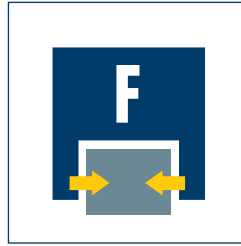




Sizes
30 .. 45



Weight
0.075 kg .. 0.29 kg



Gripping force
55 N .. 310 N



Stroke per finger
3 mm .. 5 mm



Workpiece weight
0.25 kg .. 1.1 kg

Application example



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

1 MPZ 45 3-Finger Centric Gripper

2 DDF 31 Rotary Feed-through

Gripper for Small Components

Small 3-finger centric gripper with base jaws guided on T-slots

Area 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 with high load-bearing capacity

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 information on the series

Working principle

Wedge-hook kinematics

Housing material

Aluminum alloy, hard-anodized

Base jaw material

Steel

Actuation

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

Warranty

24 months

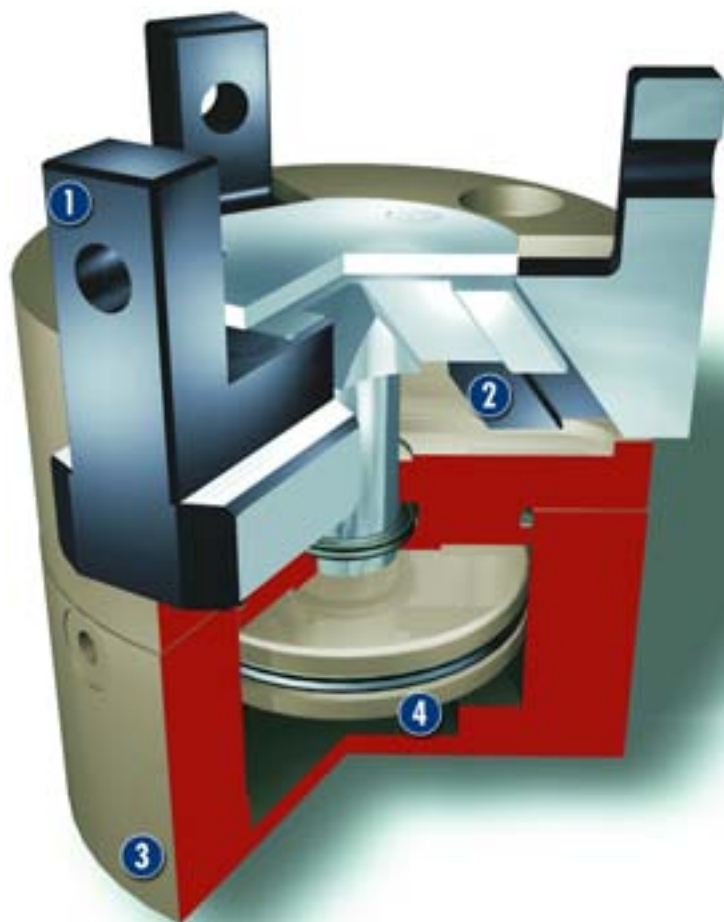
Scope of delivery

Centering sleeves, O-rings for direct connection, assembly and operating manual with manufacturer's declaration

Gripping force safety device

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

Sectional diagram



1 T-slot guidance
precise gripping with high load-bearing capacity

2 Kinematics
wedge-hook principle for high power transmission and synchronized gripping

3 Housing
weight-reduced through the use of a hard-anodized, high-strength aluminum alloy

4 Drive
pneumatic, powerful and easy to handle

Function description

The piston is moved up or down by means of compressed air. Through its angled active surfaces, the wedge hook transforms this motion into the lateral, synchronous movement of the 3 base fingers.

Options and special information

Small, 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



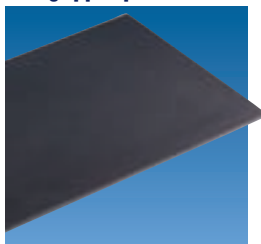
MMS magnetic switches



Quentes plastic inserts



HKI gripper pads



SDV-P pressure maintenance valves



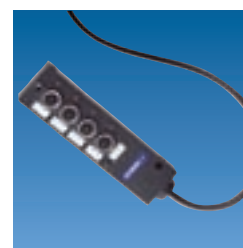
Finger blanks



KV/KA sensor cables



V sensor distributors



FPS flexible position sensor



① For the exact size of the required accessories, availability of this size and the designation and ID, please refer to the additional views at the end of the size in question. You will find more detailed information on our accessory range in the "Accessories" catalog section.

General information on the series

Gripping force

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

Finger length

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

Repeat accuracy

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

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

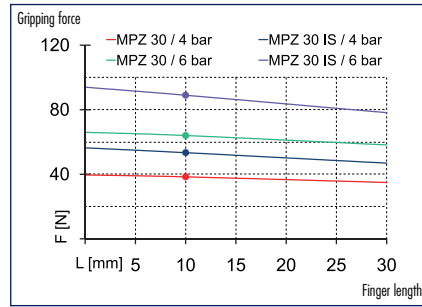
Closing and opening times are purely the times that the base jaws or fingers are in motion. Valve switching times, hose filling times or PLC reaction times are not included in the above times and must be taken into consideration when determining cycle times.

MPZ 30

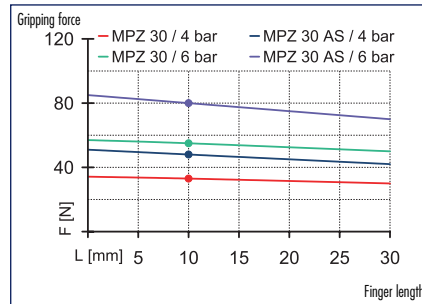
Pneumatic · 3-Finger Centric Gripper · Gripper for Small Components



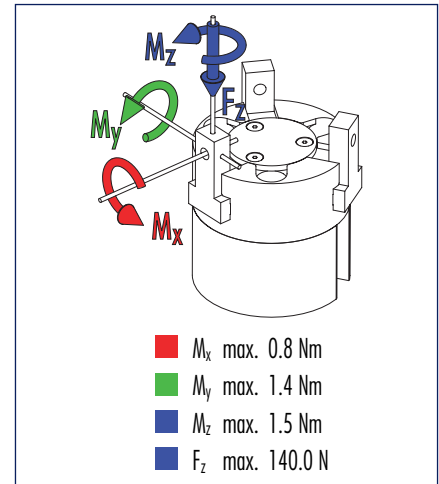
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

