



Superior Clamping and Gripping



Product Information

Miniature swivel unit SRU-mini

SRU-mini

Miniature swivel unit

Faster. More compact. Higher Performance.

Small, universal SRU-mini swivel unit

light and fast miniature swivel unit with multiple options such as fluid feed-through, hydraulic shock absorbers, hydraulic-elastomer shock absorbers and a pneumatic middle position.

Field of application

To be used in clean to slightly dirty environments such as assembly or packaging areas, or wherever fast cycles are required.



Advantages – Your benefits

Finely graded series with a steady increase in torque for multiple cases of application, the correct size as a standard product is available

always with large end position adjustability for flexible adjustability of the swivel angle

Fluid feed-through can be used for gases, fluids, and vacuum therefore no interfering hoses

Scope-free end positions for high accuracy

Middle position for flexible manufacturing

Series extends upwards with the SRU-plus, for a wide range of applications



Sizes
Quantity: 4



Weight
0.15 .. 0.65 kg



Torque
0.16 .. 1.15 Nm



Repeat accuracy
0.07°

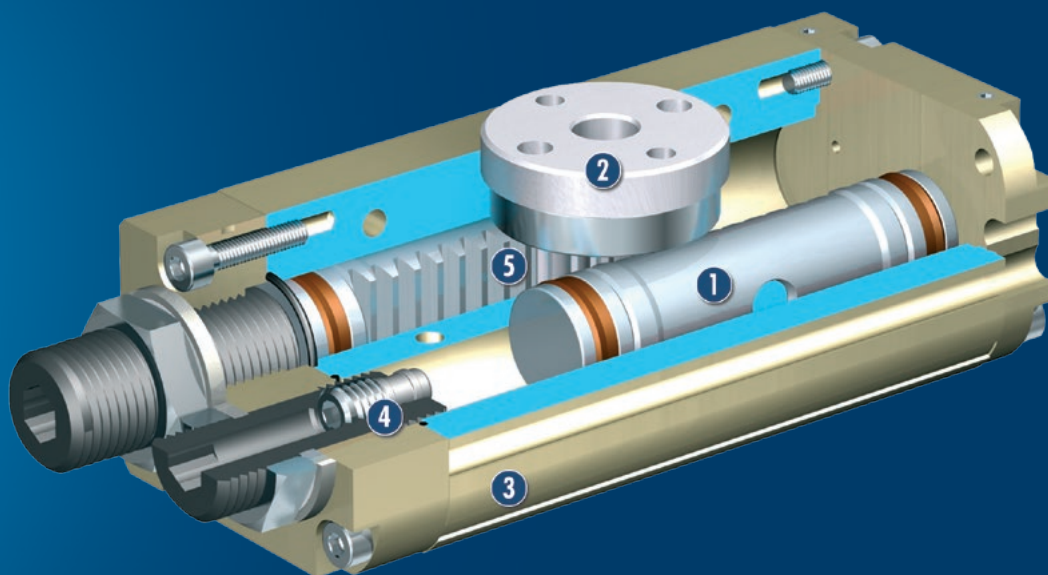


Angle of rotation
180°

Functional description

When subjected to pressure, the two pneumatic pistons move their end faces in a straight line in their respective

bores thus turning the pinion by means of the serrations on their sides.



- ① **Damping**
via elastomer, hydraulic shock absorbers or spring-elastomer dampers
- ② **Bearing**
high-precision bearing seat due to the use of high-quality rolling bearings
- ③ **Housing**
Weight-optimized due to the use of high-strength aluminum alloy
- ④ **End position**
for flexible end position
- ⑤ **Kinematics**
Rack and pinion principle for a reduced backlash transmission of the driving force into the rotary motion

CAD data, operating manuals and other current product documents can be found online.

