⑦ Locking

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

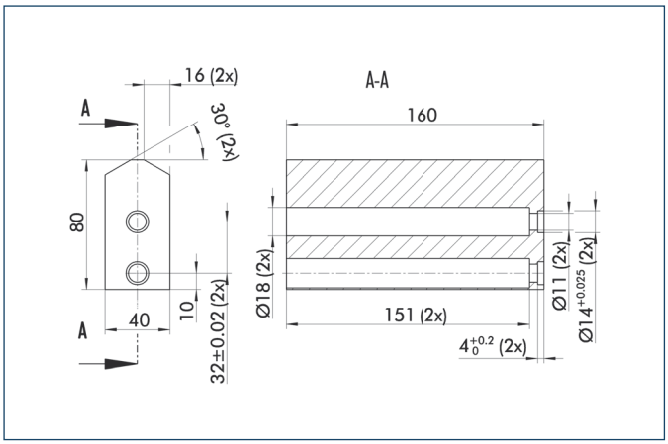


① Gripper connection
② Finger connection
⑰ Cable outlet
⑦⑦ Active intermediate jaws
⑦⑧ Passive intermediate jaws

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

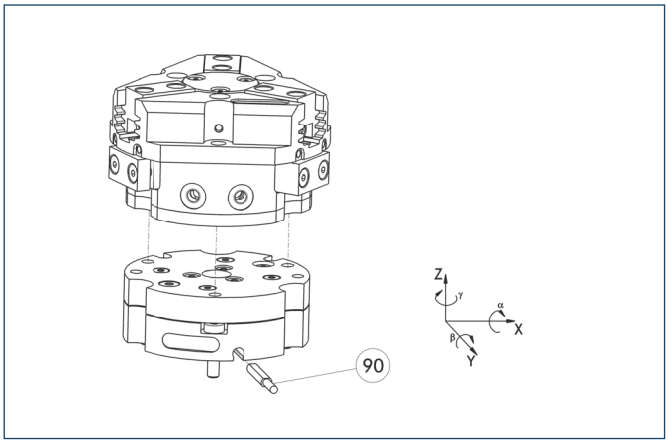


Finger blanks for customized subsequent machining

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

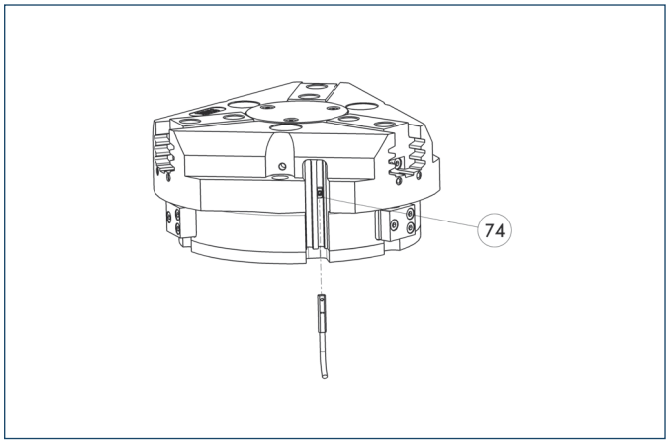


(90) Monitoring of locking

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-Z	**0324838**	Yes	
TCU-160-3-OV-Z	**0324839**	No	

Programmable magnetic switch



(74) Stop for MMS-P

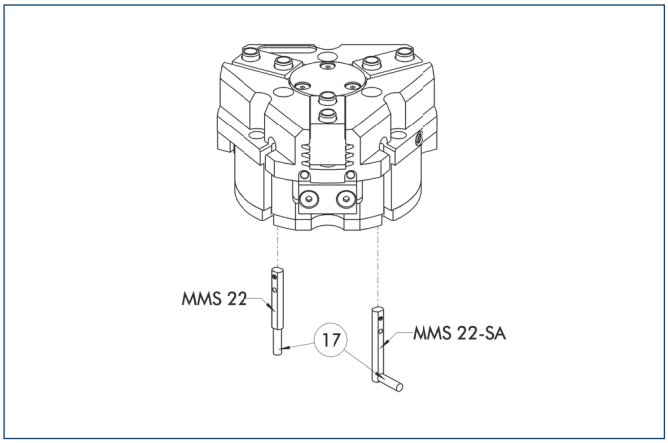
Position monitoring with two programmable positions per sensor. The end position monitoring is mounted in the C-slot.

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

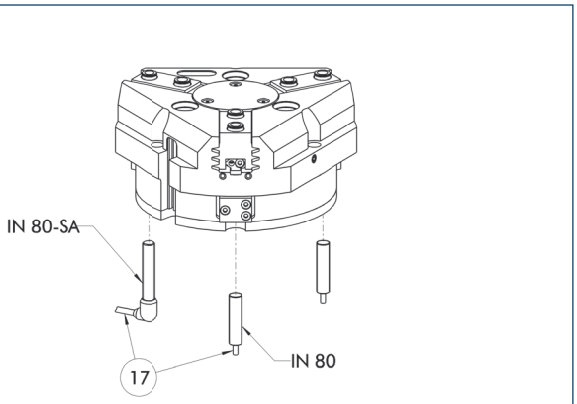
End position monitoring for mounting in the C-slot

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

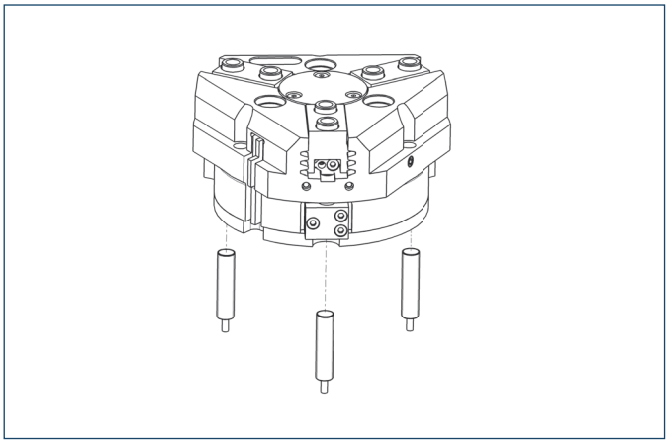
Description	ID	Recommended product
Inductive proximity switches		
IN 80-S-M8	0301478	•
IN 80-S-M12	0301578	
INK 80-S	0301550	
Inductive proximity switch with lateral outlet		
IN 80-S-M12-SA	0301587	
IN 80-S-M8-SA	0301483	•
INK 80-S-SA	0301566	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	
KA BG08-L 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

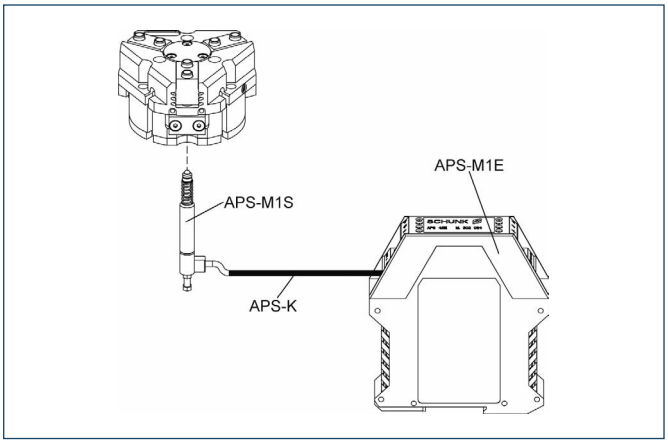


End position monitoring mounted with mounting kit

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



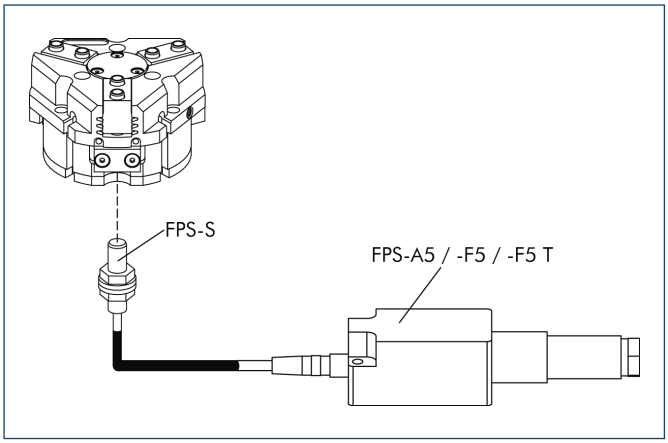
Analog multi position monitoring for any desired positions

Description	ID
Mounting kit	
AS-APS-M1-160/1 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.

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

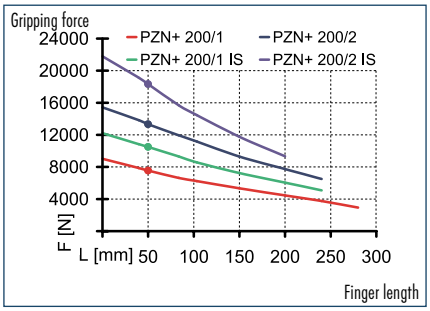
ⓘ When using a FPS system, a FPS sensor (FPS-S) and a control unit (FPS-F5 / F5 T or A5) are required for each gripper as well as a mounting kit (AS), if listed. Cable extensions (KV) are available as options in the “Accessories” catalog section.

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

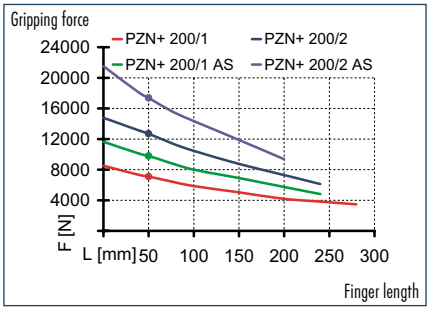
PZN-plus 200

Pneumatic • 3-Finger Centric Gripper • Universal Gripper

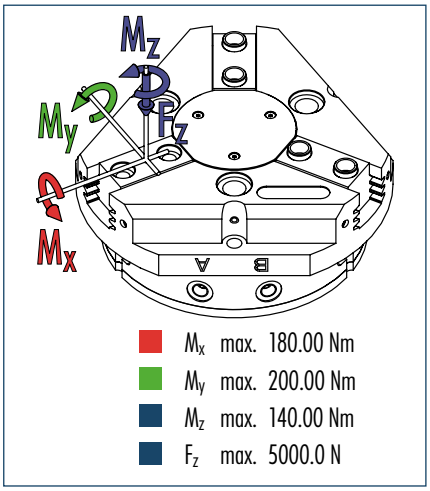
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load



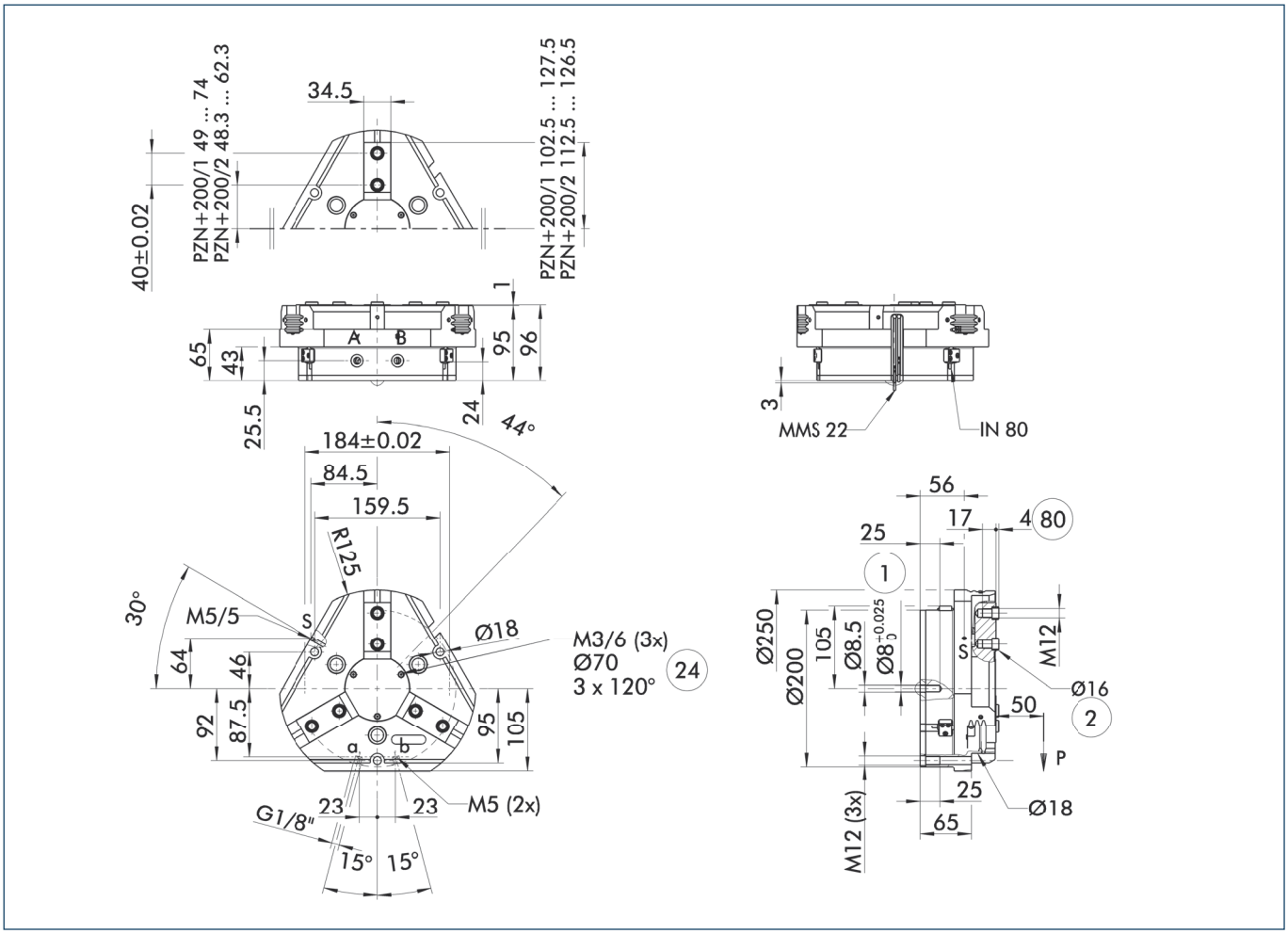
- M_x max. 180.00 Nm
- M_y max. 200.00 Nm
- M_z max. 140.00 Nm
- F_z max. 5000.0 N

ⓘ 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		PZN-plus 200-1	PZN-plus 200-2	PZN-plus 200-1-AS	PZN-plus 200-2-AS	PZN-plus 200-1-IS	PZN-plus 200-2-IS
ID		**0303315**	**0303415**	**0303515**	**0303615**	**0303545**	**0303645**
Stroke per finger	[mm]	25	14	25	14	25	14
Closing force	[N]	7100	12700	9800	17380		
Opening force	[N]	7540	13330			10500	18330
Min. spring force	[N]			2700	4680	2960	5000
Weight	[kg]	11	11	15.7	15.7	15.7	15.7
Recommended workpiece weight	[kg]	35.5	63.5	35.5	63.5	35.5	63.5
Air consumption per double stroke	[cm³]	1040	1040	1725	1725	1725	1725
Min./max. operating pressure	[bar]	2/8	2/8	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]	1.2/1.2	1.2/1.2	1/1.5	1/1.5	1.5/1	1.5/1
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]	0.05	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		**37303315**	**37303415**	**37303515**	**37303615**	**37303545**	**37303645**
IP class		64	64	64	64	64	64
Weight	[kg]	12	12	16.7	16.7	16.7	16.7
Anti-corrosion version		**38303315**	**38303415**	**38303515**	**38303615**	**38303545**	**38303645**
High-temperature version		**39303315**	**39303415**	**39303515**	**39303615**	**39303545**	**39303645**
Min./max. ambient temperature	[°C]	-10/130	-10/130	-10/130	-10/130	-10/130	-10/130
Precision version		**0303345**	**0303445**	**0303495**	**0303595**		

Main view

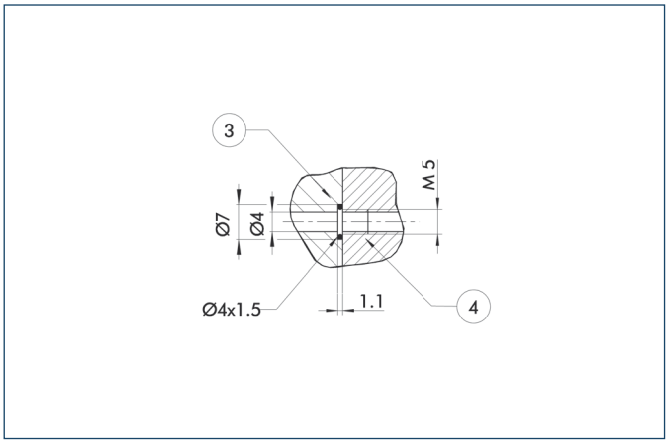


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ 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
㉔ Bolt circle
㉚ Depth of the centering sleeve hole in the matching part

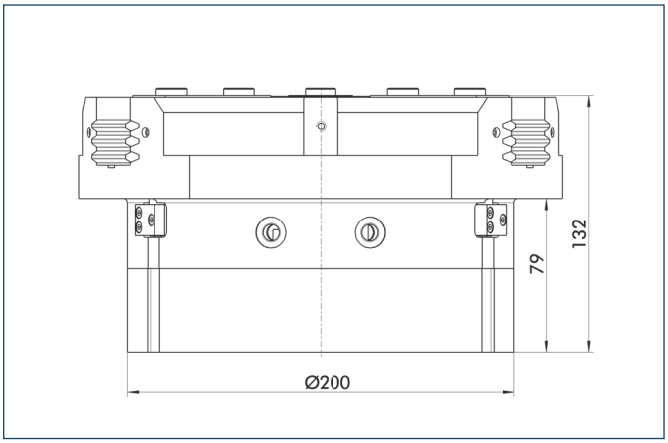
Hose-free direct connection



③ Adapter
④ Gripper

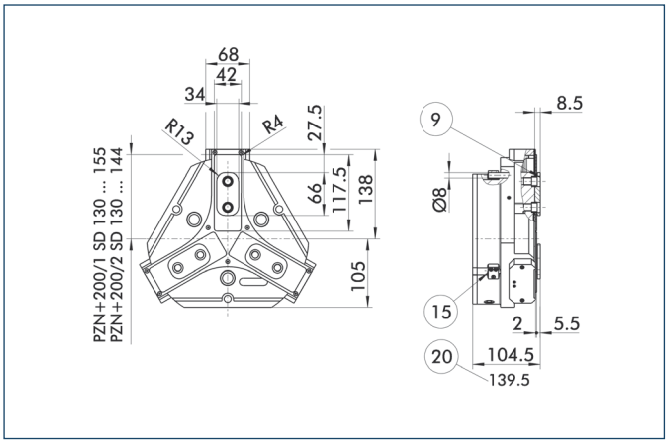
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

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.

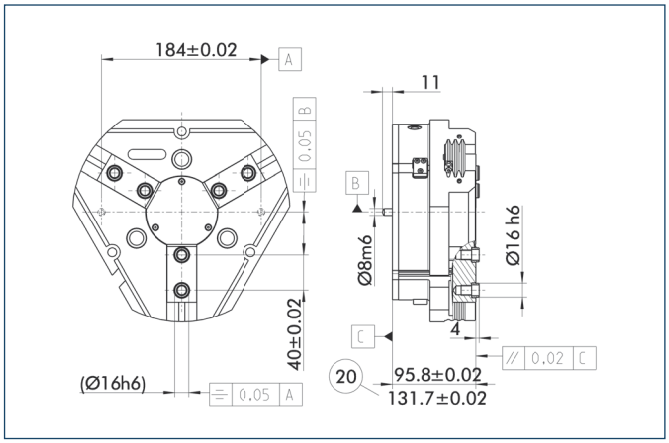
Dust-protection version



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.

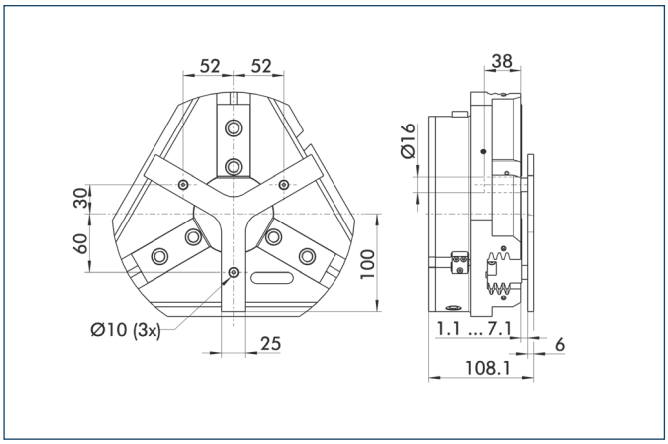
Precision version



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.

Spring-loaded pressure piece

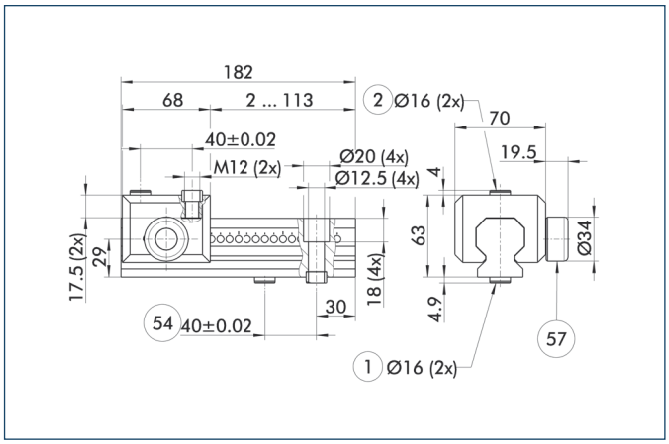


For spring-supported positioning of the workpiece against a stop after the gripper has opened. Especially developed for loading machines.

Description	ID	Stroke	Min. force
Spring-loaded pressure piece			
A-PZN-plus/DPZ-plus 200	**0303725**	6 mm	247 N

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

Universal intermediate jaw



① Gripper connection
② Finger connection
⑭ Optional right or left connection
⑰ Locking

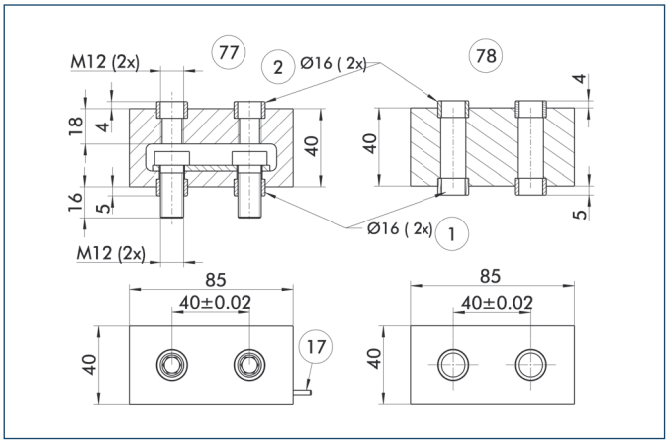
The universal intermediate jaw allows fast tool-free and reliable plugging and shifting of top jaws at the gripper.

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

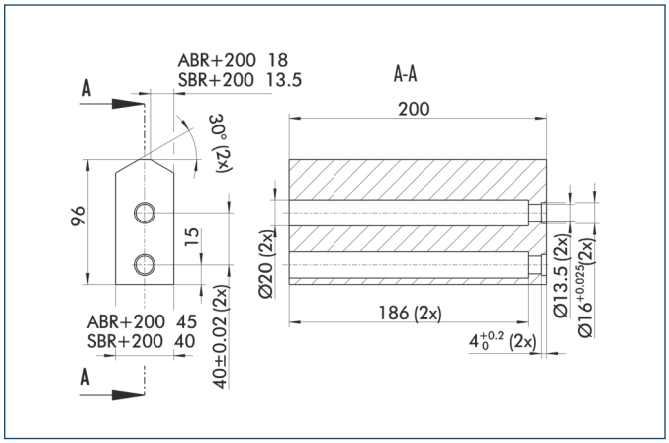


① Gripper connection
② Finger connection
⑰ Cable outlet
⑦⑦ Active intermediate jaws
⑦⑧ Passive intermediate jaws

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

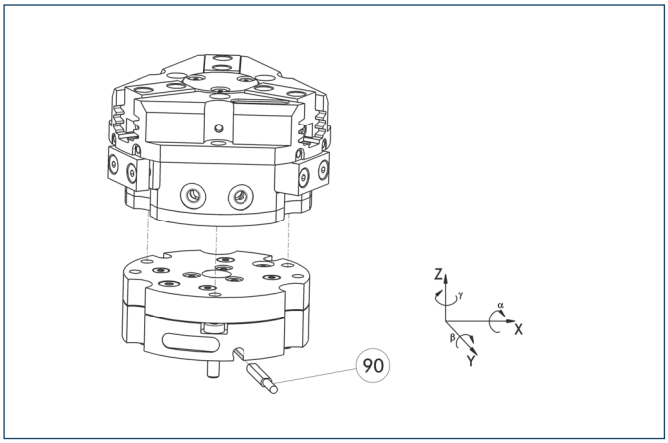


Finger blanks for customized subsequent machining

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

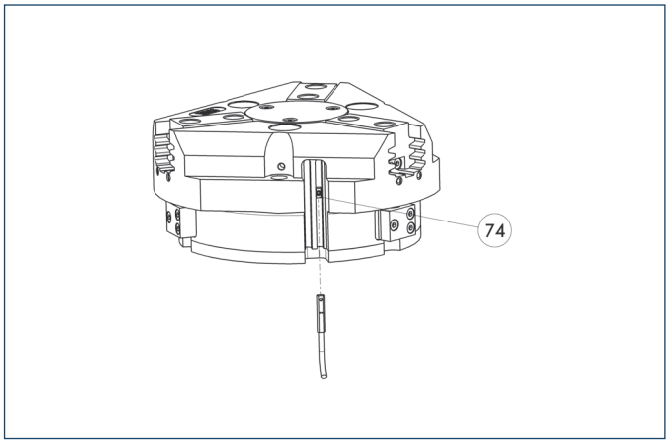


(90) Monitoring of locking

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-Z	**0324856**	Yes	
TCU-200-3-OV-Z	**0324857**	No	

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.

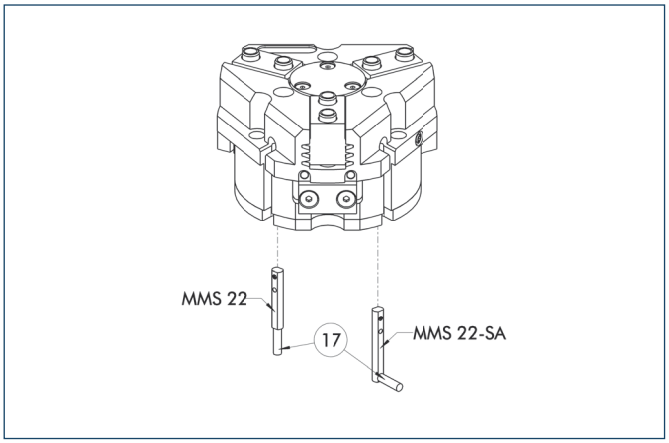
Description	ID	Recommended product
Programmable magnetic switch		
MMS-P 22-S-M8-PNP	**0301370**	•
MMSK-P 22-S-PNP	**0301371**	
Connection cables		
KA BG08-L 4P-0500	**0307767**	
KA BG08-L 4P-1000	**0307768**	
KA BW08-L 4P-0500	**0307765**	
KA BW08-L 4P-1000	**0307766**	
Sensor Distributor		
V2-M8-4P-2XM8-3P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

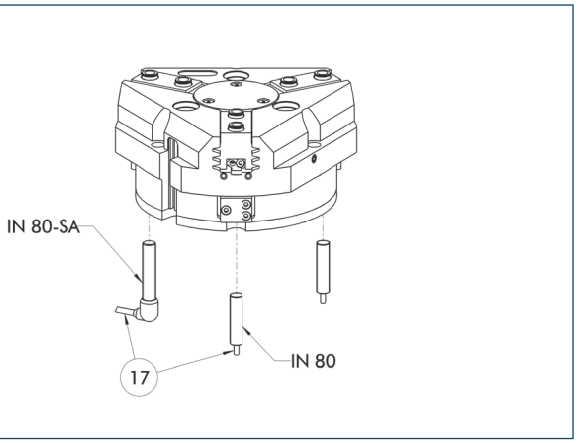
End position monitoring for mounting in the C-slot

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

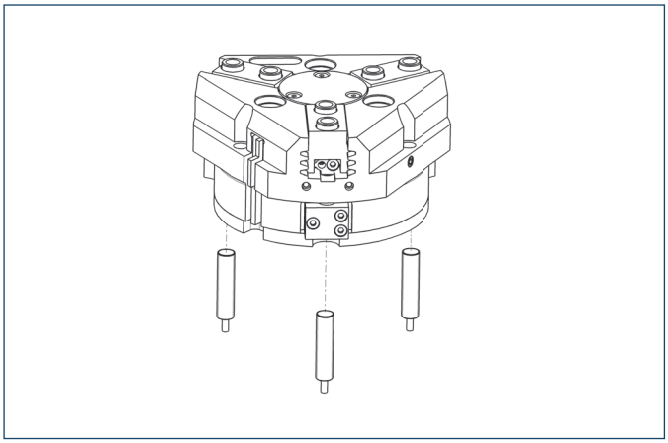
Description	ID	Recommended product
Inductive proximity switches		
IN 80-S-M8	**0301478**	•
IN 80-S-M12	**0301578**	
INK 80-S	**0301550**	
Inductive proximity switch with lateral outlet		
IN 80-S-M12-SA	**0301587**	
IN 80-S-M8-SA	**0301483**	•
INK 80-S-SA	**0301566**	
Connection cables		
KA BG08-L 3P-0300-PNP	**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

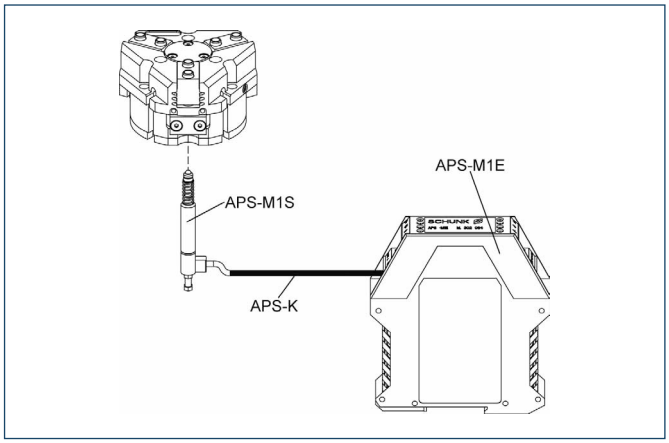


End position monitoring mounted with mounting kit

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



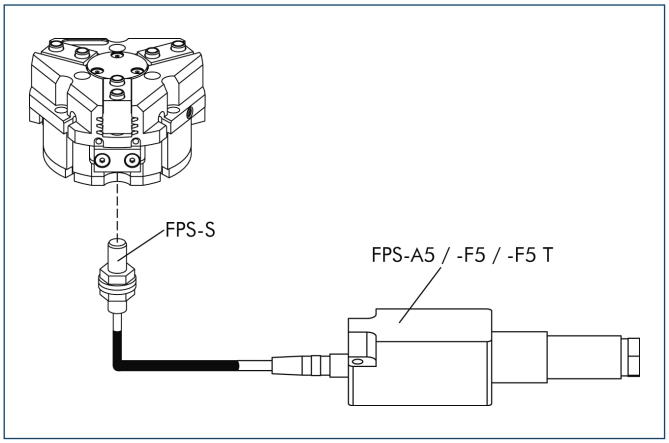
Analog multi position monitoring for any desired positions

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**

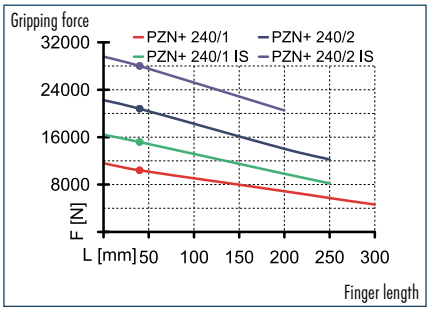
ⓘ When using a FPS system, a FPS sensor (FPS-S) and a control unit (FPS-F5 / F5 T or A5) are required for each gripper as well as a mounting kit (AS), if listed. Cable extensions (KV) are available as options in the "Accessories" catalog section.

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

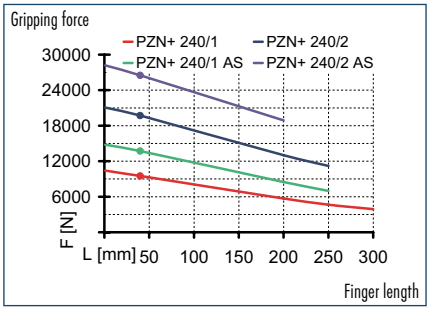
PZN-plus 240

Pneumatic • 3-Finger Centric Gripper • Universal Gripper

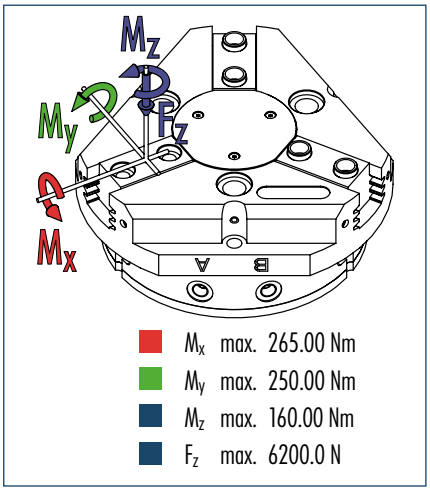
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load



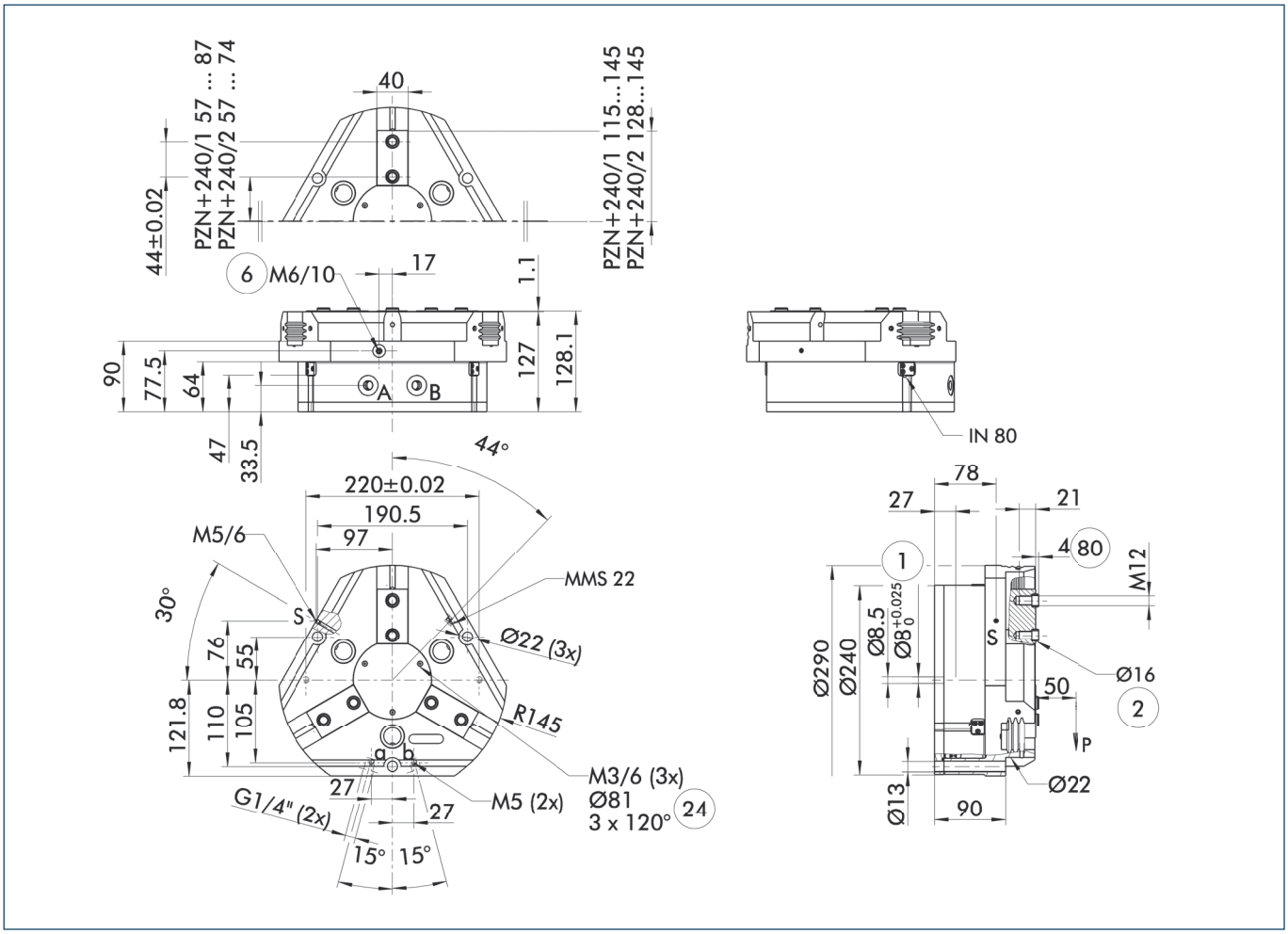
- M_x max. 265.00 Nm
- M_y max. 250.00 Nm
- M_z max. 160.00 Nm
- F_z max. 6200.0 N

ⓘ 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		PZN-plus 240-1	PZN-plus 240-2	PZN-plus 240-1-AS	PZN-plus 240-2-AS	PZN-plus 240-1-IS	PZN-plus 240-2-IS
ID		**0303316**	**0303416**	**0303516**	**0303616**	**0303546**	**0303646**
Stroke per finger	[mm]	30	17	30	17	30	17
Closing force	[N]	9500	19700	13720	26500		
Opening force	[N]	10400	20800			15170	28000
Min. spring force	[N]			4220	6800	4770	7200
Weight	[kg]	20	20	24	24	24	24
Recommended workpiece weight	[kg]	50	100.5	50	100.5	50	100.5
Air consumption per double stroke	[cm³]	1780	1780	3090	3090	3090	3090
Min./max. operating pressure	[bar]	2/8	2/8	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]	1.25/1.25	1.25/1.25	1.1/2.1	1.1/2.1	1.7/1.1	1.7/1.1
Max. permitted finger length	[mm]	300	250	250	200	250	200
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]	0.05	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		**37303316**	**37303416**	**37303516**	**37303616**	**37303546**	**37303646**
IP class		64	64	64	64	64	64
Weight	[kg]	21.5	21.5	25.5	25.5	25.5	25.5
Anti-corrosion version		**38303316**	**38303416**	**38303516**	**38303616**	**38303546**	**38303646**
High-temperature version		**39303316**	**39303416**	**39303516**	**39303616**	**39303546**	**39303646**
Min./max. ambient temperature	[°C]	-10/130	-10/130	-10/130	-10/130	-10/130	-10/130
Precision version		**0303346**	**0303446**	**0303496**	**0303596**		

Main view

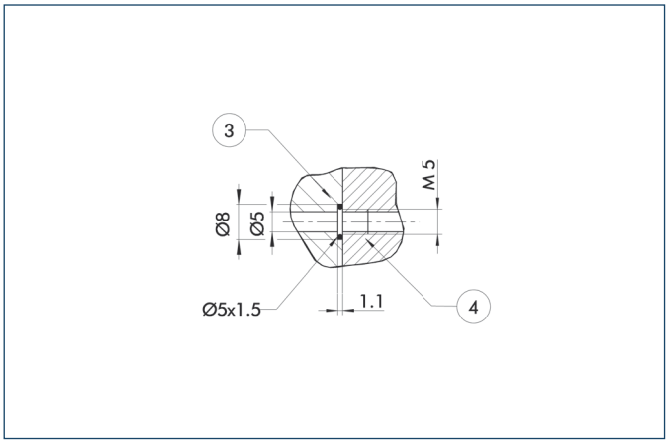


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ 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
(6) Lubricating nipple connection
(24) Bolt circle
(80) Depth of the centering sleeve hole in the matching part

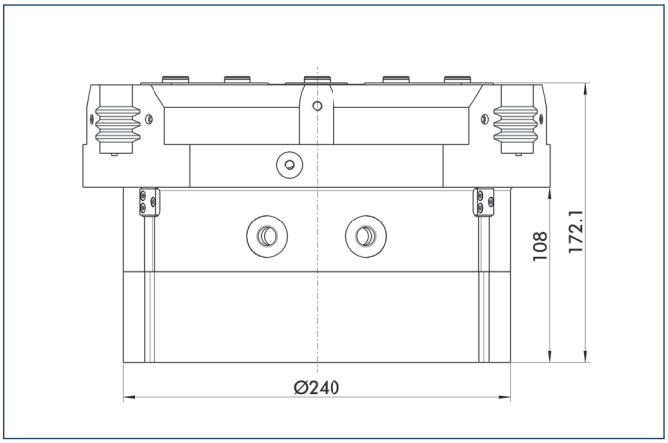
Hose-free direct connection



(3) Adapter
(4) Gripper

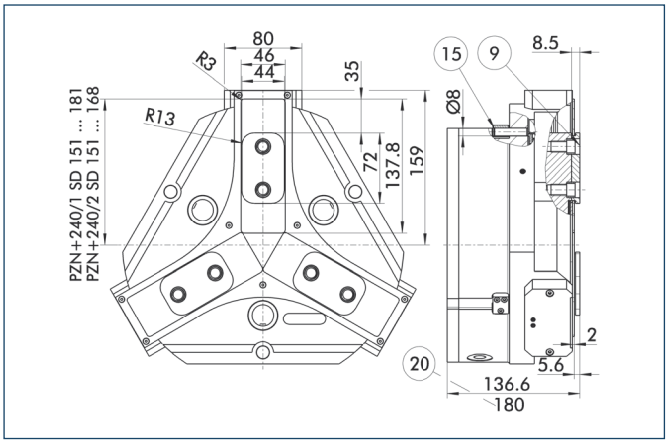
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

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.

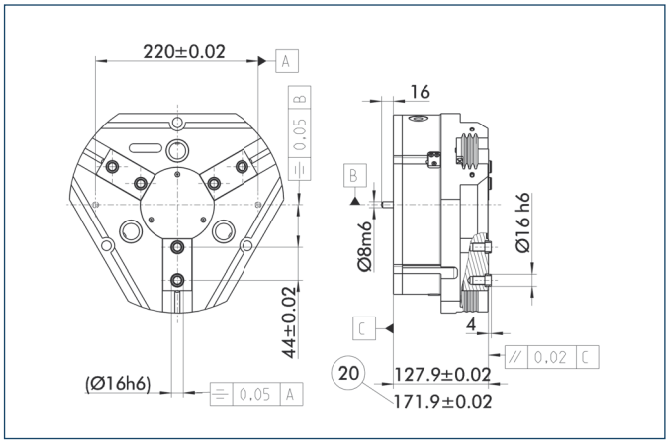
Dust-protection version



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.

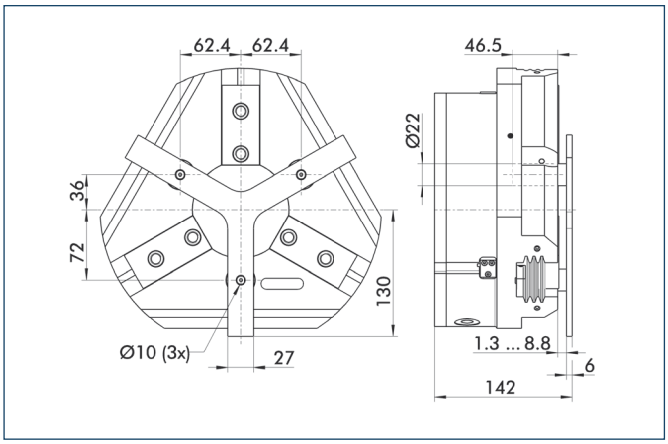
Precision version



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.

Spring-loaded pressure piece

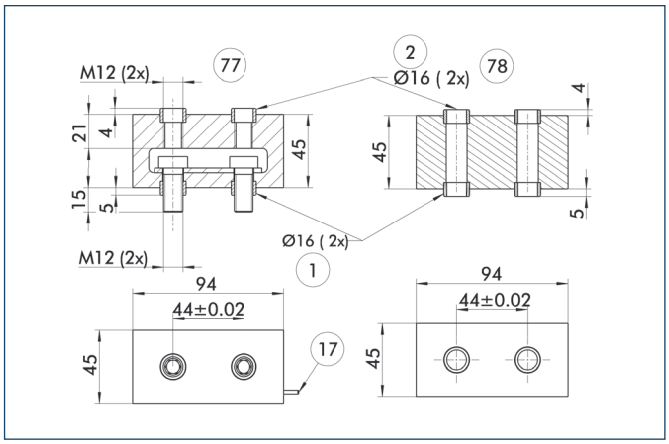


For spring-supported positioning of the workpiece against a stop after the gripper has opened. Especially developed for loading machines.

Description	ID	Stroke	Min. force
Spring-loaded pressure piece			
A-PZN-plus/DPZ-plus 240	**0303726**	7.5 mm	240 N

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

Force measuring jaws



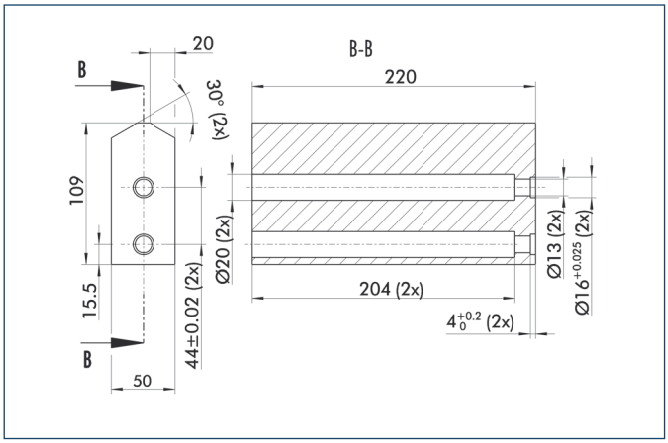
① Gripper connection
② Finger connection
⑰ Cable outlet
⑦⑦ Active intermediate jaws
⑦⑧ Passive intermediate jaws

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 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**

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

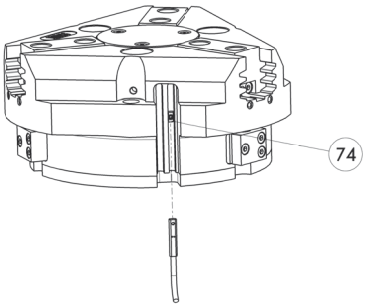
Finger blanks



Finger blanks for customized subsequent machining

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

Programmable magnetic switch



74 Stop for MMS-P

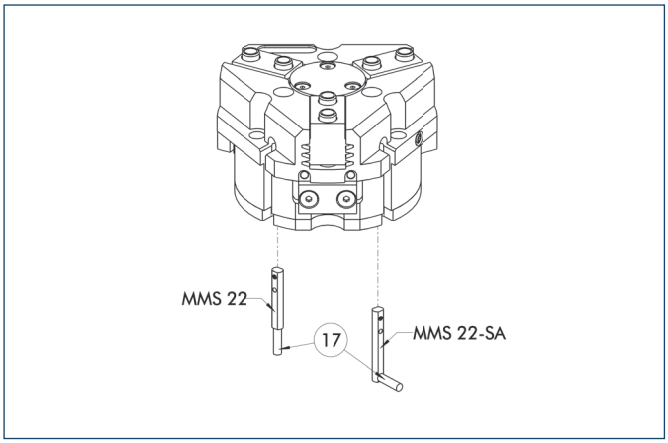
Position monitoring with two programmable positions per sensor. The end position monitoring is mounted in the C-slot.

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

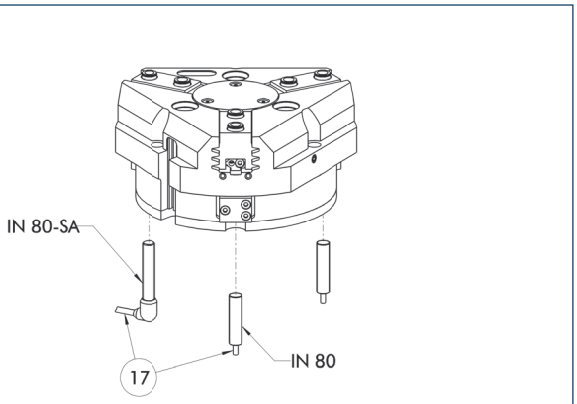
End position monitoring for mounting in the C-slot

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

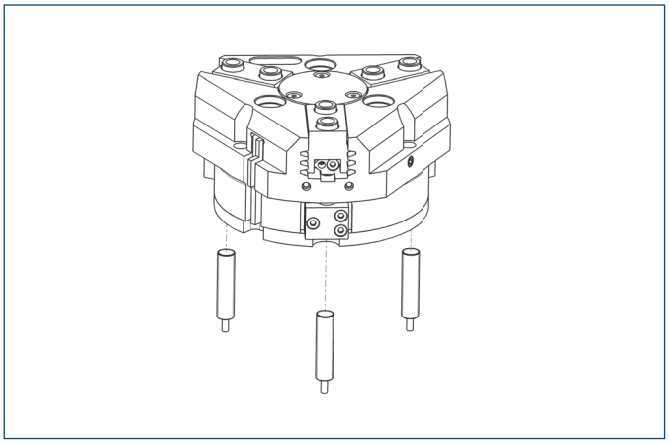
Description	ID	Recommended product
Inductive proximity switches		
IN 80-S-M8	0301478	•
IN 80-S-M12	0301578	
INK 80-S	0301550	
Inductive proximity switch with lateral outlet		
IN 80-S-M12-SA	0301587	
IN 80-S-M8-SA	0301483	•
INK 80-S-SA	0301566	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	
KA BG08-L 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

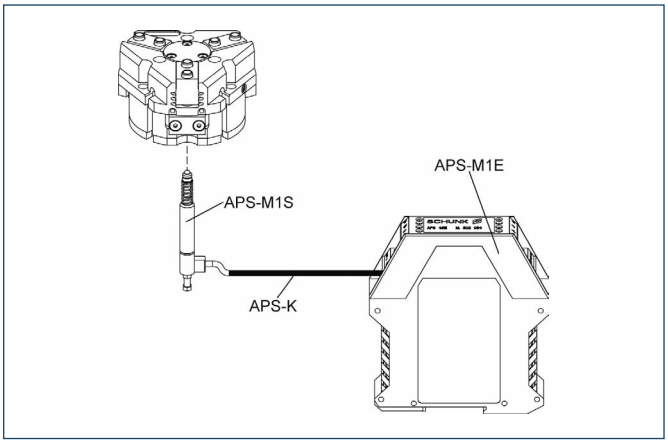


End position monitoring mounted with mounting kit

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



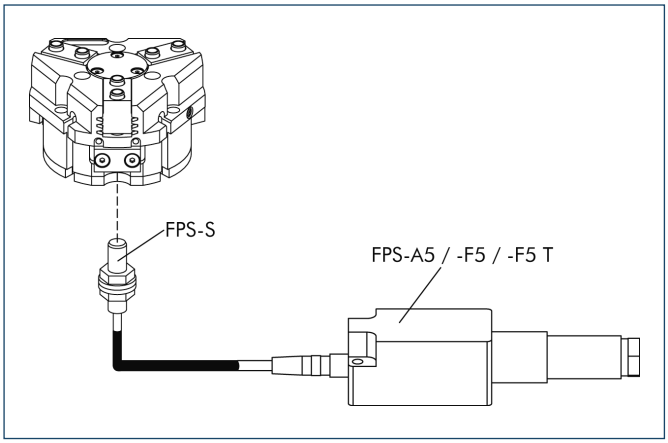
Analog multi position monitoring for any desired positions

Description	ID
Mounting kit	
AS-APS-M1-160/1 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.

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

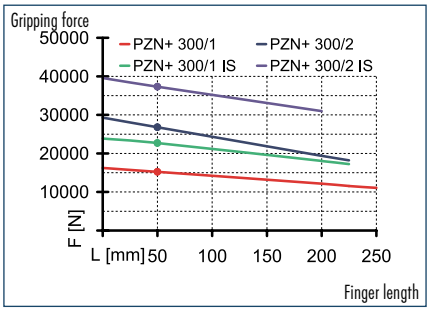
ⓘ When using a FPS system, a FPS sensor (FPS-S) and a control unit (FPS-F5 / F5 T or A5) are required for each gripper as well as a mounting kit (AS), if listed. Cable extensions (KV) are available as options in the “Accessories” catalog section.

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

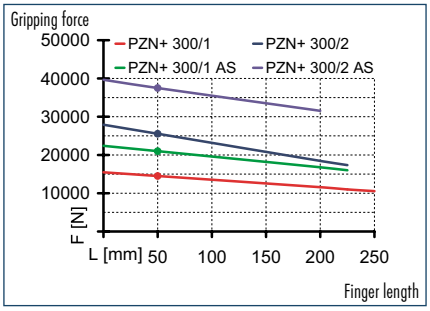
PZN-plus 300

Pneumatic • 3-Finger Centric Gripper • Universal Gripper

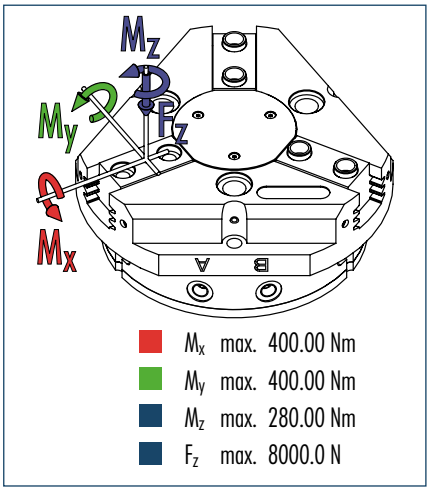
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

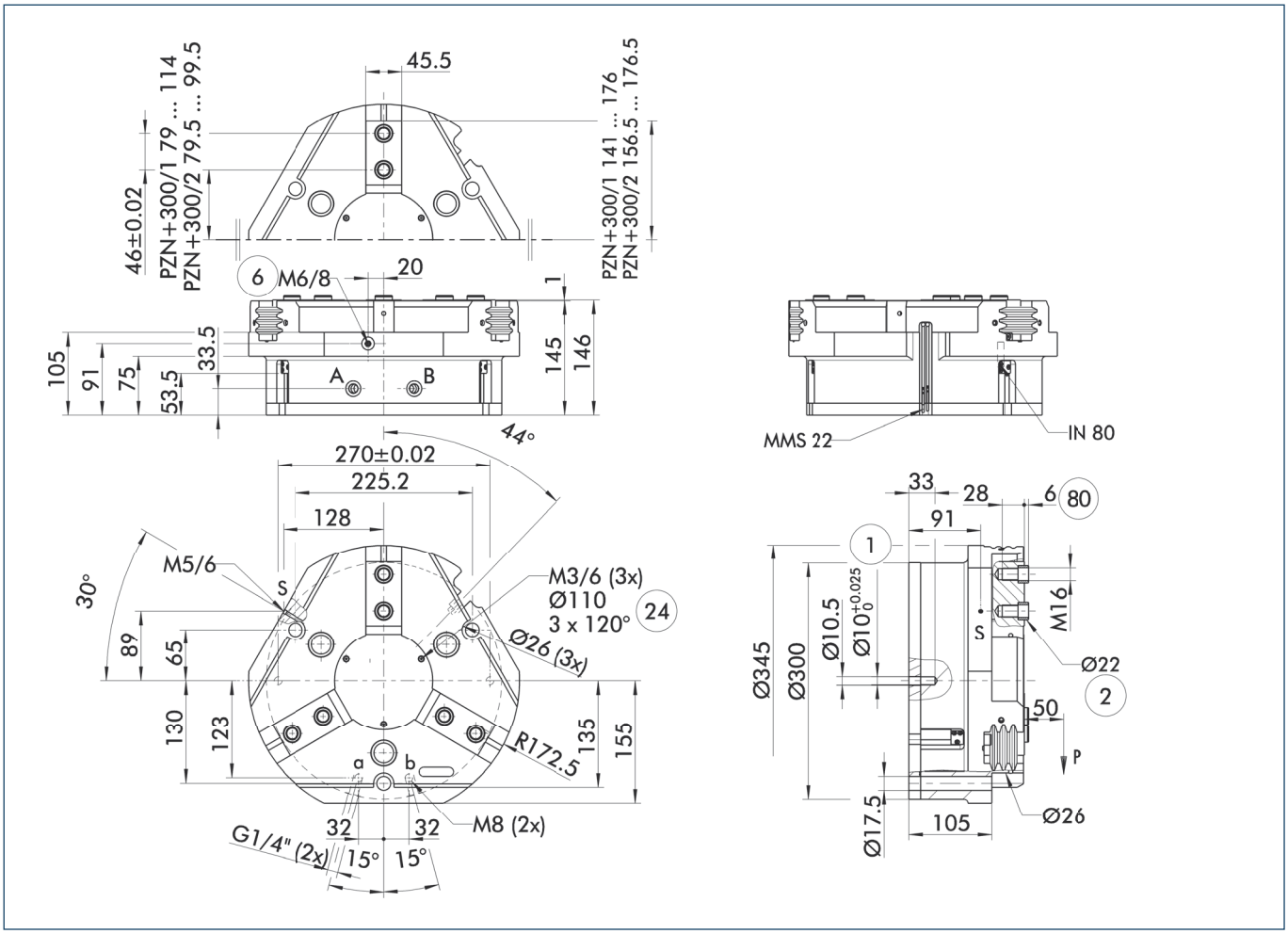


ⓘ The indicated moments and forces are static values, apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement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

Technical data

Description		PZN-plus 300-1	PZN-plus 300-2	PZN-plus 300-1-AS	PZN-plus 300-2-AS	PZN-plus 300-1-IS	PZN-plus 300-2-IS
ID		**0303317**	**0303417**	**0303517**	**0303617**	**0303547**	**0303647**
Stroke per finger	[mm]	35	20	35	20	35	20
Closing force	[N]	14500	25500	21000	35500		
Opening force	[N]	15200	16800			22700	37300
Min. spring force	[N]			6500	10000	7500	10500
Weight	[kg]	33	33	43.5	43.5	43.5	43.5
Recommended workpiece weight	[kg]	72.5	127.5	72.5	127.5	72.5	127.5
Air consumption per double stroke	[cm³]	2850	2850	5050	5050	5050	5050
Min./max. operating pressure	[bar]	2/8	2/8	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]	1.3/1.3	1.3/1.3	1.2/2.5	1.2/2.5	2/1.2	2/1.2
Max. permitted finger length	[mm]	250	225	225	200	225	200
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		**37303317**	**37303417**	**37303517**	**37303617**	**37303547**	**37303647**
IP class		64	64	64	64	64	64
Weight	[kg]	35.5	35.5	46	46	46	46
Anti-corrosion version		**38303317**	**38303417**	**38303517**	**38303617**	**38303547**	**38303647**
High-temperature version		**39303317**	**39303417**	**39303517**	**39303617**	**39303547**	**39303647**
Min./max. ambient temperature	[°C]	-10/130	-10/130	-10/130	-10/130	-10/130	-10/130
Precision version		**0303347**	**0303447**	**0303497**	**0303597**		

Main view

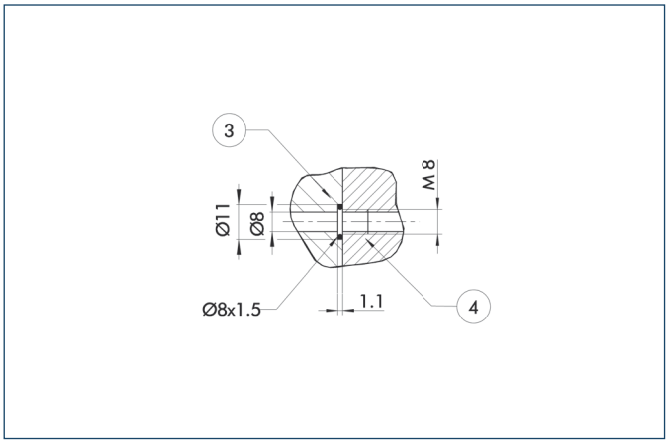


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ 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
⑥ Lubricating nipple connection
㉔ Bolt circle
㊽ Depth of the centering sleeve hole in the matching part

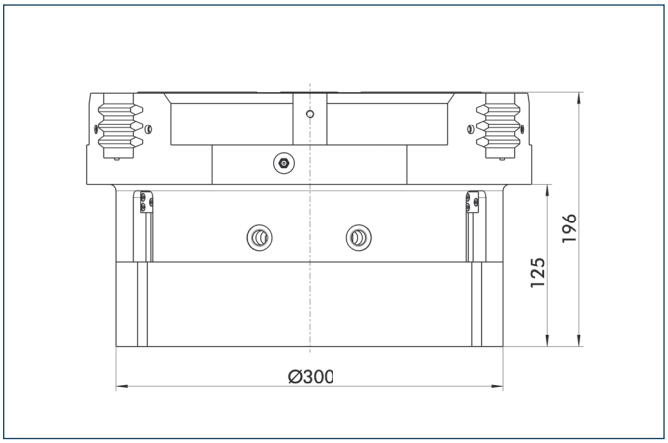
Hose-free direct connection



③ Adapter
④ Gripper

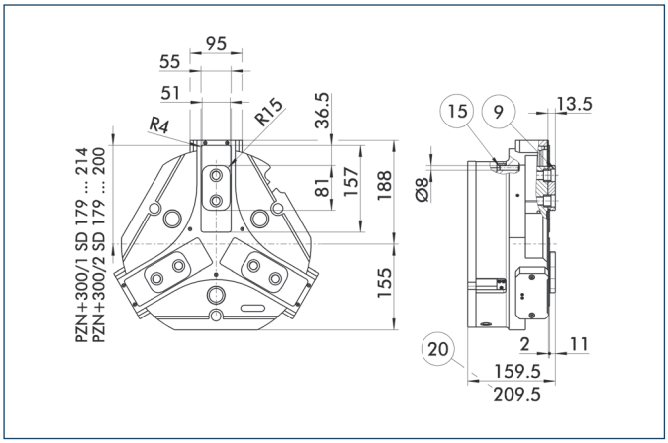
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

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.

