PZB

Pneumatic · 3-Finger Centric Gripper · Universal Gripper

Sizes
64 .. 160

Weight
0.32 kg .. 3.6 kg

Gripping force
400 N .. 4000 N

Stroke per finger
4 mm .. 13 mm

Workpiece weight
2.0 kg .. 20 kg

Application example

Assembly unit for long wheel spindles. Parts are fed in a space-saving way through the center bore of the gripper and the rotary feed-through.

1. PZB 160 3-Finger Centric Gripper
2. Modified DDF Rotary Feed-through unit with center bore

Universal Gripper

Universal 3-finger centric gripper with large gripping force and high maximum moments per finger, plus center bore

Area 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

Sturdy T-slot guidance
guarantees enormous versatility

High maximum moments possible
suitable for the use of long gripper fingers

High gripping forces achievable
for a varied range of applications

End-to-end center bore provided
for feeding through supply hoses, etc.

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

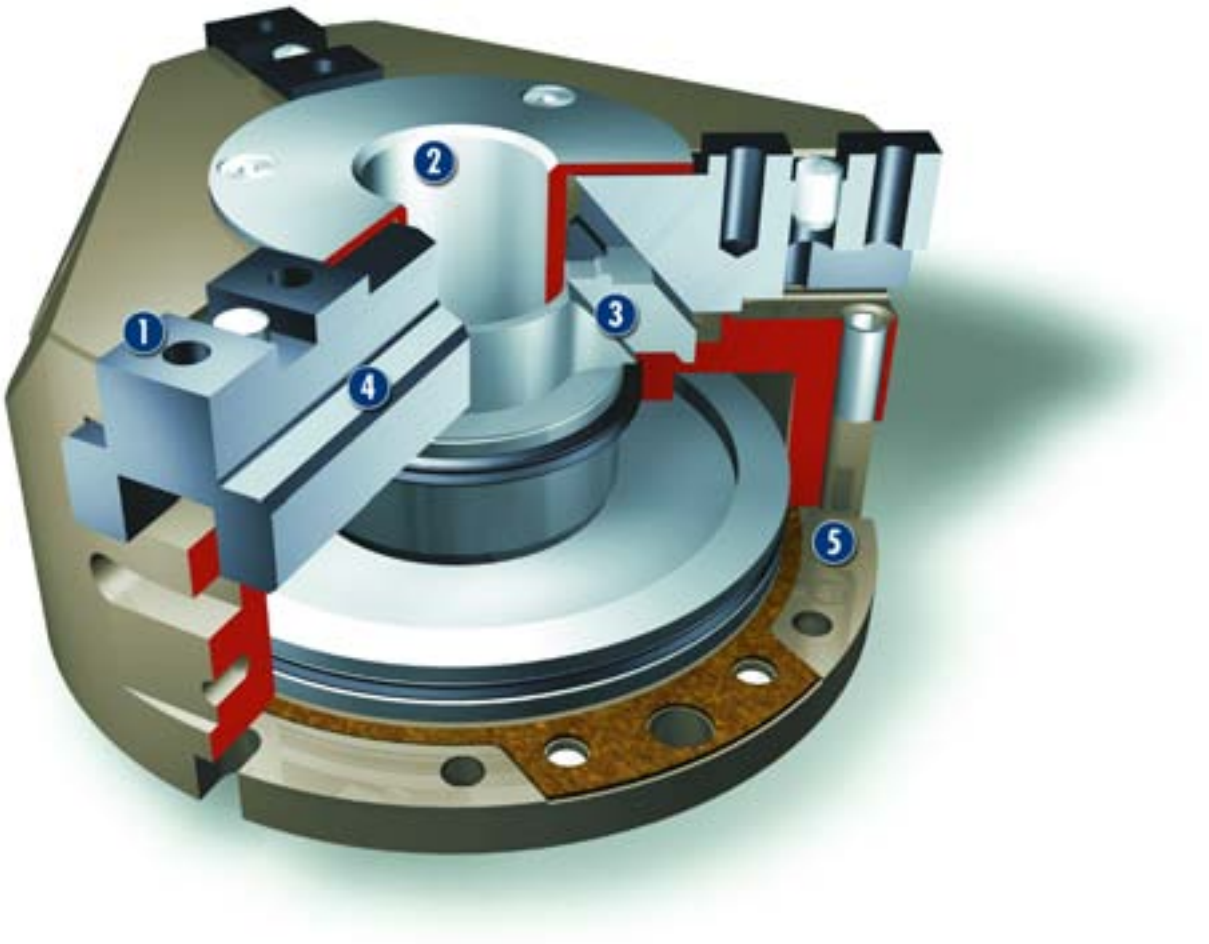
Actuation
Pneumatic, with filtered compressed air (10 µm): Dry, lubricated or non-lubricated
Pressure medium: Requirements on quality of the compressed air according to DIN ISO 8573-1: 6 4 4.

Warranty
24 months

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

Gripping force safety device
possible with SDV-P pressure maintenance valve

Sectional diagram



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

2 Center bore
for the feed-through of workpieces, for sensor systems or optical workpiece recognition

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

4 T-slot guidance
high load-bearing T-slot base jaw guide with minimum play

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

Function description

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

Options and special information

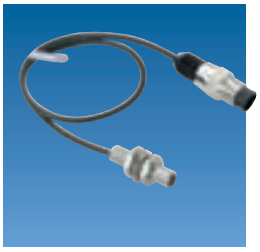
With its center bore, the PZB series is the ideal standard solution for many areas of application.

Accessories

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

Fittings

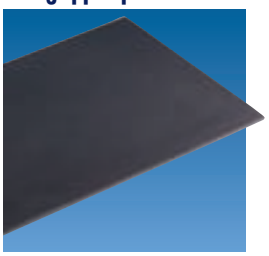
IN inductive proximity switches



Quentes plastic inserts

KV/KA sensor cables

HKI gripper pads

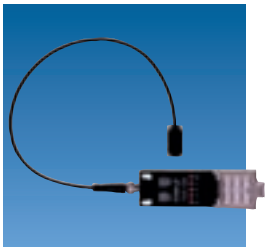


V sensor distributors

SDV-P pressure maintenance valves

Finger blanks

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 claw jaw at distance P (see illustration), measured from the upper edge of the gripper.

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

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

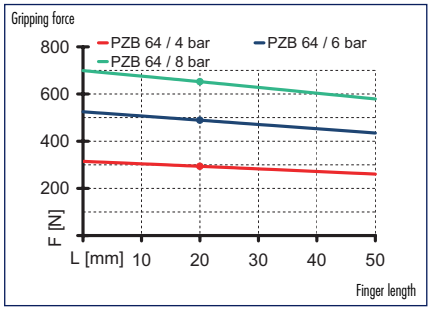
Workpiece weight
The recommended workpiece weight is calculated for a force-type connection with a coefficient of friction of 0.1 and a safety factor of 2 against slippage of the workpiece on acceleration due to gravity g. Considerably heavier workpiece weights are permitted with form-fit gripping.

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.

