

Flexible. Energy-efficient. Compact.

GSM-P Rotary Gripping Module

Compact rotary gripping combination, consisting of a powerful rotor drive, an end-position and damping device and a 2-finger parallel gripper

Field of Application

Gripping and swiveling combined in a single compact module, for automated assembly in places with a restricted amount of available space.

Advantages – Your benefit

Space-saving as the rotary drive, end-position damping unit and gripper are merged in one compact module

Economical since adapter plates are not needed, there will be costs for project planning and engineering design

Powerful due to optional hydraulic damping

Flexible through several mounting options, infinitely adjustable swiveling angle and numerous product versions

Cross roller guidance for precise gripping through base jaw guidance with minimum play

Reliable production as moving cables and hoses are replaced by integrated feed-throughs

Mounting on three gripper sides in five screwing directions for universal and flexible assembly of the rotary gripping module

Air supply via hose-free direct connection or screw connections for the specific adaption of the rotary gripping module in all automation solutions

Comprehensive accessories through the use of existing gripper components



Sizes

Quantity: 4



Weight

0.37 .. 1.51 kg



Gripping force

39 .. 162 N



Stroke per jaw

4 .. 10 mm



Torque

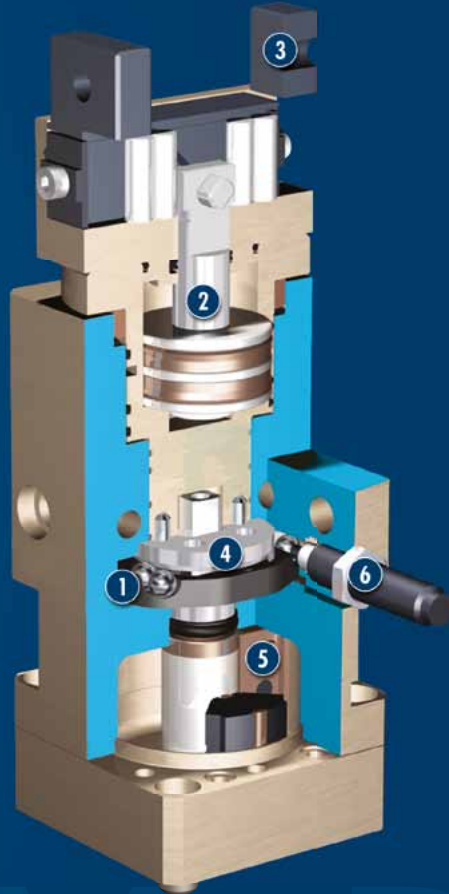
0.3 .. 2.9 Nm



Functional Description

The swivel drive rotates the integrated gripper by apply pressure from a rotor. This drive is driven by its own

piston. The piston movement is then deflected in a synchronous gripping motion.



- ① **Preset of rotating angle**
using steel balls for any desired angle of rotation
- ② **Gripper drive**
Double-acting piston drive system with diagonal pull
- ③ **Base jaw**
for the connection of workpiece-specific gripper fingers
- ④ **End-position damping assembly**
for end-position adjustment and damping
- ⑤ **Rotor**
as a compact, powerful drive
- ⑥ **Hydraulic shock absorber**
to increase the damping performance



CAD data, operating manuals and other current product documents are available at www.schunk.com

General Notes about the Series

Operating principle: Combined rotor and piston drive

Housing material: Aluminum alloy, anodized

Base jaw material: Steel

Actuation: pneumatic, with filtered compressed air as per DIN ISO 8573-1: 7 4 4

Warranty: 24 months (details, general terms and conditions and operating manuals can be downloaded at www.schunk.com)

Scope of delivery: Centering sleeves, O-rings for direct connection, screws for lateral fastening, steel balls for adjustment of the swiveling angle, assembly and operating manual with declaration of incorporation

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

Gripping force: is the arithmetic total of the gripping force applied to each gripper jaw at distance P (see illustration).

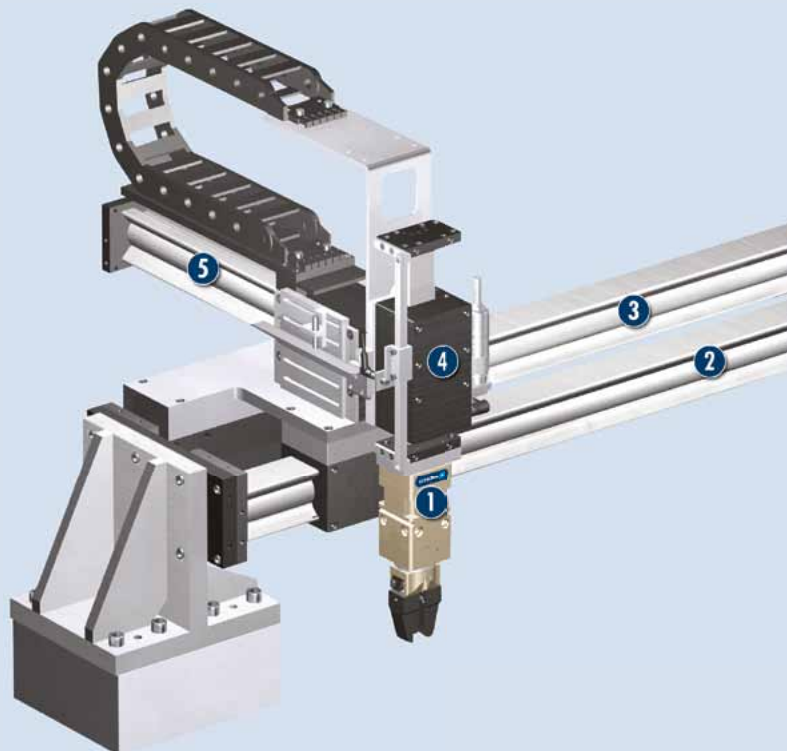
Finger length: is measured from the upper edge of the gripper housing in the direction of the main axis. The breach of the max. permitted finger length can bring higher abrasion.

Workpiece weight: is calculated for a force-fit 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.

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

Closing and opening times, cycle times: are purely the times that the base jaws or fingers are in motion. Cycle times are purely the times that the rotating part (mostly the pinion) is 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.

Middle attached load: should constitute a typical load. It is defined as the half of the max. possible mass moment of inertia that can be swiveled without restriction, bouncing or hitting, with a centric load and a vertical rotating axis.



Application example

The three-axis boom (X-Y-Z) with rotary gripping combination is employed to insert various products individually in outer packaging whilst rotating them if necessary.

- | | |
|--------------------------------|--|
| ① GSM-P Rotary Gripping Module | ④ MLD Short-stroke Axis with direct drive and reference switch |
| ② MLD Linear Motor Drive | |
| ③ Support Axis without drive | ⑤ MLD Linear Axis with direct drive with measuring system |

SCHUNK offers more ...

The following components make the product GSM-P even more productive – the suitable addition for the highest functionality, flexibility, reliability, and controlled production.



Centering Sleeves



Fittings

MMS-P Programmable
Magnetic Switch

Inductive Proximity Switches



Sensor Distributor



Gripper Pads



Sensor Cables



Plastic Inserts

SCV-P Pressure Maintenance
Valve

Finger Blanks



GSM-Z Gripper Swivel Module



GSM-W Gripper Swivel Module

① Further information regarding the products can be found on the following product pages or at www.schunk.com. Please contact us for further information: SCHUNK technical hotline +49-7133-103-2696

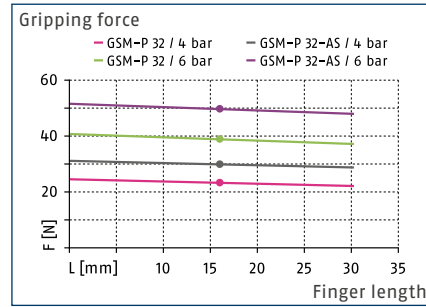
Options and special Information

Despite the many options and versions already available as standard, SCHUNK also designs and produces customized versions on request.

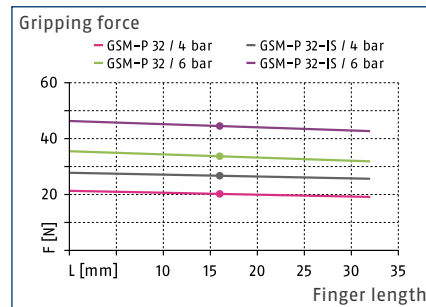
The GSM-P rotary gripping module with parallel travel is also available with GSM-Z centric gripper, GSM-W angular gripper, or GSM-R radial gripper. For more information visit www.schunk.com.



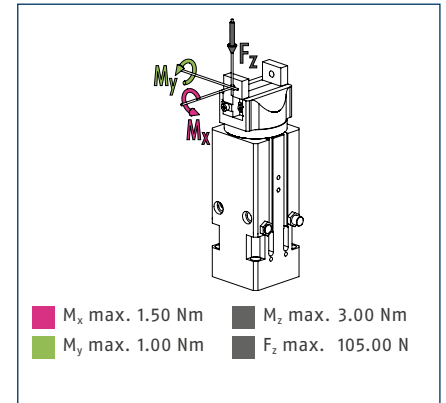
Gripping force, O.D. gripping



Gripping force, I.D. gripping



Finger load

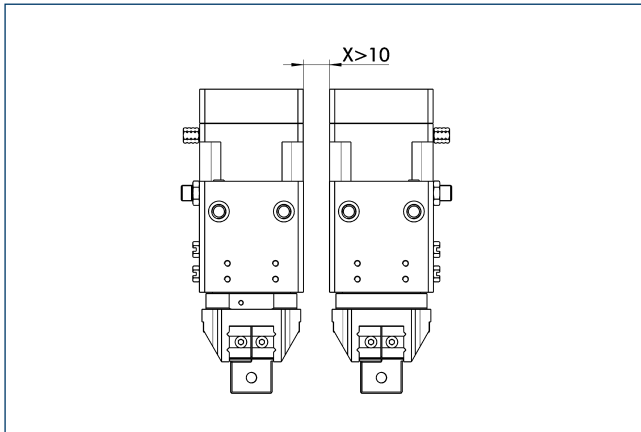


① The indicated moments and forces are static values, apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air supply so that the jaw movement occurs without any hitting or bouncing. Service life may be reduced.