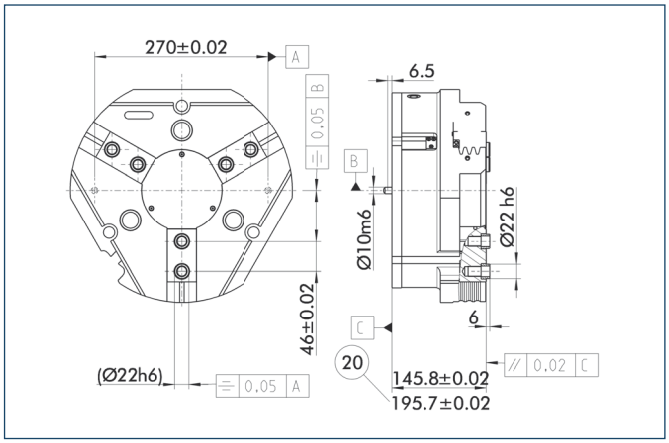
Dust-protection version



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.

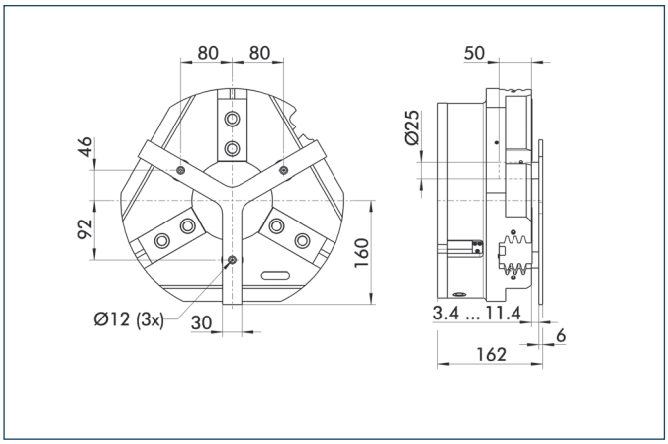
Precision version



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.

Spring-loaded pressure piece

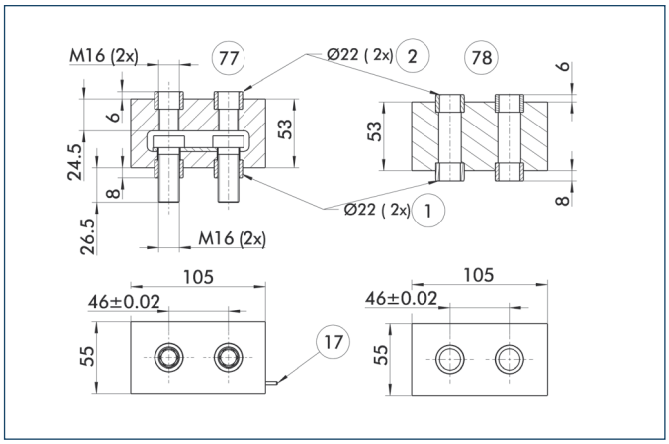


For spring-supported positioning of the workpiece against a stop after the gripper has opened. Especially developed for loading machines.

Description	ID	Stroke	Min. force
Spring-loaded pressure piece			
A-PZN-plus/DPZ-plus 300	**0303727**	8 mm	160 N

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

Force measuring jaws



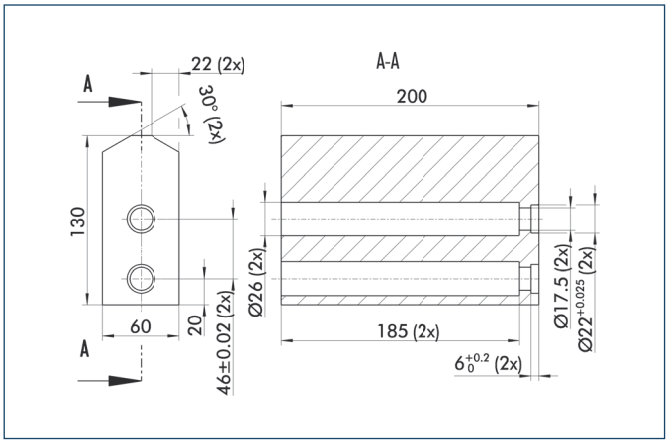
① Gripper connection
② Finger connection
⑰ Cable outlet
⑦⑦ Active intermediate jaws
⑦⑧ Passive intermediate jaws

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 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**

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

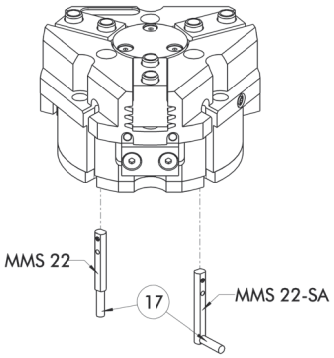
Finger blanks



Finger blanks for customized subsequent machining

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

Electronic magnetic switches



⑰ Cable outlet

End position monitoring for mounting in the C-slot

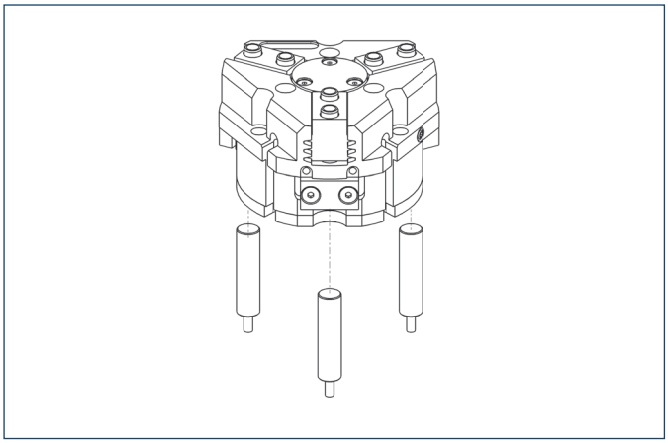
Description	ID	Recommended product
Electronic magnetic switches		
MMS 22-S-M5-PNP	**0301438**	
MMS 22-S-M5-NPN	**0301439**	
MMS 22-S-M8-PNP	**0301432**	•
MMS 22-S-M8-NPN	**0301433**	
MMSK 22-S-PNP	**0301434**	
MMSK 22-S-NPN	**0301435**	
Electronic magnetic switches with lateral cable outlet		
MMS 22-S-M5-PNP-SA	**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



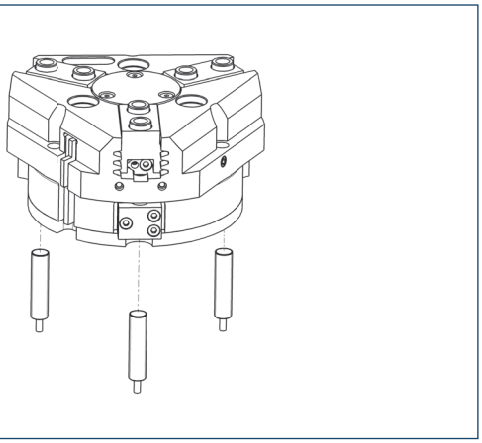
End position monitoring for direct mounting

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.

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**

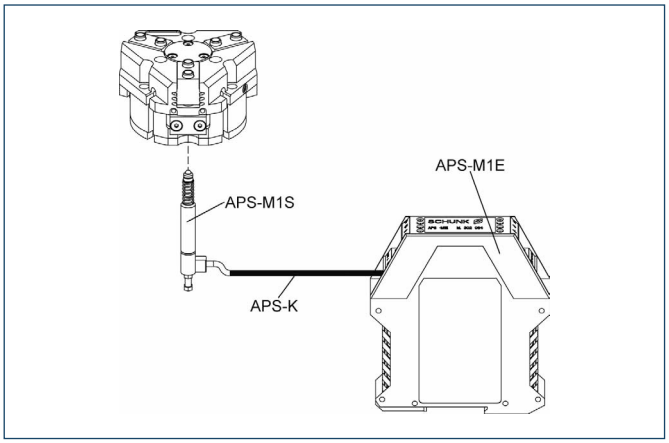
ⓘ Two sensors (closer/NO) are required for each gripper, plus extension cables as an option.

ⓘ 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



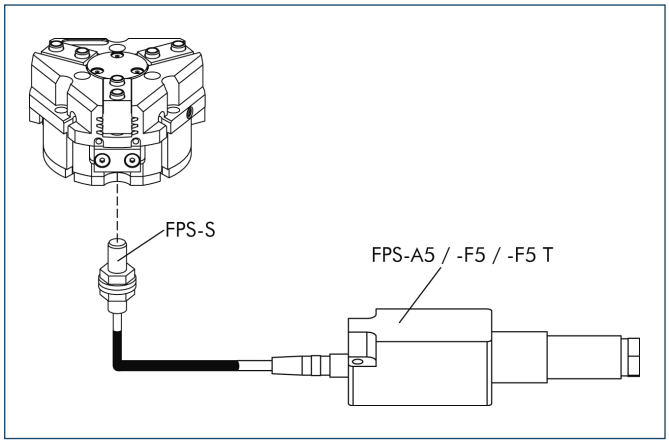
Analog multi position monitoring for any desired positions

Description	ID
Mounting kit	
AS-APS-M1-300/1	**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.

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.

JGZ

Pneumatic • 3-Finger Centric Gripper • Universal Gripper

Sizes
40 ... 160

Weight
0.12 kg ... 8 kg

Gripping force
255 N ... 8480 N

Stroke per finger
2.5 mm ... 16 mm

Workpiece weight
1.25 kg ... 30 kg

Application example

Tactile assembly of insertion aids in cylinder heads

1 3-Finger Centric Gripper JGZ with workpiece-specific gripper fingers

2 6-Axis Force/Torque Sensor FTC-050-80

Universal Gripper
universal 3-Finger Concentric Gripper of the compact class with T-slot guidance and best cost-performance ratio

Field of application
Optimum standard solution for many fields of application. Universal application in clean and slightly dirty surroundings in machine building and plant building industry, assembly and handling as well as automotive industry.

Your advantages and benefits

A firm focus on the essentials
for maximum profitability

Sturdy T-slot guidance
for the precise handling of all kinds of workpieces

Compact dimensions and low weight
for minimal interfering contours in handling

High maximum moments possible
suitable for using long gripper fingers

Wedge-hook design
for high power transmission and synchronized gripping

Comprehensive sensor accessories
for interrogation and control of the stroke position

Fastening at one gripper side in two screw directions
for universal and flexible gripper assembly

Air supply via hose-free direct connection or screw connections
for the flexible supply of compressed air in all automation systems

General note to the series

Principle of function
Wedge-hook kinematics

Housing material
Aluminum alloy, hard-anodized

Base jaw material
Steel

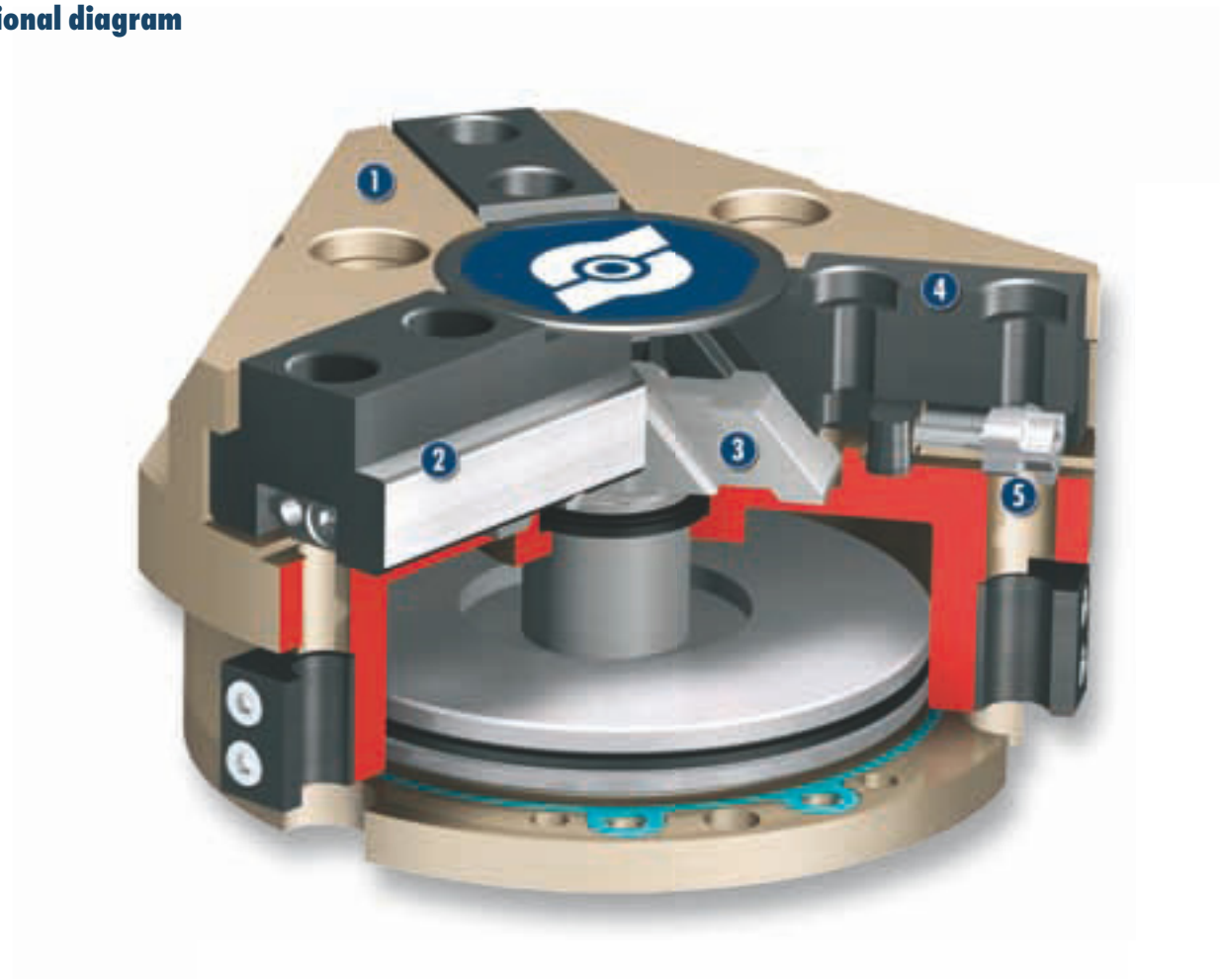
Actuation
pneumatic, with filtered compressed air (10 microns): dry, lubricated or non-lubricated
Pressure medium: Required quality class of compressed air according to DIN ISO 8573-1: 6 4 4

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

2 T-slot guidance
loadable, robust base jaw guidance for extremely long gripper fingers

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

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

5 Sensor system
Proximity switch can be assembled without mounting kit

Functional description

The piston is moved up and down by 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

The JGZ series is especially suitable for economic handling solutions and distinguishes by its high cost-benefit ratio.

Accessories

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

Tolerance compensation unit

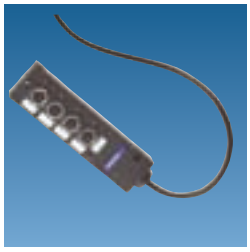
Compensation unit

Magnetic Switches

Inductive proximity switches

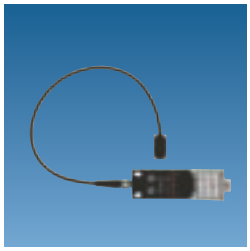
Universal intermediate jaw

Sensor Distributor



Quick-change Jaw System

Flexible Position Sensor



Pressure maintenance valve

Finger blanks

Force measuring jaws

Analog 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.

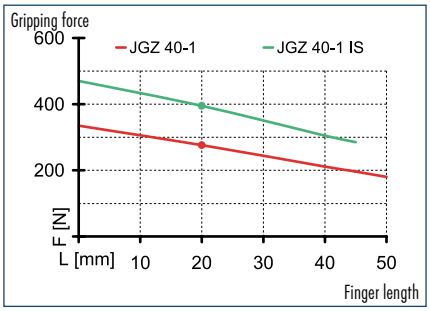
Workpiece weight
The recommended workpiece weight is calculated for a force-type connection with a coefficient of friction of 0.1 and a safety factor of 2 against slippage of the workpiece on acceleration due to gravity g. Considerably heavier workpiece weights are permitted with form-fit gripping.

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.

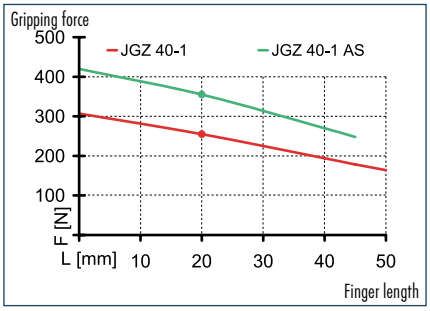
JGZ 40

Pneumatic • 3-Finger Centric Gripper • Universal Gripper

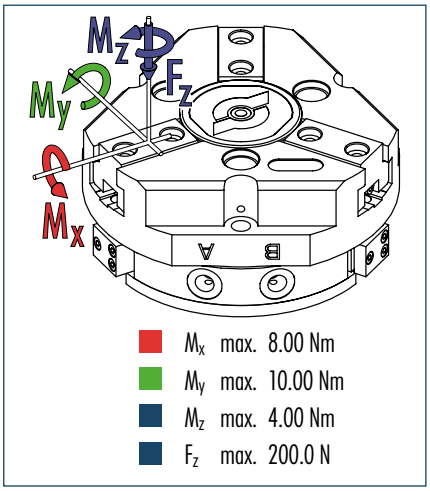
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

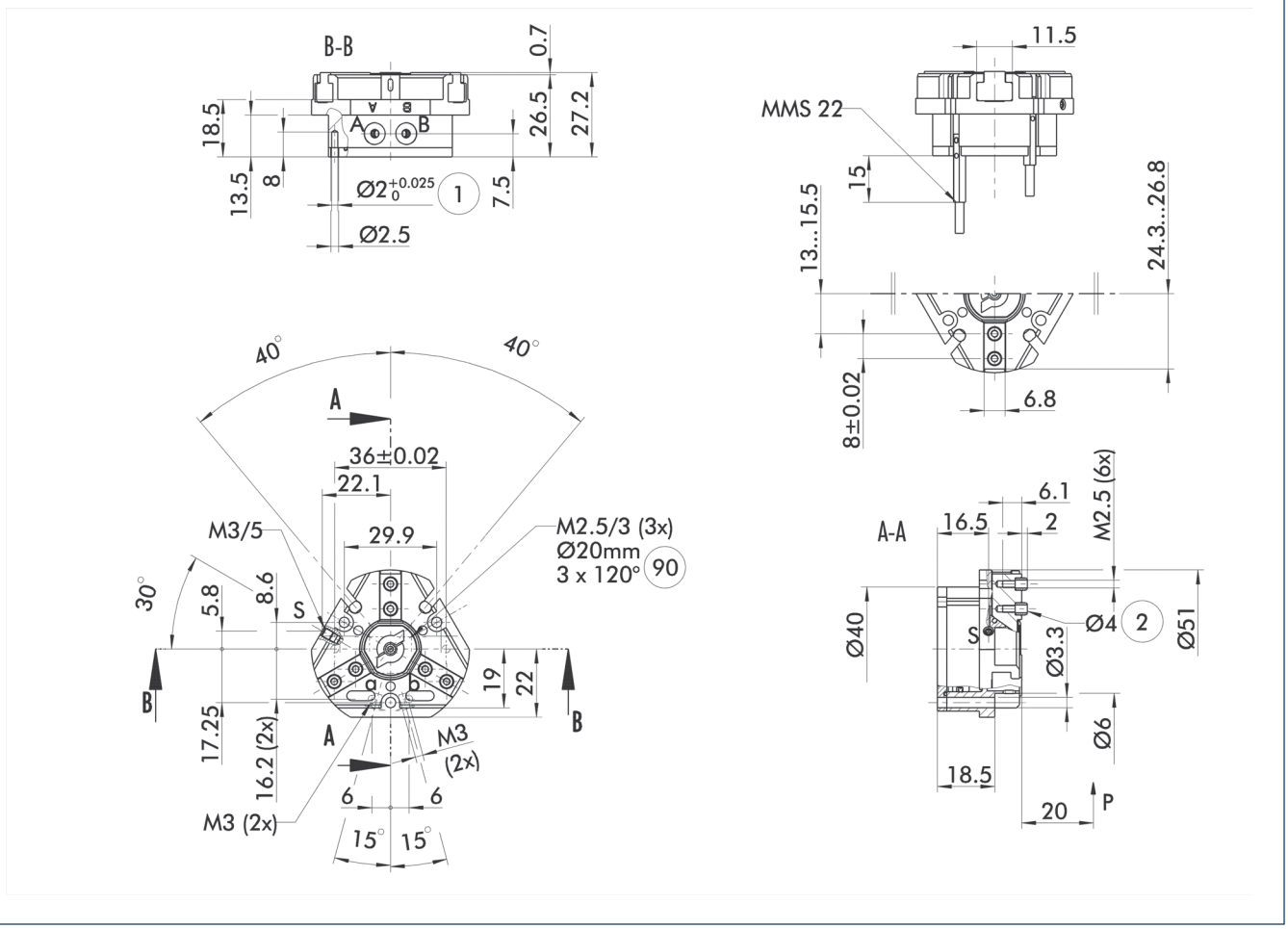


ⓘ The indicated moments and forces are static values, apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement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

Technical data

Description		JGZ 40-1	JGZ 40-1 AS	JGZ 40-1 IS
ID		**0308900**	**0308901**	**0308902**
Stroke per finger	[mm]	2.5	2.5	2.5
Closing force	[N]	255	355	
Opening force	[N]	270		370
Min. spring force	[N]		100	100
Weight	[kg]	0.12	0.15	0.15
Recommended workpiece weight	[kg]	1.25	1.25	1.25
Air consumption per double stroke	[cm³]	5	9	9
Min./max. operating pressure	[bar]	2/8	4/6.5	4/6.5
Nominal operating pressure	[bar]	6	6	6
Closing/opening time	[s]	0.02/0.03	0.02/0.04	0.02/0.02
Max. permitted finger length	[mm]	50	45	45
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

Main view

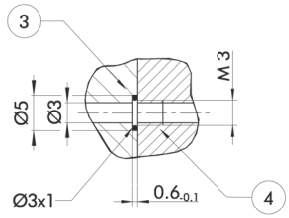


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ 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
① Gripper connection
② Finger connection
⑨⓪ Thread below the cover for fastening external attachments

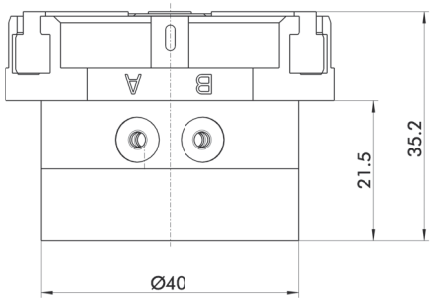
Hose-free direct connection



③ Adapter
④ Gripper

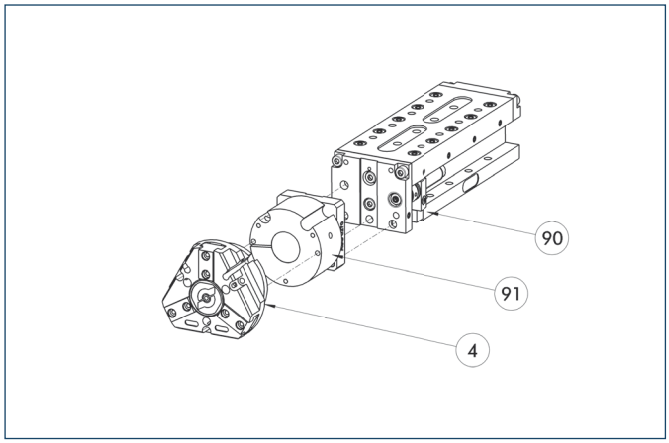
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

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.

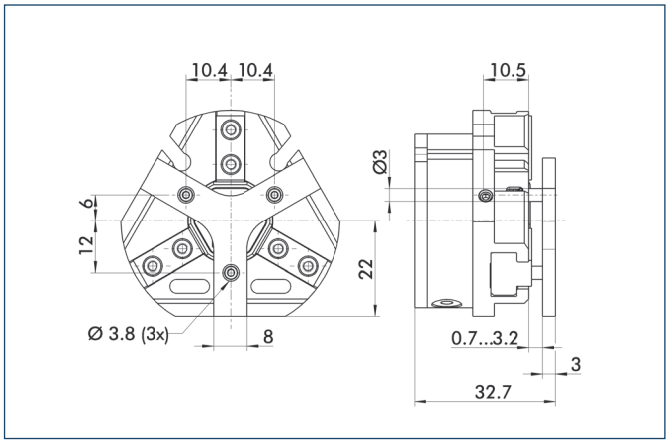
Modular Assembly Automation



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".

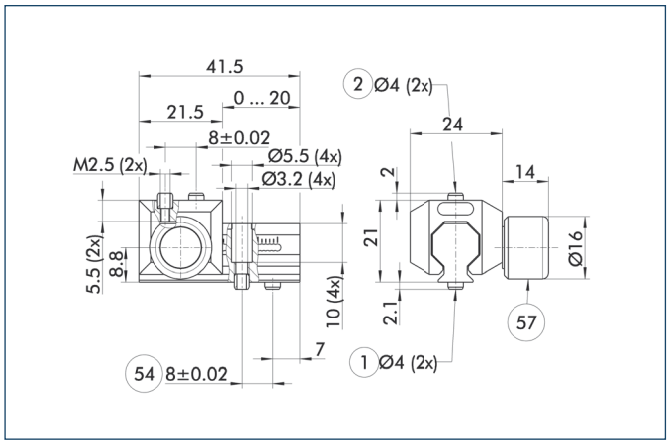
Spring-loaded pressure piece



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

Description	ID	Stroke	Min. force
Spring-loaded pressure piece			
A-PZN-plus 40	**0303718**	2.5 mm	5 N

Universal intermediate jaw

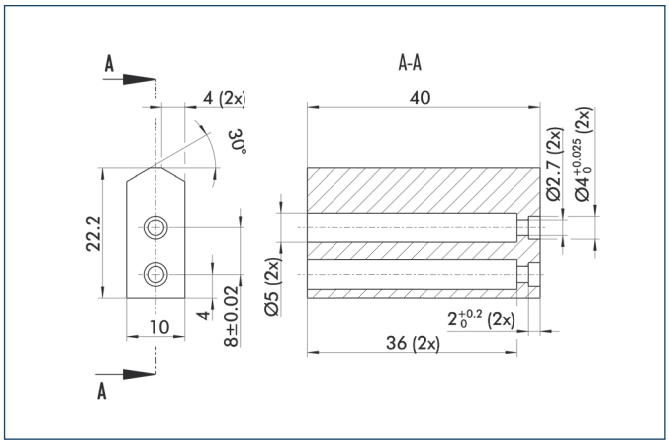


① Gripper connection
② Finger connection
⑤④ Optional right or left connection
⑤⑦ Locking

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

Finger blanks

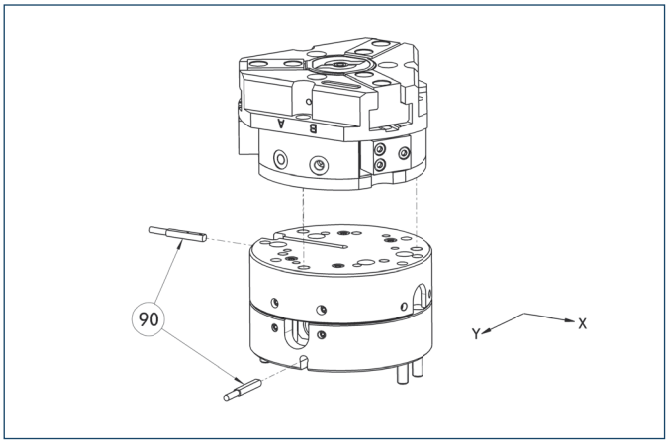


Finger blanks for customized subsequent machining

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

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

Compensation unit with spring reset

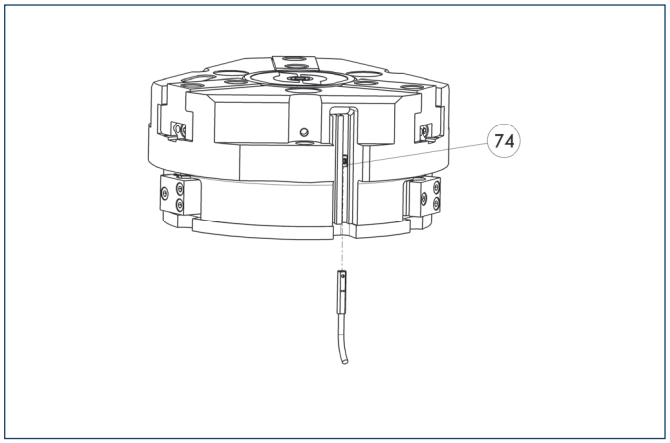


(90) Monitoring

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

Programmable magnetic switch



(74) Stop for MMS-P

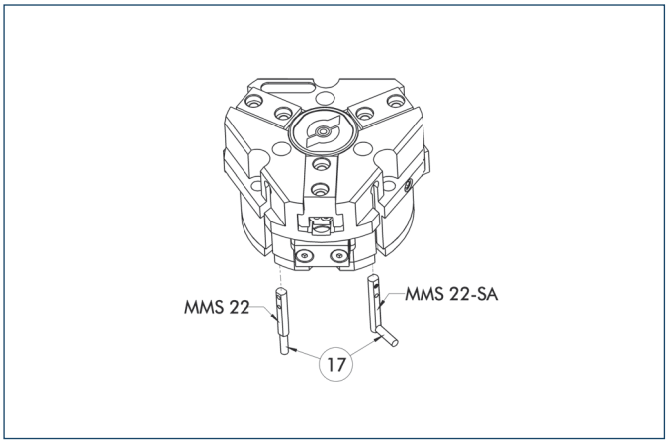
Position monitoring with two programmable positions per sensor. The end position monitoring is mounted in the C-slot.

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

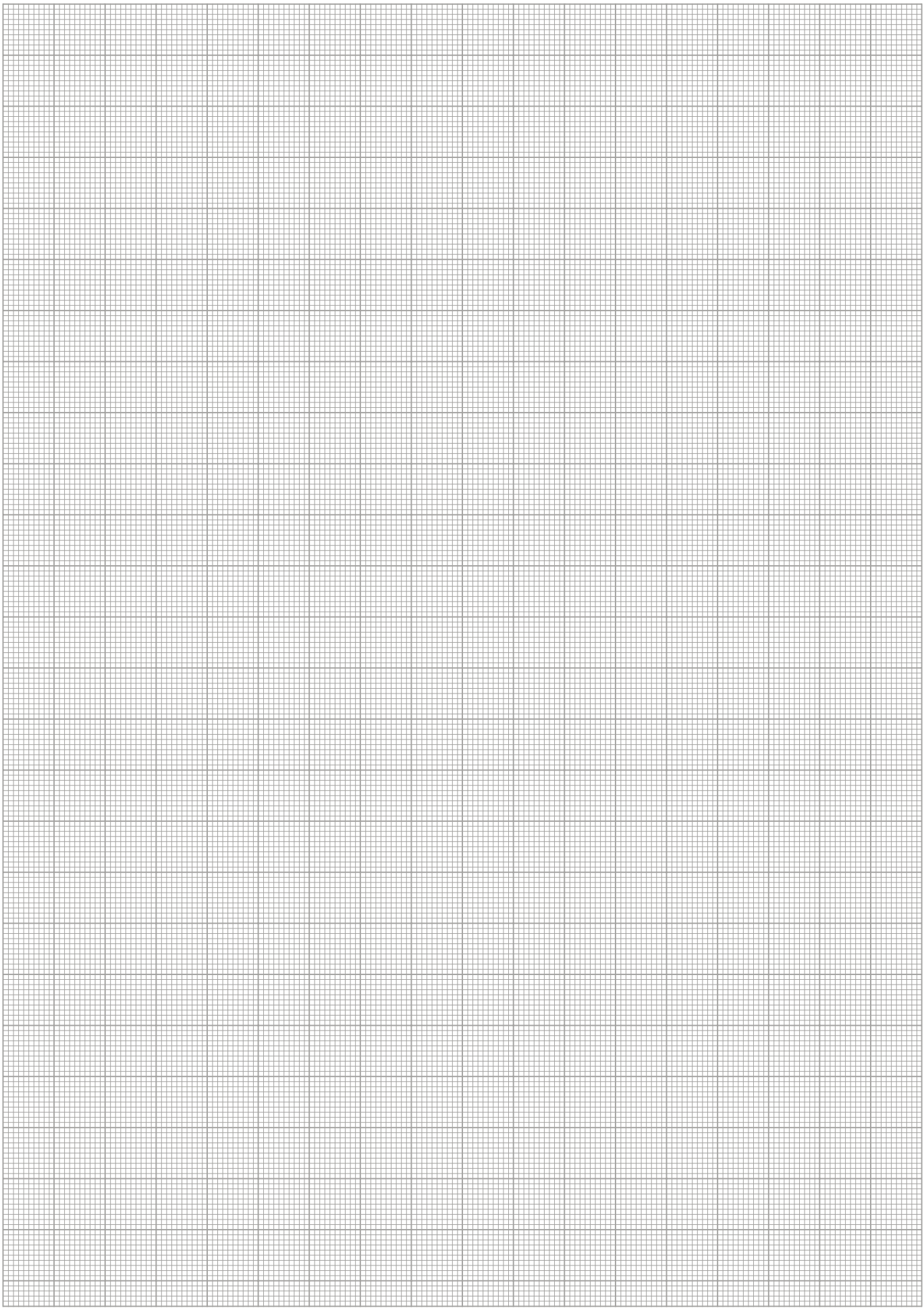
End position monitoring for mounting in the C-slot

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.

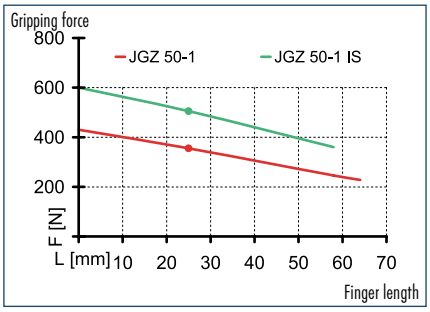
You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.



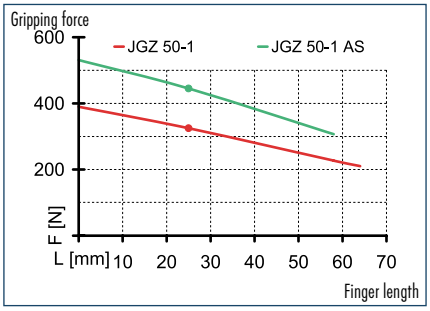
JGZ 50

Pneumatic • 3-Finger Centric Gripper • Universal Gripper

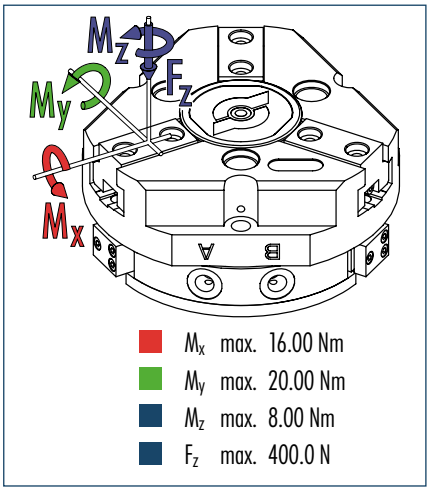
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

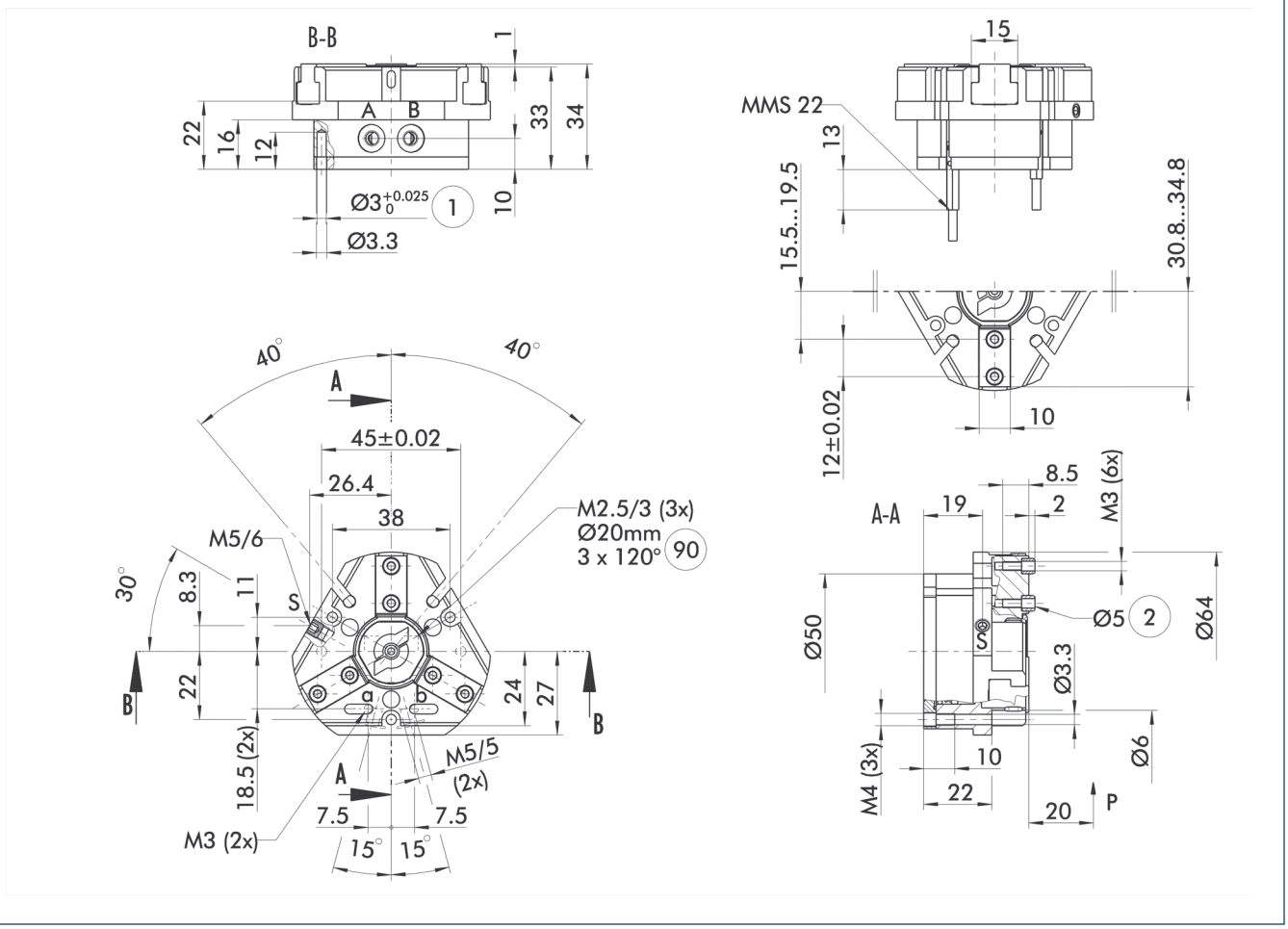


The indicated moments and forces are static values, apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement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

Technical data

Description		JGZ 50-1	JGZ 50-1 AS	JGZ 50-1 IS
ID		**0308910**	**0308911**	**0308912**
Stroke per finger	[mm]	4	4	4
Closing force	[N]	325	445	
Opening force	[N]	355		505
Min. spring force	[N]		120	150
Weight	[kg]	0.25	0.3	0.3
Recommended workpiece weight	[kg]	1.6	1.6	1.6
Air consumption per double stroke	[cm³]	9	18	18
Min./max. operating pressure	[bar]	2/8	4/6.5	4/6.5
Nominal operating pressure	[bar]	6	6	6
Closing/opening time	[s]	0.03/0.03	0.02/0.04	0.04/0.02
Max. permitted finger length	[mm]	64	58	58
Max. permitted weight per finger	[kg]	0.18	0.18	0.18
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

Main view

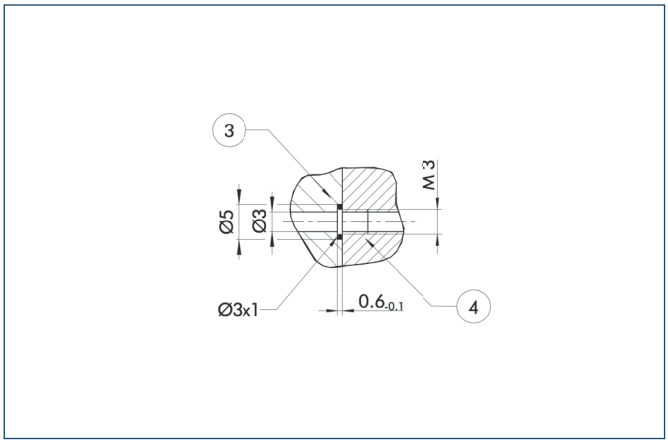


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ 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
① Gripper connection
② Finger connection
⑨⓪ Thread below the cover for fastening external attachments

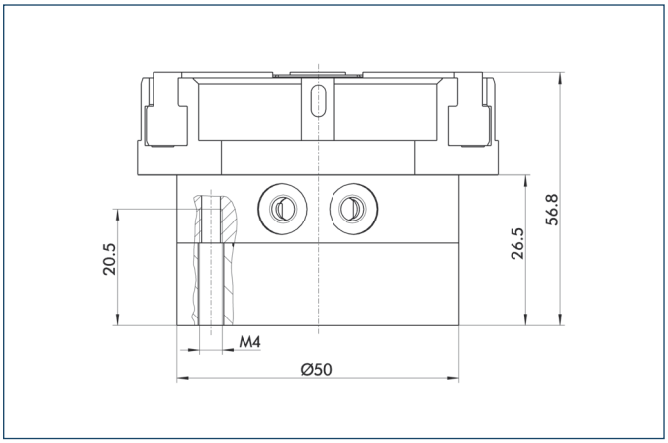
Hose-free direct connection



③ Adapter
④ Gripper

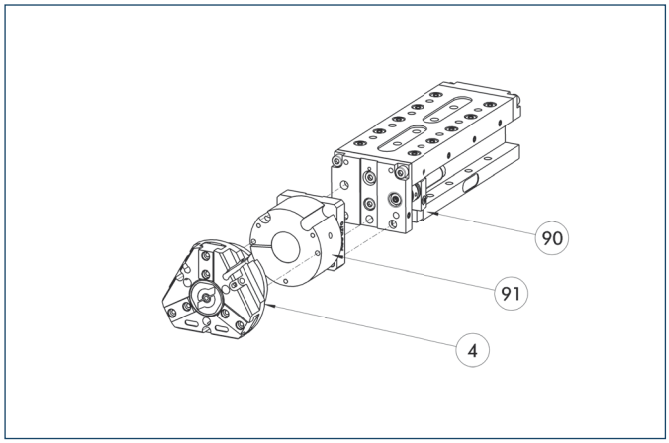
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

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.

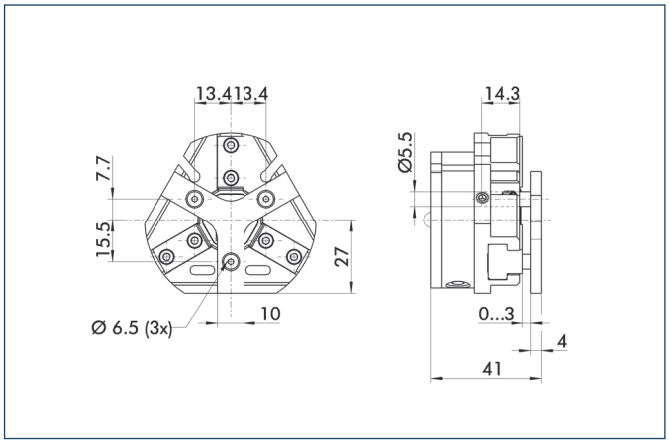
Modular Assembly Automation



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".

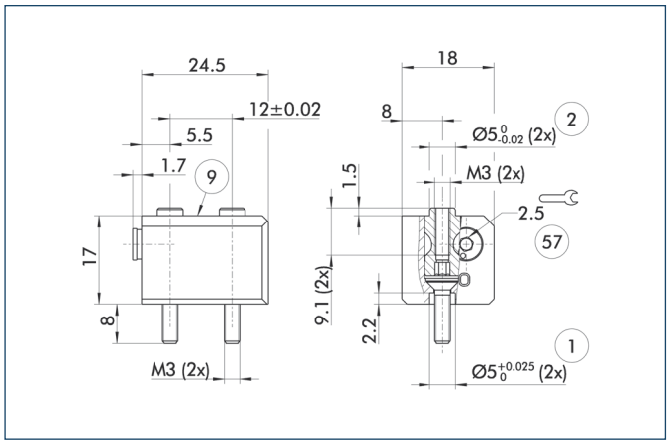
Spring-loaded pressure piece



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

Description	ID	Stroke	Min. force
Spring-loaded pressure piece			
A-PZN-plus 50	**0303719**	3 mm	12 N

Quick-change Jaw System

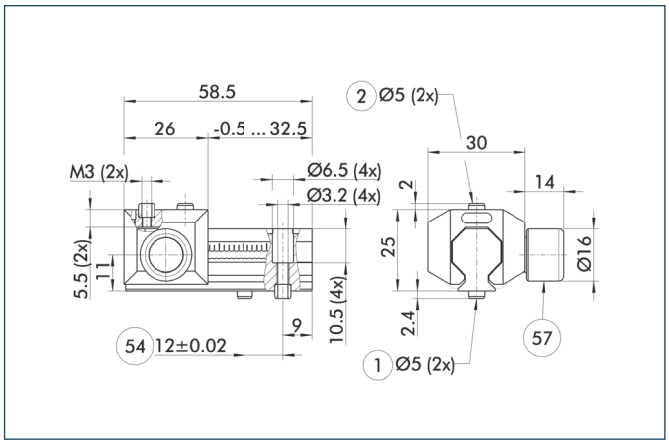


① Gripper connection
② Finger connection
⑨ For mounting screw connection diagram, see basic version
⑤⑦ Locking

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**

Universal intermediate jaw



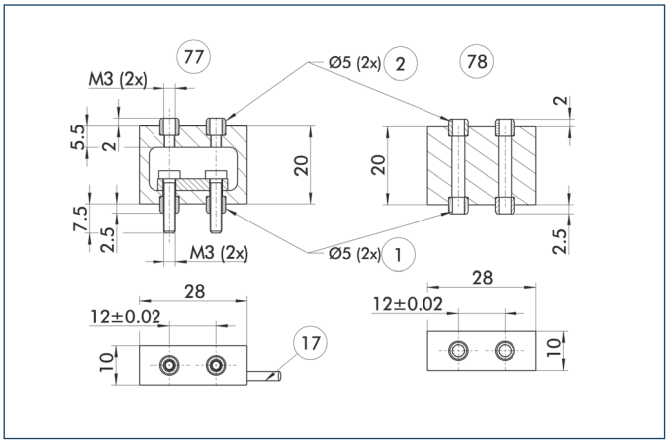
① Gripper connection
② Finger connection
⑤④ Optional right or left connection
⑤⑦ Locking

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

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

Force measuring jaws

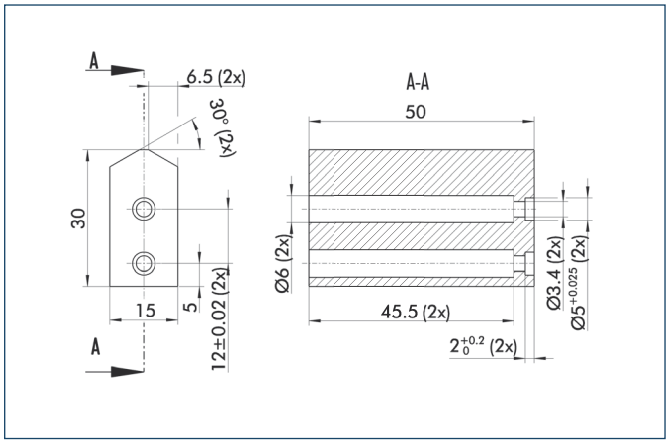


① Gripper connection
② Finger connection
⑰ Cable outlet
⑦⑦ Active intermediate jaws
⑦⑧ Passive intermediate jaws

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 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

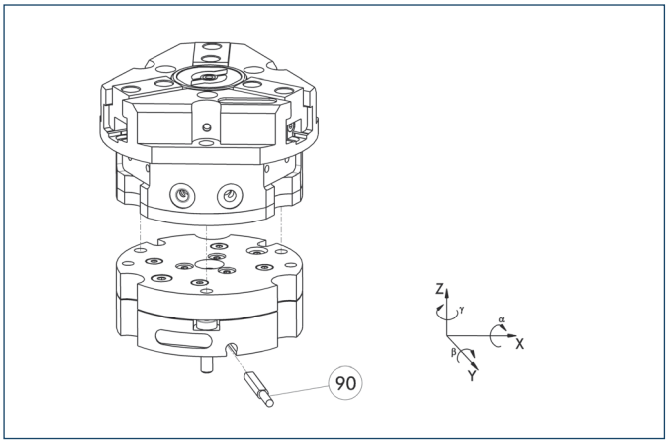


Finger blanks for customized subsequent machining

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

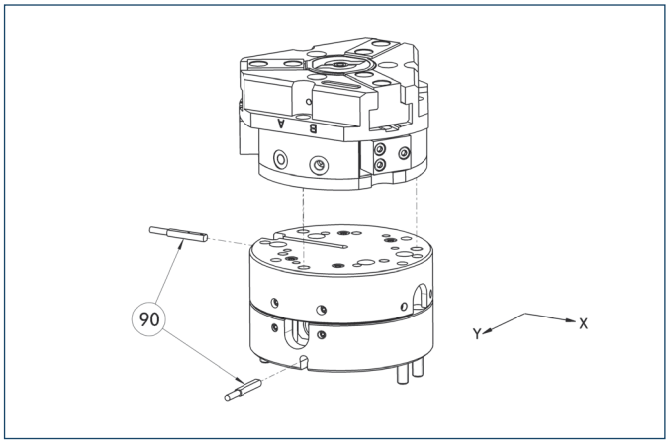


(90) Monitoring of locking

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-Z	**0324749**	No	

Compensation unit with spring reset

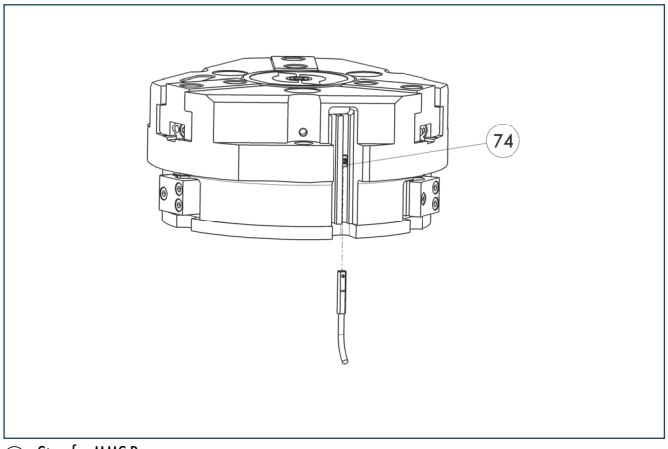


(90) Monitoring

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

Programmable magnetic switch



(74) Stop for MMS-P

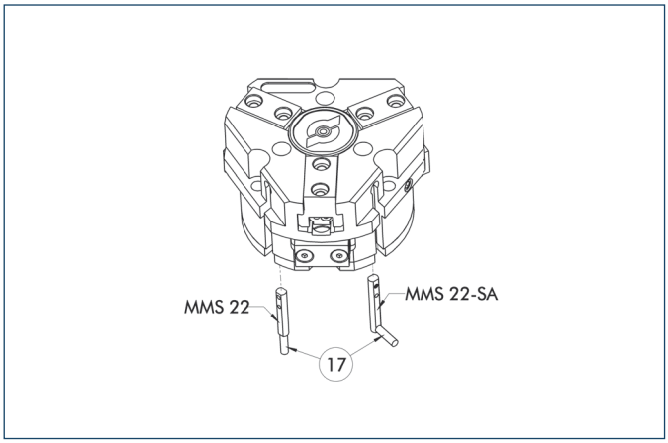
Position monitoring with two programmable positions per sensor. The end position monitoring is mounted in the C-slot.

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**	
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**	

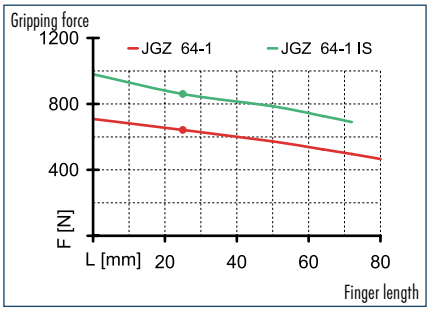
ⓘ Two sensors (closer/NO) are required for each gripper, plus extension cables as an option.

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

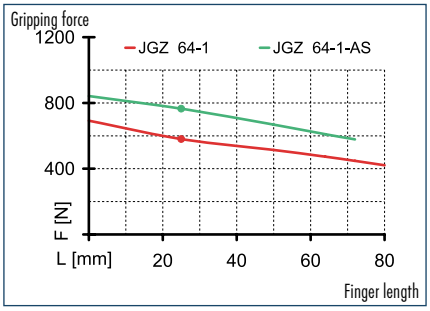
You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

JGZ 64

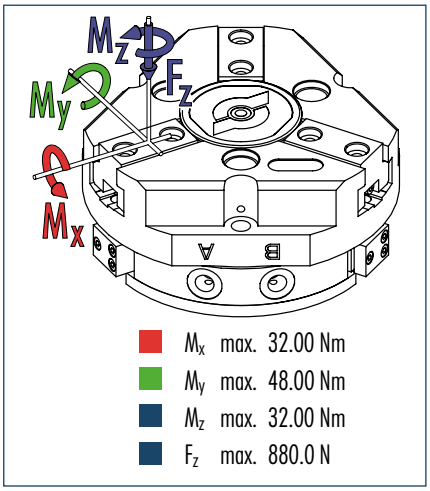
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

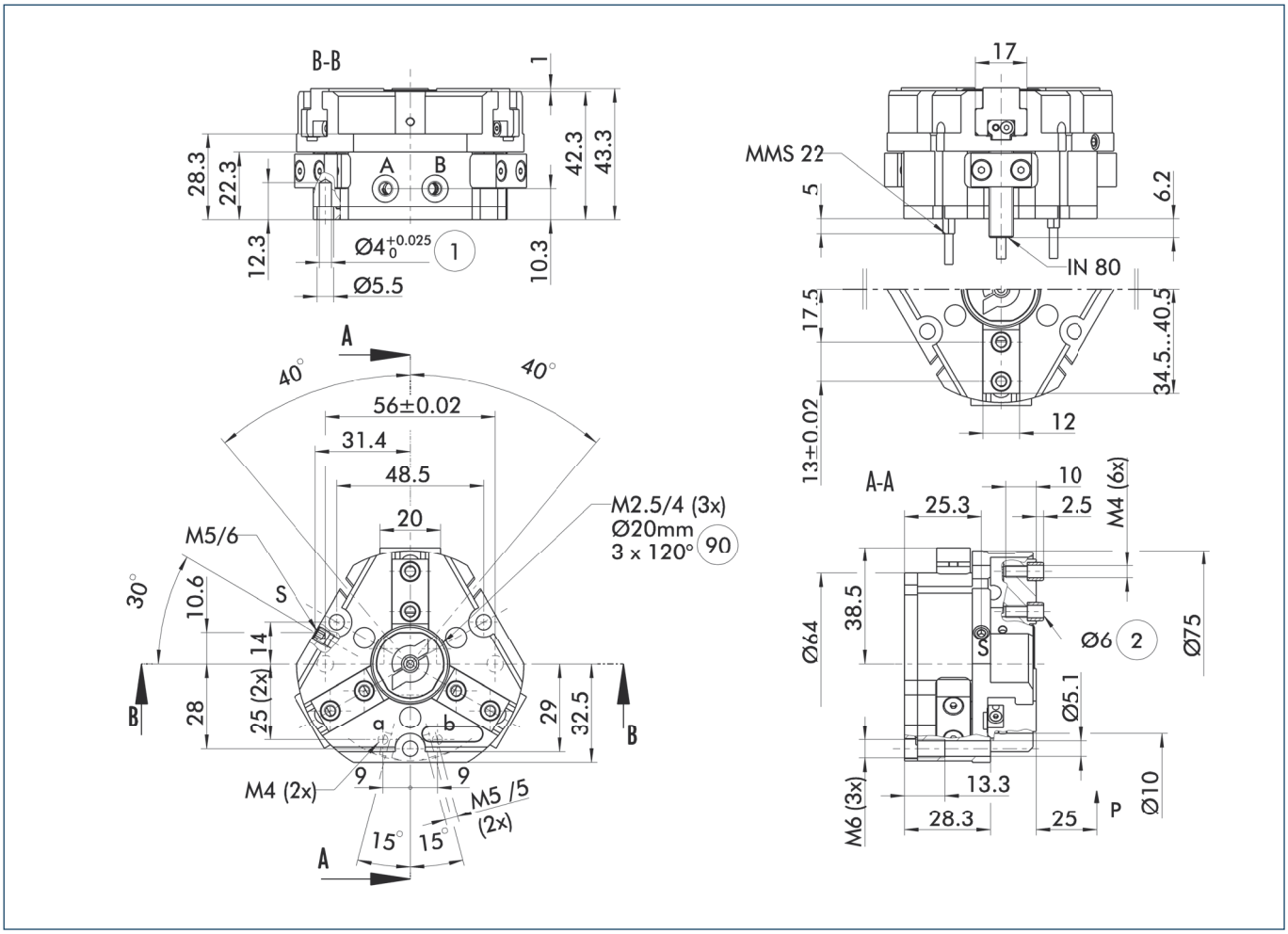


ⓘ The indicated moments and forces are static values, apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement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

Technical data

Description		JGZ 64-1	JGZ 64-1-AS	JGZ 64-1-IS
ID		0308920	0308921	0308922
Stroke per finger	[mm]	6	6	6
Closing force	[N]	580	765	
Opening force	[N]	640		860
Min. spring force	[N]		185	220
Weight	[kg]	0.43	0.54	0.54
Recommended workpiece weight	[kg]	2.9	2.9	2.9
Air consumption per double stroke	[cm³]	25	25	25
Min./max. operating pressure	[bar]	2/8	4/6.5	4/6.5
Nominal operating pressure	[bar]	6	6	6
Closing/opening time	[s]	0.03/0.03	0.02/0.04	0.04/0.02
Max. permitted finger length	[mm]	80	72	72
Max. permitted weight per finger	[kg]	0.35	0.35	0.35
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

Main view

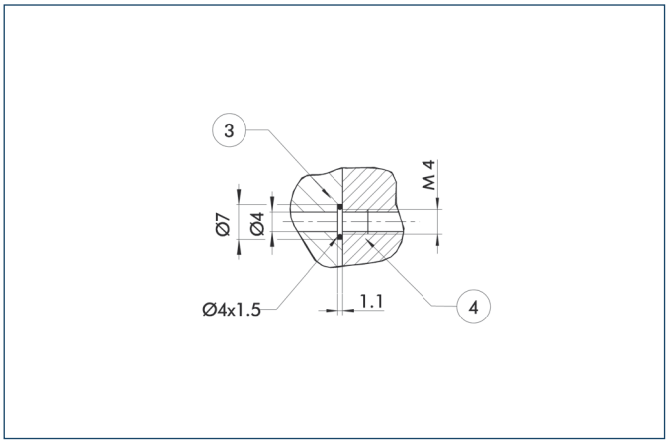


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ 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
⑨⓪ Thread below the cover for fastening external attachments

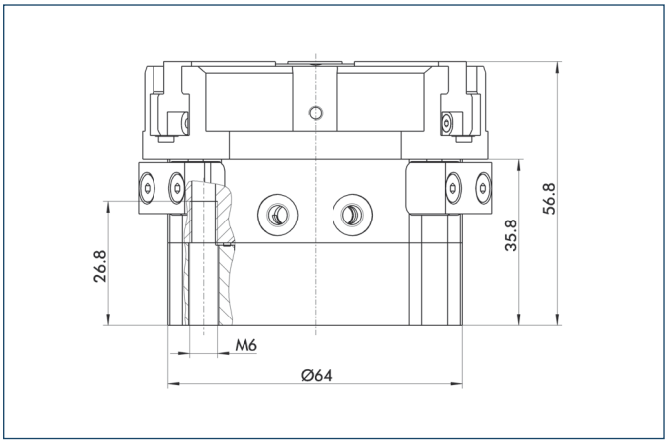
Hose-free direct connection



③ Adapter
④ Gripper

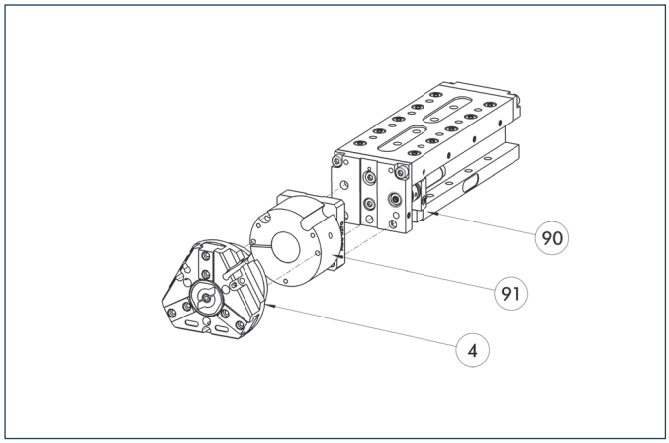
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

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.

