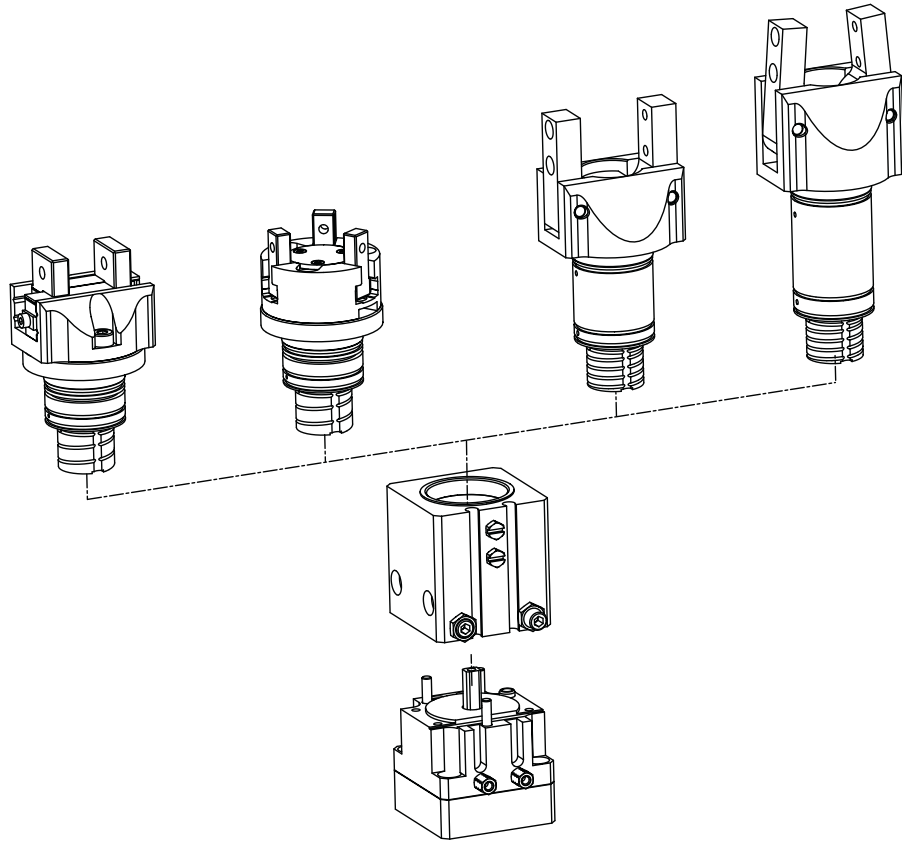
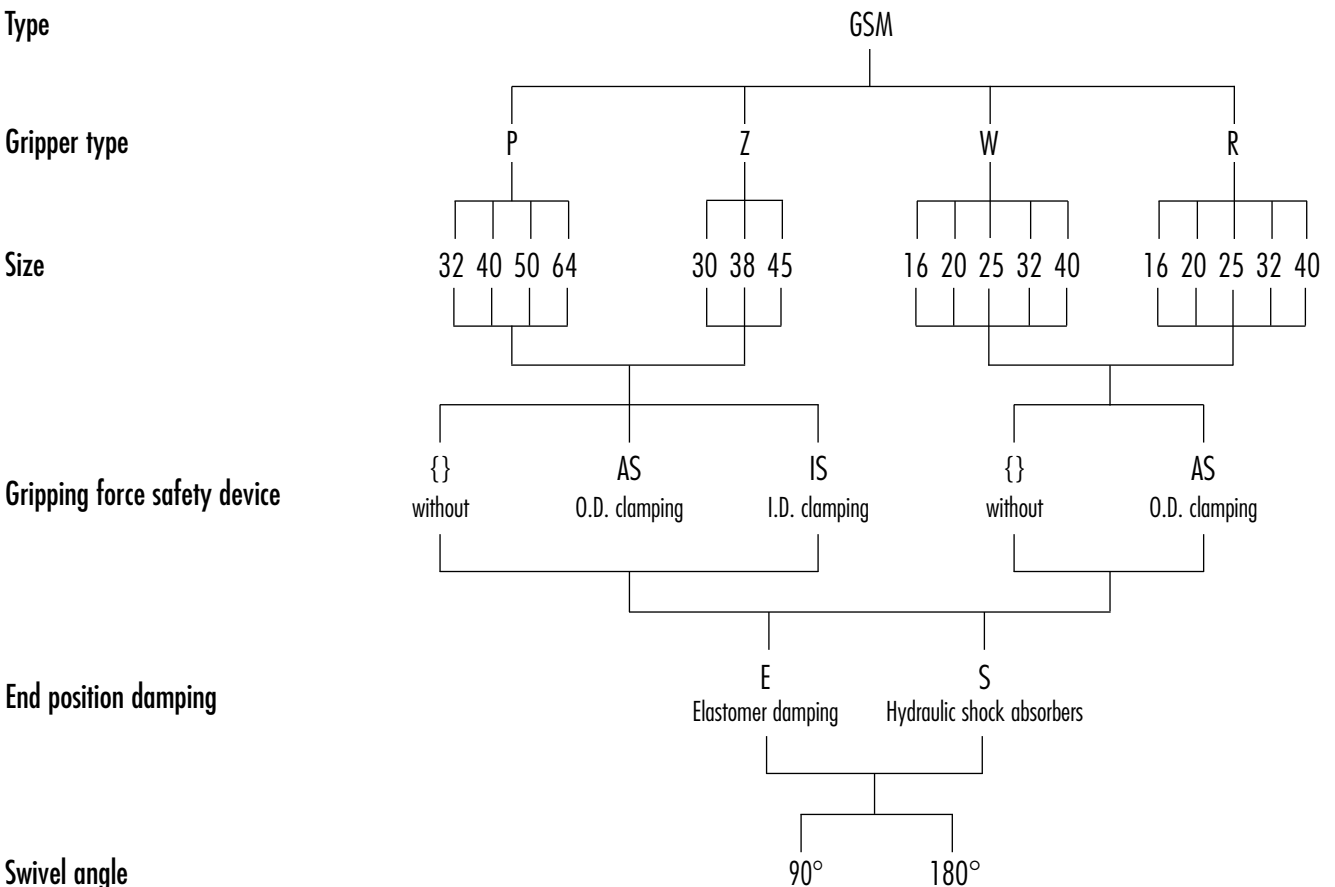