Technical data

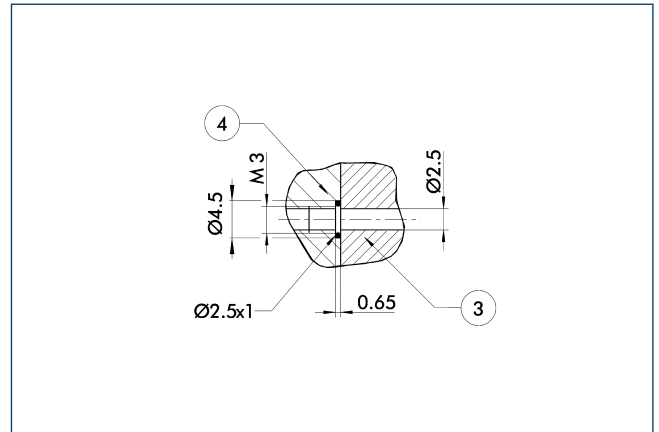
Description		GSM-P 32-E-090	GSM-P 32-E-180	GSM-P 32-AS-E-090	GSM-P 32-AS-E-180	GSM-P 32-IS-E-090	GSM-P 32-IS-E-180
ID		0304630	0303830	0304631	0303831	0304632	0303832
Stroke per jaw	[mm]	4	4	4	4	4	4
Closing- / opening force	[N]	39/33	39/33	51/-	51/-	-/48	-/48
min. spring force	[N]			12	12	15	15
Torque	[Nm]	0.35	0.35	0.35	0.35	0.35	0.35
Angle of rotation	[°]	90	180	90	180	90	180
End position adjustability	[°]	90	180	90	180	90	180
Dampening for swiveling		Elastomer	Elastomer	Elastomer	Elastomer	Elastomer	Elastomer
Recommended workpiece weight	[kg]	0.2	0.2	0.2	0.2	0.2	0.2
Air consumption for gripping	[cm³]	4	4	4	4	4	4
Air consumption for swiveling	[cm³]	9	15	9	15	9	15
Weight	[kg]	0.37	0.37	0.42	0.42	0.42	0.42
Nominal operating pressure	[bar]	6	6	6	6	6	6
max. operating pressure	[bar]	6.5	6.5	6.5	6.5	6.5	6.5
min. operating pressure for gripping	[bar]	2	2	4	4	4	4
min. operating pressure for swiveling	[bar]	3.5	3.5	3.5	3.5	3.5	3.5
Closing- / opening time	[s]	0.04/0.04	0.04/0.04	0.03/0.04	0.03/0.04	0.04/0.03	0.04/0.03
Swiveling time with middle attached load	[s]	0.12	0.18	0.12	0.18	0.12	0.18
max. permitted finger length	[mm]	32	32	32	32	32	32
max. permitted weight per finger	[kg]	0.04	0.04	0.04	0.04	0.04	0.04
max. mass moment of inertia	[kgmm²]	66	66	65	65	65	65
IP class		30	30	30	30	30	30
min. / max. ambient temperature	[°C]	5/90	5/90	5/90	5/90	5/90	5/90
Repeat accuracy for gripping	[mm]	0.02	0.02	0.02	0.02	0.02	0.02
Repeat accuracy for swiveling	[°]	0.1	0.1	0.1	0.1	0.1	0.1
Options and their characteristics							
Version of shock absorber		GSM-P 32-S-090	GSM-P 32-S-180	GSM-P 32-AS-S-090	GSM-P 32-AS-S-180	GSM-P 32-IS-S-090	GSM-P 32-IS-S-180
ID		0304730	0303930	0304731	0303931	0304732	0303932
Dampening for swiveling		hydraulic absorber	hydraulic absorber	hydraulic absorber	hydraulic absorber	hydraulic absorber	hydraulic absorber
max. mass moment of inertia	[kgmm²]	141	141	140	140	140	140
min. / max. ambient temperature	[°C]	5/60	5/60	5/60	5/60	5/60	5/60

Monitoring for stacked arrangement



Caution: Monitoring is carried out by magnetic switches, and in case of side-by-side assembly of several units, a minimum distance of X mm between the units must be maintained.

Hose-free direct connection M3

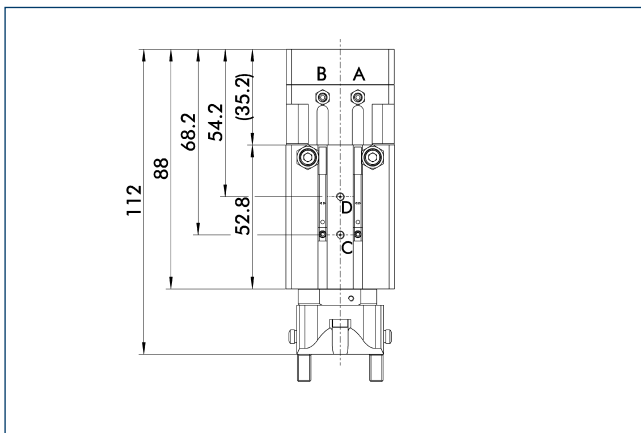


③ Adapter

④ Rotary actuator

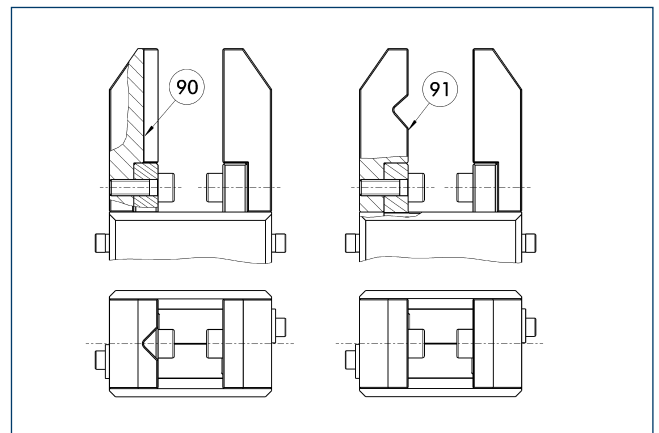
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

Gripping force maintenance device AS / IS



The mechanical maintenance of gripping force also assures a minimum gripping force in the case of a loss of pressure. With the AS / S variant, this acts as a closing force, and as an opening force for the IS variant. The maintenance of gripping force element can also be used as a means for increasing gripping force or for single actuated gripping.

Jaw design

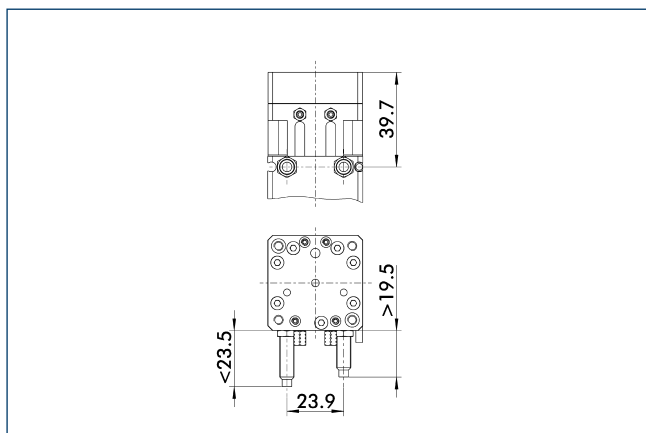


⑨0 Vertical prism

⑨1 Horizontal prism

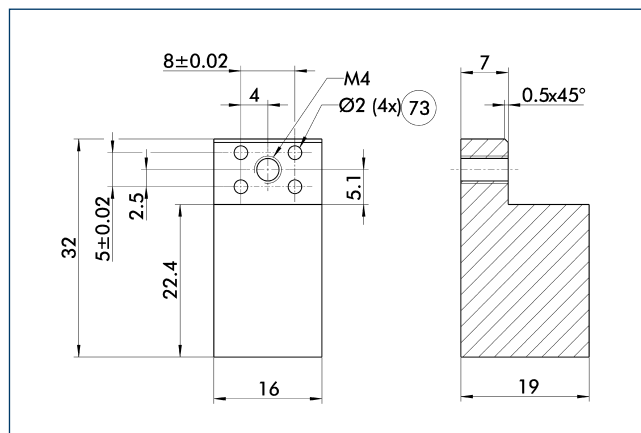
A three-point support of the gripped workpiece is beneficial for gripping the workpiece with repeat accuracy and process reliability. More than three support points lead to a redundancy of the system. The drawing shows two alternative recommendations for the jaw design for coaxial and radial gripping of a cylindrical part.

Version with shock absorbers



The drawing shows the dimensional changes of the shock absorber versions as compared to the drawing in the main view which shows the elastomer version.

ABR-MPG-plus 32 finger blanks

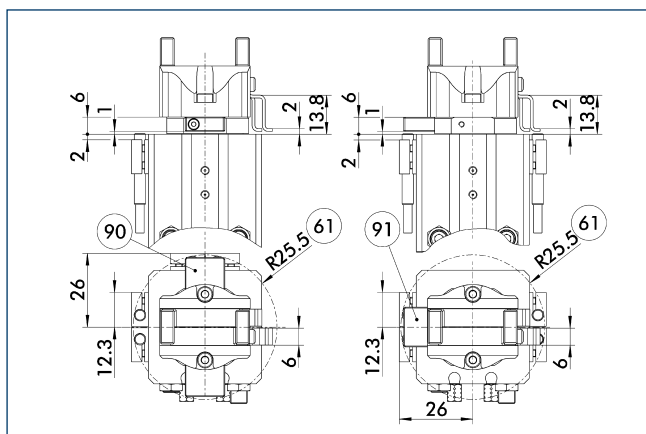


73 Fit for centering pins

Finger blanks for customized subsequent machining.

Description	ID	Material	Scope of delivery
Finger blanks			
ABR-MPG-plus 32	0340212	Aluminum	2

Mounting kit for proximity switch – 90° / 180° angle of rotation



61 Interfering contour during swiveling

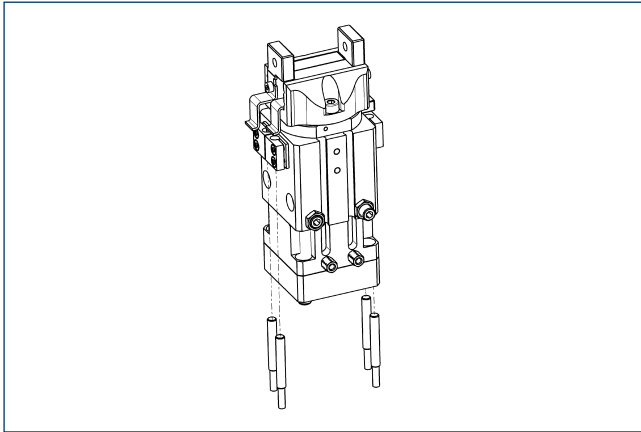
90 Variant for 90° version

91 Variant for 180° version

The mounting kit for the 90° and 180° GSM versions is identical, only the mounting is different. The mounting kit consists of two switch cams, two operating cams, four sensor brackets and small components. The proximity switches must be ordered separately.

Description	ID
Mounting kit for proximity switch	
AS-GSM-P 32	0304934

Inductive proximity switches

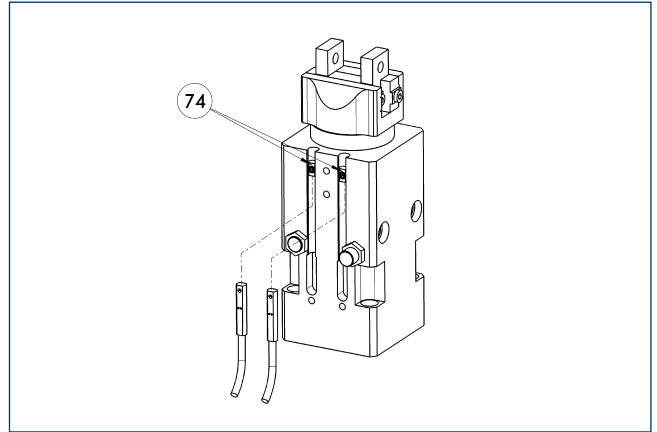


Limit position monitor can be mounted with mounting kit.

Description	ID	Often combined
Mounting kit for proximity switch		
AS-GSM-P 32	0304934	
Inductive proximity switches		
IN 40-S-M12	0301574	
IN 40-S-M8	0301474	●
INK 40-S	0301555	
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	
Clip for plug / socket		
CLI-M12	0301464	
CLI-M8	0301463	
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	
Sensor distributor		
V2-M8	0301775	●
V2-M12	0301776	●
V4-M12	0301747	
V4-M8	0301746	
V8-M12	0301752	
V8-M8	0301751	

- ① Two sensors (closer/S) are required for each unit, 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.

