PSH

Pneumatic · 2-Finger Parallel Gripper · Long-stroke Gripper

Sizes
22 .. 52

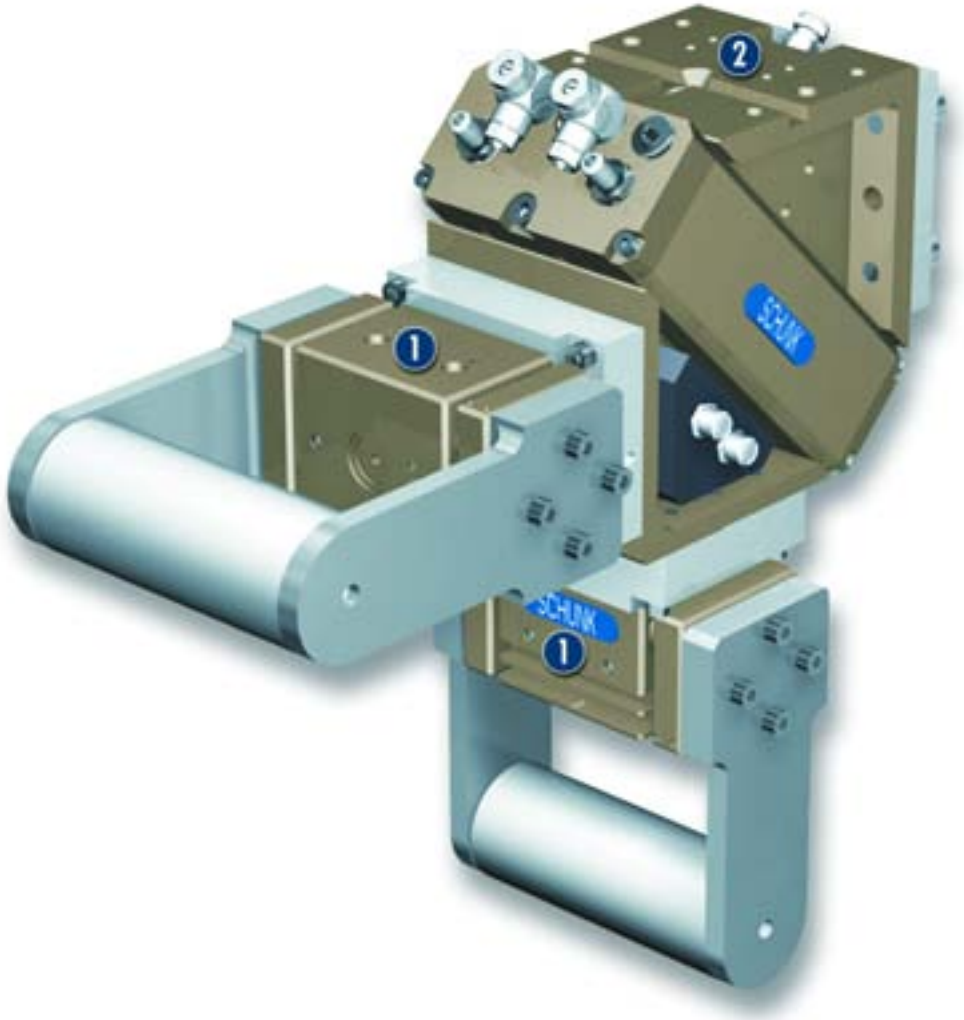
Weight
0.77 kg .. 8.05 kg

Gripping force
320 N .. 1760 N

Stroke per finger
14 mm .. 64 mm

Workpiece weight
1.60 kg .. 8.80 kg

Application example



Rapid loading and unloading unit on a swivel head base. Due to the sturdiness of this unit, it is particularly suitable for use in machine tools.

1 PSH 22-2 2-Finger Parallel Gripper

2 PSK 34 Swivel Head

Long-stroke Gripper

2-Finger parallel gripper with long jaw stroke and dirt-resistant round guides

Area of application

for slightly dirty working environments and a broad range of parts

Your advantages and benefits

High maximum load capabilities possible
suitable for the use of long gripper fingers

Dirt-protected round guides
sealed, for long strokes

Attached to two gripper sides with centering
for universal and flexible gripper mounting

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

Comprehensive sensor accessories
for diverse monitoring tasks and stroke position monitoring

General information on the series

Working principle
Pneumatic double piston system synchronized by rack and pinion principle

Housing material
Aluminum alloy, hard-anodized

Base jaw material
Aluminum alloy, hard-anodized

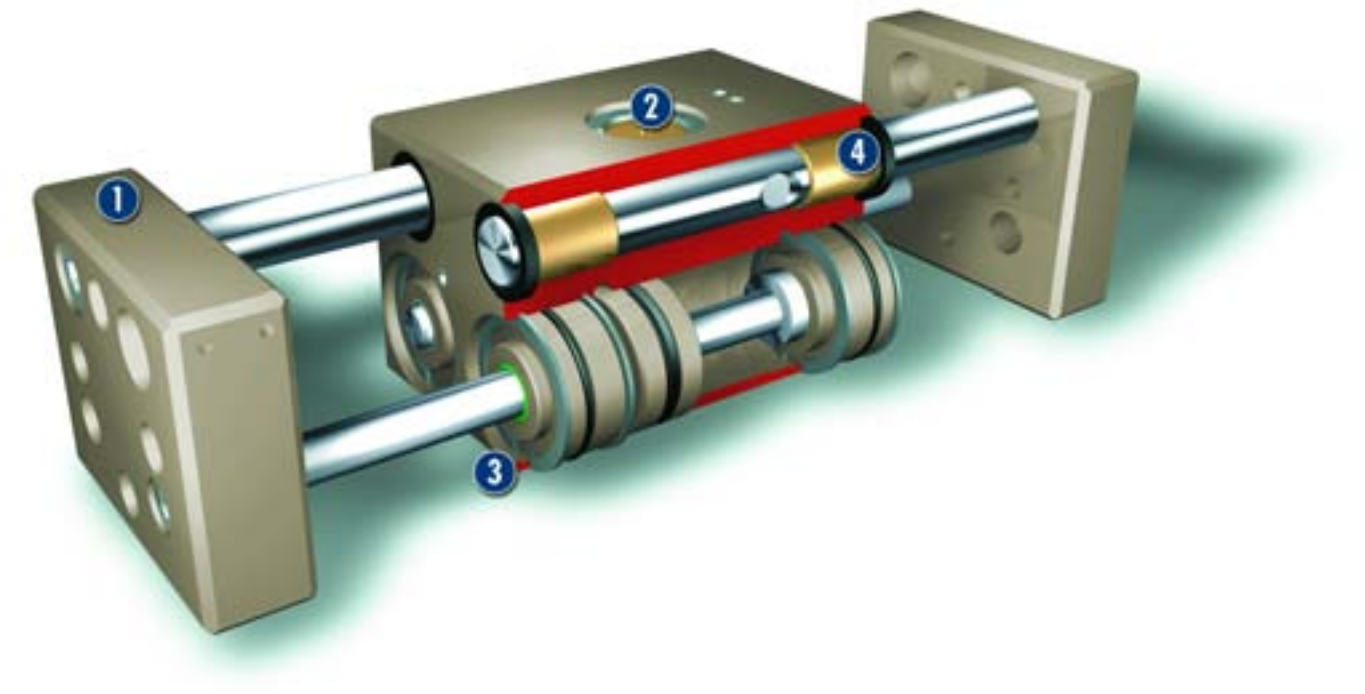
Actuation
Pneumatic, with filtered compressed air (10 µm): Dry, lubricated or non-lubricated
Pressure medium: Requirements on quality of the compressed air according to DIN ISO 8573-1: 6 4 4.

Warranty
24 months

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

Maintenance of gripping force
Possible with SDV-P pressure maintenance valve

Sectional diagram



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

2 **Kinematics**
rack and pinion principle for centric gripping

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

4 **Round guides**
sealed, for long strokes

Function description

The application of pressure on the pistons sets the base jaws, each of which is secured to the piston and the rack, in motion. The jaw stroke is synchronized by means of rack and pinion kinematics.

Options and special information

Finger position
can be monitored by magnetic and/or inductive proximity switches. Unsynchronized version available on request as a special design.

