



Superior Clamping and Gripping



Product Information

Universal swivel finger GFS

Productive. Flexible. Compact.

Universal rotary finger GFS

Rotary finger for turning workpieces that are held by a gripper or can also be used as a special swivel unit

Field of application

For universal use in clean and slightly dirty environments.

Advantages – Your benefits

Integrated hydraulic end position dampers for fast swiveling cycles

scope-free end positions for highest positioning accuracy

Counter-bearing without drive or damping as a cost-efficient version of the second bearing position



Sizes
Quantity: 4



Weight
0.55 .. 5 kg



Torque
0.64 .. 10 Nm



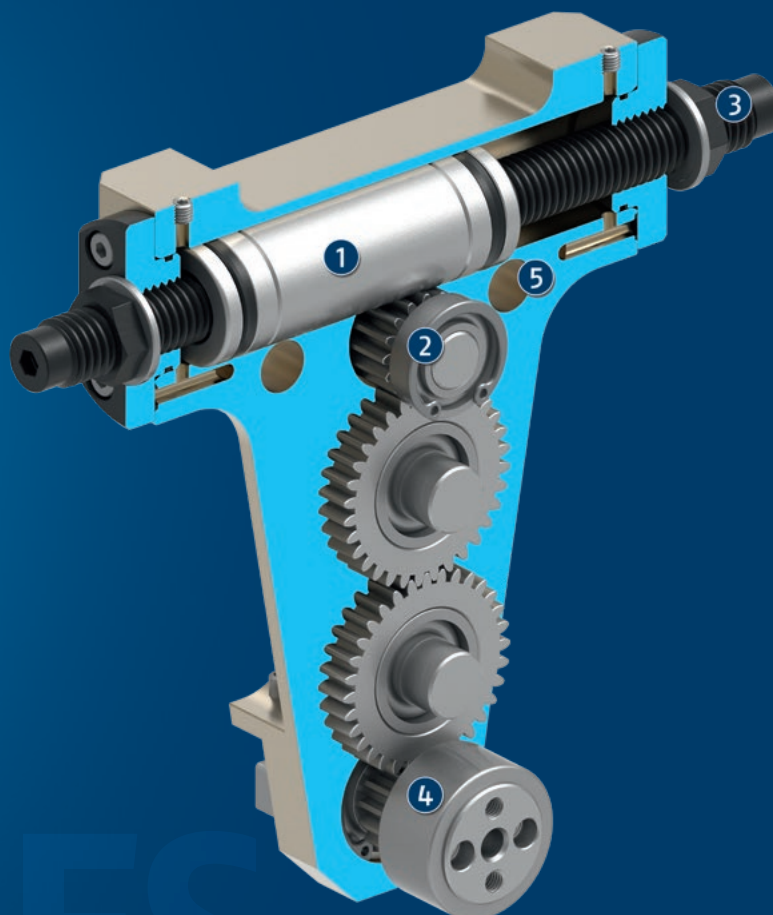
Repeat accuracy
0.07°



Angle of rotation
90 .. 180°

Functional description

The piston, subjected to compressed air on both sides, moves in a straight line. With its serrations, it turns the first gear. The rotary movement is transferred to the output flange by means of further gears.



- ① **Drive**
pneumatic, double-acting drive piston
- ② **Kinematics**
rack and pinion principle with gear transmission to the rotary flange
- ③ **Damping**
powerful, hydraulic shock absorbers for rapid swiveling cycles
- ④ **Rotary flange**
seated by roller bearings, with center bore
- ⑤ **Centering and mounting possibilities**
for universal assembly of the swivel finger

General notes about the series

Housing material: hard-anodized, high strength aluminum

Actuation: pneumatic, with filtered compressed air as per ISO 8573-1:2010 [7:4:4].

Operating principle: double acting piston with geared transmission

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

Warranty: 24 months

Service life characteristics: on request

Counter-bearings: Counter-bearings have no drive and no damping

Repeat accuracy: is defined as a distribution of the end position for 100 consecutive cycles.

Customized angle of rotation: More swivel angles are available on request.