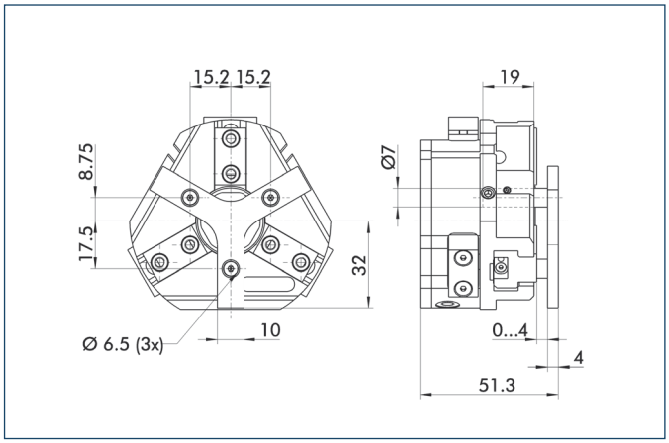
Modular Assembly Automation



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".

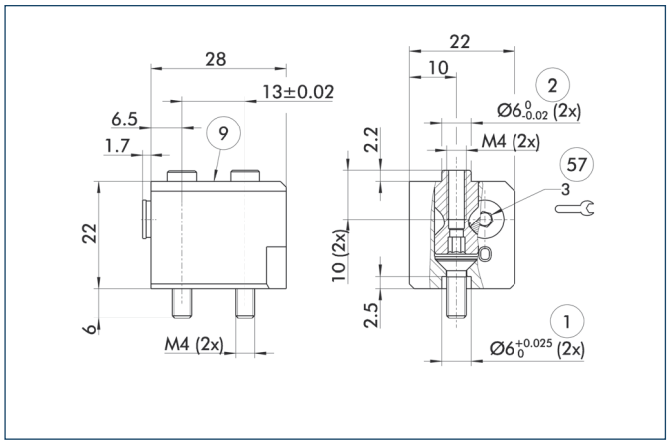
Spring-loaded pressure piece



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

Description	ID	Stroke	Min. force
Spring-loaded pressure piece			
A-PZN-plus/DPZ-plus 64	**0303720**	4 mm	11 N

Quick-change Jaw System

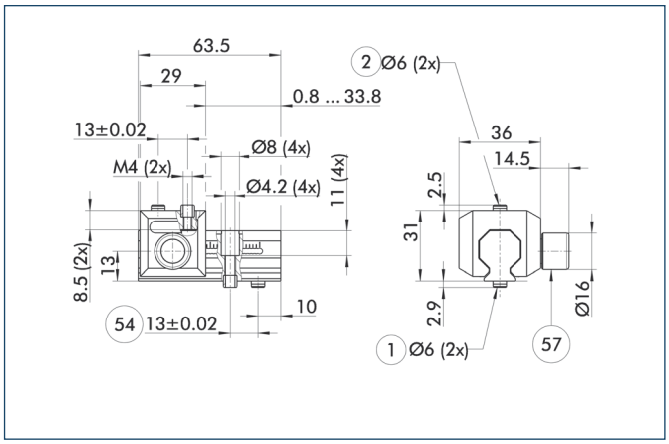


① Gripper connection
② Finger connection
⑨ For mounting screw connection diagram, see basic version
⑤⑦ Locking

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 64	**0303022**
Quick-change Jaw System base	
BSWS-B 64	**0303023**
Quick-change Jaw System reversed	
BSWS-U 64	**0303041**

Universal intermediate jaw



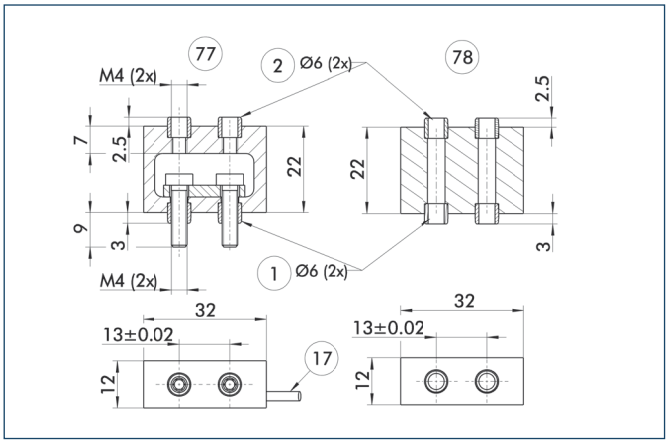
① Gripper connection
② Finger connection
⑤④ Optional right or left connection
⑤⑦ Locking

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

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

Force measuring jaws

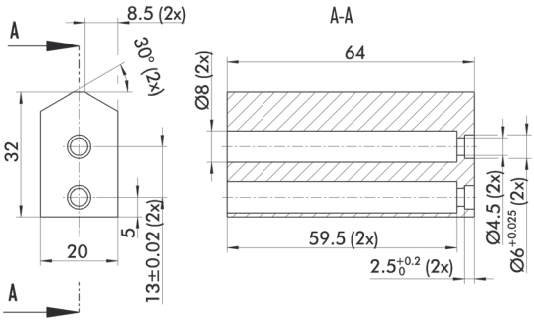


① Gripper connection
② Finger connection
⑰ Cable outlet
⑦⑦ Active intermediate jaws
⑦⑧ Passive intermediate jaws

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 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

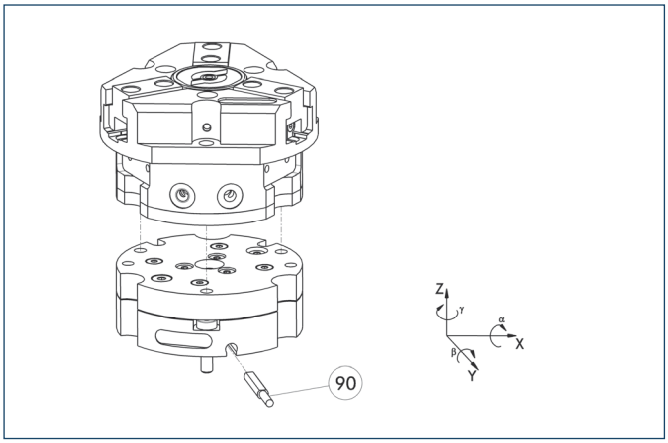


Finger blanks for customized subsequent machining

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

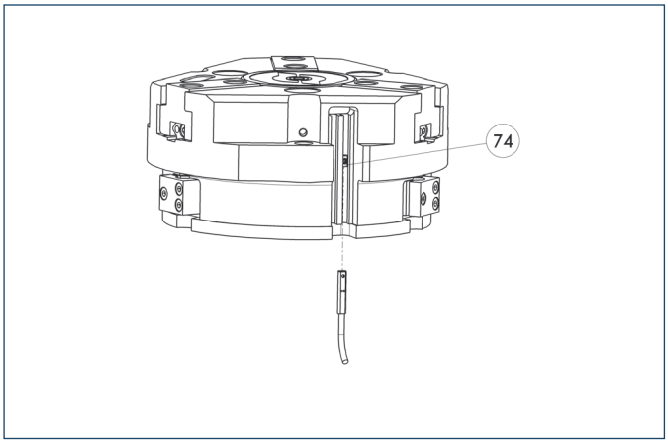


(90) Monitoring of locking

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-Z	**0324766**	Yes	
TCU-064-3-OV-Z	**0324767**	No	

Programmable magnetic switch



(74) Stop for MMS-P

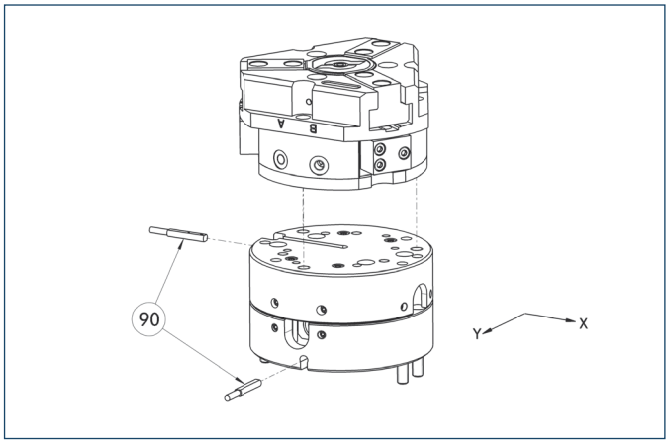
Position monitoring with two programmable positions per sensor. The end position monitoring is mounted in the C-slot.

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.

Compensation unit with spring reset

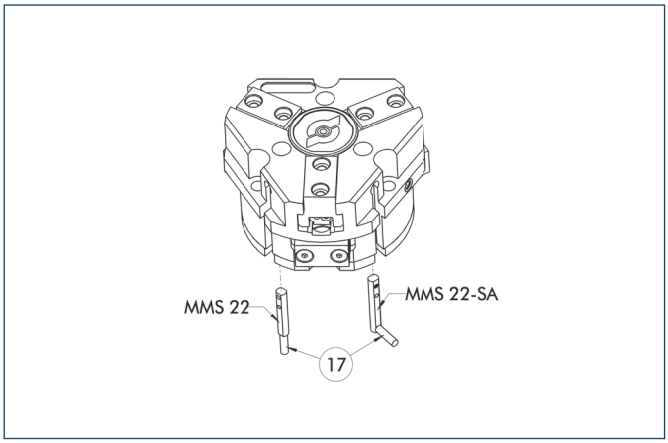


(90) Monitoring

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

Electronic magnetic switches



⑰ Cable outlet

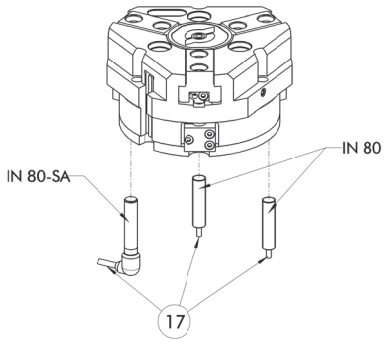
End position monitoring for mounting in the C-slot

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

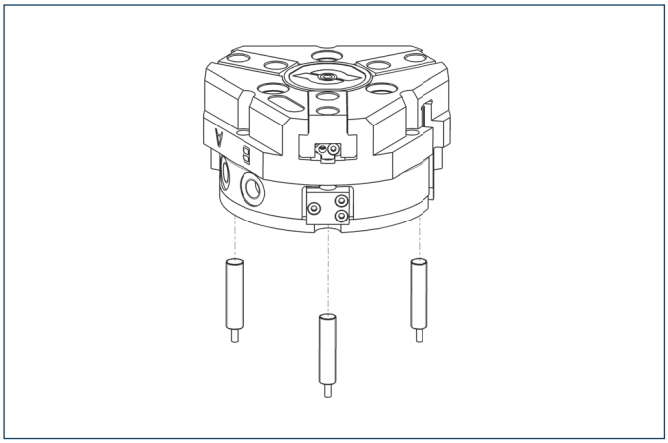
Description	ID	Recommended product
Inductive proximity switches		
IN 80-S-M8	**0301478**	•
IN 80-S-M12	**0301578**	
INK 80-S	**0301550**	
Inductive proximity switch with lateral outlet		
IN 80-S-M12-SA	**0301587**	
IN 80-S-M8-SA	**0301483**	•
INK 80-S-SA	**0301566**	
Connection cables		
KA BG08-L 3P-0300-PNP	**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

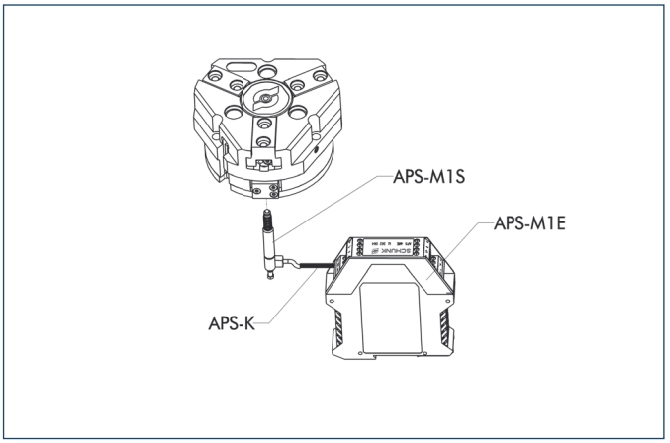


End position monitoring mounted with mounting kit

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



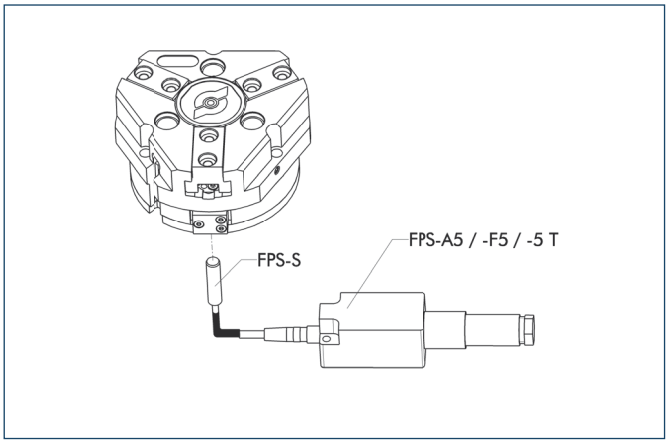
Analog multi position monitoring for any desired positions

Description	ID
Mounting kit	
AS-APS-M1-64/1	**0302075**
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**

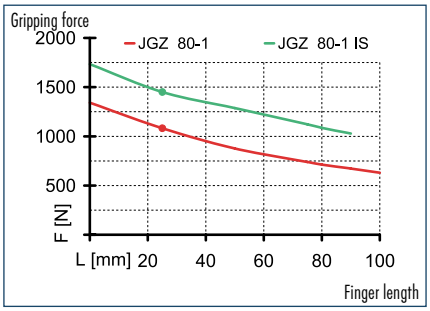
ⓘ When using a FPS system, a FPS sensor (FPS-S) and a control unit (FPS-F5 / F5 T or A5) are required for each gripper as well as a mounting kit (AS), if listed. Cable extensions (KV) are available as options in the “Accessories” catalog section.

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

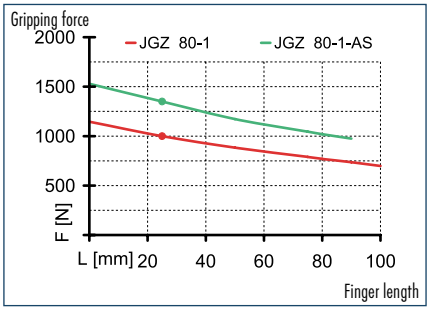
JGZ 80

Pneumatic • 3-Finger Centric Gripper • Universal Gripper

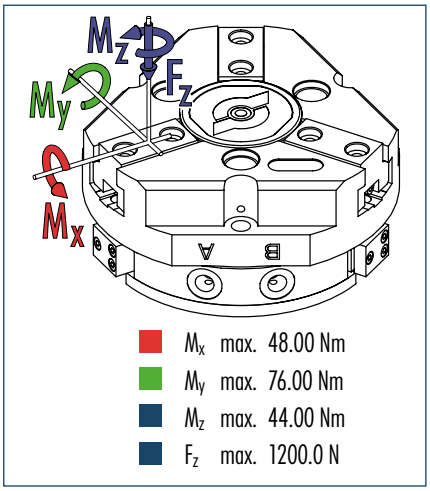
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load



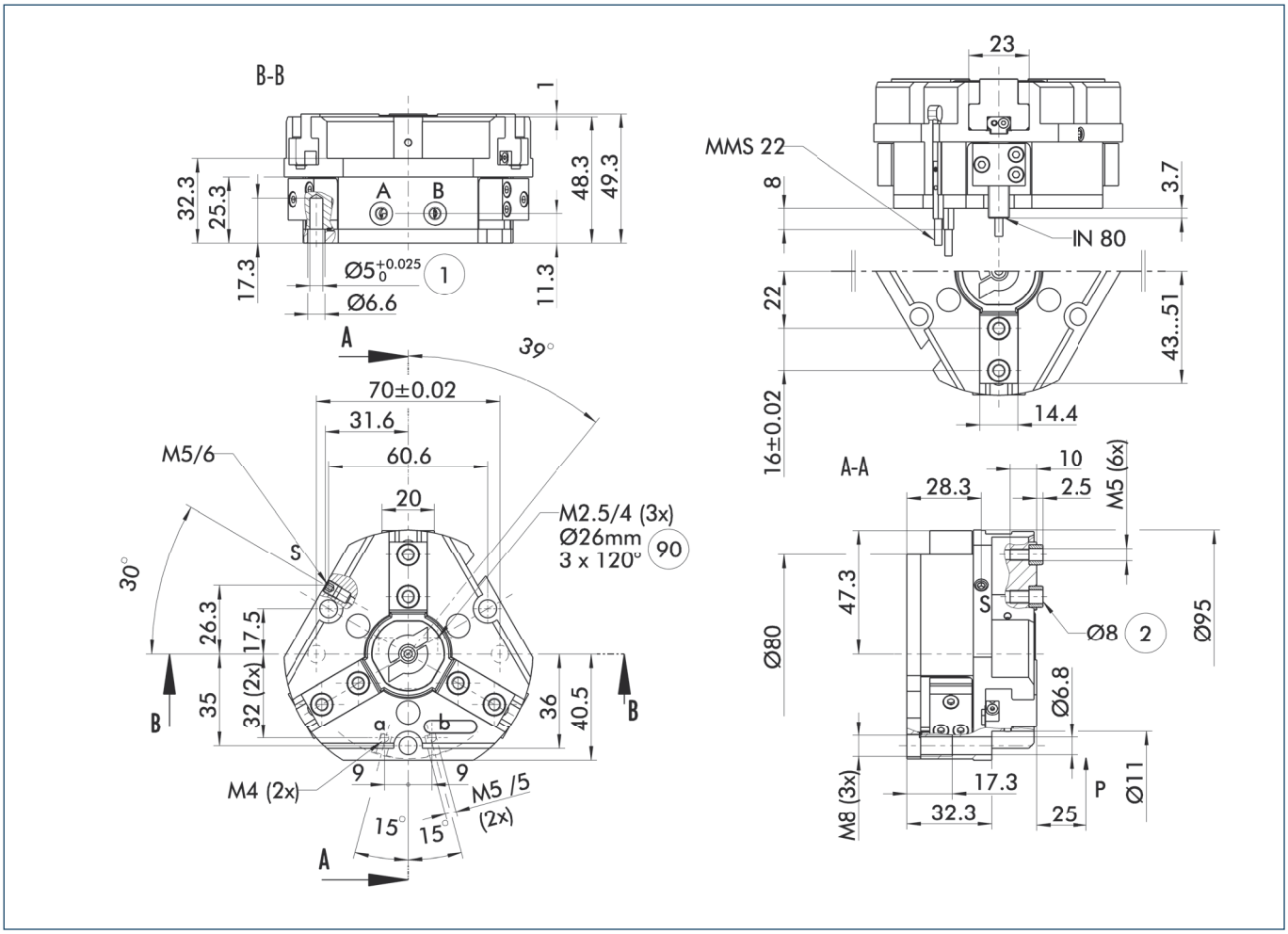
- M_x max. 48.00 Nm
- M_y max. 76.00 Nm
- M_z max. 44.00 Nm
- F_z max. 1200.0 N

ⓘ 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		JGZ 80-1	JGZ 80-1-AS	JGZ 80-1-IS
ID		**0308930**	**0308931**	**0308932**
Stroke per finger	[mm]	8	8	8
Closing force	[N]	1000	1350	
Opening force	[N]	1080		1450
Min. spring force	[N]		350	370
Weight	[kg]	0.79	0.96	0.96
Recommended workpiece weight	[kg]	5	5	5
Air consumption per double stroke	[cm³]	60	60	60
Min./max. operating pressure	[bar]	2/8	4/6.5	4/6.5
Nominal operating pressure	[bar]	6	6	6
Closing/opening time	[s]	0.05/0.05	0.03/0.05	0.06/0.04
Max. permitted finger length	[mm]	100	90	90
Max. permitted weight per finger	[kg]	0.6	0.6	0.6
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

Main view

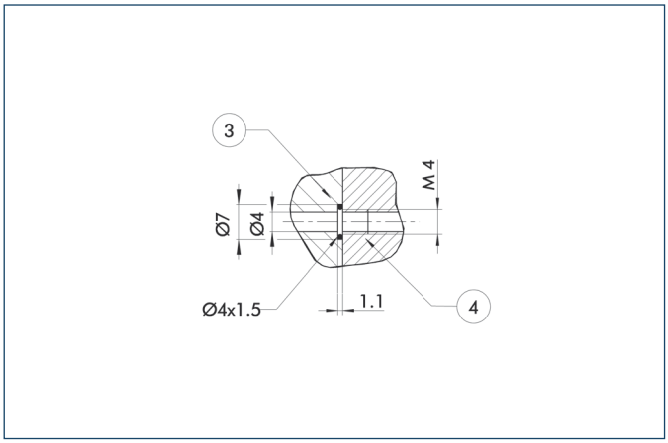


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ 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
⑨⓪ Thread below the cover for fastening external attachments

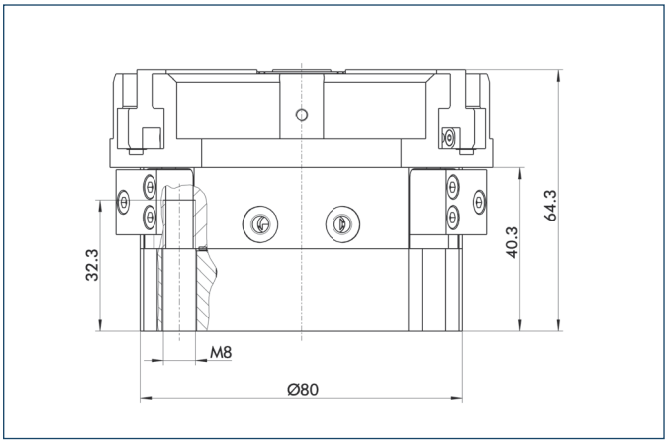
Hose-free direct connection



③ Adapter
④ Gripper

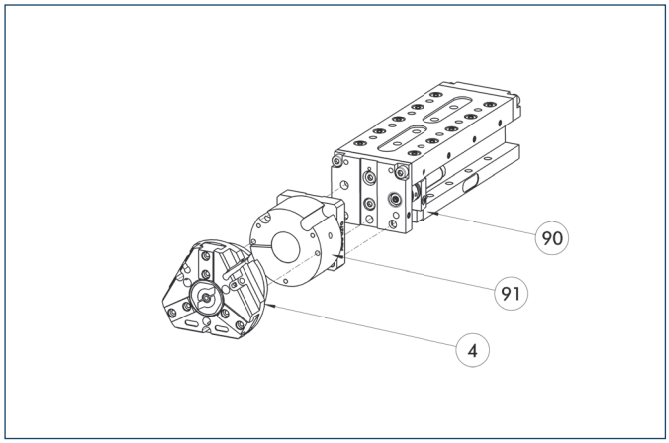
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

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.

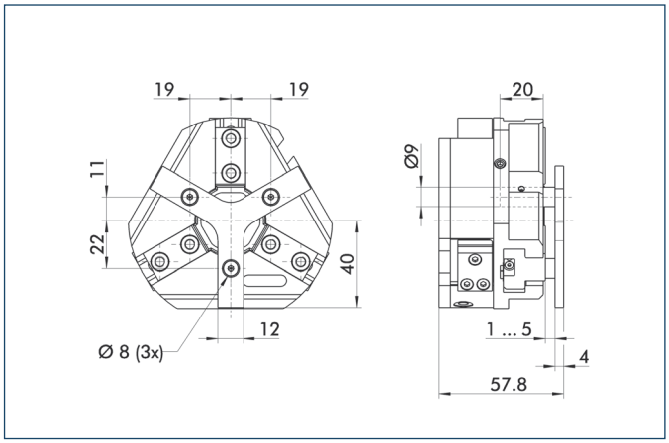
Modular Assembly Automation



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".

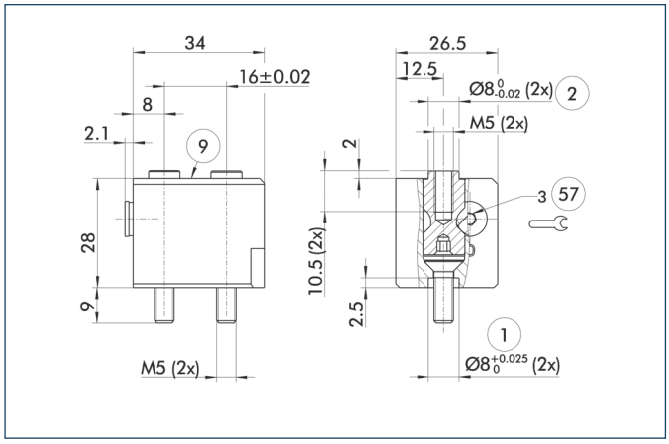
Spring-loaded pressure piece



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

Description	ID	Stroke	Min. force
Spring-loaded pressure piece			
A-PZN-plus/DPZ-plus 80	**0303721**	4 mm	18 N

Quick-change Jaw System

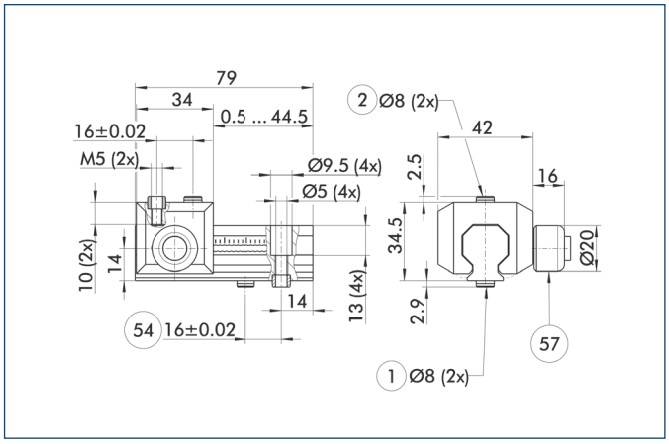


① Gripper connection
② Finger connection
⑨ For mounting screw connection diagram, see basic version
⑤⑦ Locking

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**

Universal intermediate jaw



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

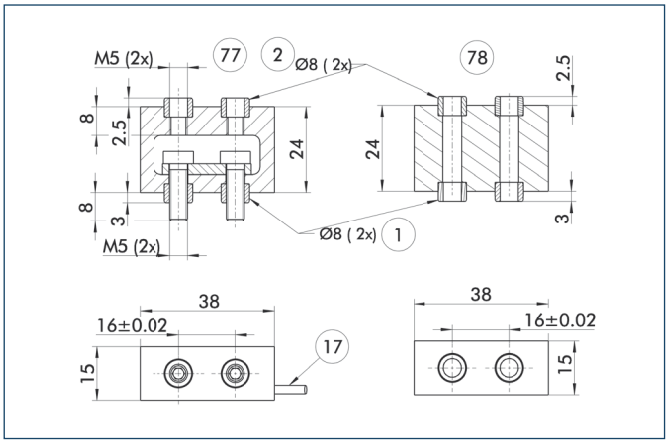
The universal intermediate jaw allows fast tool-free and reliable plugging and shifting of top jaws at the gripper.

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.

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

Force measuring jaws

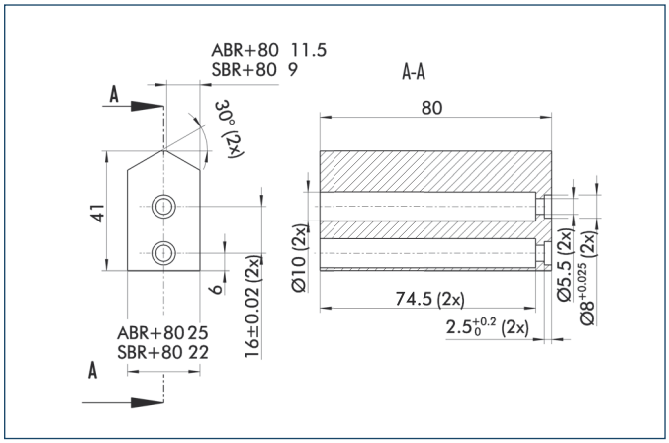


① Gripper connection
② Finger connection
⑰ Cable outlet
⑦⑦ Active intermediate jaws
⑦⑧ Passive intermediate jaws

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 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

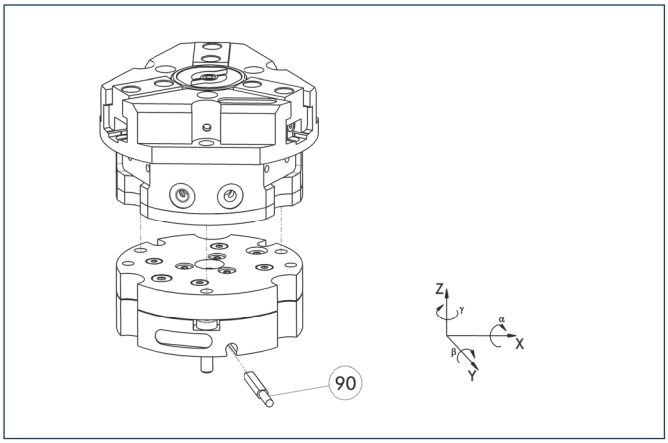


Finger blanks for customized subsequent machining

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

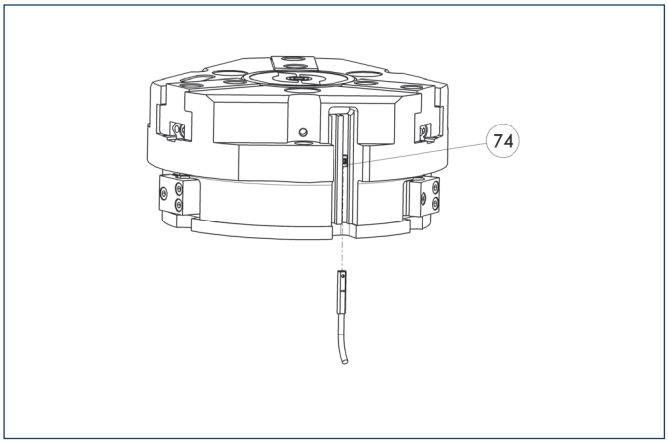


(90) Monitoring of locking

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-Z	**0324784**	Yes	
TCU-080-3-OV-Z	**0324785**	No	

Programmable magnetic switch



(74) Stop for MMS-P

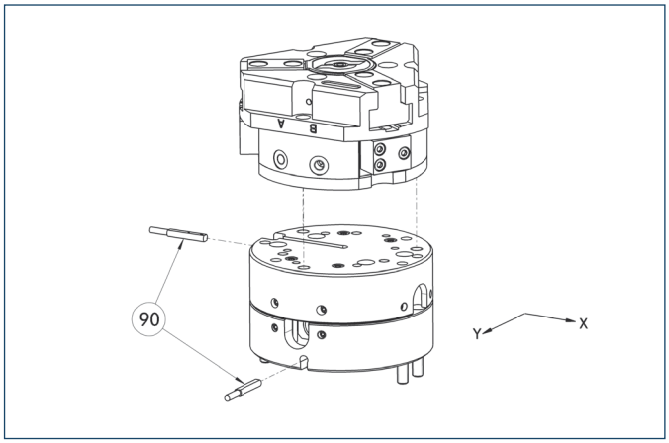
Position monitoring with two programmable positions per sensor. The end position monitoring is mounted in the C-slot.

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.

Compensation unit with spring reset

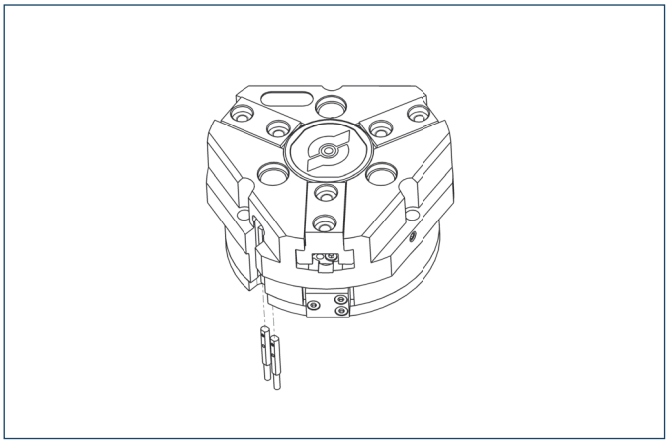


(90) Monitoring

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

Electronic magnetic switches



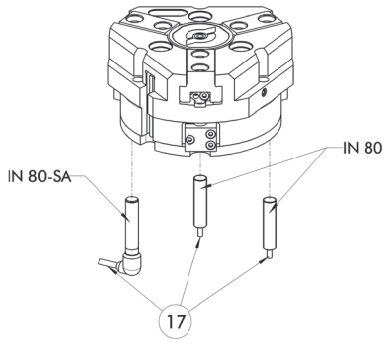
End position monitoring for mounting in the C-slot

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

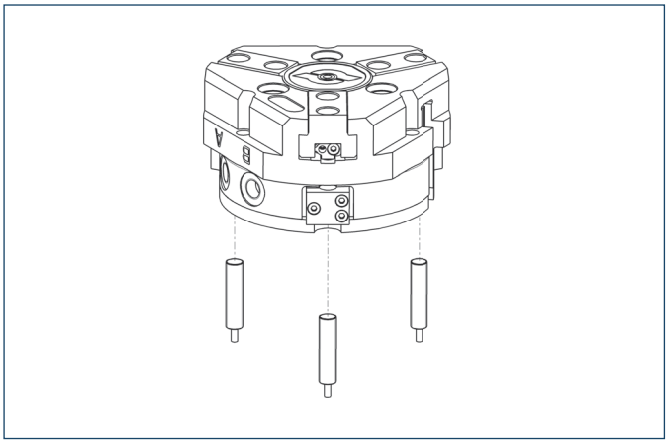
Description	ID	Recommended product
Inductive proximity switches		
IN 80-S-M8	**0301478**	•
IN 80-S-M12	**0301578**	
INK 80-S	**0301550**	
Inductive proximity switch with lateral outlet		
IN 80-S-M12-SA	**0301587**	
IN 80-S-M8-SA	**0301483**	•
INK 80-S-SA	**0301566**	
Connection cables		
KA BG08-L 3P-0300-PNP	**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

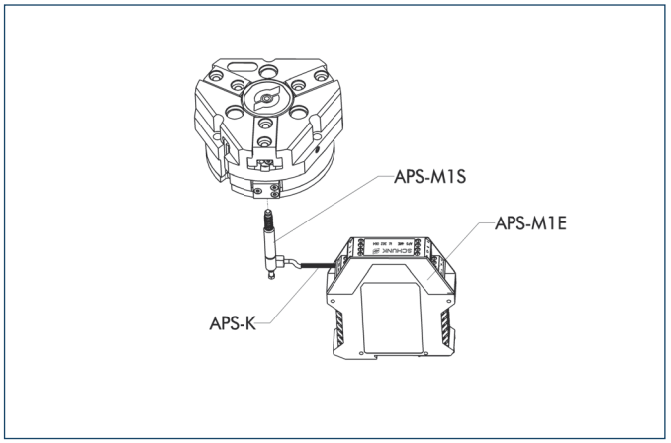


End position monitoring mounted with mounting kit

Description	ID
Mounting kit for proximity switch	
AS-RMS 80 PGN/PZN-plus 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



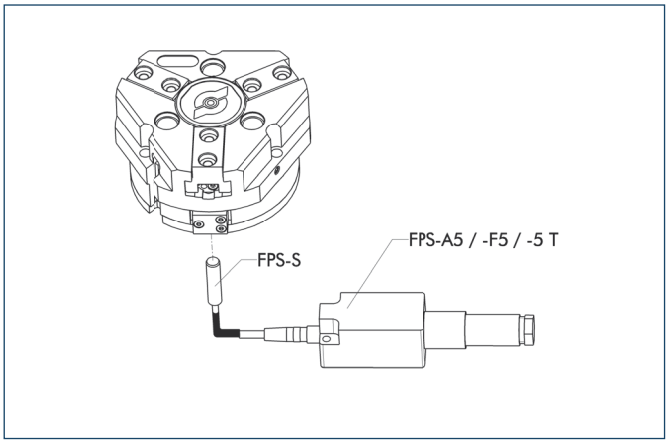
Analog multi position monitoring for any desired positions

Description	ID
Mounting kit	
AS-APS-M1-80/1	**0302077**
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/PZN-plus 80/1, PZB 80/100	**0301632**
Electronic Processor	
FPS-F5	**0301805**
FPS-F5 T	**0301807**
Sensor	
FPS-S M8	**0301704**

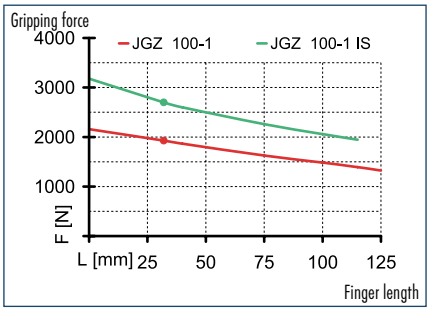
ⓘ When using a FPS system, a FPS sensor (FPS-S) and a control unit (FPS-F5 / F5 T or A5) are required for each gripper as well as a mounting kit (AS), if listed. Cable extensions (KV) are available as options in the “Accessories” catalog section.

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

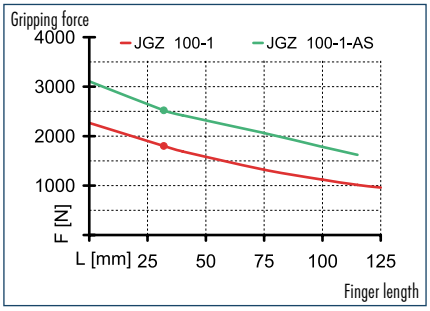
JGZ 100

Pneumatic • 3-Finger Centric Gripper • Universal Gripper

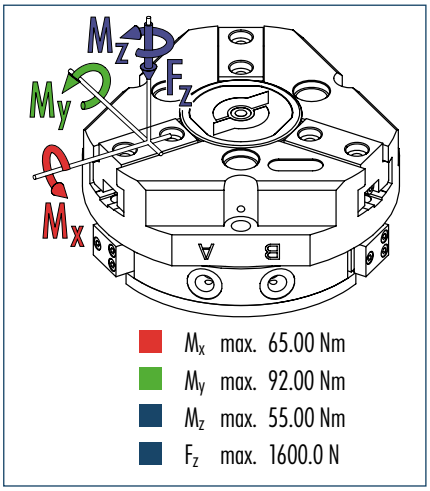
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

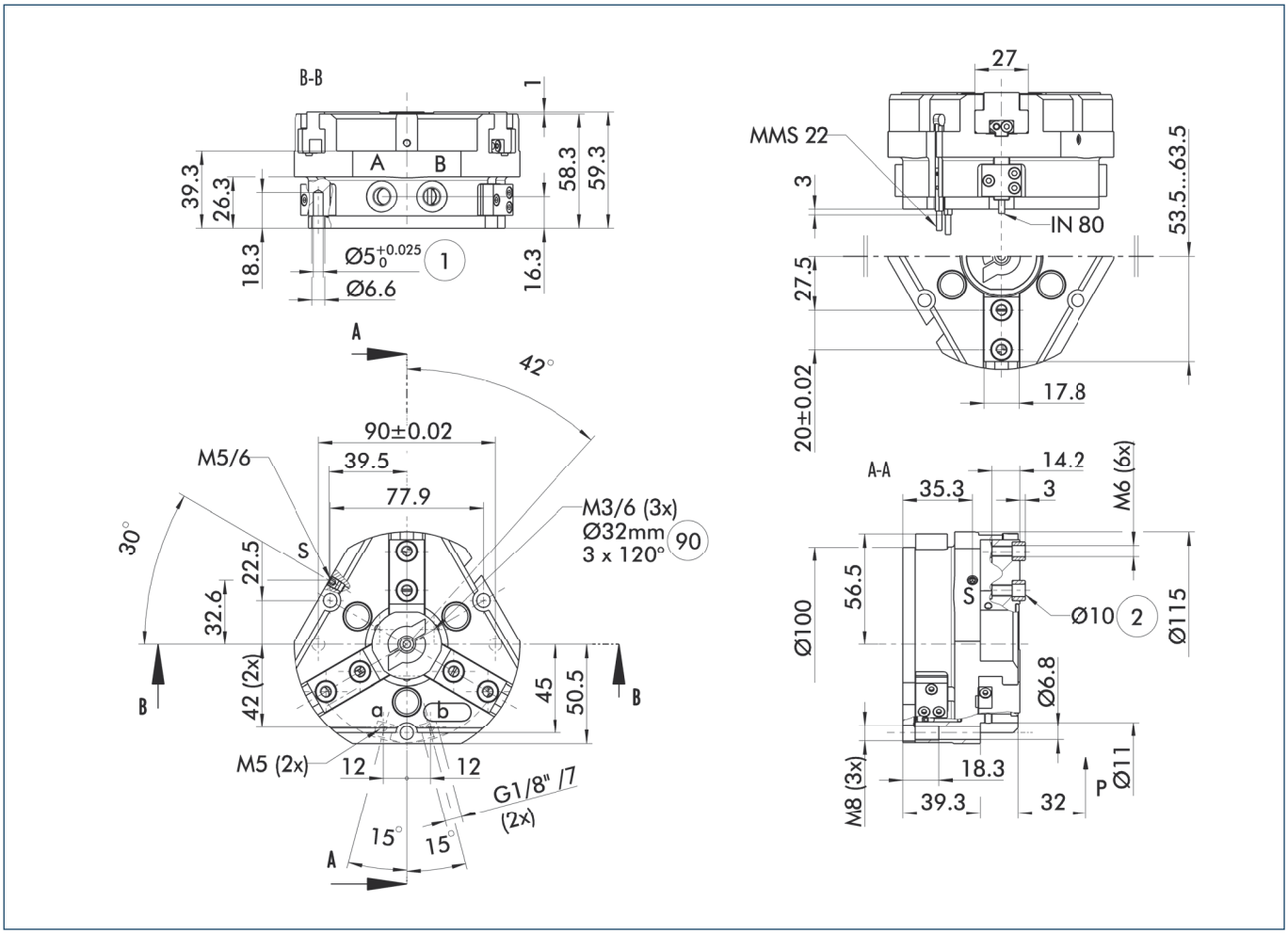


ⓘ The indicated moments and forces are static values, apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement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

Technical data

Description		JGZ 100-1	JGZ 100-1-AS	JGZ 100-1-IS
ID		**0308940**	**0308941**	**0308942**
Stroke per finger	[mm]	10	10	10
Closing force	[N]	1800	2520	
Opening force	[N]	1920		2700
Min. spring force	[N]		720	780
Weight	[kg]	1.41	1.95	1.95
Recommended workpiece weight	[kg]	9	9	9
Air consumption per double stroke	[cm³]	120	120	120
Min./max. operating pressure	[bar]	2/8	4/6.5	4/6.5
Nominal operating pressure	[bar]	6	6	6
Closing/opening time	[s]	0.1/0.1	0.1/0.2	0.2/0.1
Max. permitted finger length	[mm]	125	115	115
Max. permitted weight per finger	[kg]	1.1	1.1	1.1
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

Main view

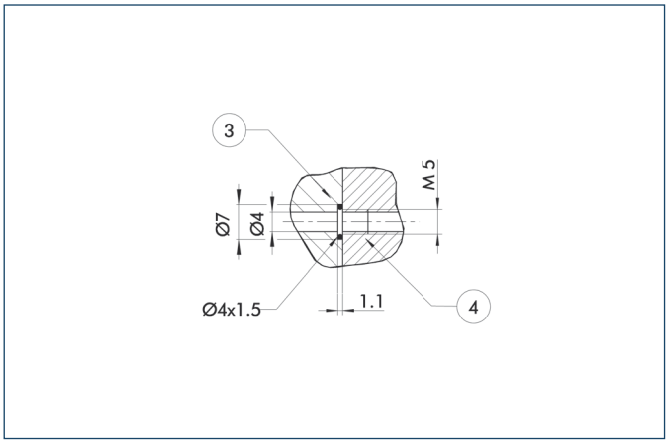


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ 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
⑨⓪ Thread below the cover for fastening external attachments

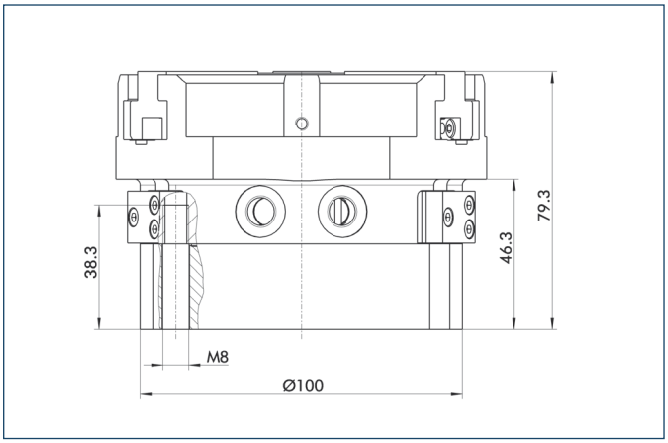
Hose-free direct connection



③ Adapter
④ Gripper

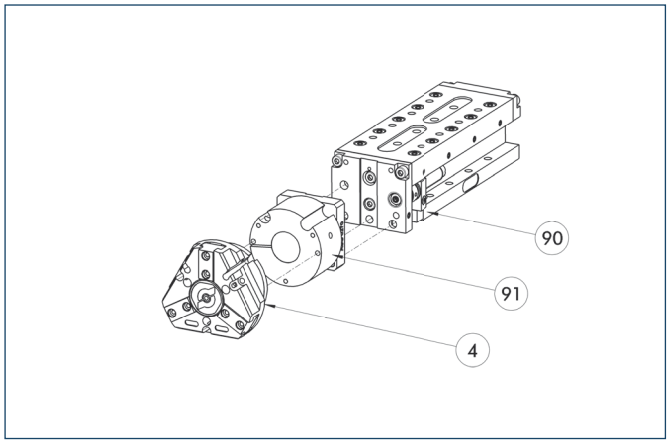
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

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.

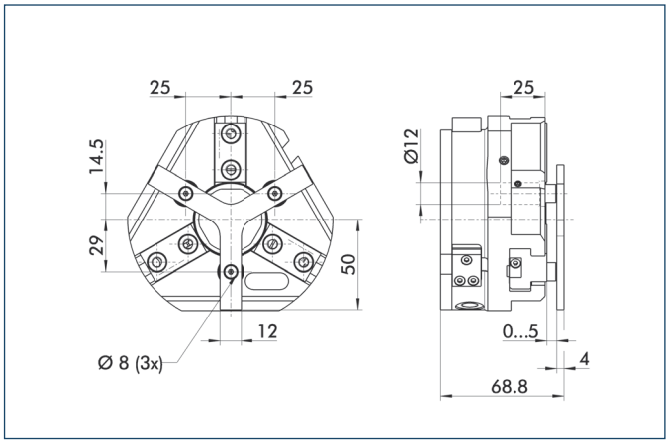
Modular Assembly Automation



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".

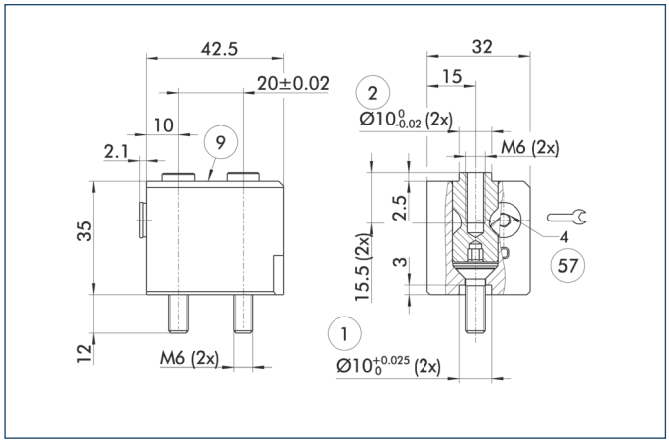
Spring-loaded pressure piece



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

Description	ID	Stroke	Min. force
Spring-loaded pressure piece			
A-PZN-plus/DPZ-plus 100	**0303722**	5 mm	35 N

Quick-change Jaw System

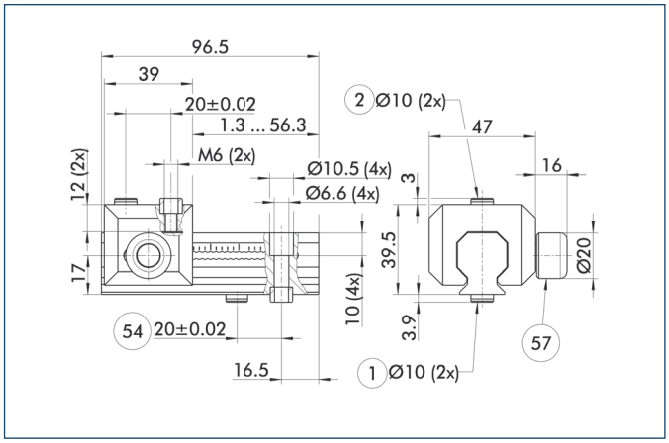


① Gripper connection
② Finger connection
⑨ For mounting screw connection diagram, see basic version
⑤⑦ Locking

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**

Universal intermediate jaw



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

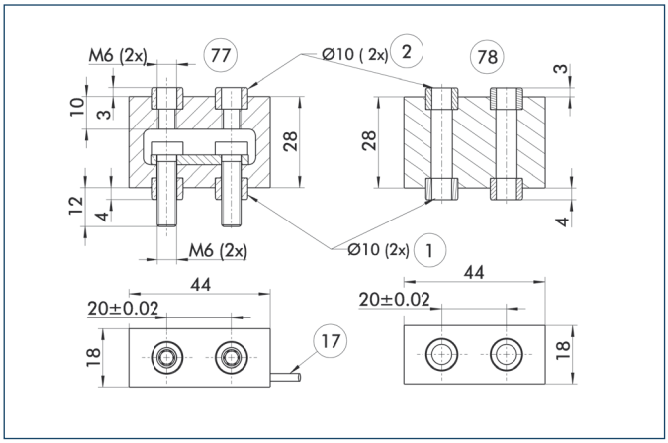
The universal intermediate jaw allows fast tool-free and reliable plugging and shifting of top jaws at the gripper.

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.

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

Force measuring jaws

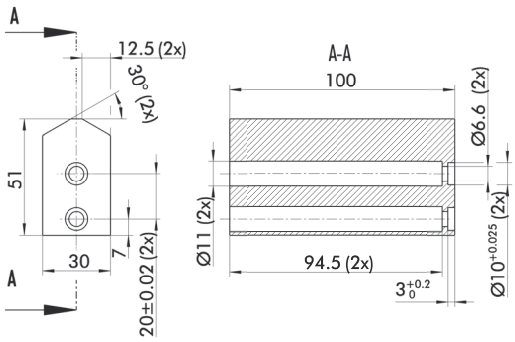


① Gripper connection
② Finger connection
⑰ Cable outlet
⑦⑦ Active intermediate jaws
⑦⑧ Passive intermediate jaws

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 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

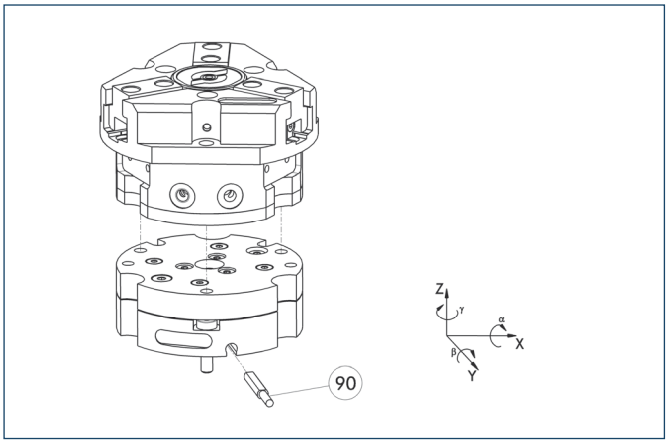


Finger blanks for customized subsequent machining

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

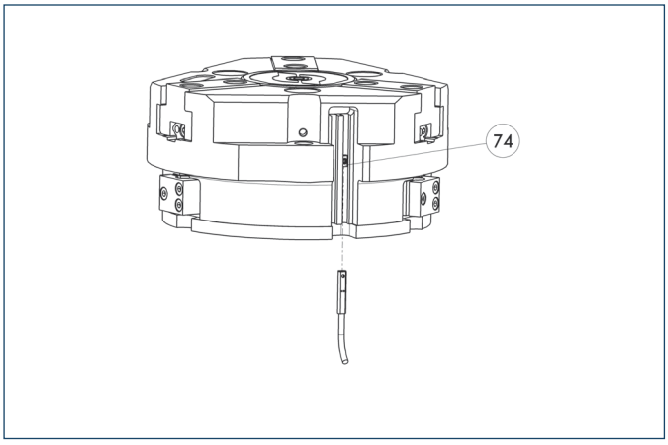


90 Monitoring of locking

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-Z	**0324794**	Yes	
TCU-100-2-OV-Z	**0324799**	No	

Programmable magnetic switch



74 Stop for MMS-P

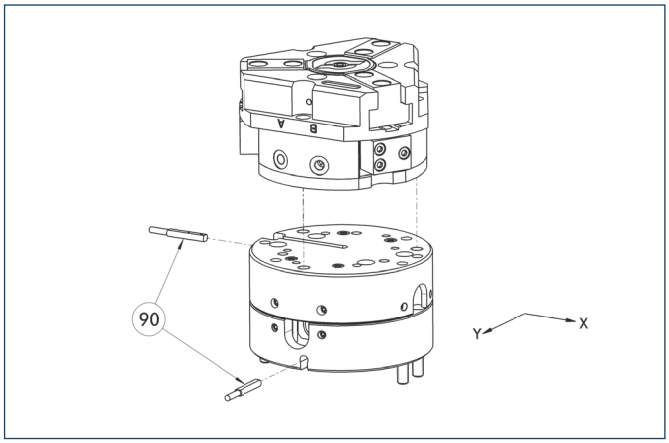
Position monitoring with two programmable positions per sensor. The end position monitoring is mounted in the C-slot.

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.

Compensation unit with spring reset

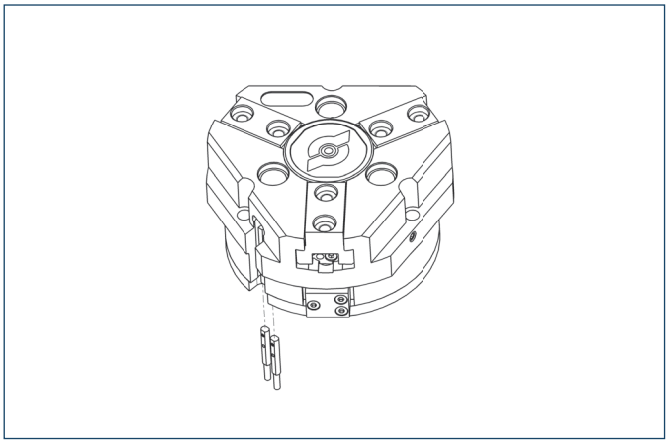


90 Monitoring

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

Electronic magnetic switches



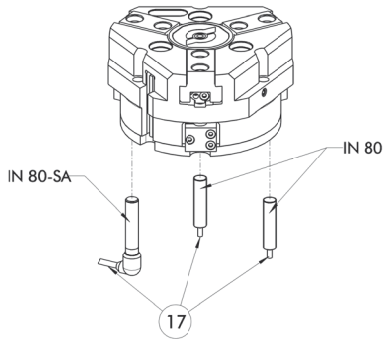
End position monitoring for mounting in the C-slot

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

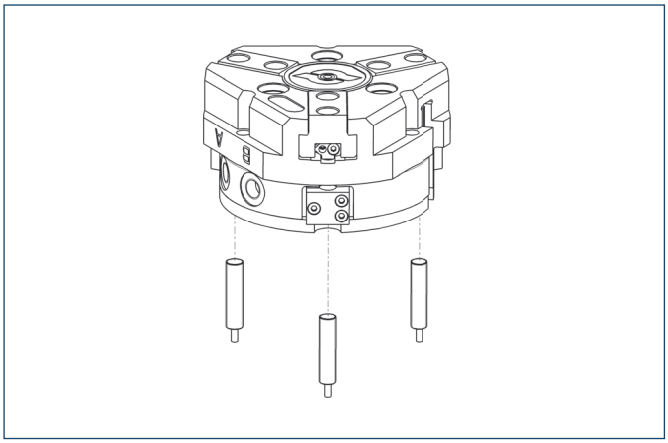
Description	ID	Recommended product
Inductive proximity switches		
IN 80-S-M8	**0301478**	•
IN 80-S-M12	**0301578**	
INK 80-S	**0301550**	
Inductive proximity switch with lateral outlet		
IN 80-S-M12-SA	**0301587**	
IN 80-S-M8-SA	**0301483**	•
INK 80-S-SA	**0301566**	
Connection cables		
KA BG08-L 3P-0300-PNP	**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

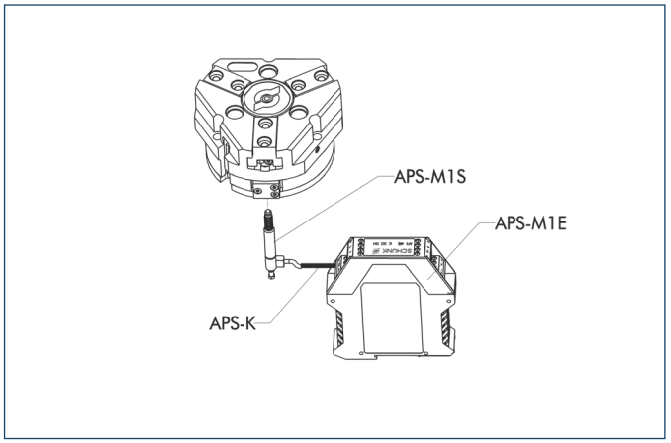


End position monitoring mounted with mounting kit

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



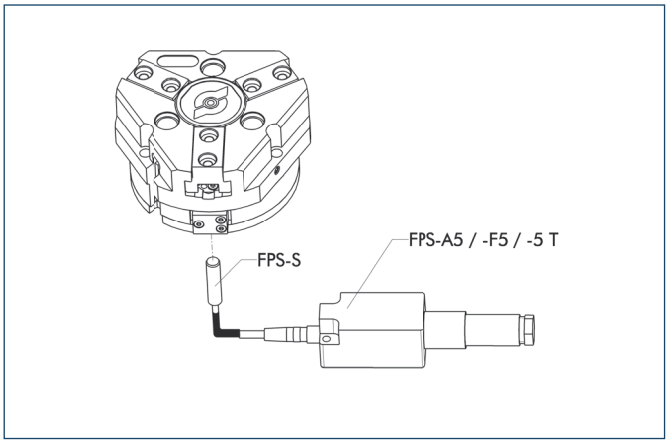
Analog multi position monitoring for any desired positions

Description	ID
Mounting kit	
AS-APS-M1-100/1	**0302079**
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**
Electronic Processor	
FPS-F5	**0301805**
FPS-F5 T	**0301807**
Sensor	
FPS-S M8	**0301704**

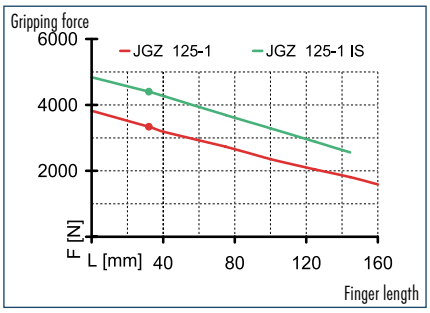
ⓘ When using a FPS system, a FPS sensor (FPS-S) and a control unit (FPS-F5 / F5 T or A5) are required for each gripper as well as a mounting kit (AS), if listed. Cable extensions (KV) are available as options in the “Accessories” catalog section.