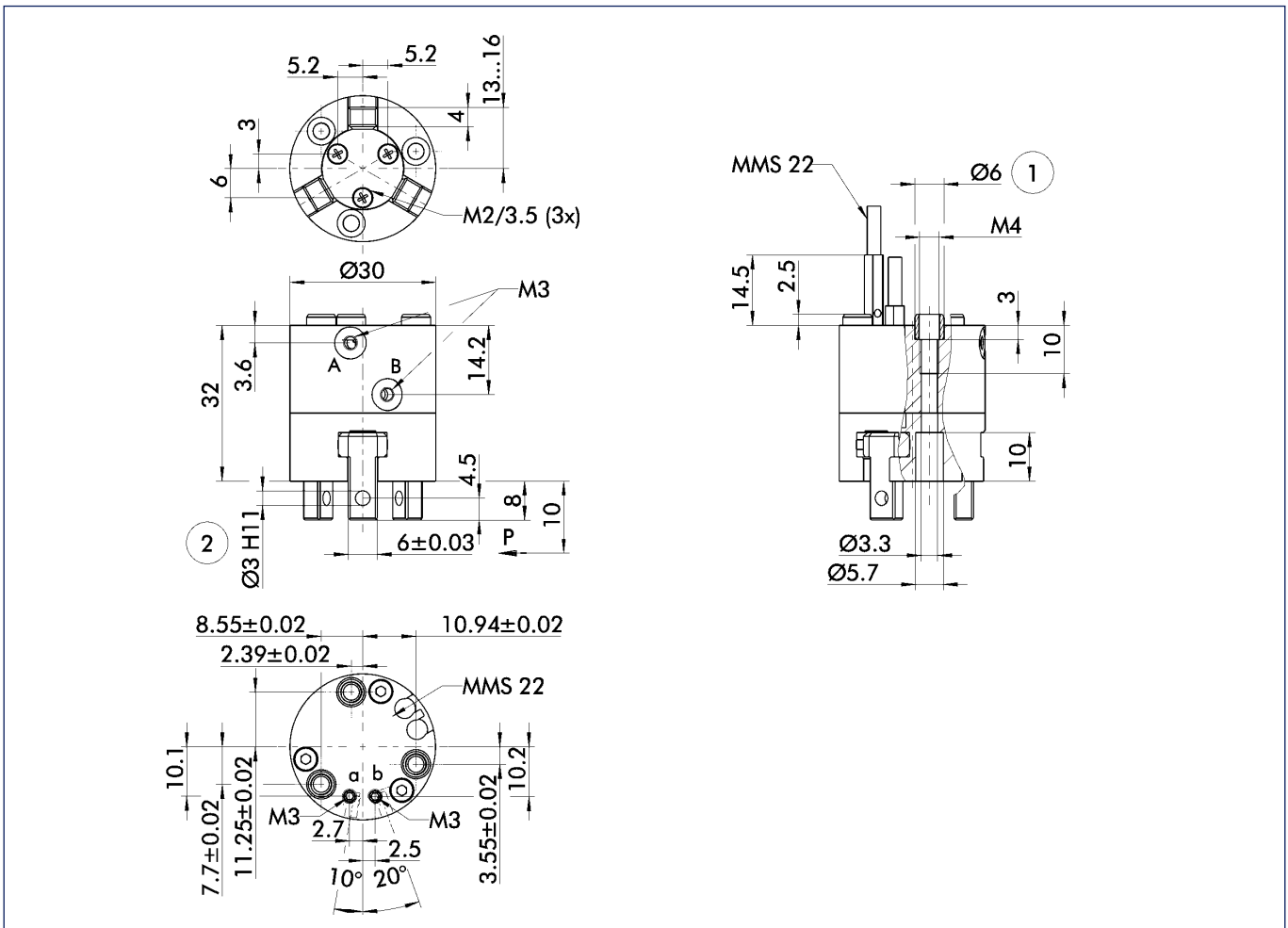


① Moments and forces apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement occurs without any hitting or bouncing. Service life may reduce.

Technical data

Description		MPZ 30	MPZ 30-AS	MPZ 30-IS	MPZ 30 FPS
	ID	0340510	0340511	0340512	0340513
Stroke per finger	[mm]	3.0	3.0	3.0	3.0
Closing force	[N]	55.0	80.0		55.0
Opening force	[N]	65.0		90.0	65.0
Min. gripping force through spring	[N]		25.0	25.0	
Weight	[kg]	0.075	0.09	0.09	0.096
Recommended workpiece weight	[kg]	0.25	0.25	0.25	0.25
Air consumption per double stroke	[cm ³]	2.011	2.011	2.011	2.011
Nominal pressure	[bar]	6.0	6.0	6.0	6.0
Minimum pressure	[bar]	2.0	4.0	4.0	2.0
Maximum pressure	[bar]	8.0	6.5	6.5	8.0
Closing time	[s]	0.02	0.02	0.04	0.02
Opening time	[s]	0.02	0.04	0.02	0.02
Closing/opening time with spring only	[s]			0.3	0.3
Max. permitted finger length	[mm]	30.0	30.0	30.0	30.0
Max. permitted weight per finger	[kg]	0.03	0.03	0.03	0.03
IP class		40	40	40	40
Min. ambient temperature	[°C]	-10.0	-10.0	-10.0	-10.0
Max. ambient temperature	[°C]	90.0	90.0	90.0	90.0
Repeat accuracy	[mm]	0.01	0.01	0.01	0.01

Main views

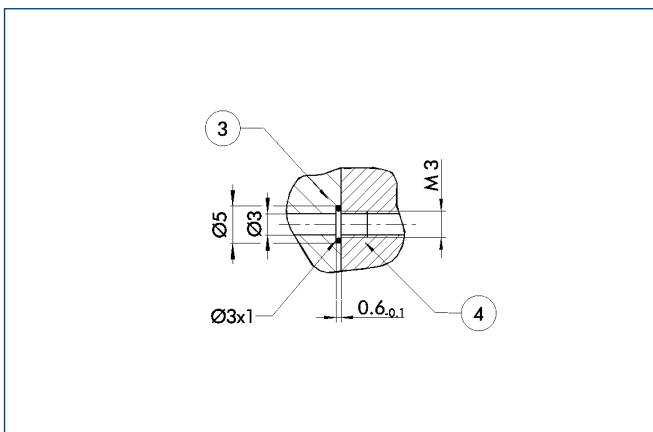


The drawing shows the gripper in the basic version with open jaws, the dimensions do not include the options described below.