Accessories

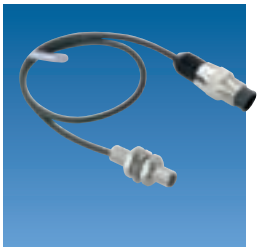
Accessories from SCHUNK – the suitable supplement for maximum functionality, reliability and performance of all automation modules.

Centering sleeves

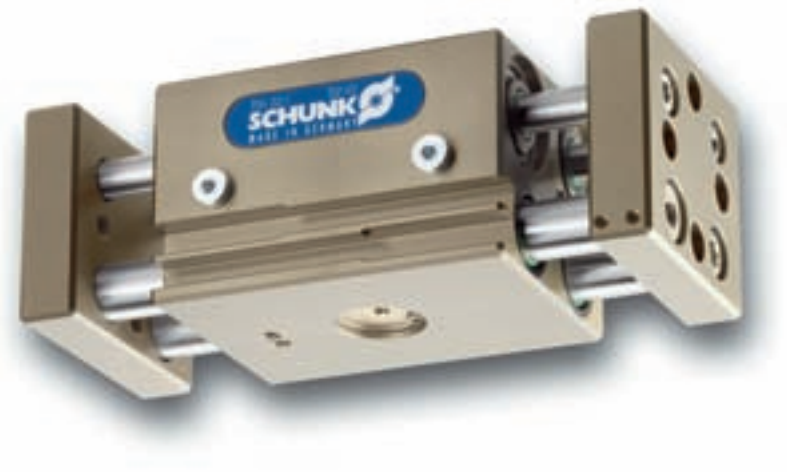
Fittings

MMS magnetic switches

IN inductive proximity switches

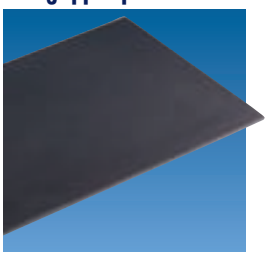


Quentes plastic inserts



KV/KA sensor cables

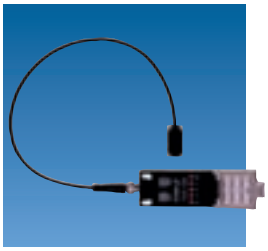
HKI gripper pads



V sensor distributors

SDV-P pressure maintenance valves

FPS 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 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.

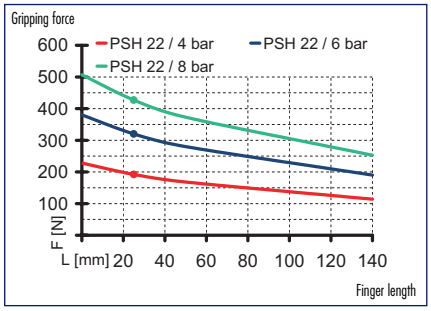
Closing and opening times

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.

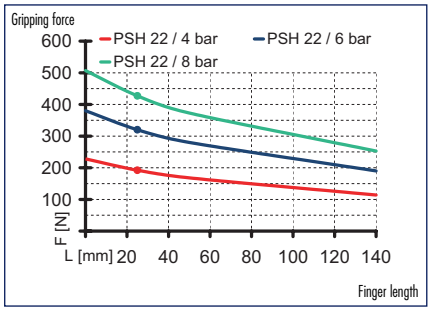
PSH 22

Pneumatic · 2-Finger Parallel Gripper · Long-stroke Gripper

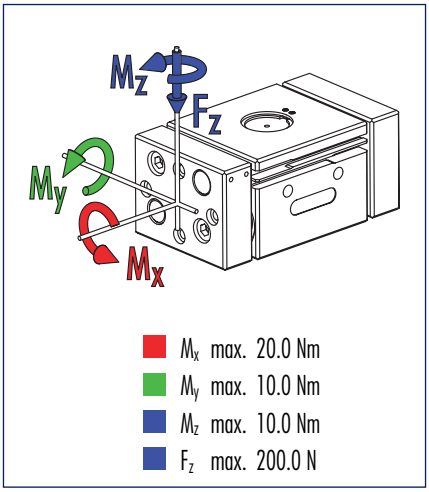
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

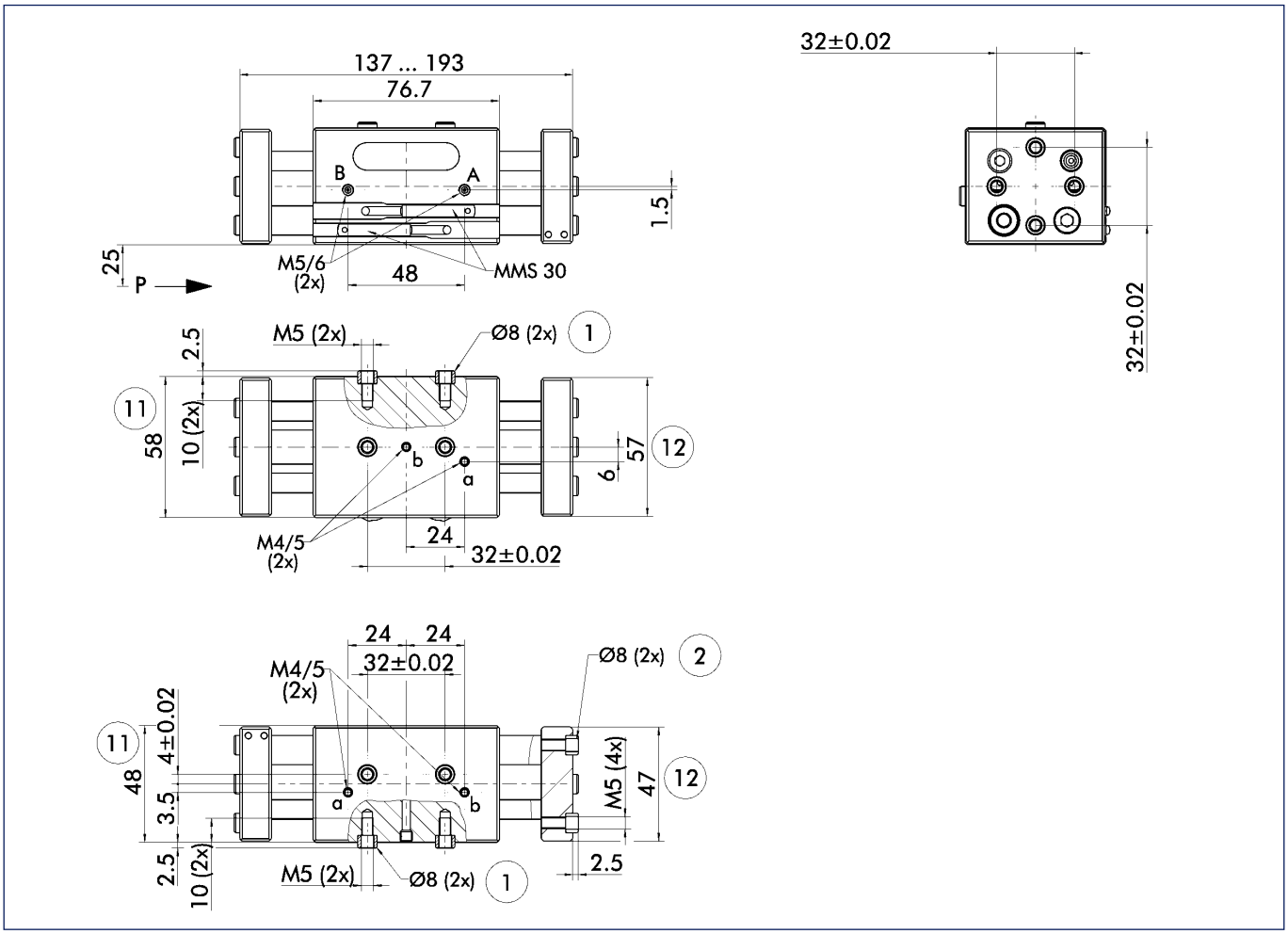


ⓘ Moments and forces apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement occurs without any hitting or bouncing.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