SRU-mini

Miniature swivel unit

General notes about the series

Housing material: Aluminum (extruded profile)

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

Operating principle: Double piston rack and pinion principle

Scope of delivery: Flow control coupling, centering bushings, O-rings for direct connection, assembly and operating manual with declaration of incorporation

Warranty: 24 months

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

Pinion position: is always shown in the left end position. The pinion rotates from here to the right in clockwise direction. The arrow makes the direction of rotation clear.

Pinion screw connection diagram: Please note that when the rotating angle is to be set for less than 90°, the left stop will generally be completely turned in. The left end position therefore has a screw connection diagram which has been rotated by 90° in clockwise direction in relation to the drawing, which is shown at a 180° angle of rotation.

Special swivel angle: More swivel angles are available on request.

Torque in the end positions: Please note that the final angular degrees (approx. 2°) before the end position can only be approached using the force of a single drive piston. For this reason, double actuated modules only have about half the rated torque available in this area. An external stop can be used to provide the full torque even in the end positions.

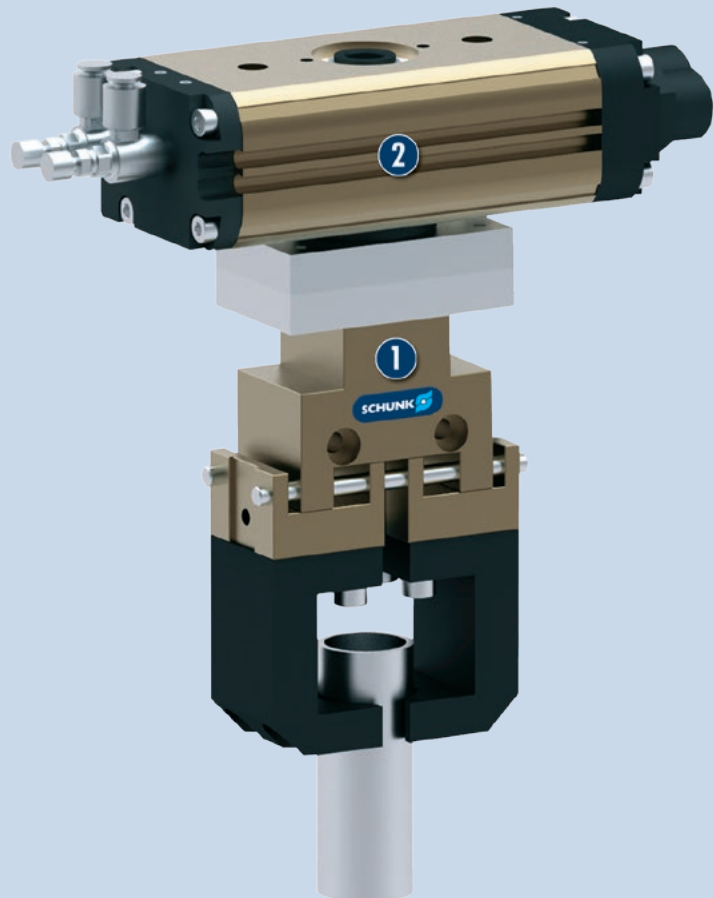
Travel to the pneumatic middle position: is carried out using only half of the nominal torque.

Cycle 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 a part of this and are to be considered when cycle times are calculated.

Application example

Swivel unit for reorientation of cylindrical bar material

- 1 PGM 2-finger parallel gripper
- 2 SRU-mini miniature swivel unit



SCHUNK offers more ...

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



Centering sleeves



Fittings



MMS magnetic switch



Sensor cables



MPZ 3-finger centric gripper



Pneumatic Small Parts Gripper MPG-plus



Sensor distributor



Pressure maintenance valve

① Additional 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

More swivel angles are available on request.