- A,a Main/direct connection, gripper opening
- B,b Main/direct connection, gripper closing
- ① Gripper connection
- ② Finger connection

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

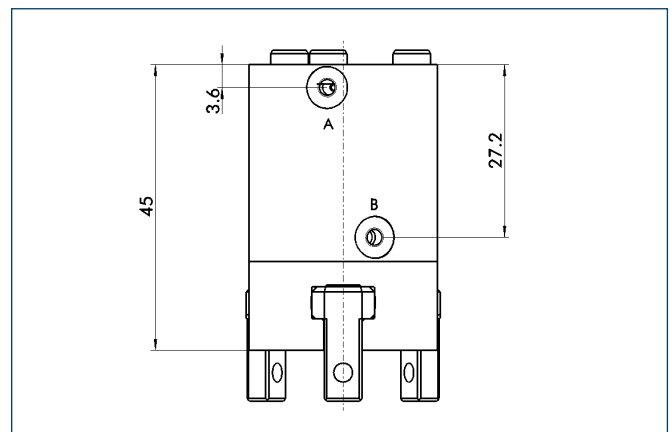
Hose-free direct connection



- ③ Adapter
- ④ Gripper

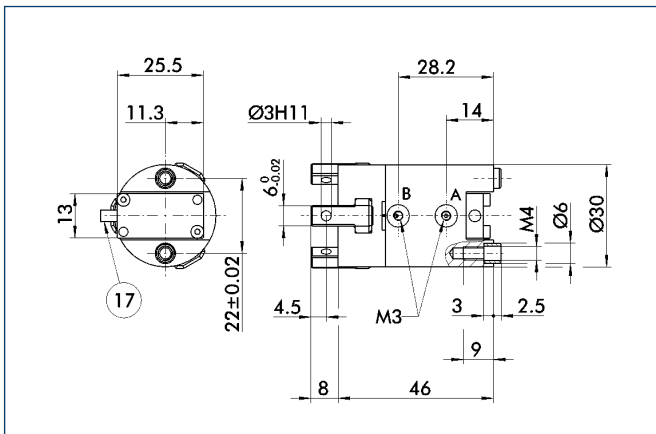
The direct connection is used for supplying compressed air to the gripper without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

AS/IS gripping force safety device



Springs integrated in the gripper ensure a minimum gripping force even if there is a drop in pressure.

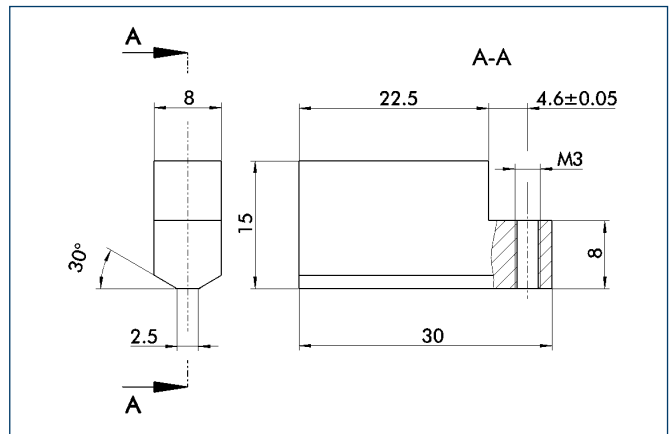
FPS measuring system



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.

Finger blanks



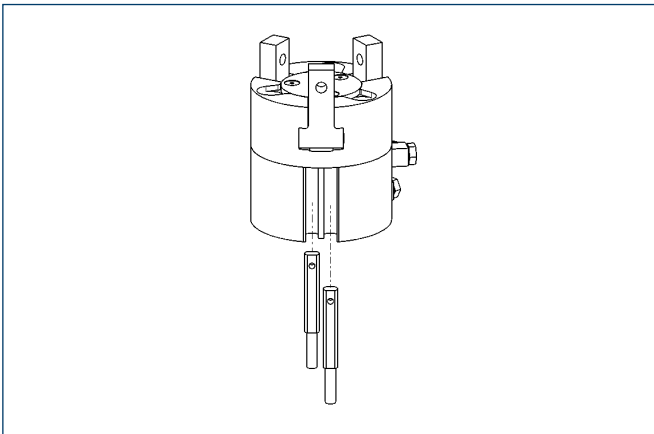
Finger blanks for customized subsequent machining

Description	Material	Scope of delivery	ID
ABR 30	Aluminum	3	0340519



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

Sensor system



End position monitoring:

Electronic magnetic switches, for mounting in C-slot

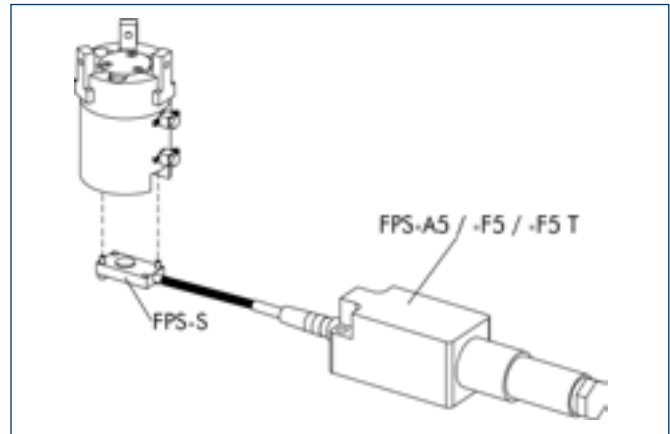
Description	ID	Recommended product
MMS 22-S-M5-NPN	0301439	
MMS 22-S-M5-NPN-SA	0301449	
MMS 22-S-M5-PNP	0301438	
MMS 22-S-M5-PNP-SA	0301448	
MMS 22-S-M8-NPN	0301433	
MMS 22-S-M8-NPN-SA	0301443	
MMS 22-S-M8-PNP	0301432	•
MMS 22-S-M8-PNP-SA	0301442	
MMSK 22-S-NPN	0301435	
MMSK 22-S-NPN-SA	0301445	
MMSK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