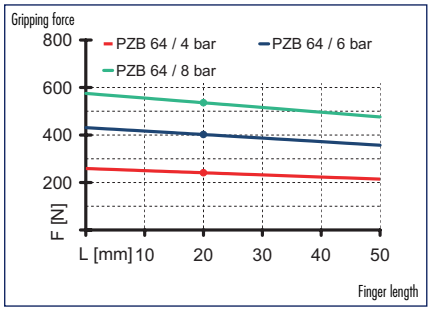
PZB 64

Pneumatic · 3-Finger Centric Gripper · Universal Gripper

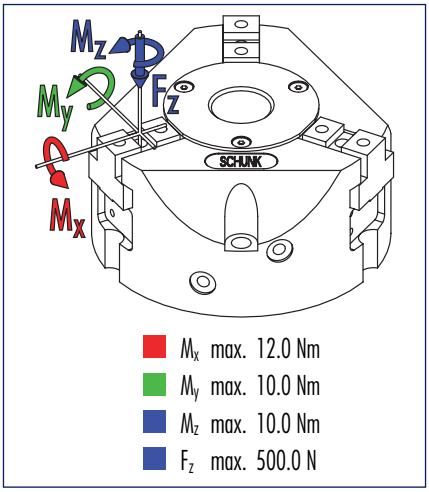
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

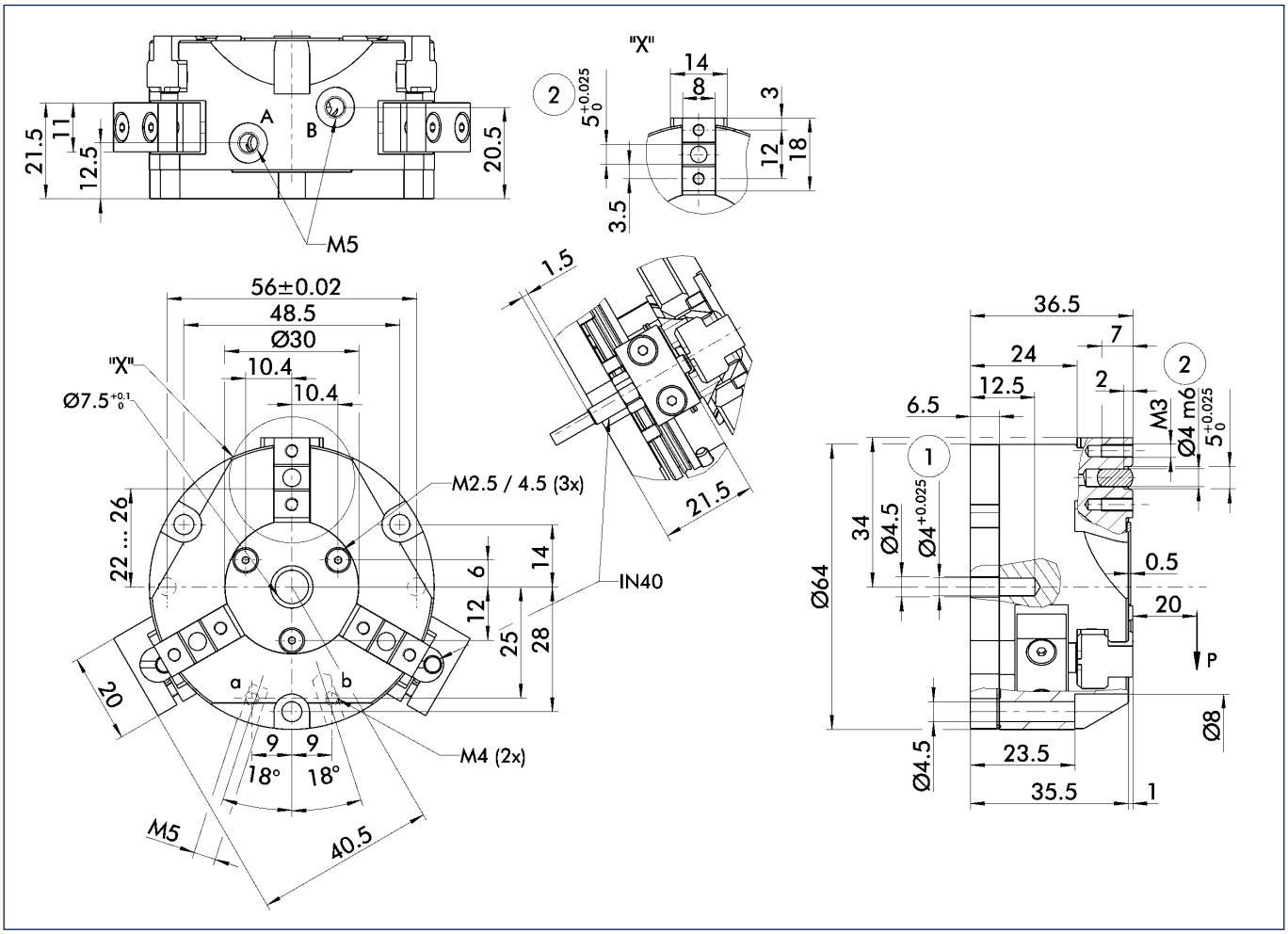


ⓘ Moments and forces apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement occurs without any hitting or bouncing.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

Technical data

Description		PZB 64
	ID	0300345
Stroke per jaw	[mm]	4.0
Closing force	[N]	400.0
Opening force	[N]	490.0
Weight	[kg]	0.32
Recommended workpiece weight	[kg]	2.0
Air consumption per double stroke	[cm³]	16.0
Nominal pressure	[bar]	6.0
Minimum pressure	[bar]	2.0
Maximum pressure	[bar]	8.0
Closing time	[s]	0.04
Opening time	[s]	0.04
Max. permitted finger length	[mm]	50.0
Max. permitted weight per finger	[kg]	0.15
IP class		40
Min. ambient temperature	[°C]	-10.0
Max. ambient temperature	[°C]	90.0
Repeat accuracy	[mm]	0.01
Diameter of center bore	[mm]	7.5

Main views

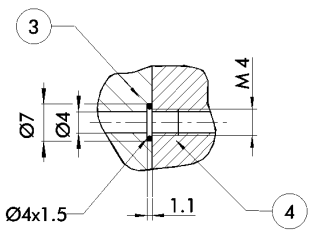


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ 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

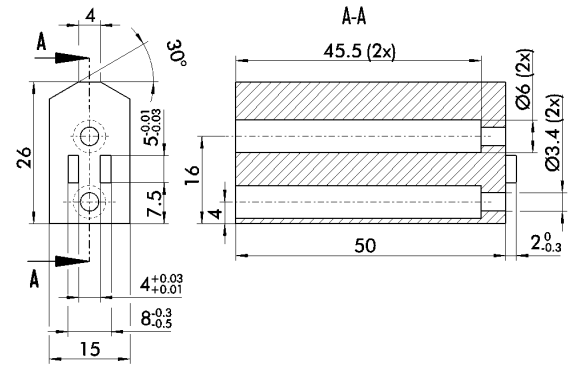
Hose-free direct connection



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.

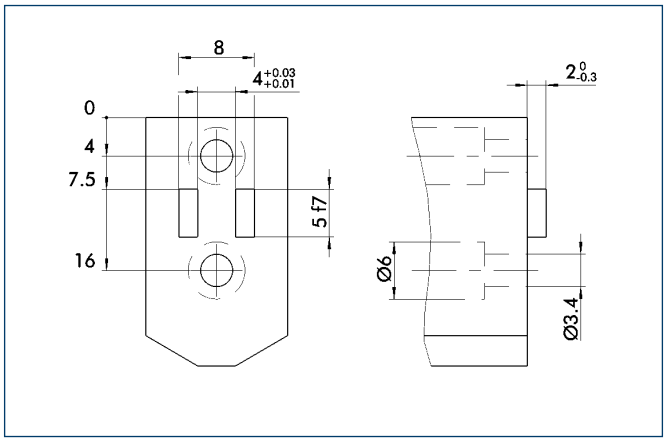
Finger blanks



Finger blanks for customized subsequent machining, incl. screw connection diagram

Description	Material	Scope of delivery	ID
ABR 50	Aluminum	1	0300714
SBR 50	16 MnCr 5	1	0300715

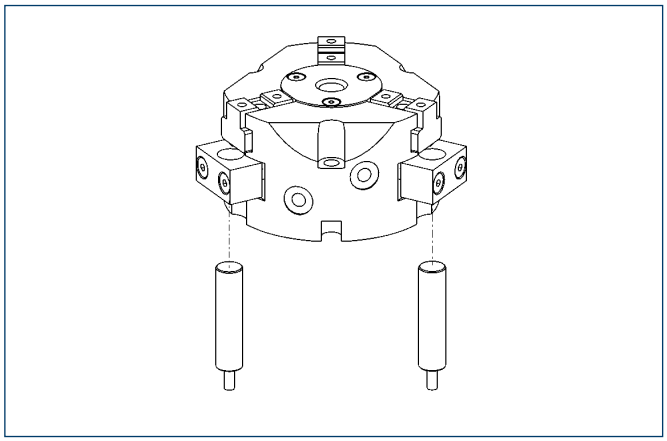
Finger design



Suggested connection dimensions for gripper fingers

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

Sensor system



End position monitoring:
Inductive proximity switches, for direct mounting

Description	ID	Recommended product
IN 40-O-M12	0301584	
IN 40-O-M8	0301484	•
IN 40-S-M12	0301574	
IN 40-S-M8	0301474	•
IN 80-O-M12	0301588	
IN 80-O-M8	0301488	
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	
INK 40-O	0301556	
INK 40-S	0301555	
INK 80-O	0301551	
INK 80-S	0301550	

ⓘ Two sensors, one NO and one NC contact, 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.