Technical data

Description		PSH 22-1	PSH 22-2
	ID	0302122	0302123
Stroke per finger	[mm]	28.0	14.0
Closing force	[N]	320.0	320.0
Opening force	[N]	320.0	320.0
Weight	[kg]	0.95	0.77
Recommended workpiece weight	[kg]	1.6	1.6
Air consumption per double stroke	[cm^3]	36.0	18.0
Nominal pressure	[bar]	6.0	6.0
Minimum pressure	[bar]	3.0	3.0
Maximum pressure	[bar]	8.0	8.0
Closing time	[s]	0.1	0.08
Opening time	[s]	0.1	0.08
Max. permitted finger length	[mm]	140.0	140.0
Max. permitted weight per finger	[kg]	0.8	0.8
IP class		67	67
Min. ambient temperature	[°C]	-10.0	-10.0
Max. ambient temperature	[°C]	90.0	90.0
Repeat accuracy	[mm]	0.1	0.1

Main views

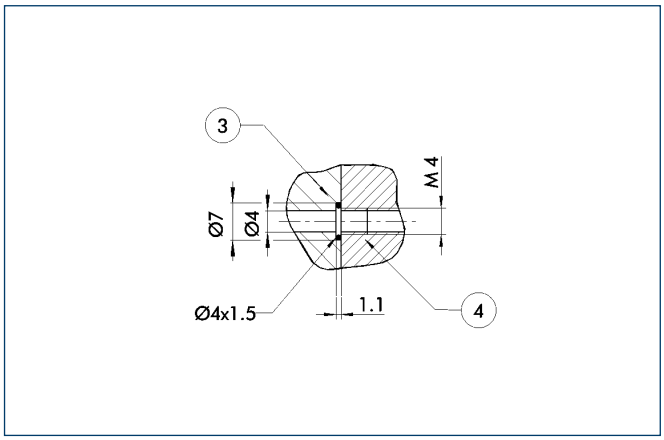


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ The SDV-P pressure maintenance valve can be used as a gripping force safety 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
⑪ Housing
⑫ Jaw

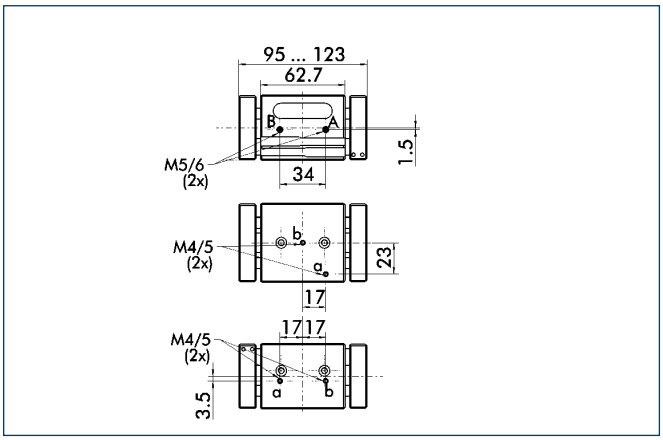
Hose-free direct connection



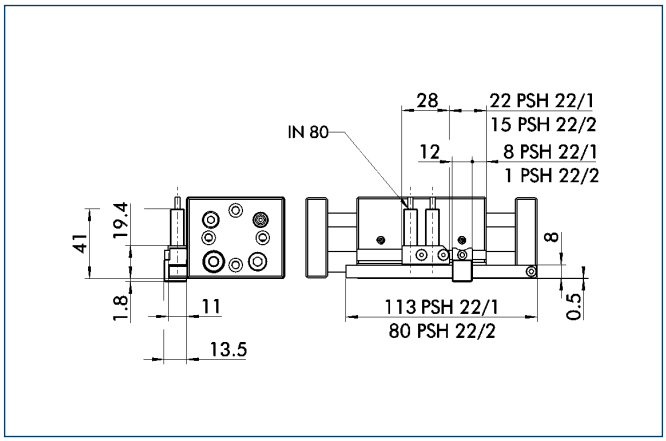
③ Adapter
④ Gripper

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.

Version, stroke 2



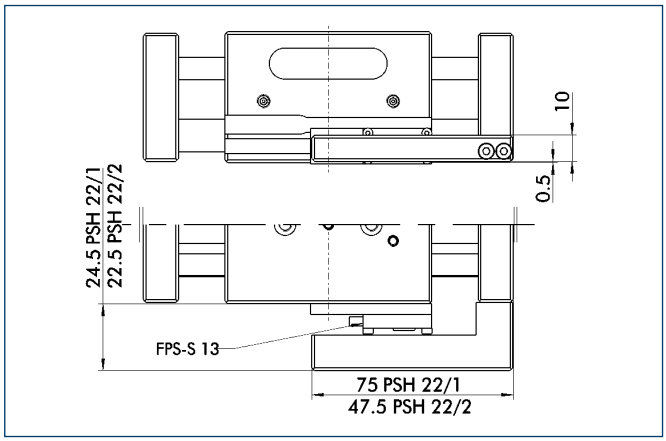
Mounting kit for proximity switch



The mounting kit consists of brackets, switch cams and the associated mounting materials. The proximity switches must be ordered separately.

Description	ID
HG-PSH 22-1	0300754
HG-PSH 22-2	0300755

Mounting kit for FPS

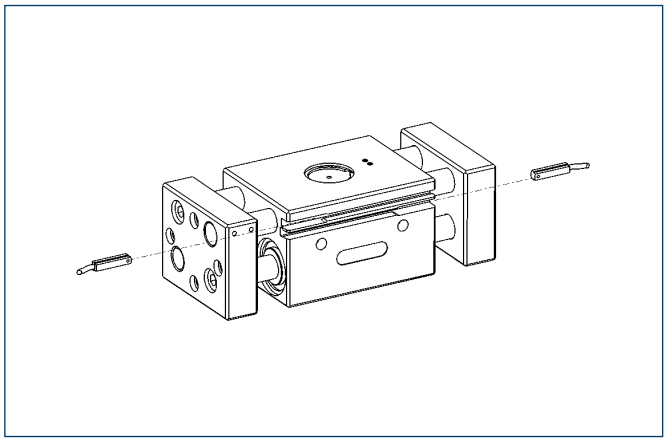


The FPS flexible position sensor can distinguish between five freely programmable ranges or switching points for the stroke of a gripper and can be used in conjunction with a PC as a measuring system.

Description	ID
AS-PSH 22-1	0301736
AS-PSH 22-2	0301737

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

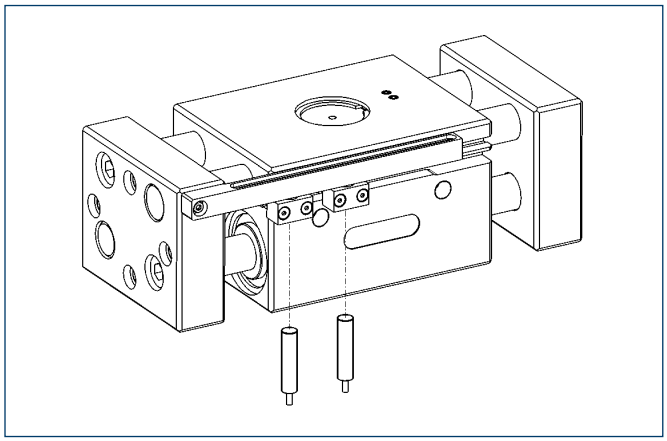
Sensor system



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

Description	ID	Recommended product
MMS 30-S-M12-PNP	0301571	
MMS 30-S-M8-PNP	0301471	•
MMSK 30-S-PNP	0301563	

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



End position monitoring:
Inductive proximity switches, mounted with mounting kit

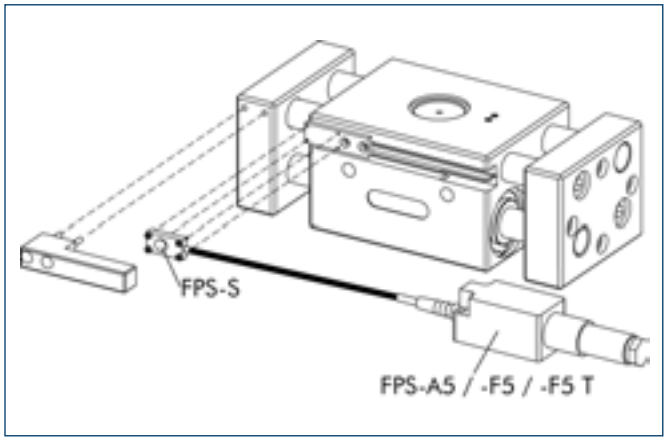
Description	ID	Recommended product
HG-PSH 22-1	0300754	
HG-PSH 22-2	0300755	
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	•
IN-C 80-S-M8	0301475	
INK 80-S	0301550	
INK 80-SL	0301579	

ⓘ 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 BG08-L 3P-0300-PNP	0301622
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
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.