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

Extension cables for proximity switches/magnetic switches

Description	ID
KA BG05-L 3P-0300	0301652
KA BG08-L 3P-0300-PNP	0301622
KA BW05-L 3P-0300	0301650
KA BW08-L 3P-0300-NPN	0301602
KA BW08-L 3P-0300-PNP	0301594
KA BW08-L 3P-0500-NPN	9641116
KA BW08-L 3P-0500-PNP	0301502
KV BW08-SG08 3P-0030-PNP	0301495
KV BW08-SG08 3P-0100-PNP	0301496
KV BW08-SG08 3P-0200-PNP	0301497

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



Measuring system:

FPS Flexible position sensor

Description	ID
FPS-F5	0301805
FPS-F5 T	0301807
FPS-S 13	0301705

① When using an FPS system, an FPS sensor (FPS-S) and a control unit (FPS-F5 / F5 T or A5) are required for each gripper as well as a mounting kit (AS), if listed. Cable extensions (KV) are available as options in the "Accessories" catalog section.



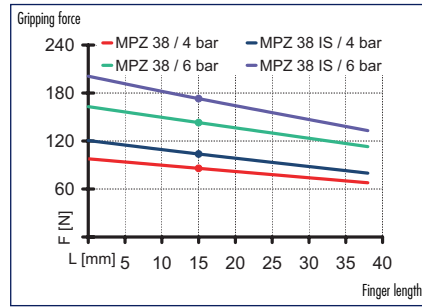
You can find more detailed information and individual parts of the above-mentioned accessories in the "Accessories" catalog section.

MPZ 38

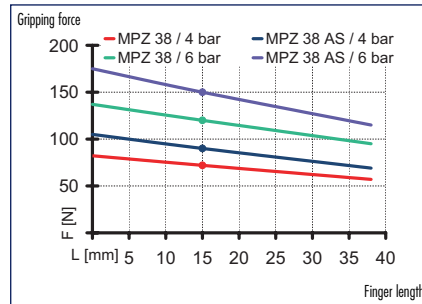
Pneumatic · 3-Finger Centric Gripper · Gripper for Small Components



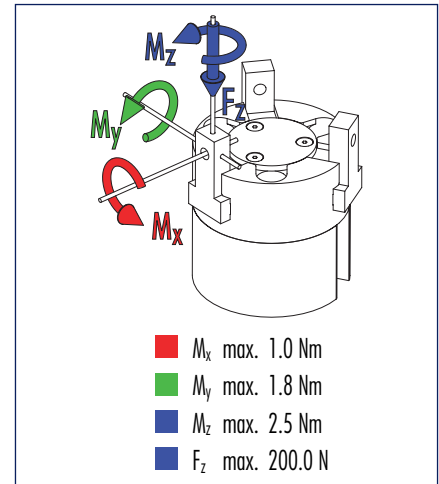
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

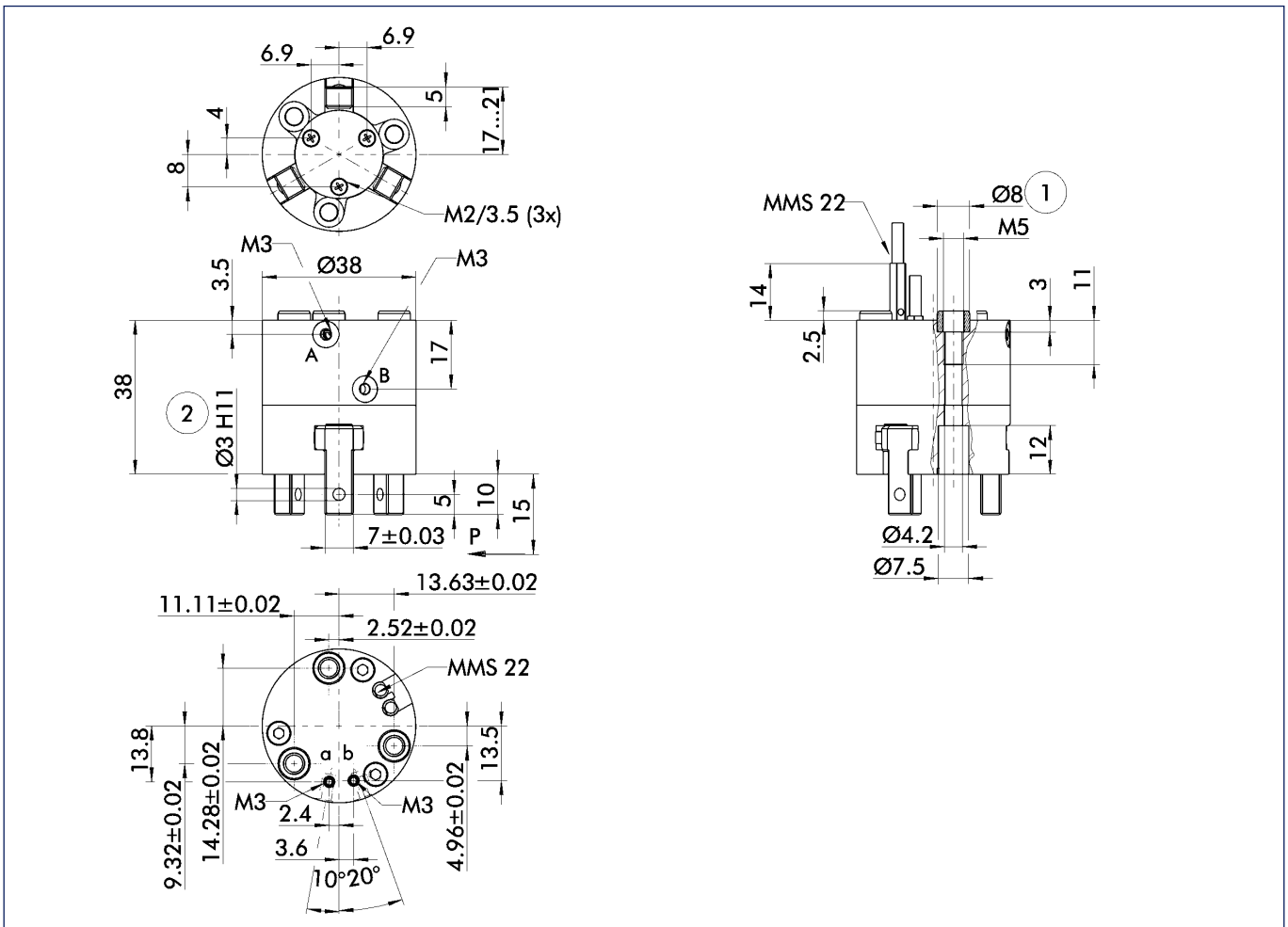


① Moments and forces apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement occurs without any hitting or bouncing. Service life may reduce.