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

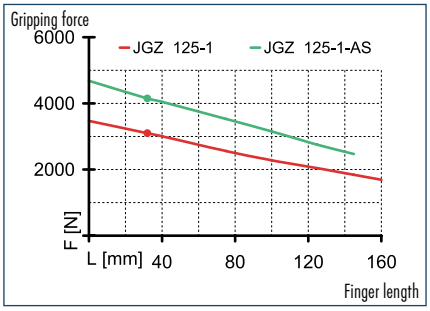
JGZ 125

Pneumatic • 3-Finger Centric Gripper • Universal Gripper

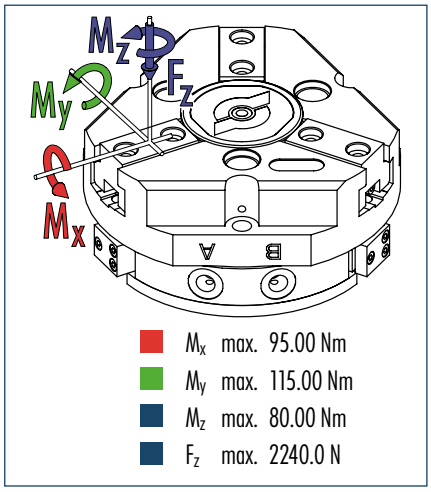
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

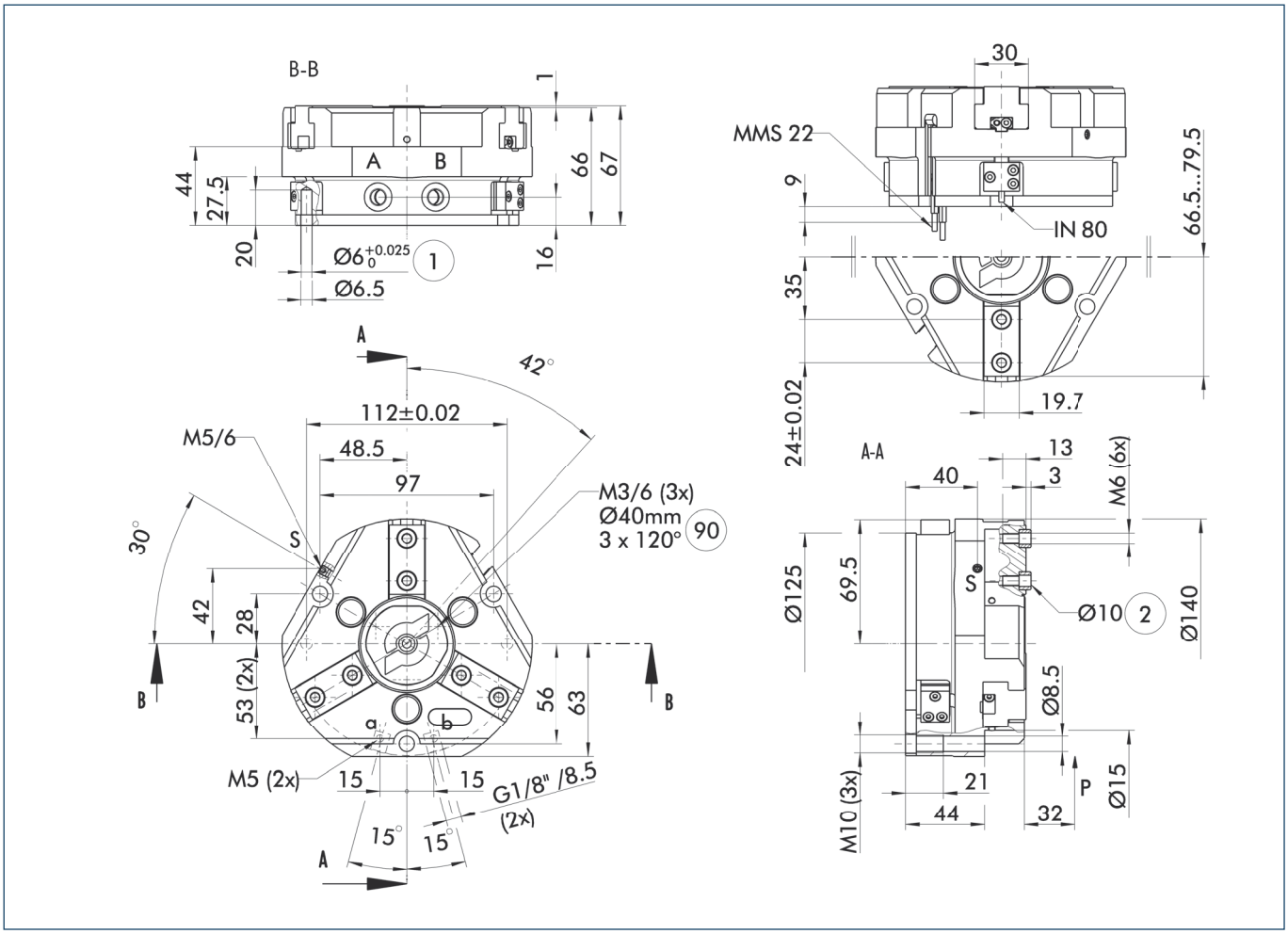


ⓘ The indicated moments and forces are static values, apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement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

Technical data

Description		JGZ 125-1	JGZ 125-1-AS	JGZ 125-1-IS
ID		**0308950**	**0308951**	**0308952**
Stroke per finger	[mm]	13	13	13
Closing force	[N]	3100	4150	
Opening force	[N]	3330		4400
Min. spring force	[N]		1050	1070
Weight	[kg]	2.8	3.6	3.6
Recommended workpiece weight	[kg]	15.5	15.5	15.5
Air consumption per double stroke	[cm³]	230	230	230
Min./max. operating pressure	[bar]	2/8	4/6.5	4/6.5
Nominal operating pressure	[bar]	6	6	6
Closing/opening time	[s]	0.2/0.2	0.17/0.35	0.35/0.17
Max. permitted finger length	[mm]	160	145	145
Max. permitted weight per finger	[kg]	2.1	2.1	2.1
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

Main view

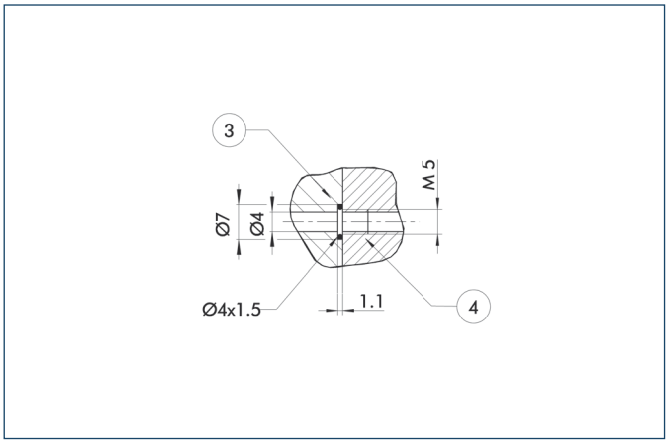


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ 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
⑨⓪ Thread below the cover for fastening external attachments

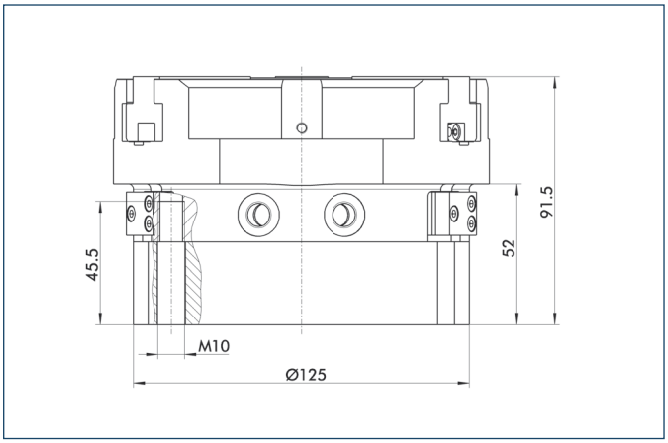
Hose-free direct connection



③ Adapter
④ Gripper

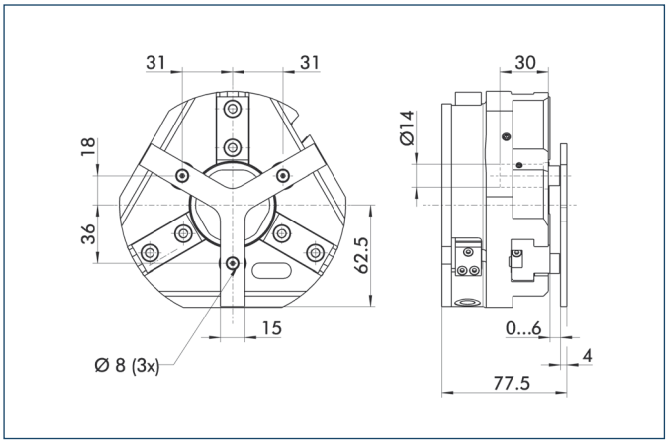
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

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.

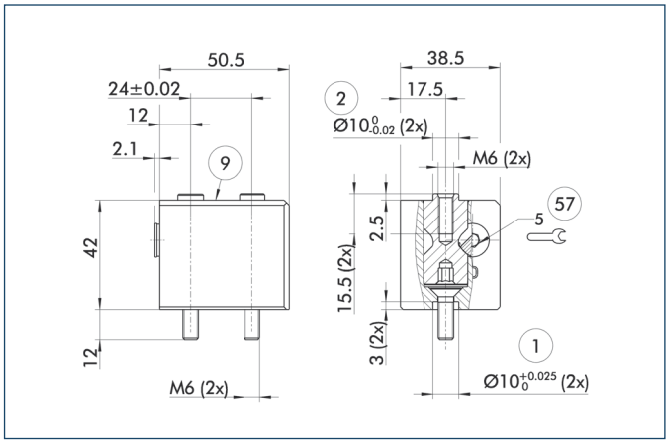
Spring-loaded pressure piece



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

Description	ID	Stroke	Min. force
Spring-loaded pressure piece			
A-PZN-plus/DPZ-plus 125	**0303723**	6 mm	105 N

Quick-change Jaw System



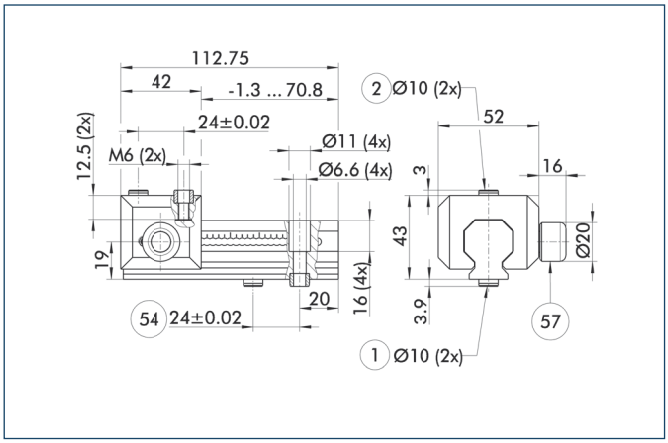
① Gripper connection
② Finger connection
⑨ For mounting screw connection diagram, see basic version
57 Locking

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 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



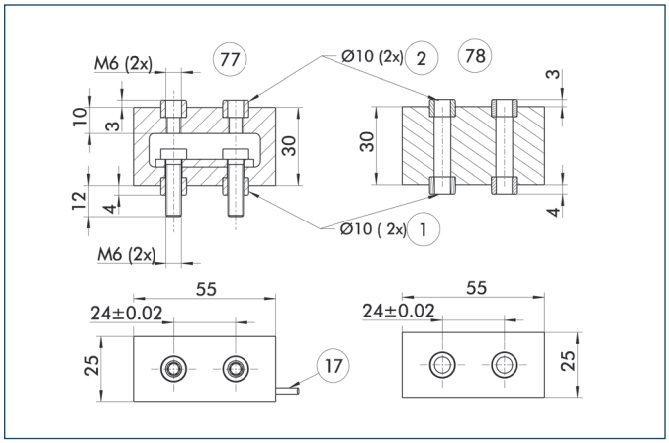
① Gripper connection
② Finger connection
54 Optional right or left connection
57 Locking

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

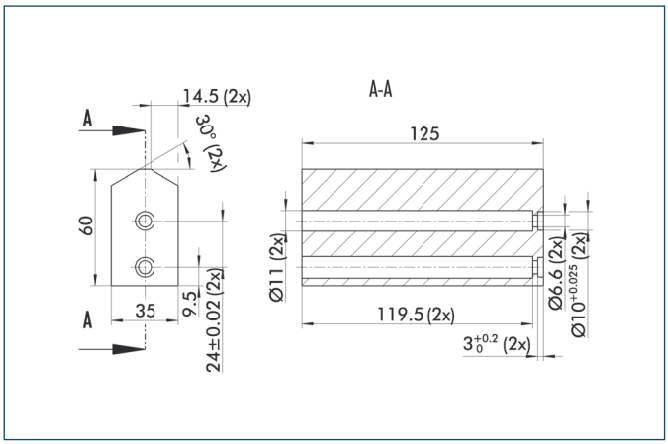


① Gripper connection
② Finger connection
17 Cable outlet
77 Active intermediate jaws
78 Passive intermediate jaws

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

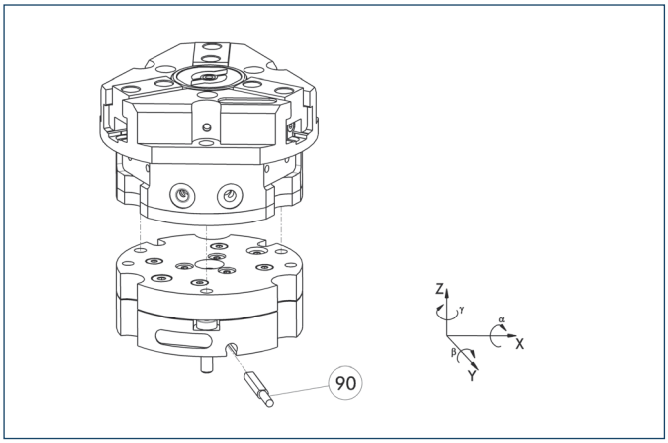


Finger blanks for customized subsequent machining

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

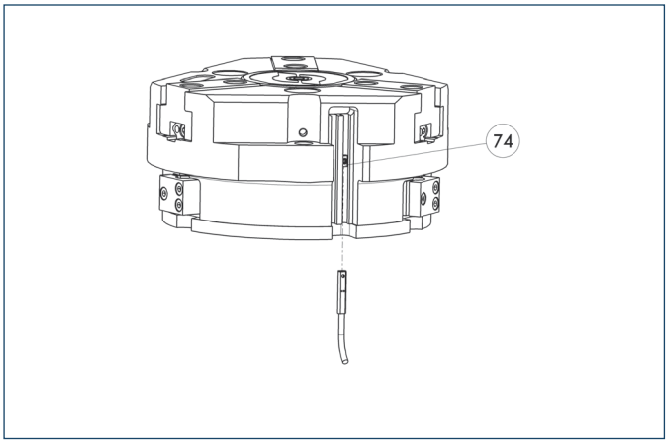


90 Monitoring of locking

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-Z	**0324820**	Yes	
TCU-125-3-OV-Z	**0324821**	No	

Programmable magnetic switch



74 Stop for MMS-P

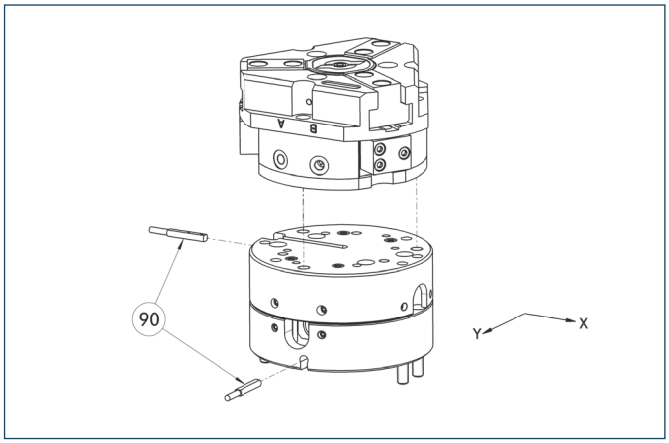
Position monitoring with two programmable positions per sensor. The end position monitoring is mounted in the C-slot.

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.

Compensation unit with spring reset

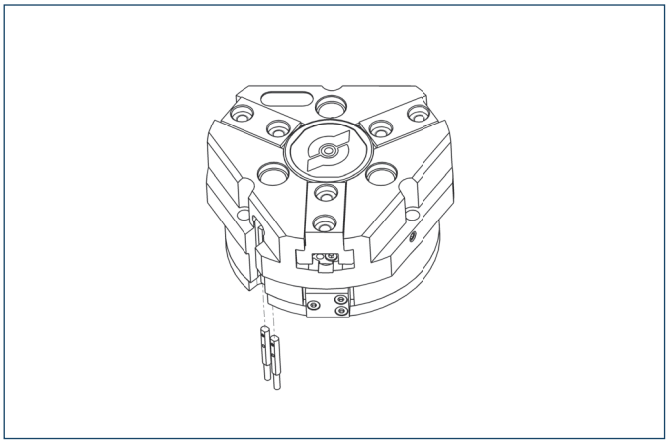


90 Monitoring

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

Electronic magnetic switches



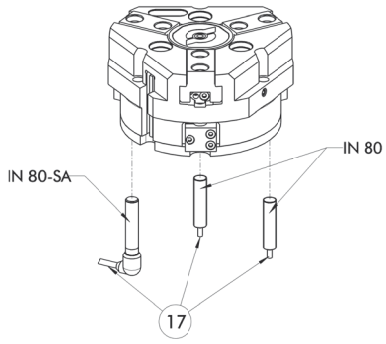
End position monitoring for mounting in the C-slot

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

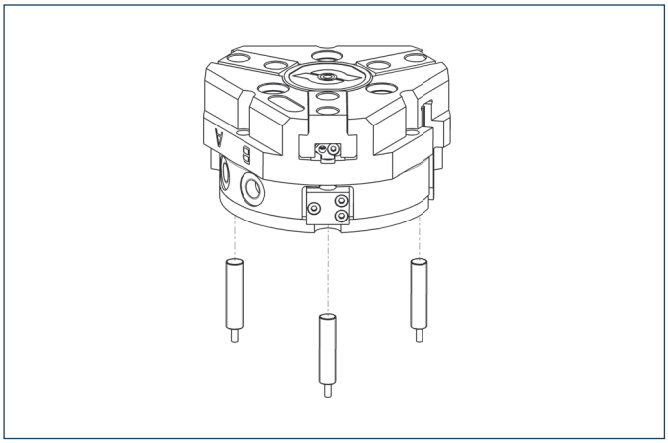
Description	ID	Recommended product
Inductive proximity switches		
IN 80-S-M8	**0301478**	•
IN 80-S-M12	**0301578**	
INK 80-S	**0301550**	
Inductive proximity switch with lateral outlet		
IN 80-S-M12-SA	**0301587**	
IN 80-S-M8-SA	**0301483**	•
INK 80-S-SA	**0301566**	
Connection cables		
KA BG08-L 3P-0300-PNP	**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

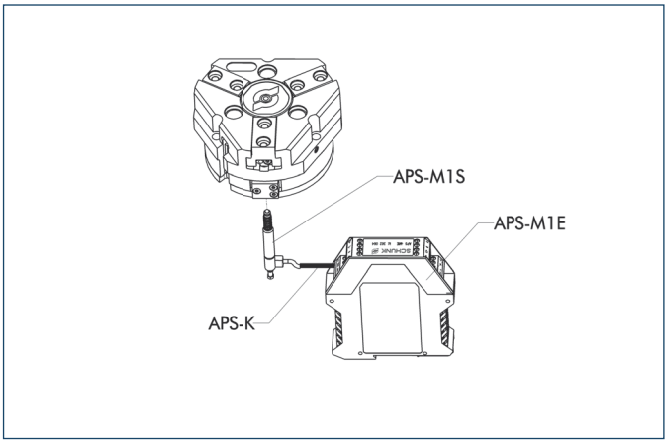


End position monitoring mounted with mounting kit

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



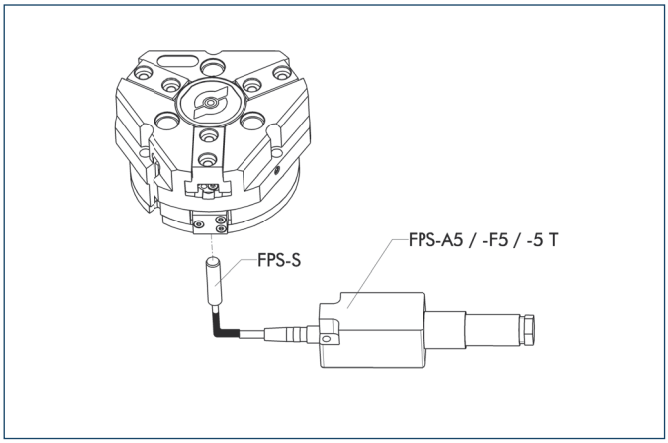
Analog multi position monitoring for any desired positions

Description	ID
Mounting kit	
AS-APS-M1-125/1	**0302081**
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**
Electronic Processor	
FPS-F5	**0301805**
FPS-F5 T	**0301807**
Sensor	
FPS-S M8	**0301704**

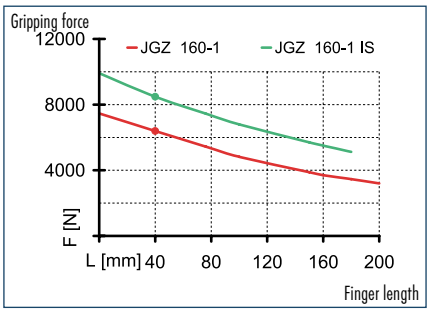
ⓘ When using a FPS system, a FPS sensor (FPS-S) and a control unit (FPS-F5 / F5 T or A5) are required for each gripper as well as a mounting kit (AS), if listed. Cable extensions (KV) are available as options in the “Accessories” catalog section.

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

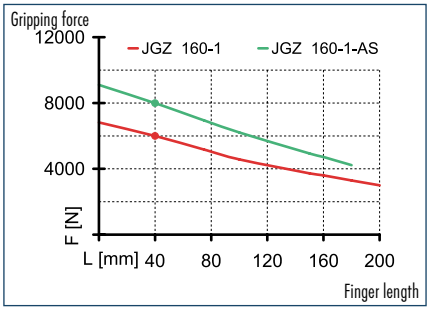
JGZ 160

Pneumatic • 3-Finger Centric Gripper • Universal Gripper

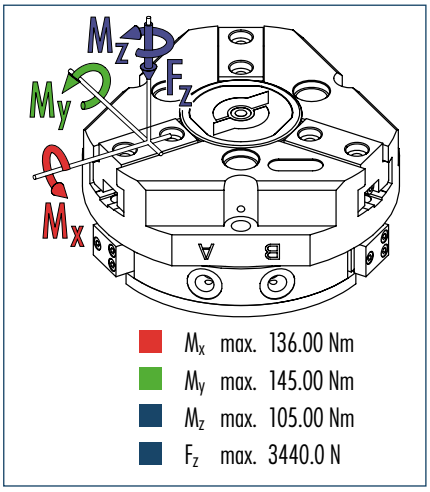
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

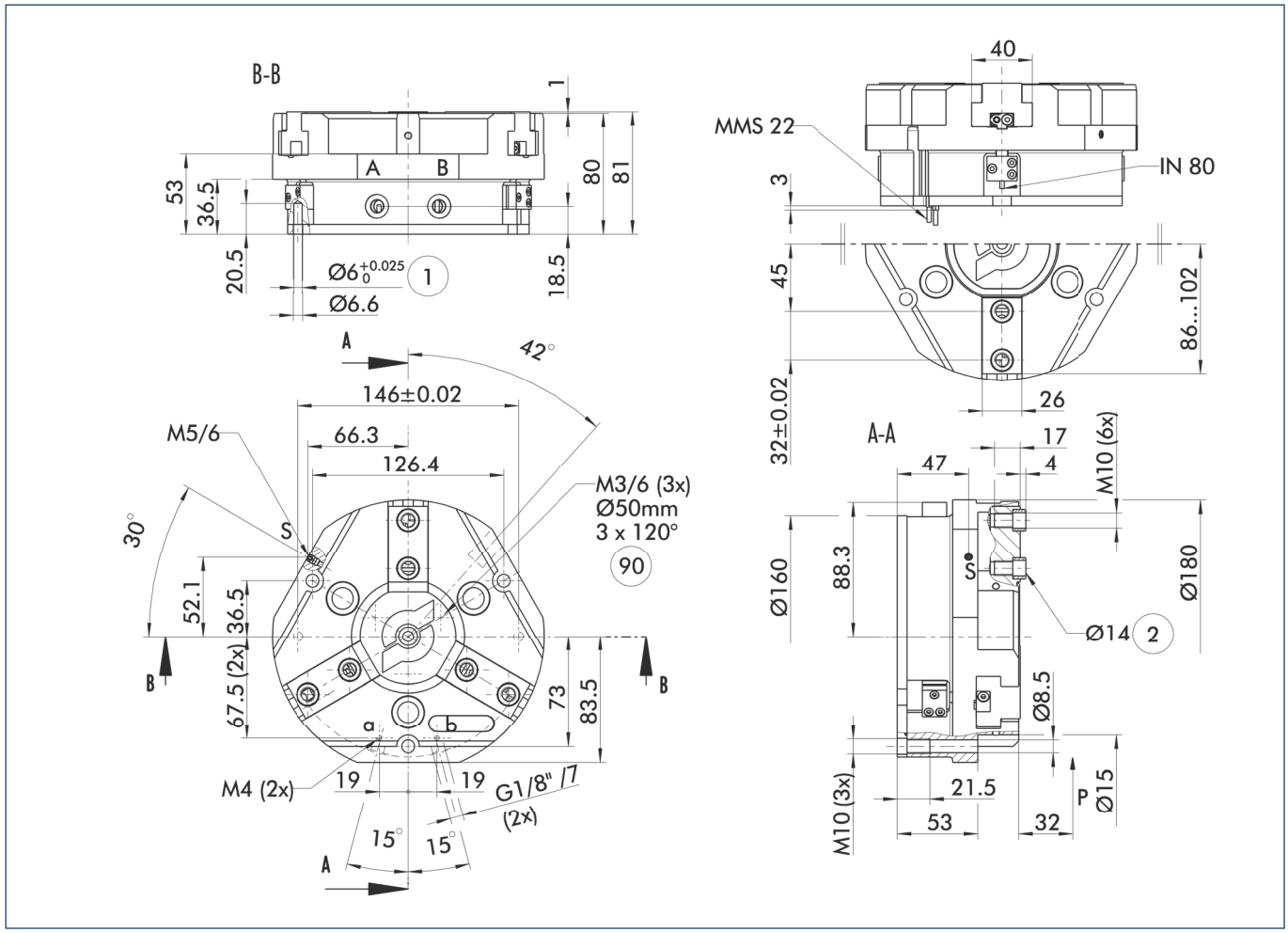


ⓘ The indicated moments and forces are static values, apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement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

Technical data

Description		JGZ 160-1	JGZ 160-1-AS	JGZ 160-1-IS
ID		**0308960**	**0308961**	**0308962**
Stroke per finger	[mm]	16	16	16
Closing force	[N]	6000	7990	
Opening force	[N]	6390		8480
Min. spring force	[N]		1990	2090
Weight	[kg]	5.6	8	8
Recommended workpiece weight	[kg]	30	30	30
Air consumption per double stroke	[cm³]	520	520	520
Min./max. operating pressure	[bar]	2/8	4/6.5	4/6.5
Nominal operating pressure	[bar]	6	6	6
Closing/opening time	[s]	0.5/0.5	0.4/0.8	0.8/0.4
Max. permitted finger length	[mm]	200	180	180
Max. permitted weight per finger	[kg]	3.5	3.5	3.5
IP class		40	40	40
Min./max. ambient temperature	[°C]	-10/90	-10/90	-10/90
Repeat accuracy	[mm]	0.02	0.02	0.02
Cleanroom class ISO-classification 14644-1		5	5	5

Main view

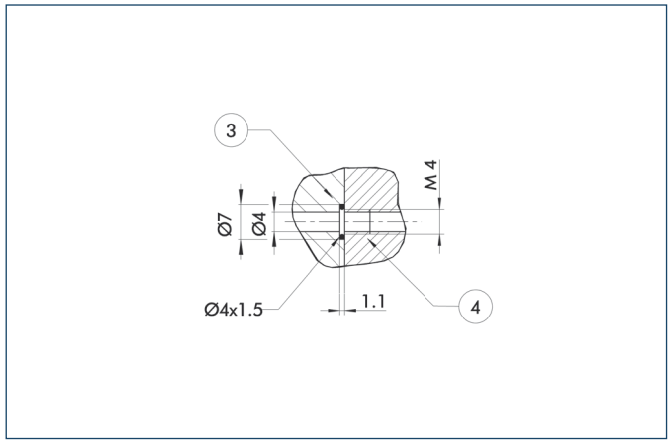


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ 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
⑨⓪ Thread below the cover for fastening external attachments

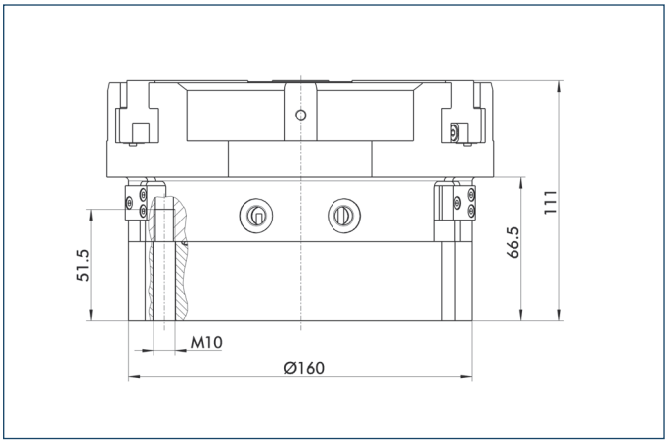
Hose-free direct connection



③ Adapter
④ Gripper

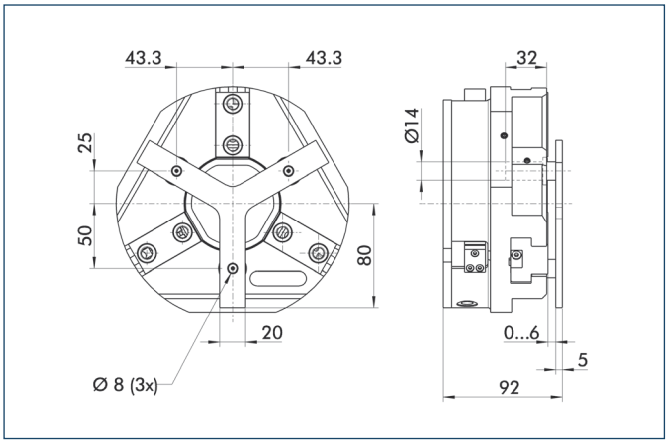
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

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.

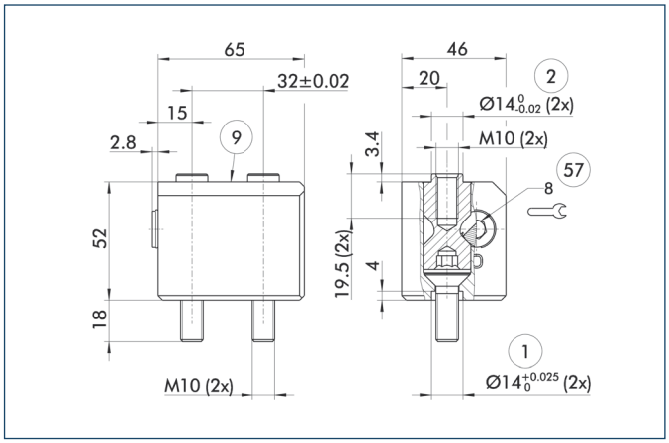
Spring-loaded pressure piece



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

Description	ID	Stroke	Min. force
Spring-loaded pressure piece			
A-PZN-plus/DPZ-plus 160	**0303724**	6 mm	205 N

Quick-change Jaw System



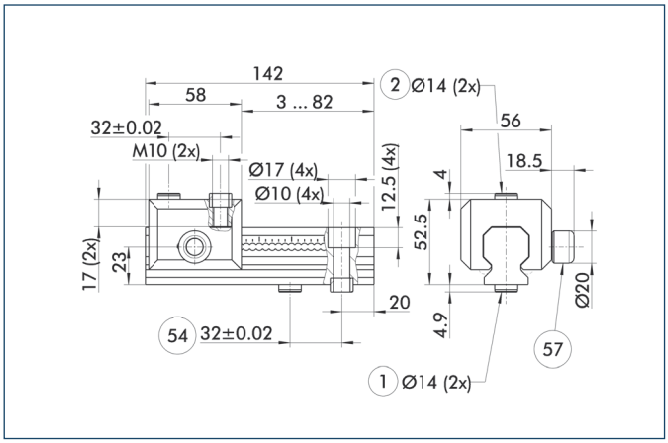
① Gripper connection
② Finger connection
⑨ For mounting screw connection diagram, see basic version
57 Locking

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



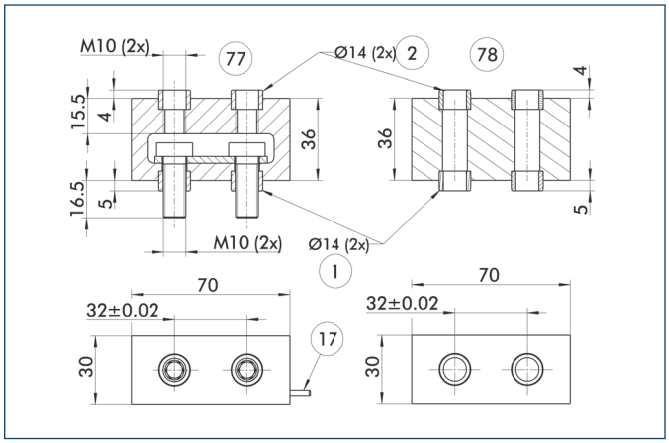
① Gripper connection
② Finger connection
54 Optional right or left connection
57 Locking

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

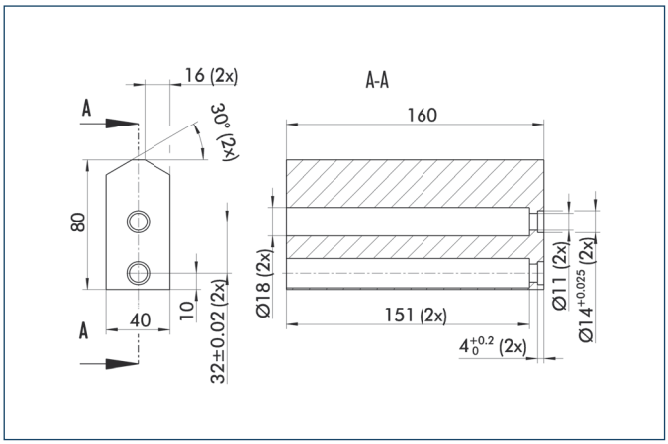


① Gripper connection
② Finger connection
17 Cable outlet
77 Active intermediate jaws
78 Passive intermediate jaws

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

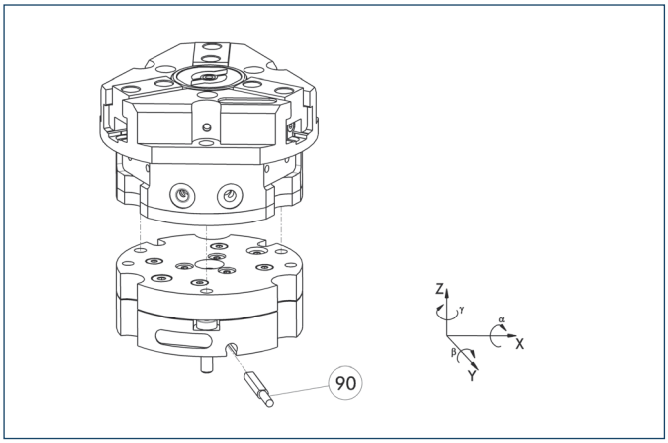


Finger blanks for customized subsequent machining

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

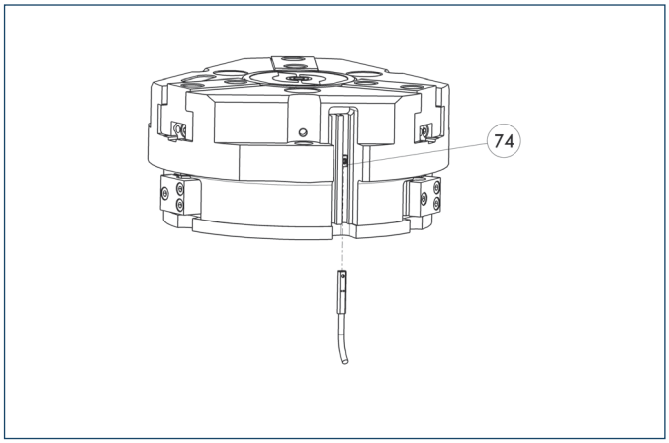


(90) Monitoring of locking

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-Z	**0324838**	Yes	
TCU-160-3-OV-Z	**0324839**	No	

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.

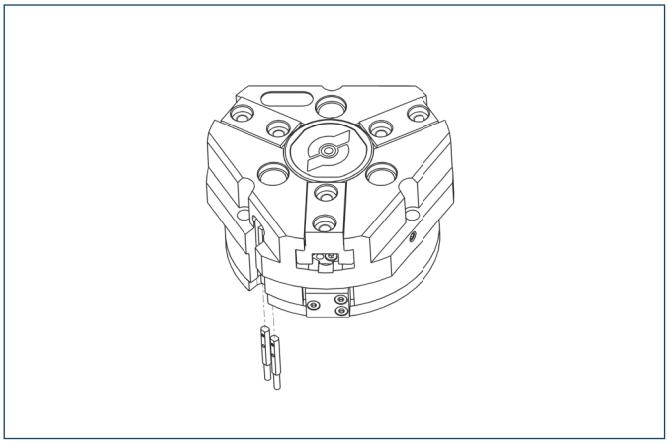
Description	ID	Recommended product
Programmable magnetic switch		
MMS-P 22-S-M8-PNP	**0301370**	•
MMSK-P 22-S-PNP	**0301371**	
Connection cables		
KA BG08-L 4P-0500	**0307767**	
KA BG08-L 4P-1000	**0307768**	
KA BW08-L 4P-0500	**0307765**	
KA BW08-L 4P-1000	**0307766**	
Sensor Distributor		
V2-M8-4P-2XM8-3P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



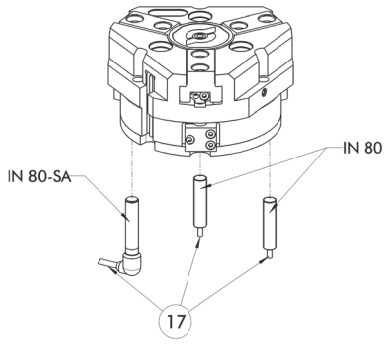
End position monitoring for mounting in the C-slot

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

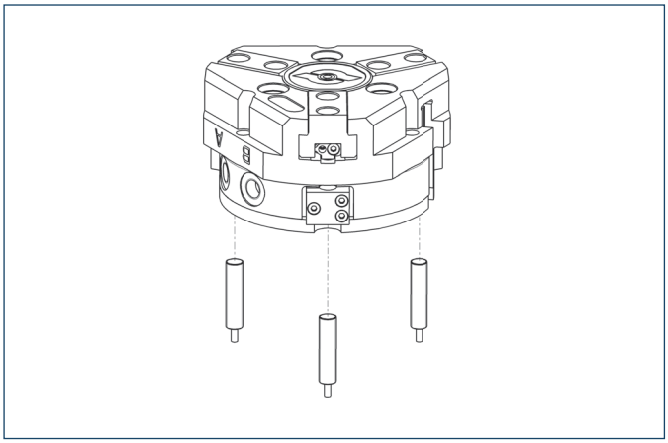
Description	ID	Recommended product
Inductive proximity switches		
IN 80-S-M8	**0301478**	•
IN 80-S-M12	**0301578**	
INK 80-S	**0301550**	
Inductive proximity switch with lateral outlet		
IN 80-S-M12-SA	**0301587**	
INK 80-S-SA	**0301566**	
Connection cables		
KA BG08-L 3P-0300-PNP	**0301622**	
KA BG08-L 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

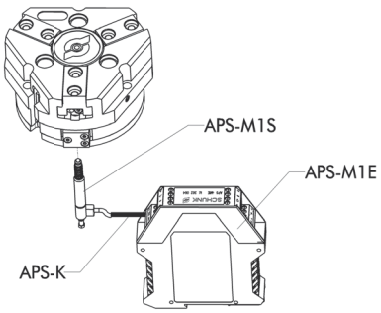
Description	ID
Mounting kit for proximity switch	
AS-RMS 80 PGN/PZN-plus 160-380	**0377727**
Reed Switches	
RMS 80-S-M8	**0377721**

ⓘ 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

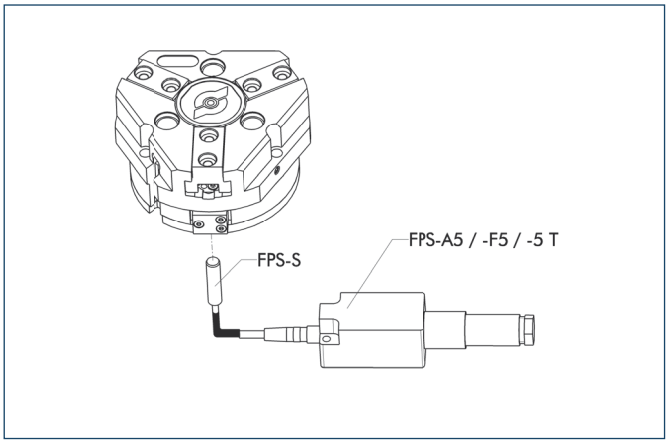
Description	ID
Mounting kit	
AS-APS-M1-160/1 and 240/2	**0302083**
Connection cables	
APS-K0200	**0302066**
APS-K0700	**0302068**
Electronic Processor	
APS-M1E	**0302064**
Sensor	
APS-M1S	**0302062**

ⓘ 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 160/1	**0301638**
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.

PZB-plus

Pneumatic • 3-Finger Centric Gripper • Universal Gripper

Sizes
50 ... 160

Weight
0.26 kg ... 7.3 kg

Gripping force
340 N ... 5400 N

Stroke per finger
2 mm ... 13 mm

Workpiece weight
1.25 kg ... 20 kg

Application example

Assembly aid for long shafts. Feeding is done space-saving via the center bores of gripper and rotary feed through.

1. 3-Finger Centric Gripper PZB-plus
2. Modified DDF Rotary feed-through with center bore

Universal Gripper

universal 3-Finger Concentric Gripper with large gripping force and high maximum moments per finger, plus center bore

Field of application

For universal use in clean and slightly dirty environments. Suitable for applications that require a center bore, e.g. for workpiece feed, special sensor systems or optical recognition systems.

Your advantages and benefits

Robust multi-tooth guidance
for precise handling

High maximum moments possible
suitable for using long gripper fingers

High gripping forces achievable
for a wide range of applications

Center through-hole
Available with fitting and female thread, which facilitates assembly of customer attachments. Moreover, the center bore is used for feed through of supply hoses and others.

Air supply via hose-free direct connection or screw connections
for the flexible supply of compressed air in all automation systems

Manifold options
optional with mechanic gripping force maintenance

General note to the series

Principle of function
Wedge-hook kinematics

Housing material
Aluminum alloy, hard-anodized

Base jaw material
Steel

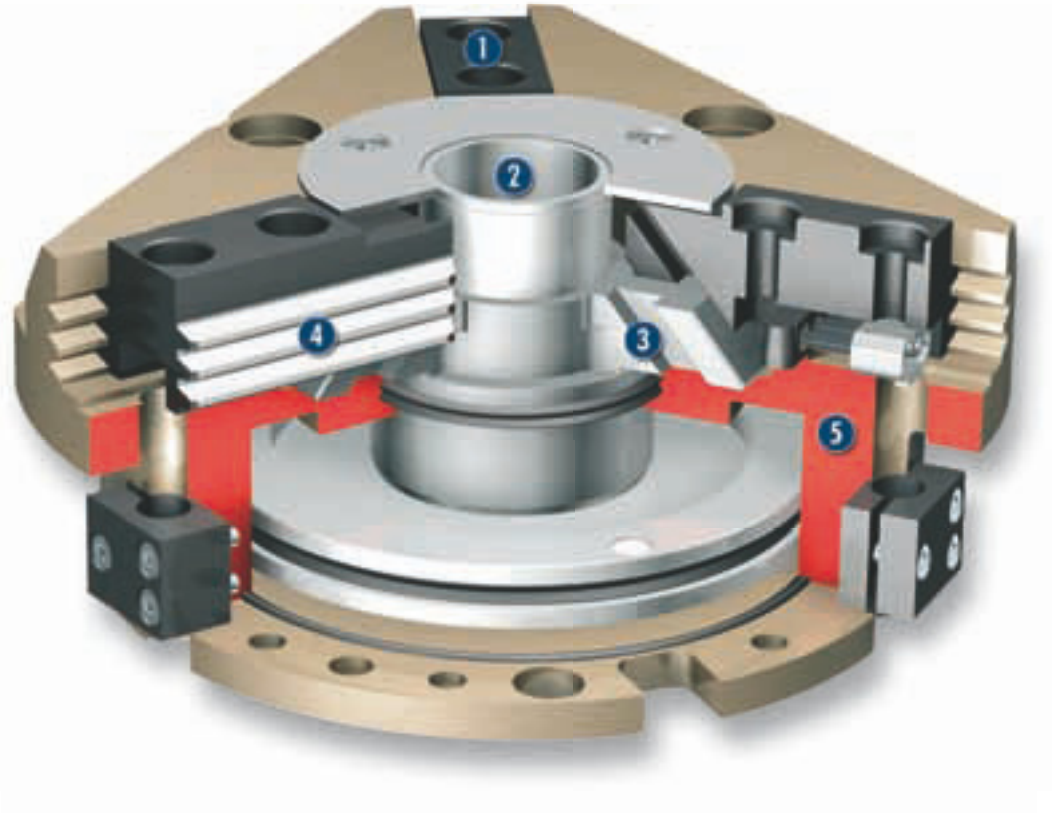
Actuation
pneumatic, with filtered compressed air (10 microns): dry, lubricated or non-lubricated
Pressure medium: Required quality class of compressed air according to DIN ISO 8573-1: 6 4 4

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
possible with SDV-P pressure maintenance valve

Sectional diagram



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

2 Center bore
for workpiece feeding, for sensor systems, actuators (ejectors) or optical workpiece recognition

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

4 Multiple-tooth guidance
precise gripping through base jaw guidance with a high load capacity and a minimum play

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

Functional description

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

Thanks to the center bore, the PZB-plus series is an ideal standard solution for many fields of application.

Accessories

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

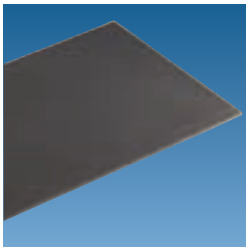
Sensor system

Fittings

Universal intermediate jaw

Compensation unit

Gripper pads



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.

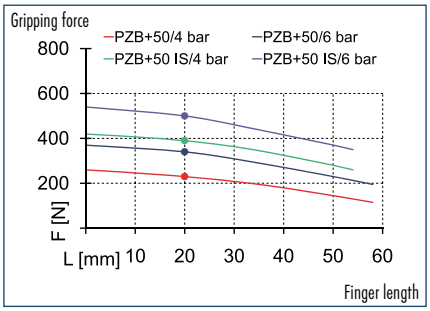
Workpiece weight
The recommended workpiece weight is calculated for a force-type connection with a coefficient of friction of 0.1 and a safety factor of 2 against slippage of the workpiece on acceleration due to gravity g. Considerably heavier workpiece weights are permitted with form-fit gripping.

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.

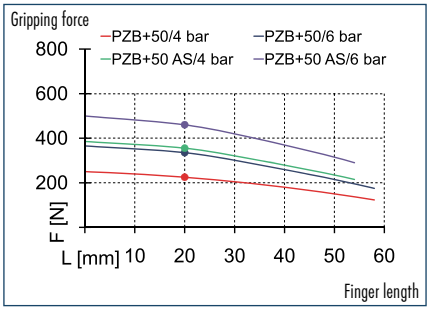
PZB-plus 50

Pneumatic • 3-Finger Centric Gripper • Universal Gripper

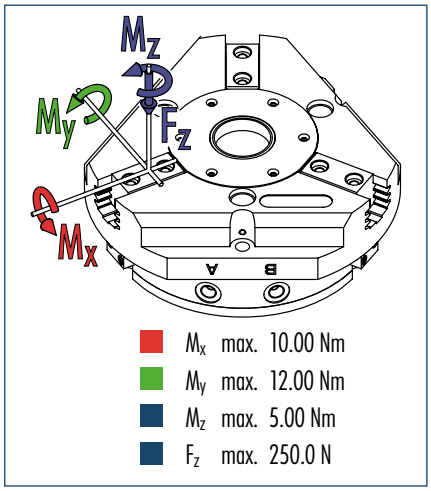
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

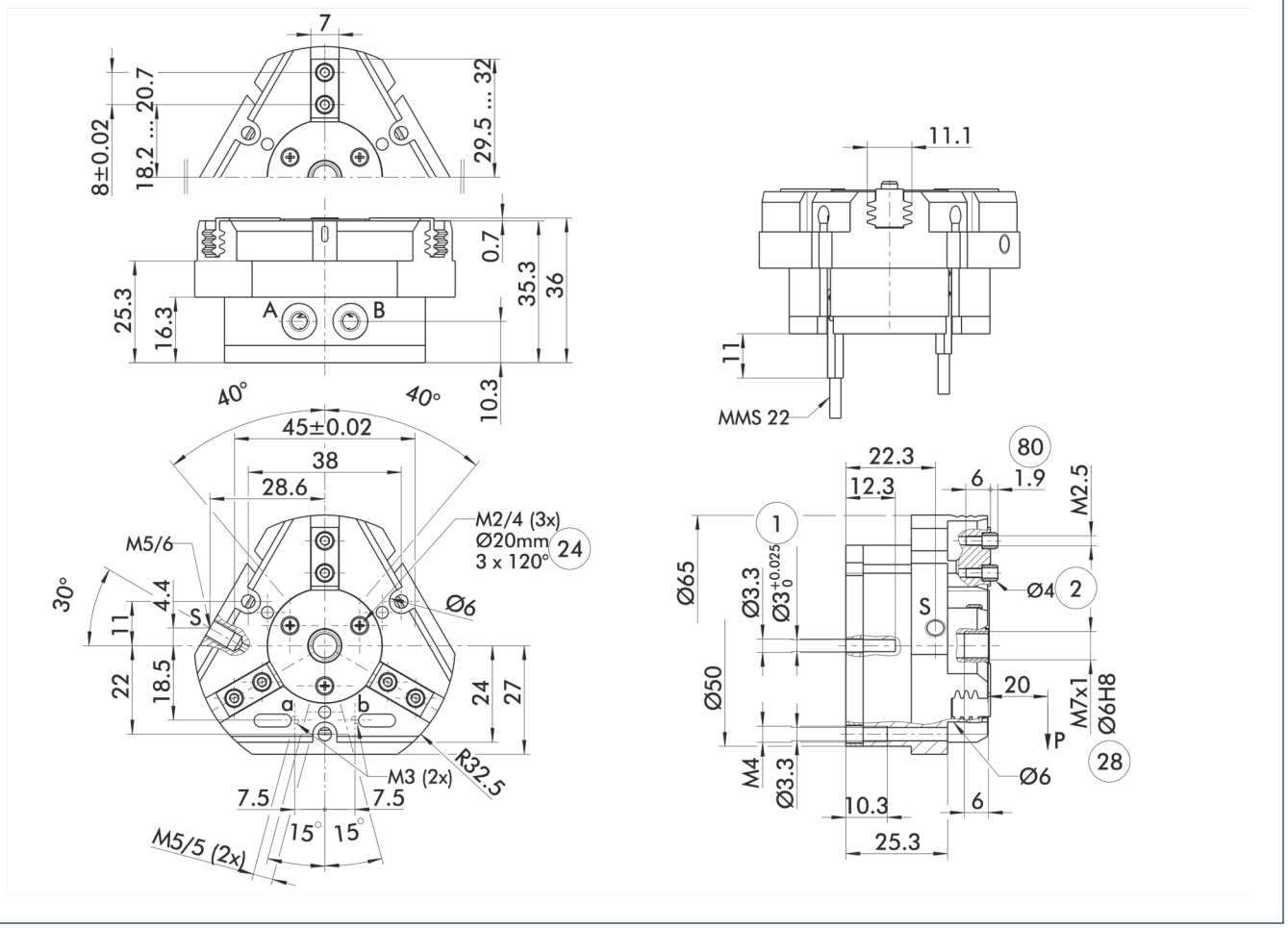


ⓘ The indicated moments and forces are static values, apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement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

Technical data

Description		PZB-plus 50-1	PZB-plus 50-1-AS	PZB-plus 50-1-IS
ID		**0305140**	**0305142**	**0305144**
Stroke per finger	[mm]	2.5	2.5	2.5
Closing force	[N]	340	460	
Opening force	[N]	360		500
Min. spring force	[N]		120	140
Weight	[kg]	0.26	0.36	0.36
Recommended workpiece weight	[kg]	1.25	1.25	1.25
Air consumption per double stroke	[cm^3]	10.5	15	15
Min./max. operating pressure	[bar]	2/8	4/6.5	4/6.5
Nominal operating pressure	[bar]	6	6	6
Closing/opening time	[s]	0.03/0.03	0.02/0.04	0.04/0.02
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
Diameter of center bore	[mm]	6	6	6

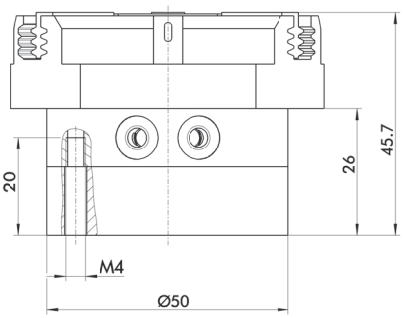
Main view



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

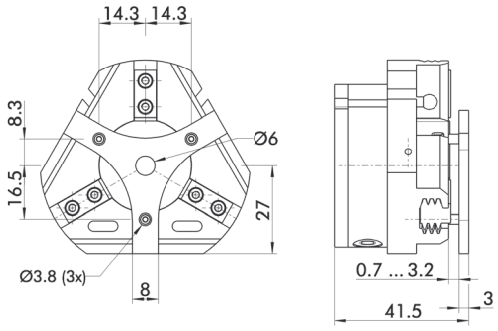
A, a Main/direct connection, gripper opening
B, b Main/direct connection, gripper closing
S Air purge connection
① Gripper connection
② Finger connection
㉔ Bolt circle
㉘ Through-bore
㉚ Depth of the centering sleeve hole in the matching part

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.

Spring-loaded pressure piece

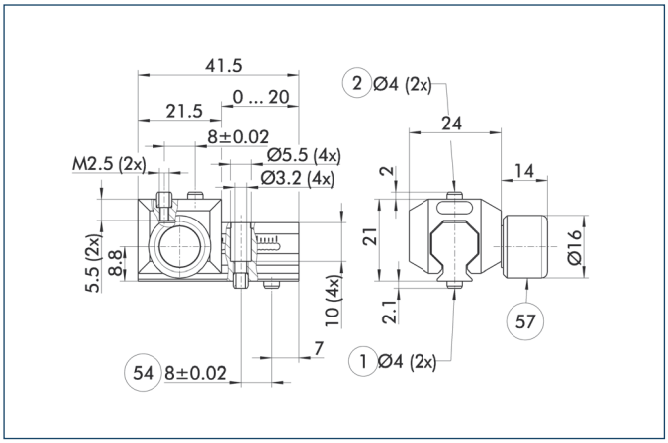


For spring-supported positioning of the workpiece against a stop after the gripper has opened. Especially developed for loading machines.