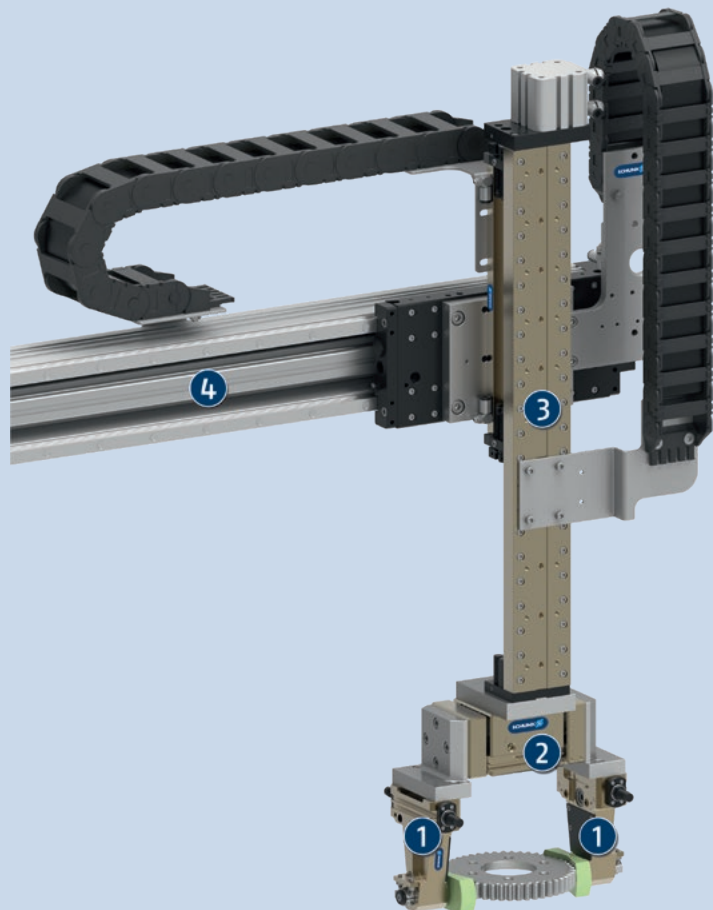
Swiveling time: is the rotation time of pinion/flange around the nominal rotation angle. Valve switching times, hose filling times, or PLC reaction times are not included and are to be considered when cycle times are calculated.

Layout or control calculation: Verifying the sizing of the selected unit is necessary, since otherwise overloading can result. Please contact us for assistance.

Application example

Gripping/rotating unit on a linear axis for rotating gripped cast parts during linear transport

- ① Universal rotary finger GFS
- ② 2-finger parallel gripper PSH
- ③ Linear module LM
- ④ Gantry module PMP



SCHUNK offers more ...

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



Universal gripper



Long-stroke gripper



Linear module



Pressure maintenance valve



Magnetic switches

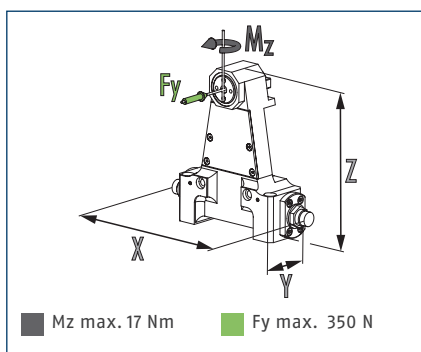
① For more information on these products can be found on the following product pages or at schunk.com.

Options and special information

Due to a pressure maintenance valve (SDV-P), the GFS can hold its position even in case of pressure failure. 90° and 180° swivel angles available as standard, other angles available on request.