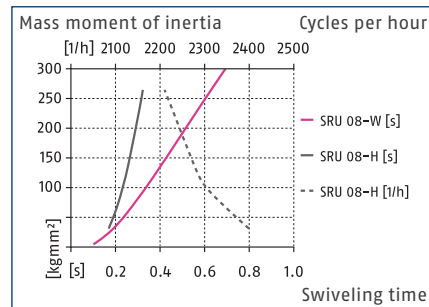
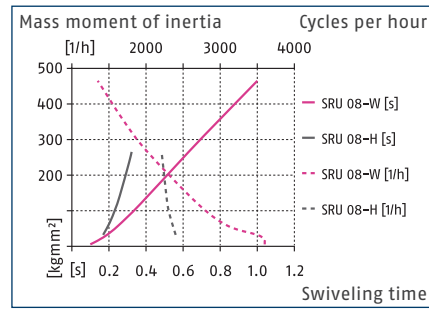
Please note that suitable emergency stop scenarios (e.g. controlled shut down) and restarting scenarios (e.g. pressure build-up valves, appropriate valve switching sequences) are needed for all pneumatic actuators. Cutting off the pressure in an uncontrolled manner could lead to undefined states and behavior.

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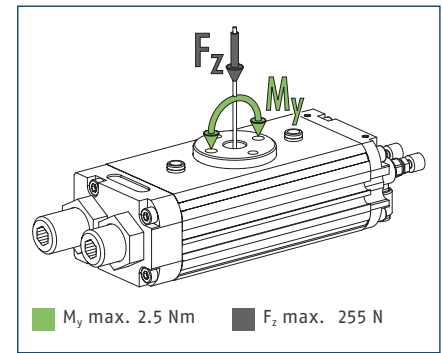
Miniature swivel unit



Max. admissible inertia J



Pinion load



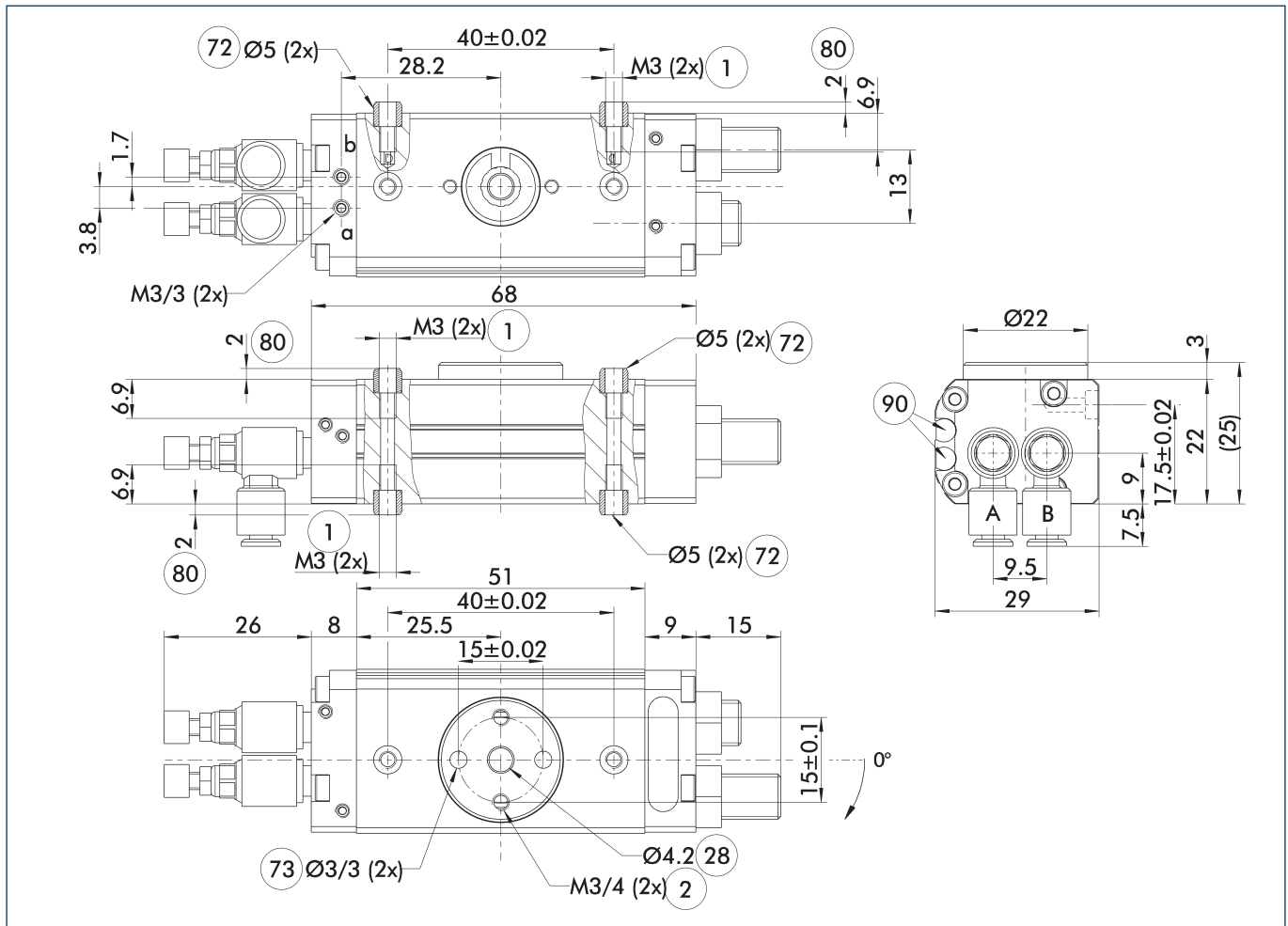
① The indicated moments and forces are static values and should not appear simultaneously. Throttling has to be done for ensuring that the rotary motion takes place without impact or bouncing, otherwise the service life reduces.