Description	ID	Stroke	Min. force
Spring-loaded pressure piece			
A-PZB-plus 50	**0305146**	2.5 mm	5 N

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

Universal intermediate jaw

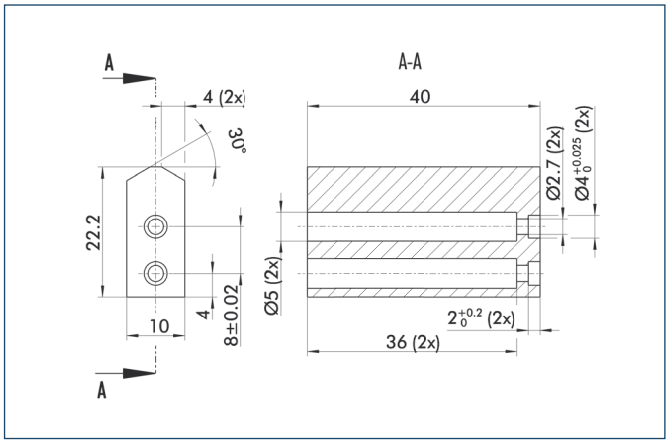


① Gripper connection
② Finger connection
54 Optional right or left connection
57 Locking

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 40	**0300040**	1 mm

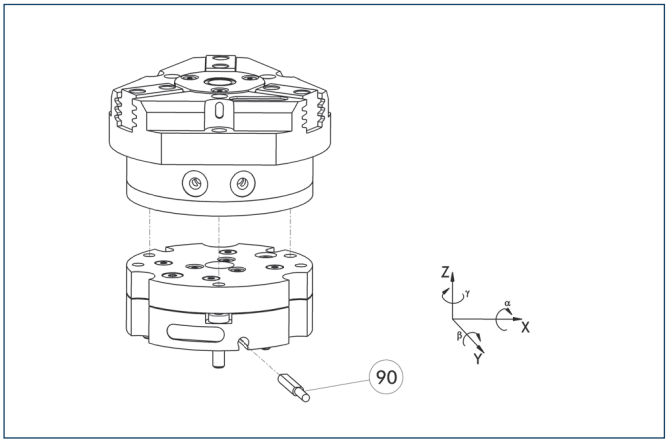
Finger blanks



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

Tolerance compensation unit

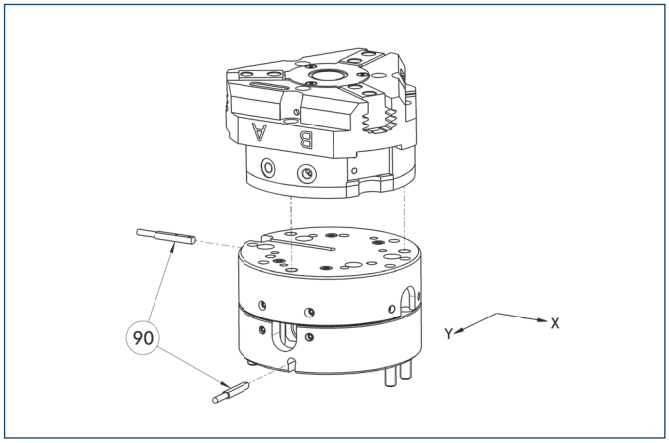


90 Monitoring of locking

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-Z	**0324749**	No	

Compensation unit with spring reset



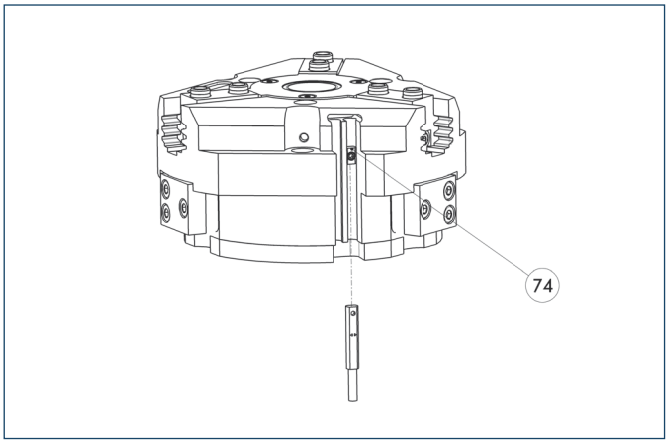
90 Monitoring

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

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

Programmable magnetic switch



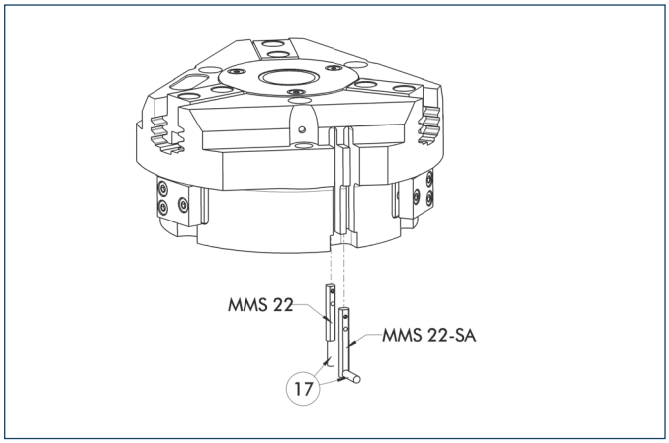
(74) Stop for MMS-P

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**	
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**	

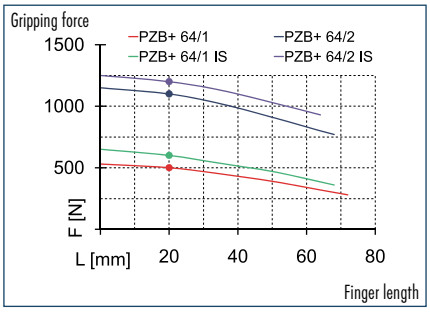
ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

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

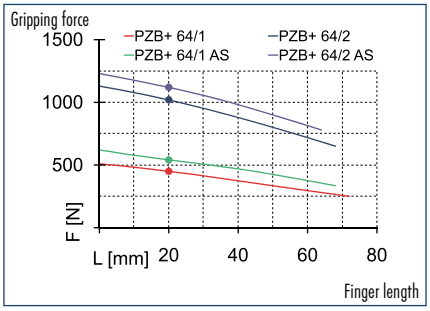
PZB-plus 64

Pneumatic • 3-Finger Centric Gripper • Universal Gripper

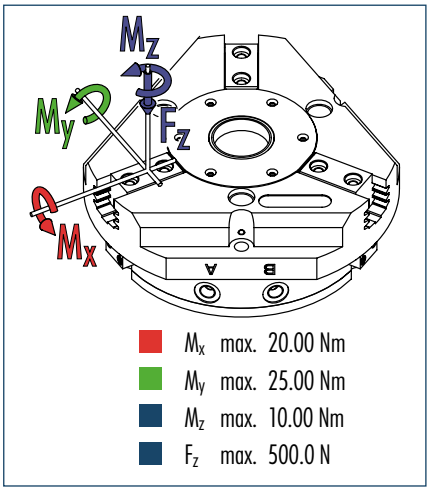
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load



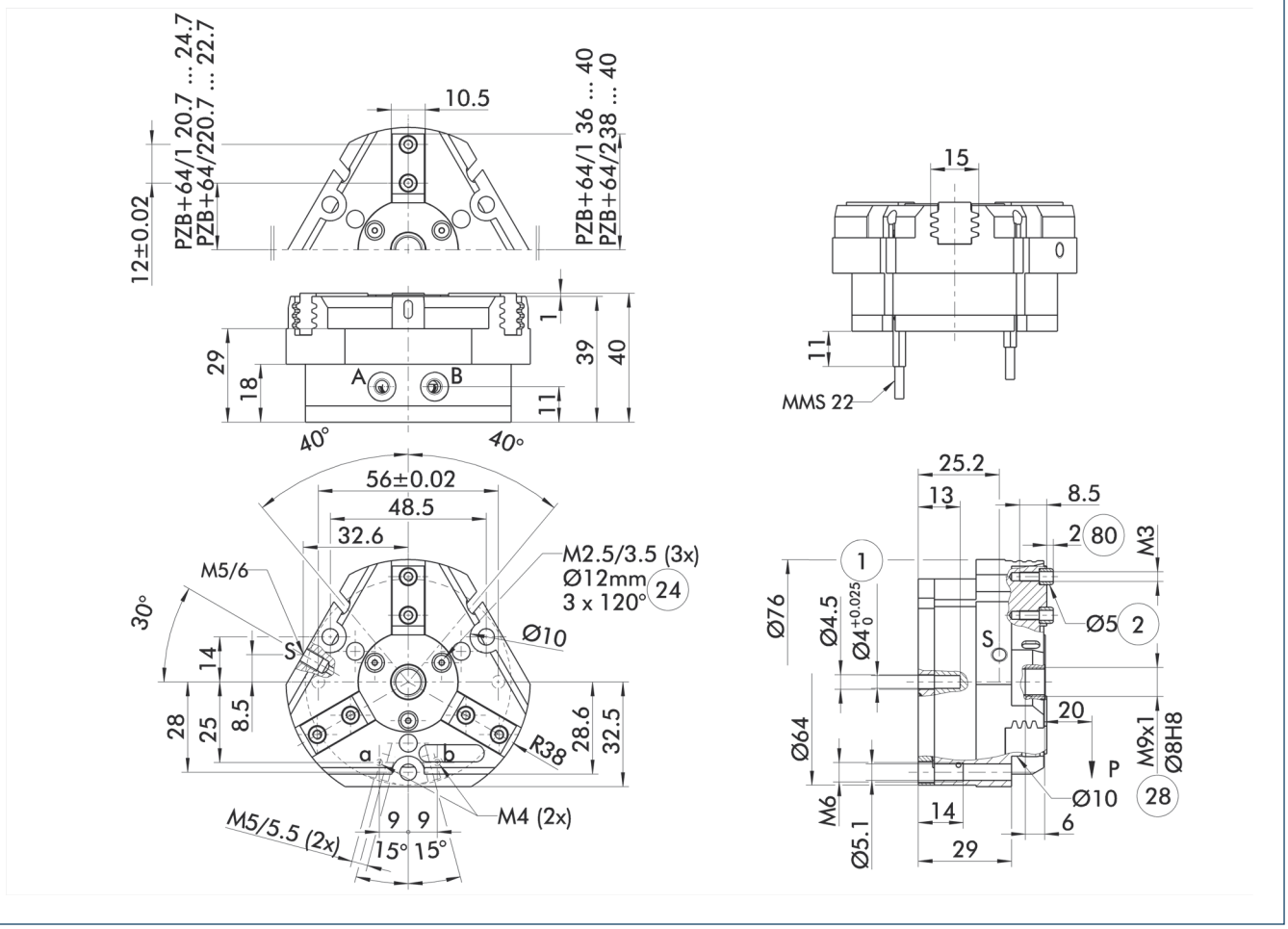
- M_x max. 20.00 Nm
- M_y max. 25.00 Nm
- M_z max. 10.00 Nm
- F_z max. 500.0 N

ⓘ 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		PZB-plus 64-1	PZB-plus 64-2	PZB-plus 64-1-AS	PZB-plus 64-2-AS	PZB-plus 64-1-IS	PZB-plus 64-2-IS
ID		**0305150**	**0305151**	**0305152**	**0305153**	**0305154**	**0305155**
Stroke per finger	[mm]	4	2	4	2	4	2
Closing force	[N]	450	1000	540	1180		
Opening force	[N]	500	1100			600	1300
Min. spring force	[N]			90	180	100	200
Weight	[kg]	0.51	0.51	0.63	0.63	0.63	0.63
Recommended workpiece weight	[kg]	1.6	3.4	1.6	3.4	1.6	3.4
Air consumption per double stroke	[cm³]	19.5	19.5	35	35	35	35
Min./max. operating pressure	[bar]	2/8	2/8	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]	72	68	68	64	68	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
Diameter of center bore	[mm]	8	8	8	8	8	8

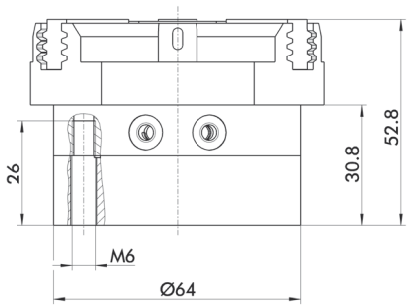
Main view



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

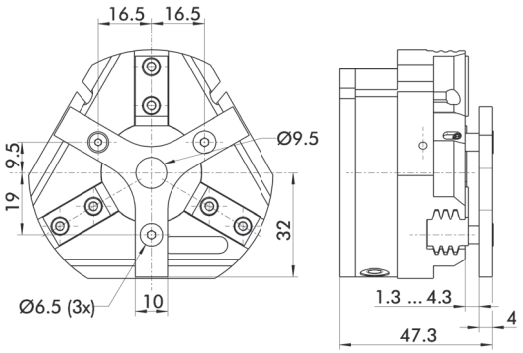
A, a Main/direct connection, gripper opening
B, b Main/direct connection, gripper closing
S Air purge connection
① Gripper connection
② Finger connection
㉔ Bolt circle
㉘ Through-bore
㊽ Depth of the centering sleeve hole in the matching part

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.

Spring-loaded pressure piece

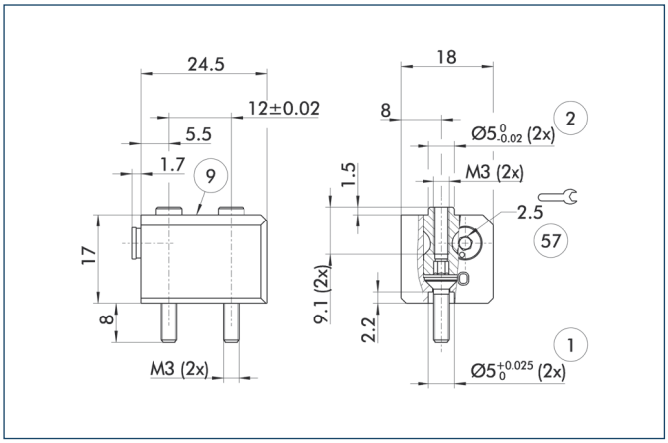


For spring-supported positioning of the workpiece against a stop after the gripper has opened. Especially developed for loading machines.

Description	ID	Stroke	Min. force
Spring-loaded pressure piece			
A-PZB-plus 64	**0305156**	3 mm	12 N

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

Quick-change Jaw System

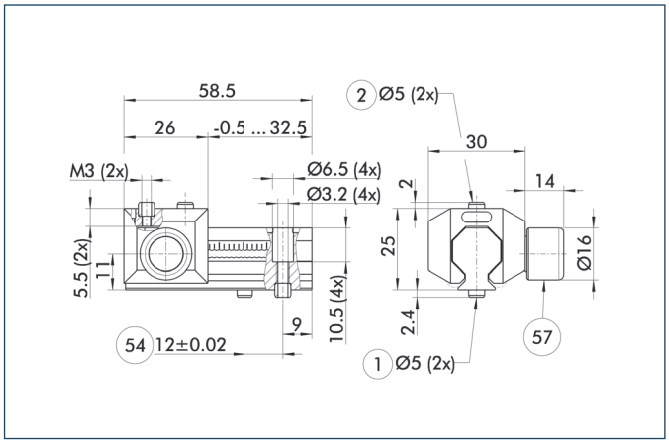


① Gripper connection
② Finger connection
⑨ For mounting screw connection diagram, see basic version
⑤⑦ Locking

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**

Universal intermediate jaw



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

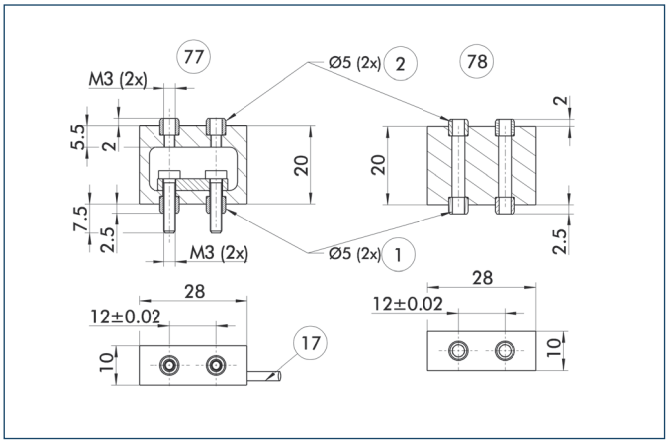
The universal intermediate jaw allows fast tool-free and reliable plugging and shifting of top jaws at the gripper.

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.

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

Force measuring jaws

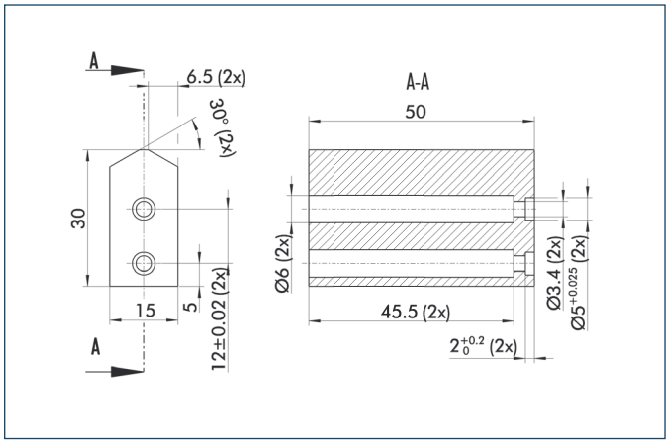


① Gripper connection
② Finger connection
⑰ Cable outlet
⑦⑦ Active intermediate jaws
⑦⑧ Passive intermediate jaws

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 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

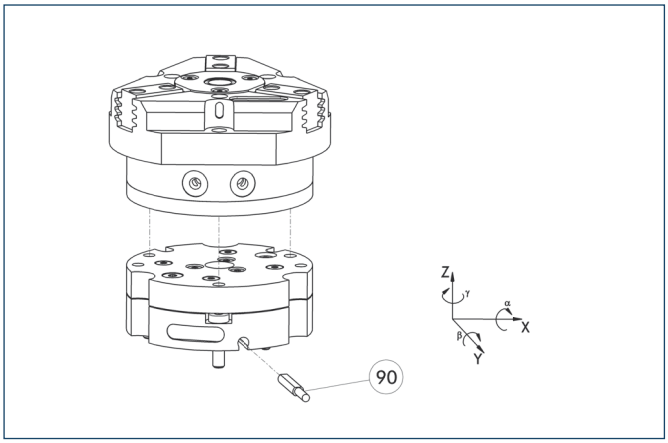


Finger blanks for customized subsequent machining

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

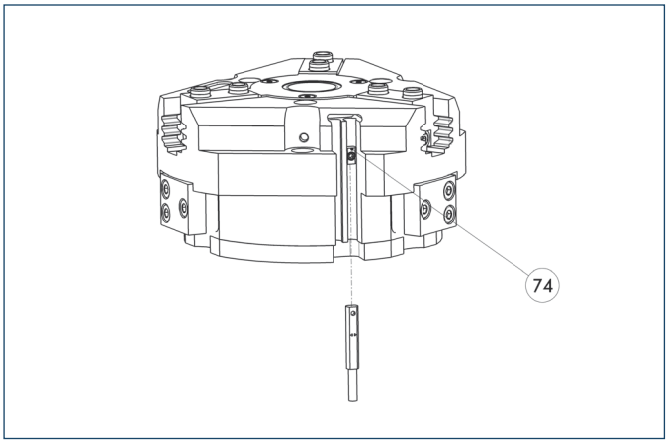


90 Monitoring of locking

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-064-3-MV-Z	**0324766**	Yes	
TCU-064-3-OV-Z	**0324767**	No	

Programmable magnetic switch



74 Stop for MMS-P

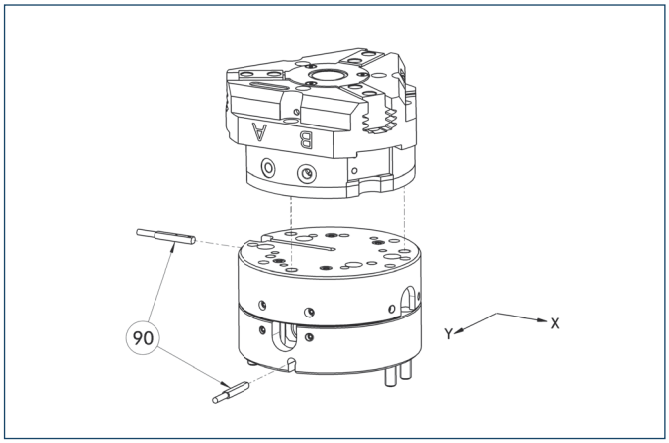
Position monitoring with two programmable positions per sensor. The end position monitoring is mounted in the C-slot.

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.

Compensation unit with spring reset

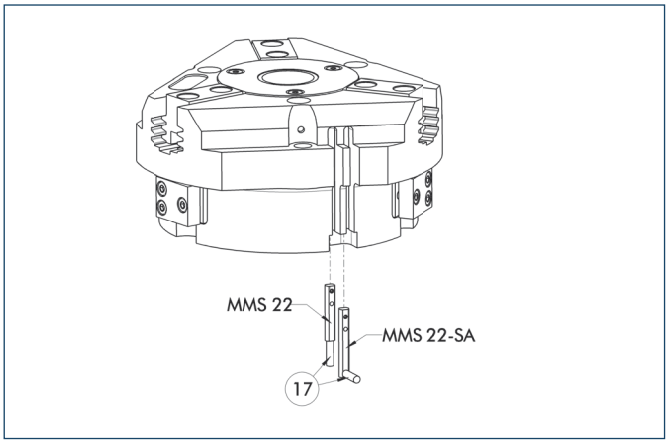


90 Monitoring

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

Electronic magnetic switches



⑰ Cable outlet

End position monitoring for mounting in the C-slot

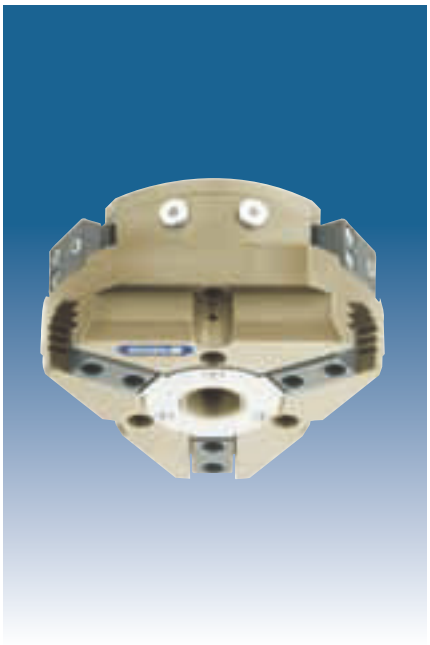
Description	ID	Recommended product
Electronic magnetic switches		
MMS 22-S-M5-PNP	**0301438**	
MMS 22-S-M5-NPN	**0301439**	
MMS 22-S-M8-PNP	**0301432**	•
MMS 22-S-M8-NPN	**0301433**	
MMSK 22-S-PNP	**0301434**	
MMSK 22-S-NPN	**0301435**	
Electronic magnetic switches with lateral cable outlet		
MMS 22-S-M5-PNP-SA	**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**	

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

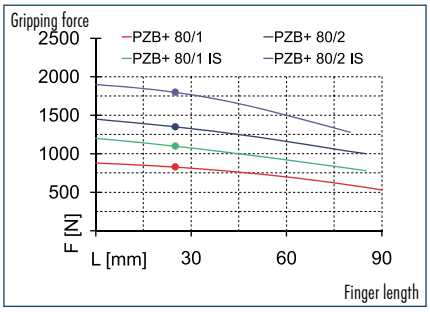
You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

PZB-plus 80

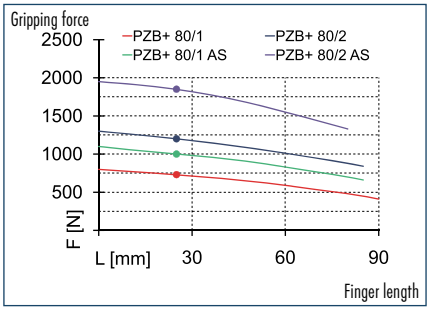
Pneumatic • 3-Finger Centric Gripper • Universal Gripper



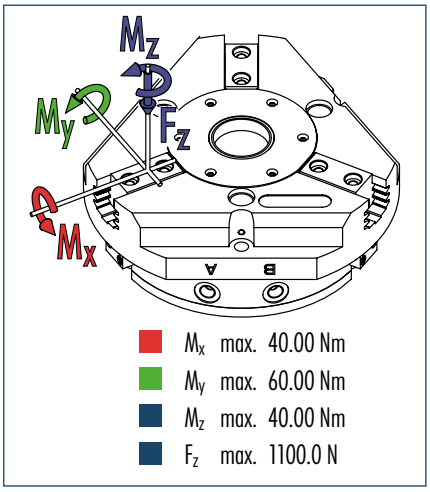
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

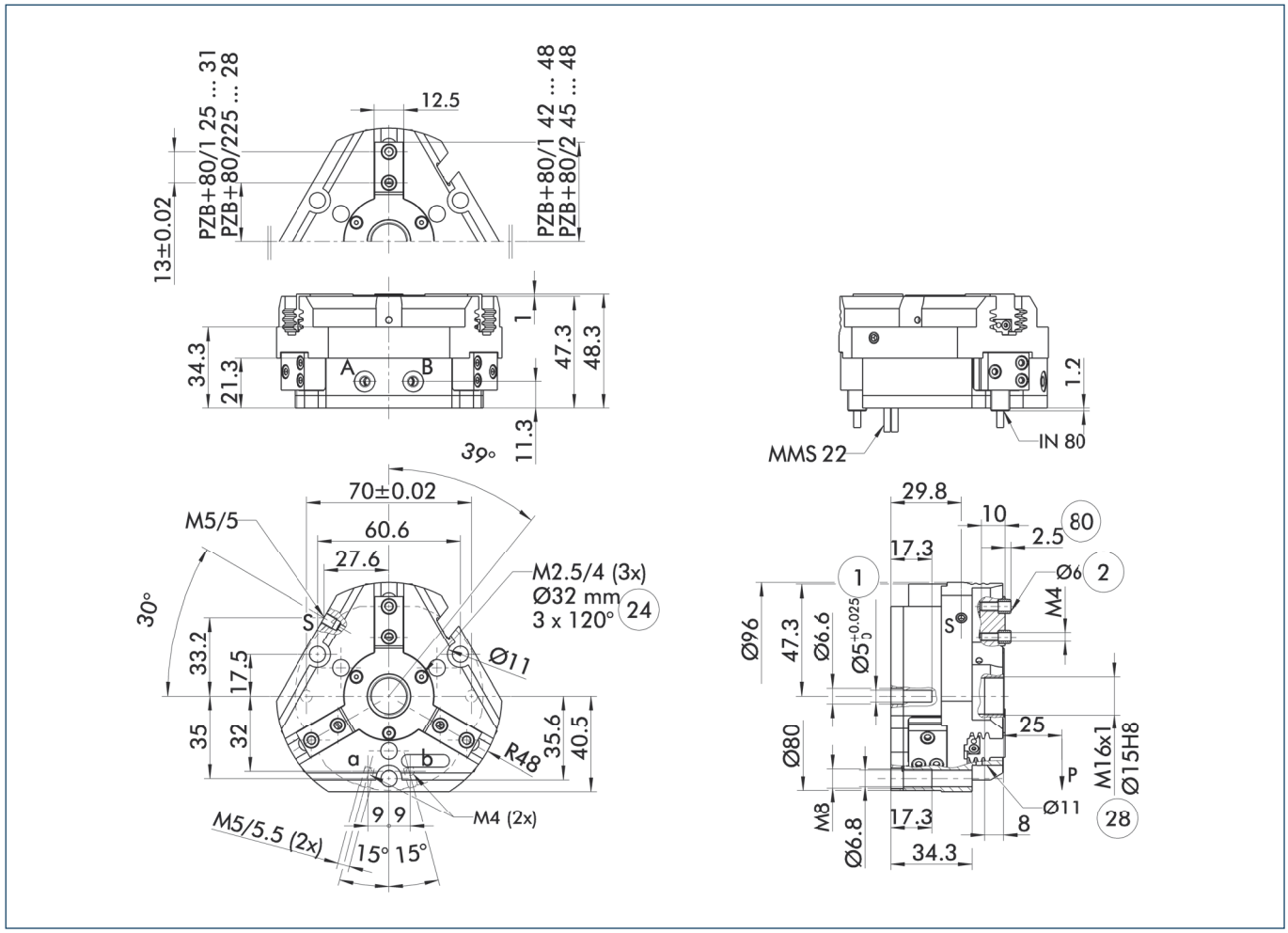


ⓘ The indicated moments and forces are static values, apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement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

Technical data

Description		PZB-plus 80-1	PZB-plus 80-2	PZB-plus 80-1-AS	PZB-plus 80-2-AS	PZB-plus 80-1-IS	PZB-plus 80-2-IS
ID		**0305160**	**0305161**	**0305162**	**0305163**	**0305164**	**0305165**
Stroke per finger	[mm]	6	3	6	3	6	3
Closing force	[N]	730	1200	950	1810		
Opening force	[N]	830	1350			1030	1750
Min. spring force	[N]			220	360	200	400
Weight	[kg]	0.8	0.8	1.1	1.1	1.1	1.1
Recommended workpiece weight	[kg]	2.9	4.85	2.9	4.85	2.9	4.85
Air consumption per double stroke	[cm³]	42	42	75	75	75	75
Min./max. operating pressure	[bar]	2/8	2/8	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]	0.05/0.05	0.05/0.05	0.03/0.05	0.03/0.05	0.06/0.04	0.06/0.04
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
Diameter of center bore	[mm]	15	15	15	15	15	15

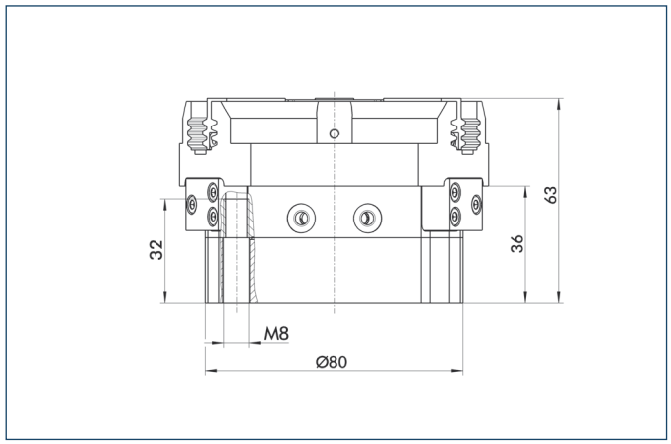
Main view



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

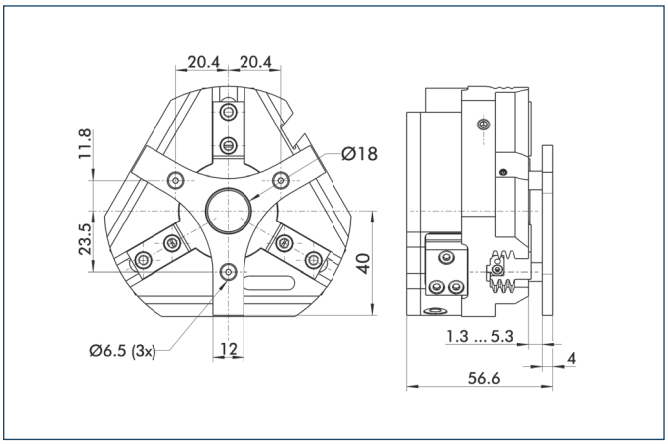
A, a Main/direct connection, gripper opening
B, b Main/direct connection, gripper closing
S Air purge connection
(1) Gripper connection
(2) Finger connection
(24) Bolt circle
(28) Through-bore
(80) Depth of the centering sleeve hole in the matching part

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.

Spring-loaded pressure piece

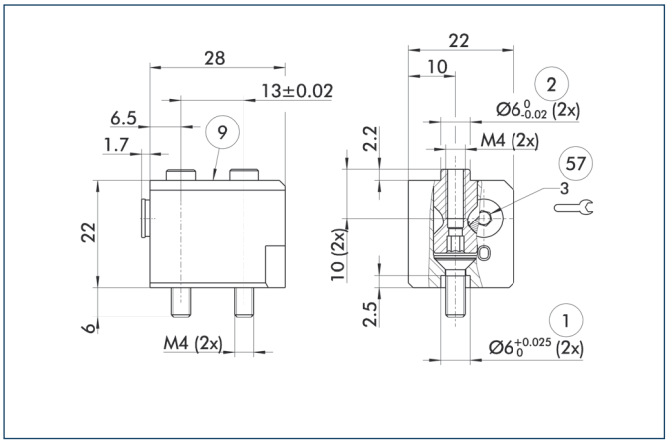


For spring-supported positioning of the workpiece against a stop after the gripper has opened. Especially developed for loading machines.

Description	ID	Stroke	Min. force
Spring-loaded pressure piece			
A-PZB-plus 80	**0305166**	4 mm	11 N

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

Quick-change Jaw System

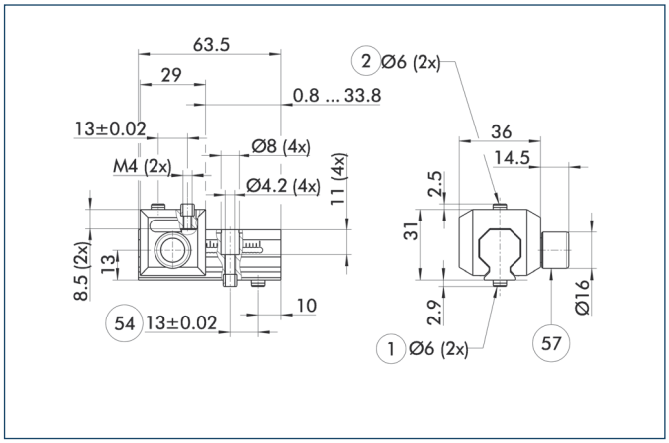


① Gripper connection
② Finger connection
⑨ For mounting screw connection diagram, see basic version
㊼ Locking

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 64	**0303022**
Quick-change Jaw System base	
BSWS-B 64	**0303023**
Quick-change Jaw System reversed	
BSWS-U 64	**0303041**

Universal intermediate jaw



① Gripper connection
② Finger connection
㊹ Optional right or left connection
㊼ Locking

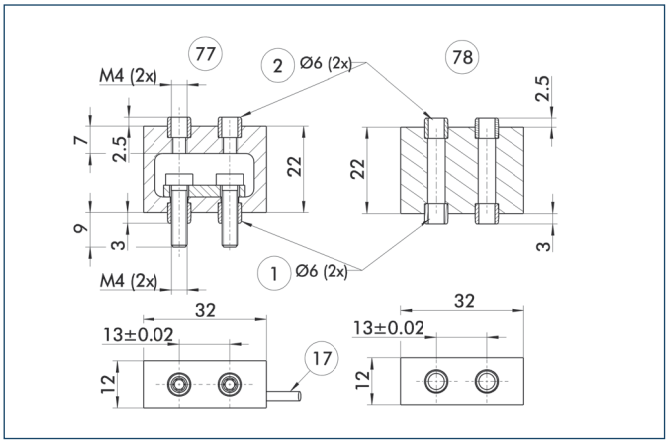
The universal intermediate jaw allows fast tool-free and reliable plugging and shifting of top jaws at the gripper.

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.

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

Force measuring jaws

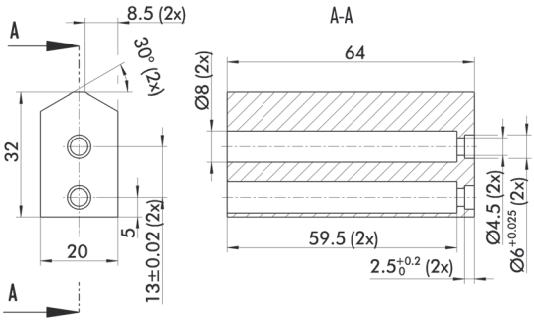


① Gripper connection
② Finger connection
⑰ Cable outlet
⑦⑦ Active intermediate jaws
⑦⑧ Passive intermediate jaws

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 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

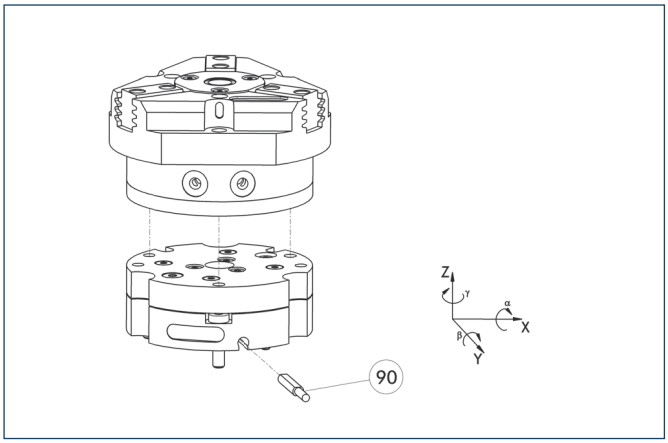


Finger blanks for customized subsequent machining

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

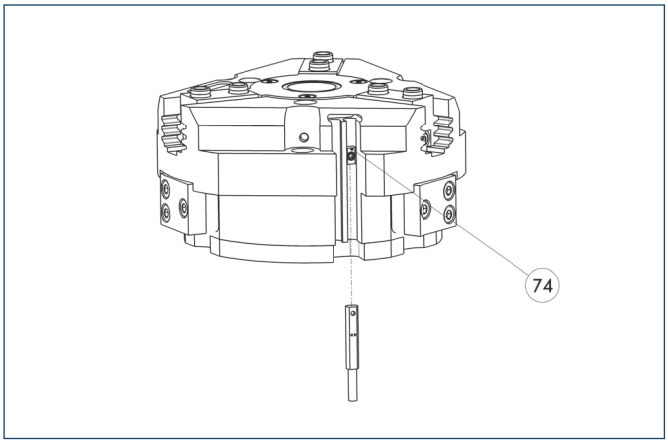


90 Monitoring of locking

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-080-3-MV-Z	**0324784**	Yes	
TCU-080-3-OV-Z	**0324785**	No	

Programmable magnetic switch



74 Stop for MMS-P

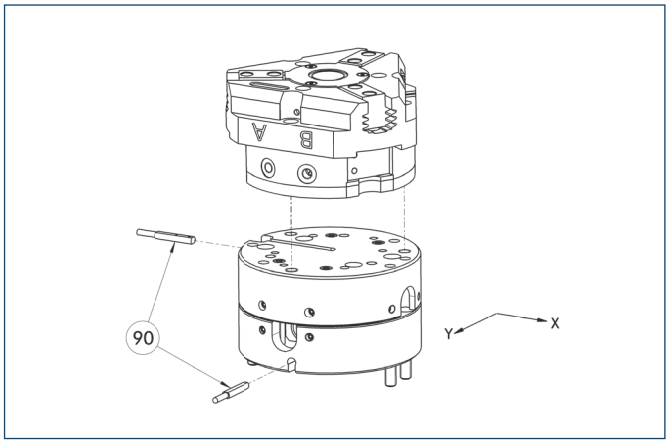
Position monitoring with two programmable positions per sensor. The end position monitoring is mounted in the C-slot.

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.

Compensation unit with spring reset

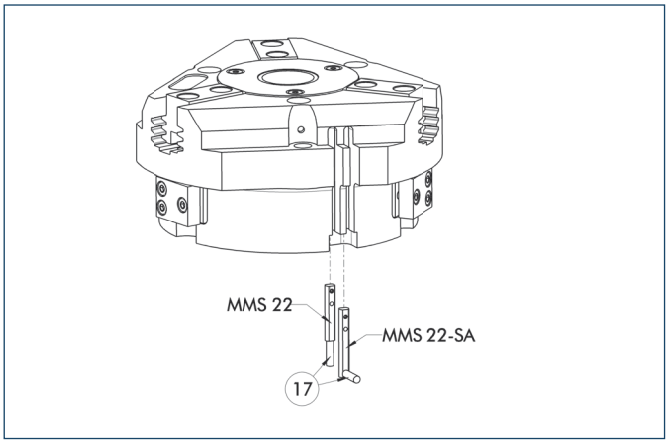


90 Monitoring

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

Electronic magnetic switches



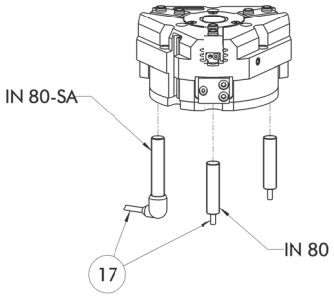
⑰ Cable outlet

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**	

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

Inductive proximity switches



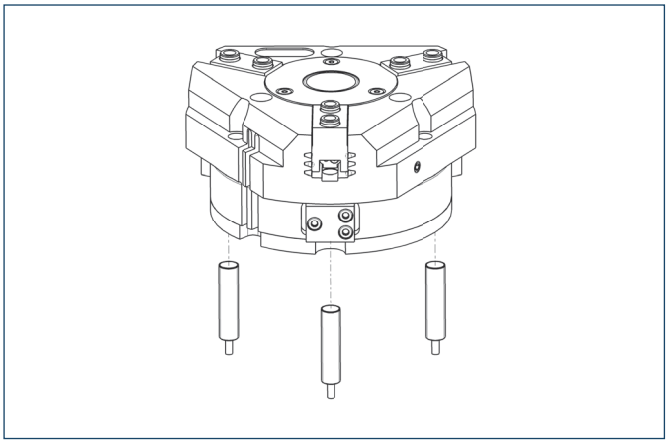
⑰ Cable outlet

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**	

ⓘ 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

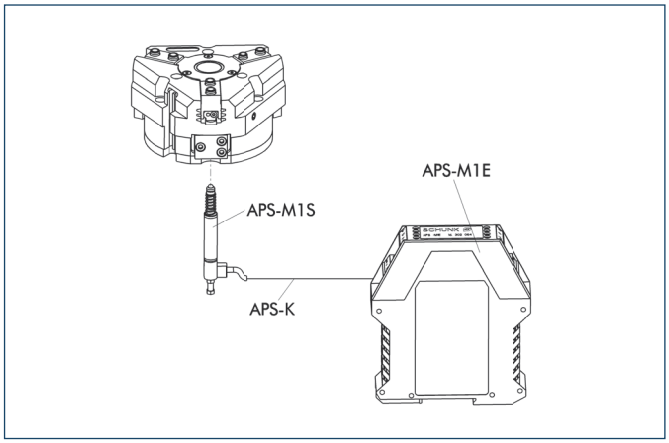


End position monitoring mounted with mounting kit

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

ⓘ 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



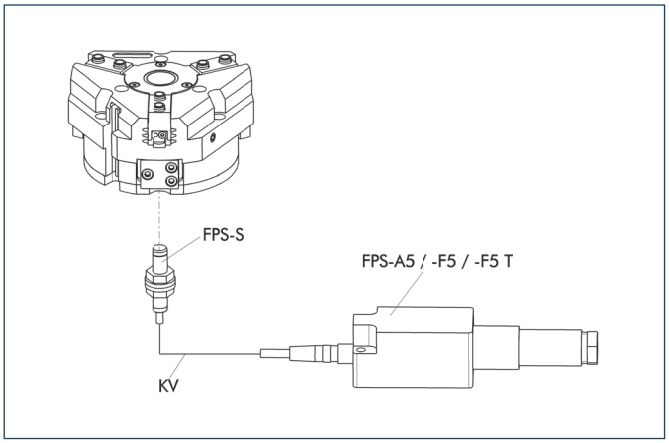
Analog multi position monitoring for any desired positions

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**

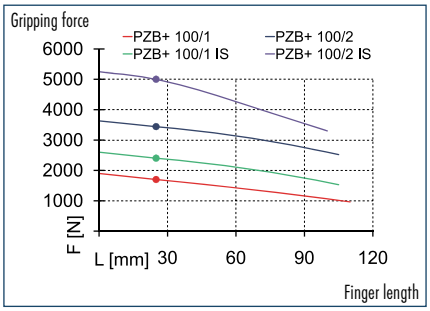
ⓘ When using a FPS system, a FPS sensor (FPS-S) and a control unit (FPS-F5 / F5 T or A5) are required for each gripper as well as a mounting kit (AS), if listed. Cable extensions (KV) are available as options in the “Accessories” catalog section.

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

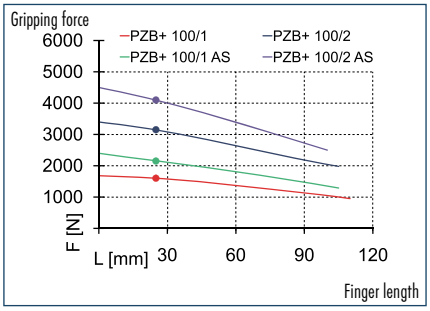
PZB-plus 100

Pneumatic • 3-Finger Centric Gripper • Universal Gripper

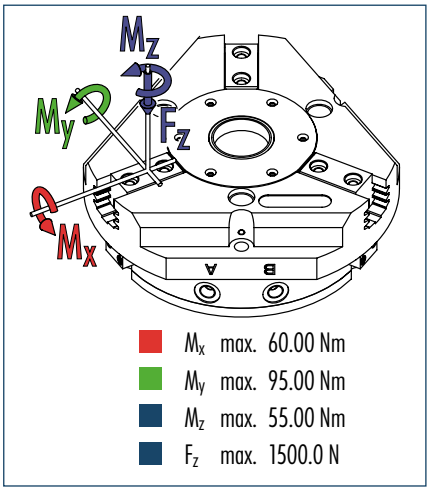
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load



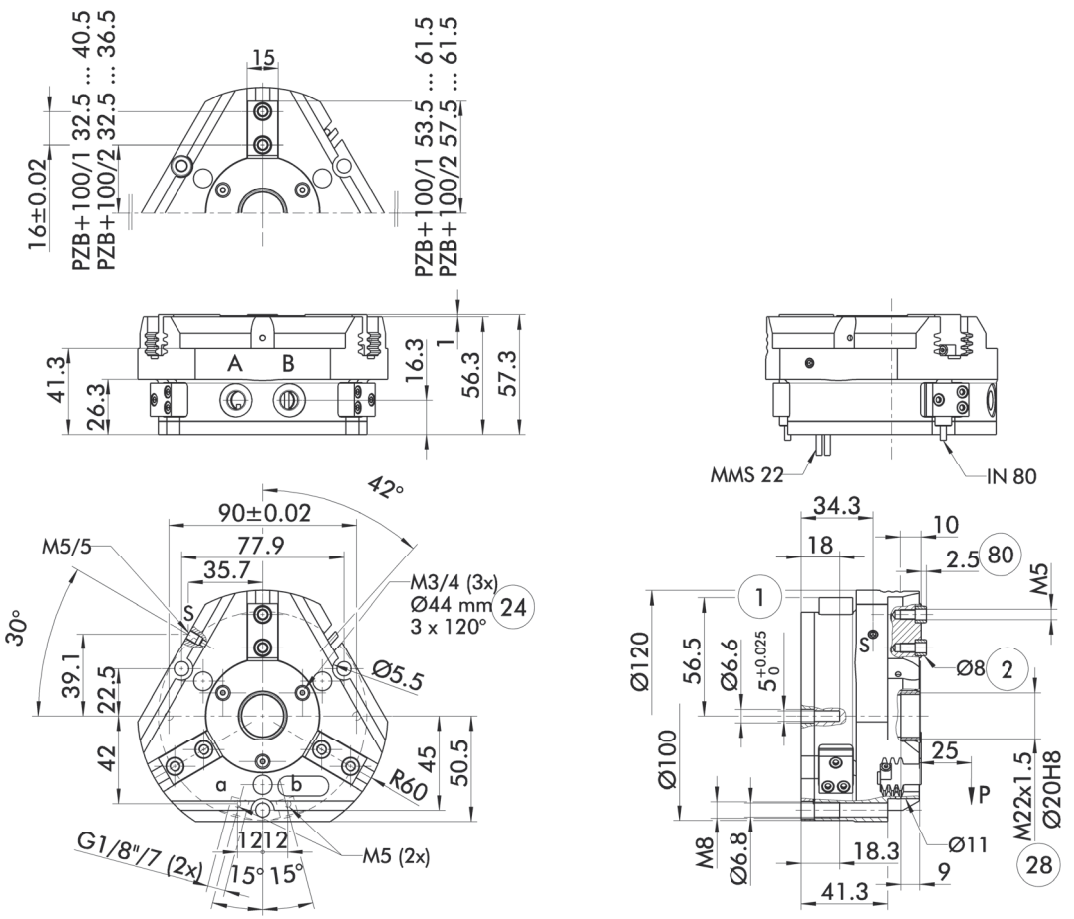
- M_x max. 60.00 Nm
- M_y max. 95.00 Nm
- M_z max. 55.00 Nm
- F_z max. 1500.0 N

ⓘ 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		PZB-plus 100-1	PZB-plus 100-2	PZB-plus 100-1-AS	PZB-plus 100-2-AS	PZB-plus 100-1-IS	PZB-plus 100-2-IS
ID		**0305170**	**0305171**	**0305172**	**0305173**	**0305174**	**0305175**
Stroke per finger	[mm]	8	4	8	4	8	4
Closing force	[N]	1600	3150	2100	4050		
Opening force	[N]	1700	3400			2380	4900
Min. spring force	[N]			500	900	680	1500
Weight	[kg]	1.5	1.5	2.3	2.3	2.3	2.3
Recommended workpiece weight	[kg]	5	11.5	5	11.5	5	11.5
Air consumption per double stroke	[cm³]	92	92	185	185	185	185
Min./max. operating pressure	[bar]	2/8	2/8	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	0.1/0.2	0.1/0.2	0.2/0.1	0.2/0.1
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
Diameter of center bore	[mm]	20	20	20	20	20	20

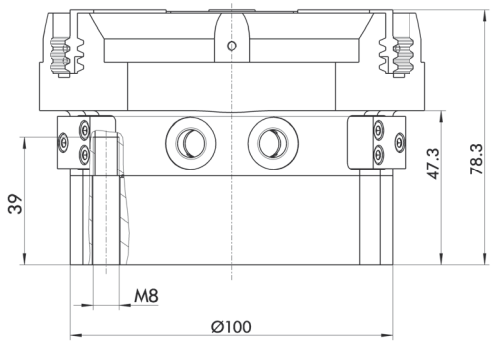
Main view



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

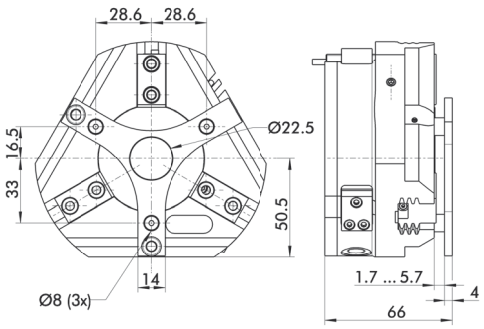
A, a Main/direct connection, gripper opening
B, b Main/direct connection, gripper closing
S Air purge connection
① Gripper connection
② Finger connection
㉔ Bolt circle
㉘ Through-bore
㉚ Depth of the centering sleeve hole in the matching part

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.

Spring-loaded pressure piece

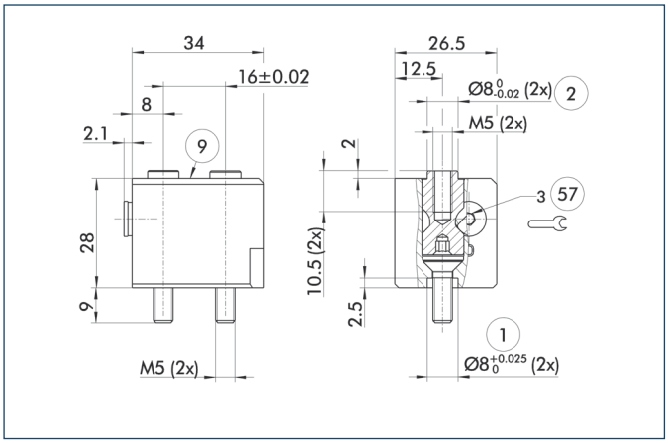


For spring-supported positioning of the workpiece against a stop after the gripper has opened. Especially developed for loading machines.

Description	ID	Stroke	Min. force
Spring-loaded pressure piece			
A-PZB-plus 100	**0305176**	4 mm	18 N

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

Quick-change Jaw System

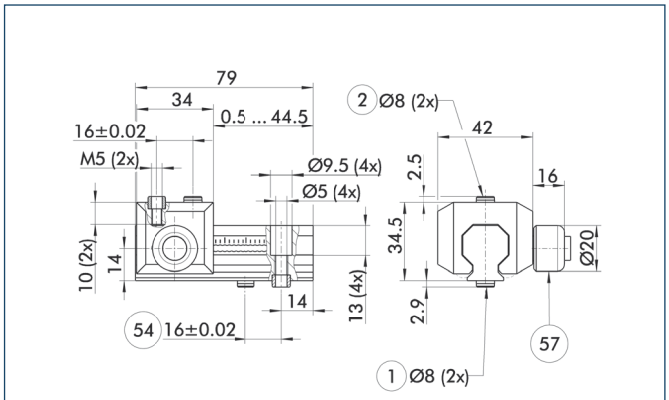


① Gripper connection
② Finger connection
⑨ For mounting screw connection diagram, see basic version
57 Locking

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**

Universal intermediate jaw



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

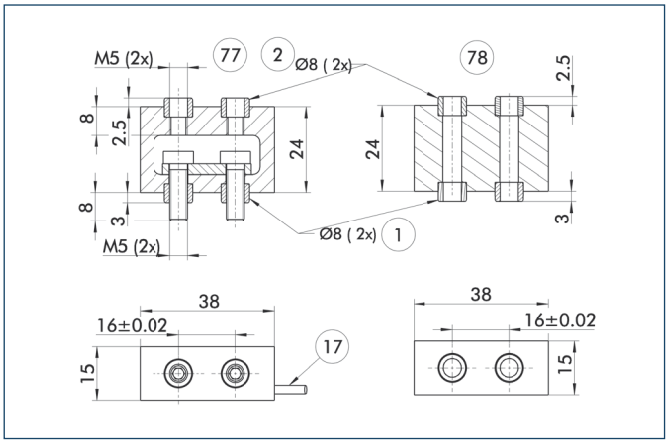
The universal intermediate jaw allows fast tool-free and reliable plugging and shifting of top jaws at the gripper.

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.

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

Force measuring jaws

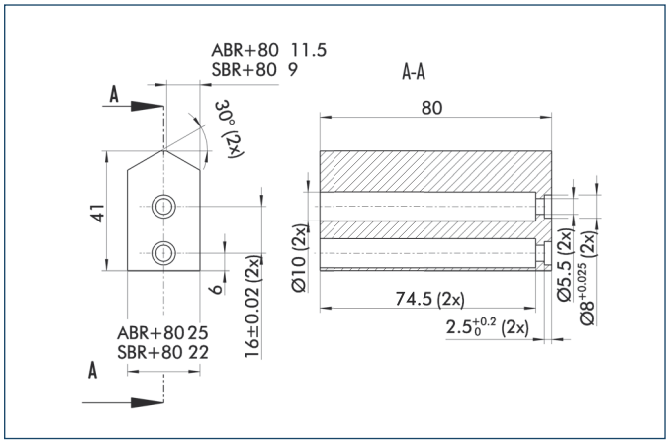


① Gripper connection
② Finger connection
⑰ Cable outlet
⑦⑦ Active intermediate jaws
⑦⑧ Passive intermediate jaws

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 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

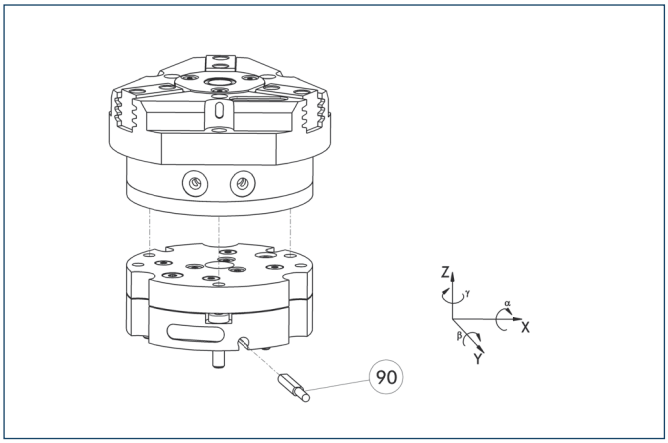


Finger blanks for customized subsequent machining

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

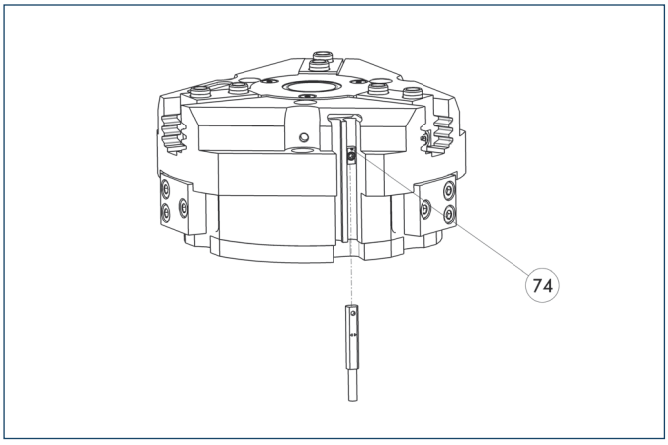


(90) Monitoring of locking

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-100-2-MV-Z	**0324794**	Yes	
TCU-100-2-OV-Z	**0324799**	No	

Programmable magnetic switch



(74) Stop for MMS-P

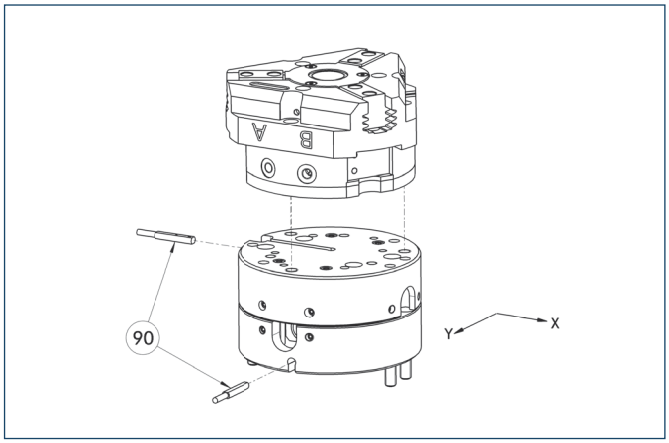
Position monitoring with two programmable positions per sensor. The end position monitoring is mounted in the C-slot.

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.

Compensation unit with spring reset

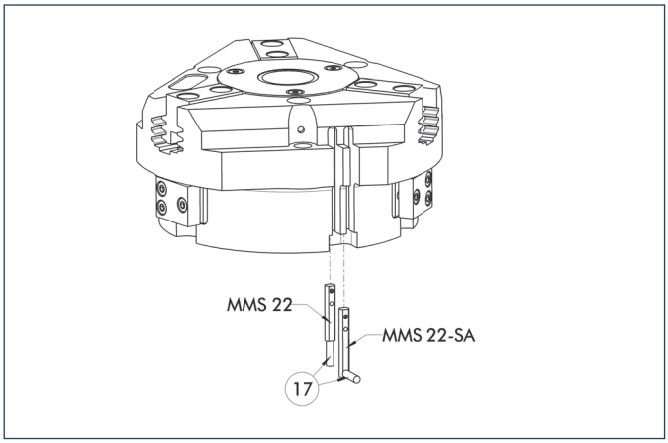


(90) Monitoring

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

Electronic magnetic switches



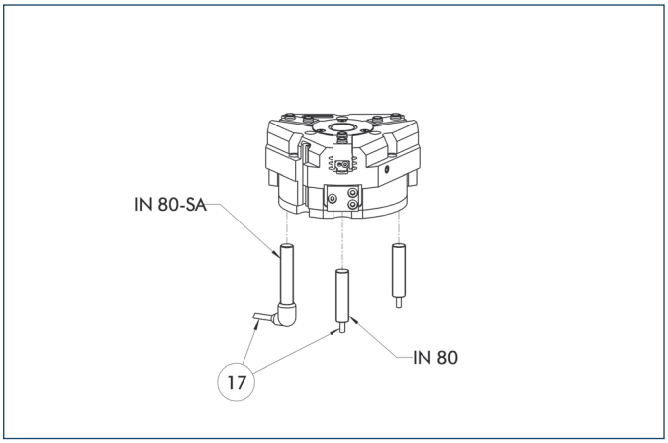
⑰ Cable outlet

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**	

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

Inductive proximity switches



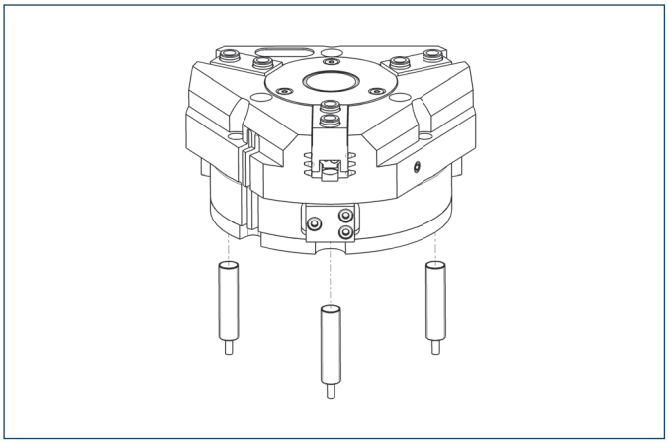
⑰ Cable outlet

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**	

ⓘ 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

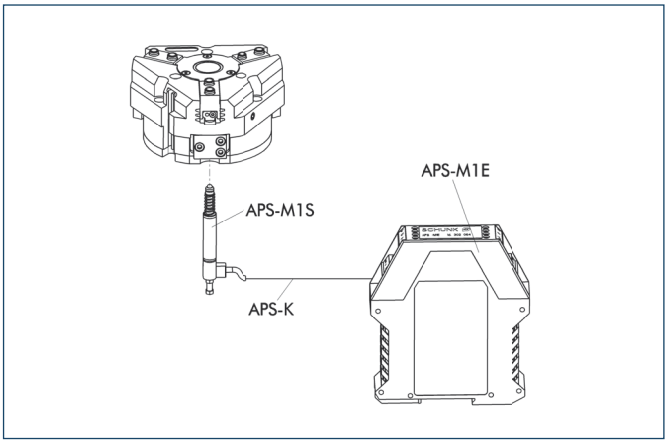


End position monitoring mounted with mounting kit

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

ⓘ 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



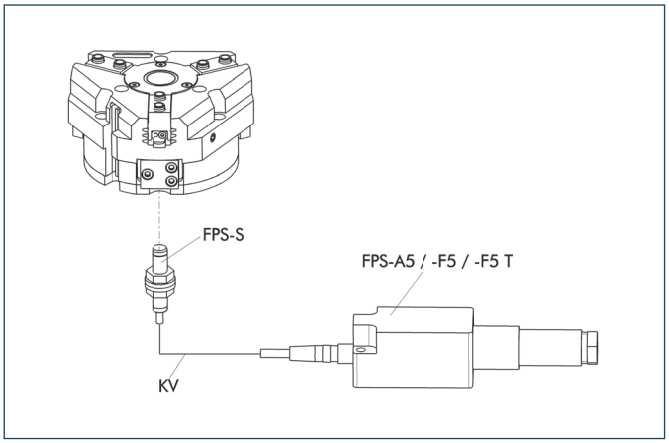
Analog multi position monitoring for any desired positions

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**

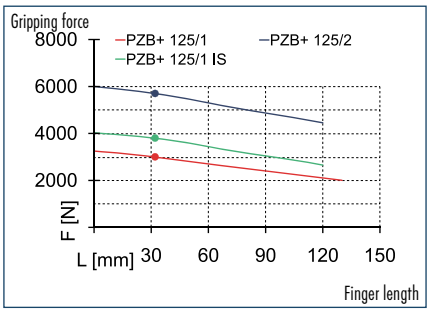
ⓘ When using a FPS system, a FPS sensor (FPS-S) and a control unit (FPS-F5 / F5 T or A5) are required for each gripper as well as a mounting kit (AS), if listed. Cable extensions (KV) are available as options in the “Accessories” catalog section.