MMS-P programmable magnetic switches

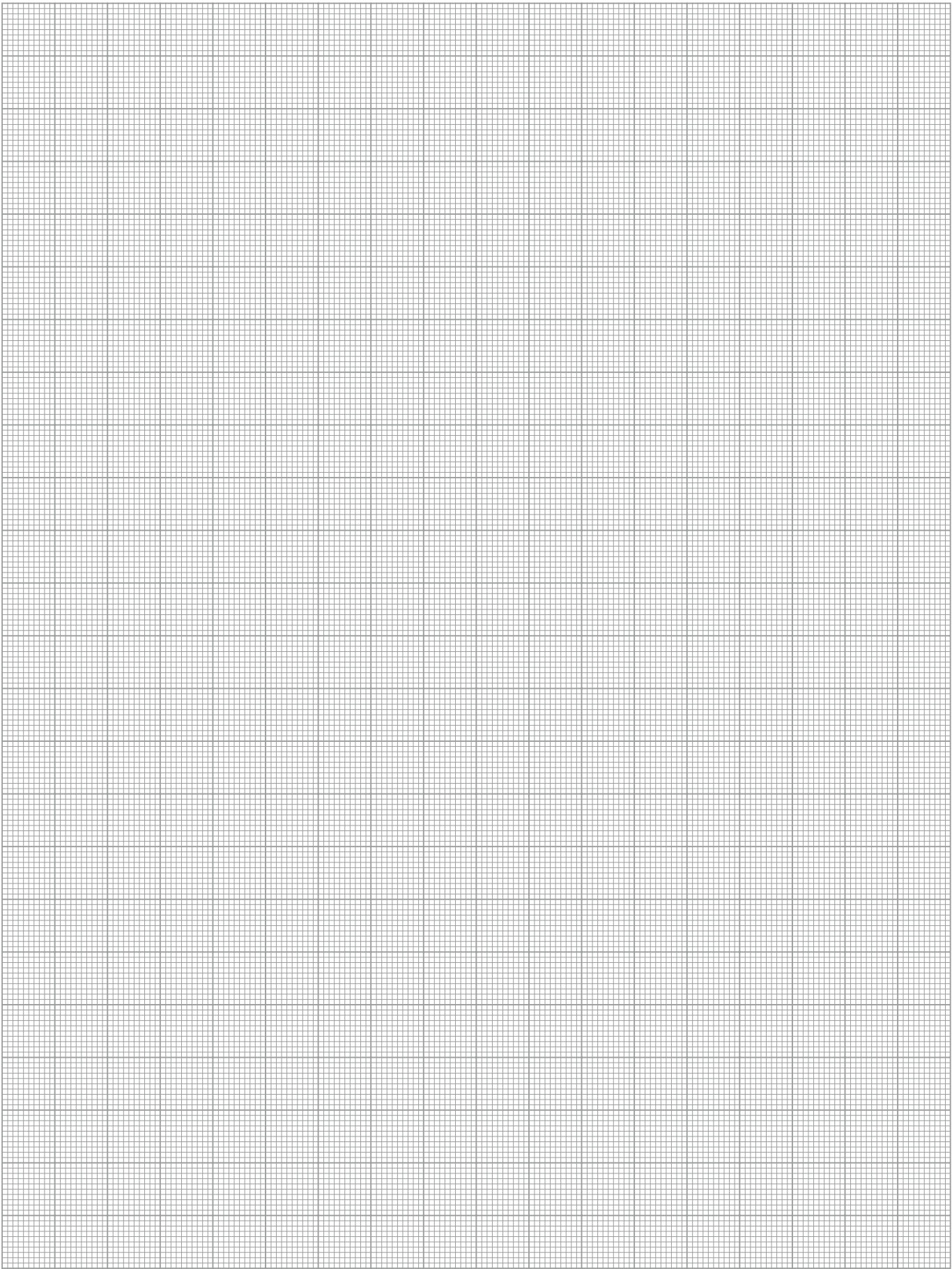


74 Stop for MMS-P

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

Description	ID	Often combined
MMS-P programmable magnetic switches		
MMSK-P 22-S-PNP	0301371	
MMS-P 22-S-M8-PNP	0301370	●
Clip for plug / socket		
CLI-M8	0301463	
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	

- ① Per each GSM two sensors MMS-P are required. If standard extension cables (M8-3P) are used, the sensor distributor can be applied.

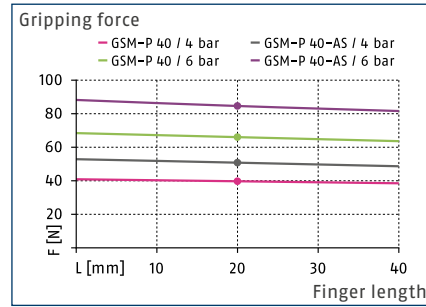


GSM-P 40

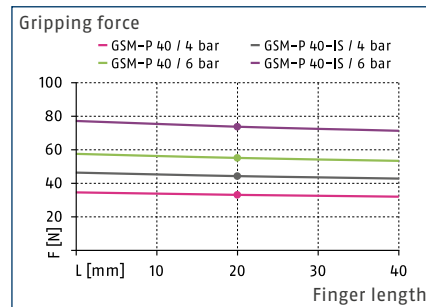
Rotary Gripping Modules pneumatic | Rotary Gripping Module with Parallel Gripper



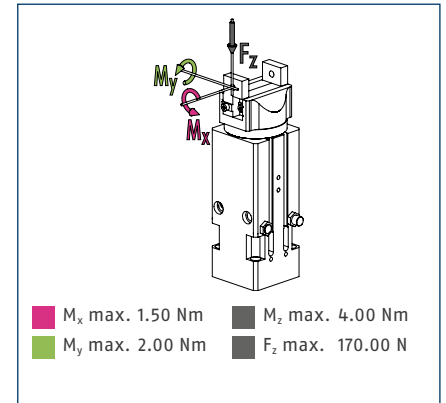
Gripping force, O.D. gripping



Gripping force, I.D. gripping



Finger load



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Technical data

Description		GSM-P 40-E-090	GSM-P 40-E-180	GSM-P 40-AS-E-090	GSM-P 40-AS-E-180	GSM-P 40-IS-E-090	GSM-P 40-IS-E-180
ID		0304640	0303840	0304641	0303841	0304642	0303842
Stroke per jaw	[mm]	6	6	6	6	6	6
Closing- / opening force	[N]	66/54	66/54	87/-	87/-	-/69	-/69
min. spring force	[N]			21	21	15	15
Torque	[Nm]	0.3	0.3	0.3	0.3	0.3	0.3
Angle of rotation	[°]	90	180	90	180	90	180
End position adjustability	[°]	90	180	90	180	90	180
Dampening for swiveling		Elastomer	Elastomer	Elastomer	Elastomer	Elastomer	Elastomer
Recommended workpiece weight	[kg]	0.33	0.33	0.33	0.33	0.33	0.33
Air consumption for gripping	[cm³]	5.97	5.97	5.97	5.97	5.97	5.97
Air consumption for swiveling	[cm³]	9	15	9	15	9	15
Weight	[kg]	0.43	0.43	0.5	0.5	0.5	0.5
Nominal operating pressure	[bar]	6	6	6	6	6	6
max. operating pressure	[bar]	6.5	6.5	6.5	6.5	6.5	6.5
min. operating pressure for gripping	[bar]	2	2	4	4	4	4
min. operating pressure for swiveling	[bar]	4	4	4	4	4	4
Closing- / opening time	[s]	0.05/0.05	0.05/0.05	0.03/0.05	0.03/0.05	0.05/0.03	0.05/0.03
Swiveling time with middle attached load	[s]	0.14	0.22	0.14	0.22	0.14	0.22
max. permitted finger length	[mm]	40	40	40	40	40	40
max. permitted weight per finger	[kg]	0.08	0.08	0.08	0.08	0.08	0.08
max. mass moment of inertia	[kgmm²]	52	52	50	50	50	50
IP class		30	30	30	30	30	30
min. / max. ambient temperature	[°C]	5/90	5/90	5/90	5/90	5/90	5/90
Repeat accuracy for gripping	[mm]	0.02	0.02	0.02	0.02	0.02	0.02
Repeat accuracy for swiveling	[°]	0.1	0.1	0.1	0.1	0.1	0.1
Options and their characteristics							
Version of shock absorber		GSM-P 40-S-090	GSM-P 40-S-180	GSM-P 40-AS-S-090	GSM-P 40-AS-S-180	GSM-P 40-IS-S-090	GSM-P 40-IS-S-180
ID		0304740	0303940	0304741	0303941	0304742	0303942
Dampening for swiveling		hydraulic absorber	hydraulic absorber	hydraulic absorber	hydraulic absorber	hydraulic absorber	hydraulic absorber
max. mass moment of inertia	[kgmm²]	127	127	125	125	125	125
min. / max. ambient temperature	[°C]	5/60	5/60	5/60	5/60	5/60	5/60

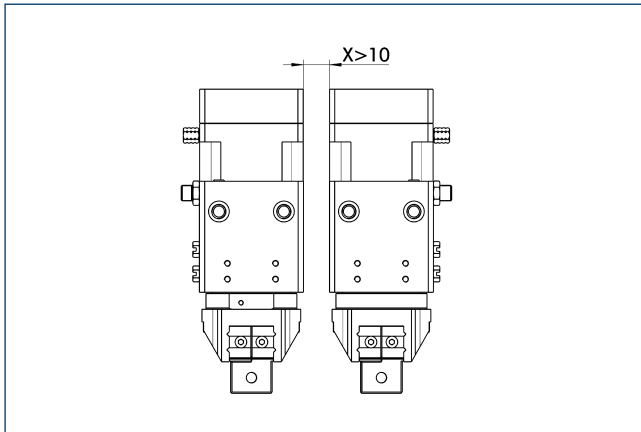


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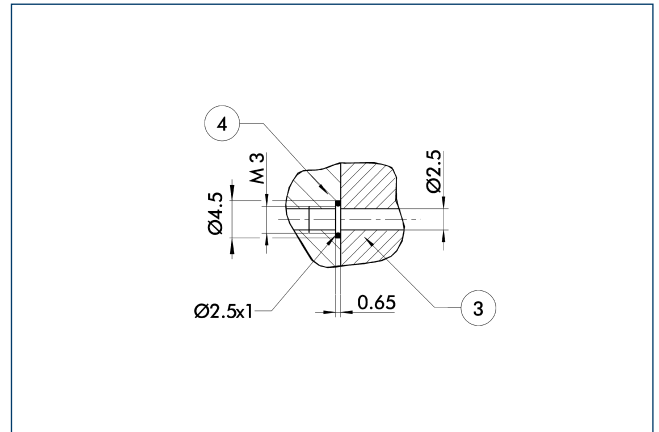
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Monitoring for stacked arrangement



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Hose-free direct connection M3

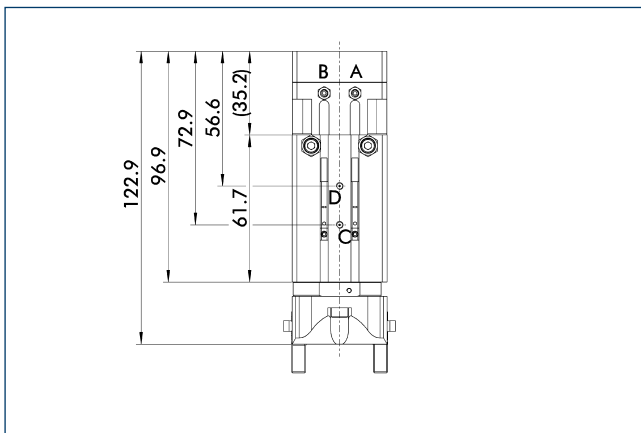


③ Adapter

④ Rotary actuator

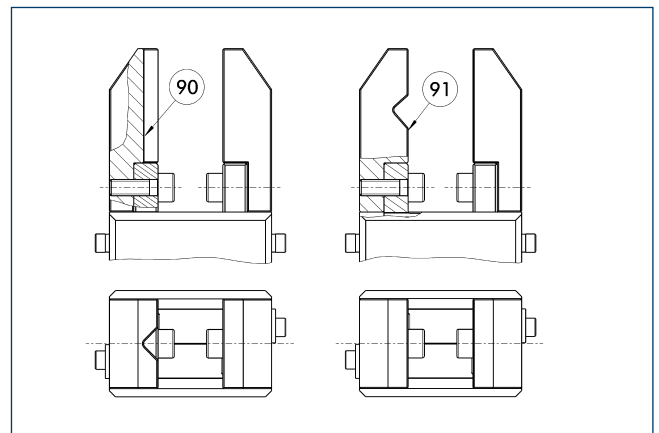
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

Gripping force maintenance device AS / IS



The mechanical maintenance of gripping force also assures a minimum gripping force in the case of a loss of pressure. With the AS / S variant, this acts as a closing force, and as an opening force for the IS variant. The maintenance of gripping force element can also be used as a means for increasing gripping force or for single actuated gripping.