Technical data

Description		SRU 8.2-W	SRU 8.2-W-M	SRU 8.2-W-2	SRU 8.2-W-M-2
ID		0356810	0356811	0356812	0356813
Angle of rotation	[°]	180.0	180.0	180.0	180.0
End position adjustability	[°]	90.0	90.0	90.0	90.0
End position damping		Elastomer	Elastomer	Elastomer	Elastomer
Torque	[Nm]	0.2	0.2	0.16	0.16
Middle position		none	1 x M (pneumatic)	none	1 x M (pneumatic)
Adjustability of middle position	[°]		45.0		45.0
Protection class IP		65	65	65	65
Weight	[kg]	0.15	0.18	0.17	0.2
Fluid consumption (2 x nominal angle)	[cm³]	3.32	4.37	3.32	4.37
Nominal operating pressure	[bar]	6.0	6.0	6.0	6.0
min./max. operating pressure	[bar]	4.5/8	4.5/8	4.5/8	4.5/8
Diameter of connecting hose		3 x 1.8 x 0.6	3 x 1.8 x 0.6	3 x 1.8 x 0.6	3 x 1.8 x 0.6
No. of fluid feed-throughs				2	2
max. pressure in the air feed-through	[bar]			8	8
min./max. ambient temperature	[°C]	5/90	5/90	5/90	5/90
Repeat accuracy	[°]	0.07	0.07	0.07	0.07
Cleanroom class ISO 14644-1		5	5	5	5
Options and their characteristics					
Description (Hard Damping)		SRU 8.2-H	SRU 8.2-H-M	SRU 8.2-H-2	SRU 8.2-H-M-2
ID		0356814	0356815	0356816	0356817
End position damping		Hydr. damper	Hydr. damper	Hydr. damper	Hydr. damper
Weight	[kg]	0.17	0.2	0.19	0.22
min./max. ambient temperature	[°C]	5/60	5/60	5/60	5/60

① The diagrams are valid for swivel angles of 90° and 180°, units without center position and for applications with a vertical swivel axis as well as for absolutely centric loads with a horizontal rotary axis and with a pneumatic operating pressure of 6 bar. The swiveling times per throttling have to be observed, otherwise the life time could reduce. We will be happy to help you to design other cases of application.