Dimensions and maximum loads

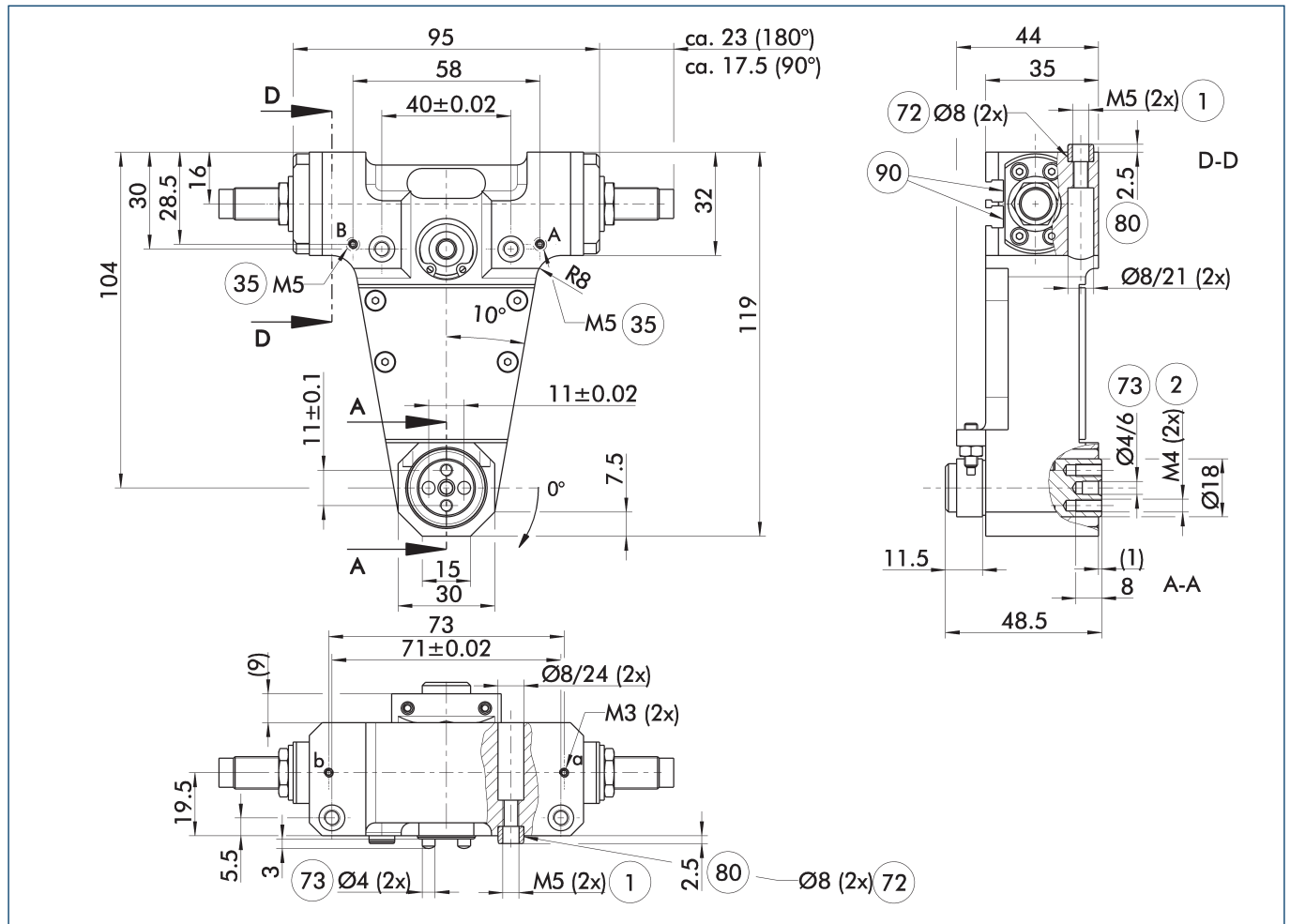


① The moment and force can impact the pinion simultaneously.

Technical data

Description		GFS 16-180°	GFS 16-90°-L	GFS 16-90°-R	GFS 16-G
ID		0355497	0355498	0355499	0355503
Angle of rotation	[°]	180.0	90.0	90.0	
Direction of rotation			left	Right	
End position adjustability	[°]	3.0	3.0	3.0	
End position damping		hydr. damper	hydr. damper	hydr. damper	none
Torque	[Nm]	0.64	0.64	0.64	
IP protection class		54	54	54	54
Weight	[kg]	0.69	0.69	0.69	0.55
Swiveling time (1x nominal rotation angle) without attached load	[s]	0.30	0.30	0.30	
Fluid consumption (2x nom. angle)	[cm³]	4.5	2.3	2.3	
Min./nom./max. operating pressure	[bar]	3/6/8	3/6/8	3/6/8	
Diameter of connecting hose		6 x 3.9 x 1.05	6 x 3.9 x 1.05	6 x 3.9 x 1.05	
Min./max. ambient temperature	[°C]	5/60	5/60	5/60	5/90
Repeat accuracy	[°]	0.07	0.07	0.07	
Dimensions X x Y x Z	[mm]	141 x 44 x 119	141 x 44 x 119	141 x 44 x 119	141 x 44 x 119

Main view



The drawing shows the basic design of the rotary finger. The pinion is in the left-hand end position and turns clockwise from here.

- ① The SDV-P pressure maintenance valve can be used to maintain the position in the case of a loss of pressure (see "Accessories" catalog section).