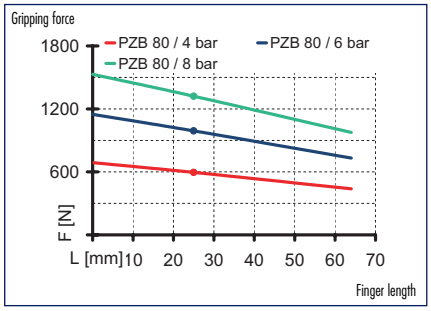
ⓘ **Please note if using IN 80 instead of IN 40 proximity switches**
The proximity switches are also mounted using the supplied brackets, but without using the eccentric sleeves. Please note that when using IN 80 instead of IN 40 sensors, the switching position cannot be adjusted.

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

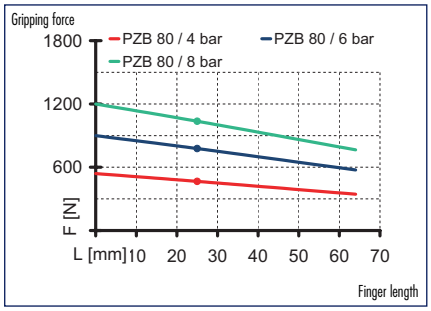
PZB 80

Pneumatic · 3-Finger Centric Gripper · Universal Gripper

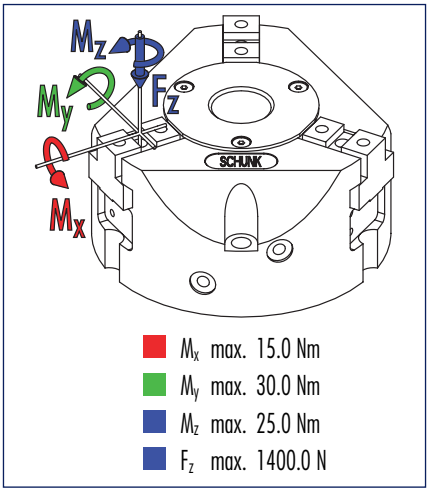
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

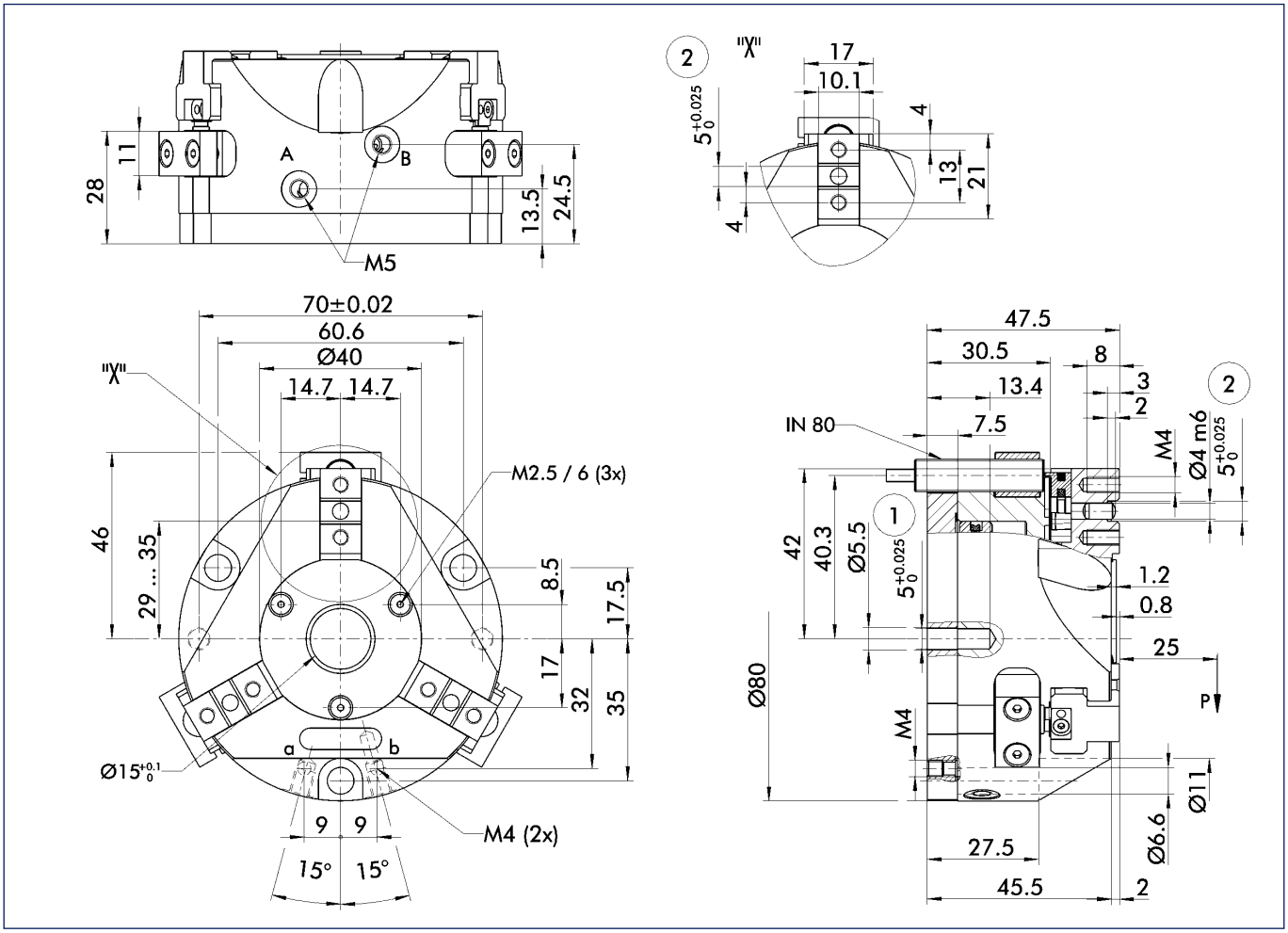


ⓘ Moments and forces apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement occurs without any hitting or bouncing.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

Technical data

Description		PZB 80
	ID	0300346
Stroke per jaw	[mm]	6.0
Closing force	[N]	800.0
Opening force	[N]	990.0
Weight	[kg]	0.62
Recommended workpiece weight	[kg]	4.0
Air consumption per double stroke	[cm³]	35.0
Nominal pressure	[bar]	6.0
Minimum pressure	[bar]	2.0
Maximum pressure	[bar]	8.0
Closing time	[s]	0.04
Opening time	[s]	0.04
Max. permitted finger length	[mm]	64.0
Max. permitted weight per finger	[kg]	0.3
IP class		40
Min. ambient temperature	[°C]	-10.0
Max. ambient temperature	[°C]	90.0
Repeat accuracy	[mm]	0.01
Diameter of center bore	[mm]	15.0