Main view



The drawing shows the unit in standard design, without considering any dimensions of the options described below.

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, swivel unit clockwise turning

B, b Main / direct connection, swivel unit counterclockwise turning

① Connection swivel unit

② Attachment connection

②8 Through-hole

⑦2 Fit for centering sleeves

⑦3 Fit for centering pins

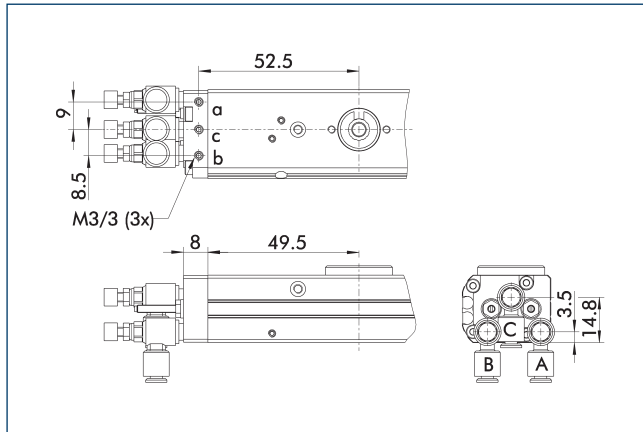
⑧0 Depth of the centering sleeve hole in the counter part

⑨0 Sensor MMS 22..

SRU-mini 8

Miniature swivel unit

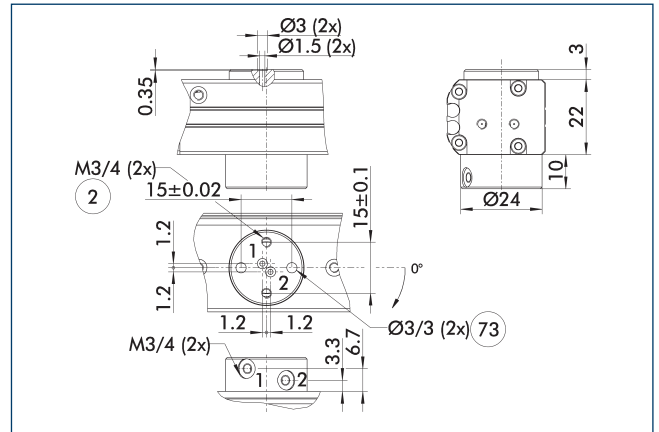
Pneumatic middle position (M)



- A, a Main / direct connection, swivel unit clockwise turning
- B, b Main / direct connection, swivel unit counterclockwise turning
- C, c Main / direct connection, middle position

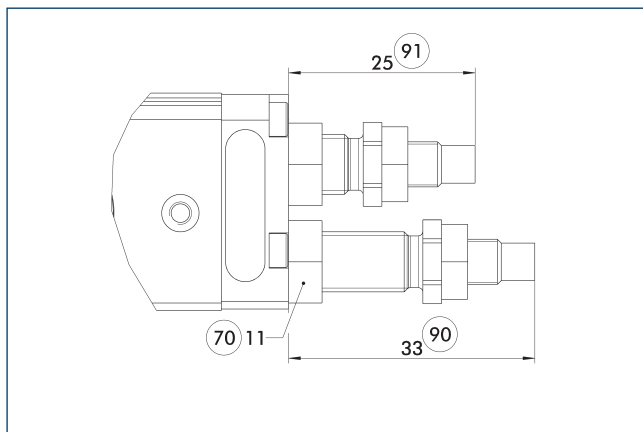
Dimensional changes with the „Pneumatic Middle Position“ option. Heavy attachments may have to settle before they reach the final position.