Jaw design

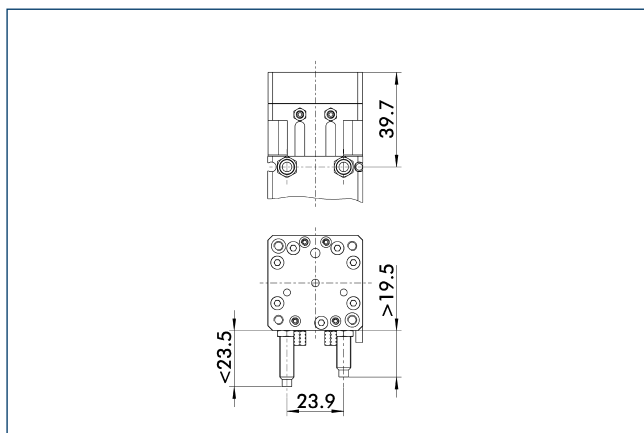


90 Vertical prism

91 Horizontal prism

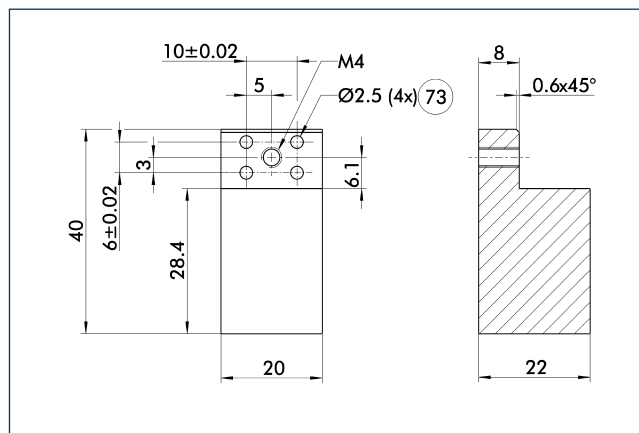
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Version with shock absorbers



The drawing shows the dimensional changes of the shock absorber versions as compared to the drawing in the main view which shows the elastomer version.

ABR-MPG-plus 40 finger blanks

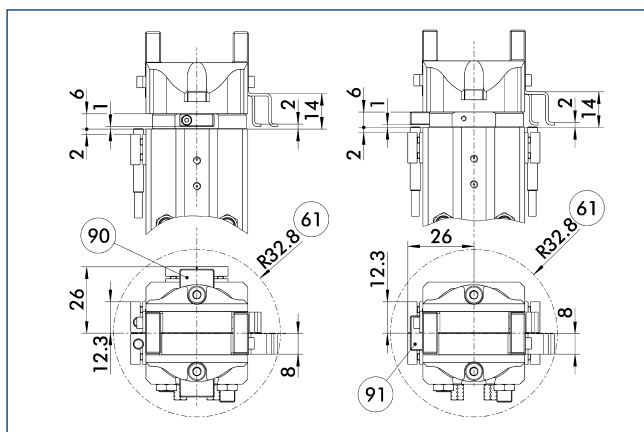


73 Fit for centering pins

Finger blanks for customized subsequent machining.

Description	ID	Material	Scope of delivery
Finger blanks			
ABR-MPG-plus 40	0340213	Aluminum	2

Mounting kit for proximity switch – 90° / 180° angle of rotation



61 Interfering contour during swiveling

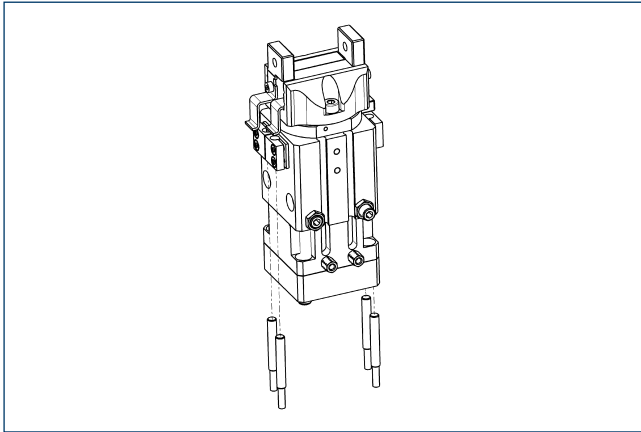
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91 Variant for 180° version

The mounting kit for the 90° and 180° GSM versions is identical, only the mounting is different. The mounting kit consists of two switch cams, two operating cams, four sensor brackets and small components. The proximity switches must be ordered separately.

Description	ID
Mounting kit for proximity switch	
AS-GSM-P 40	0304935

Inductive proximity switches

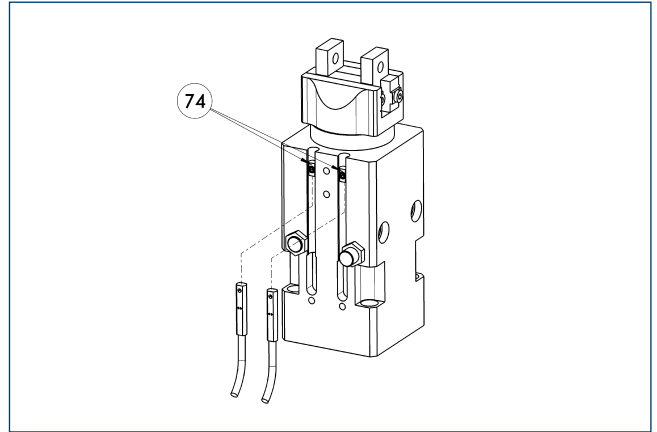


Limit position monitor can be mounted with mounting kit.

Description	ID	Often combined
Mounting kit for proximity switch		
AS-GSM-P 40	0304935	
Inductive proximity switches		
IN 40-S-M12	0301574	
IN 40-S-M8	0301474	●
INK 40-S	0301555	
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	
Clip for plug / socket		
CLI-M12	0301464	
CLI-M8	0301463	
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	
Sensor distributor		
V2-M8	0301775	●
V2-M12	0301776	●
V4-M12	0301747	
V4-M8	0301746	
V8-M12	0301752	
V8-M8	0301751	

- ① Two sensors (closer/S) are required for each unit, 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.

MMS-P programmable magnetic switches

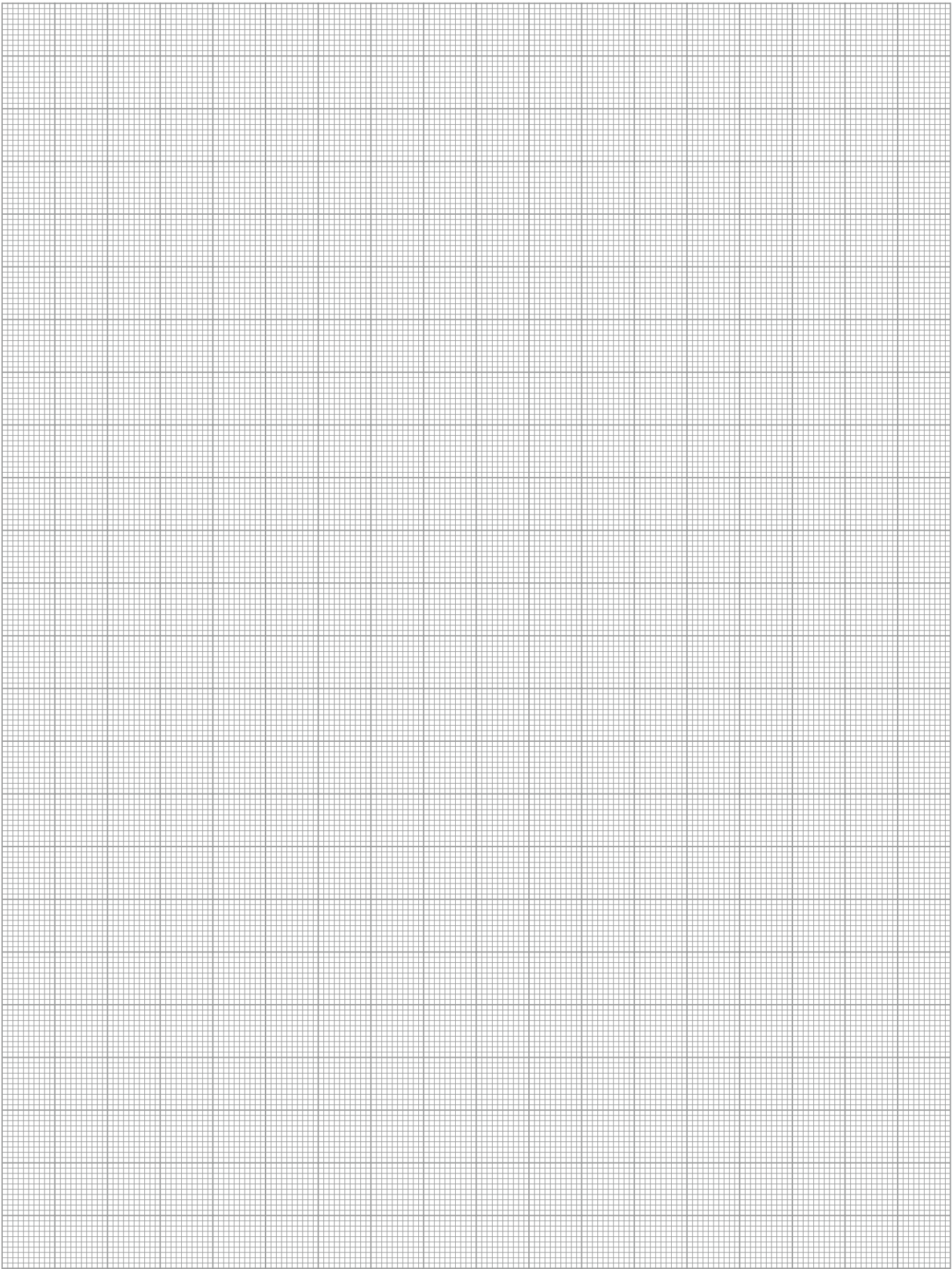


⑦4 Stop for MMS-P

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

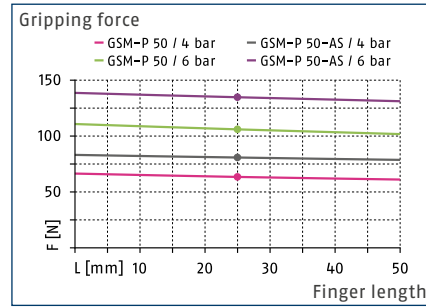
Description	ID	Often combined
MMS-P programmable magnetic switches		
MMSK-P 22-S-PNP	0301371	
MMS-P 22-S-M8-PNP	0301370	●
Clip for plug / socket		
CLI-M8	0301463	
Connection cables		
KA BG08-L 4P-0500	0307767	●
KA BG08-L 4P-1000	0307768	
KA BW08-L 4P-0500	0307765	
KA BW08-L 4P-1000	0307766	
Sensor distributor		
V2-M8-4P-2XM8-3P	0301380	

- ① Per each GSM two sensors MMS-P are required. If standard extension cables (M8-3P) are used, the sensor distributor can be applied.