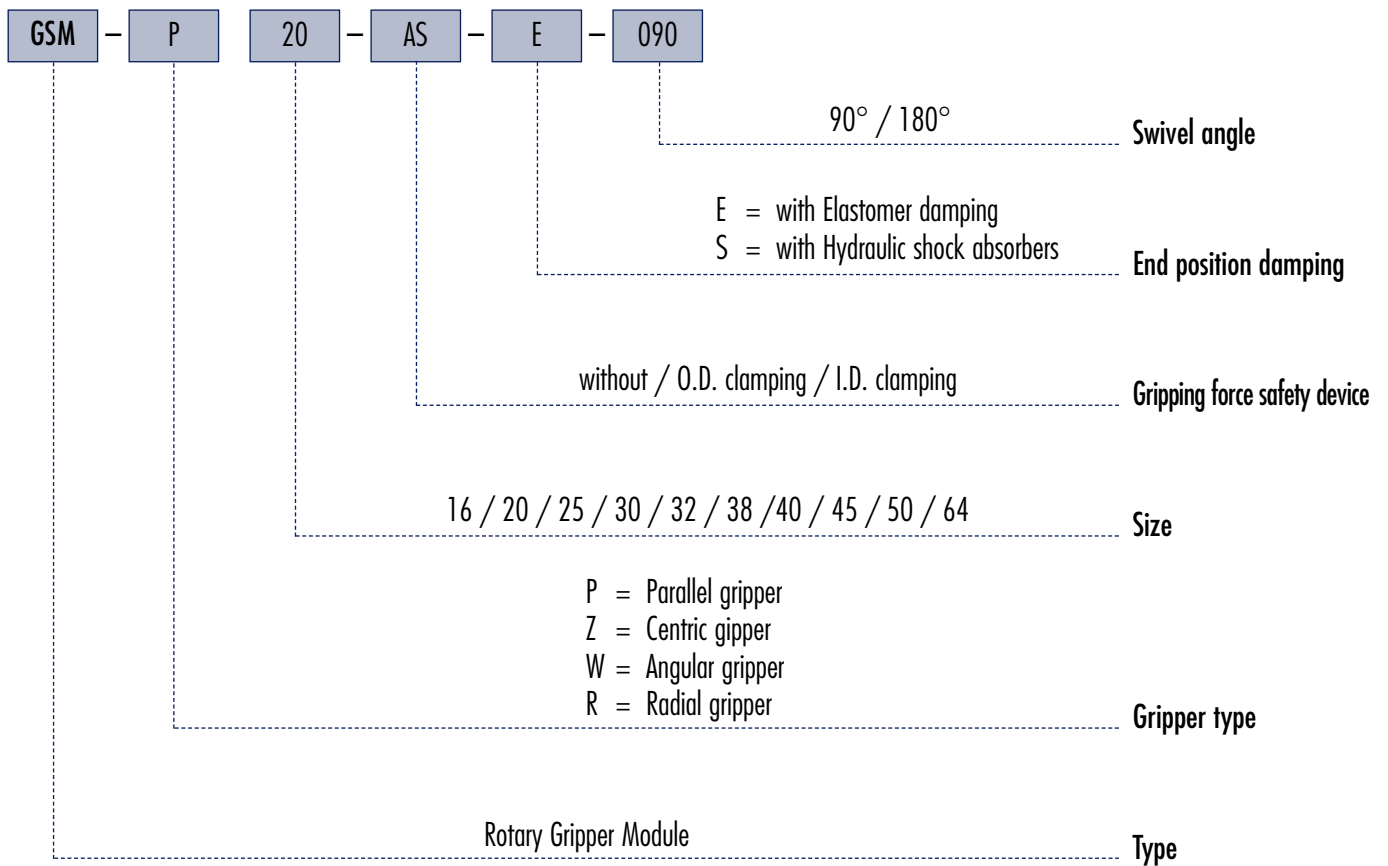
Modular Design



Versions of the series



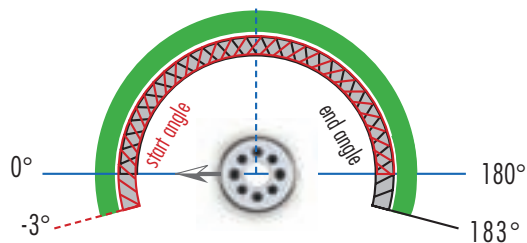
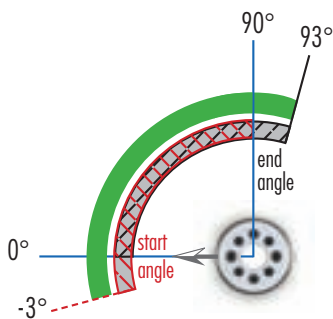
How to order