Main views

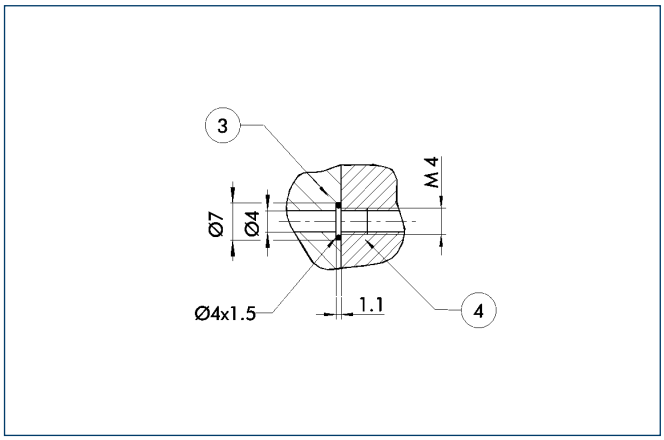


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ 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

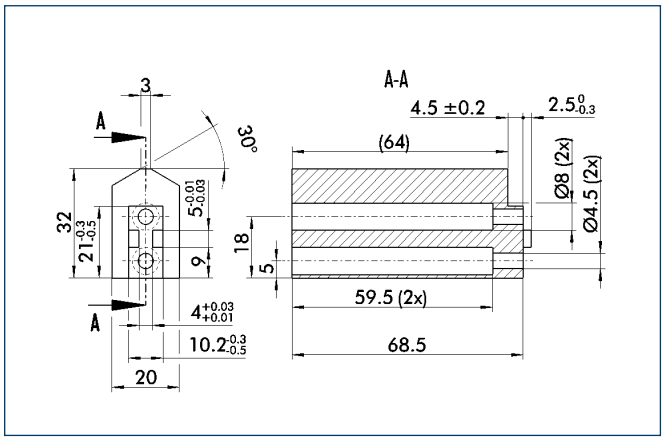
Hose-free direct connection



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.

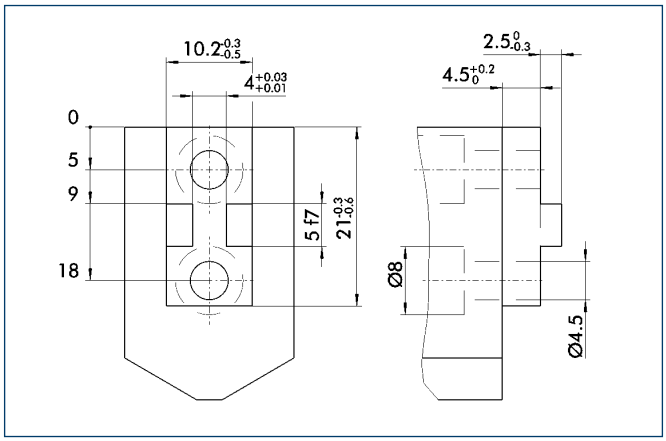
Finger blanks



Finger blanks for customized subsequent machining, incl. screw connection diagram

Description	Material	Scope of delivery	ID
ABR 64	Aluminum	1	0300725
SBR 64	16 MnCr 5	1	0300734

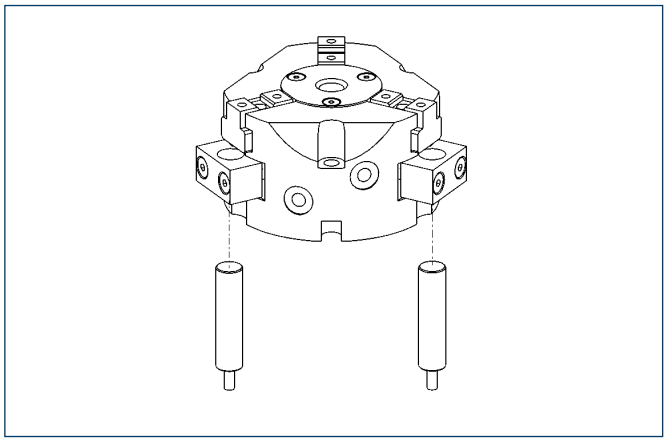
Finger design

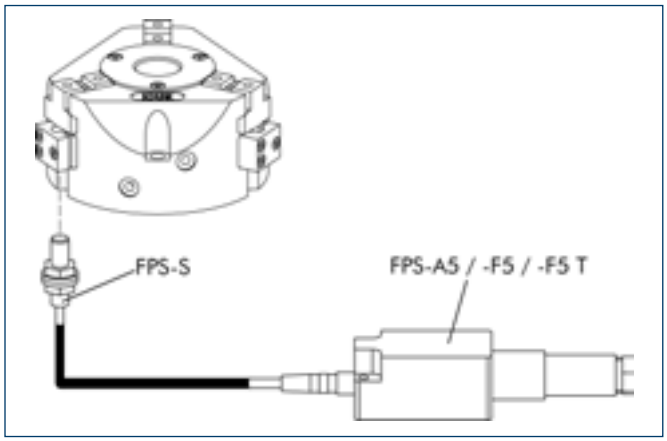


Suggested connection dimensions for gripper fingers

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

Sensor system





End position monitoring:
Inductive proximity switches, for direct mounting

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

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

Measuring system:
FPS Flexible position sensor

Description	ID
AS-PGN-plus/PZN-plus 80/1, PZB 80/100	0301632
FPS-F5	0301805
FPS-F5 T	0301807
FPS-S M8	0301704

ⓘ 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.

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

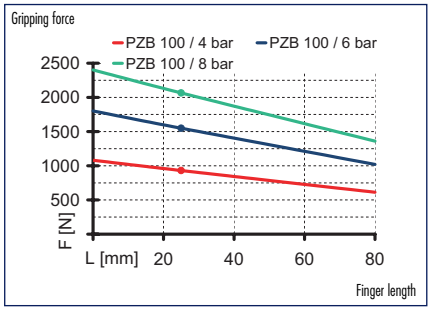
ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

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

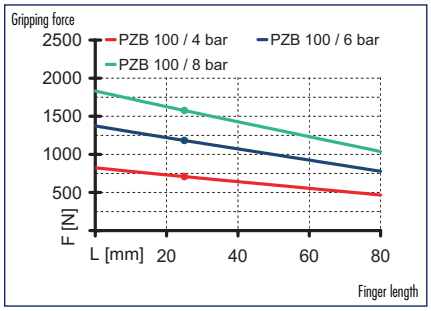
PZB 100

Pneumatic · 3-Finger Centric Gripper · Universal Gripper

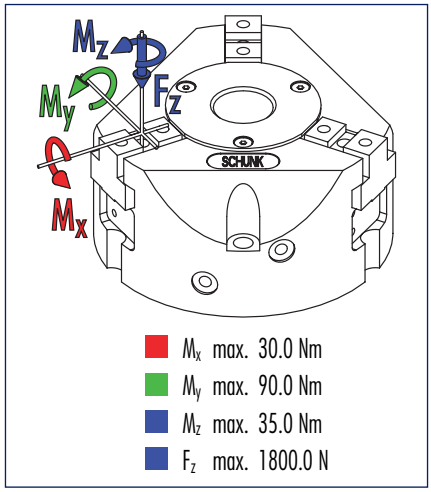
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