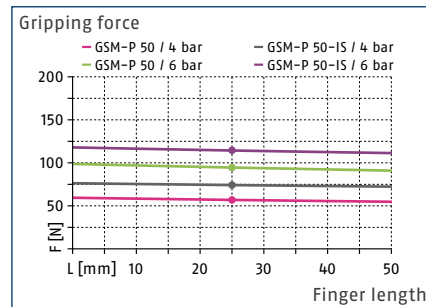




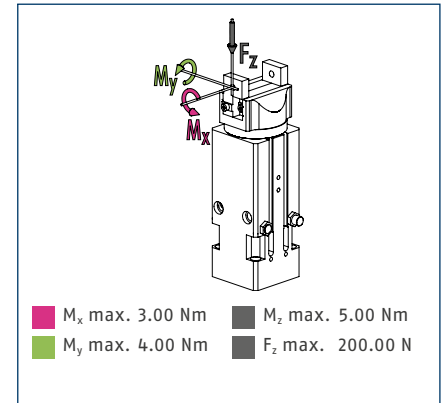
Gripping force, O.D. gripping



Gripping force, I.D. gripping



Finger load

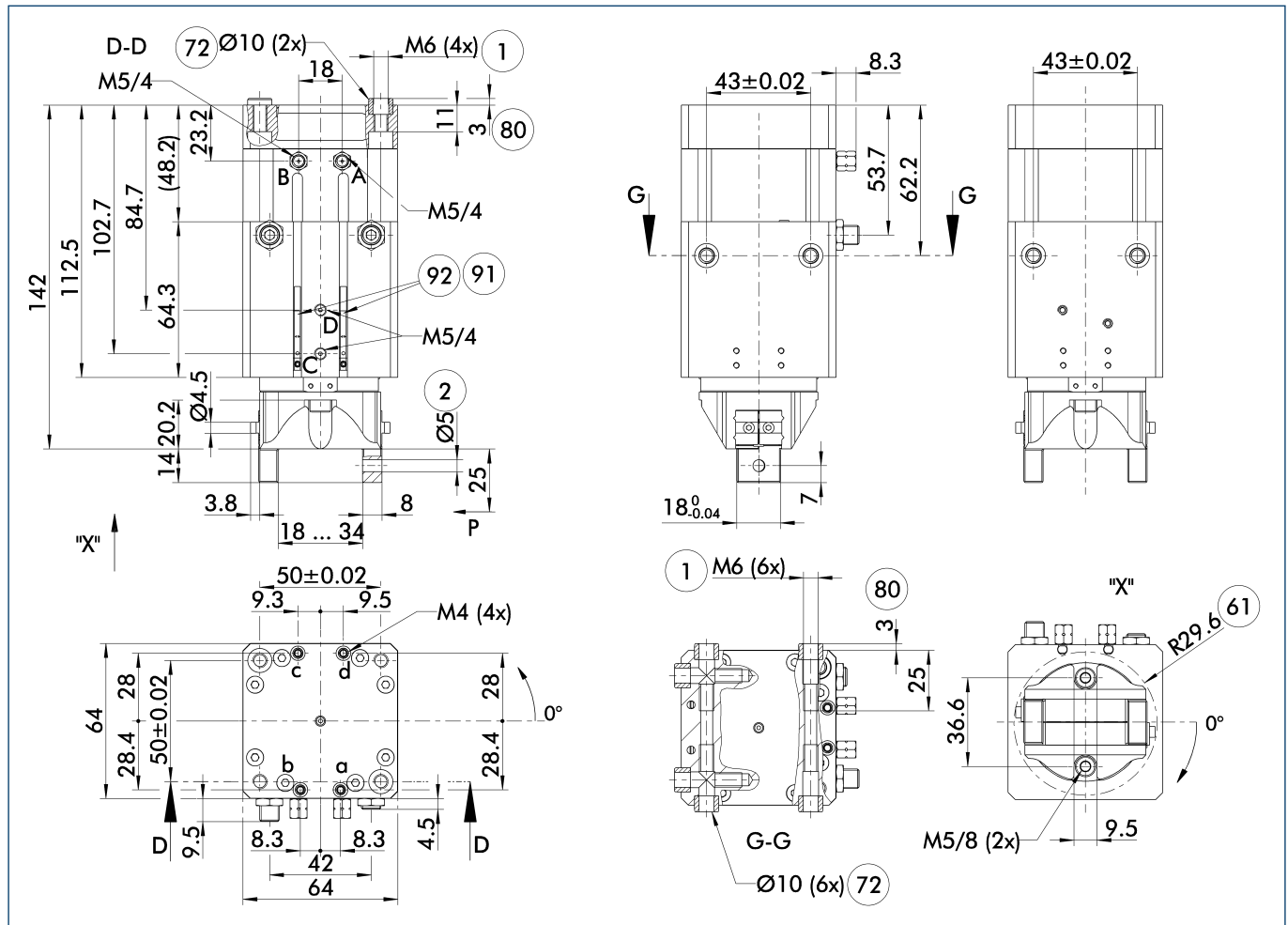


① The indicated moments and forces are static values, apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is impreative to throttle the air supply so that the jaw movement occurs without any hitting or bouncing. Service life may be reduced.

Technical data

Description		GSM-P 50-E-090	GSM-P 50-E-180	GSM-P 50-AS-E-090	GSM-P 50-AS-E-180	GSM-P 50-IS-E-090	GSM-P 50-IS-E-180
ID		0304650	0303850	0304651	0303851	0304652	0303852
Stroke per jaw	[mm]	8	8	8	8	8	8
Closing- / opening force	[N]	105/93	105/93	135/-	135/-	-/114	-/114
min. spring force	[N]			30	30	21	21
Torque	[Nm]	2.9	2.9	2.9	2.9	2.9	2.9
Angle of rotation	[°]	90	180	90	180	90	180
End position adjustability	[°]	90	180	90	180	90	180
Dampening for swiveling		Elastomer	Elastomer	Elastomer	Elastomer	Elastomer	Elastomer
Recommended workpiece weight	[kg]	0.52	0.52	0.52	0.52	0.52	0.52
Air consumption for gripping	[cm³]	10.84	10.84	10.84	10.84	10.84	10.84
Air consumption for swiveling	[cm³]	51	85	51	85	51	85
Weight	[kg]	1.19	1.19	1.19	1.19	1.2	1.2
Nominal operating pressure	[bar]	6	6	6	6	6	6
max. operating pressure	[bar]	6.5	6.5	6.5	6.5	6.5	6.5
min. operating pressure for gripping	[bar]	2	2	4	4	4	4
min. operating pressure for swiveling	[bar]	3	3	3	3	3	3
Closing- / opening time	[s]	0.01/0.01	0.01/0.01	0.01/0.02	0.01/0.02	0.02/0.01	0.02/0.01
Swiveling time with middle attached load	[s]	0.14	0.24	0.14	0.24	0.14	0.24
max. permitted finger length	[mm]	50	50	50	50	50	50
max. permitted weight per finger	[kg]	0.14	0.14	0.14	0.14	0.14	0.14
max. mass moment of inertia	[kgmm²]	180	180	176	176	176	176
IP class		30	30	30	30	30	30
min. / max. ambient temperature	[°C]	5/90	5/90	5/90	5/90	5/90	5/90
Repeat accuracy for gripping	[mm]	0.02	0.02	0.02	0.02	0.02	0.02
Repeat accuracy for swiveling	[°]	0.1	0.1	0.1	0.1	0.1	0.1
Options and their characteristics							
Version of shock absorber		GSM-P 50-S-090	GSM-P 50-S-180	GSM-P 50-AS-S-090	GSM-P 50-AS-S-180	GSM-P 50-IS-S-090	GSM-P 50-IS-S-180
ID		0304750	0303950	0304751	0303951	0304752	0303952
Dampening for swiveling		hydraulic absorber	hydraulic absorber	hydraulic absorber	hydraulic absorber	hydraulic absorber	hydraulic absorber
max. mass moment of inertia	[kgmm²]	430	430	426	426	426	426
min. / max. ambient temperature	[°C]	5/60	5/60	5/60	5/60	5/60	5/60

Main view



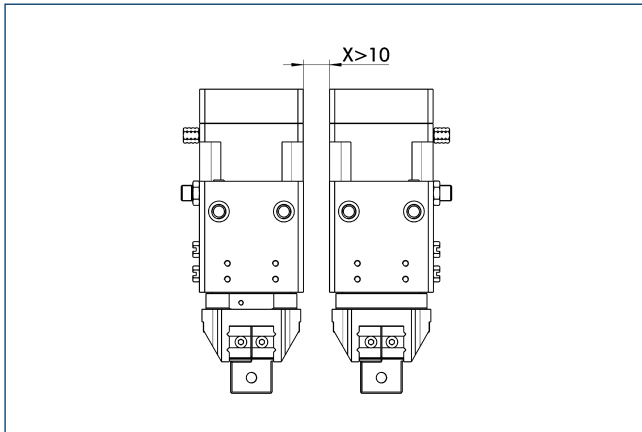
The drawing shows the basic version of the gripper with open jaws, without dimensional consideration of the options described below.

- ① 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 catalog section on "Accessories").

- A, a Main / direct connection, rotary actuator rotates clockwise
- B, b Main / direct connection, rotary actuator rotates counterclockwise
- C, c Main / direct connection, gripper "open"
- D, d Main / direct connection, gripper "closed"

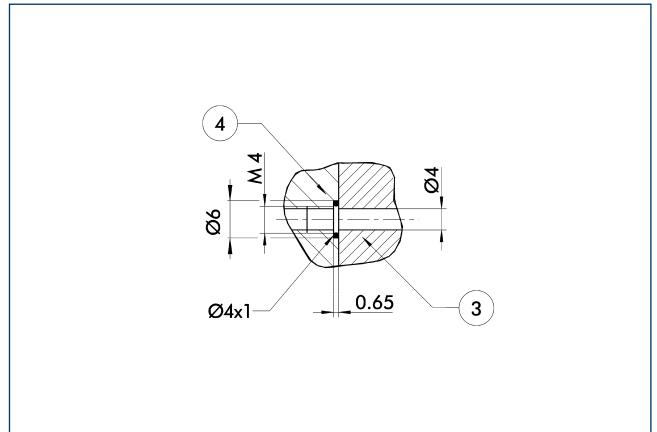
- ① Rotary actuator connection
- ② Attachment connection
- 61 Interfering contour during swiveling
- 72 Fit for centering sleeves
- 80 Depth of the centering sleeve hole in the mating part
- 91 Monitoring of gripping and swiveling
- 92 MMS-P22

Monitoring for stacked arrangement



Caution: Monitoring is carried out by magnetic switches, and in case of side-by-side assembly of several units, a minimum distance of X mm between the units must be maintained.