A, a Main / direct connection, rotary actuator rotates clockwise

B, b Main / direct connection, rotary actuator rotates counterclockwise

① Connection swivel unit

② Attachment connection

③⑤ Back side

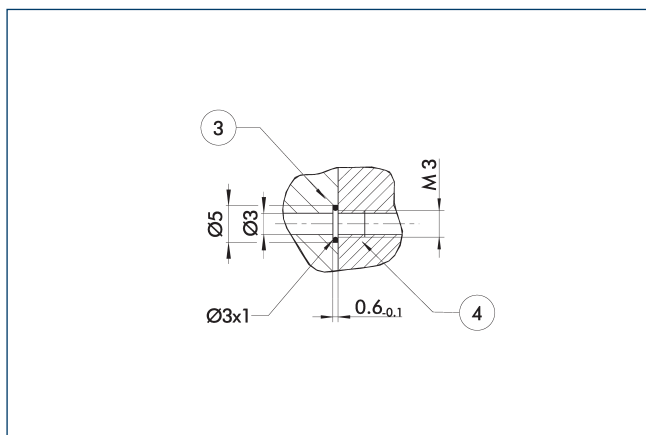
⑦② Fit for centering sleeves

⑦③ Fit for centering pins

⑧① Depth of the centering sleeve hole in the counter part

⑨① MMS 30

Hose-free direct connection M3

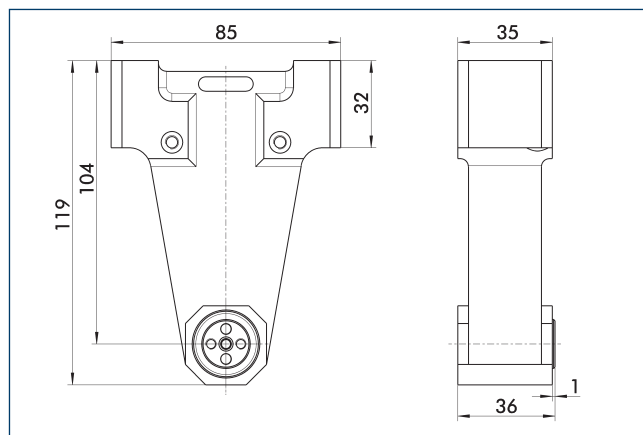


③ Adapter

④ Rotary unit

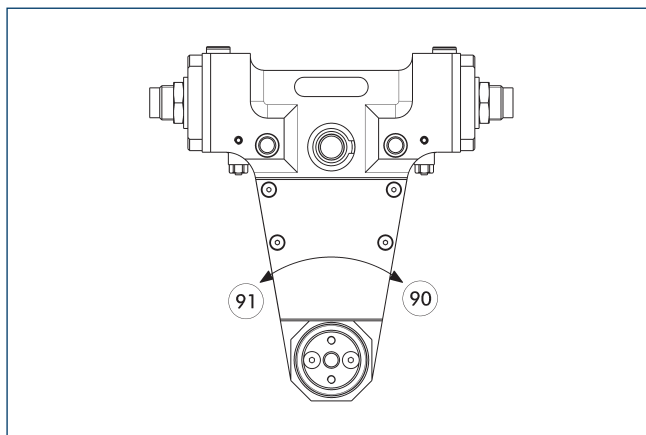
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

Counter-bearings



Counter-bearings have no drive and no damping

Direction of rotation

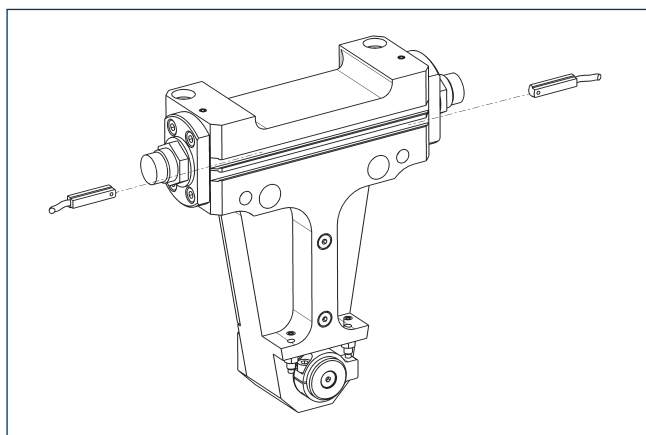


⑨⑩ Right turning

⑨⑪ Rotating to the left

Direction of rotation with right-turning (-R) and left-turning (-L) units

Electronic magnetic switch MMS



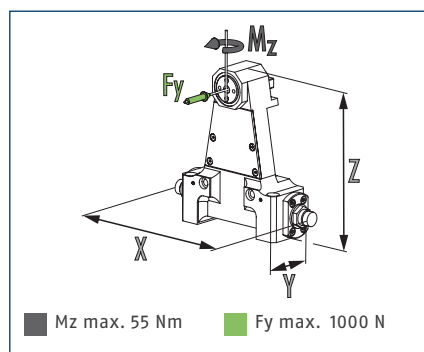
End position monitoring for mounting in the T-slot

Description	ID	Often combined
Electronic magnetic switch		
MMS 30-S-M12-PNP	0301571	
MMS 30-S-M8-PNP	0301471	●
MMSK 30-S-PNP	0301563	
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	
clip for plug/socket		
CLI-M12	0301464	
CLI-M8	0301463	
Cable extension		
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	
Sensor distributor		
V2-M8	0301775	●
V4-M8	0301746	
V8-M8	0301751	

- ① Two sensors are required per unit for monitoring two positions. On option, extension cables and sensor distributors are available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor system.



Dimensions and maximum loads



① The moment and force can impact the pinion simultaneously.