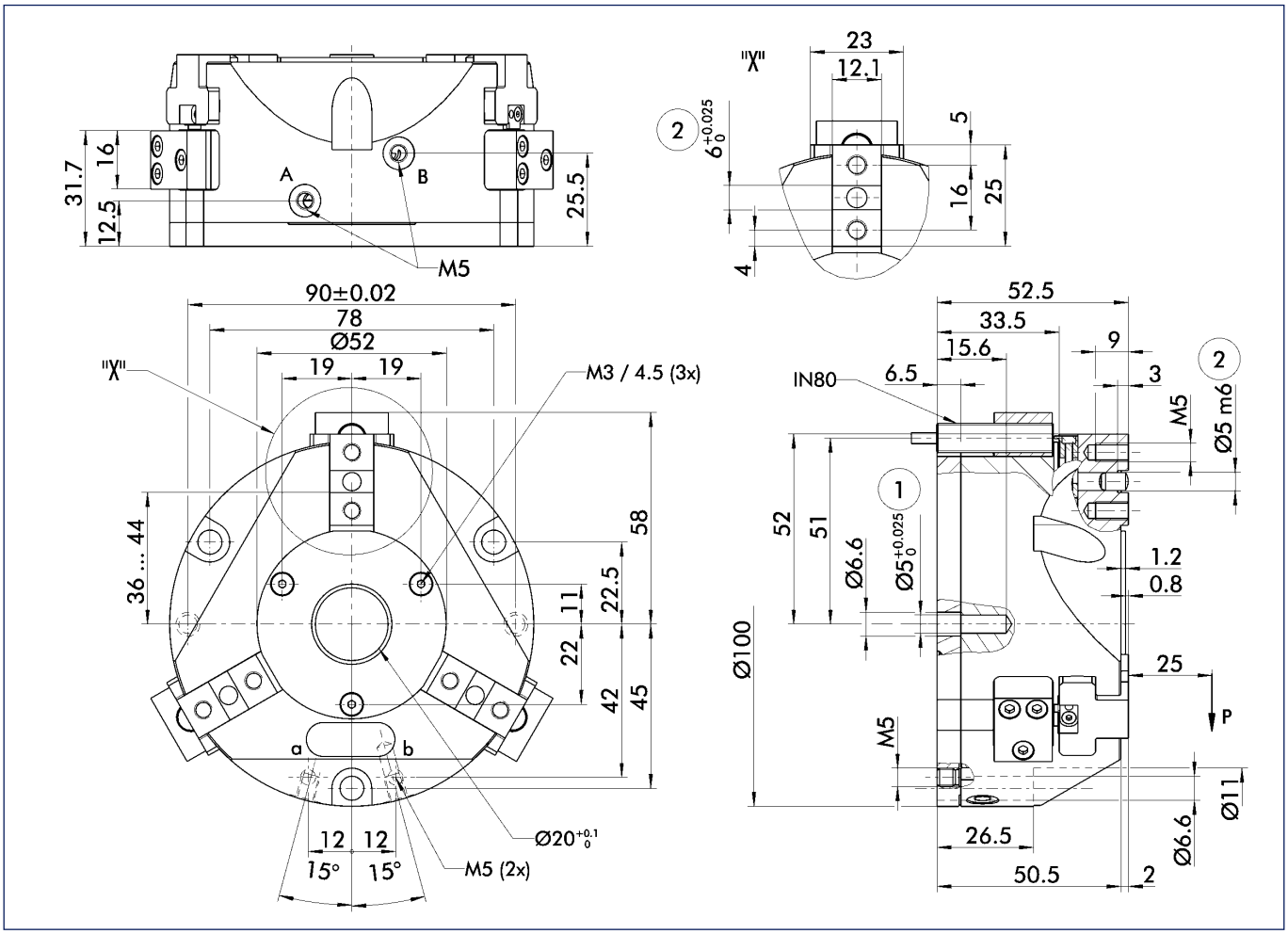


ⓘ Moments and forces apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement occurs without any hitting or bouncing.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

Technical data

Description		PZB 100
	ID	0300347
Stroke per jaw	[mm]	8.0
Closing force	[N]	1200.0
Opening force	[N]	1550.0
Weight	[kg]	1.1
Recommended workpiece weight	[kg]	6.0
Air consumption per double stroke	[cm³]	80.0
Nominal pressure	[bar]	6.0
Minimum pressure	[bar]	2.0
Maximum pressure	[bar]	8.0
Closing time	[s]	0.1
Opening time	[s]	0.09
Max. permitted finger length	[mm]	80.0
Max. permitted weight per finger	[kg]	0.5
IP class		40
Min. ambient temperature	[°C]	-10.0
Max. ambient temperature	[°C]	90.0
Repeat accuracy	[mm]	0.01
Diameter of center bore	[mm]	20.0

Main views

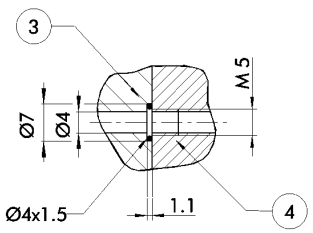


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ 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

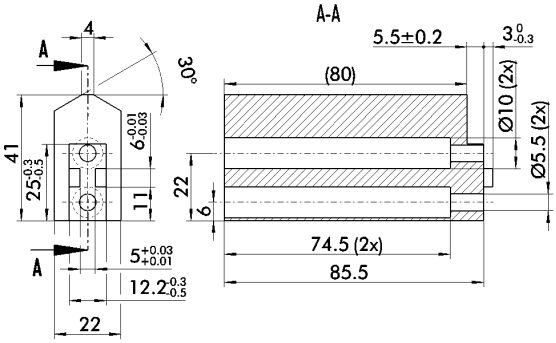
Hose-free direct connection



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.

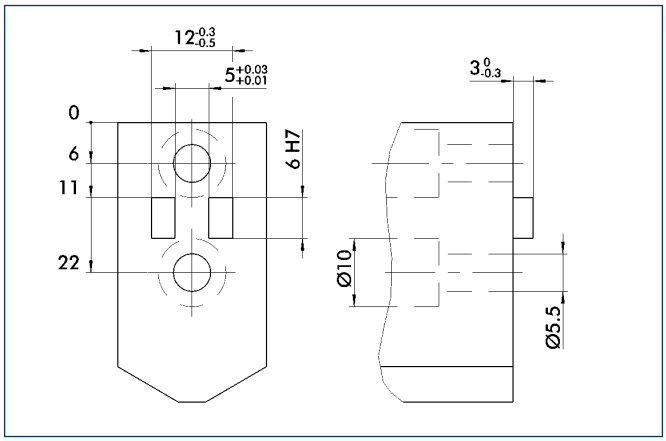
Finger blanks



Finger blanks for customized subsequent machining, incl. screw connection diagram

Description	Material	Scope of delivery	ID
ABR 80	Aluminum	1	0300726
SBR 80	16 MnCr 5	1	0300735

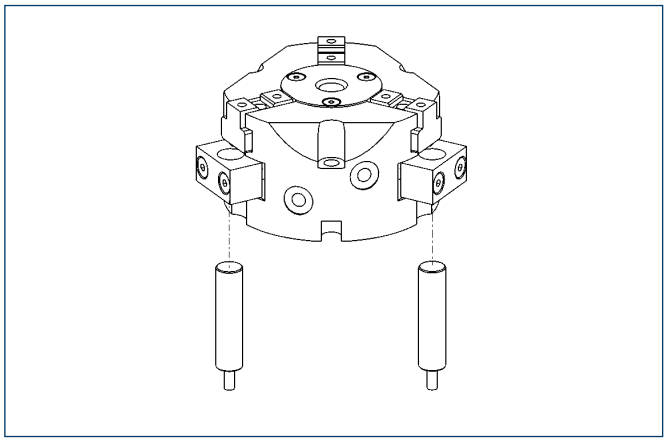
Finger design

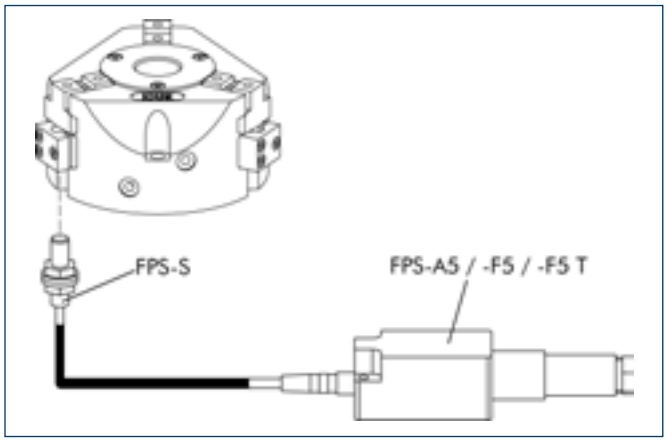


Suggested connection dimensions for gripper fingers

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

Sensor system





End position monitoring:
Inductive proximity switches, for direct mounting

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

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

Measuring system:
FPS Flexible position sensor

Description	ID
AS-PGN-plus/PZN-plus 80/1, PZB 80/100	**0301632**
FPS-F5	**0301805**
FPS-F5 T	**0301807**
FPS-S M8	**0301704**

ⓘ 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.