Hose-free direct connection M4

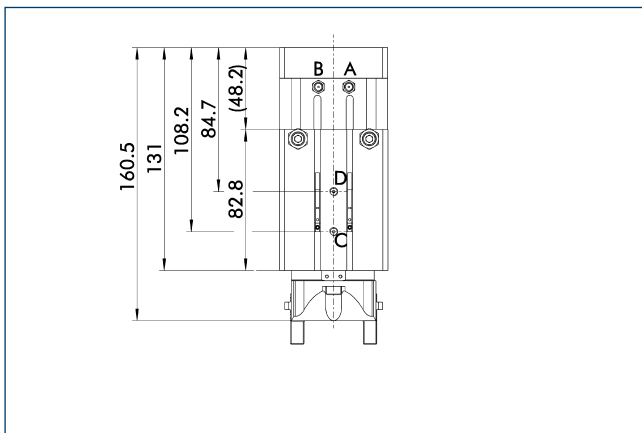


③ Adapter

④ Rotary actuator

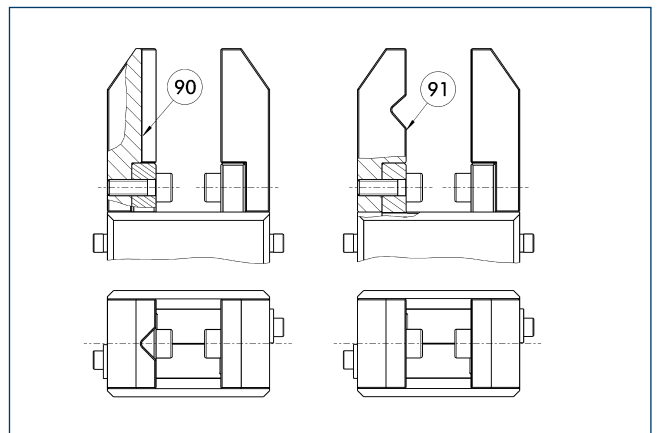
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

Gripping force maintenance device AS / IS



The mechanical maintenance of gripping force also assures a minimum gripping force in the case of a loss of pressure. With the AS / S variant, this acts as a closing force, and as an opening force for the IS variant. The maintenance of gripping force element can also be used as a means for increasing gripping force or for single actuated gripping.

Jaw design

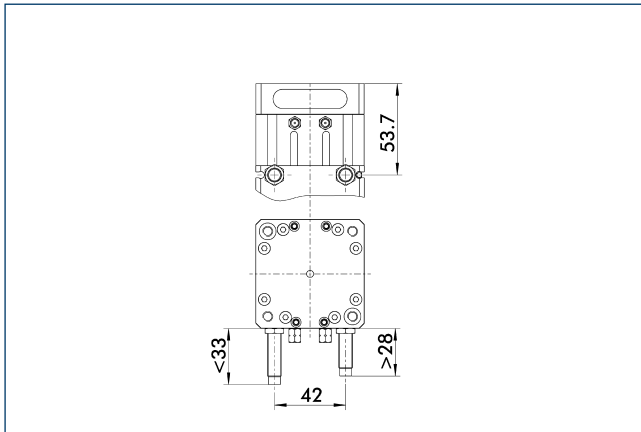


90 Vertical prism

91 Horizontal prism

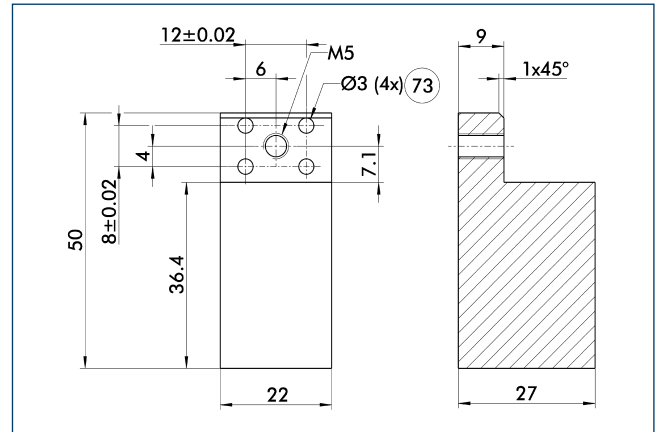
A three-point support of the gripped workpiece is beneficial for gripping the workpiece with repeat accuracy and process reliability. More than three support points lead to a redundancy of the system. The drawing shows two alternative recommendations for the jaw design for coaxial and radial gripping of a cylindrical part.

Version with shock absorbers



The drawing shows the dimensional changes of the shock absorber versions as compared to the drawing in the main view which shows the elastomer version.

ABR-MPG-plus 50 finger blanks

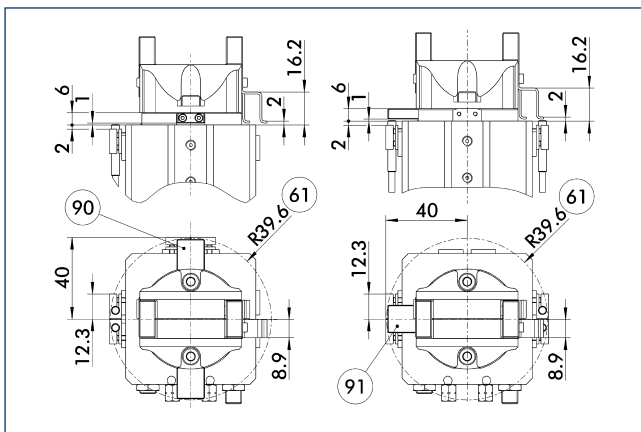


73 Fit for centering pins

Finger blanks for customized subsequent machining.

Description	ID	Material	Scope of delivery
Finger blanks			
ABR-MPG-plus 50	0340214	Aluminum	2

Mounting kit for proximity switch – 90° / 180° angle of rotation



61 Interfering contour during swiveling

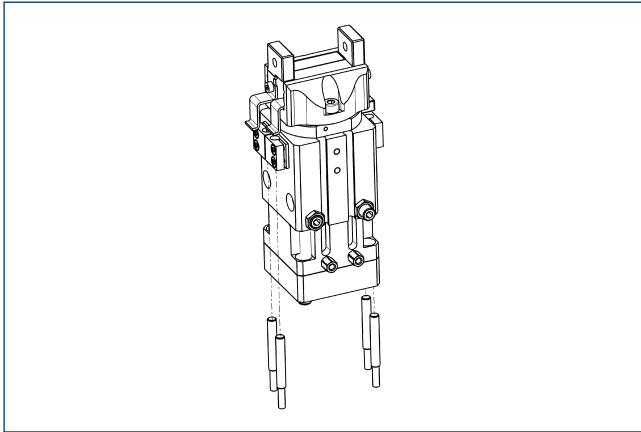
90 Variant for 90° version

91 Variant for 180° version

The mounting kit for the 90° and 180° GSM versions is identical, only the mounting is different. The mounting kit consists of two switch cams, two operating cams, four sensor brackets and small components. The proximity switches must be ordered separately.

Description	ID
Mounting kit for proximity switch	
AS-GSM-P 50	0304936

Inductive proximity switches

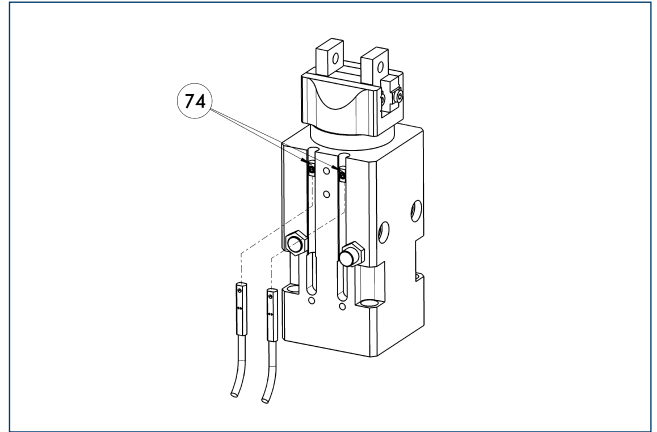


Limit position monitor can be mounted with mounting kit.

Description	ID	Often combined
Mounting kit for proximity switch		
AS-GSM-P 50	0304936	
Inductive proximity switches		
IN 40-S-M12	0301574	
IN 40-S-M8	0301474	●
INK 40-S	0301555	
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	
Clip for plug / socket		
CLI-M12	0301464	
CLI-M8	0301463	
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	
Sensor distributor		
V2-M8	0301775	●
V2-M12	0301776	●
V4-M12	0301747	
V4-M8	0301746	
V8-M12	0301752	
V8-M8	0301751	

- ① Two sensors (closer/S) are required for each unit, 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.