End stop adjustability and switching angle of sensor

• in the case of 90° units

• in the case of 180° units



- Swivel range
- Adjustment range of start angle
- Adjustment range of end angle
- Switching range of sensor

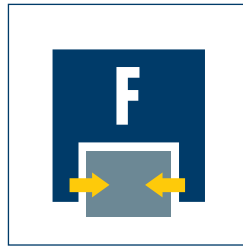
- Swivel range
- Adjustment range of start angle
- Adjustment range of end angle
- Switching range of sensor



Sizes
32 .. 64



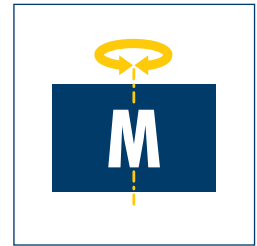
Weight
0.13 kg .. 1.51 kg



Gripping force
28 N .. 270 N

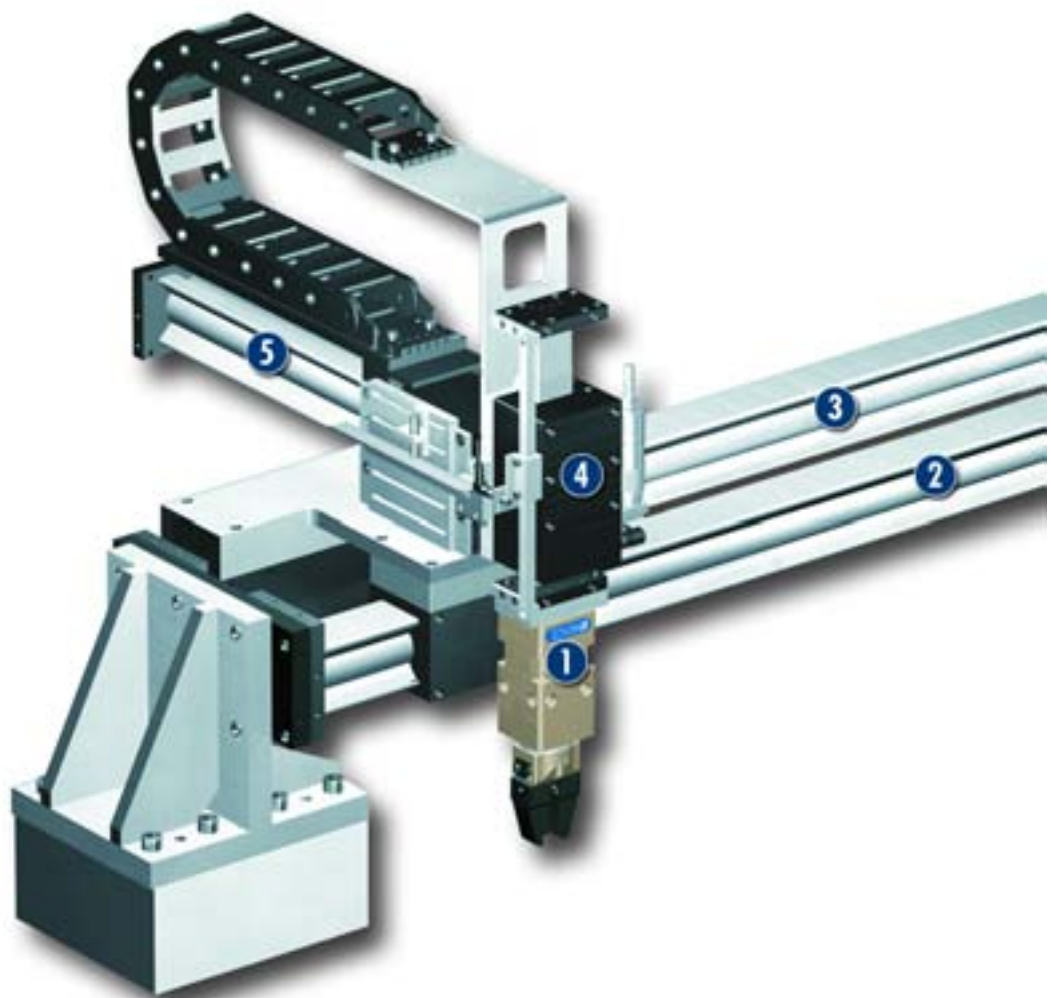


Stroke per finger
2.0 mm .. 10.0 mm



Torque
0.05 Nm .. 2.7 Nm

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 32-E Gripper Swivel Module
- 2 MLD 100 Linear Motor Drive
- 3 Support axis without drive
- 4 MLD 100K short-stroke module
Stroke 50 with reference switch
- 5 MLD 100 Linear Motor Drive
Stroke 300 with measuring system