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**

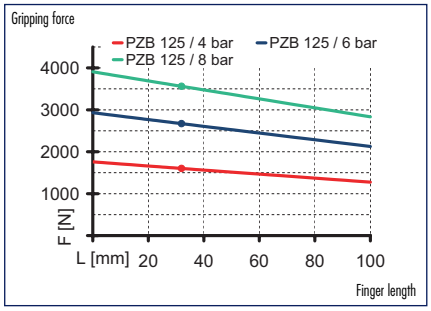
ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

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

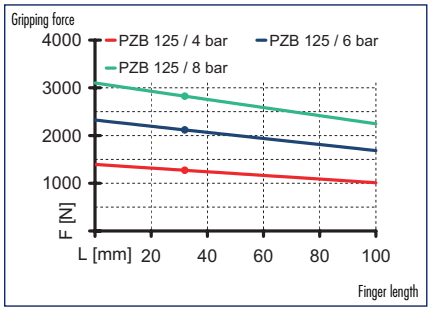
PZB 125

Pneumatic · 3-Finger Centric Gripper · Universal Gripper

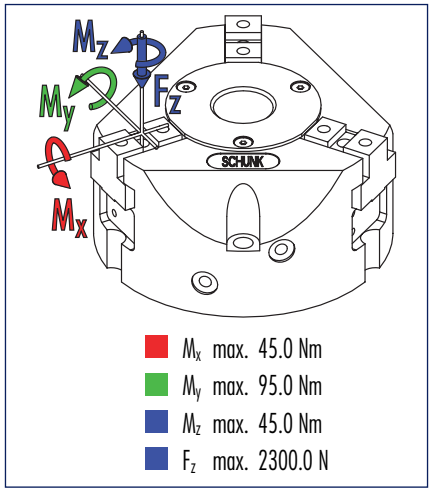
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

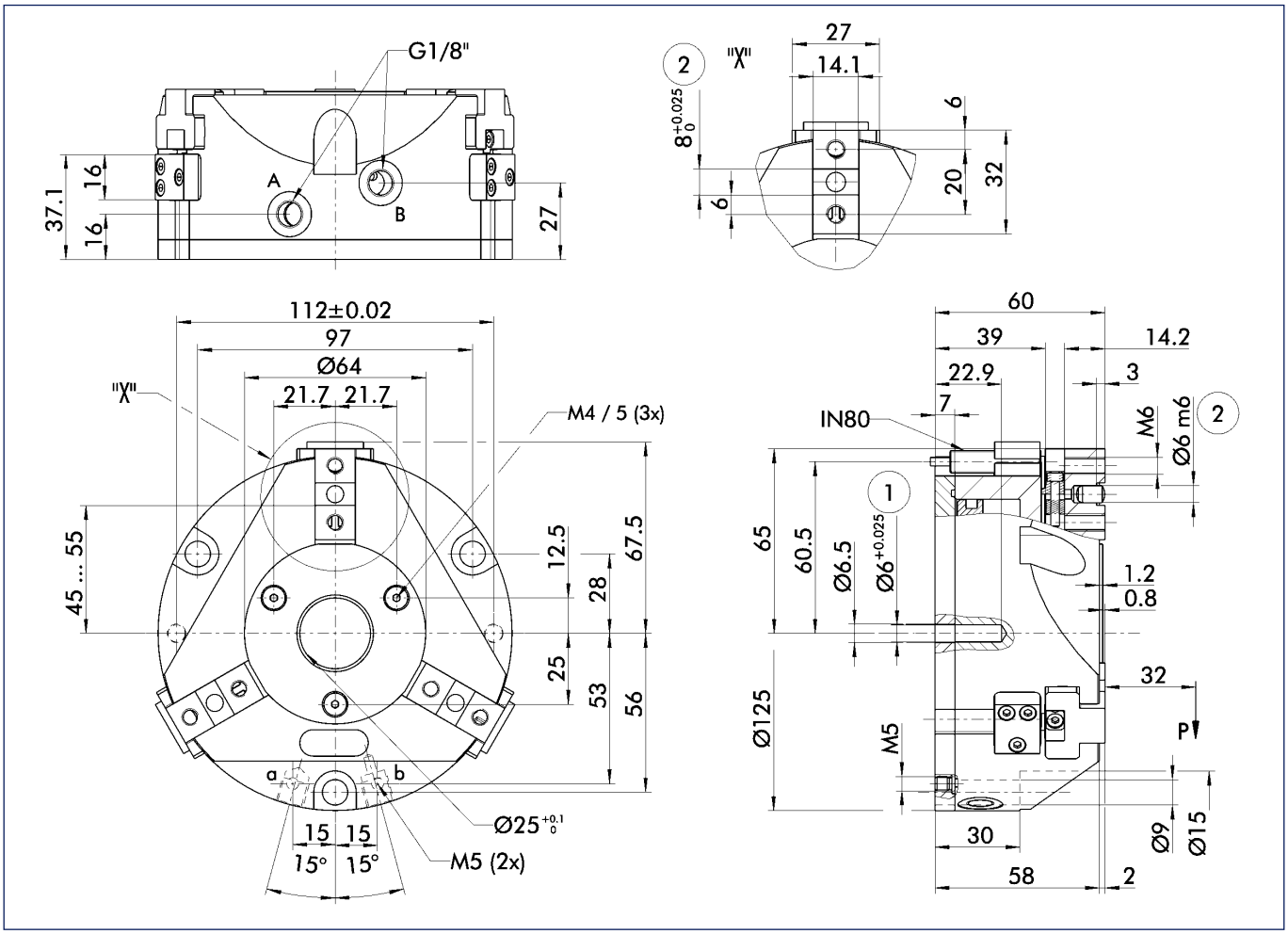


ⓘ Moments and forces apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement occurs without any hitting or bouncing.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

Technical data

Description		PZB 125
	ID	0300348
Stroke per jaw	[mm]	10.0
Closing force	[N]	2100.0
Opening force	[N]	2670.0
Weight	[kg]	1.9
Recommended workpiece weight	[kg]	10.5
Air consumption per double stroke	[cm³]	150.0
Nominal pressure	[bar]	6.0
Minimum pressure	[bar]	2.0
Maximum pressure	[bar]	8.0
Closing time	[s]	0.16
Opening time	[s]	0.14
Max. permitted finger length	[mm]	100.0
Max. permitted weight per finger	[kg]	0.95
IP class		40
Min. ambient temperature	[°C]	-10.0
Max. ambient temperature	[°C]	90.0
Repeat accuracy	[mm]	0.01
Diameter of center bore	[mm]	25.0

Main views

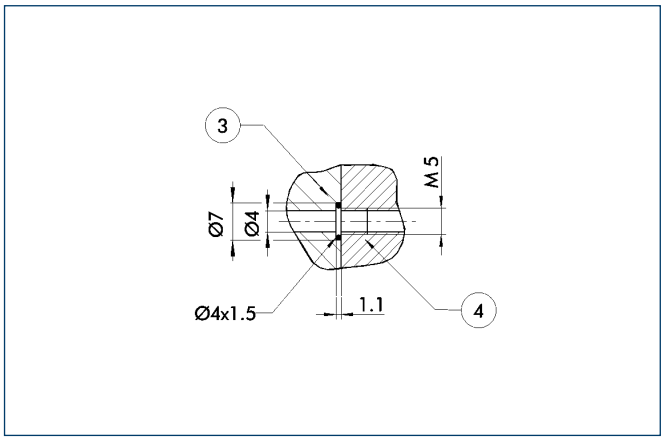


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ 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

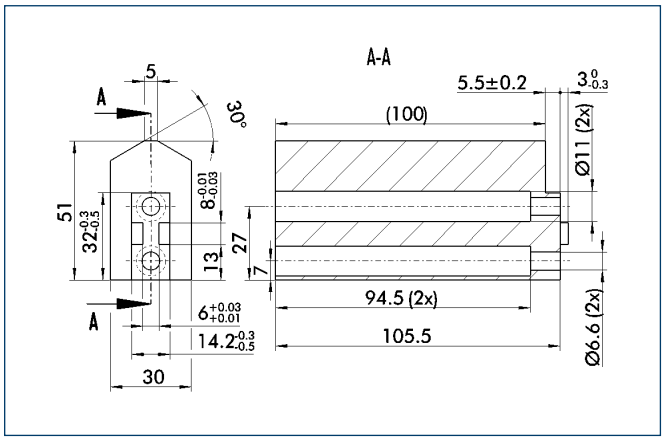
Hose-free direct connection



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.