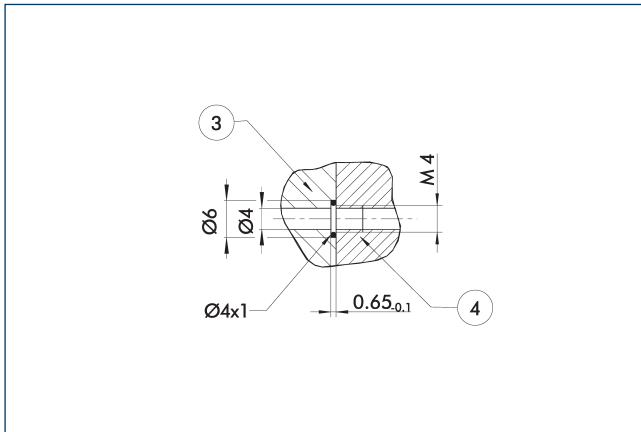
Technical data

Description		GFS 25-180°	GFS 25-90°-L	GFS 25-90°-R	GFS 25-G
ID		0355510	0355511	0355512	0355513
Angle of rotation	[°]	180.0	90.0	90.0	
Direction of rotation			left	Right	
End position adjustability	[°]	3.0	3.0	3.0	
End position damping		hydr. damper	hydr. damper	hydr. damper	none
Torque	[Nm]	2.35	2.35	2.35	
IP protection class		54	54	54	54
Weight	[kg]	1.6	1.6	1.6	1.25
Swiveling time (1x nominal rotation angle) without attached load	[s]	0.30	0.30	0.30	
Fluid consumption (2x nom. angle)	[cm³]	15.5	7.8	7.8	
Min./nom./max. operating pressure	[bar]	3/6/8	3/6/8	3/6/8	
Diameter of connecting hose		6 x 3.9 x 1.05	6 x 3.9 x 1.05	6 x 3.9 x 1.05	
Min./max. ambient temperature	[°C]	5/60	5/60	5/60	5/90
Repeat accuracy	[°]	0.07	0.07	0.07	
Dimensions X x Y x Z	[mm]	186 x 50 x 164	186 x 50 x 164	186 x 50 x 164	186 x 50 x 164

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⑨ MMS 30

Hose-free direct connection M4

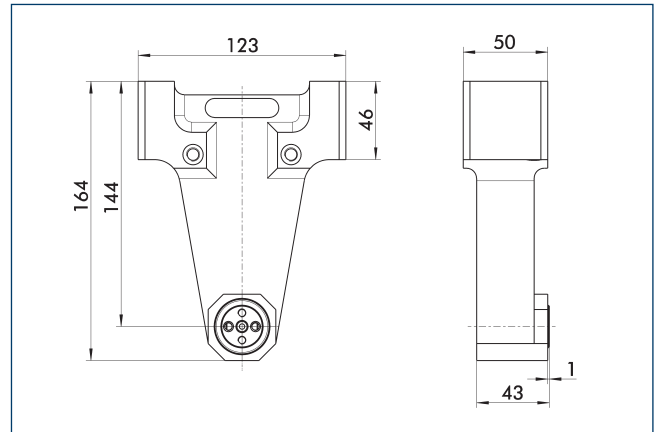


③ Adapter

④ Rotary unit

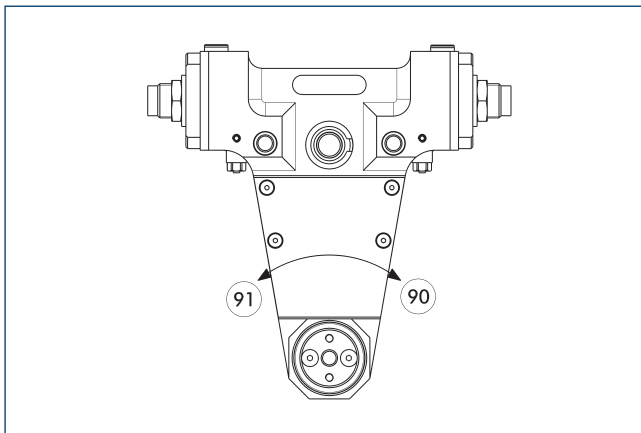
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