Parallel Gripper Swivel Module

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

Area of application

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

Your advantages and benefits

Compact

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

Reduces costs

as no adapter plates are required with and planning and design time is saved

Powerful

thanks to optional hydraulic damping

Flexible

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

Roller guide

for precise gripping through base jaw guide with minimum play

Controlled production

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

Mounting from three sides in three screw directions

for universal and flexible assembly of the rotary gripper module

Air supply via hose-free direct connection or screw connections

for the connection of exactly the right rotary gripper module in all automation solutions

Comprehensive accessories

through the use of existing gripper components

Information about the series

Working principle

Combined rotor and piston drive

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

Maintenance

Maintenance-free up to 2 million strokes and 2 million swiveling movements

Scope of delivery

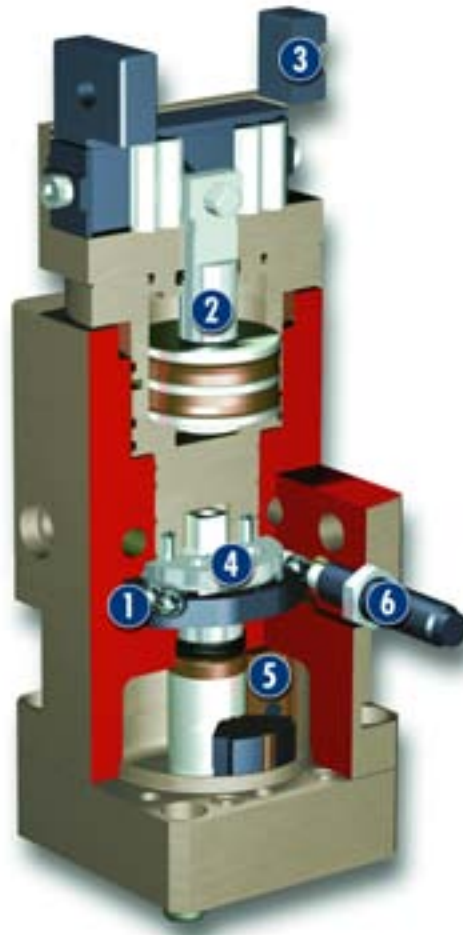
Centering sleeves, O-rings for direct connection, screws for attachment to the side, steel balls for adjusting the angle of traverse, assembly and operating manual with manufacturer's declaration

Gripping force safety device

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



Sectional diagram



- 1 Preset angle of rotation**
using steel balls for any desired angle of rotation
- 2 Drive**
double-acting piston drive system with wedge hook

- 3 Base jaws**
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

Function description

As its non-centric rotor is subjected to pressure, the drive rotates the integrated gripper module. The module itself is driven by its own piston. The piston movement is subsequently transformed into a synchronized gripping motion.

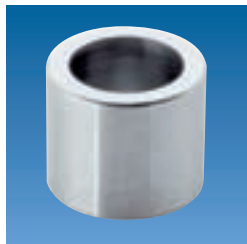
Options and special information

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

Accessories

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

Centering sleeves



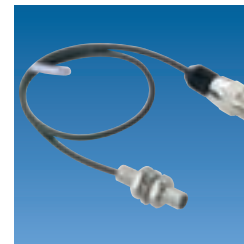
Fittings



MMS-P magnetic switches



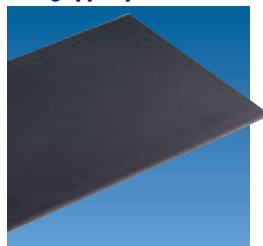
Inductive proximity switches



Quentes plastic inserts



HKI gripper pads



SDV-P pressure maintenance valves



Finger blanks



KV/KA sensor cables



V sensor distributors



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

General information on the series

Gripping force

is the arithmetic total of the gripping force applied to each 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 or rotary cycles.

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, cycle times

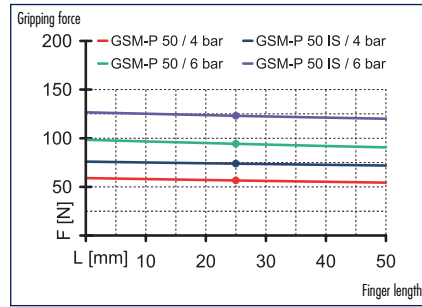
Closing and opening times are purely the times that the base jaws or fingers are in motion. Cycle times are purely the times that the rotating part (mostly the pinion) is in motion. Valve switching times, hose filling times or PLC reaction times are not included in the above times and must be taken into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

Mean attached load

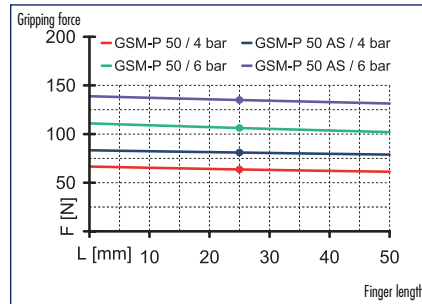
The mean attached load should constitute a typical load. It is defined as the half of the max. possible moment of inertia that can be swiveled without restriction, bouncing or hitting, with a centric load and a vertical rotating axis.