Measuring system:
FPS Flexible position sensor

Description	ID
AS-PSH 22-1	0301736
AS-PSH 22-2	0301737
FPS-F5	0301805
FPS-F5 T	0301807
FPS-S 13	0301705

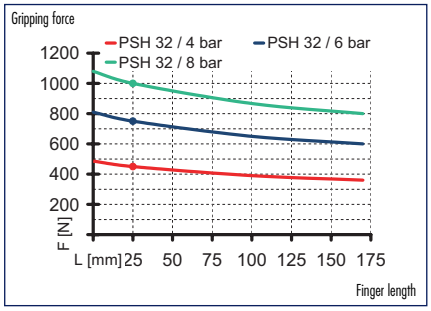
ⓘ When using an FPS system, an FPS sensor (FPS-S) and an control unit (FPS-F5 / F5 T or A5) are required for each gripper as well as a mounting kit (AS), if listed. Cable extensions (KV) are available as options in the "Accessories" catalog section.

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

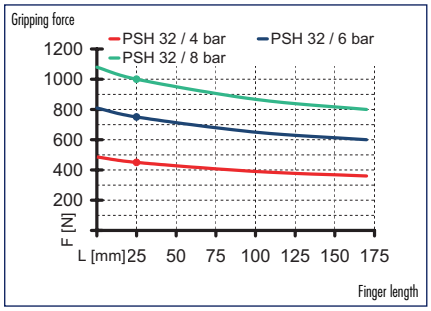
PSH 32

Pneumatic · 2-Finger Parallel Gripper · Long-stroke Gripper

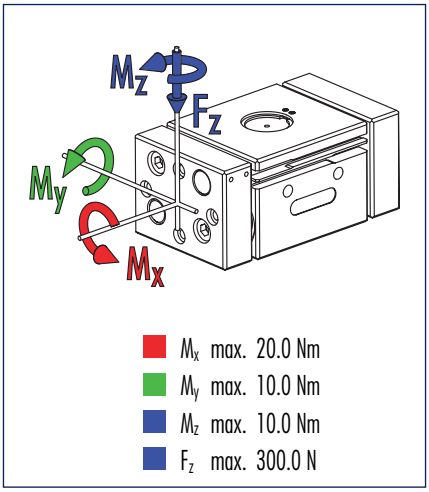
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

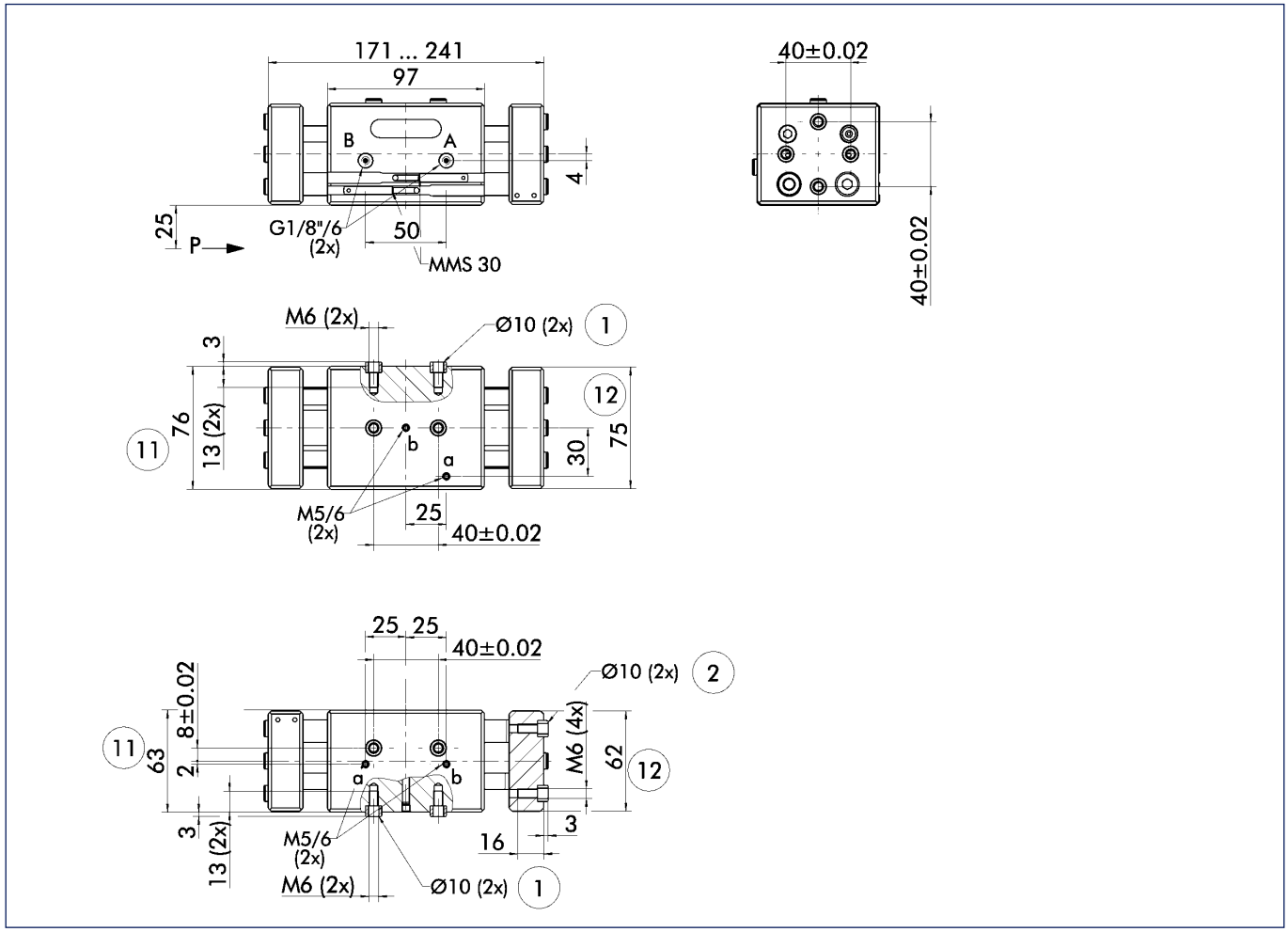


ⓘ Moments and forces apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement occurs without any hitting or bouncing.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

Technical data

Description		PSH 32-1	PSH 32-2
	ID	0302132	0302133
Stroke per finger	[mm]	35.0	22.5
Closing force	[N]	750.0	750.0
Opening force	[N]	750.0	750.0
Weight	[kg]	2.05	1.8
Recommended workpiece weight	[kg]	3.75	3.75
Air consumption per double stroke	[cm³]	101.0	65.0
Nominal pressure	[bar]	6.0	6.0
Minimum pressure	[bar]	3.0	3.0
Maximum pressure	[bar]	8.0	8.0
Closing time	[s]	0.2	0.12
Opening time	[s]	0.2	0.12
Max. permitted finger length	[mm]	170.0	170.0
Max. permitted weight per finger	[kg]	1.5	1.5
IP class		67	67
Min. ambient temperature	[°C]	-10.0	-10.0
Max. ambient temperature	[°C]	90.0	90.0
Repeat accuracy	[mm]	0.1	0.1

Main views

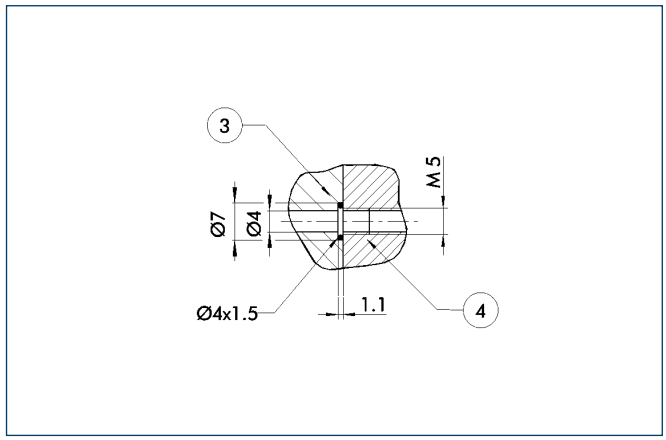


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ The SDV-P pressure maintenance valve can be used as a gripping force safety 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
⑪ Housing
⑫ Jaw