Counter-bearings



Counter-bearings have no drive and no damping

Direction of rotation

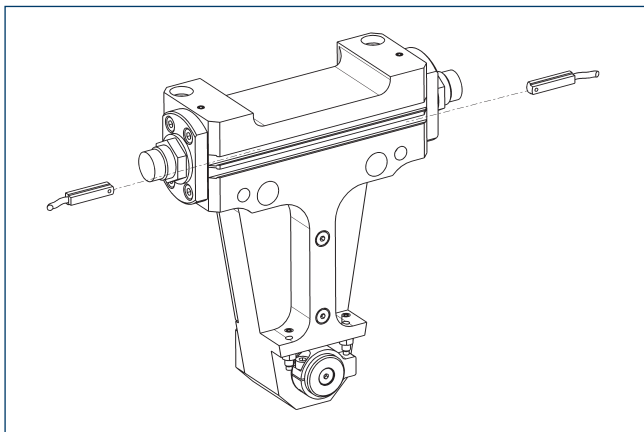


90 Right turning

91 Rotating to the left

Direction of rotation with right-turning (-R) and left-turning (-L) units

Electronic magnetic switch MMS

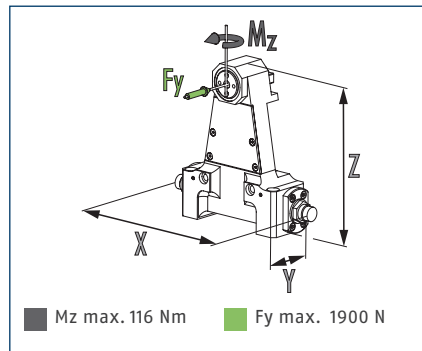


End position monitoring for mounting in the T-slot

Description	ID	Often combined
Electronic magnetic switch		
MMS 30-S-M12-PNP	0301571	
MMS 30-S-M8-PNP	0301471	●
MMSK 30-S-PNP	0301563	
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	
clip for plug/socket		
CLI-M12	0301464	
CLI-M8	0301463	
Cable extension		
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	
Sensor distributor		
V2-M8	0301775	●
V4-M8	0301746	
V8-M8	0301751	

- ① Two sensors are required per unit for monitoring two positions. On option, extension cables and sensor distributors are available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor system.

Dimensions and maximum loads



① The moment and force can impact the pinion simultaneously.

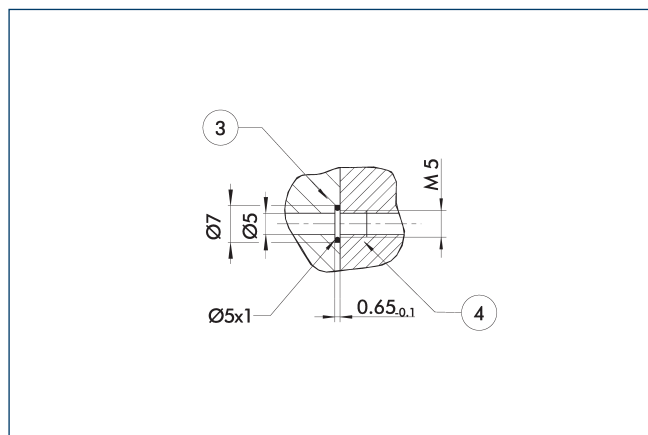
Technical data

Description		GFS 32-180°	GFS 32-90°-L	GFS 32-90°-R	GFS 32-G
ID		0355520	0355521	0355522	0355523
Angle of rotation	[°]	180.0	90.0	90.0	
Direction of rotation			left	Right	
End position adjustability	[°]	3.0	3.0	3.0	
End position damping		hydr. damper	hydr. damper	hydr. damper	none
Torque	[Nm]	5	5	5	
IP protection class		54	54	54	54
Weight	[kg]	3	3	3	2.4
Swiveling time (1x nominal rotation angle) without attached load	[s]	0.40	0.40	0.40	
Fluid consumption (2x nom. angle)	[cm³]	31.5	16.0	16.0	
Min./nom./max. operating pressure	[bar]	3/6/8	3/6/8	3/6/8	
Diameter of connecting hose		6 x 3.9 x 1.05	6 x 3.9 x 1.05	6 x 3.9 x 1.05	
Min./max. ambient temperature	[°C]	5/60	5/60	5/60	5/90
Repeat accuracy	[°]	0.07	0.07	0.07	
Dimensions X x Y x Z	[mm]	216 x 59 x 204	216 x 59 x 204	216 x 59 x 204	216 x 59 x 204

[illegible]