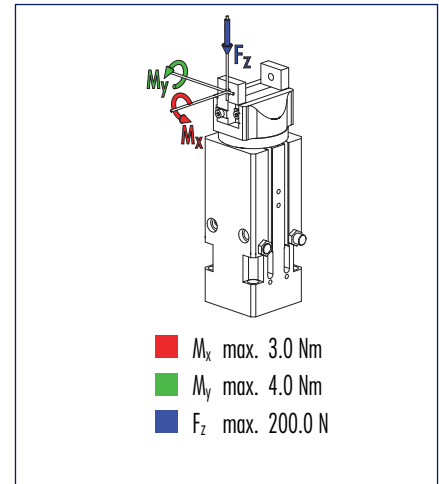
Gripping force, I.D. gripping



Gripping force, O.D. gripping



Finger load



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

Technical data 90° rotating angle

Description	ID	GSM-P 50-E-090	GSM-P 50-S-090	GSM-P 50-AS-E-090	GSM-P 50-AS-S-090	GSM-P 50-IS-E-090	GSM-P 50-IS-S-090
		0304650	0304750	0304651	0304751	0304652	0304752
Stroke per finger	[mm]	8.0	8.0	8.0	8.0	8.0	8.0
Closing force	[N]	105.0	105.0	135.0	135.0		
Opening force	[N]	93.0	93.0			114.0	114.0
Min. gripping force through spring	[N]			30.0	30.0	21.0	21.0
Torque	[Nm]	2.9	2.9	2.9	2.9	2.9	2.9
Rotating angle	[°]	90.0	90.0	90.0	90.0	90.0	90.0
Adjustability of end positions	[°]	90.0	90.0	90.0	90.0	90.0	90.0
Damping for rotation		Elastomer damping	hydr. shock absorbers	Elastomer damping	hydr. shock absorbers	Elastomer damping	hydr. shock absorbers
Recommended workpiece weight	[kg]	0.52	0.52	0.52	0.52	0.52	0.52
Air consumption for gripping	[cm ³]	10.84	10.84	10.84	10.84	10.84	10.84
Air consumption for swiveling	[cm ³]	51.0	51.0	51.0	51.0	51.0	51.0
Weight	[kg]	1.19	1.19	1.19	1.2	1.2	1.2
Nominal pressure	[bar]	6.0	6.0	6.0	6.0	6.0	6.0
Minimum pressure for gripping	[bar]	2.0	2.0	4.0	4.0	4.0	4.0
Maximum pressure for gripping	[bar]	8.0	8.0	6.5	6.5	6.5	6.5
Minimum pressure for swiveling	[bar]	3.0	3.0	3.0	3.0	3.0	3.0
Maximum pressure for swiveling	[bar]	6.5	6.5	6.5	6.5	6.5	6.5
Closing time for gripping	[s]	0.01	0.01	0.01	0.01	0.02	0.02
Opening time for gripping	[s]	0.01	0.01	0.02	0.02	0.01	0.01
Swiveling time with middle attached load	[s]	0.14	0.14	0.14	0.14	0.14	0.14
Max. permitted finger length	[mm]	50.0	50.0	50.0	50.0	50.0	50.0
Max. permitted weight per finger	[kg]	0.14	0.14	0.14	0.14	0.14	0.14
IP class		30	30	30	30	30	30
Min. ambient temperature	[°C]	-10.0	5.0	-10.0	5.0	-10.0	5.0
Max. ambient temperature	[°C]	90.0	60.0	90.0	60.0	90.0	60.0
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