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

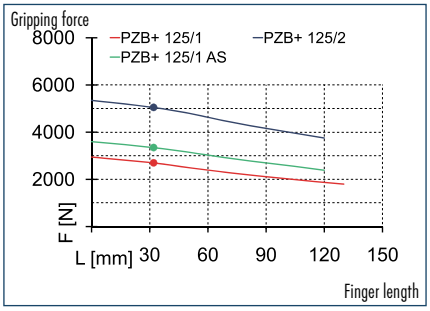
PZB-plus 125

Pneumatic • 3-Finger Centric Gripper • Universal Gripper

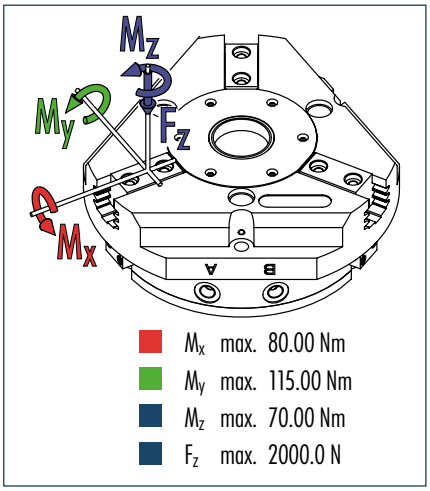
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

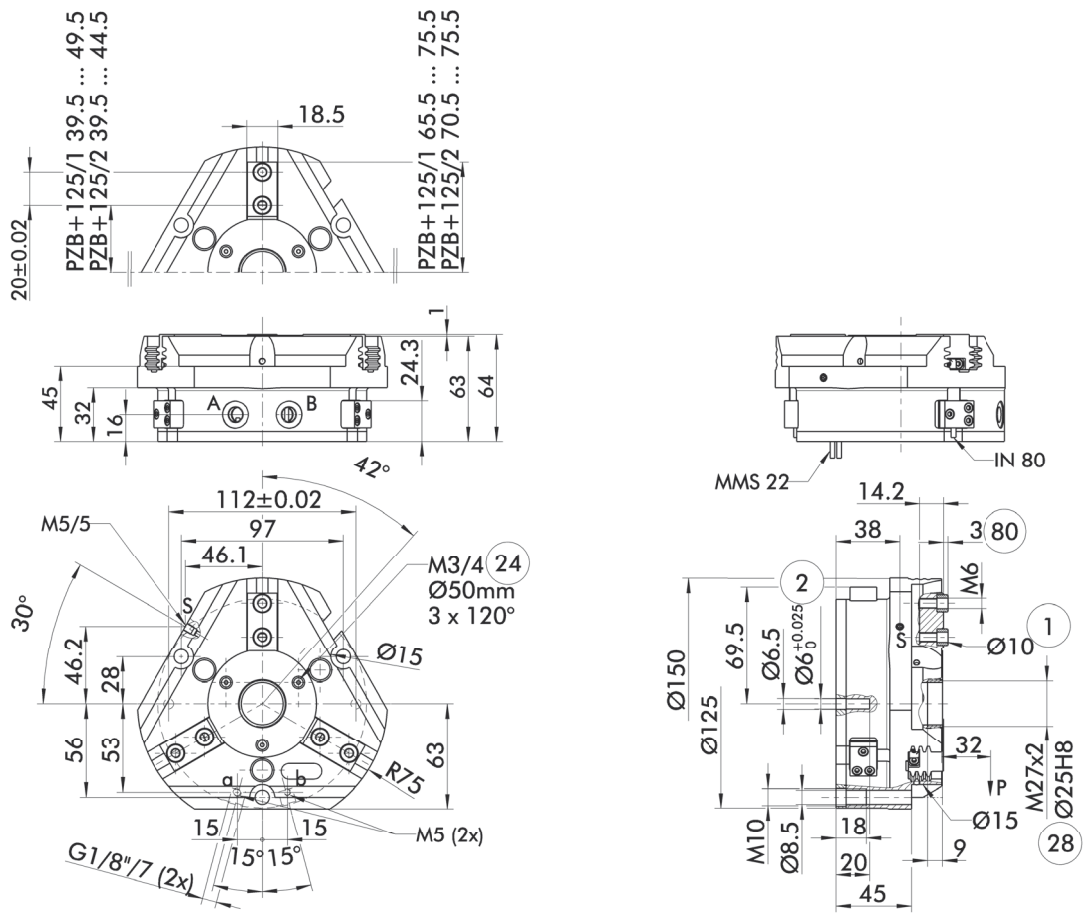


ⓘ The indicated moments and forces are static values, apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement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

Technical data

Description		PZB-plus 125-1	PZB-plus 125-2	PZB-plus 125-1-AS	PZB-plus 125-1-IS
ID		**0305180**	**0305181**	**0305182**	**0305184**
Stroke per finger	[mm]	10	5	10	10
Closing force	[N]	2700	5050	3350	
Opening force	[N]	3000	5700		3750
Min. spring force	[N]			650	750
Weight	[kg]	2.5	2.5	4	4
Recommended workpiece weight	[kg]	9	20	9	9
Air consumption per double stroke	[cm³]	65	65	300	300
Min./max. operating pressure	[bar]	2/8	2/8	4/6.5	4/6.5
Nominal operating pressure	[bar]	6	6	6	6
Closing/opening time	[s]	0.2/0.2	0.2/0.2	0.17/0.35	0.35/0.17
Max. permitted finger length	[mm]	130	120	120	120
Max. permitted weight per finger	[kg]	1.1	1.1	1.1	1.1
IP class		40	40	40	40
Min./max. ambient temperature	[°C]	-10/90	-10/90	-10/90	-10/90
Repeat accuracy	[mm]	0.01	0.01	0.01	0.01
Diameter of center bore	[mm]	25	25	25	25

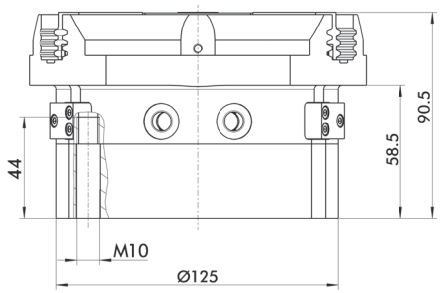
Main view



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

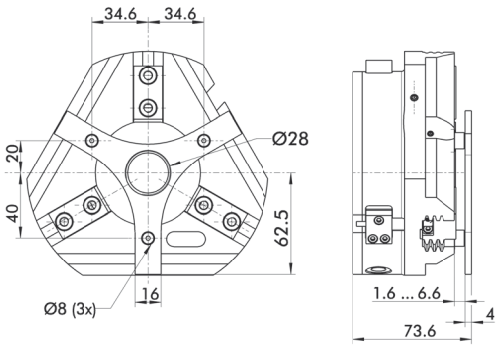
A, a Main/direct connection, gripper opening
B, b Main/direct connection, gripper closing
S Air purge connection, or deaeration bore
① Gripper connection
② Finger connection
㉔ Bolt circle
㉘ Through-bore
㉚ Depth of the centering sleeve hole in the matching part

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.

Spring-loaded pressure piece

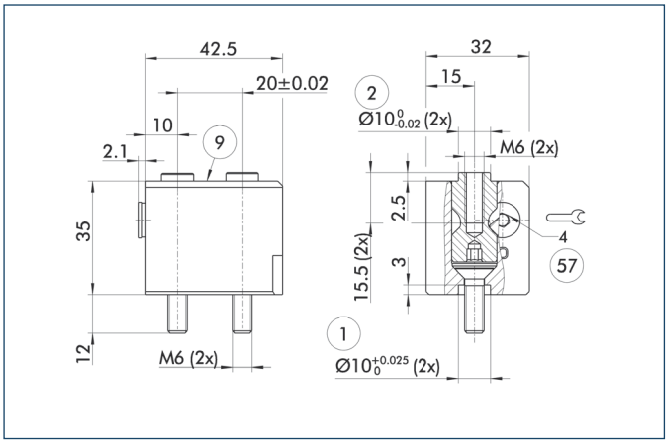


For spring-supported positioning of the workpiece against a stop after the gripper has opened. Especially developed for loading machines.

Description	ID	Stroke	Min. force
Spring-loaded pressure piece			
A-PZB-plus 125	**0305186**	5 mm	35 N

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

Quick-change Jaw System

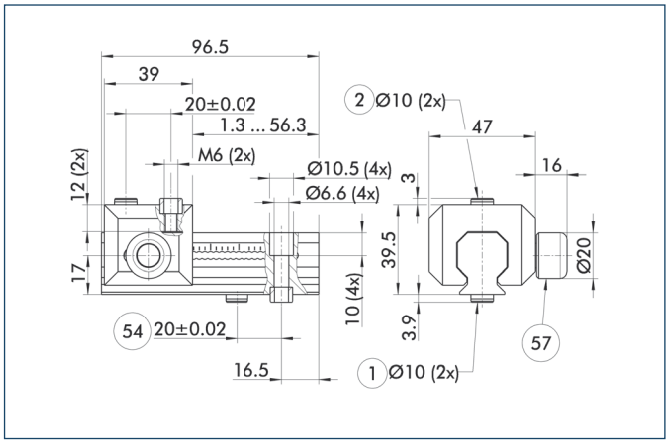


① Gripper connection
② Finger connection
⑨ For mounting screw connection diagram, see basic version
㊼ Locking

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 100	**0303026**
Quick-change Jaw System base	
BSWS-B 100	**0303027**
Quick-change Jaw System reversed	
BSWS-U 100	**0303043**

Universal intermediate jaw



① Gripper connection
② Finger connection
㊿④ Optional right or left connection
㊼ Locking

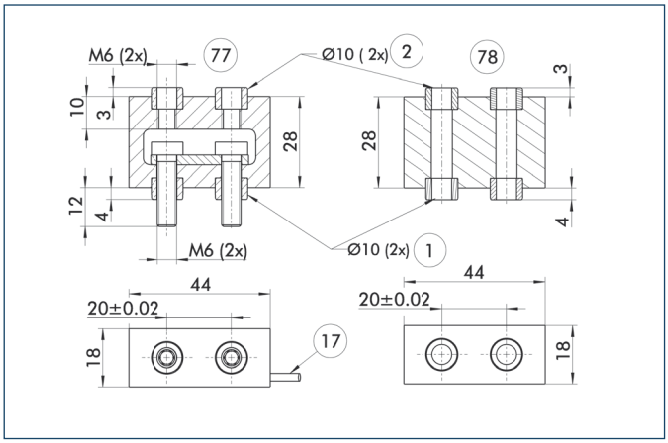
The universal intermediate jaw allows fast tool-free and reliable plugging and shifting of top jaws at the gripper.

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.

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

Force measuring jaws

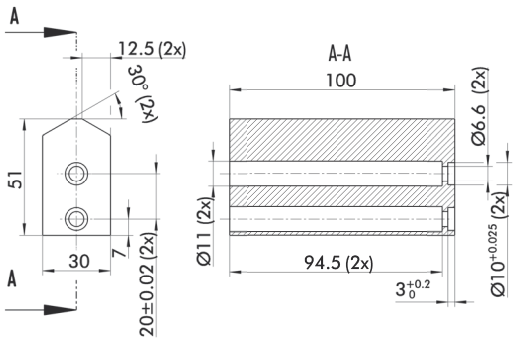


① Gripper connection
② Finger connection
⑰ Cable outlet
⑦⑦ Active intermediate jaws
⑦⑧ Passive intermediate jaws

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 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

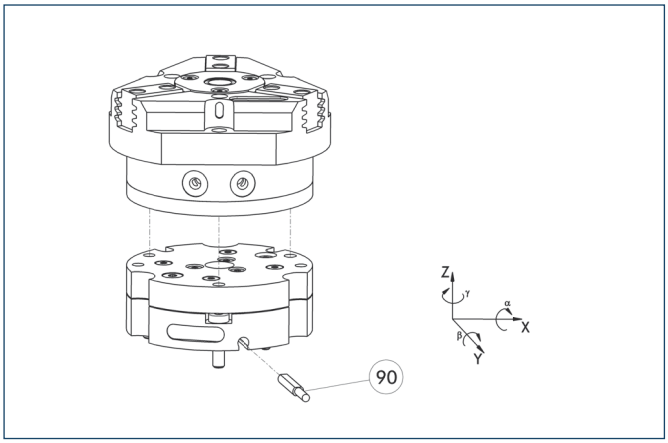


Finger blanks for customized subsequent machining

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

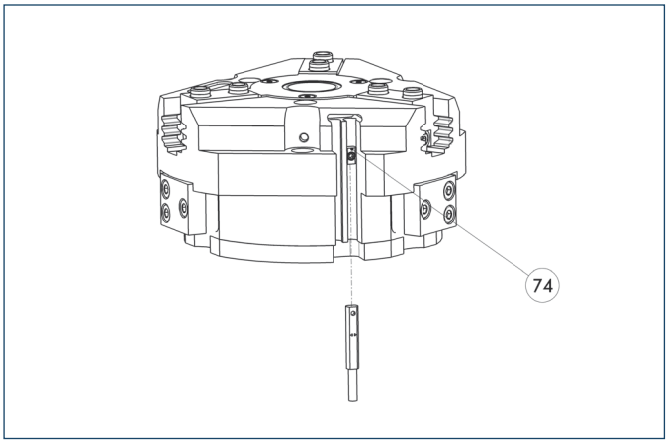


(90) Monitoring of locking

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-125-3-MV-Z	**0324820**	Yes	
TCU-125-3-OV-Z	**0324821**	No	

Programmable magnetic switch



(74) Stop for MMS-P

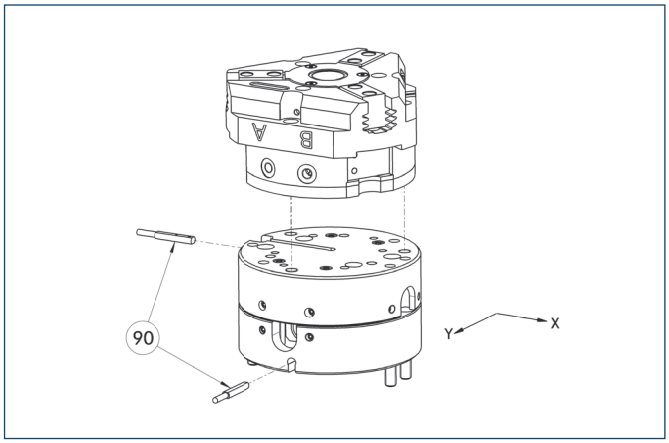
Position monitoring with two programmable positions per sensor. The end position monitoring is mounted in the C-slot.

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.

Compensation unit with spring reset

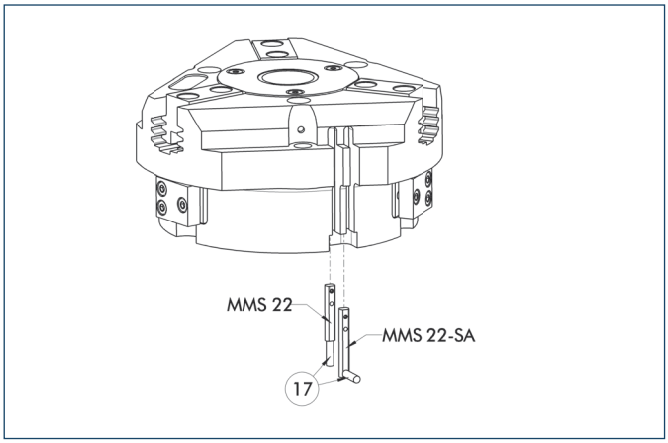


(90) Monitoring

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

Electronic magnetic switches



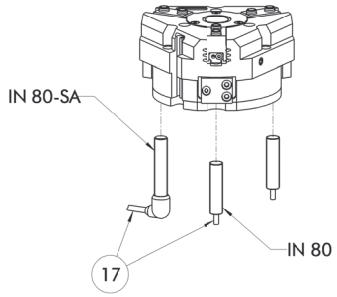
⑰ Cable outlet

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**	

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

Inductive proximity switches



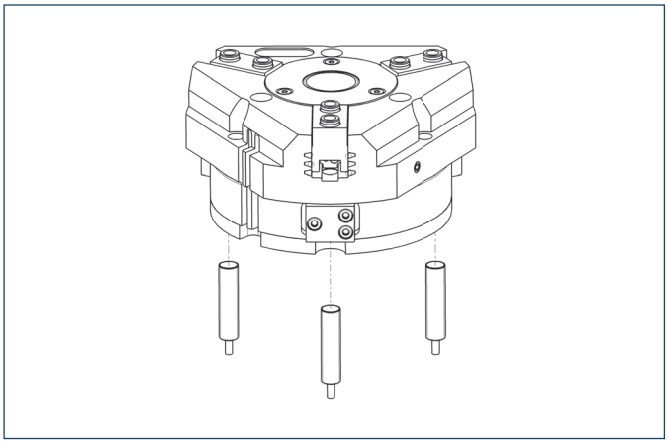
⑰ Cable outlet

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**	

ⓘ 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



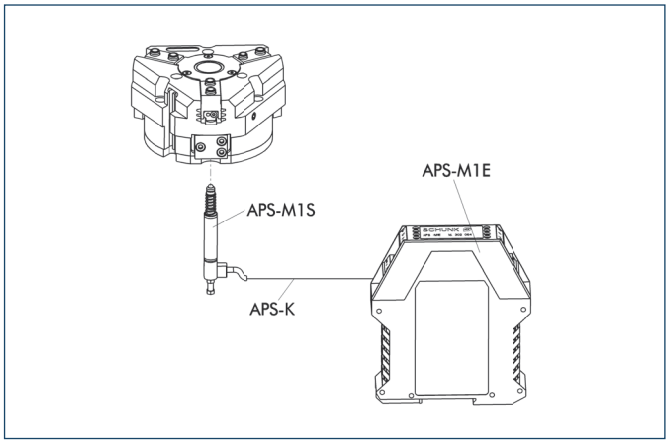
End position monitoring mounted with mounting kit

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

ⓘ 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

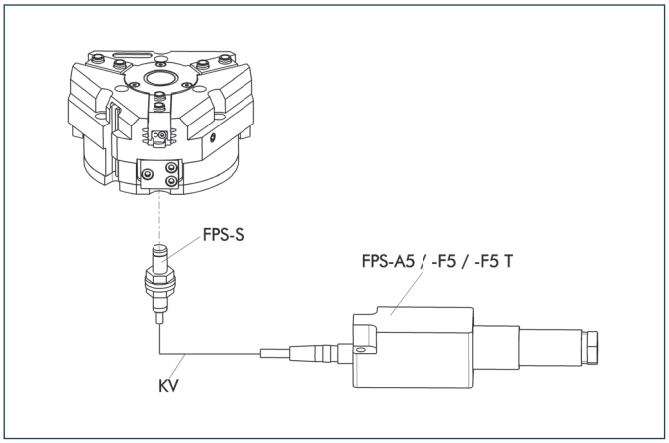
Description	ID
Mounting kit	
AS-APS-M1-100/1	**0302079**
AS-APS-M1-100/2	**0302080**
Connection cables	
APS-K0200	**0302066**
APS-K0700	**0302068**
Electronic Processor	
APS-M1E	**0302064**
Sensor	
APS-M1S	**0302062**

ⓘ 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

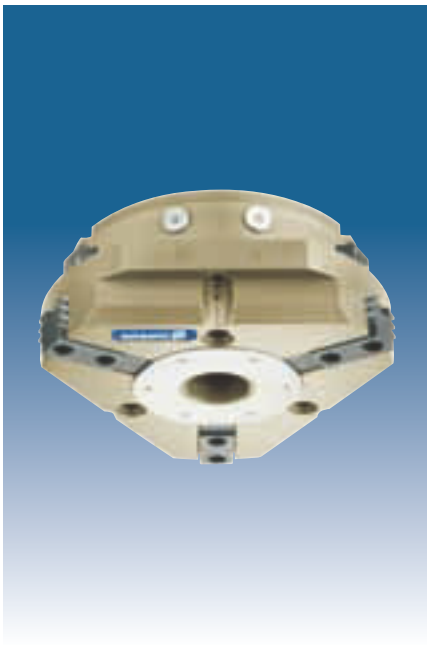
Description	ID
Mounting kit for FPS	
AS-PGN/PZN-plus 100/1	**0301634**
AS-PGN/PZN-plus 100/2, PZB 125	**0301635**
Electronic Processor	
FPS-F5	**0301805**
FPS-F5 T	**0301807**
Sensor	
FPS-S M8	**0301704**

ⓘ 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.

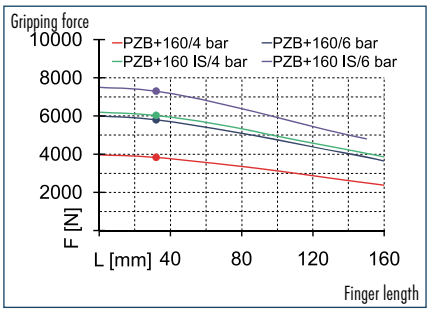
You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

PZB-plus 160

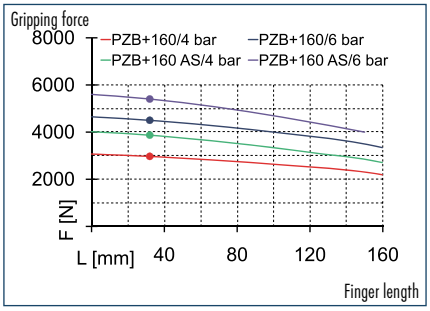
Pneumatic • 3-Finger Centric Gripper • Universal Gripper



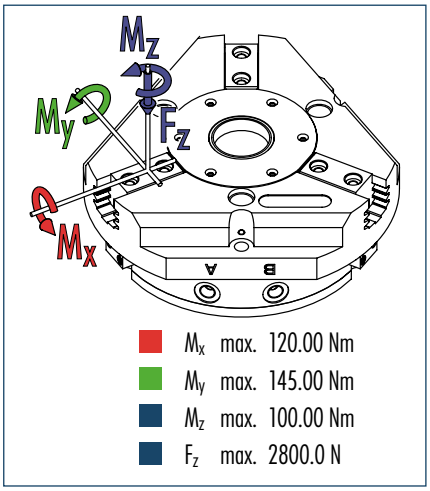
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

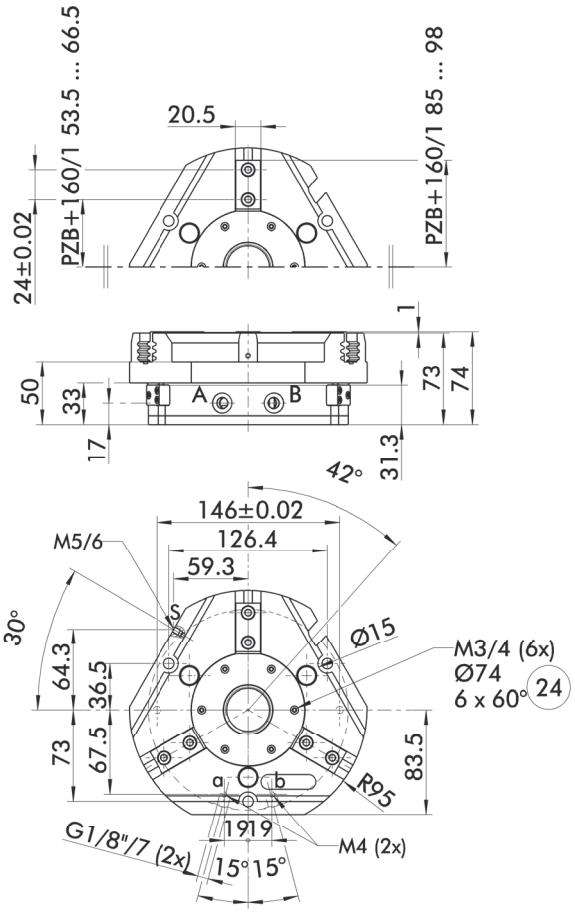


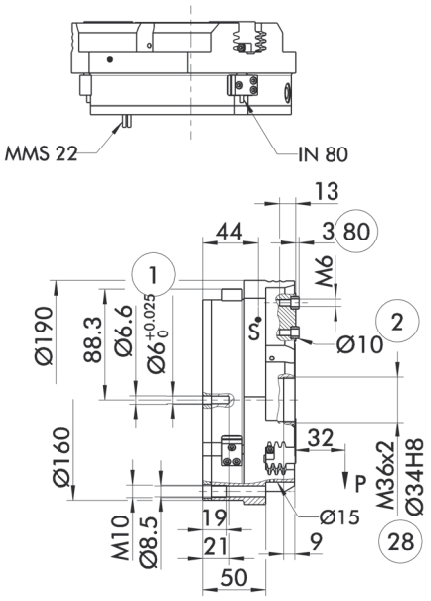
ⓘ The indicated moments and forces are static values, apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement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

Technical data

Description		PZB-plus 160-1	PZB-plus 160-1-AS	PZB-plus 160-1-IS
ID		**0305190**	**0305192**	**0305194**
Stroke per finger	[mm]	13	13	13
Closing force	[N]	4500	5400	
Opening force	[N]	5800		7300
Min. spring force	[N]		900	1500
Weight	[kg]	4.8	7.3	7.3
Recommended workpiece weight	[kg]	15.5	15.5	15.5
Air consumption per double stroke	[cm³]	360	620	620
Min./max. operating pressure	[bar]	2/8	4/6.5	4/6.5
Nominal operating pressure	[bar]	6	6	6
Closing/opening time	[s]	0.5/0.5	0.4/0.8	0.8/0.4
Max. permitted finger length	[mm]	160	135	135
Max. permitted weight per finger	[kg]	2.1	2.1	2.1
IP class		40	40	40
Min./max. ambient temperature	[°C]	-10/90	-10/90	-10/90
Repeat accuracy	[mm]	0.02	0.02	0.02
Diameter of center bore	[mm]	34	34	34

Main view

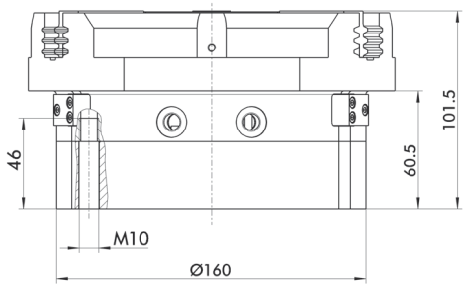




The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

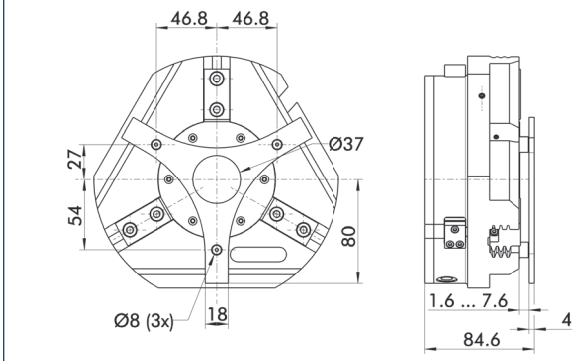
A, a Main/direct connection, gripper opening
B, b Main/direct connection, gripper closing
S Air purge connection
(1) Gripper connection
(2) Finger connection
(24) Bolt circle
(28) Through-bore
(80) Depth of the centering sleeve hole in the matching part

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.

Spring-loaded pressure piece

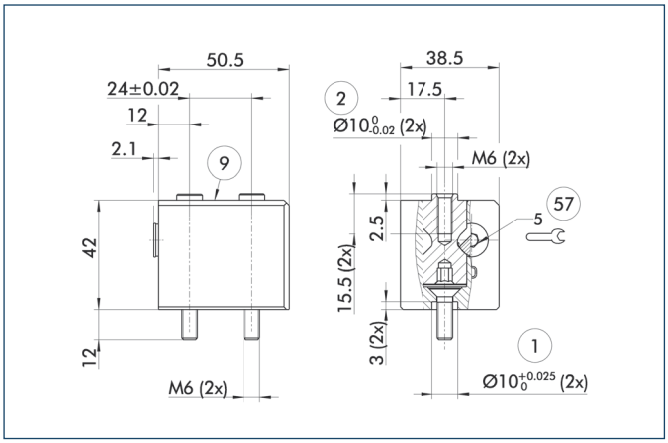


For spring-supported positioning of the workpiece against a stop after the gripper has opened. Especially developed for loading machines.

Description	ID	Stroke	Min. force
Spring-loaded pressure piece			
A-PZB-plus 160	**0305196**	6 mm	105 N

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

Quick-change Jaw System

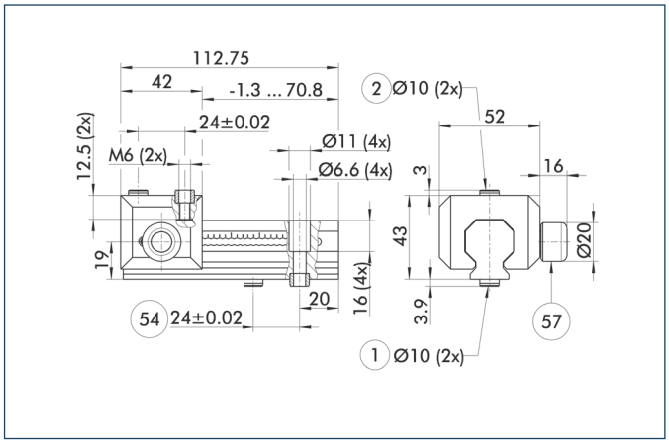


① Gripper connection
② Finger connection
⑨ For mounting screw connection diagram, see basic version
㊼ Locking

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 125	**0303028**
Quick-change Jaw System base	
BSWS-B 125	**0303029**
Quick-change Jaw System reversed	
BSWS-U 125	**0303044**

Universal intermediate jaw



① Gripper connection
② Finger connection
㊹ Optional right or left connection
㊼ Locking

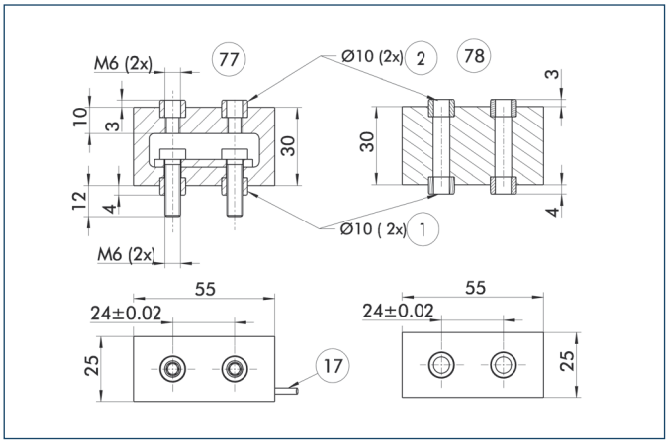
The universal intermediate jaw allows fast tool-free and reliable plugging and shifting of top jaws at the gripper.

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.

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

Force measuring jaws

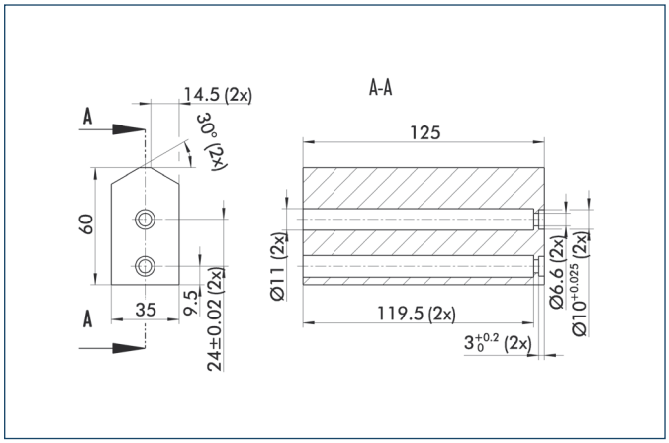


① Gripper connection
② Finger connection
⑰ Cable outlet
⑦⑦ Active intermediate jaws
⑦⑧ Passive intermediate jaws

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 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

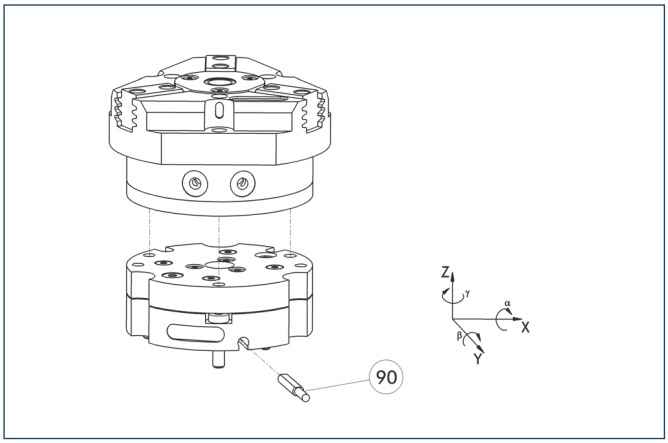


Finger blanks for customized subsequent machining

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

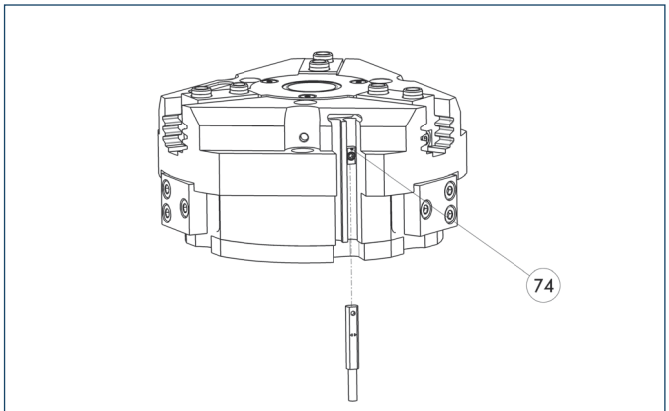


(90) Monitoring of locking

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-160-3-MV-Z	**0324838**	Yes	
TCU-160-3-OV-Z	**0324839**	No	

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.

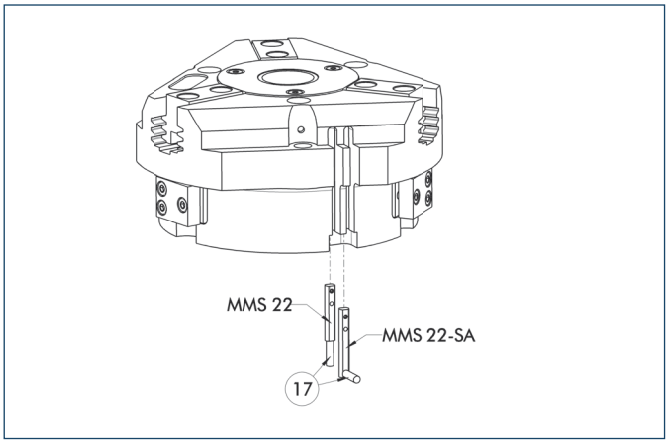
Description	ID	Recommended product
Programmable magnetic switch		
MMS-P 22-S-M8-PNP	**0301370**	•
MMSK-P 22-S-PNP	**0301371**	
Connection cables		
KA BG08-L 4P-0500	**0307767**	
KA BG08-L 4P-1000	**0307768**	
KA BW08-L 4P-0500	**0307765**	
KA BW08-L 4P-1000	**0307766**	
Sensor Distributor		
V2-M8-4P-2XM8-3P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



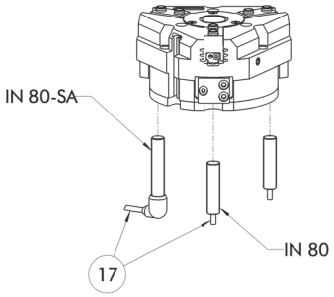
⑰ Cable outlet

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**	

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

Inductive proximity switches



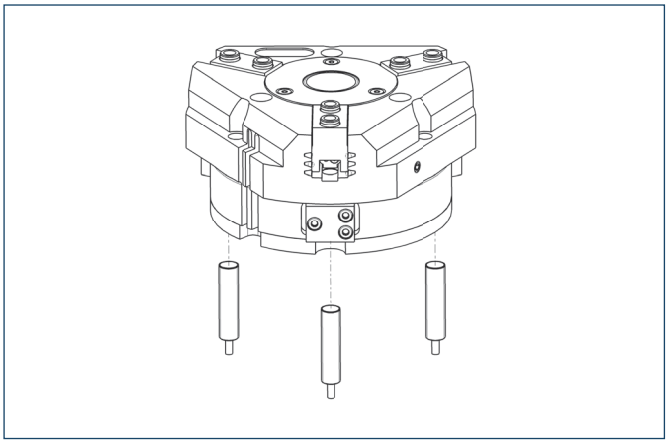
⑰ Cable outlet

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**	

ⓘ 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



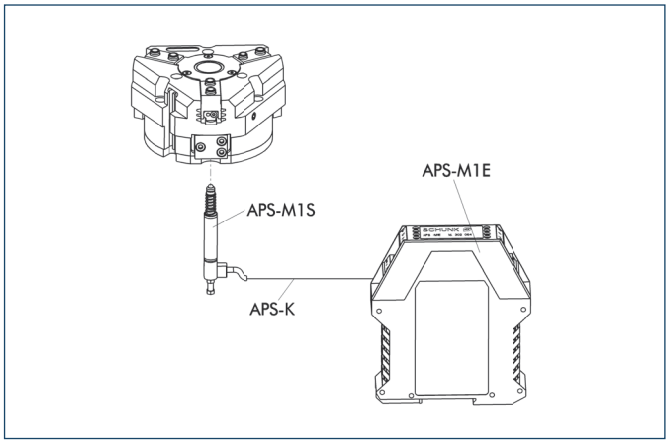
End position monitoring mounted with mounting kit

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

ⓘ 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

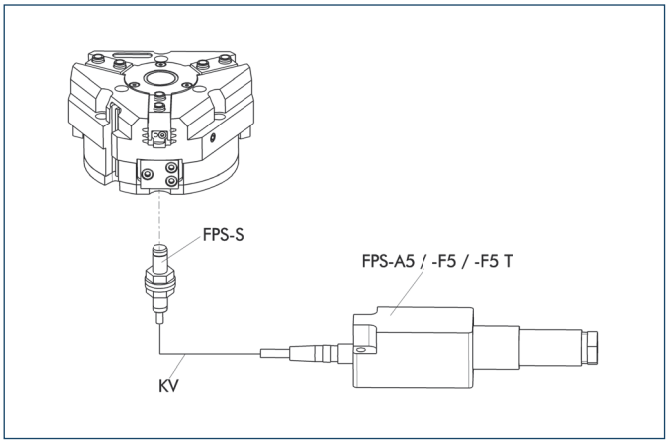
Description	ID
Mounting kit	
AS-APS-M1-125/1	**0302081**
Connection cables	
APS-K0200	**0302066**
APS-K0700	**0302068**
Electronic Processor	
APS-M1E	**0302064**
Sensor	
APS-M1S	**0302062**

ⓘ 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**
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.

DPZ-plus

Pneumatic • 3-Finger Centric Gripper • Sealed Gripper

Sizes
40 ... 200

Weight
0.2 kg ... 20.1 kg

Gripping force
230 N ... 16500 N

Stroke per finger
2 mm ... 25 mm

Workpiece weight
1.15 kg ... 60 kg

Application example

Insertion tool for assembly of small to medium-sized workpieces. The tool can be used in both clean and dirty environments. Thanks to its quick-change system, other tools can alternately be fixed to the robot flange.

1. 3-Finger Centric Gripper DPZ-plus
2. Insertion Unit FUS
3. SWS Quick-change System

Sealed Gripper

Despite the high moment load of the base jaws, this sealed 3-finger concentric gripper satisfies the requirements of IP67 and does not permit any substances from the working environment to penetrate the interior of the component.

Field of application

The DPZ-plus is ideally suitable for handling of rough or dirty workpieces. Its field of application extends from the loading and unloading of machines, such as in the case of sanitary blocks, grinding machines, lathes or milling machines, to handling tasks in painting plants, in powder-processing or underwater.

Your advantages and benefits

Robust interior multi-tooth guidance
for the precise handling of all kinds of workpieces

Lip seal at the outside round guidance
for permanent, secure gripper sealing

High maximum moments possible
suitable for using long gripper fingers

Sealed 3-Finger Concentric Gripper
complies to IP67 requirements despite a high moment load

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

Maximum gripping forces despite a compact design
for a wide range of applications

Air supply via hose-free direct connection or screw connections
for the flexible supply of compressed air in all automation systems

Compact dimensions
for minimal interfering contours in handling

General note to the series

Principle of function
Wedge-hook kinematics

Housing material
Aluminum alloy, hard-anodized

Base jaw material
Steel

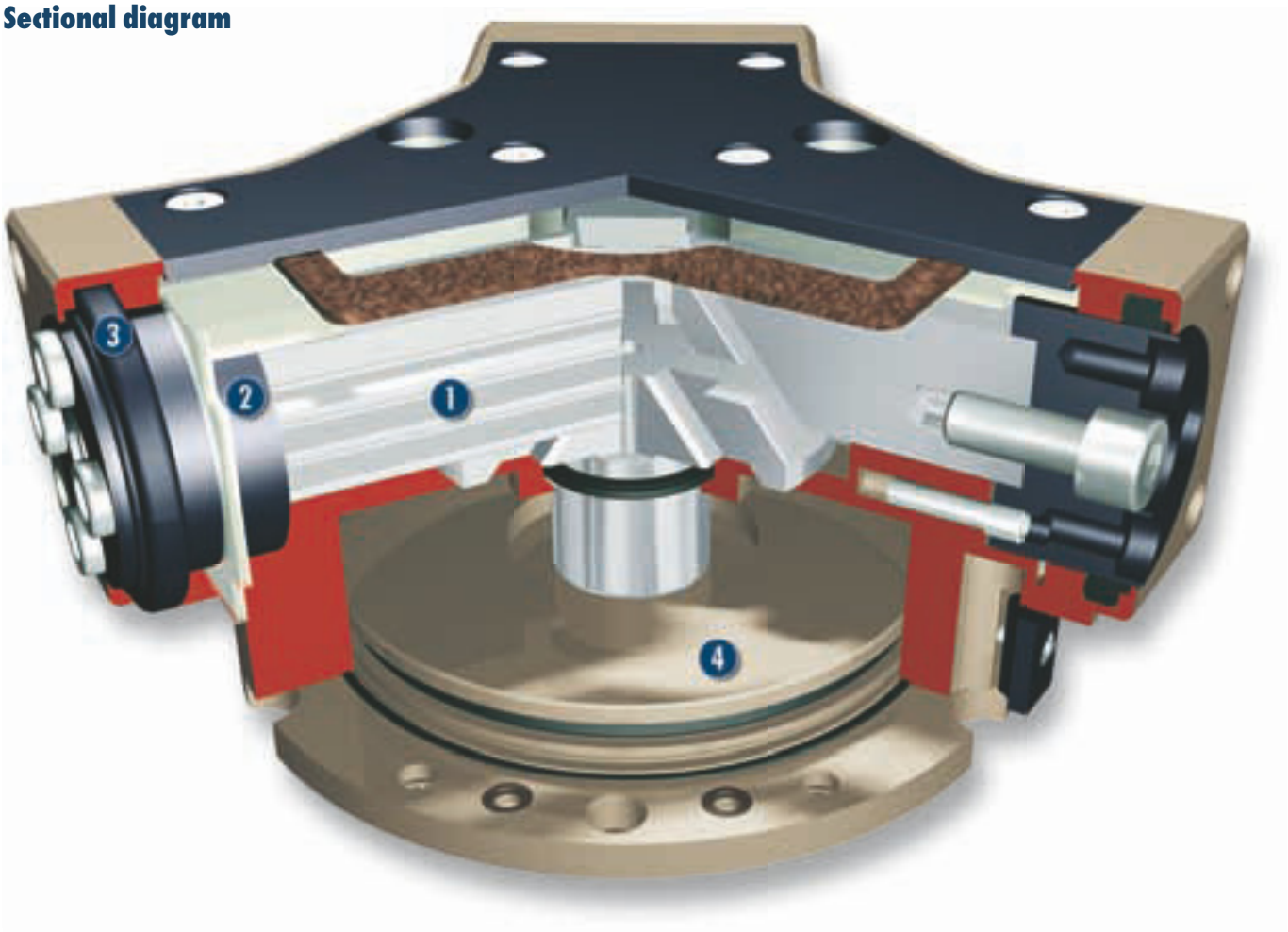
Actuation
pneumatic, with filtered compressed air (10 microns): dry, lubricated or non-lubricated
Pressure medium: Required quality class of compressed air according to DIN ISO 8573-1: 6 4 4

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

Scope of delivery
Centering sleeves, centering pins, 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 **Inner base jaw with multi-tooth guidance**
for high moment loads

2 **External round base jaw**
providing a sealable, round surface

3 **Lip seal**
for permanent, secure gripper sealing

4 **Round piston with rod and wedge hook**
for power generation

Functional description

The piston is moved up and down by 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

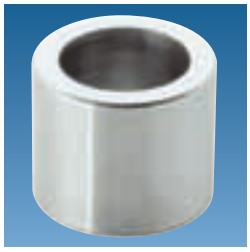
Please note that an additional hose for deaeration or air purge is essential for the gripper, i.e. it requires three hoses in total. See the assembly and operating manual for detailed information.

Force intensified version
if higher gripping forces are required

Accessories

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

Centering sleeves



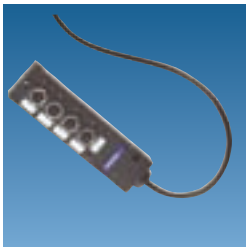
Fittings

Sensor system

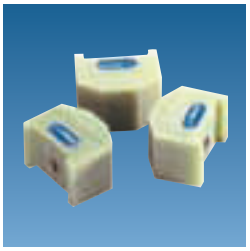
Sensor cables

Quick-change Jaw System

Sensor Distributor

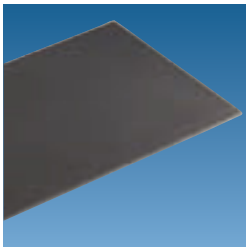


Plastic inserts



Pressure maintenance valve

Gripper pads



Finger blanks

Universal intermediate jaw

Compensation unit

Tolerance compensation unit

ⓘ 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.

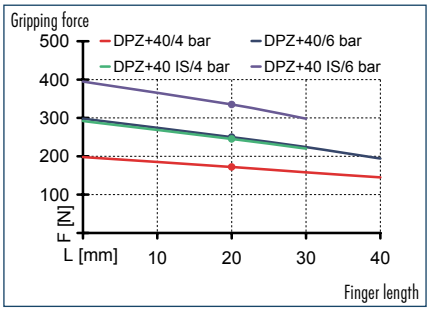
Workpiece weight
The recommended workpiece weight is calculated for a force-type connection with a coefficient of friction of 0.1 and a safety factor of 2 against slippage of the workpiece on acceleration due to gravity g. Considerably heavier workpiece weights are permitted with form-fit gripping.

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.

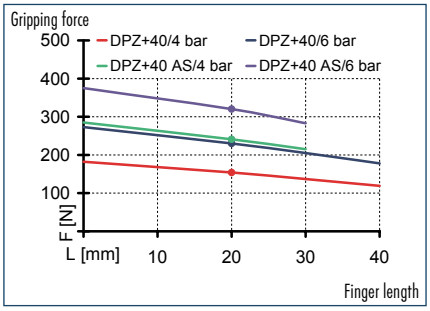
DPZ-plus 40

Pneumatic • 3-Finger Centric Gripper • Sealed Gripper

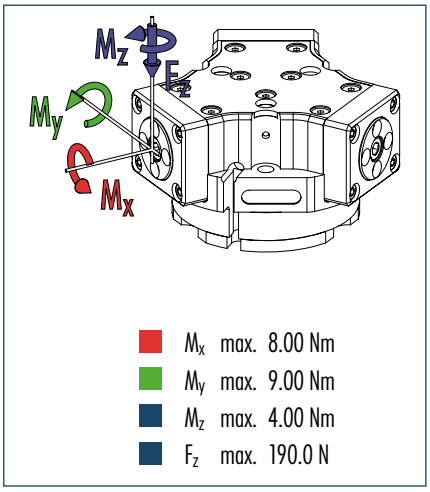
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

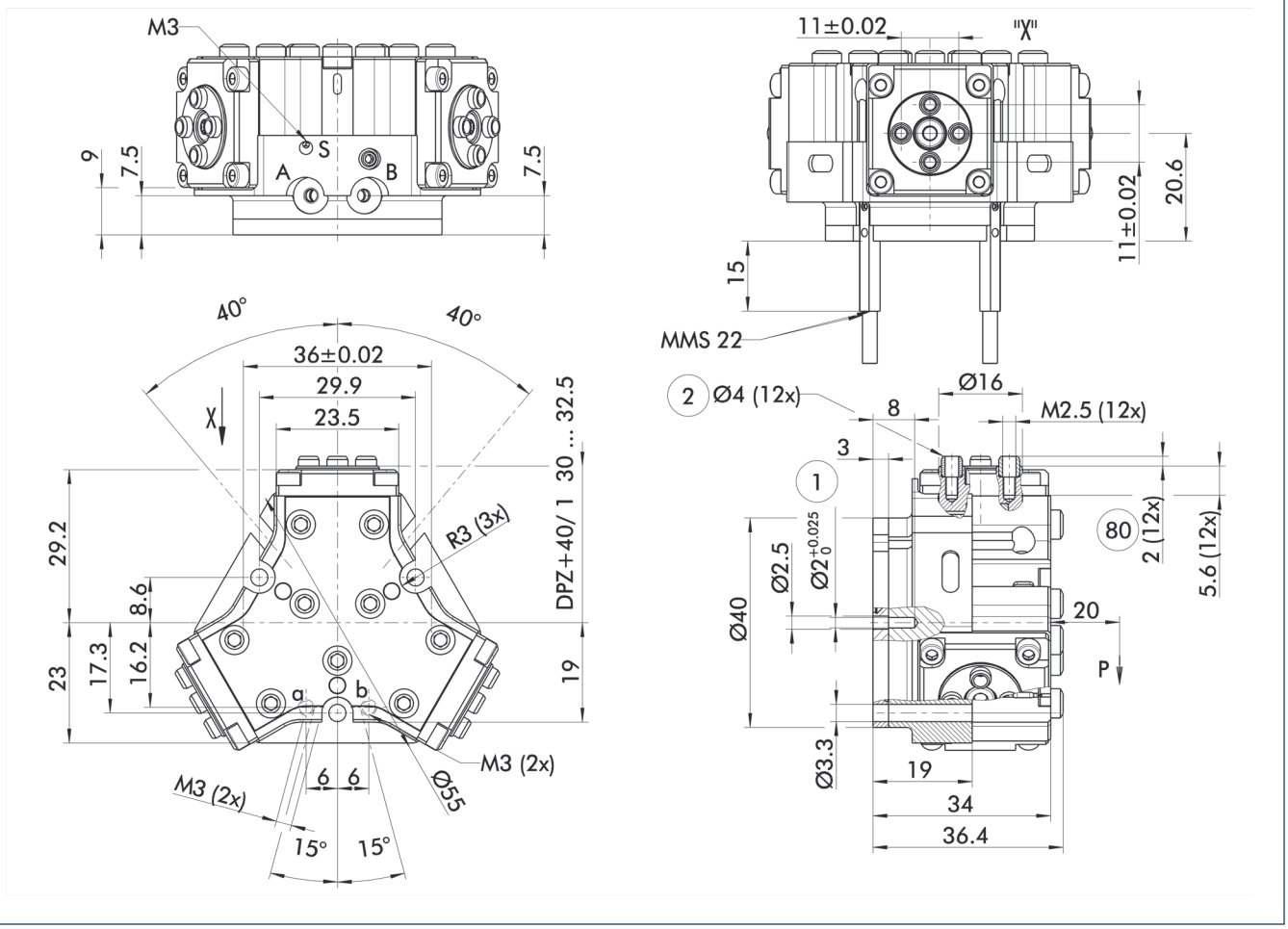


ⓘ The indicated moments and forces are static values, apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement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

Technical data

Description		DPZ-plus 40	DPZ-plus 40-AS	DPZ-plus 40-IS
ID		**0304501**	**0304503**	**0304505**
Stroke per finger	[mm]	2.5	2.5	2.5
Closing force	[N]	230	320	
Opening force	[N]	250		355
Min. spring force	[N]		90	105
Weight	[kg]	0.2	0.25	0.25
Recommended workpiece weight	[kg]	1.15	1.15	1.15
Air consumption per double stroke	[cm^3]	5	9	9
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]	0.03/0.03	0.03/0.05	0.03/0.05
Max. permitted finger length	[mm]	40	30	30
Max. permitted weight per finger	[kg]	0.1	0.1	0.1
IP class		67	67	67
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

Main view

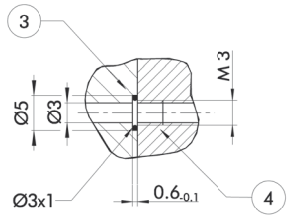


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ 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

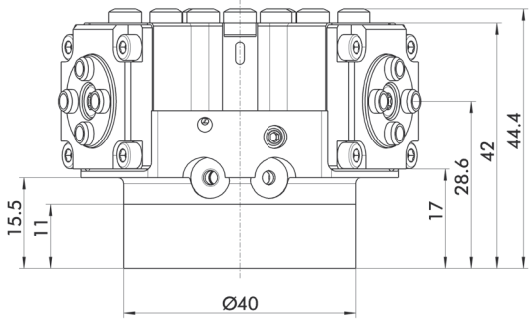
Hose-free direct connection



③ Adapter
④ Gripper

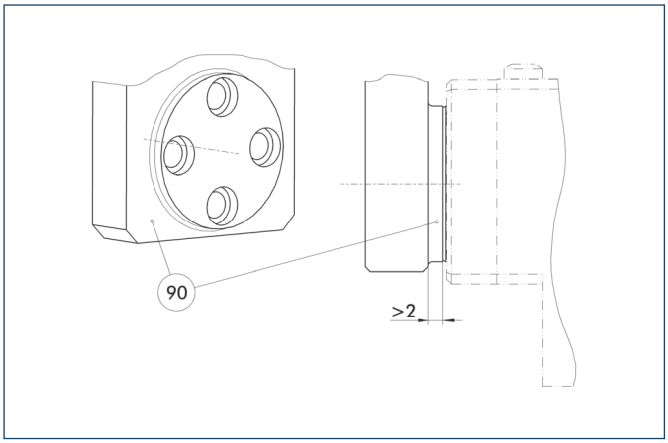
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

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.

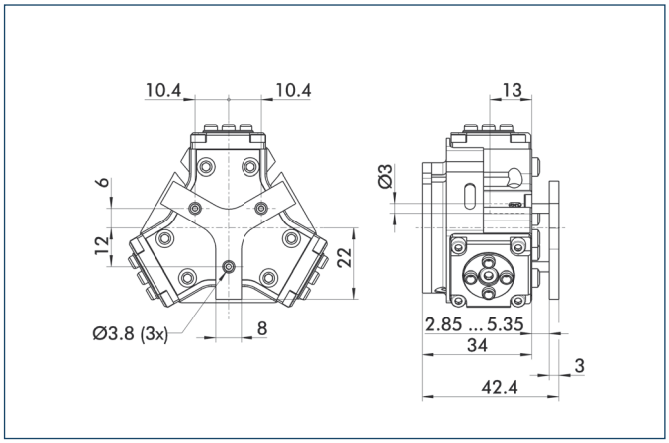
Proposed jaw design



(90) Step

In order to avoid impairment of the stroke due to contamination or chips, there should be a sufficient distance between the top jaws and the gripper.

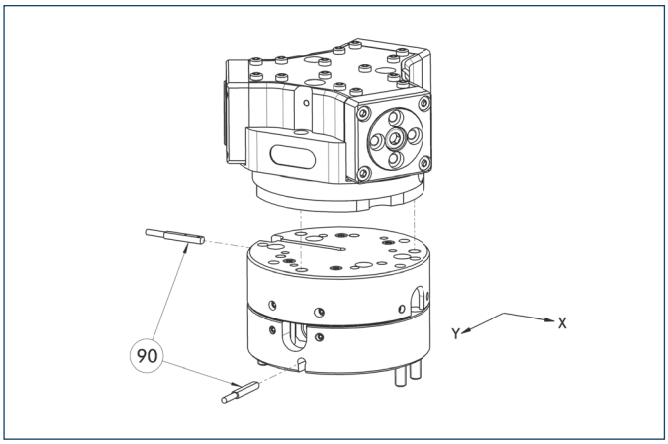
Spring-loaded pressure piece



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

Description	ID	Stroke	Min. force
Spring-loaded pressure piece			
A-DPZ-plus 40	**0303730**	2.5 mm	11 N

Compensation unit with spring reset

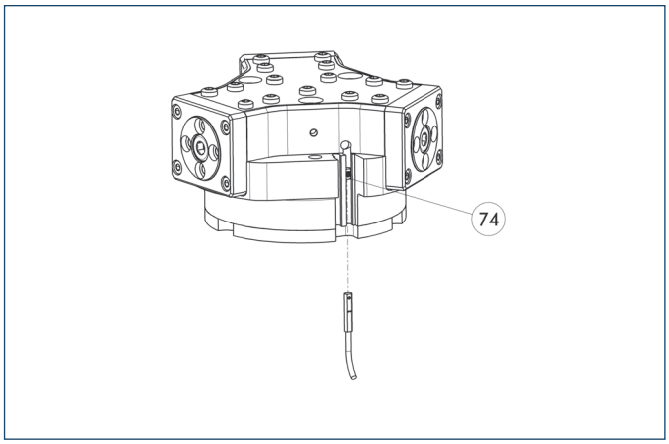


(90) Monitoring

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

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.