⑨ MMS 30

Hose-free direct connection M5

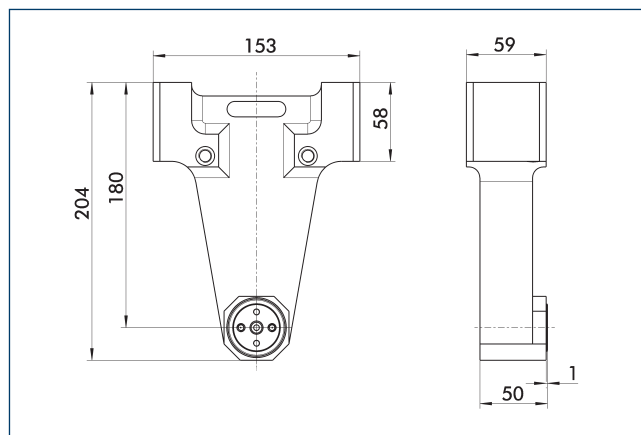


③ Adapter

④ Rotary unit

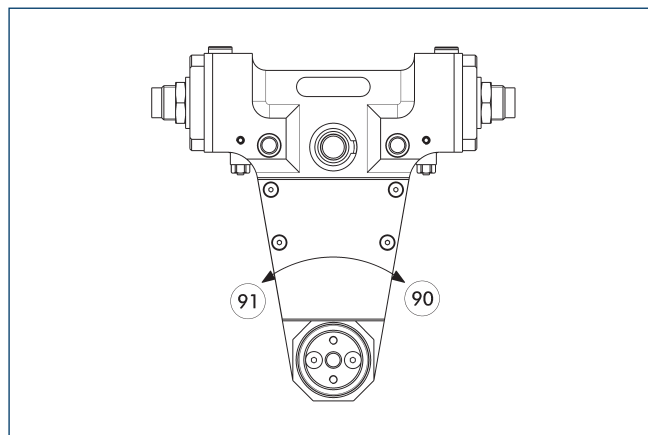
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

Counter-bearings



Counter-bearings have no drive and no damping

Direction of rotation

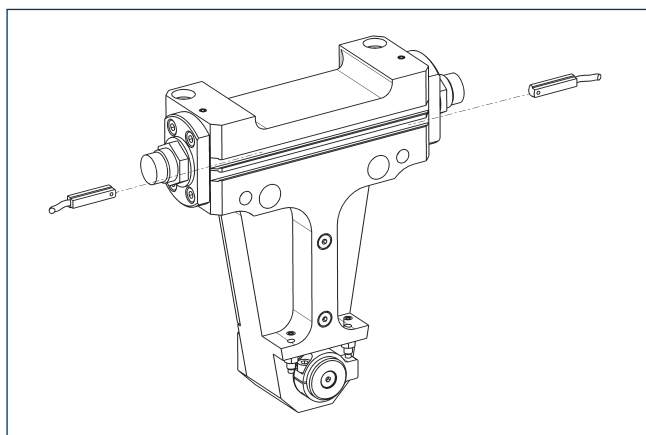


⑨⑩ Right turning

⑨① Rotating to the left

Direction of rotation with right-turning (-R) and left-turning (-L) units

Electronic magnetic switch MMS



End position monitoring for mounting in the T-slot

Description	ID	Often combined
Electronic magnetic switch		
MMS 30-S-M12-PNP	0301571	
MMS 30-S-M8-PNP	0301471	●
MMSK 30-S-PNP	0301563	
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	
clip for plug/socket		
CLI-M12	0301464	
CLI-M8	0301463	
Cable extension		
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	
Sensor distributor		
V2-M8	0301775	●
V4-M8	0301746	
V8-M8	0301751	

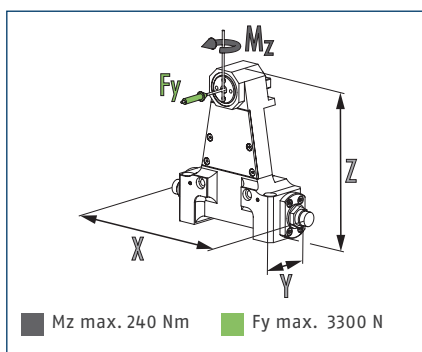
- ① Two sensors are required per unit for monitoring two positions. On option, extension cables and sensor distributors are available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor system.

GFS 40

Universal swivel finger



Dimensions and maximum loads



① The moment and force can impact the pinion simultaneously.

Technical data

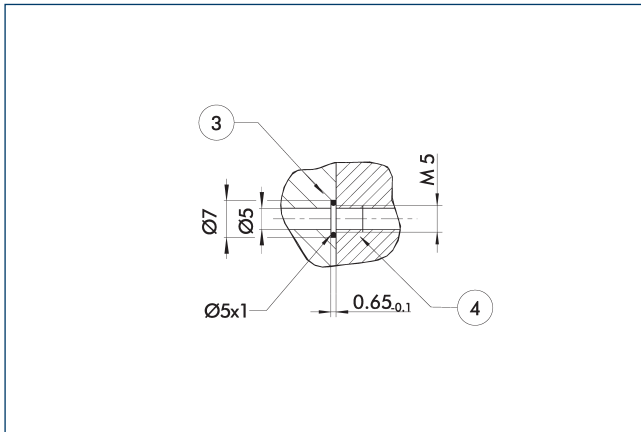
Description		GFS 40-180°	GFS 40-90°-L	GFS 40-90°-R	GFS 40-G
ID		0355527	0355528	0355529	0355533
Angle of rotation	[°]	180.0	90.0	90.0	
Direction of rotation			left	Right	
End position adjustability	[°]	3.0	3.0	3.0	
End position damping		hydr. damper	hydr. damper	hydr. damper	none
Torque	[Nm]	10	10	10	
IP protection class		54	54	54	54
Weight	[kg]	5	5	5	4
Swiveling time (1x nominal rotation angle) without attached load	[s]	0.40	0.40	0.40	
Fluid consumption (2x nom. angle)	[cm³]	63.0	32.0	32.0	
Min./nom./max. operating pressure	[bar]	3/6/8	3/6/8	3/6/8	
Diameter of connecting hose		6 x 3.9 x 1.05	6 x 3.9 x 1.05	6 x 3.9 x 1.05	
Min./max. ambient temperature	[°C]	5/60	5/60	5/60	5/90
Repeat accuracy	[°]	0.07	0.07	0.07	
Dimensions X x Y x Z	[mm]	292 x 69 x 249	292 x 69 x 249	292 x 69 x 249	292 x 69 x 249