Connections for fluid feed-through



- ② Attachment connection
- ⑦③ Fit for centering pins
- ① Maximum permissible pressure in the fluid feed-through is 8 bar.

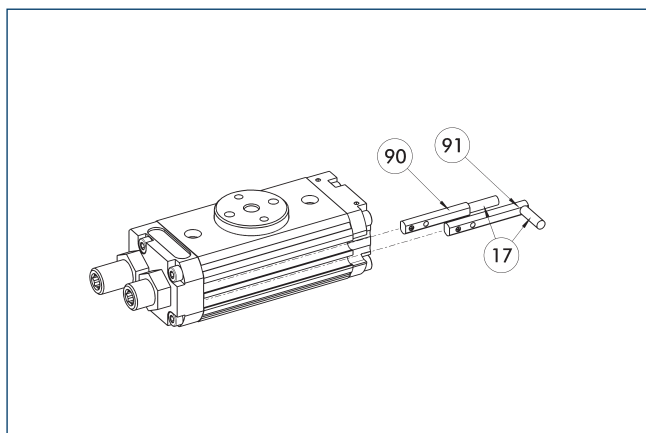
Version with shock absorbers



- ⑦① Wrench size
- ⑨① Projection with max. end position adjustability
- ⑨① Projection with min. end position adjustability

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

Electronic magnetic switches MMS



- ①⑦ Cable outlet
- ①⑨ Sensor MMS 22...-SA
- ①⑩ Sensor MMS 22..

End and intermediate position monitoring mounted in C-slot

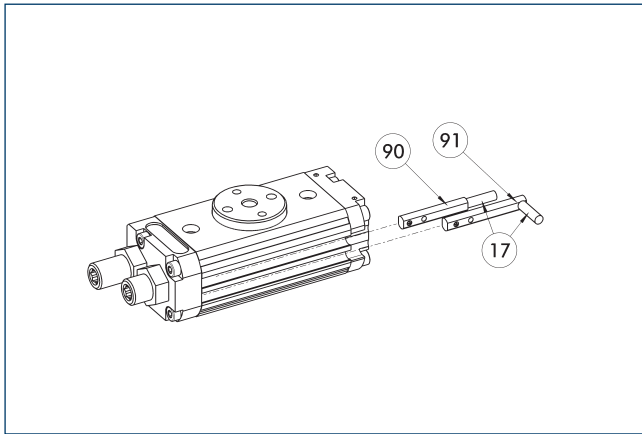
Description	ID	Often combined
Electronic magnetic switches MMS		
MMS 22-S-M8-PNP	0301032	●
MMSK 22-S-PNP	0301034	
MMS electronic magnetic switches with lateral outlet		
MMS 22-S-M8-PNP-SA	0301042	●
MMSK 22-S-PNP-SA	0301044	
Cable extension		
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
clip for plug/socket		
CLI-M8	0301463	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
Sensor distributor		
V2-M8	0301775	●
V4-M8	0301746	
V8-M8	0301751	

- ① Two sensors (closer/S) are required for each unit and extension cables are available as an option. For sensor cables, note the minimum permissible bending radii. These are generally 35 mm.

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Miniature swivel unit

Programmable magnetic switches MMS PI1



- ①⑦ Cable outlet ①⑨① Sensor MMS 22 ..-PI1-...-SA
①⑨① Sensor MMS 22 PI1-...

Position monitoring with one programmable position per sensor and electronics integrated in the sensor. Can be programmed using MT magnetic teaching tool (included in scope of delivery) or ST plug teaching tool (optional). End position monitoring is mounted in the C-slot. If the ST plug teaching tools are listed in the table provided, teaching is only possible with the ST teaching tools.