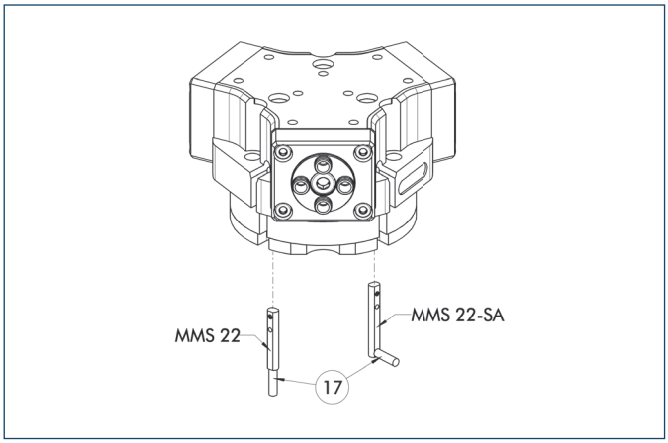
Description	ID	Recommended product
Programmable magnetic switch		
MMS-P 22-S-M8-PNP	**0301370**	•
MMSK-P 22-S-PNP	**0301371**	
Connection cables		
KA BG08-L 4P-0500	**0307767**	
KA BG08-L 4P-1000	**0307768**	
KA BW08-L 4P-0500	**0307765**	
KA BW08-L 4P-1000	**0307766**	
Sensor Distributor		
V2-M8-4P-2XM8-3P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

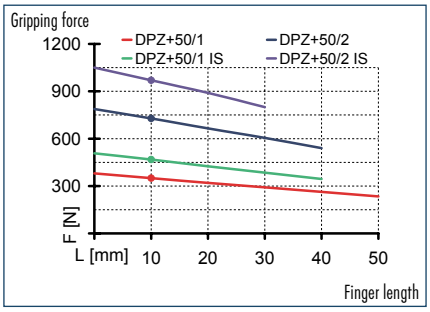
ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

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

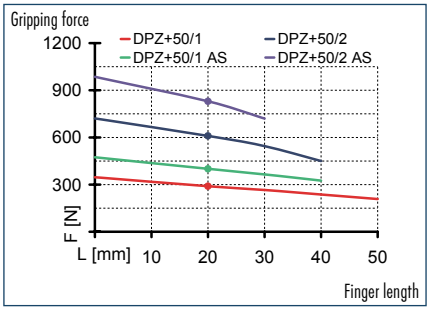
DPZ-plus 50

Pneumatic • 3-Finger Centric Gripper • Sealed Gripper

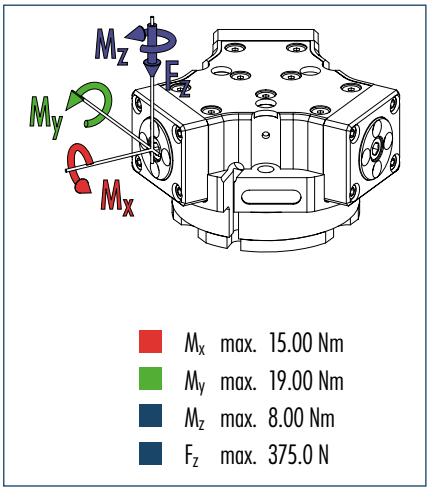
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

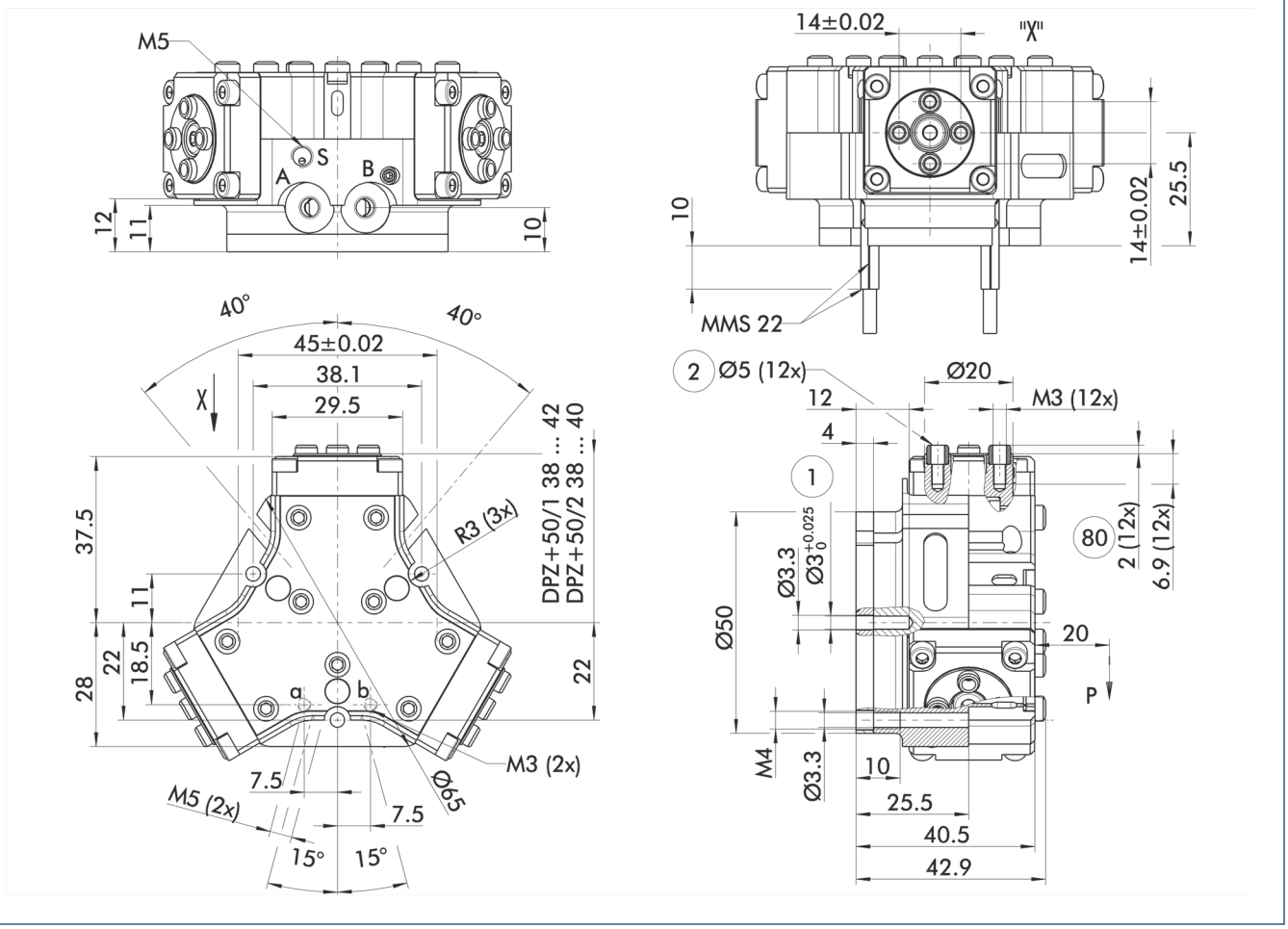


ⓘ The indicated moments and forces are static values, apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement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

Technical data

Description		DPZ-plus 50-1	DPZ-plus 50-2	DPZ-plus 50-1-AS	DPZ-plus 50-2-AS	DPZ-plus 50-1-IS	DPZ-plus 50-2-IS
ID		**0304401**	**0304402**	**0304403**	**0304404**	**0304405**	**0304406**
Stroke per finger	[mm]	4	2	4	2	4	2
Closing force	[N]	290	610	400	830		
Opening force	[N]	320	665			455	945
Min. spring force	[N]			110	220	135	280
Weight	[kg]	0.37	0.37	0.45	0.45	0.45	0.45
Recommended workpiece weight	[kg]	1.45	3.06	1.45	3.06	1.45	3.06
Air consumption per double stroke	[cm³]	9	9	18	18	18	18
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	0.03/0.05	0.03/0.05	0.05/0.03	0.05/0.03
Max. permitted finger length	[mm]	50	40	40	30	40	30
Max. permitted weight per finger	[kg]	0.15	0.15	0.15	0.15	0.15	0.15
IP class		67	67	67	67	67	67
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

Main view

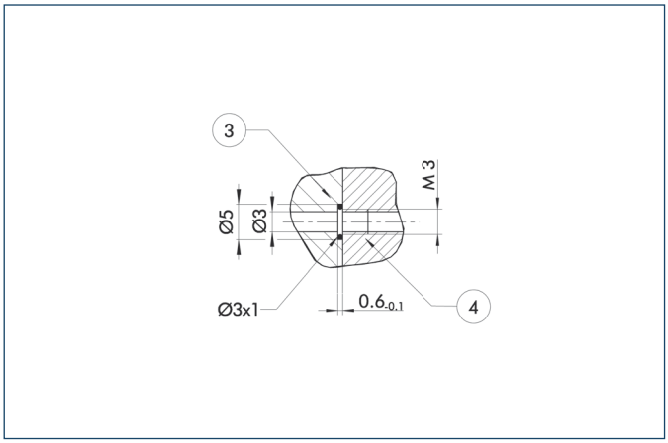


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ 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

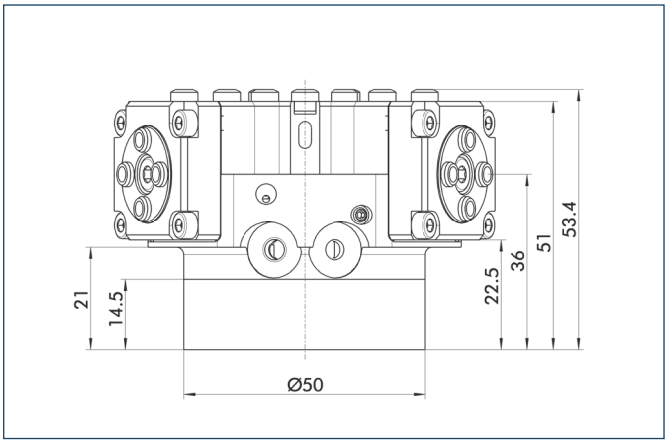
Hose-free direct connection



③ Adapter
④ Gripper

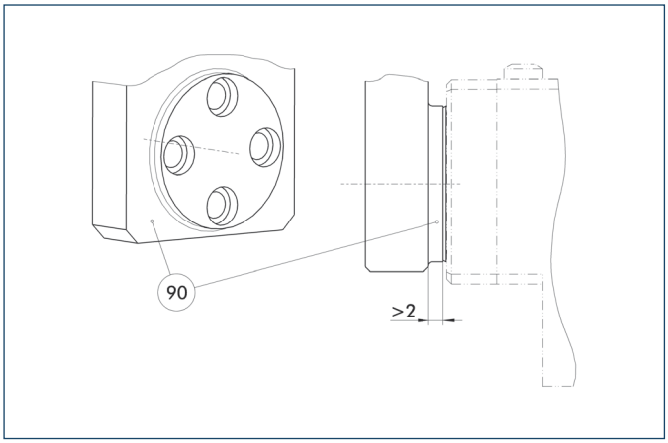
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

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.

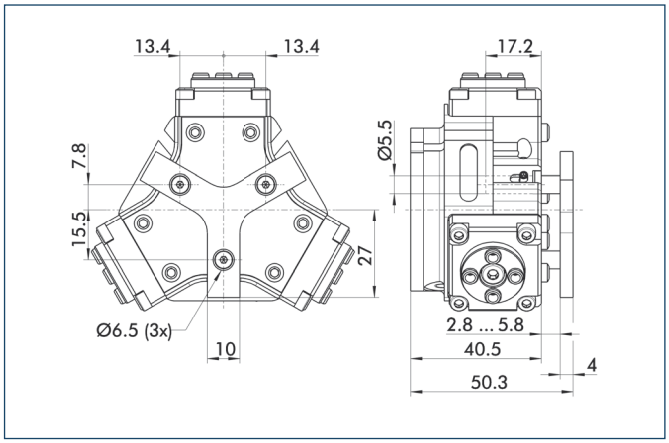
Proposed jaw design



(90) Step

In order to avoid impairment of the stroke due to contamination or chips, there should be a sufficient distance between the top jaws and the gripper.

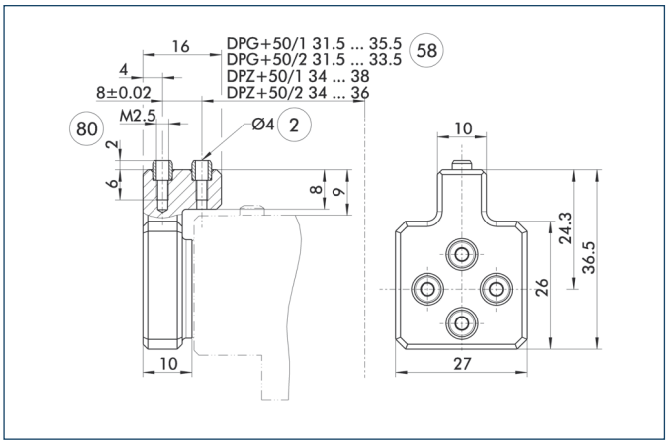
Spring-loaded pressure piece



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

Description	ID	Stroke	Min. force
Spring-loaded pressure piece			
A-DPZ-plus 50	**0303731**	3 mm	18 N

Intermediate Jaws

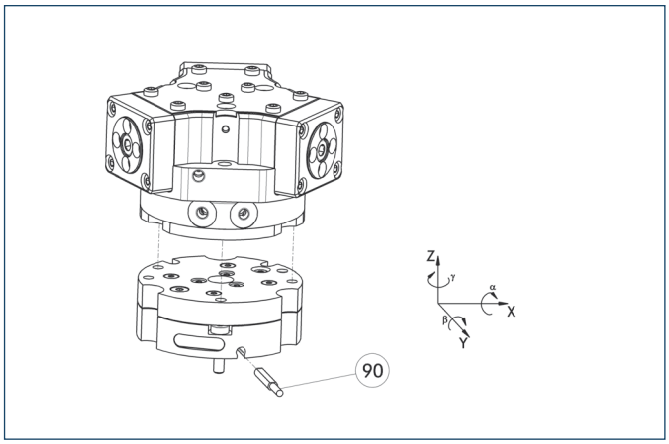


(2) Finger connection
(58) Distance from center of gripper
(80) Depth of the centering sleeve hole in the matching part

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

Description	ID	Material	Scope of delivery
Intermediate Jaws			
ZBA-DPG-DPZ+50	**0300191**	Aluminum	1

Tolerance compensation unit



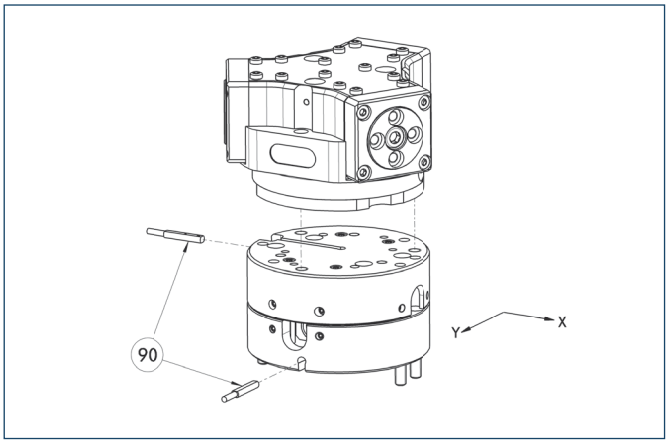
(90) Monitoring of locking

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-Z	**0324749**	No	

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

Compensation unit with spring reset

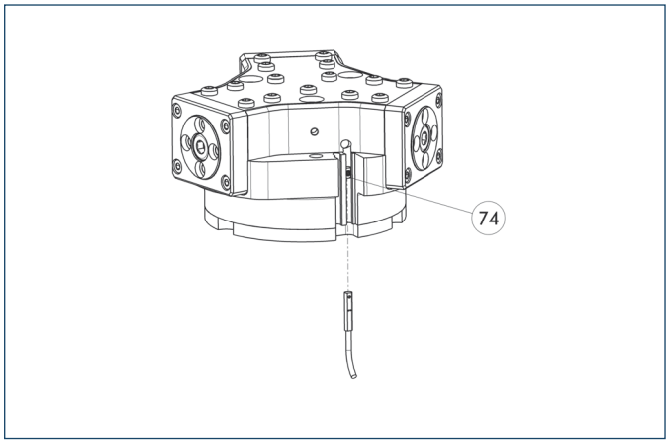


(90) Monitoring

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

Programmable magnetic switch



(74) Stop for MMS-P

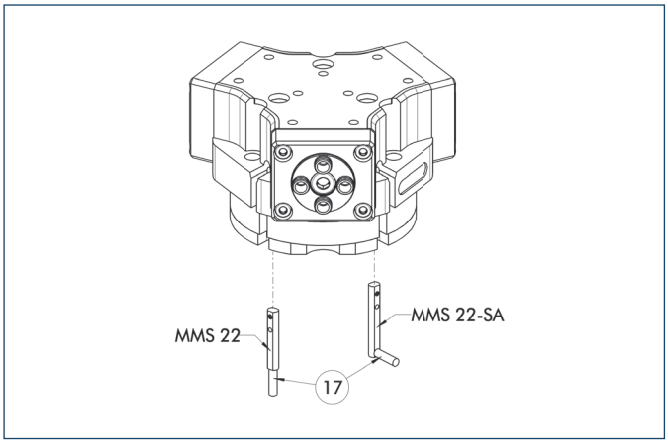
Position monitoring with two programmable positions per sensor. The end position monitoring is mounted in the C-slot.

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

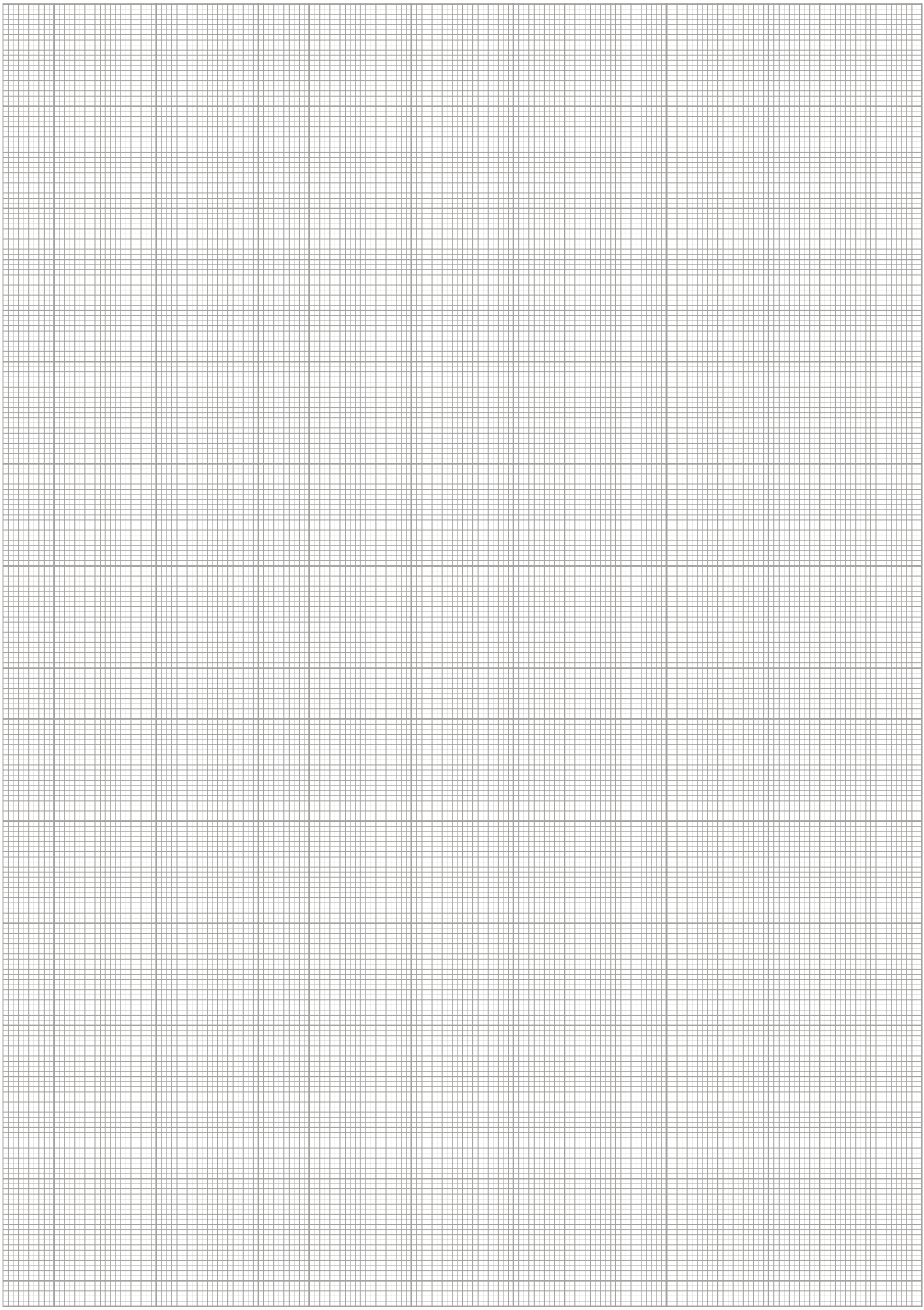
End position monitoring for mounting in the C-slot

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.

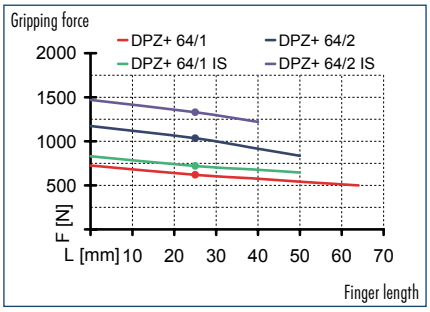
You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.



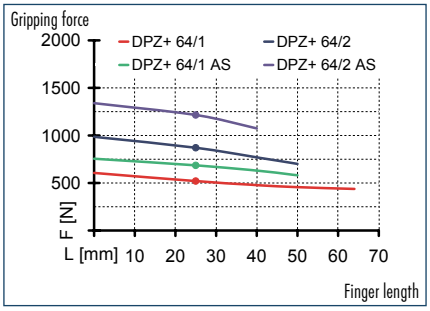
DPZ-plus 64

Pneumatic • 3-Finger Centric Gripper • Sealed Gripper

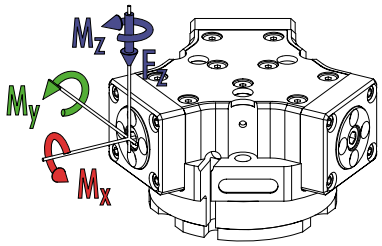
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load



- M_x max. 30.00 Nm
- M_y max. 45.00 Nm
- M_z max. 30.00 Nm
- F_z max. 825.0 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.

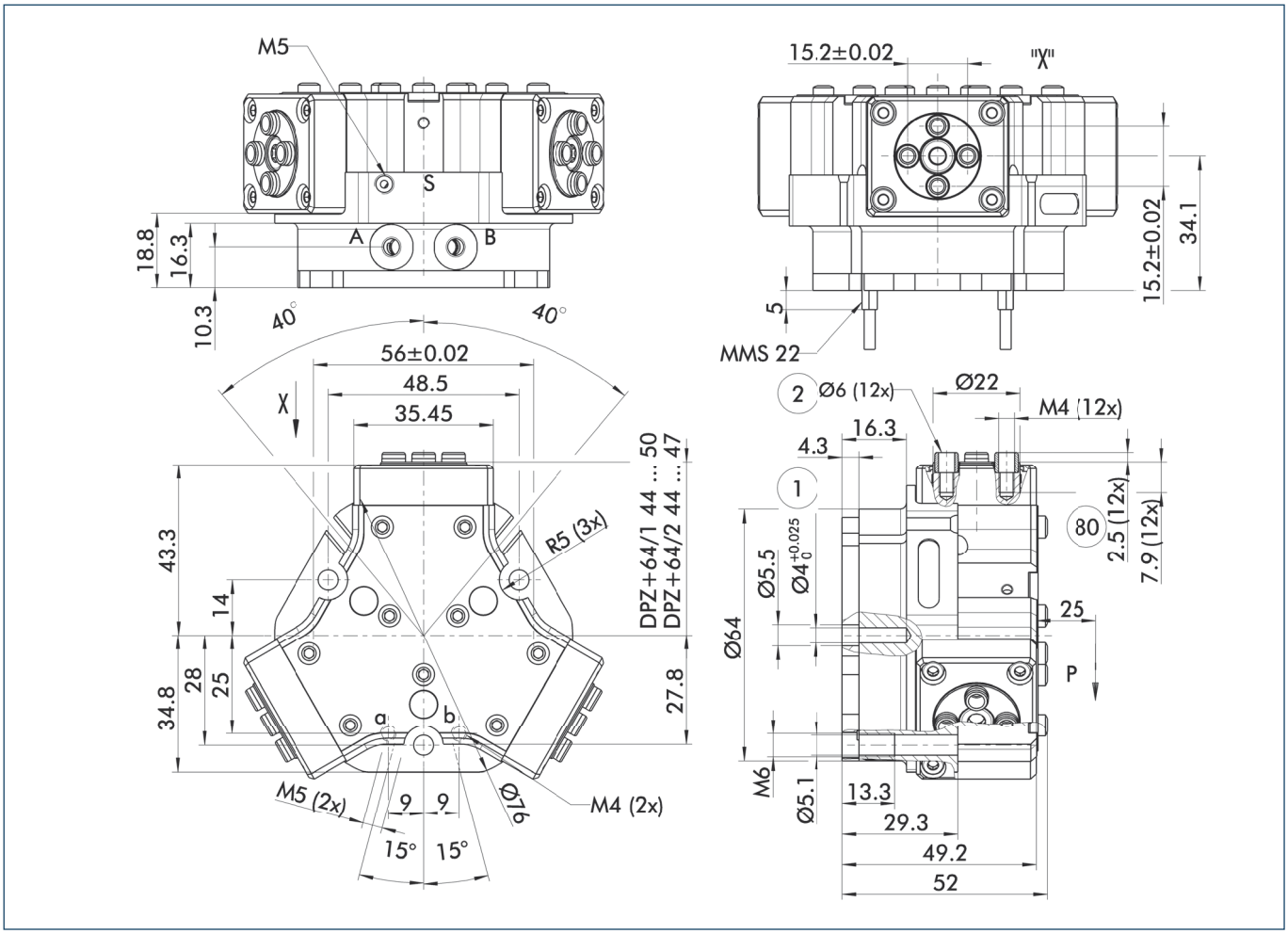
Technical data

Description		DPZ-plus 64-1	DPZ-plus 64-2	DPZ-plus 64-1-AS	DPZ-plus 64-2-AS	DPZ-plus 64-1-IS	DPZ-plus 64-2-IS
ID		**0304411**	**0304412**	**0304413**	**0304414**	**0304415**	**0304416**
Stroke per finger	[mm]	6	3	6	3	6	3
Closing force	[N]	520	870	685	1215		
Opening force	[N]	620	1030			820	1490
Min. spring force	[N]			165	345	200	460
Weight	[kg]	0.62	0.62	0.75	0.75	0.75	0.75
Recommended workpiece weight	[kg]	2.6	4.35	2.6	4.35	2.6	4.35
Air consumption per double stroke	[cm³]	25	25	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]	0.04/0.04	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]	64	50	50	40	50	40
Max. permitted weight per finger	[kg]	0.3	0.3	0.3	0.3	0.3	0.3
IP class		67	67	67	67	67	67
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

Force intensified version		DPZ-plus 64-1-KVZ
ID		**0304417**
Closing force	[N]	935
Opening force	[N]	1040
Weight	[kg]	0.92
Maximum pressure	[bar]	6
Max. permitted finger length	[mm]	40

Main view

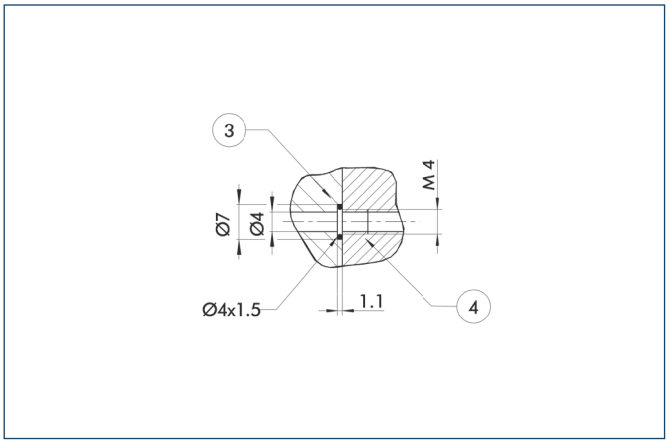


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ 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

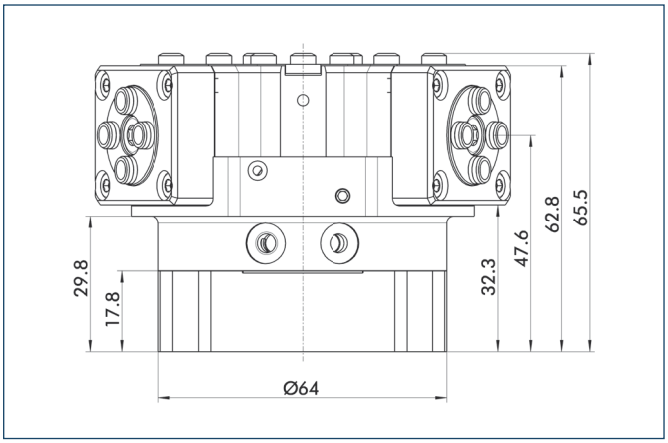
Hose-free direct connection



③ Adapter
④ Gripper

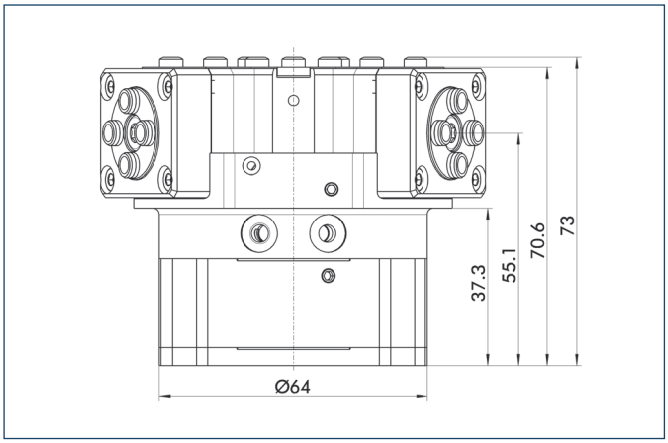
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

AS/IS gripping force maintenance device



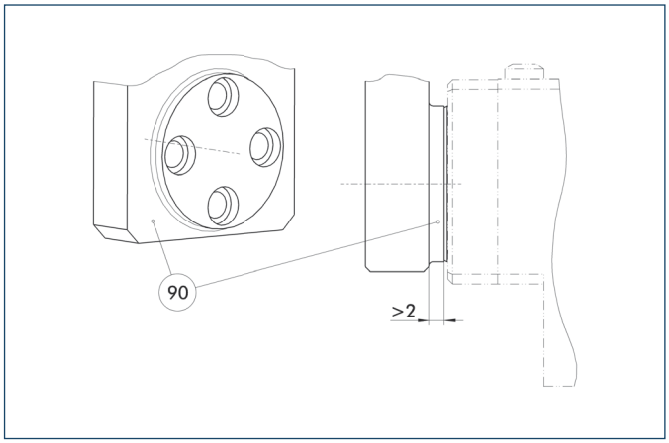
The mechanical gripping force maintenance device ensures a minimum gripping force even in case of pressure drop. This acts as closing force in the AS version, and as opening force in the IS version. In addition, the gripping force maintenance device can also be used for increasing the gripping force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

Force intensified 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.

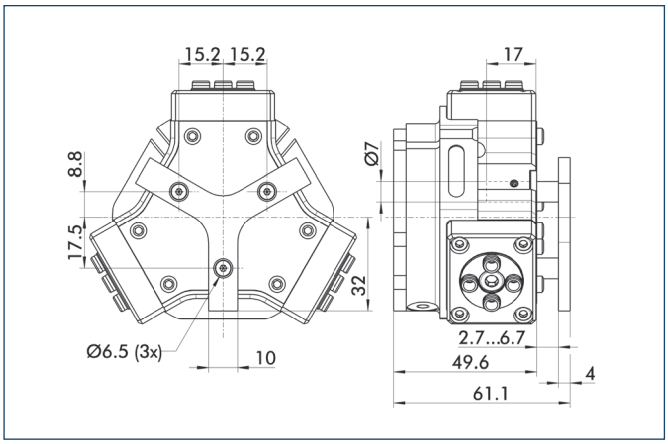
Proposed jaw design



(90) Step

In order to avoid impairment of the stroke due to contamination or chips, there should be a sufficient distance between the top jaws and the gripper.

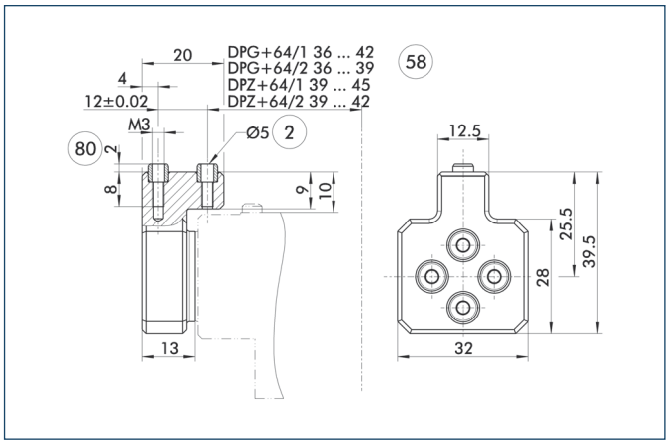
Spring-loaded pressure piece



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

Description	ID	Stroke	Min. force
Spring-loaded pressure piece			
A-PZN-plus/DPZ-plus 64	**0303720**	4 mm	11 N

Intermediate Jaws



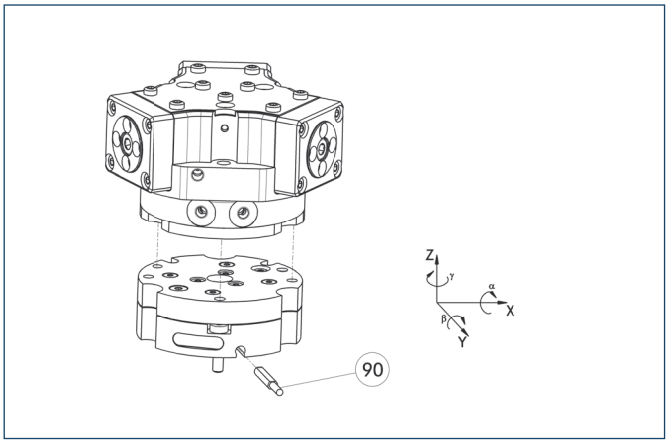
(2) Finger connection
(58) Distance from center of gripper
(80) Depth of the centering sleeve hole in the matching part

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

Description	ID	Material	Scope of delivery
Intermediate Jaws			
ZBA-DPG-DPZ+64	**0300192**	Aluminum	1

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

Tolerance compensation unit

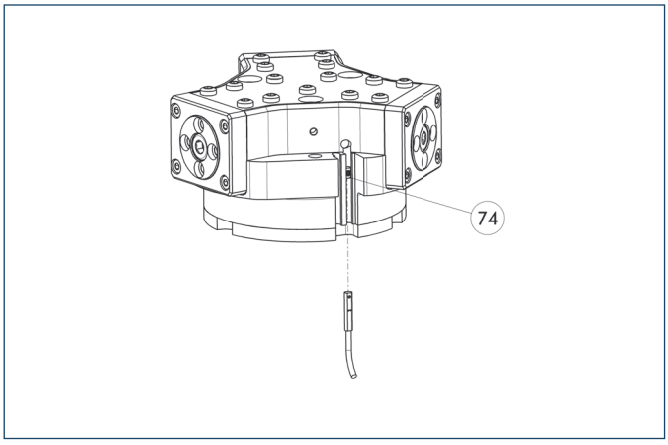


90 Monitoring of locking

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-Z	**0324766**	Yes	
TCU-064-3-OV-Z	**0324767**	No	

Programmable magnetic switch



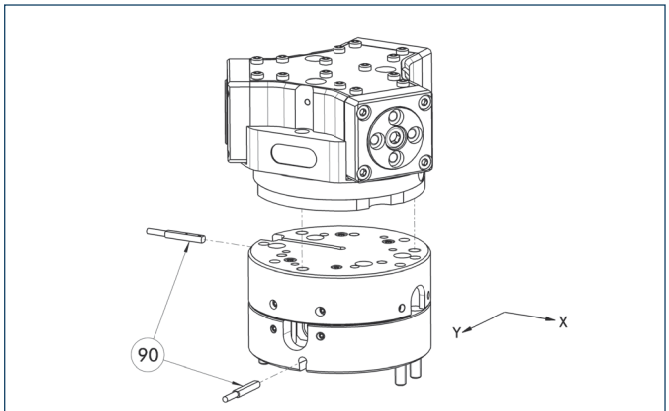
74 Stop for MMS-P

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.

Compensation unit with spring reset

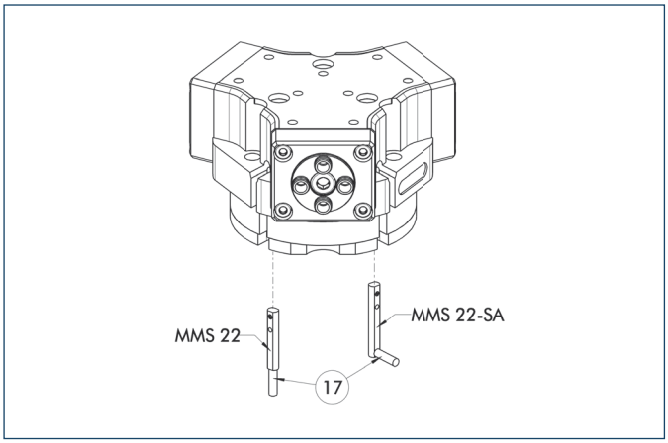


90 Monitoring

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

Electronic magnetic switches



⑰ Cable outlet

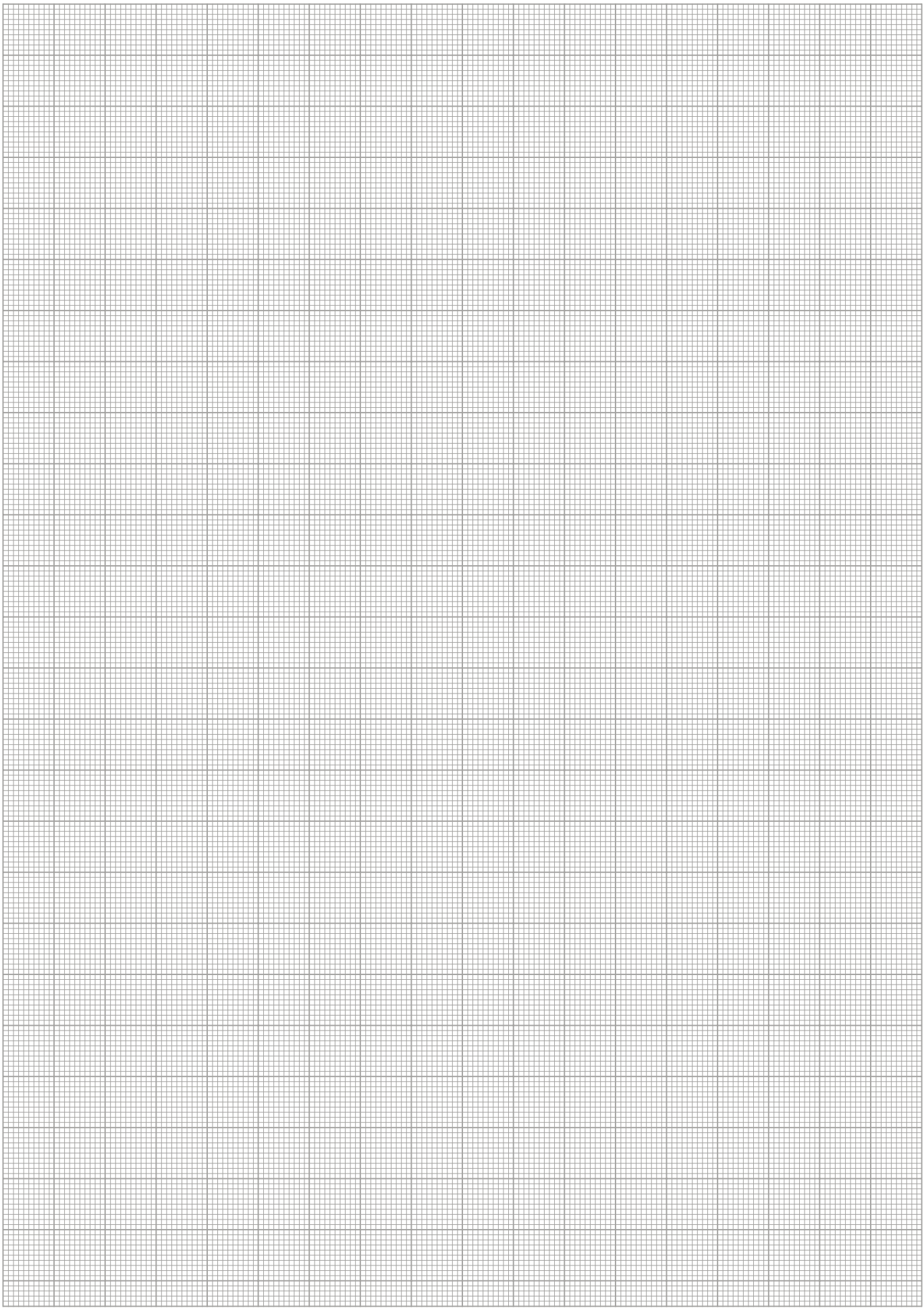
End position monitoring for mounting in the C-slot

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.

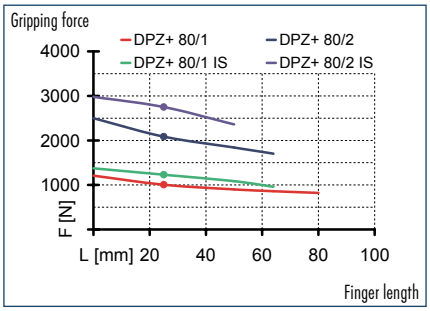
You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.



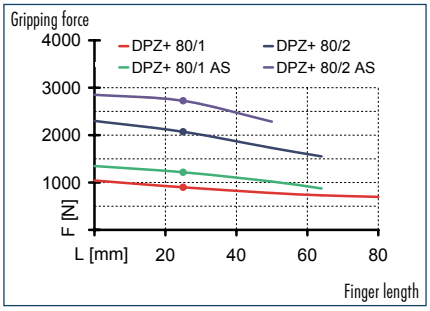
DPZ-plus 80

Pneumatic • 3-Finger Centric Gripper • Sealed Gripper

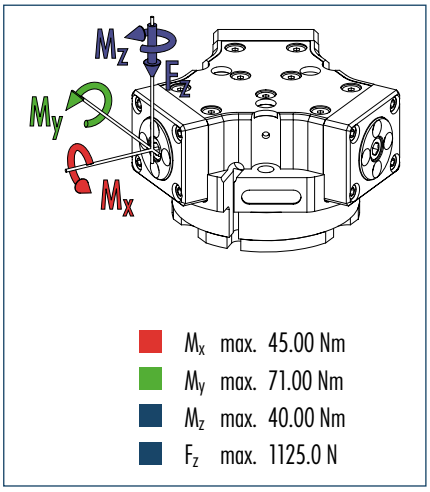
Gripping force, I.D. gripping



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.

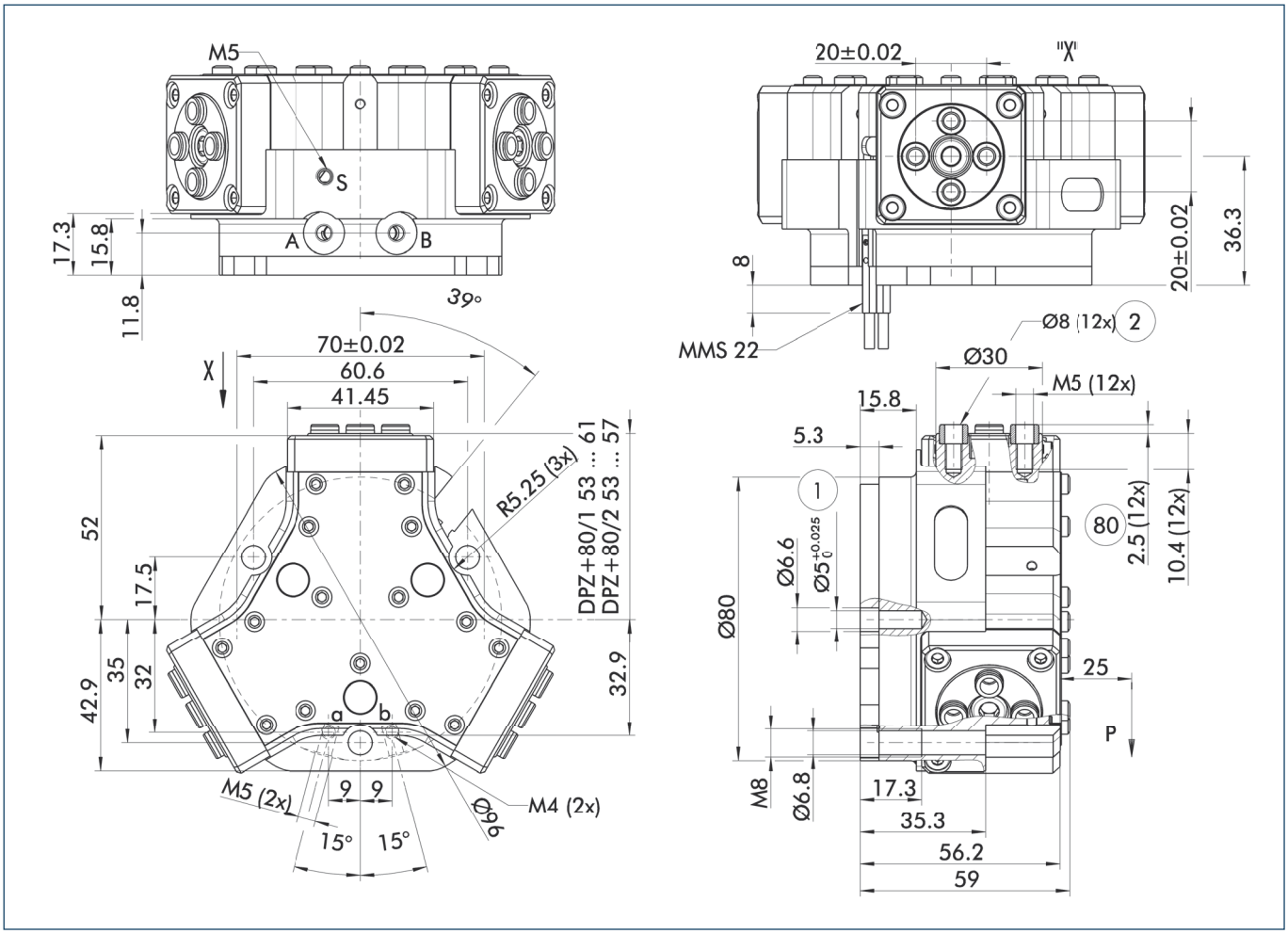
Technical data

Description		DPZ-plus 80-1	DPZ-plus 80-2	DPZ-plus 80-1-AS	DPZ-plus 80-2-AS	DPZ-plus 80-1-IS	DPZ-plus 80-2-IS
ID		**0304421**	**0304422**	**0304423**	**0304424**	**0304425**	**0304426**
Stroke per finger	[mm]	8	4	8	4	8	4
Closing force	[N]	900	2070	1215	2725		
Opening force	[N]	1000	2085			1330	2765
Min. spring force	[N]			315	655	330	680
Weight	[kg]	1.3	1.3	1.45	1.45	1.45	1.45
Recommended workpiece weight	[kg]	4.5	10.35	4.5	10.35	4.5	10.35
Air consumption per double stroke	[cm³]	60	60	108	108	108	108
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	0.05/0.08	0.05/0.08	0.08/0.05	0.08/0.05
Max. permitted finger length	[mm]	80	64	64	50	64	50
Max. permitted weight per finger	[kg]	0.5	0.5	0.5	0.5	0.5	0.5
IP class		67	67	67	67	67	67
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

Force intensified version		DPZ-plus 80-1-KVZ
ID		**0304427**
Closing force	[N]	1620
Opening force	[N]	1750
Weight	[kg]	1.6
Maximum pressure	[bar]	6
Max. permitted finger length	[mm]	50

Main view

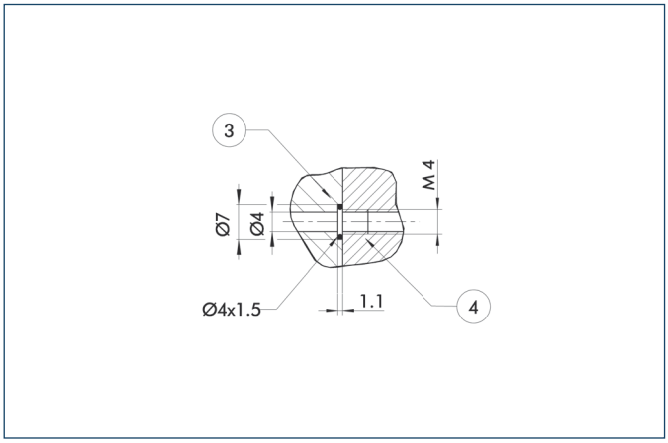


For finger connection, we recommend only to use two of the four centering bores for each finger. The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ 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

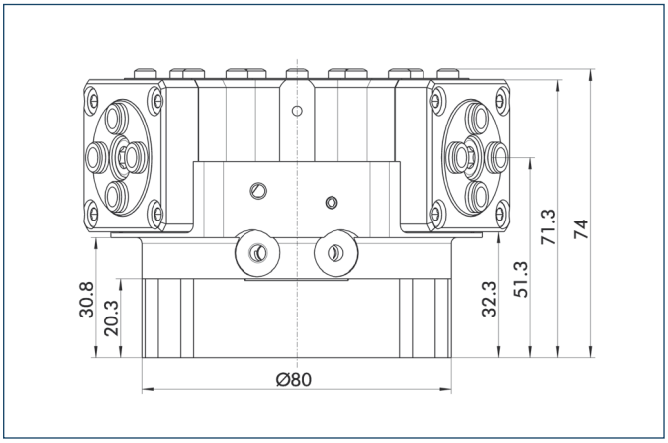
Hose-free direct connection



③ Adapter
④ Gripper

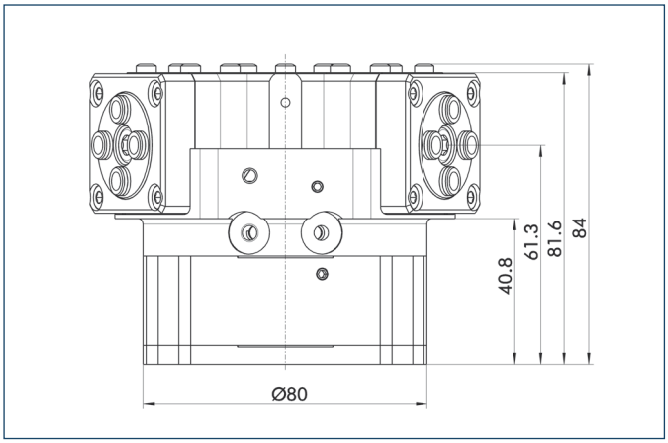
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

AS/IS gripping force maintenance device



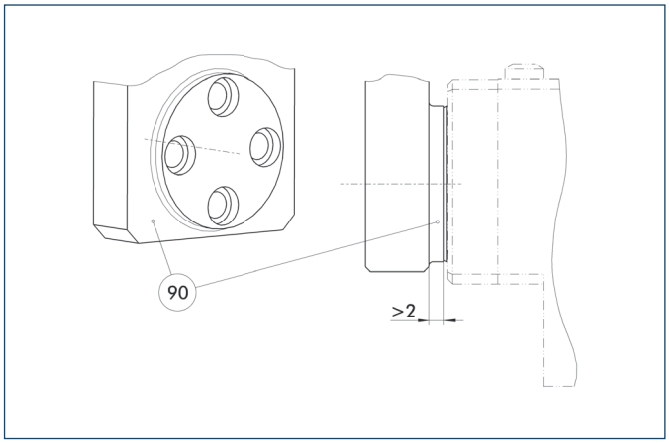
The mechanical gripping force maintenance device ensures a minimum gripping force even in case of pressure drop. This acts as closing force in the AS version, and as opening force in the IS version. In addition, the gripping force maintenance device can also be used for increasing the gripping force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

Force intensified 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.

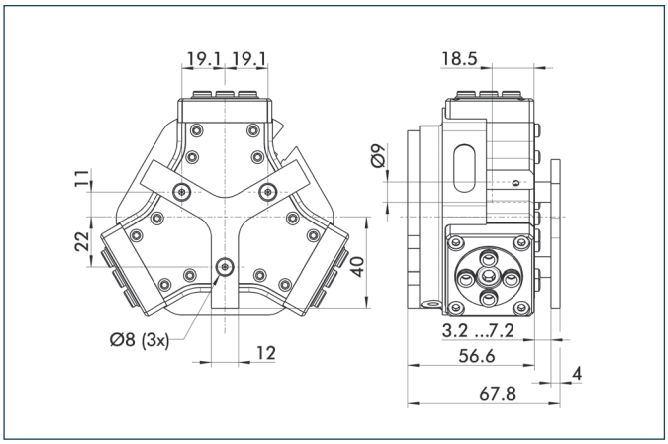
Proposed jaw design



(90) Step

In order to avoid impairment of the stroke due to contamination or chips, there should be a sufficient distance between the top jaws and the gripper.

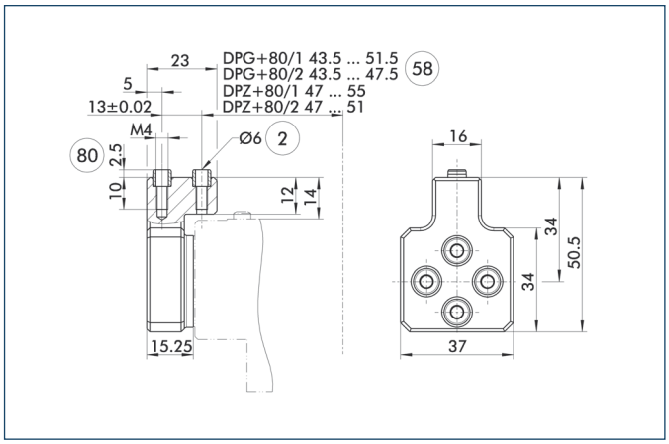
Spring-loaded pressure piece



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

Description	ID	Stroke	Min. force
Spring-loaded pressure piece			
A-PZN-plus/DPZ-plus 80	**0303721**	4 mm	18 N

Intermediate Jaws



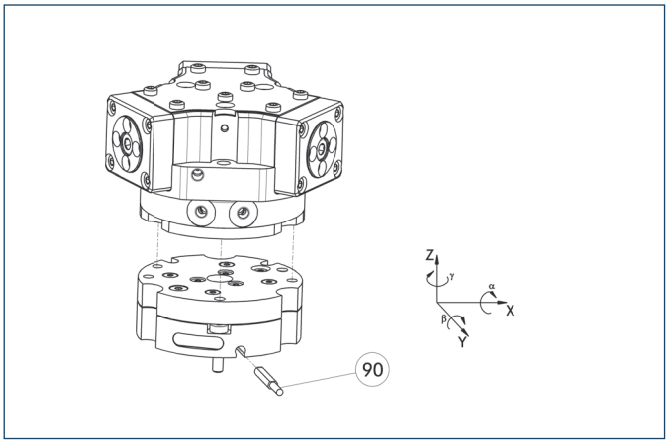
(2) Finger connection
(58) Distance from center of gripper
(80) Depth of the centering sleeve hole in the matching part

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

Description	ID	Material	Scope of delivery
Intermediate Jaws			
ZBA-DPG-DPZ+80	**0300193**	Aluminum	1

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

Tolerance compensation unit

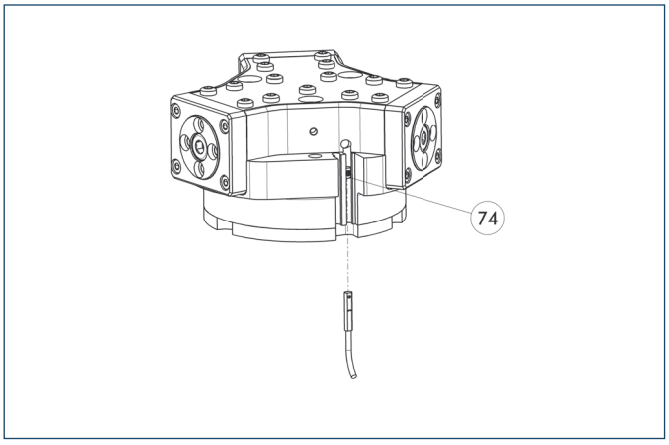


(90) Monitoring of locking

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-Z	**0324784**	Yes	
TCU-080-3-OV-Z	**0324785**	No	

Programmable magnetic switch



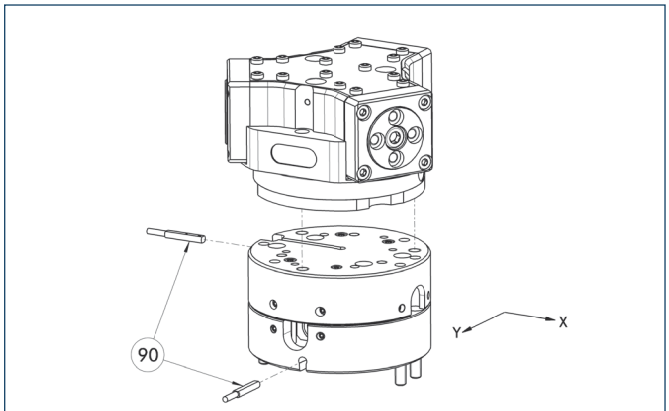
(74) Stop for MMS-P

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.

Compensation unit with spring reset

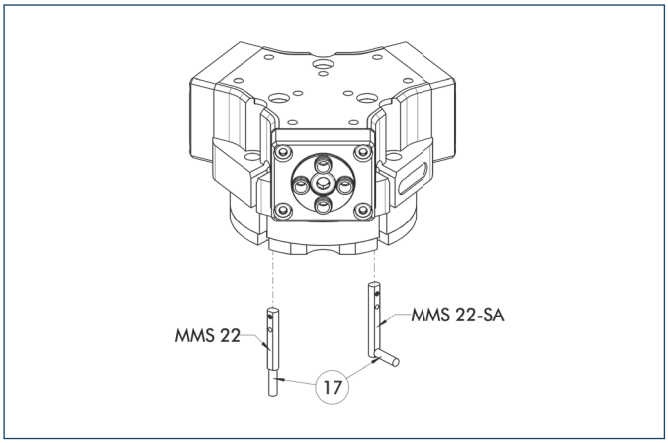


(90) Monitoring

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

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.