Technical data

Description		MPZ 38	MPZ 38-AS	MPZ 38-IS	MPZ 38 FPS
	ID	0340520	0340521	0340522	0340523
Stroke per finger	[mm]	4.0	4.0	4.0	4.0
Closing force	[N]	120.0	150.0		120.0
Opening force	[N]	140.0		180.0	140.0
Min. gripping force through spring	[N]		30.0	40.0	
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	[cm ³]	4.084	4.084	4.084	4.084
Nominal pressure	[bar]	6.0	6.0	6.0	6.0
Minimum pressure	[bar]	2.0	4.0	4.0	2.0
Maximum pressure	[bar]	8.0	6.5	6.5	8.0
Closing time	[s]	0.02	0.02	0.04	0.02
Opening time	[s]	0.02	0.04	0.02	0.02
Closing/opening time with spring only	[s]			0.2	0.2
Max. permitted finger length	[mm]	38.0	38.0	38.0	38.0
Max. permitted weight per finger	[kg]	0.05	0.05	0.05	0.05
IP class		40	40	40	40
Min. ambient temperature	[°C]	-10.0	-10.0	-10.0	-10.0
Max. ambient temperature	[°C]	90.0	90.0	90.0	90.0
Repeat accuracy	[mm]	0.01	0.01	0.01	0.01

Main views

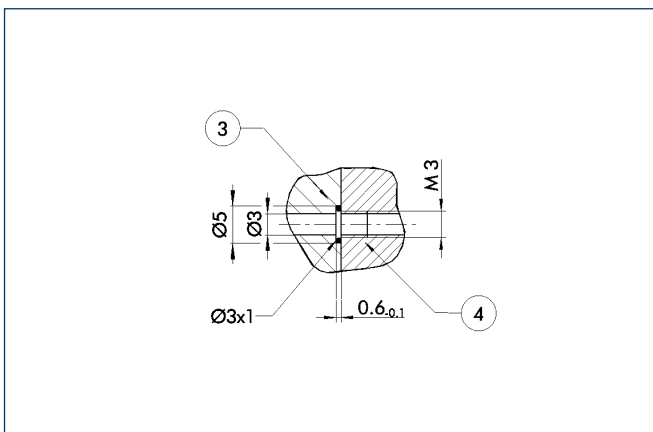


The drawing shows the gripper in the basic version with open jaws, the dimensions do not include the options described below.

- A,a Main/direct connection, gripper opening
- B,b Main/direct connection, gripper closing
- ① Gripper connection
- ② Finger connection

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

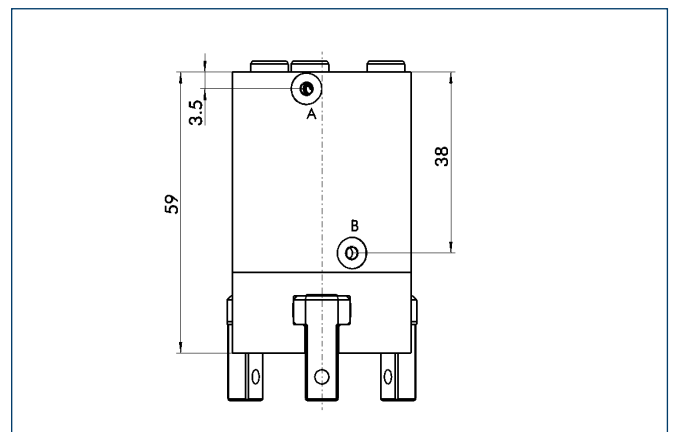
Hose-free direct connection



- ③ Adapter
- ④ Gripper

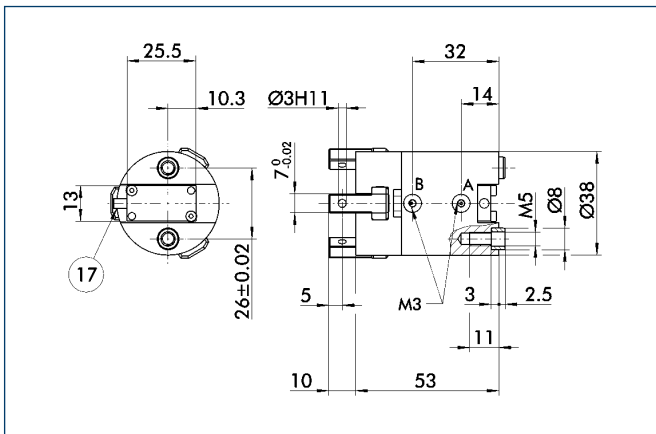
The direct connection is used for supplying compressed air to the gripper without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

AS/IS gripping force safety device



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

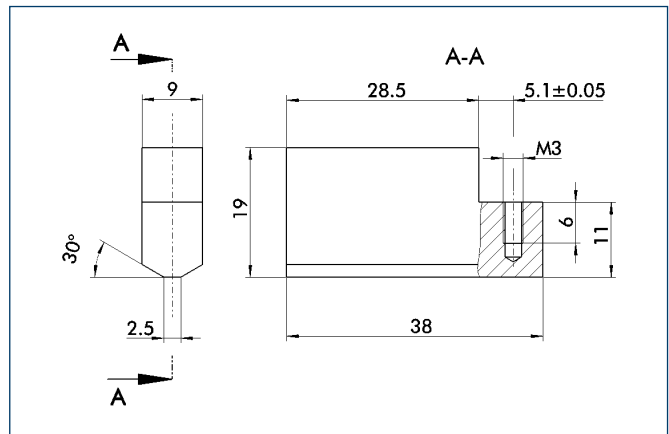
FPS measuring system



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.