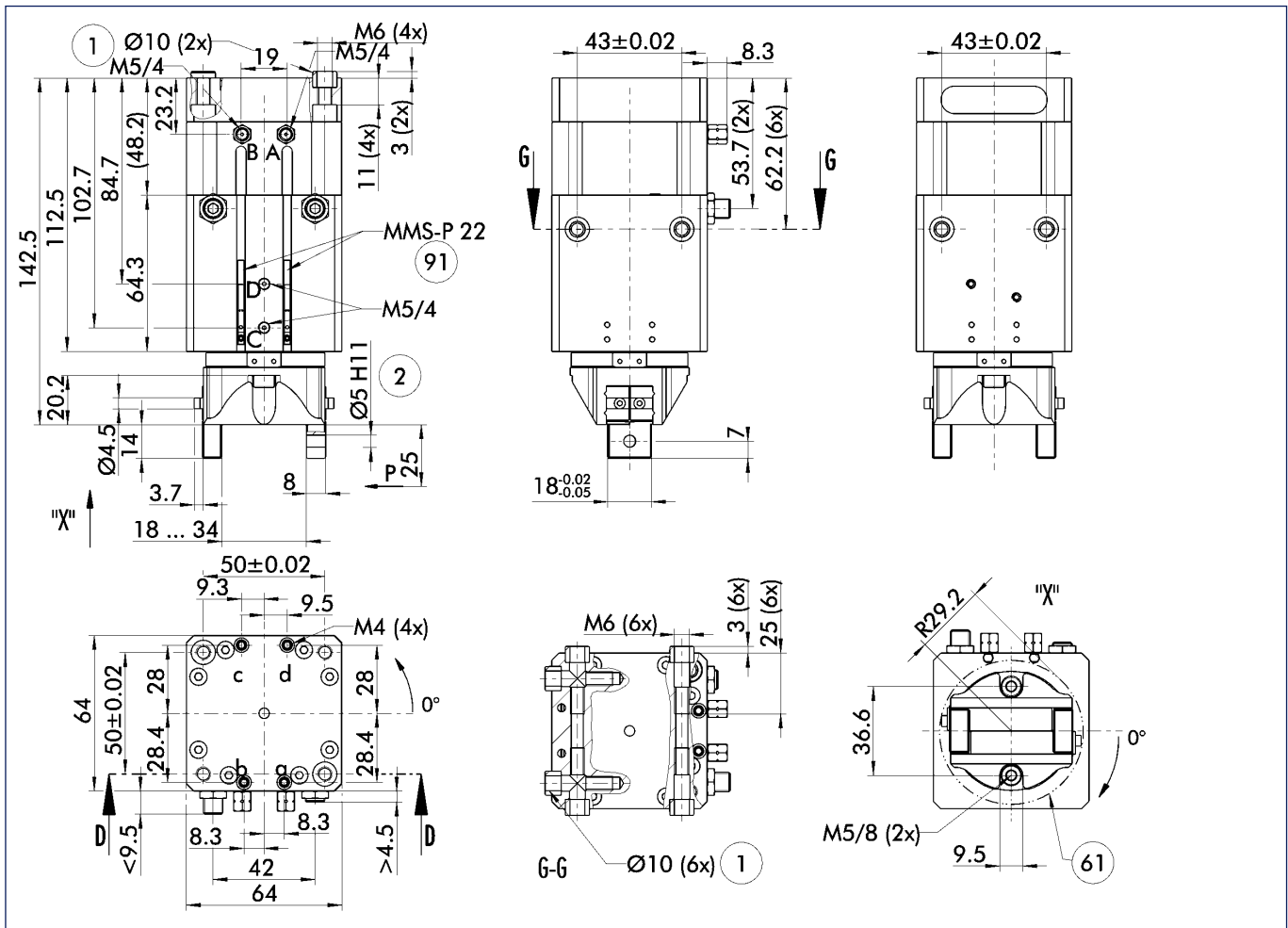
① The rotary movement can only be monitored at rotating angles of 0° and 90°, angles between these cannot be monitored.

Technical data 180° rotating angle

Description	ID	GSM-P 50-E-180	GSM-P 50-S-180	GSM-P 50-AS-E-180	GSM-P 50-AS-S-180	GSM-P 50-IS-E-180	GSM-P 50-IS-S-180
		0303850	0303950	0303851	0303951	0303852	0303952
Stroke per finger	[mm]	8.0	8.0	8.0	8.0	8.0	8.0
Closing force	[N]	105.0	105.0	135.0	135.0		
Opening force	[N]	93.0	93.0			114.0	114.0
Min. gripping force through spring	[N]			30.0	30.0	21.0	21.0
Torque	[Nm]	2.9	2.9	2.9	2.9	2.9	2.9
Rotating angle	[°]	180.0	180.0	180.0	180.0	180.0	180.0
Adjustability of end positions	[°]	180.0	180.0	180.0	180.0	180.0	180.0
Damping for rotation		Elastomer damping	hydr. shock absorbers	Elastomer damping	hydr. shock absorbers	Elastomer damping	hydr. shock absorbers
Recommended workpiece weight	[kg]	0.52	0.52	0.52	0.52	0.52	0.52
Air consumption for gripping	[cm ³]	10.84	10.84	10.84	10.84	10.84	10.84
Air consumption for swiveling	[cm ³]	85.0	85.0	85.0	85.0	85.0	85.0
Weight	[kg]	1.19	1.19	1.2	1.2	1.2	1.2
Nominal pressure	[bar]	6.0	6.0	6.0	6.0	6.0	6.0
Minimum pressure for gripping	[bar]	2.0	2.0	4.0	4.0	4.0	4.0
Maximum pressure for gripping	[bar]	8.0	8.0	6.5	6.5	6.5	6.5
Minimum pressure for swiveling	[bar]	3.0	3.0	3.0	3.0	3.0	3.0
Maximum pressure for swiveling	[bar]	6.5	6.5	6.5	6.5	6.5	6.5
Closing time for gripping	[s]	0.01	0.01	0.01	0.01	0.02	0.02
Opening time for gripping	[s]	0.01	0.01	0.02	0.02	0.01	0.01
Swiveling time with middle attached load	[s]	0.24	0.24	0.24	0.24	0.24	0.24
Max. permitted finger length	[mm]	50.0	50.0	50.0	50.0	50.0	50.0
Max. permitted weight per finger	[kg]	0.14	0.14	0.14	0.14	0.14	0.14
IP class		30	30	30	30	30	30
Min. ambient temperature	[°C]	-10.0	5.0	-10.0	5.0	-10.0	5.0
Max. ambient temperature	[°C]	90.0	60.0	90.0	60.0	90.0	60.0
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

① The rotary movement can only be monitored at rotating angles of 0° and 180°, angles between these cannot be monitored.