Description	ID	Often combined
Programmable magnetic switches MMS PI1		
MMS 22-PI1-S-M8-PNP	0301160	●
MMSK 22-PI1-S-PNP	0301162	
Programmable magnetic switches MMS PI1 with lateral cable outlet		
MMS 22-PI1-S-M8-PNP-SA	0301166	●
MMSK 22-PI1-S-PNP-SA	0301168	
Programmable magnetic switches MMS PI1 with stainless steel housing		
MMS 22-PI1-S-M8-PNP-HD	0301110	●
MMSK 22-PI1-S-PNP-HD	0301112	

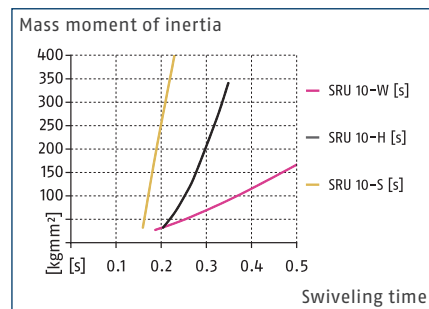
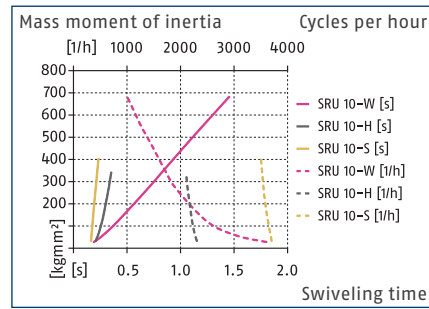
- ① Two sensors (closer/S) are required for each unit and extension cables are available as an option. For sensor cables, note the minimum permissible bending radii. These are generally 35 mm.

SRU-mini 10

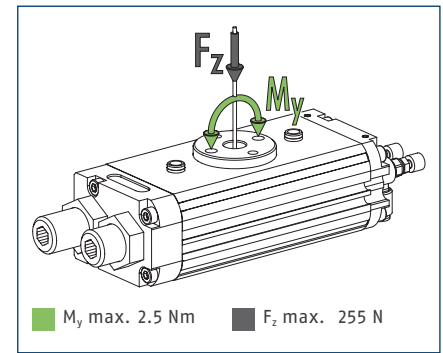
Miniature swivel unit



Max. admissible inertia J



Pinion load



① The indicated moments and forces are static values and should not appear simultaneously. Throttling has to be done for ensuring that the rotary motion takes place without impact or bouncing, otherwise the service life reduces.