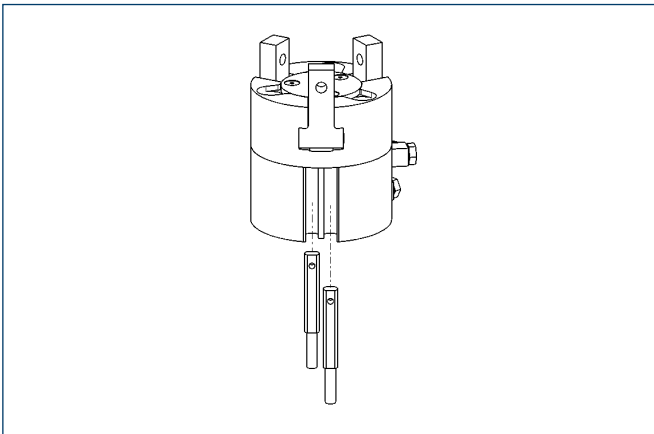
Finger blanks



Finger blanks for customized subsequent machining

Description	Material	Scope of delivery	ID
ABR 38	Aluminum	3	0340529

Sensor system



End position monitoring:

Electronic magnetic switches, for mounting in C-slot

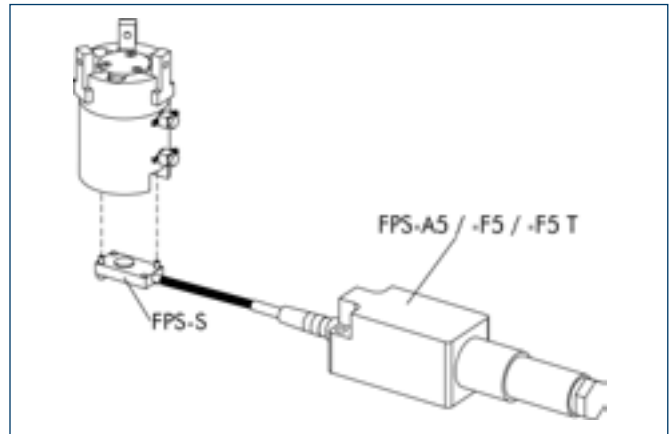
Description	ID	Recommended product
MMS 22-S-M5-NPN	0301439	
MMS 22-S-M5-NPN-SA	0301449	
MMS 22-S-M5-PNP	0301438	
MMS 22-S-M5-PNP-SA	0301448	
MMS 22-S-M8-NPN	0301433	
MMS 22-S-M8-NPN-SA	0301443	
MMS 22-S-M8-PNP	0301432	•
MMS 22-S-M8-PNP-SA	0301442	
MMSK 22-S-NPN	0301435	
MMSK 22-S-NPN-SA	0301445	
MMSK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

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

Extension cables for proximity switches/magnetic switches

Description	ID
KA BG05-L 3P-0300	0301652
KA BG08-L 3P-0300-PNP	0301622
KA BW05-L 3P-0300	0301650
KA BW08-L 3P-0300-NPN	0301602
KA BW08-L 3P-0300-PNP	0301594
KA BW08-L 3P-0500-NPN	9641116
KA BW08-L 3P-0500-PNP	0301502
KV BW08-SG08 3P-0030-PNP	0301495
KV BW08-SG08 3P-0100-PNP	0301496
KV BW08-SG08 3P-0200-PNP	0301497

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



Measuring system:

FPS Flexible position sensor

Description	ID
FPS-F5	0301805
FPS-F5 T	0301807
FPS-S 13	0301705

① When using an FPS system, an FPS sensor (FPS-S) and an 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.



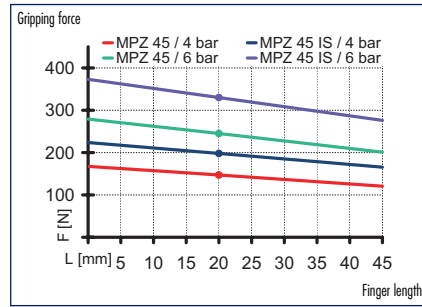
You can find more detailed information and individual parts of the above-mentioned accessories in the "Accessories" catalog section.

MPZ 45

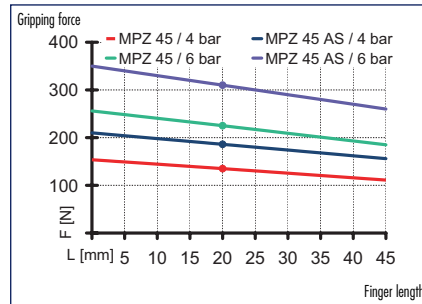
Pneumatic · 3-Finger Centric Gripper · Gripper for Small Components



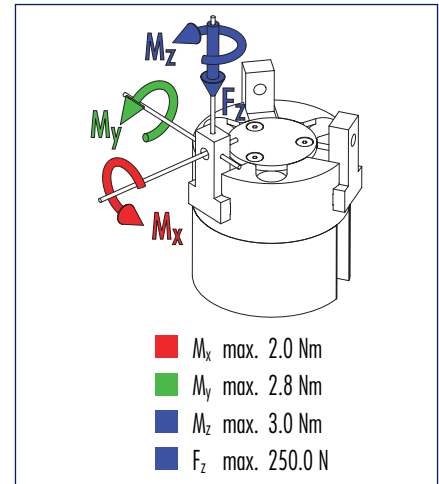
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