Main views

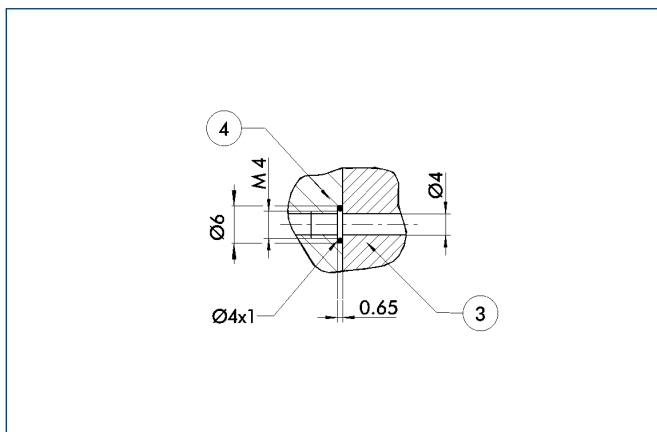


The drawing shows the gripper in the basic version with open jaws, the dimensions do not include the options described below.

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

- | | | | |
|-----|----------------------------------------------------|----|--------------------------------------|
| A,a | Main/direct connection, clockwise rotary unit | ① | Linear unit connection |
| B,b | Main/direct connection, anti-clockwise rotary unit | ② | Finger connection |
| C,c | Main/direct connection, gripper opening | ⑥1 | Interfering contour during swiveling |
| D,d | Main/direct connection, gripper closing | ⑨1 | Monitoring of gripping and swiveling |

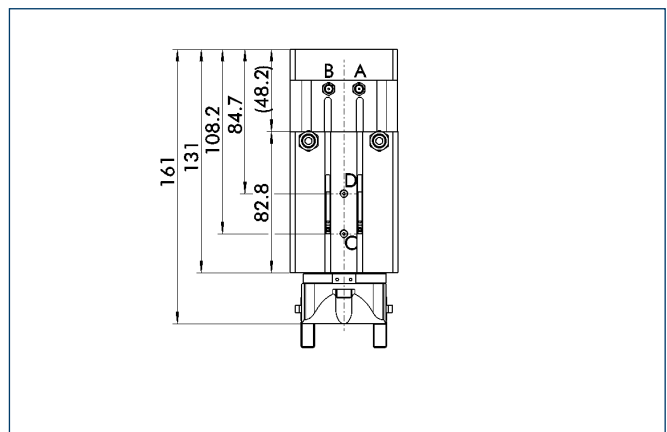
Hose-free direct connection



- ③ Adapter
- ④ Gripper swivel module

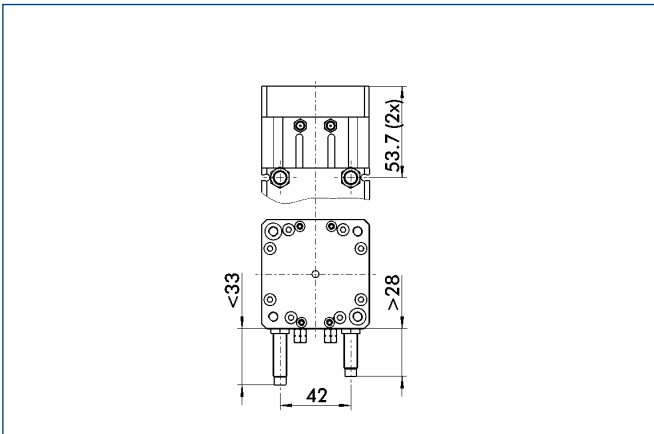
The direct connection is used for supplying compressed air to the gripper without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

AS/IS gripping force safety device



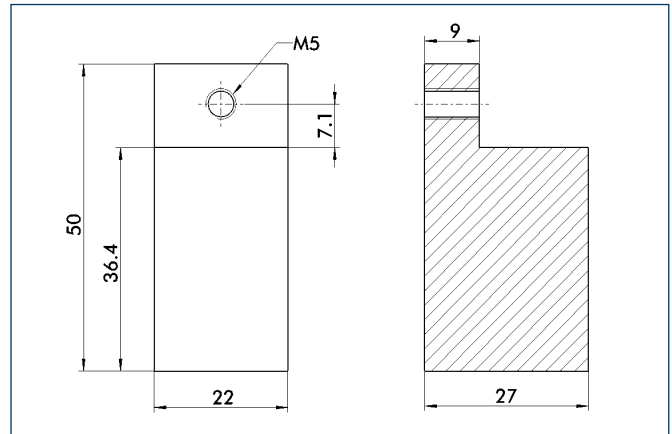
The mechanical gripping force safety device ensures a minimum gripping force even if there is a drop in pressure. This acts as closing force in the AS version, and as opening force in the IS version. In addition, the gripping force safety device can also be employed as a gripping force booster or for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