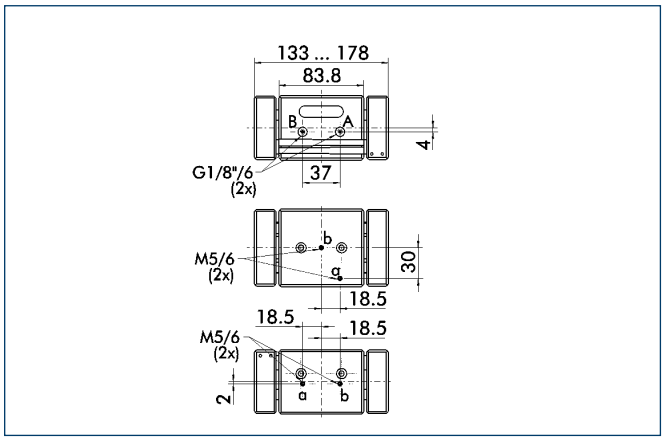
Hose-free direct connection



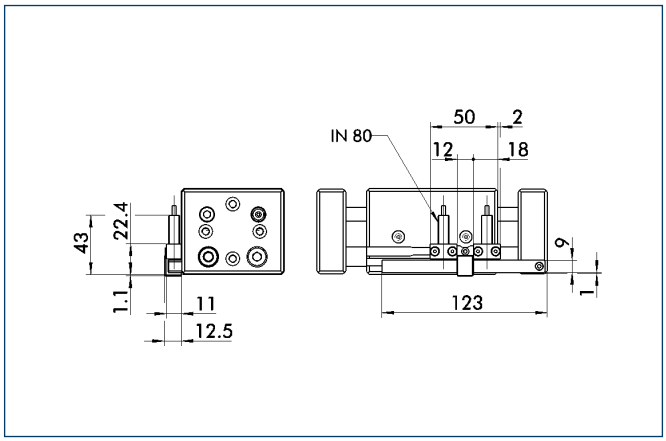
③ Adapter
④ Gripper

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.

Version, stroke 2



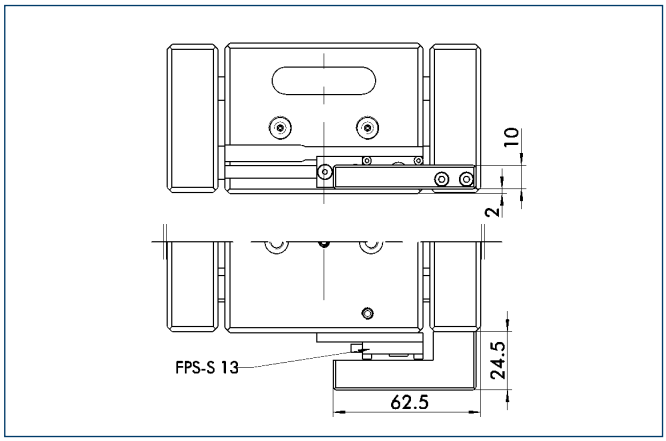
Mounting kit for proximity switch



The mounting kit consists of brackets, switch cams and the associated mounting materials. The proximity switches must be ordered separately.

Description	ID
HG-PSH 32	0300756

Mounting kit for FPS

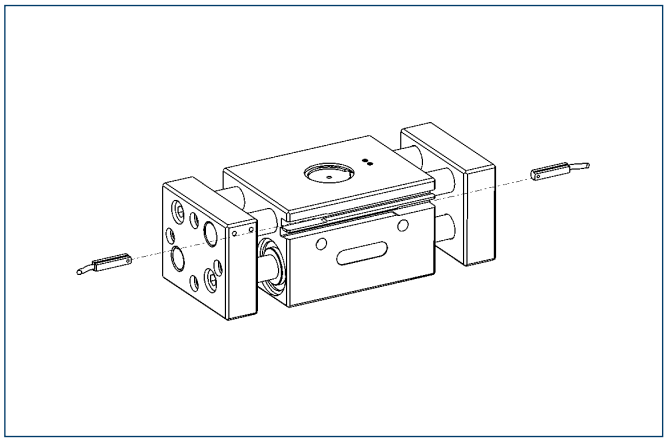


The FPS flexible position sensor can distinguish between five freely programmable ranges or switching points for the stroke of a gripper and can be used in conjunction with a PC as a measuring system.

Description	ID
AS-PSH 32-2	0301738

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

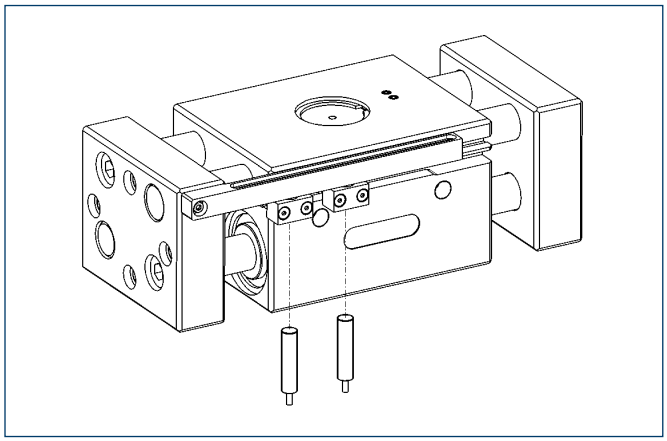
Sensor system



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

Description	ID	Recommended product
MMS 30-S-M12-PNP	0301571	
MMS 30-S-M8-PNP	0301471	•
MMSK 30-S-PNP	0301563	

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



End position monitoring:
Inductive proximity switches, mounted with mounting kit

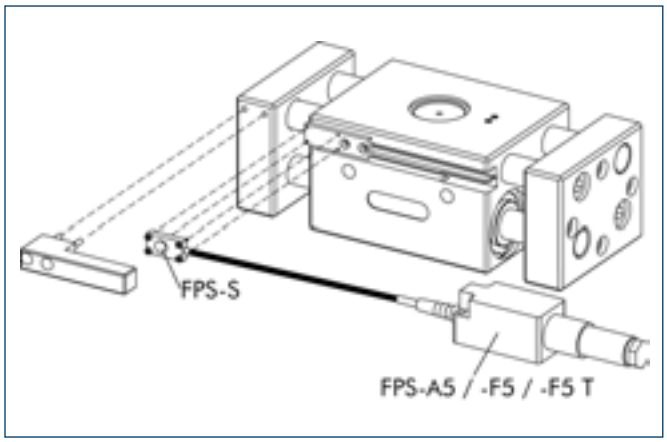
Description	ID	Recommended product
HG-PSH 32	0300756	
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	•
IN-C 80-S-M8	0301475	
INK 80-S	0301550	
INK 80-SL	0301579	

ⓘ 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 BG08-L 3P-0300-PNP	0301622
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
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.



Measuring system:
FPS Flexible position sensor

Description	ID
AS-PSH 32-2	0301738
FPS-F5	0301805
FPS-F5 T	0301807
FPS-S 13	0301705

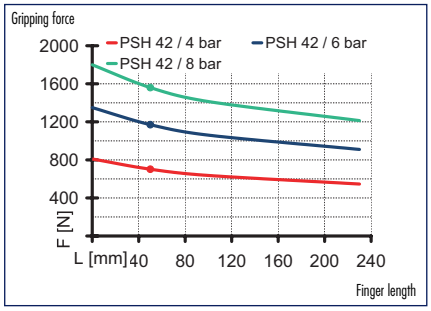
ⓘ When using an FPS system, an FPS sensor (FPS-S) and an control unit (FPS-F5 / F5 T or A5) are required for each gripper as well as a mounting kit (AS), if listed. Cable extensions (KV) are available as options in the "Accessories" catalog section.