i The SDV-P pressure maintenance valve can be used to maintain the position in the case of a loss of pressure (see "Accessories" catalog section).

- ① Connection swivel unit
- ② Attachment connection

- ⑬ Fitting screw
- ③⑤ Back side
- ⑦② Fit for centering sleeves
- ⑦③ Fit for centering pins
- ⑧① Depth of the centering sleeve hole in the counter part
- ⑨① MMS 30

Hose-free direct connection M5

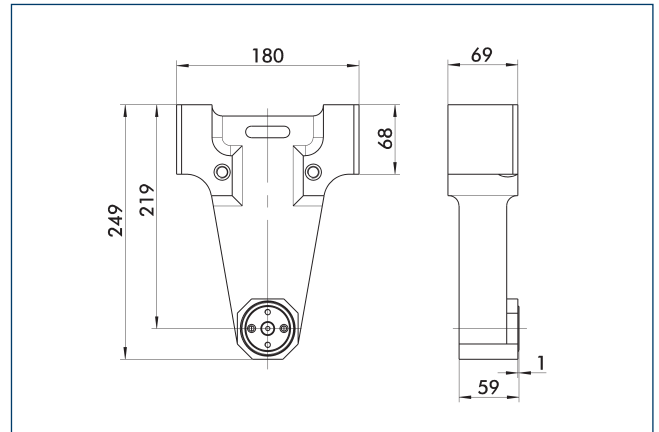


③ Adapter

④ Rotary unit

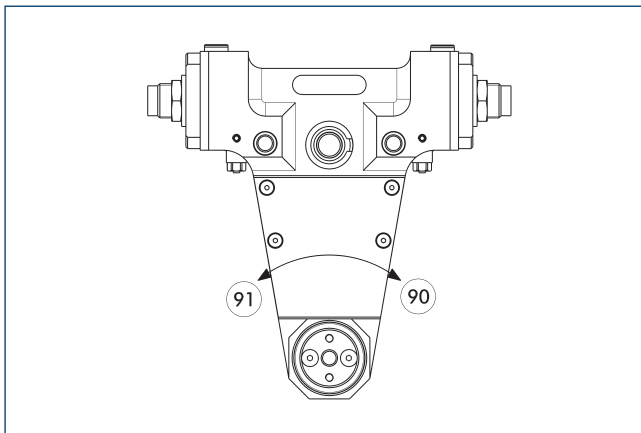
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

Counter-bearings



Counter-bearings have no drive and no damping

Direction of rotation

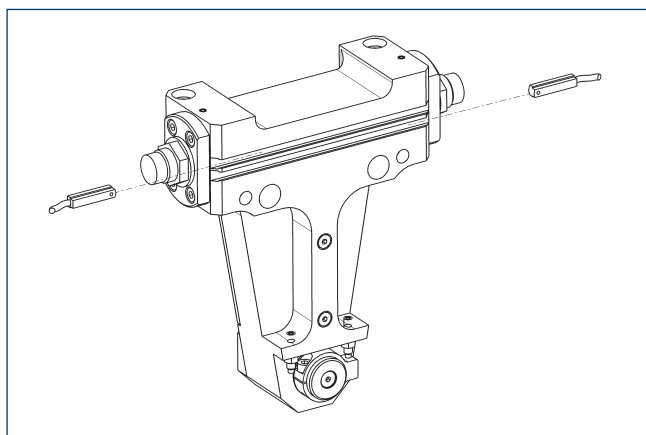


⑨⑩ Right turning

⑨⑪ Rotating to the left

Direction of rotation with right-turning (-R) and left-turning (-L) units

Electronic magnetic switch MMS



End position monitoring for mounting in the T-slot

Description	ID	Often combined
Electronic magnetic switch		
MMS 30-S-M12-PNP	0301571	
MMS 30-S-M8-PNP	0301471	●
MMSK 30-S-PNP	0301563	
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	
clip for plug/socket		
CLI-M12	0301464	
CLI-M8	0301463	
Cable extension		
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	
Sensor distributor		
V2-M8	0301775	●
V4-M8	0301746	
V8-M8	0301751	

- ① Two sensors are required per unit for monitoring two positions. On option, extension cables and sensor distributors are available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor system.



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