Shock absorber version



Different dimensions in the shock absorber version

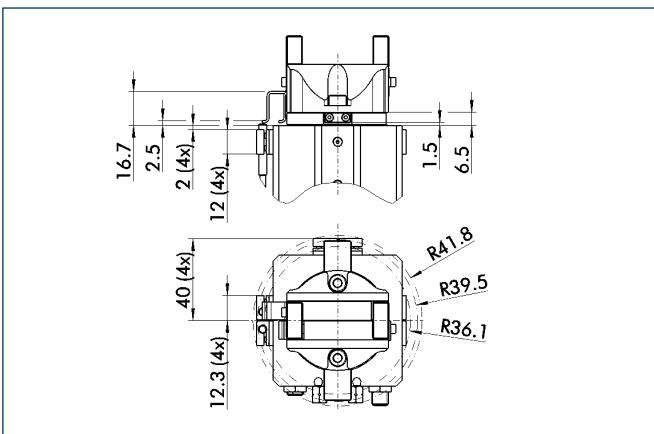
Finger blanks



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

Description	Material	Scope of delivery	ID
ABR 50	Aluminum	2	0340214

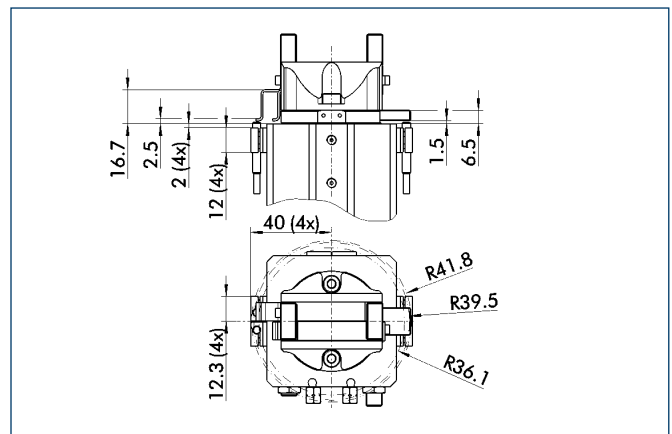
Mounting kit for proximity switches – angle of rotation 90°



The mounting kits for the 90° and 180° GSM versions are identical, only the mounting is different. The mounting kit consists of 2 switch cams, 2 operating cams and small components. The proximity switches must be ordered separately.

Description	ID
AS-GSM-P 50	0304936

Mounting kit for proximity switches – angle of rotation 180°



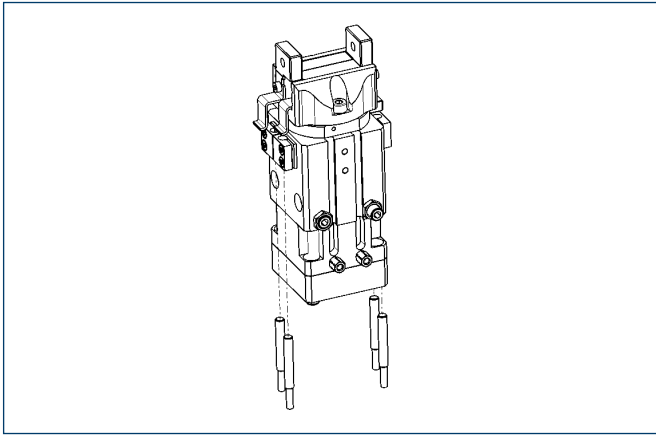
The mounting kits for the 90° and 180° GSM versions are identical, only the mounting is different. The mounting kit consists of 2 switch cams, 2 operating cams (only one needs to be fitted, see operating manual), 4 sensor brackets and small components. The proximity switches must be ordered separately.

Description	ID
AS-GSM-P 50	0304936



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, mounted with mounting kit

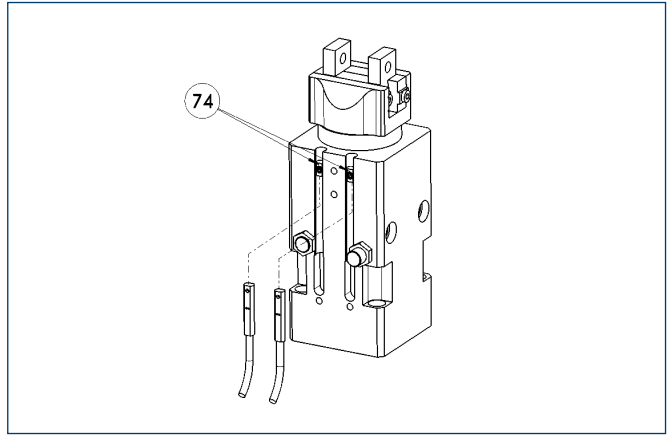
Description	ID	Recommended product
AS-GSM-P 50	0304936	
IN 40-S-M12	0301574	
IN 40-S-M8	0301474	•
INK 40-S	0301555	

- ① Four sensors (NO contacts) are required for each GSM, plus extension cables as an option. The control determines the states of the rotary or gripping process by the logical evaluation of the four sensor signals. Please note that when inductive proximity switches are used, the switching positions are not adjustable.

Extension cables for proximity switches/magnetic switches

Description	ID
KA BG05-L 3P-0300	0301652
KA BG08-L 3P-0300-PNP	0301622
KA BW05-L 3P-0300	0301650
KA BW08-L 3P-0300-NPN	0301602
KA BW08-L 3P-0300-PNP	0301594
KA BW08-L 3P-0500-NPN	9641116
KA BW08-L 3P-0500-PNP	0301502
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

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



- ⑦④ Stop for MMS-P

End position monitoring:

Programmable, electronic magnetic switch, for mounting in the C-slot

Description	ID	Recommended product
MMS-P 22-S-M8-PNP	0301370	•
MMSK-P 22-S-PNP	0301371	

- ① Two sensors MMS-P/ MMSK-P are required for each GSM. For using standard extension cables (M8, 3 pins), the Y-distributor V2-M8-4-2xM8-3, Id.-No. 0301380 is connected.



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