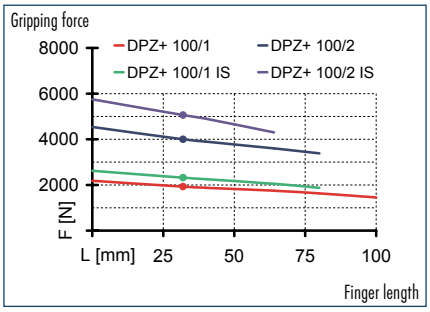
ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

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

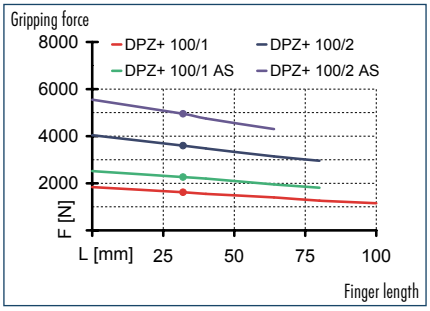
DPZ-plus 100

Pneumatic • 3-Finger Centric Gripper • Sealed Gripper

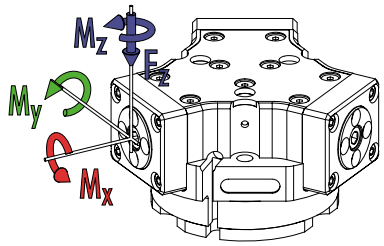
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load



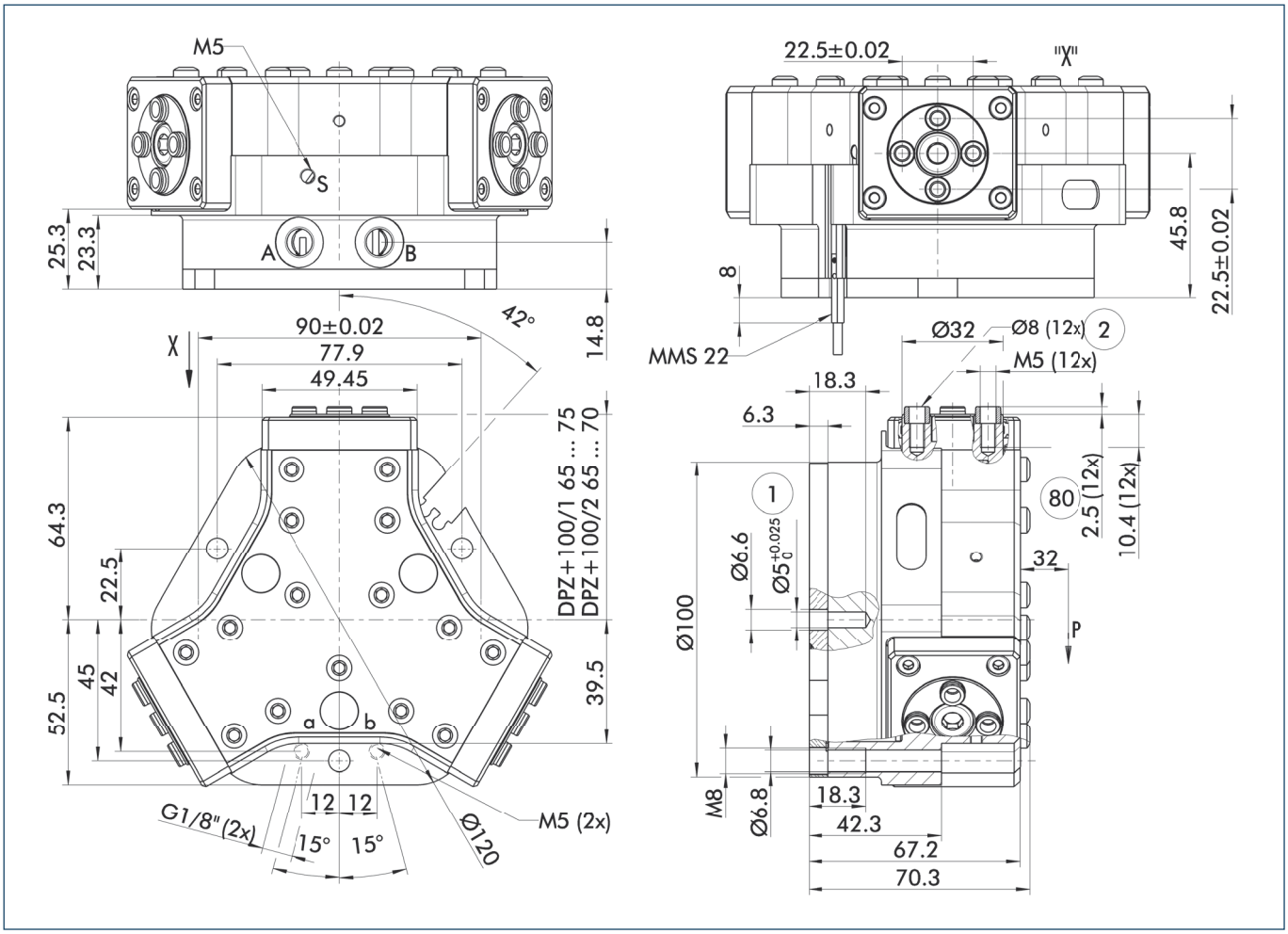
M_x	max. 60.00 Nm
M_y	max. 85.00 Nm
M_z	max. 53.00 Nm
F_z	max. 1500.0 N

ⓘ 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		DPZ-plus 100-1	DPZ-plus 100-2	DPZ-plus 100-1-AS	DPZ-plus 100-2-AS	DPZ-plus 100-1-IS	DPZ-plus 100-2-IS
ID		**0304431**	**0304432**	**0304433**	**0304434**	**0304435**	**0304436**
Stroke per finger	[mm]	10	5	10	5	10	5
Closing force	[N]	1620	3600	2265	4950		
Opening force	[N]	1920	4000			2620	5460
Min. spring force	[N]			645	1350	700	1460
Weight	[kg]	1.9	1.9	2.3	2.3	2.3	2.3
Recommended workpiece weight	[kg]	8.1	18	8.1	18	8.1	18
Air consumption per double stroke	[cm³]	120	120	210	210	210	210
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]	0.13/0.13	0.13/0.13	0.13/0.25	0.13/0.25	0.25/0.13	0.25/0.13
Max. permitted finger length	[mm]	100	80	80	64	80	64
Max. permitted weight per finger	[kg]	0.95	0.95	0.95	0.95	0.95	0.95
IP class		67	67	67	67	67	67
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

Main view

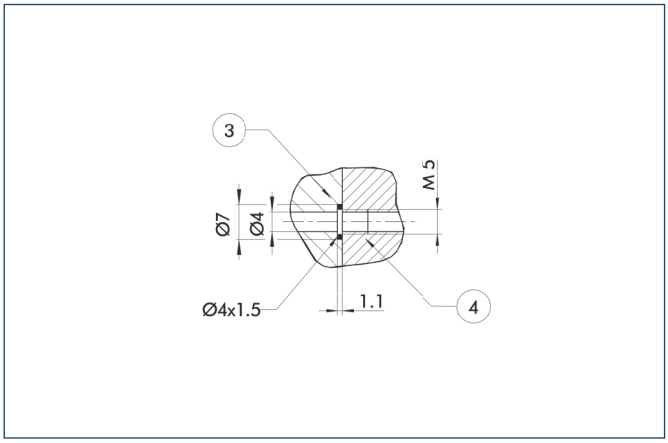


For finger connection, we recommend only to use two of the four centering bores for each finger. The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ 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

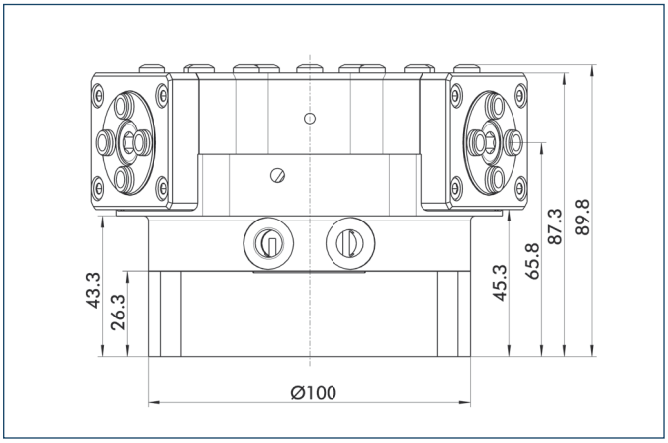
Hose-free direct connection



③ Adapter
④ Gripper

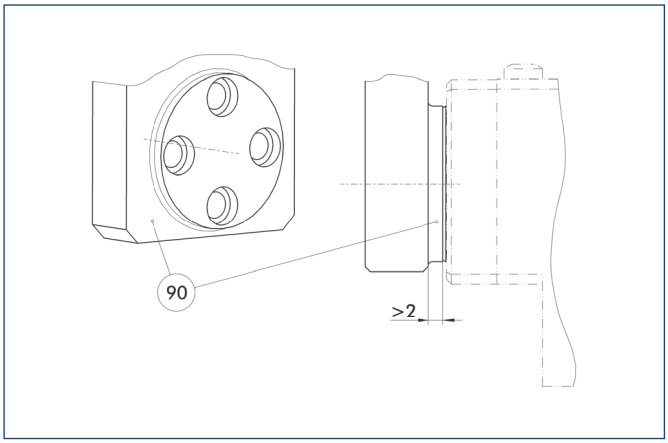
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

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.

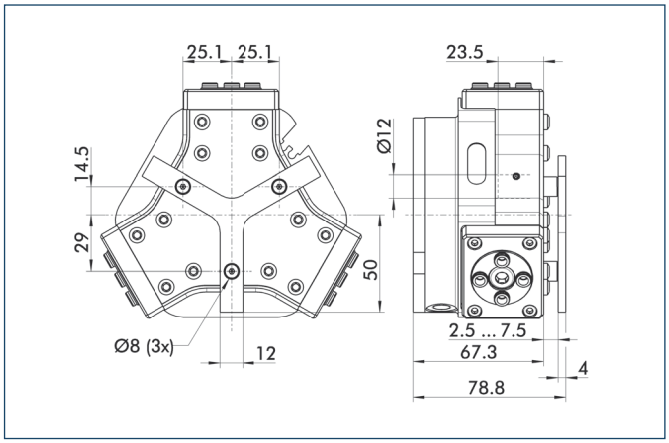
Proposed jaw design



(90) Step

In order to avoid impairment of the stroke due to contamination or chips, there should be a sufficient distance between the top jaws and the gripper.

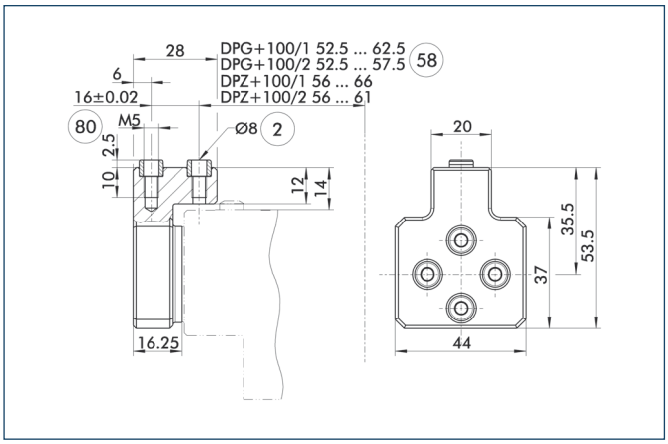
Spring-loaded pressure piece



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

Description	ID	Stroke	Min. force
Spring-loaded pressure piece			
A-PZN-plus/DPZ-plus 100	**0303722**	5 mm	35 N

Intermediate Jaws

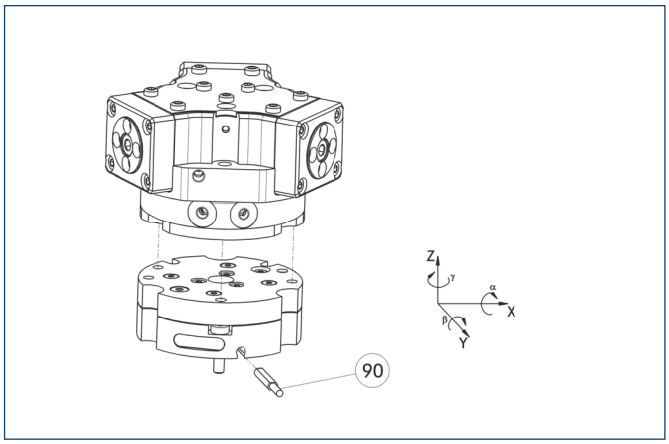


(2) Finger connection
(58) Distance from center of gripper
(80) Depth of the centering sleeve hole in the matching part

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

Description	ID	Material	Scope of delivery
Intermediate Jaws			
ZBA-DPG-DPZ+100	**0300194**	Aluminum	1

Tolerance compensation unit



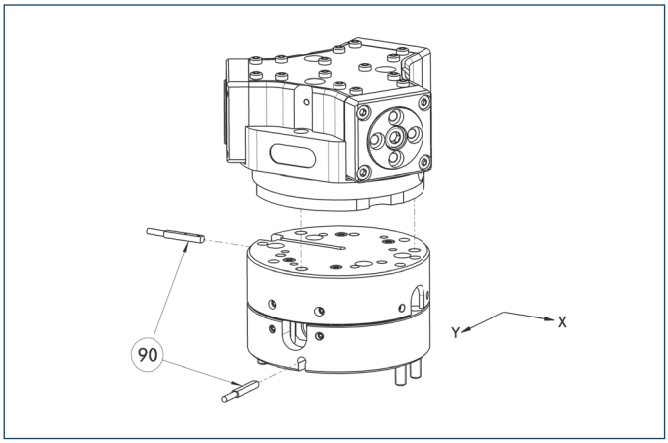
(90) Monitoring of locking

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-Z	**0324794**	Yes	
TCU-100-2-OV-Z	**0324799**	No	

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

Compensation unit with spring reset

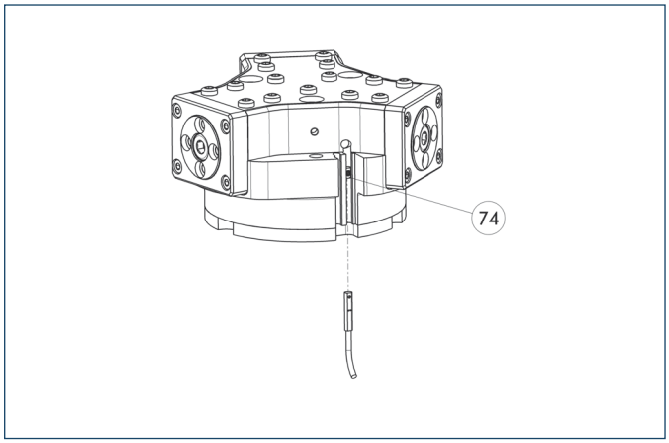


(90) Monitoring

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

Programmable magnetic switch



(74) Stop for MMS-P

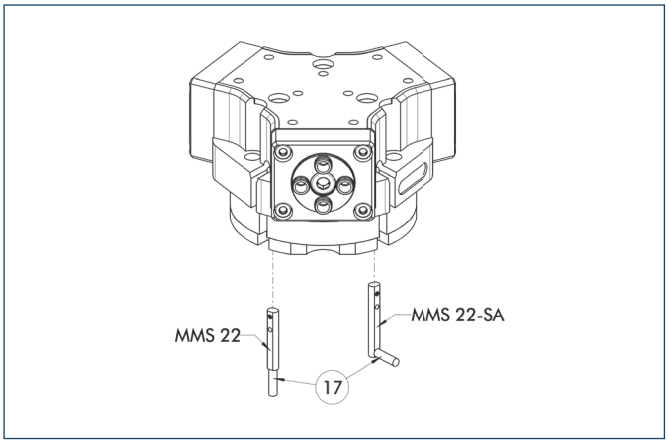
Position monitoring with two programmable positions per sensor. The end position monitoring is mounted in the C-slot.

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

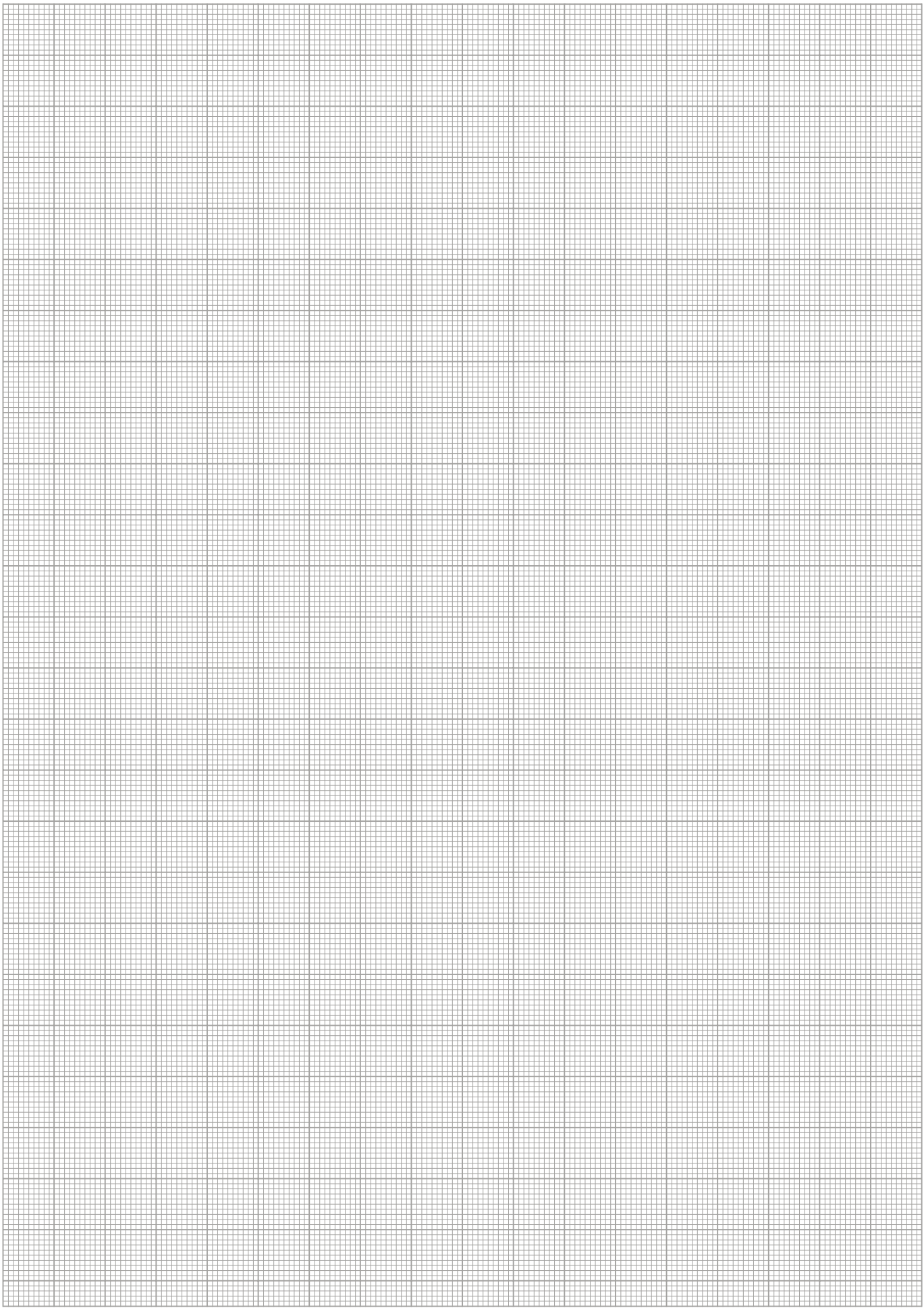
End position monitoring for mounting in the C-slot

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.

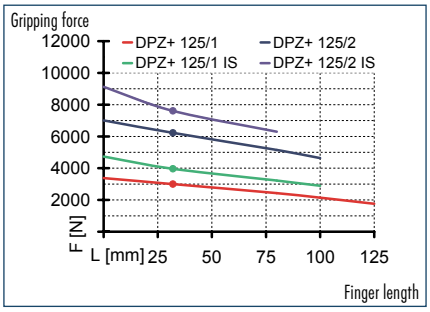
You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.



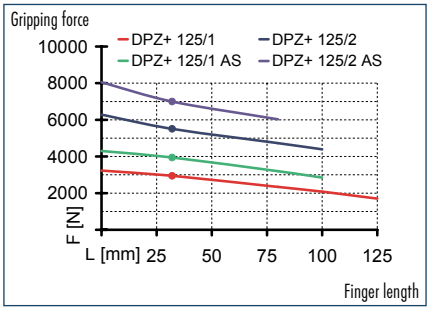
DPZ-plus 125

Pneumatic • 3-Finger Centric Gripper • Sealed Gripper

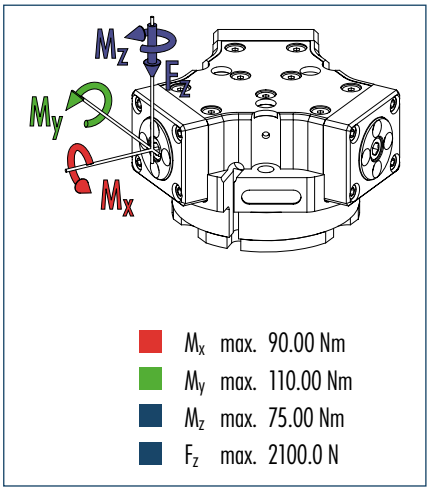
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

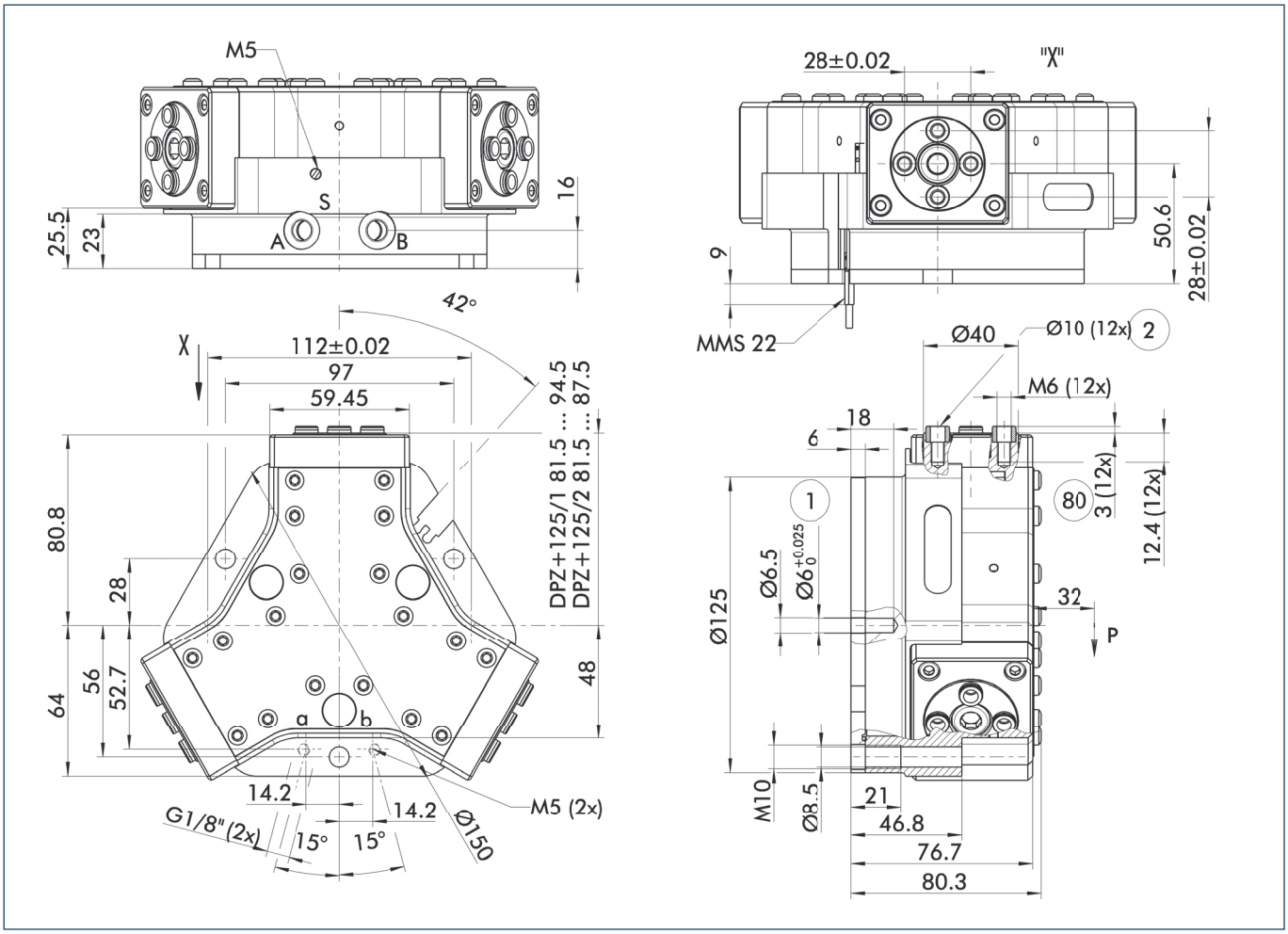


ⓘ The indicated moments and forces are static values, apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement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

Technical data

Description		DPZ-plus 125-1	DPZ-plus 125-2	DPZ-plus 125-1-AS	DPZ-plus 125-2-AS	DPZ-plus 125-1-IS	DPZ-plus 125-2-IS
ID		**0304441**	**0304442**	**0304443**	**0304444**	**0304445**	**0304446**
Stroke per finger	[mm]	13	6	13	6	13	6
Closing force	[N]	2945	5510	3940	7000		
Opening force	[N]	3000	6200			4015	8300
Min. spring force	[N]			995	1490	1015	2100
Weight	[kg]	3.5	3.5	4.7	4.7	4.7	4.7
Recommended workpiece weight	[kg]	14.7	27.5	14.7	27.5	14.7	27.5
Air consumption per double stroke	[cm³]	230	230	383	383	383	383
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]	0.25/0.25	0.25/0.25	0.22/0.45	0.22/0.45	0.45/0.22	0.45/0.22
Max. permitted finger length	[mm]	125	100	100	80	100	80
Max. permitted weight per finger	[kg]	1.75	1.75	1.75	1.75	1.75	1.75
IP class		67	67	67	67	67	67
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

Main view

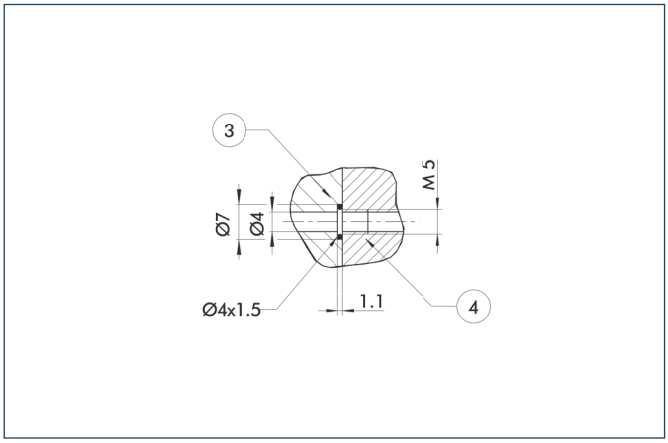


For finger connection, we recommend only to use two of the four centering bores for each finger. The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ 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

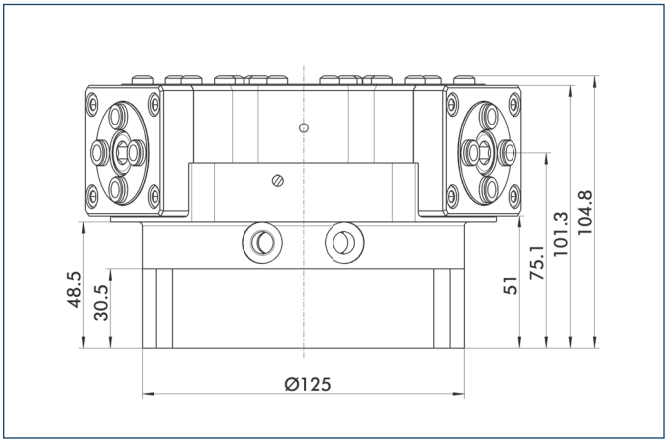
Hose-free direct connection



③ Adapter
④ Gripper

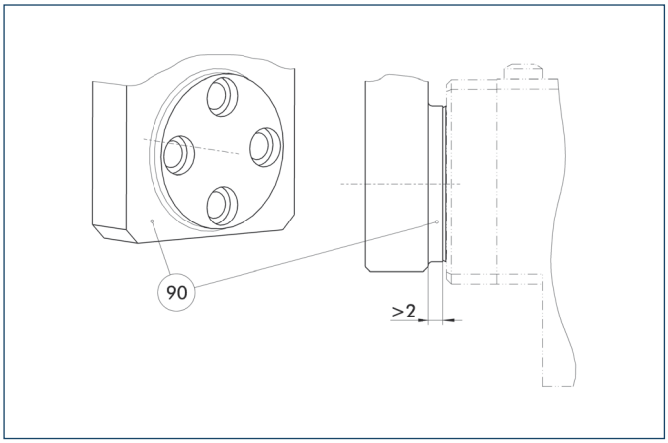
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

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.

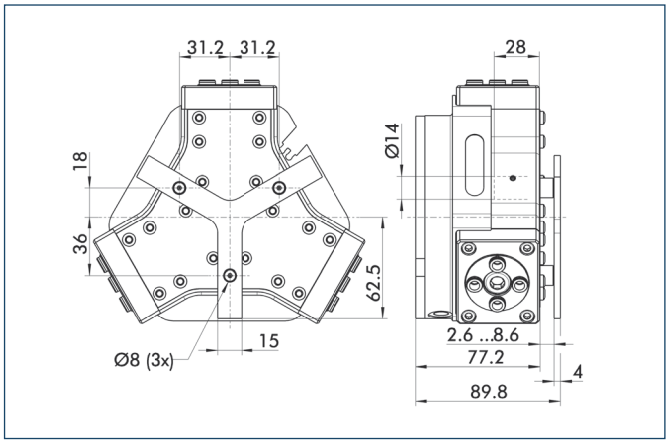
Proposed jaw design



(90) Step

In order to avoid impairment of the stroke due to contamination or chips, there should be a sufficient distance between the top jaws and the gripper.

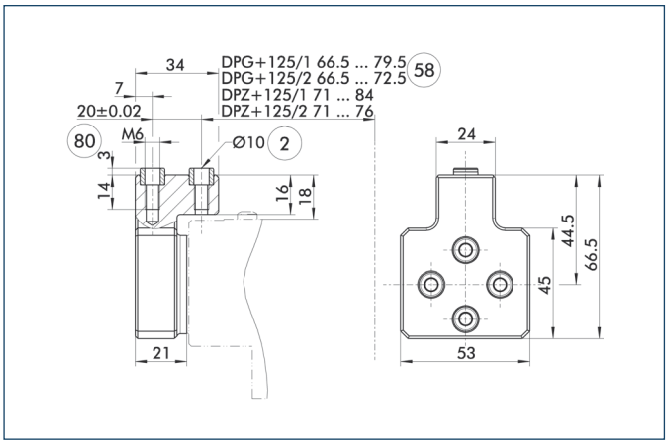
Spring-loaded pressure piece



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

Description	ID	Stroke	Min. force
Spring-loaded pressure piece			
A-PZN-plus/DPZ-plus 125	**0303723**	6 mm	105 N

Intermediate Jaws

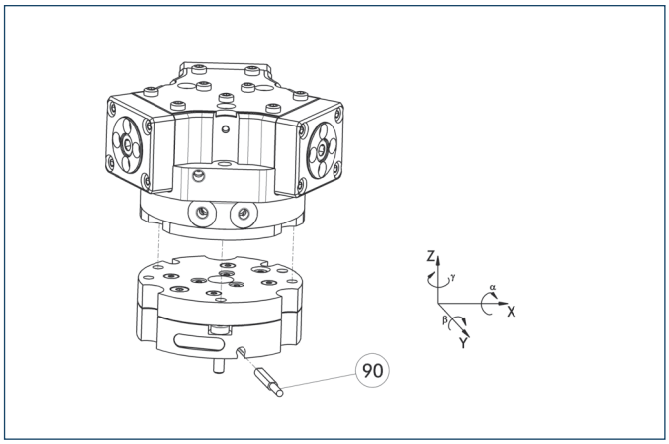


(2) Finger connection
(58) Distance from center of gripper
(80) Depth of the centering sleeve hole in the matching part

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

Description	ID	Material	Scope of delivery
Intermediate Jaws			
ZBA-DPG-DPZ+125	**0300195**	Aluminum	1

Tolerance compensation unit



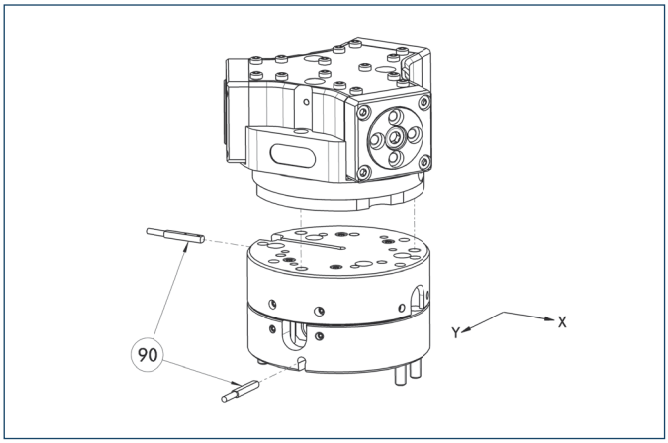
(90) Monitoring of locking

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-Z	**0324820**	Yes	
TCU-125-3-OV-Z	**0324821**	No	

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

Compensation unit with spring reset

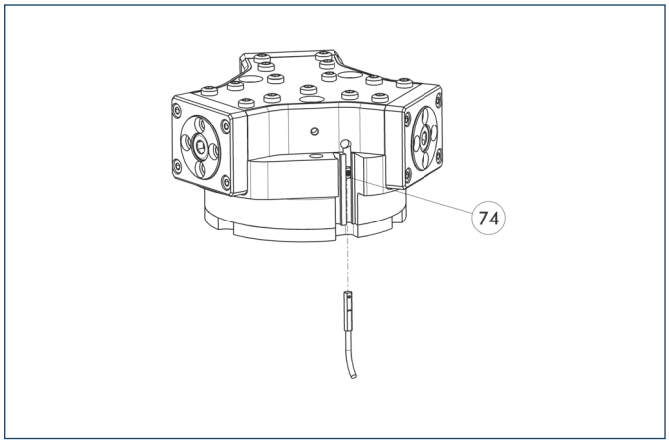


(90) Monitoring

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

Programmable magnetic switch



(74) Stop for MMS-P

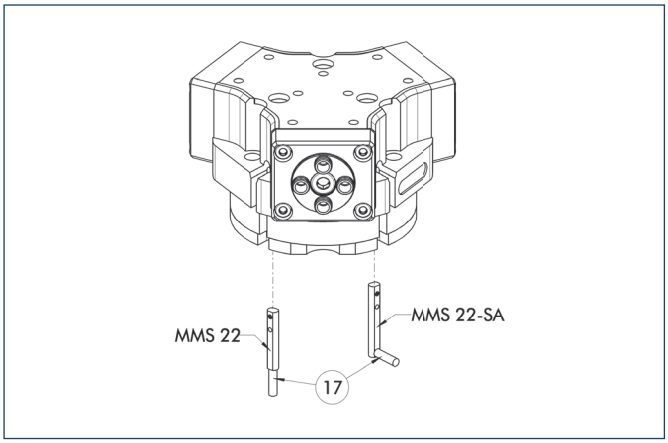
Position monitoring with two programmable positions per sensor. The end position monitoring is mounted in the C-slot.

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.

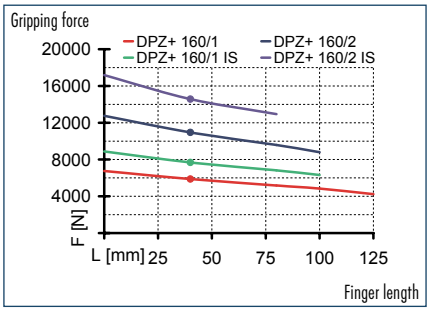
ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

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

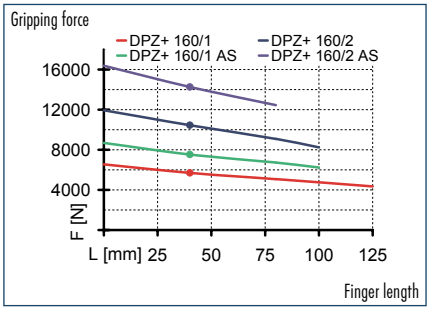
DPZ-plus 160

Pneumatic • 3-Finger Centric Gripper • Sealed Gripper

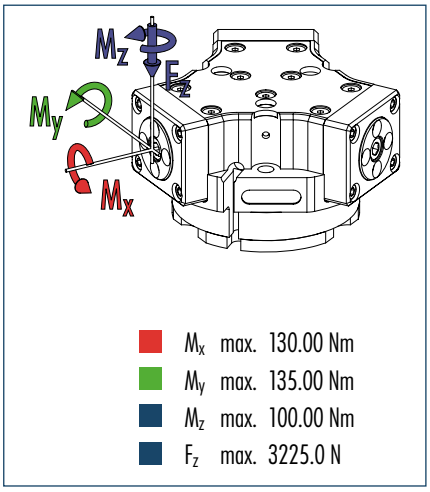
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

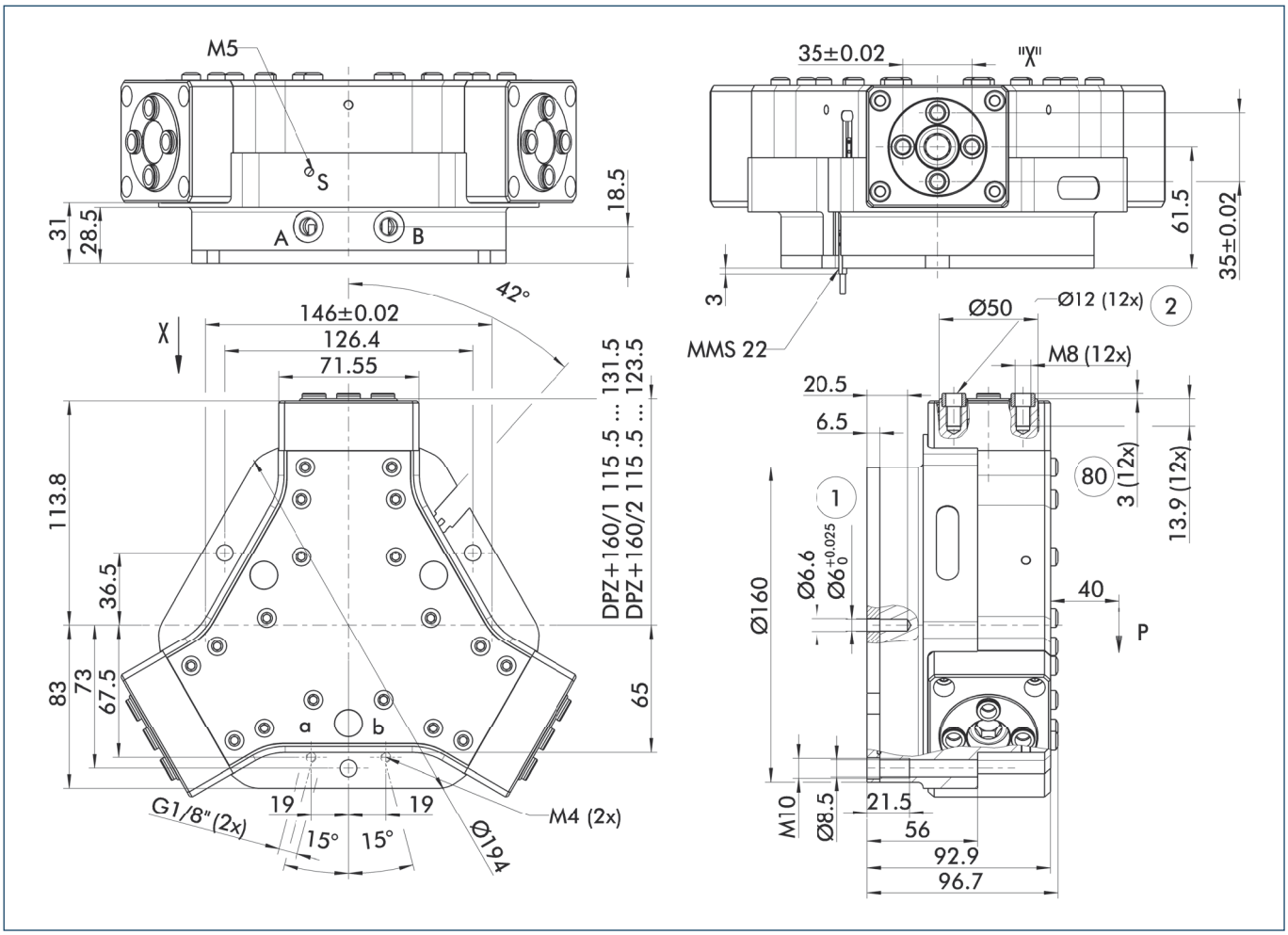


ⓘ The indicated moments and forces are static values, apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement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

Technical data

Description		DPZ-plus 160-1	DPZ-plus 160-2	DPZ-plus 160-1-AS	DPZ-plus 160-2-AS	DPZ-plus 160-1-IS	DPZ-plus 160-2-IS
ID		**0304451**	**0304452**	**0304453**	**0304454**	**0304455**	**0304456**
Stroke per finger	[mm]	16	8	16	8	16	8
Closing force	[N]	5700	10450	7530	14260		
Opening force	[N]	5880	10950			7865	15070
Min. spring force	[N]			1830	3810	1985	4120
Weight	[kg]	7.9	7.9	9.7	9.7	9.7	9.7
Recommended workpiece weight	[kg]	28.5	52	28.5	52	28.5	52
Air consumption per double stroke	[cm³]	520	520	875	875	875	875
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	0.5/1	0.5/1	1/0.5	1/0.5
Max. permitted finger length	[mm]	125	100	100	80	100	80
Max. permitted weight per finger	[kg]	3	3	3	3	3	3
IP class		67	67	67	67	67	67
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

Main view

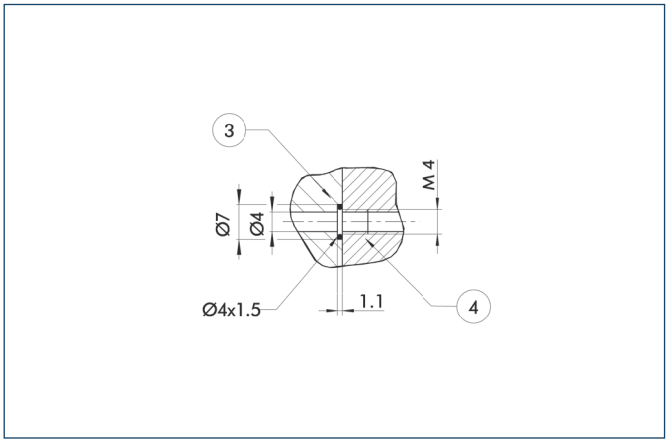


For finger connection, we recommend only to use two of the four centering bores for each finger. The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ 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

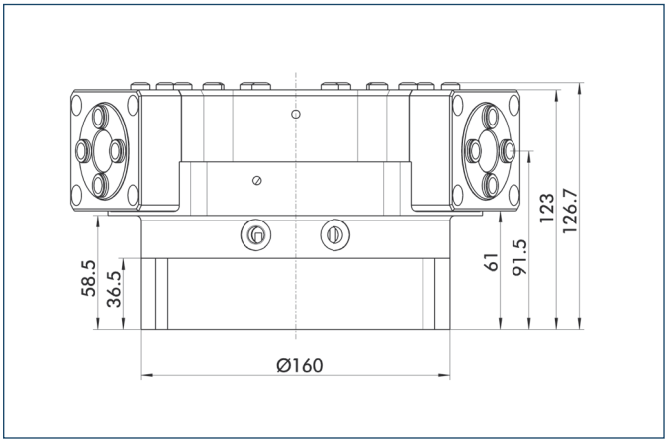
Hose-free direct connection



③ Adapter
④ Gripper

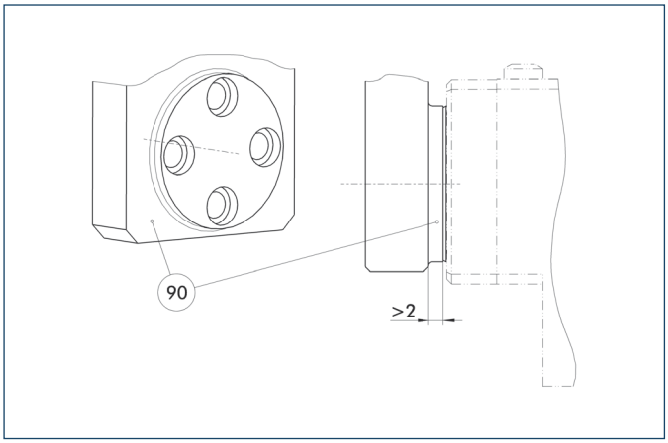
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

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.

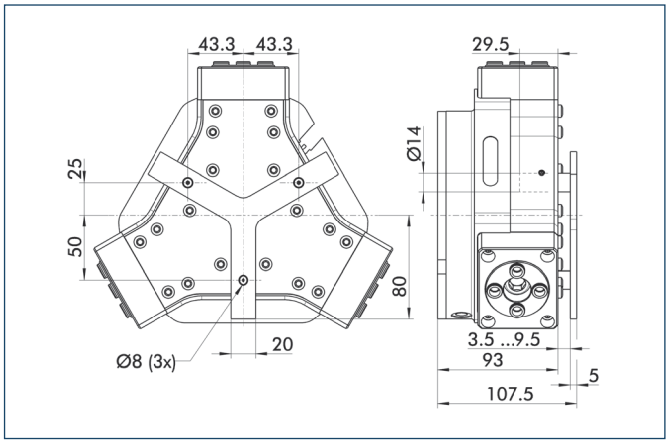
Proposed jaw design



(90) Step

In order to avoid impairment of the stroke due to contamination or chips, there should be a sufficient distance between the top jaws and the gripper.

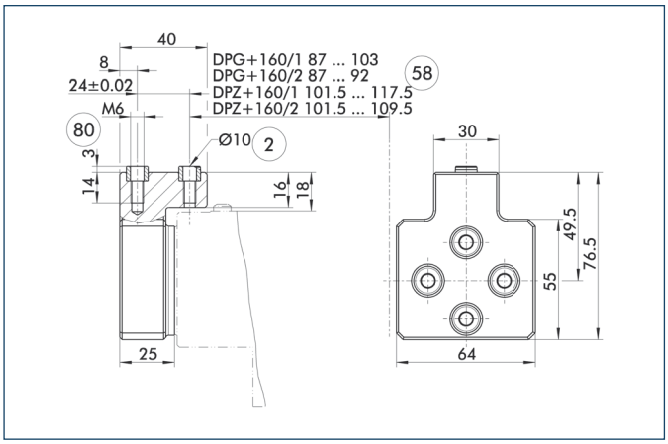
Spring-loaded pressure piece



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

Description	ID	Stroke	Min. force
Spring-loaded pressure piece			
A-PZN-plus/DPZ-plus 160	**0303724**	6 mm	205 N

Intermediate Jaws

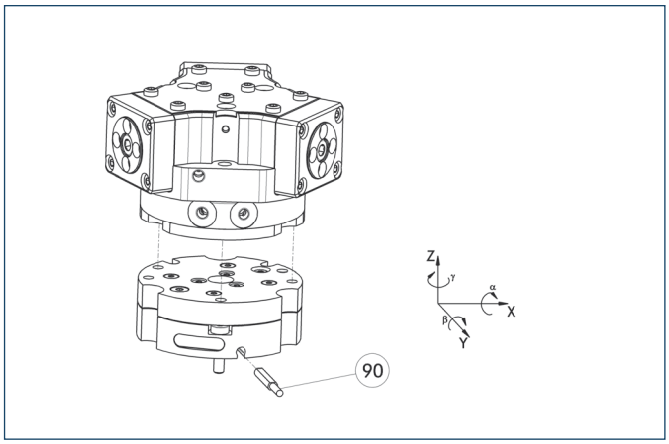


(2) Finger connection
(58) Distance from center of gripper
(80) Depth of the centering sleeve hole in the matching part

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

Description	ID	Material	Scope of delivery
Intermediate Jaws			
ZBA-DPG-DPZ+160	**0300196**	Aluminum	1

Tolerance compensation unit



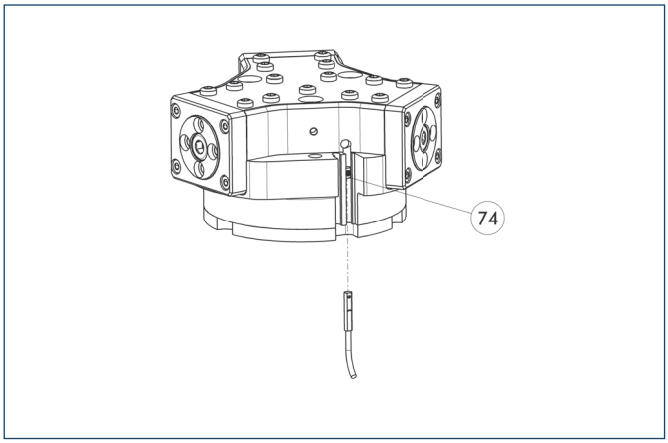
(90) Monitoring of locking

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-Z	**0324838**	Yes	
TCU-160-3-OV-Z	**0324839**	No	

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

Programmable magnetic switch



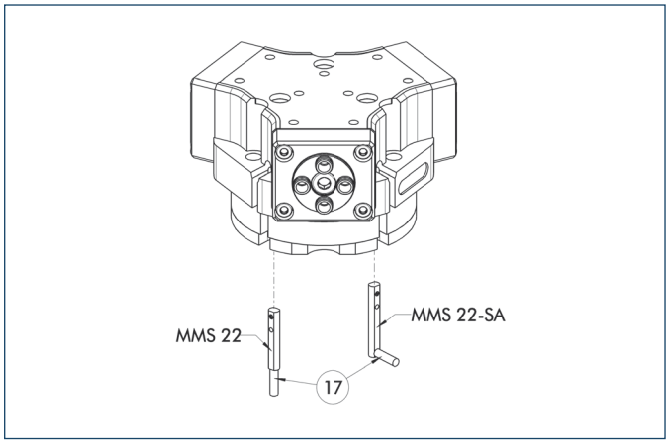
(74) Stop for MMS-P

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**	

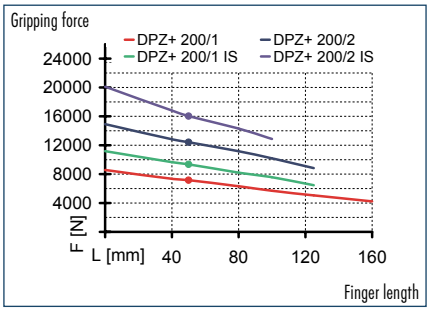
ⓘ Two sensors (closer/NO) are required for each gripper, plus extension cables as an option.
ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

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

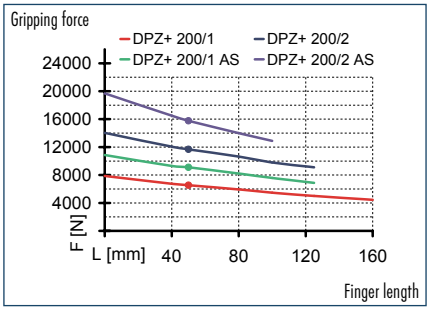
DPZ-plus 200

Pneumatic • 3-Finger Centric Gripper • Sealed Gripper

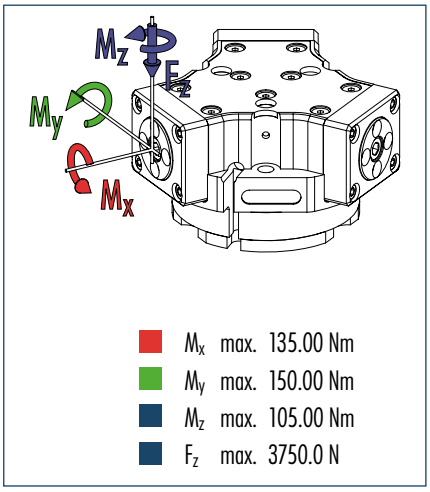
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

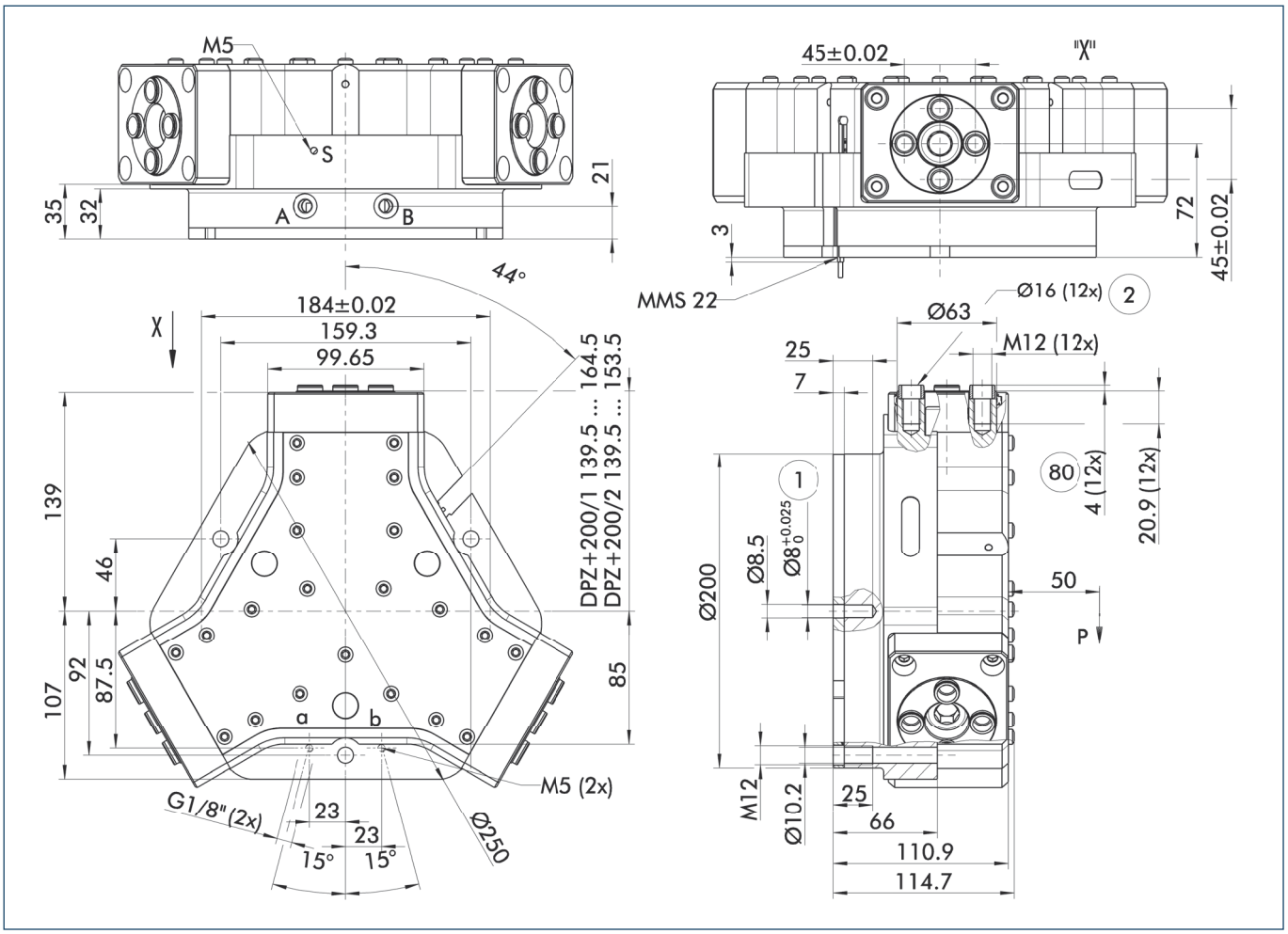


ⓘ The indicated moments and forces are static values, apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement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

Technical data

Description		DPZ-plus 200-1	DPZ-plus 200-2	DPZ-plus 200-1-AS	DPZ-plus 200-2-AS	DPZ-plus 200-1-IS	DPZ-plus 200-2-IS
ID		**0304461**	**0304462**	**0304463**	**0304464**	**0304465**	**0304466**
Stroke per finger	[mm]	25	14	25	14	25	14
Closing force	[N]	6750	12060	9300	16500		
Opening force	[N]	7160	12410			9910	17150
Min. spring force	[N]			2550	4440	2750	4740
Weight	[kg]	15.6	15.6	20.1	20.1	20.1	20.1
Recommended workpiece weight	[kg]	33.5	60	33.5	60	33.5	60
Air consumption per double stroke	[cm³]	1040	1040	1725	1725	1725	1725
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]	1.5/1.5	1.5/1.5	1.2/1.8	1.2/1.8	1.8/1.2	1.8/1.2
Max. permitted finger length	[mm]	160	125	125	100	125	100
Max. permitted weight per finger	[kg]	5.5	5.5	5.5	5.5	5.5	5.5
IP class		67	67	67	67	67	67
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

Main view

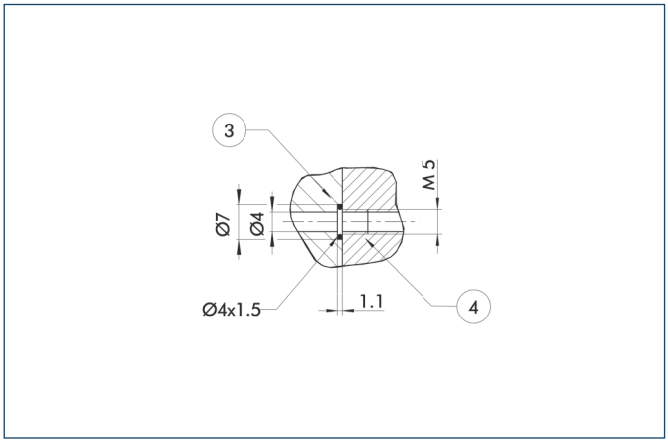


For finger connection, we recommend only to use two of the four centering bores for each finger. The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ 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

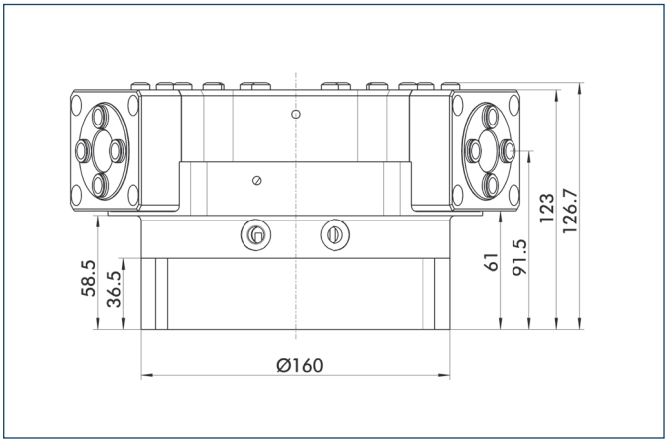
Hose-free direct connection



③ Adapter
④ Gripper

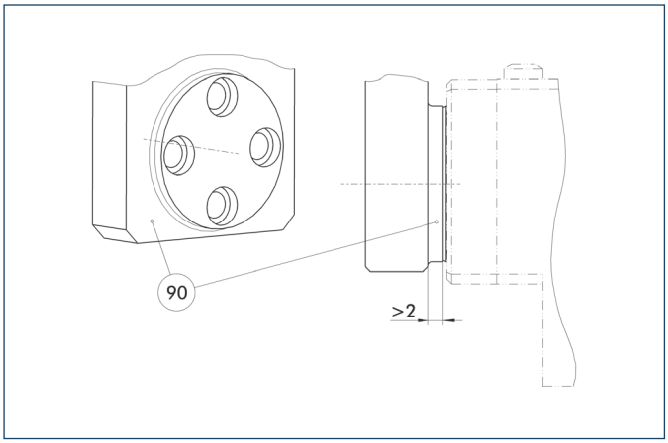
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

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.

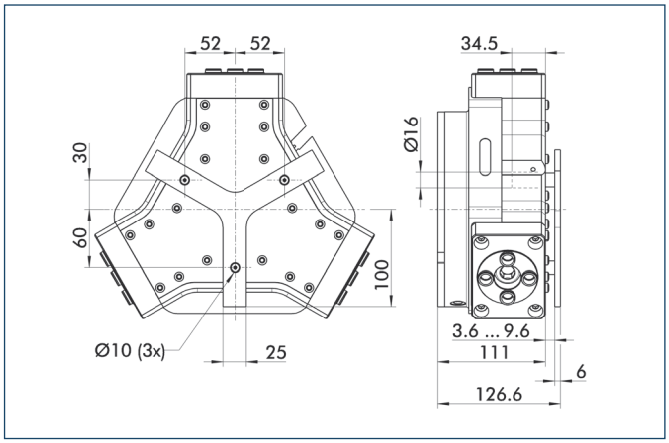
Proposed jaw design



(90) Step

In order to avoid impairment of the stroke due to contamination or chips, there should be a sufficient distance between the top jaws and the gripper.

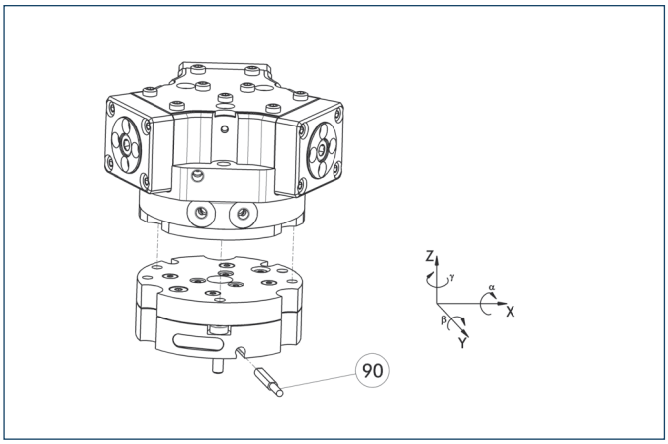
Spring-loaded pressure piece



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

Description	ID	Stroke	Min. force
Spring-loaded pressure piece			
A-PZN-plus/DPZ-plus 200	**0303725**	6 mm	247 N

Tolerance compensation unit

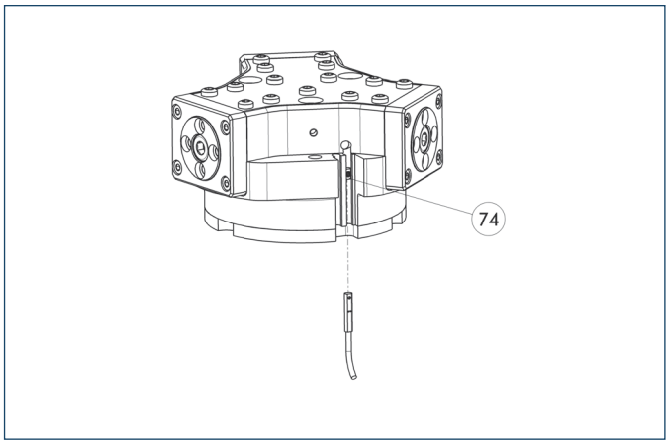


(90) Monitoring of locking

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-Z	**0324856**	Yes	
TCU-200-3-OV-Z	**0324857**	No	

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.

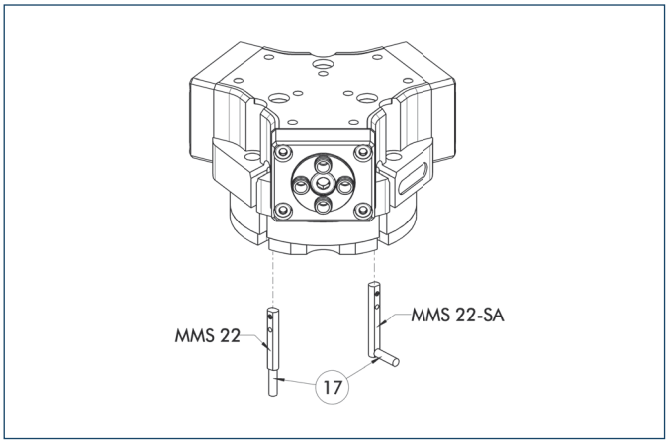
Description	ID	Recommended product
Programmable magnetic switch		
MMS-P 22-S-M8-PNP	**0301370**	•
MMSK-P 22-S-PNP	**0301371**	
Connection cables		
KA BG08-L 4P-0500	**0307767**	
KA BG08-L 4P-1000	**0307768**	
KA BW08-L 4P-0500	**0307765**	
KA BW08-L 4P-1000	**0307766**	
Sensor Distributor		
V2-M8-4P-2XM8-3P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

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