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

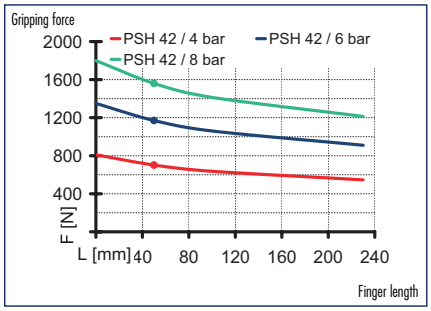
PSH 42

Pneumatic · 2-Finger Parallel Gripper · Long-stroke Gripper

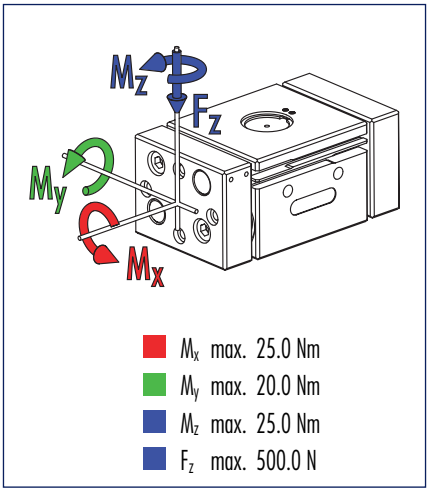
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

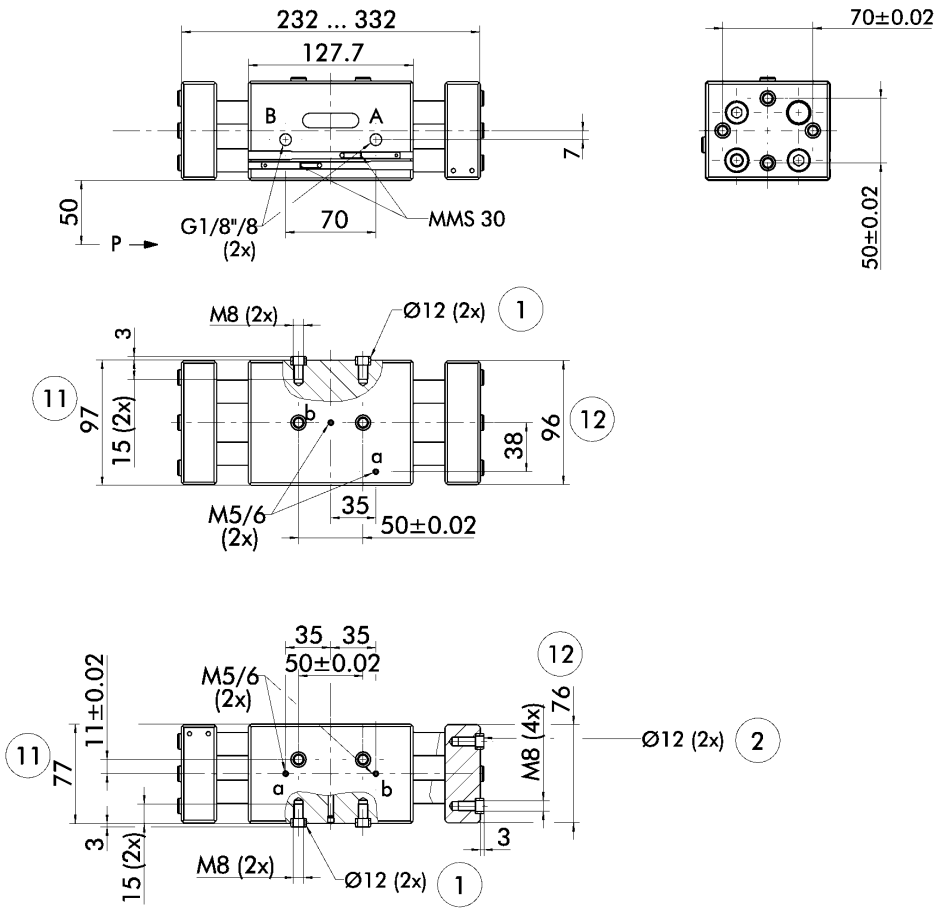


ⓘ Moments and forces apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement occurs without any hitting or bouncing.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

Technical data

Description		PSH 42-1	PSH 42-2
	ID	0302142	0302143
Stroke per finger	[mm]	50.0	29.0
Closing force	[N]	1170.0	1170.0
Opening force	[N]	1170.0	1170.0
Weight	[kg]	4.65	3.9
Recommended workpiece weight	[kg]	4.25	4.25
Air consumption per double stroke	[cm^3]	255.0	148.0
Nominal pressure	[bar]	6.0	6.0
Minimum pressure	[bar]	3.0	3.0
Maximum pressure	[bar]	8.0	8.0
Closing time	[s]	0.25	0.15
Opening time	[s]	0.25	0.15
Max. permitted finger length	[mm]	230.0	230.0
Max. permitted weight per finger	[kg]	2.5	2.5
IP class		67	67
Min. ambient temperature	[°C]	-10.0	-10.0
Max. ambient temperature	[°C]	90.0	90.0
Repeat accuracy	[mm]	0.05	0.05

Main views

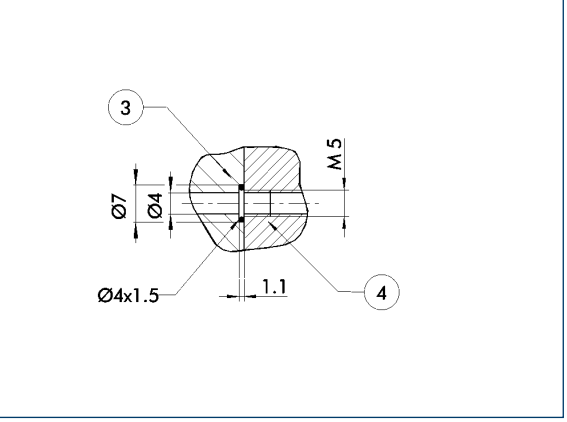


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ The SDV-P pressure maintenance valve can be used as a gripping force safety 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
⑪ Housing
⑫ Jaw

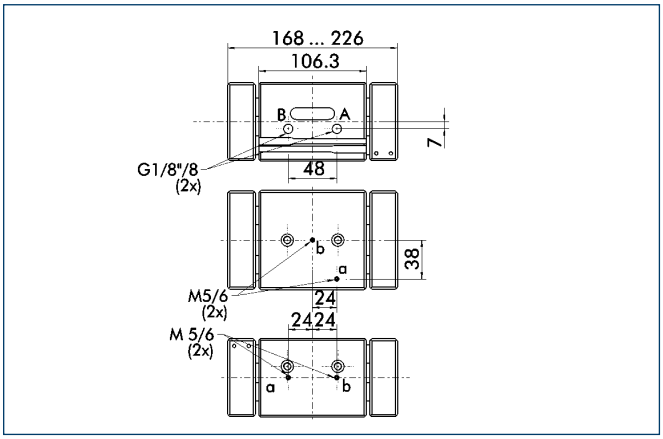
Hose-free direct connection



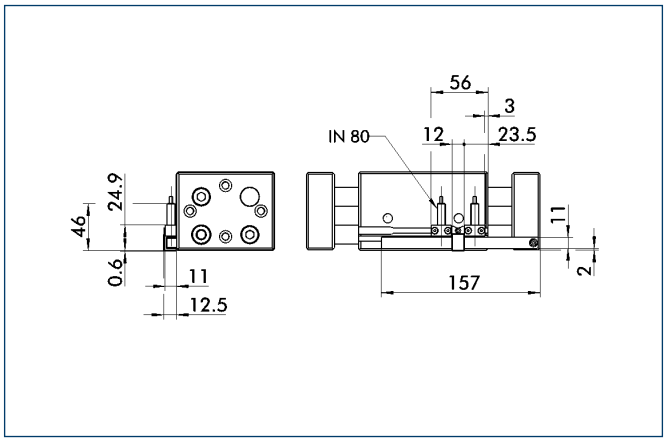
③ Adapter
④ Gripper

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.

Version, stroke 2



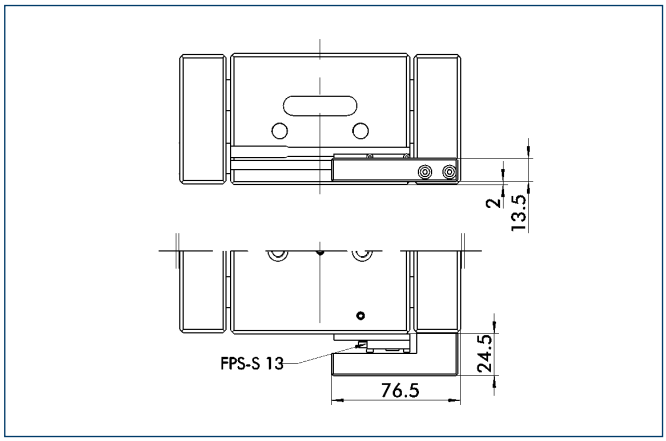
Mounting kit for proximity switch



The mounting kit consists of brackets, switch cams and the associated mounting materials. The proximity switches must be ordered separately.