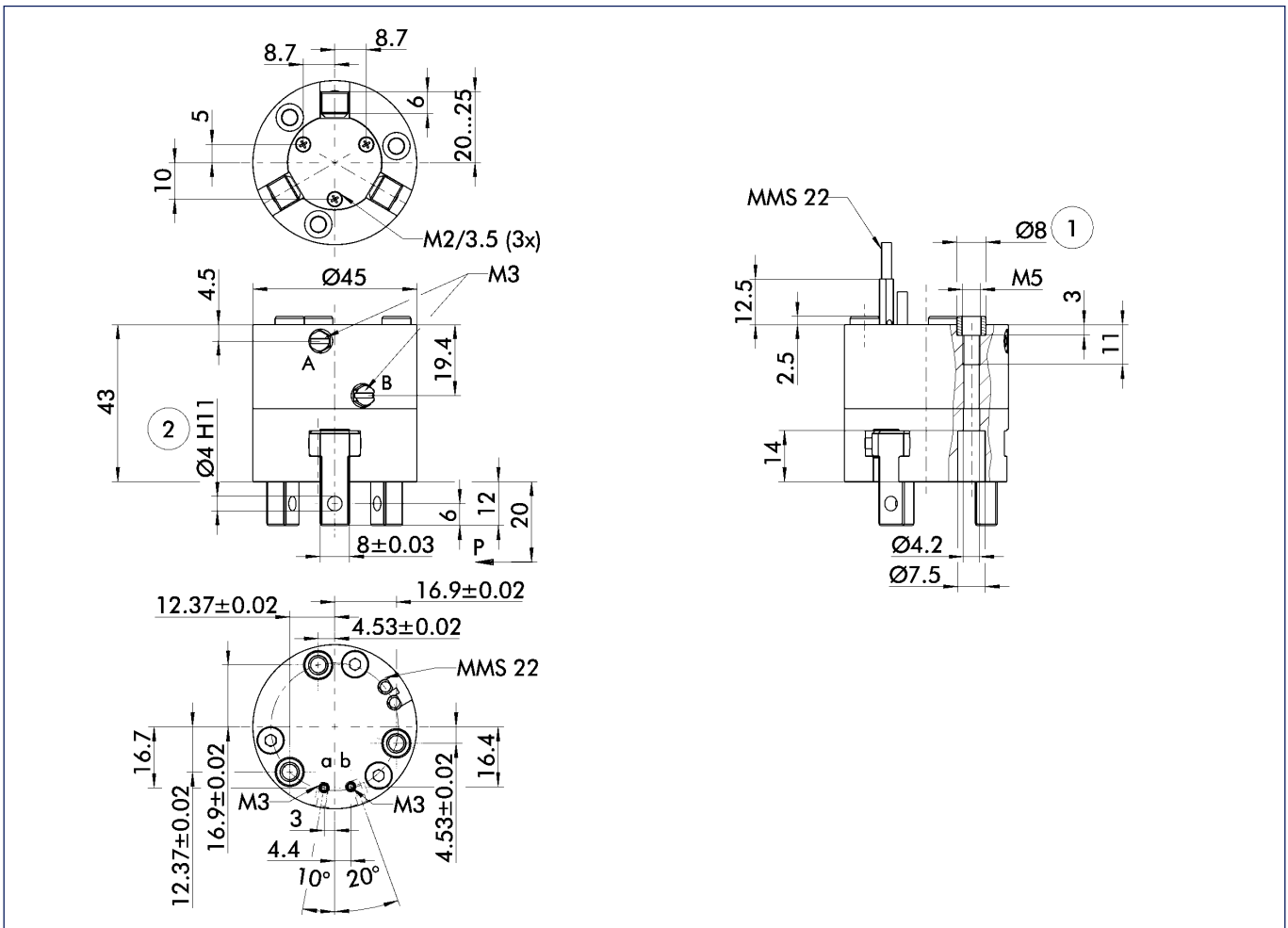


① Moments and forces apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement occurs without any hitting or bouncing. Service life may reduce.

Technical data

Description		MPZ 45	MPZ 45-AS	MPZ 45-IS	MPZ 45 FPS
	ID	0340530	0340531	0340532	0340533
Stroke per finger	[mm]	5.0	5.0	5.0	5.0
Closing force	[N]	225.0	310.0		225.0
Opening force	[N]	245.0		340.0	245.0
Min. gripping force through spring	[N]		85.0	95.0	
Weight	[kg]	0.22	0.28	0.28	0.29
Recommended workpiece weight	[kg]	1.1	1.1	1.1	1.1
Air consumption per double stroke	[cm ³]	9.852	9.852	9.852	9.852
Nominal pressure	[bar]	6.0	6.0	6.0	6.0
Minimum pressure	[bar]	2.0	4.0	4.0	2.0
Maximum pressure	[bar]	8.0	6.5	6.5	8.0
Closing time	[s]	0.05	0.04	0.05	0.05
Opening time	[s]	0.05	0.05	0.04	0.05
Closing/opening time with spring only	[s]			0.3	0.3
Max. permitted finger length	[mm]	45.0	45.0	45.0	45.0
Max. permitted weight per finger	[kg]	0.08	0.08	0.08	0.08
IP class		40	40	40	40
Min. ambient temperature	[°C]	-10.0	-10.0	-10.0	-10.0
Max. ambient temperature	[°C]	90.0	90.0	90.0	90.0
Repeat accuracy	[mm]	0.01	0.01	0.01	0.01

Main views

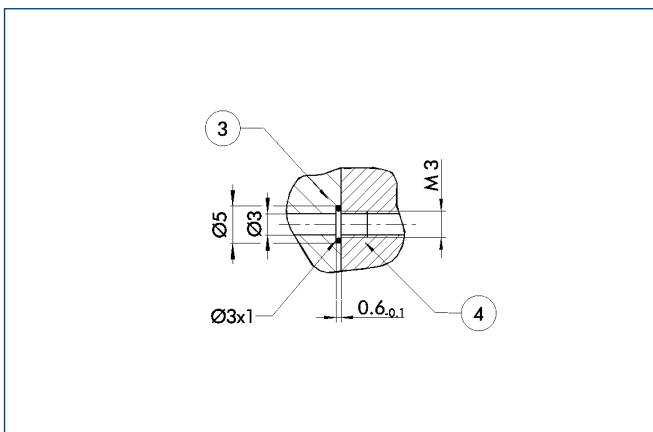


The drawing shows the gripper in the basic version with open jaws, the dimensions do not include the options described below.