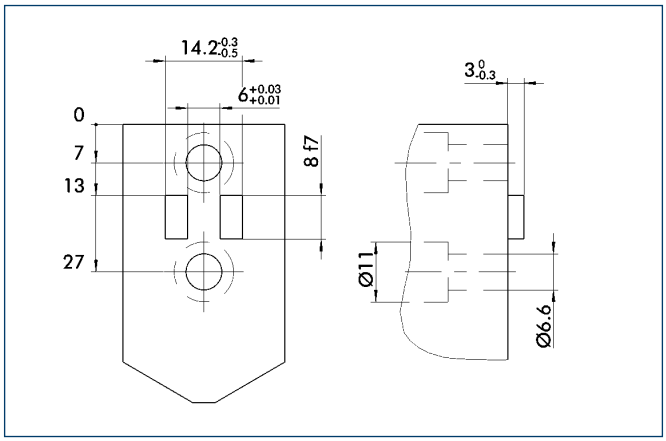
Finger blanks



Finger blanks for customized subsequent machining, incl. screw connection diagram

Description	Material	Scope of delivery	ID
ABR 100	Aluminum	1	0300727
SBR 100	16 MnCr 5	1	0300736

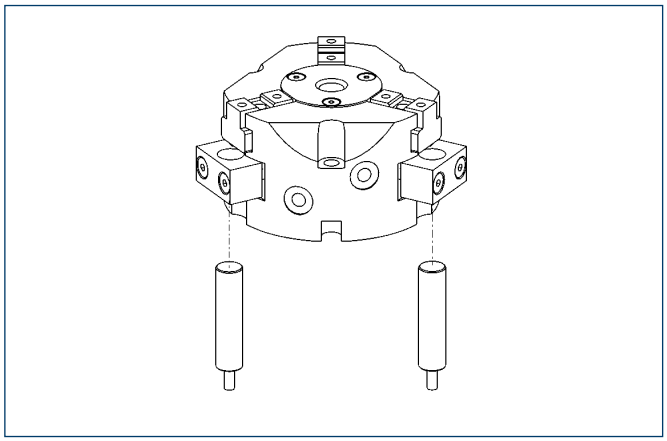
Finger design

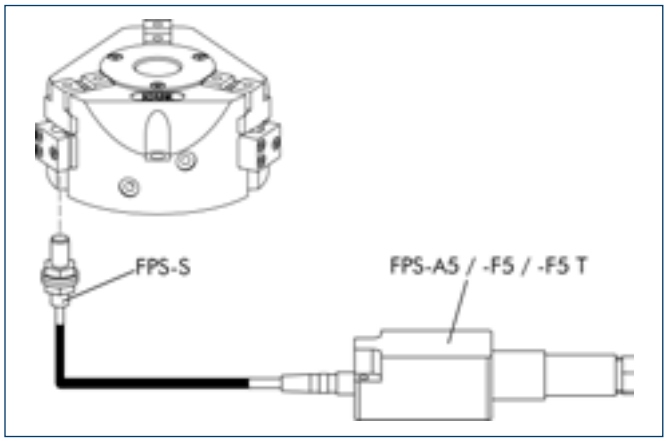


Suggested connection dimensions for gripper fingers

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

Sensor system





End position monitoring:
Inductive proximity switches, for direct mounting

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

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

Measuring system:
FPS Flexible position sensor

Description	ID
AS-PGN/PZN-plus 100/2, PZB 125	0301635
FPS-F5	0301805
FPS-F5 T	0301807
FPS-S M8	0301704

ⓘ 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.

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

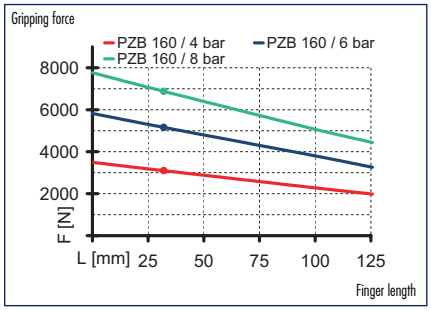
ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

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

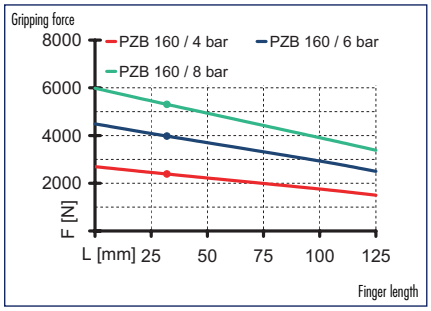
PZB 160

Pneumatic · 3-Finger Centric Gripper · Universal Gripper

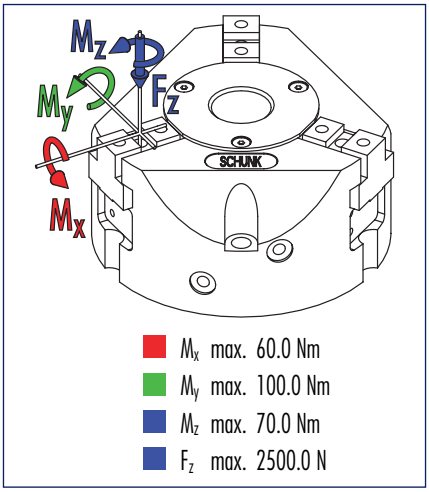
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load