Description	ID
HG-PSH 42	0300757

Mounting kit for FPS

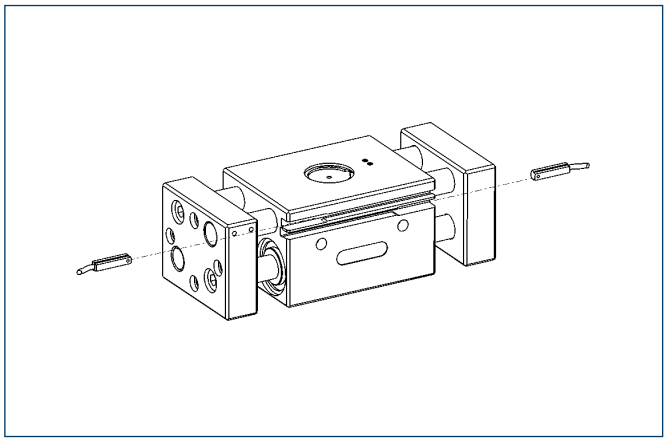


The FPS flexible position sensor can distinguish between five freely programmable ranges or switching points for the stroke of a gripper and can be used in conjunction with a PC as a measuring system.

Description	ID
AS-PSH 42-2	0301739

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

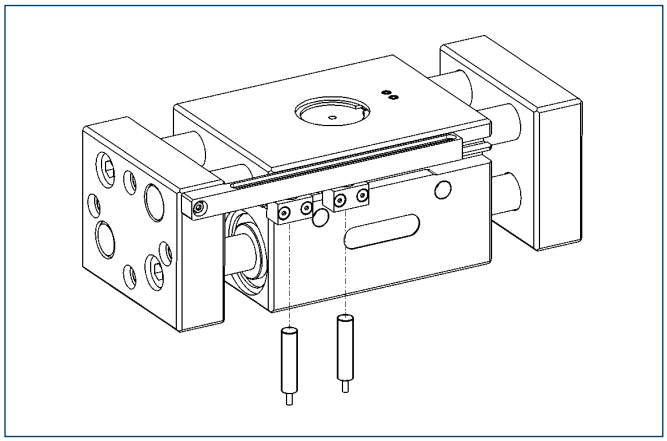
Sensor system



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

Description	ID	Recommended product
MMS 30-S-M12-PNP	0301571	
MMS 30-S-M8-PNP	0301471	•
MMSK 30-S-PNP	0301563	

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



End position monitoring:
Inductive proximity switches, mounted with mounting kit

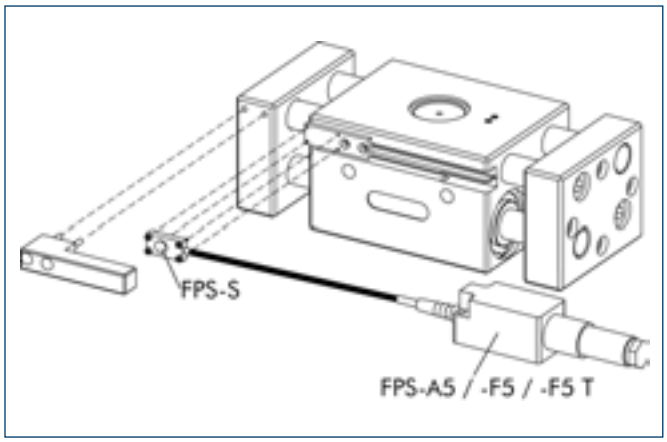
Description	ID	Recommended product
HG-PSH 42	0300757	
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	•
IN-C 80-S-M8	0301475	
INK 80-S	0301550	
INK 80-SL	0301579	

ⓘ 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 BG08-L 3P-0300-PNP	0301622
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
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.



Measuring system:
FPS Flexible position sensor

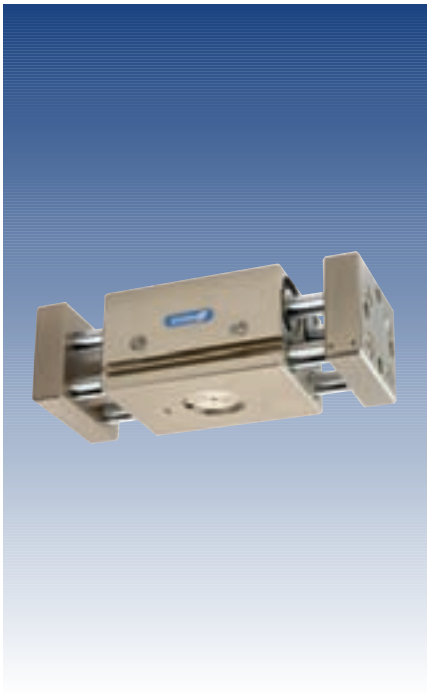
Description	ID
AS-PSH 42-2	0301739
FPS-F5	0301805
FPS-F5 T	0301807
FPS-S 13	0301705

ⓘ 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.

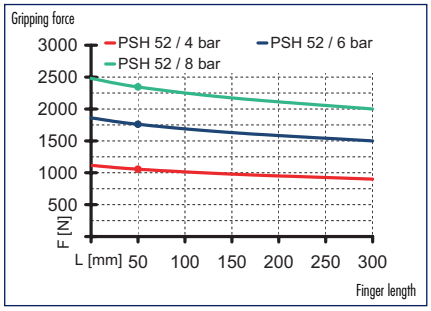
You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

PSH 52

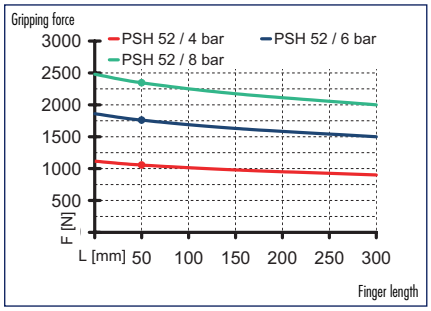
Pneumatic · 2-Finger Parallel Gripper · Long-stroke Gripper



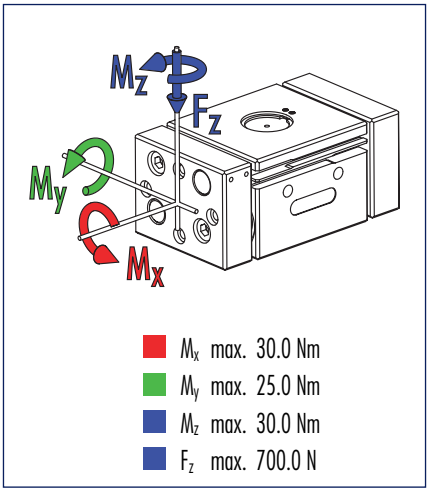
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