MMS-P programmable magnetic switches

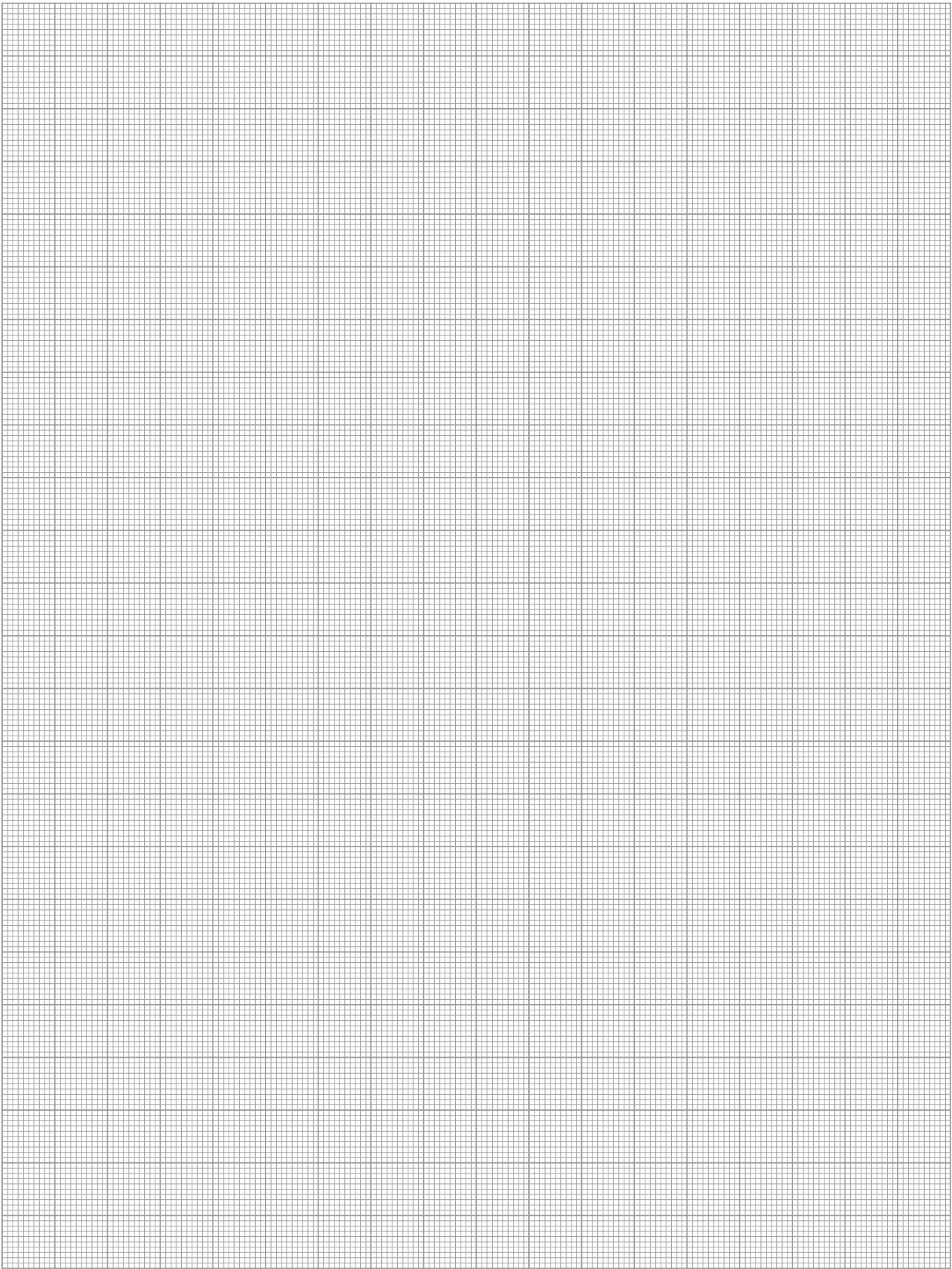


74 Stop for MMS-P

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

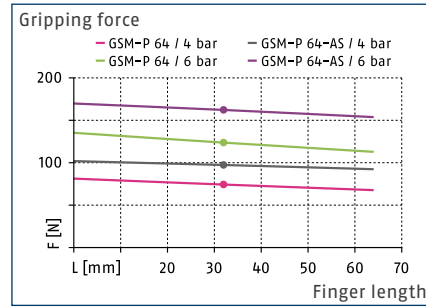
Description	ID	Often combined
MMS-P programmable magnetic switches		
MMSK-P 22-S-PNP	0301371	
MMS-P 22-S-M8-PNP	0301370	●
Clip for plug / socket		
CLI-M8	0301463	
Connection cables		
KA BG08-L 4P-0500	0307767	●
KA BG08-L 4P-1000	0307768	
KA BW08-L 4P-0500	0307765	
KA BW08-L 4P-1000	0307766	
Sensor distributor		
V2-M8-4P-2XM8-3P	0301380	

- ① Per each GSM two sensors MMS-P are required. If standard extension cables (M8-3P) are used, the sensor distributor can be applied.

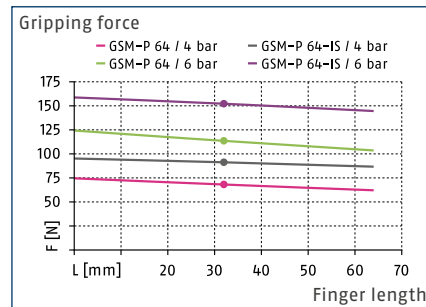




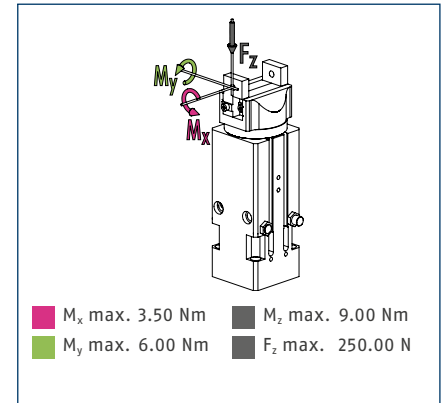
Gripping force, O.D. gripping



Gripping force, I.D. gripping



Finger load



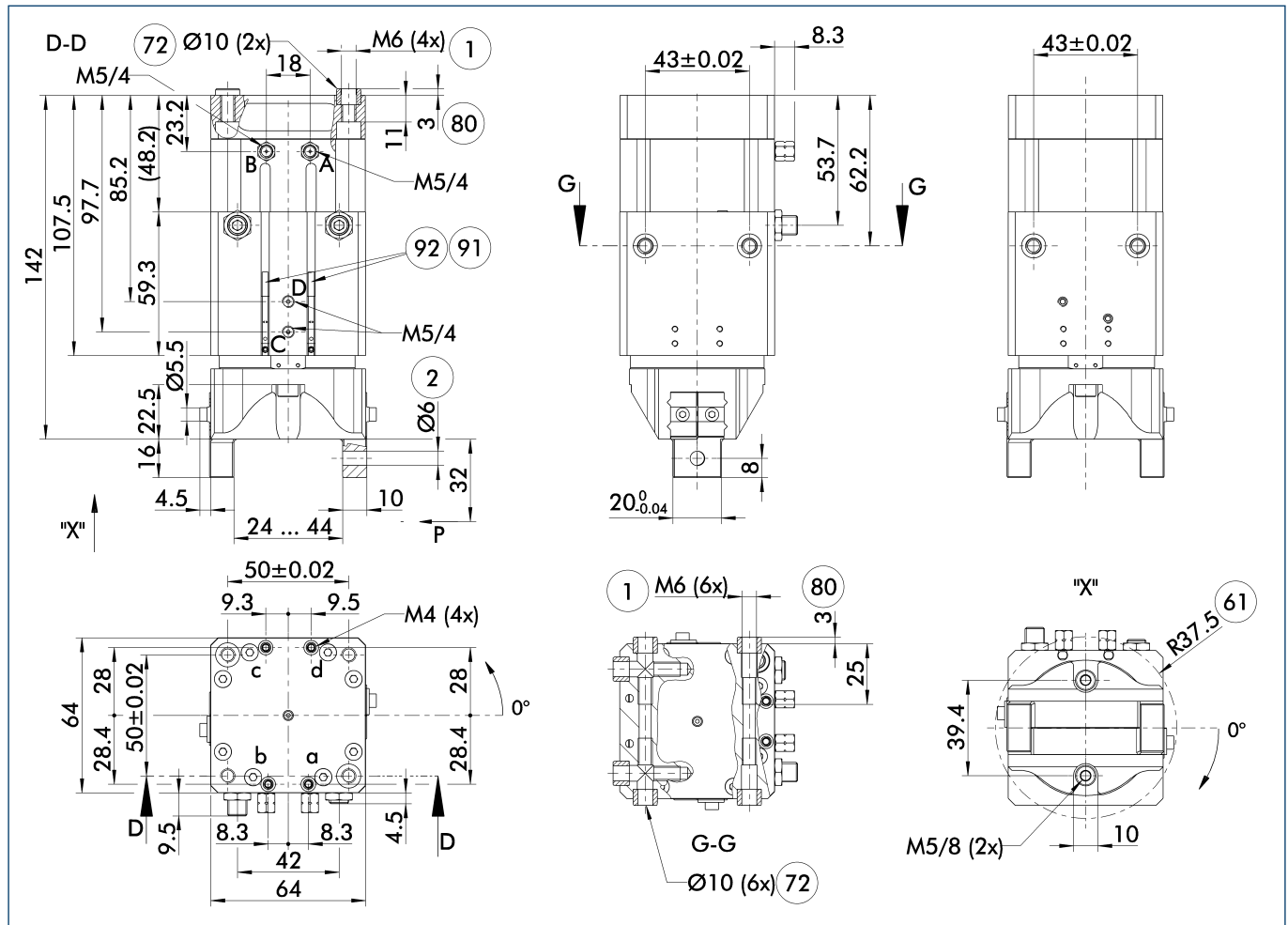
① The indicated moments and forces are static values, apply per base jaw and may occur simultaneously. M_y may arise in addition to the moment generated by the gripping force itself. If the max. permitted finger weight is exceeded, it is imperative to throttle the air supply so that the jaw movement occurs without any hitting or bouncing. Service life may be reduced.

Technical data

Description		GSM-P 64-E-090	GSM-P 64-E-180	GSM-P 64-AS-E-090	GSM-P 64-AS-E-180	GSM-P 64-IS-E-090	GSM-P 64-IS-E-180
ID		0304660	0303860	0304661	0303861	0304662	0303862
Stroke per jaw	[mm]	10	10	10	10	10	10
Closing- / opening force	[N]	120/114	120/114	162/-	162/-	-/147	-/147
min. spring force	[N]			42	42	33	33
Torque	[Nm]	2.7	2.7	2.7	2.7	2.7	2.7
Angle of rotation	[°]	90	180	90	180	90	180
End position adjustability	[°]	90	180	90	180	90	180
Dampening for swiveling		Elastomer	Elastomer	Elastomer	Elastomer	Elastomer	Elastomer
Recommended workpiece weight	[kg]	0.61	0.61	0.61	0.61	0.61	0.61
Air consumption for gripping	[cm³]	15.81	15.81	15.81	15.81	15.81	15.81
Air consumption for swiveling	[cm³]	51	85	51	85	51	85
Weight	[kg]	1.39	1.39	1.51	1.51	1.51	1.51
Nominal operating pressure	[bar]	6	6	6	6	6	6
max. operating pressure	[bar]	6.5	6.5	6.5	6.5	6.5	6.5
min. operating pressure for gripping	[bar]	2	2	4	4	4	4
min. operating pressure for swiveling	[bar]	3	3	3	3	3	3
Closing- / opening time	[s]	0.01/0.01	0.01/0.01	0.01/0.02	0.01/0.02	0.02/0.01	0.02/0.01
Swiveling time with middle attached load	[s]	0.14	0.24	0.14	0.24	0.14	0.24
max. permitted finger length	[mm]	64	64	64	64	64	64
max. permitted weight per finger	[kg]	0.24	0.24	0.24	0.24	0.24	0.24
max. mass moment of inertia	[kgmm²]	90	90	91	91	91	91
IP class		30	30	30	30	30	30
min. / max. ambient temperature	[°C]	5/90	5/90	5/90	5/90	5/90	5/90
Repeat accuracy for gripping	[mm]	0.02	0.02	0.02	0.02	0.02	0.02
Repeat accuracy for swiveling	[°]	0.1	0.1	0.1	0.1	0.1	0.1
Options and their characteristics							
Version of shock absorber		GSM-P 64-S-090	GSM-P 64-S-180	GSM-P 64-AS-S-090	GSM-P 64-AS-S-180	GSM-P 64-IS-S-090	GSM-P 64-IS-S-180
ID		0304760	0303960	0304761	0303961	0304762	0303962
Dampening for swiveling		hydraulic absorber	hydraulic absorber	hydraulic absorber	hydraulic absorber	hydraulic absorber	hydraulic absorber
max. mass moment of inertia	[kgmm²]	340	340	341	341	341	341
min. / max. ambient temperature	[°C]	5/60	5/60	5/60	5/60	5/60	5/60



Main view



The drawing shows the basic version of the gripper with open jaws, without dimensional consideration of the options described below.