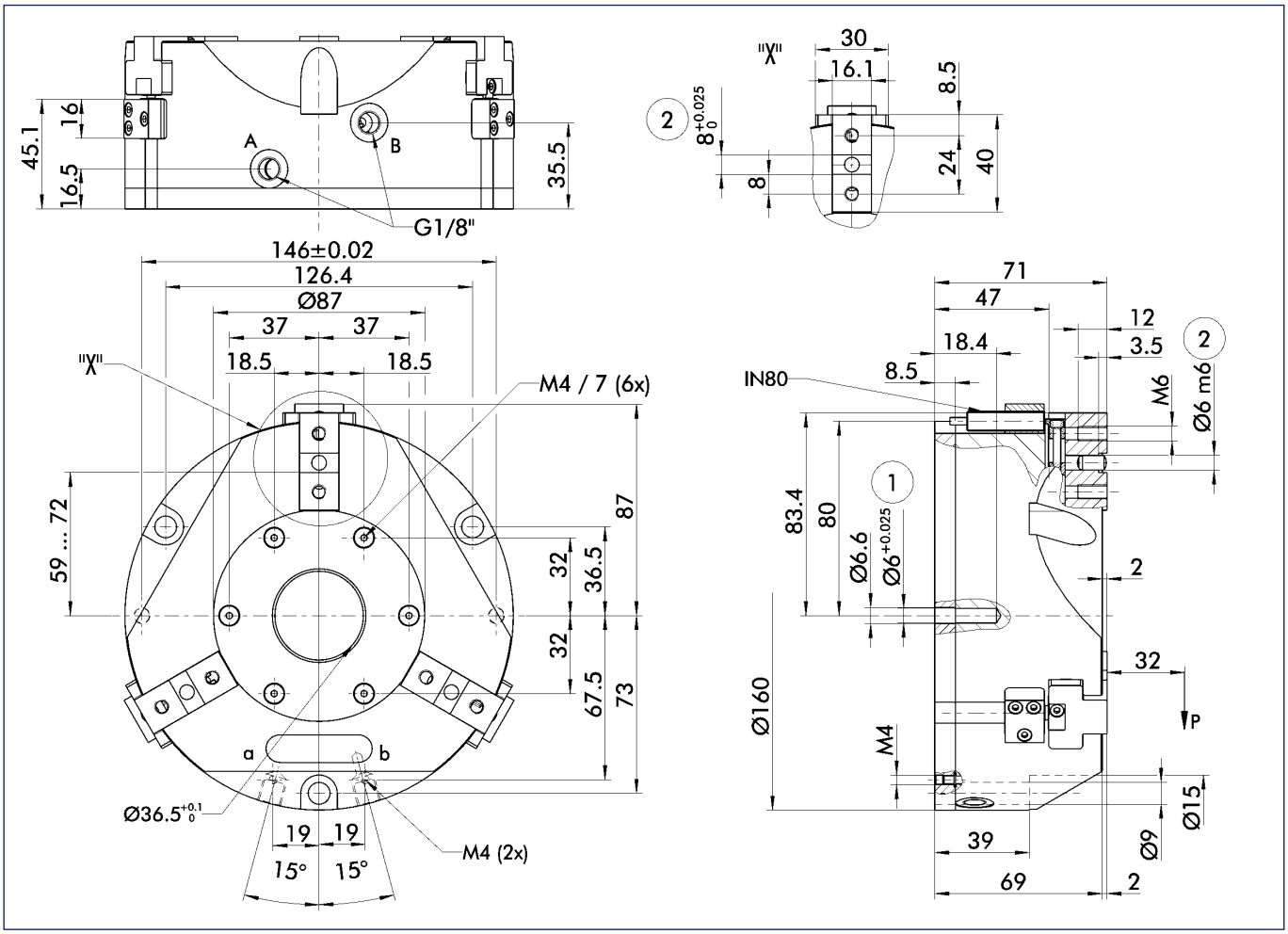


ⓘ Moments and forces apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air pressure so that the jaw movement occurs without any hitting or bouncing.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

Technical data

Description		PZB 160
	ID	0300349
Stroke per jaw	[mm]	13.0
Closing force	[N]	4000.0
Opening force	[N]	5160.0
Weight	[kg]	3.6
Recommended workpiece weight	[kg]	20.0
Air consumption per double stroke	[cm³]	330.0
Nominal pressure	[bar]	6.0
Minimum pressure	[bar]	2.0
Maximum pressure	[bar]	8.0
Closing time	[s]	0.3
Opening time	[s]	0.4
Max. permitted finger length	[mm]	125.0
Max. permitted weight per finger	[kg]	1.75
IP class		40
Min. ambient temperature	[°C]	-10.0
Max. ambient temperature	[°C]	90.0
Repeat accuracy	[mm]	0.02
Diameter of center bore	[mm]	36.5

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
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① Gripper connection
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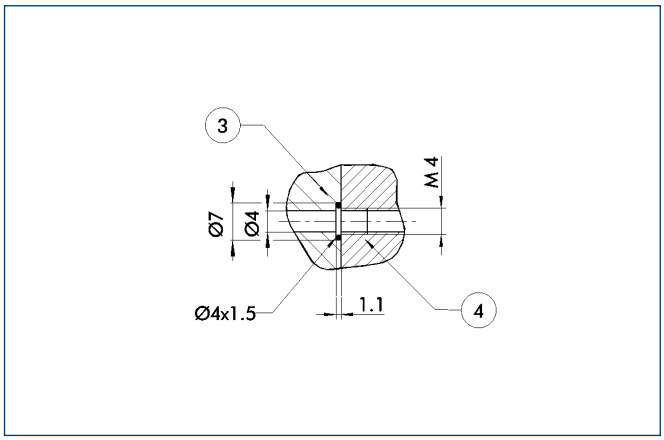
Hose-free direct connection



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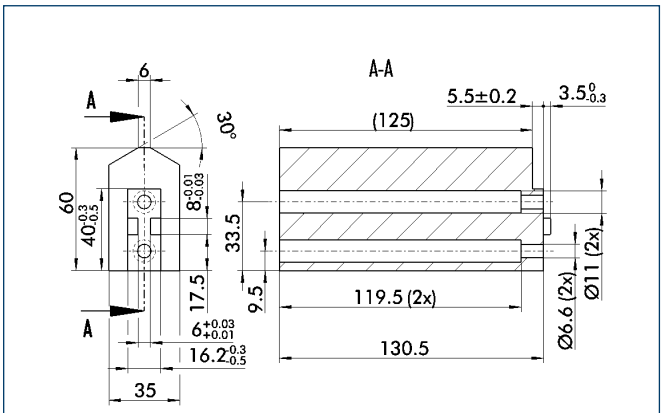
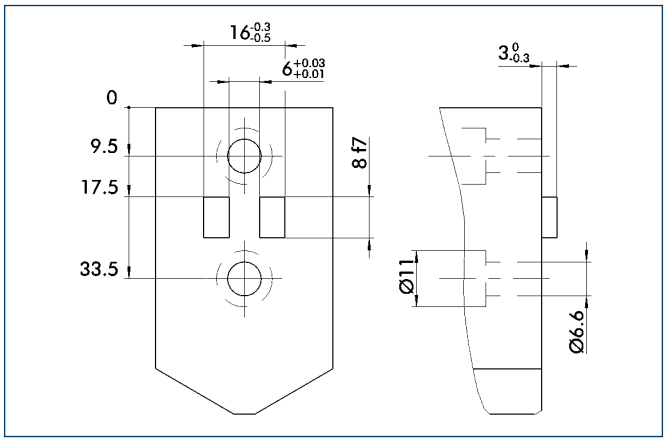
Finger blanks



Finger blanks for customized subsequent machining, incl. screw connection diagram

Description	Material	Scope of delivery	ID
ABR 125	Aluminum	1	0300728
SBR 125	16 MnCr 5	1	0300737

Finger design



Suggested connection dimensions for gripper fingers

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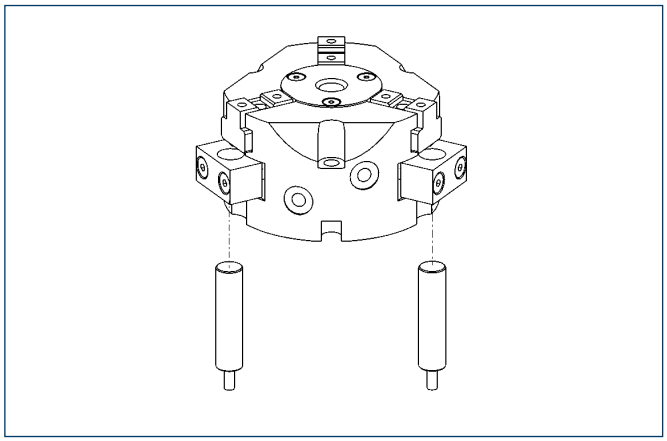
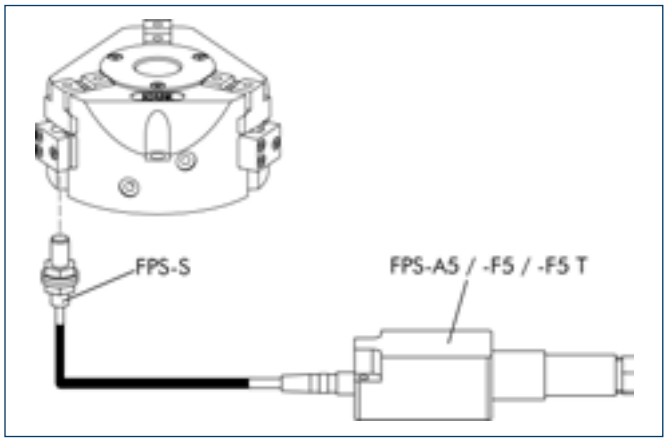
Sensor system





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IN 80-S-M8	0301478	•
INK 80-S	0301550	

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FPS-S M8	0301704

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KA BW12-L 3P-0500-PNP	0301507
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KV BW08-SG08 3P-0100-PNP	0301496
KV BW08-SG08 3P-0200-PNP	0301497
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KV BW12-SG12 3P-0100-PNP	0301596
KV BW12-SG12 3P-0200-PNP	0301597

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