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

- A,a Main/direct connection, gripper opening
- B,b Main/direct connection, gripper closing
- ① Gripper connection
- ② Finger connection

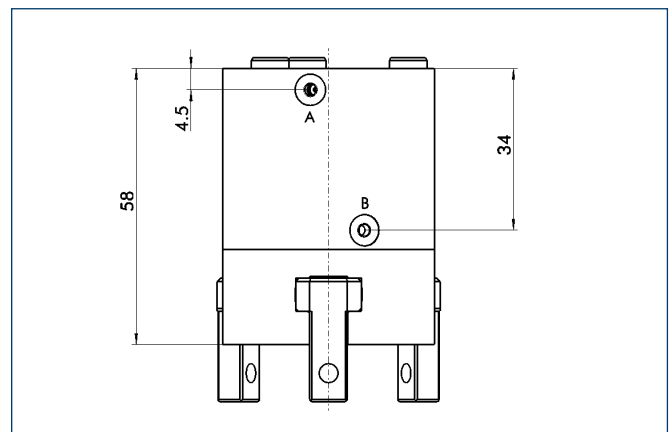
Hose-free direct connection



- ③ Adapter
- ④ Gripper

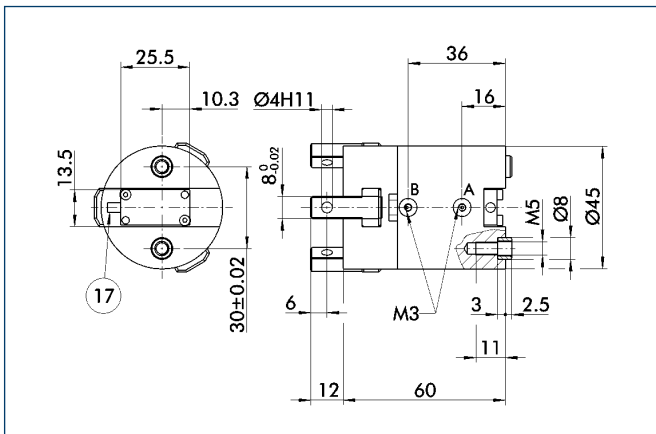
The direct connection is used for supplying compressed air to the gripper without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

AS/IS gripping force safety device



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

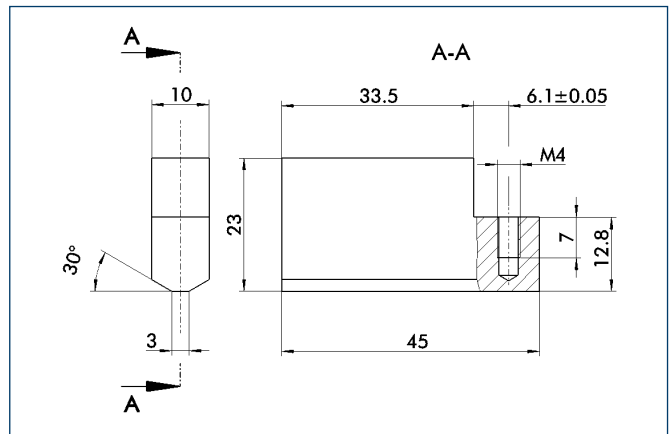
FPS measuring system



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.

Finger blanks



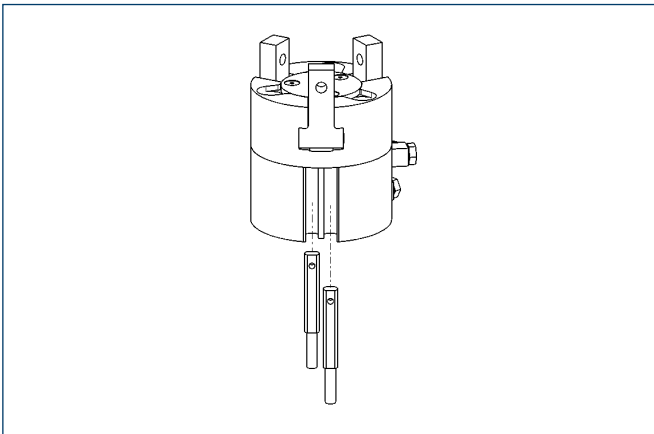
Finger blanks for customized subsequent machining

Description	Material	Scope of delivery	ID
ABR 45	Aluminum	3	0340539



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

Sensor system



End position monitoring:

Electronic magnetic switches, for mounting in C-slot

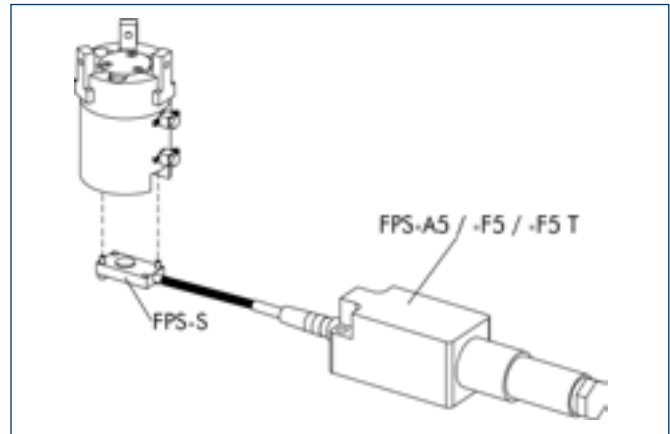
Description	ID	Recommended product
MMS 22-S-M5-NPN	0301439	
MMS 22-S-M5-NPN-SA	0301449	
MMS 22-S-M5-PNP	0301438	
MMS 22-S-M5-PNP-SA	0301448	
MMS 22-S-M8-NPN	0301433	
MMS 22-S-M8-NPN-SA	0301443	
MMS 22-S-M8-PNP	0301432	•
MMS 22-S-M8-PNP-SA	0301442	
MMSK 22-S-NPN	0301435	
MMSK 22-S-NPN-SA	0301445	
MMSK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

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

Extension cables for proximity switches/magnetic switches

Description	ID
KA BG05-L 3P-0300	0301652
KA BG08-L 3P-0300-PNP	0301622
KA BW05-L 3P-0300	0301650
KA BW08-L 3P-0300-NPN	0301602
KA BW08-L 3P-0300-PNP	0301594
KA BW08-L 3P-0500-NPN	9641116
KA BW08-L 3P-0500-PNP	0301502
KV BW08-SG08 3P-0030-PNP	0301495
KV BW08-SG08 3P-0100-PNP	0301496
KV BW08-SG08 3P-0200-PNP	0301497

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



Measuring system:

FPS Flexible position sensor

Description	ID
FPS-F5	0301805
FPS-F5 T	0301807
FPS-S 13	0301705

① When using an FPS system, an FPS sensor (FPS-S) and an 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.