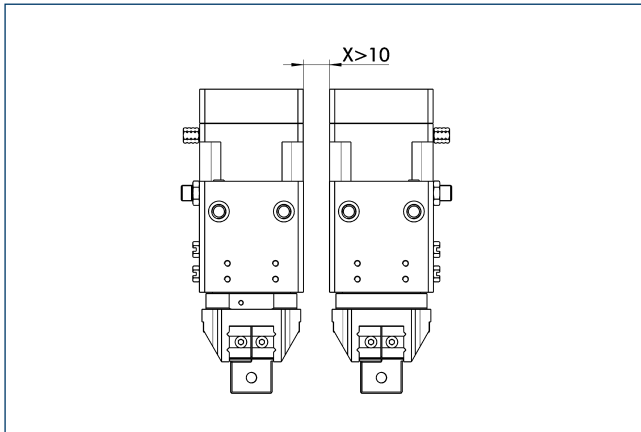
- ① The SDV-P pressure maintenance valve can also be used for I.D. or O.D. gripping alternatively or in addition to the spring-loaded, mechanical gripping force maintenance device (see catalog section on "Accessories").

- A, a Main / direct connection, rotary actuator rotates clockwise
- B, b Main / direct connection, rotary actuator rotates counterclockwise
- C, c Main / direct connection, gripper "open"
- D, d Main / direct connection, gripper "closed"

- ① Rotary actuator connection
- ② Attachment connection
- ⑥1 Interfering contour during swiveling
- ⑦2 Fit for centering sleeves
- ⑧0 Depth of the centering sleeve hole in the mating part
- ⑨1 Monitoring of gripping and swiveling
- ⑨2 MMS-P22

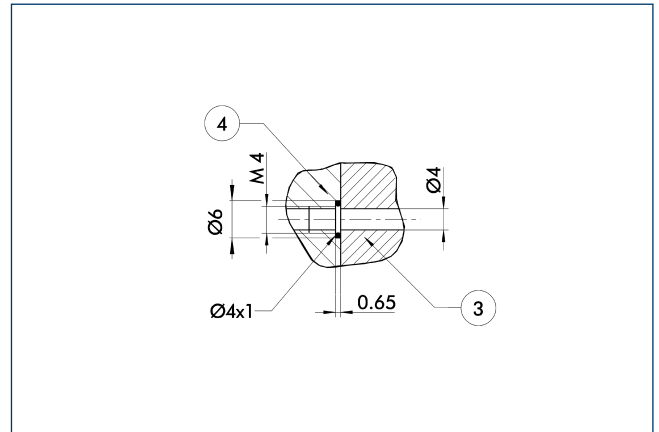


Monitoring for stacked arrangement



Caution: Monitoring is carried out by magnetic switches, and in case of side-by-side assembly of several units, a minimum distance of X mm between the units must be maintained.

Hose-free direct connection M4

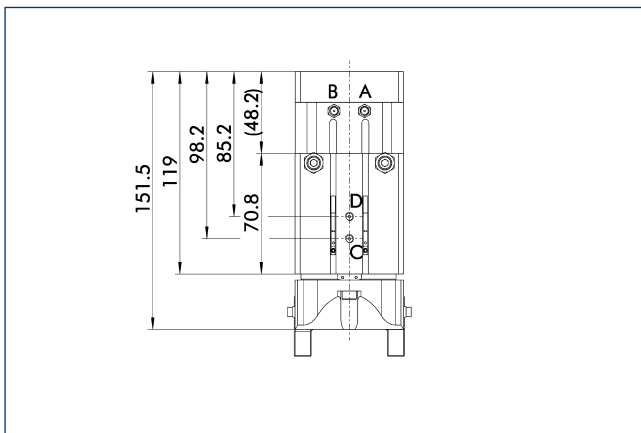


③ Adapter

④ Rotary actuator

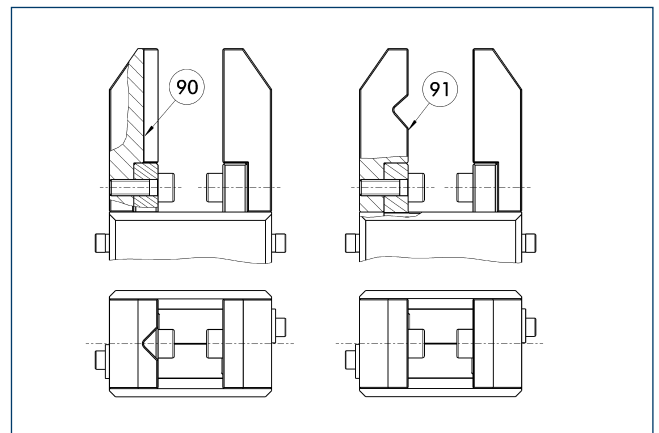
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

Gripping force maintenance device AS / IS



The mechanical maintenance of gripping force also assures a minimum gripping force in the case of a loss of pressure. With the AS / S variant, this acts as a closing force, and as an opening force for the IS variant. The maintenance of gripping force element can also be used as a means for increasing gripping force or for single actuated gripping.

Jaw design

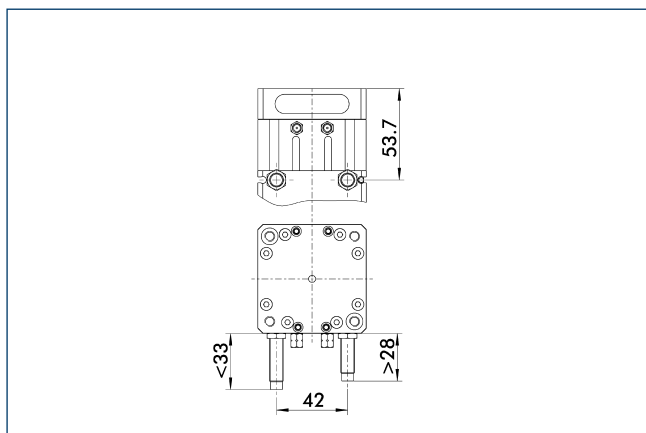


90 Vertical prism

91 Horizontal prism

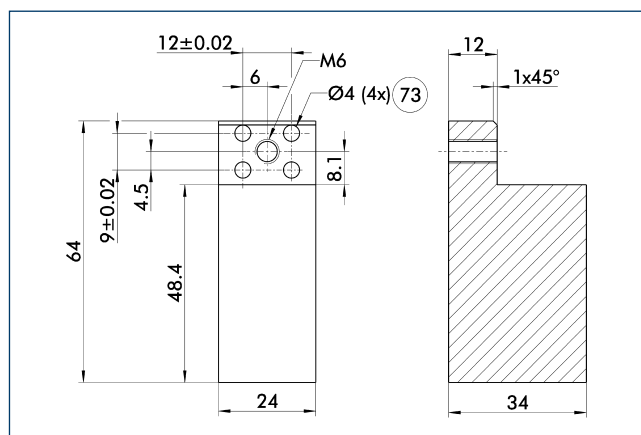
A three-point support of the gripped workpiece is beneficial for gripping the workpiece with repeat accuracy and process reliability. More than three support points lead to a redundancy of the system. The drawing shows two alternative recommendations for the jaw design for coaxial and radial gripping of a cylindrical part.

Version with shock absorbers



The drawing shows the dimensional changes of the shock absorber versions as compared to the drawing in the main view which shows the elastomer version.

ABR-MPG-plus 64 finger blanks

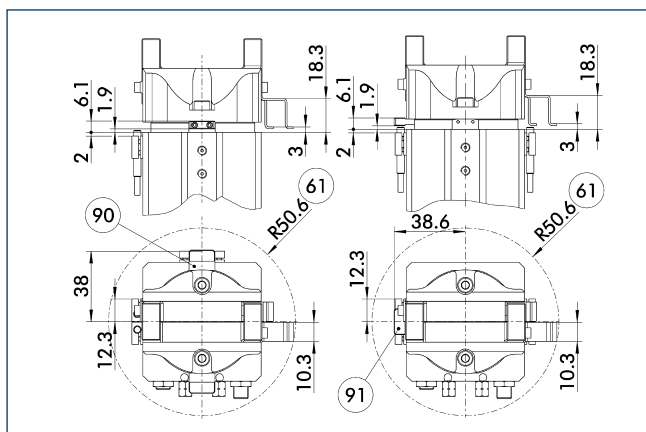


73 Fit for centering pins

Finger blanks for customized subsequent machining.

Description	ID	Material	Scope of delivery
Finger blanks			
ABR-MPG-plus 64	0340215	Aluminum	2

Mounting kit for proximity switch – 90° / 180° angle of rotation



61 Interfering contour during swiveling

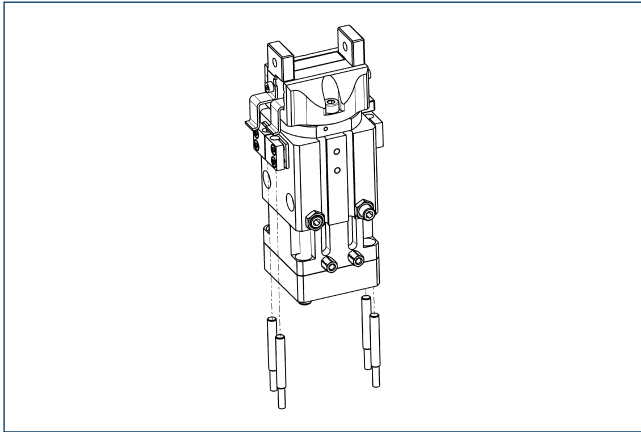
90 Variant for 90° version

91 Variant for 180° version

The mounting kit for the 90° and 180° GSM versions is identical, only the mounting is different. The mounting kit consists of two switch cams, two operating cams, four sensor brackets and small components. The proximity switches must be ordered separately.

Description	ID
Mounting kit for proximity switch	
AS-GSM-P 64	0304937

Inductive proximity switches

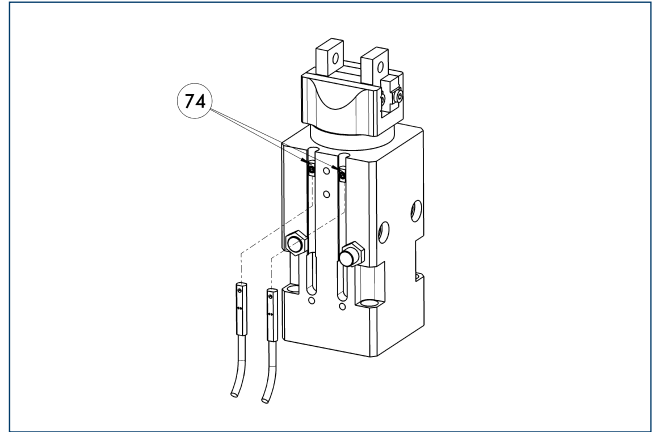


Limit position monitor can be mounted with mounting kit.

Description	ID	Often combined
Mounting kit for proximity switch		
AS-GSM-P 64	0304937	
Inductive proximity switches		
IN 40-S-M12	0301574	
IN 40-S-M8	0301474	●
INK 40-S	0301555	
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	
Clip for plug / socket		
CLI-M12	0301464	
CLI-M8	0301463	
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	
Sensor distributor		
V2-M8	0301775	●
V2-M12	0301776	●
V4-M12	0301747	
V4-M8	0301746	
V8-M12	0301752	
V8-M8	0301751	

- ① Two sensors (closer/S) are required for each unit, 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.

MMS-P programmable magnetic switches



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	Often combined
MMS-P programmable magnetic switches		
MMSK-P 22-S-PNP	0301371	
MMS-P 22-S-M8-PNP	0301370	●
Clip for plug / socket		
CLI-M8	0301463	
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	

- ① Per each GSM two sensors MMS-P are required. If standard extension cables (M8-3P) are used, the sensor distributor can be applied.