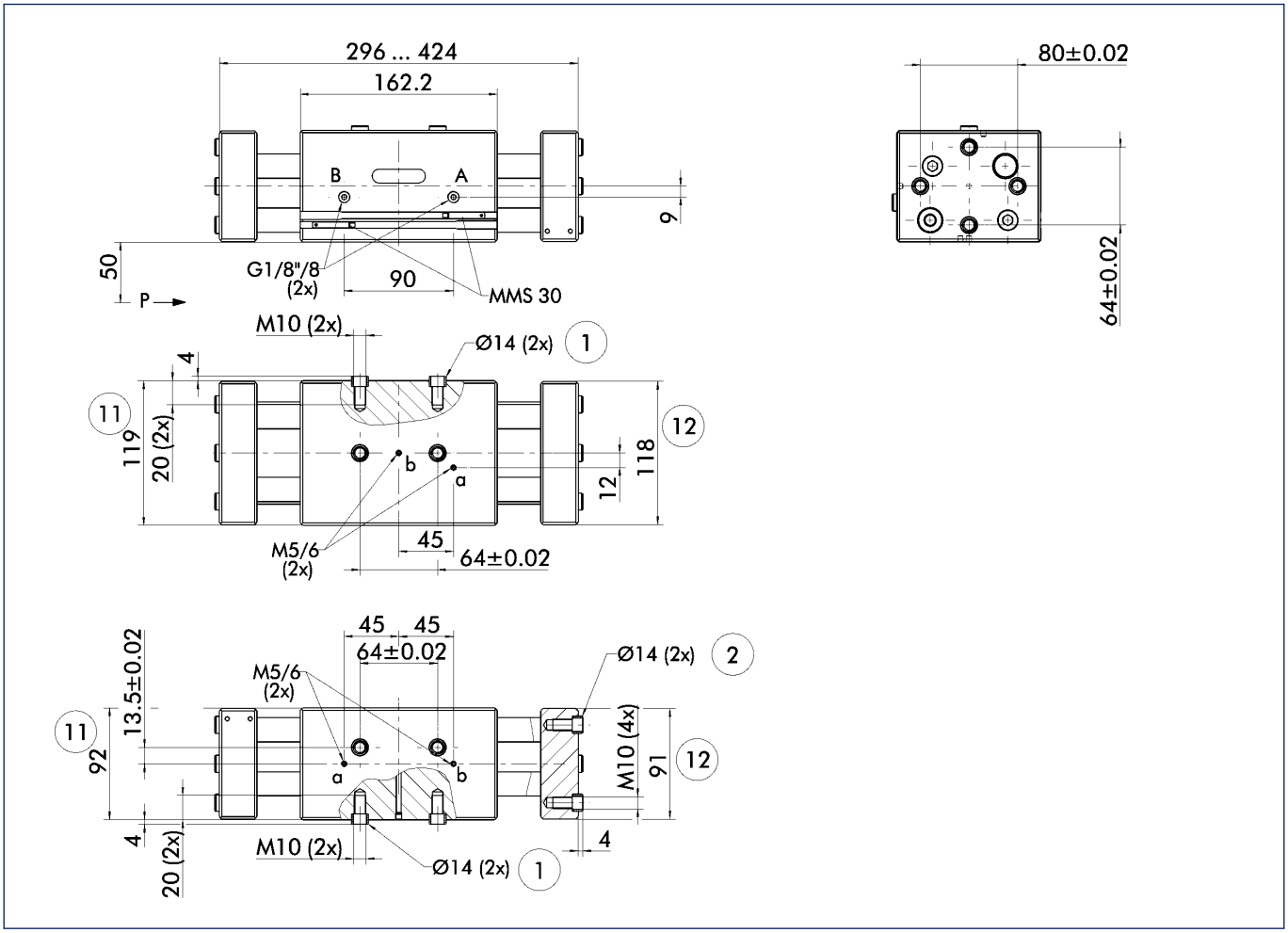


ⓘ Moments and forces apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement occurs without any hitting or bouncing.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

Technical data

Description		PSH 52
	ID	0302152
Stroke per finger	[mm]	64.0
Closing force	[N]	1760.0
Opening force	[N]	1760.0
Weight	[kg]	8.05
Recommended workpiece weight	[kg]	8.8
Air consumption per double stroke	[cm³]	504.0
Nominal pressure	[bar]	6.0
Minimum pressure	[bar]	3.0
Maximum pressure	[bar]	8.0
Closing time	[s]	0.4
Opening time	[s]	0.4
Max. permitted finger length	[mm]	300.0
Max. permitted weight per finger	[kg]	3.5
IP class		67
Min. ambient temperature	[°C]	-10.0
Max. ambient temperature	[°C]	90.0
Repeat accuracy	[mm]	0.05

Main views

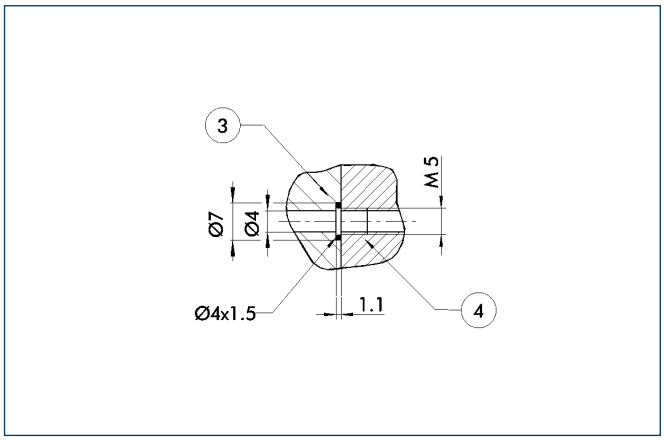


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ The SDV-P pressure maintenance valve can be used as a gripping force safety 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
⑪ Housing
⑫ Jaw

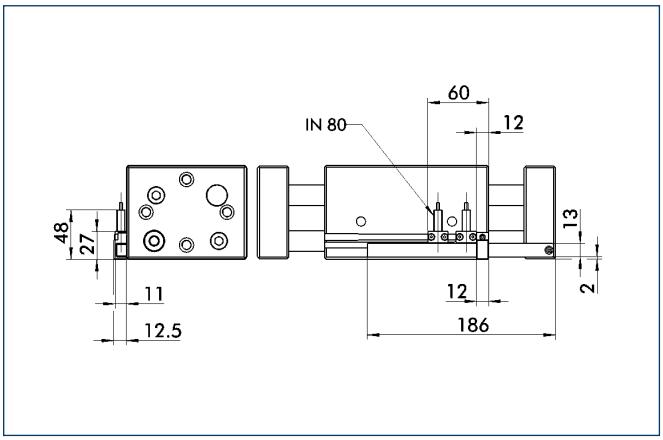
Hose-free direct connection



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.

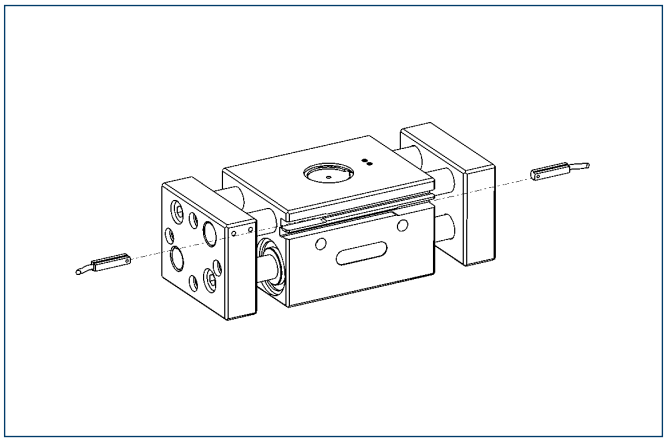
Mounting kit for proximity switch



The mounting kit consists of brackets, switch cams and the associated mounting materials. The proximity switches must be ordered separately.

Description	ID
HG-PSH 52	0300759

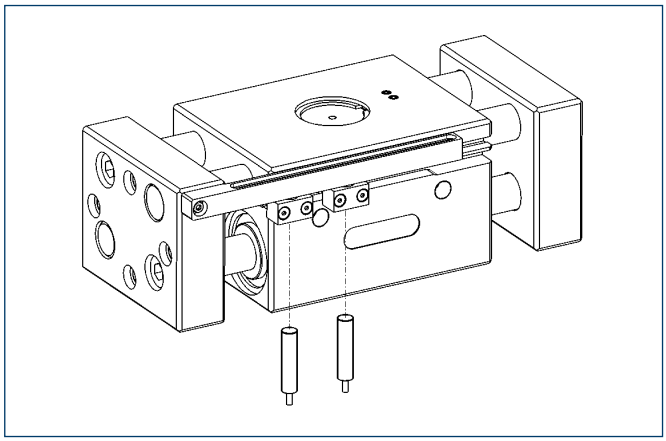
Sensor system



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

Description	ID	Recommended product
MMS 30-S-M12-PNP	0301571	
MMS 30-S-M8-PNP	0301471	•
MMSK 30-S-PNP	0301563	

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



End position monitoring:
Inductive proximity switches, mounted with mounting kit

Description	ID	Recommended product
HG-PSH 52	0300759	
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	•
IN-C 80-S-M8	0301475	
INK 80-S	0301550	
INK 80-SL	0301579	

ⓘ 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 BG08-L 3P-0300-PNP	0301622
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
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.