Technical data

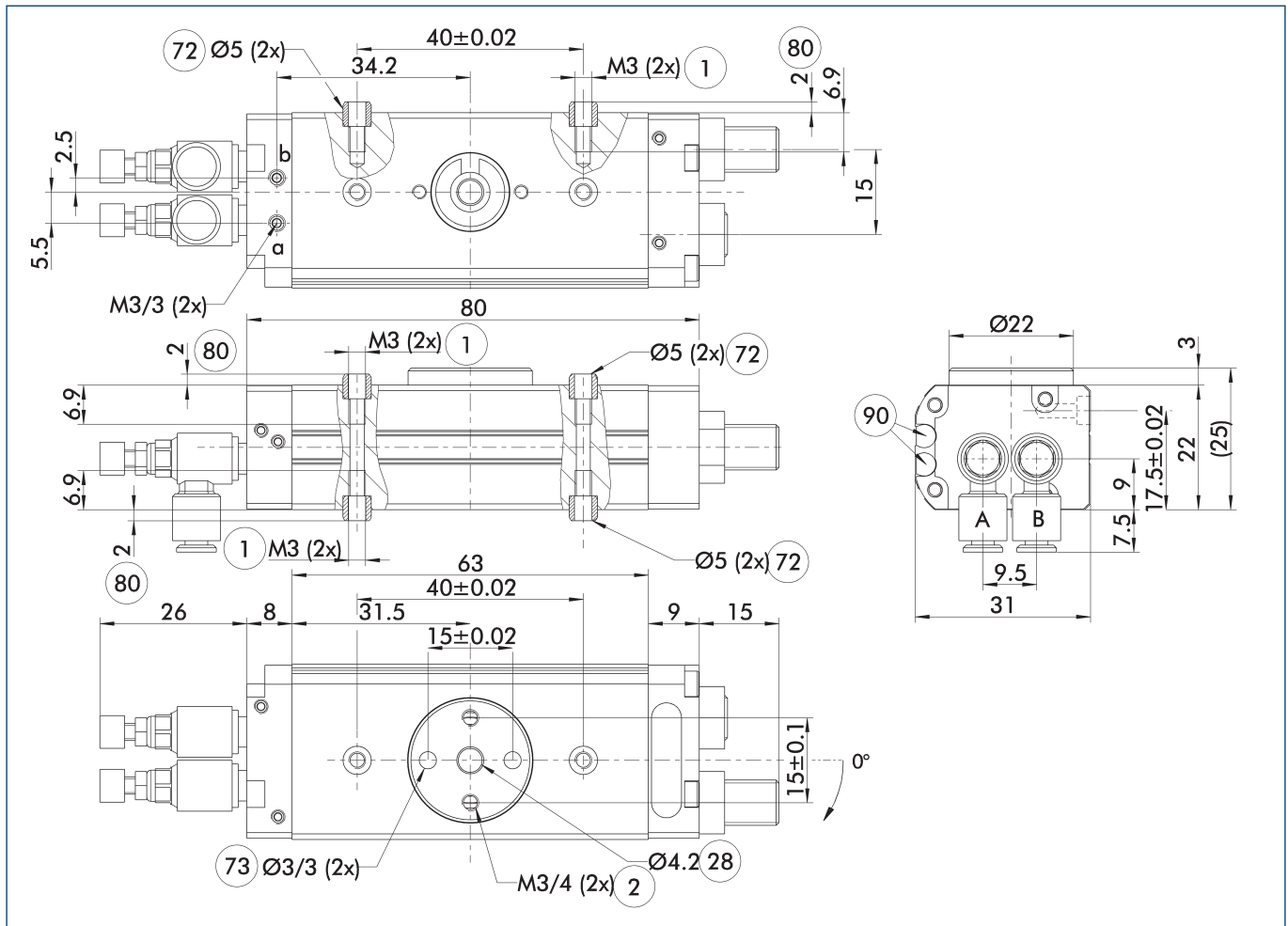
Description		SRU 10.2-W	SRU 10.2-W-M	SRU 10.2-W-2	SRU 10.2-W-M-2
ID		0356830	0356831	0356832	0356833
Angle of rotation	[°]	180.0	180.0	180.0	180.0
End position adjustability	[°]	90.0	90.0	90.0	90.0
End position damping		Elastomer	Elastomer	Elastomer	Elastomer
Torque	[Nm]	0.28	0.28	0.24	0.24
Middle position		none	1 x M (pneumatic)	none	1 x M (pneumatic)
Adjustability of middle position	[°]		45.0		45.0
Protection class IP		65	65	65	65
Weight	[kg]	0.18	0.22	0.2	0.24
Fluid consumption (2 x nominal angle)	[cm ³]	4.27	5.8	4.27	5.8
Nominal operating pressure	[bar]	6.0	6.0	6.0	6.0
min./max. operating pressure	[bar]	4.5/8	4.5/8	4.5/8	4.5/8
Diameter of connecting hose		3 x 1.8 x 0.6	3 x 1.8 x 0.6	3 x 1.8 x 0.6	3 x 1.8 x 0.6
No. of fluid feed-throughs				2	2
max. pressure in the air feed-through	[bar]			8	8
min./max. ambient temperature	[°C]	5/90	5/90	5/90	5/90
Repeat accuracy	[°]	0.07	0.07	0.07	0.07
Cleanroom class ISO 14644-1		5	5	5	5

Options and their characteristics

Description (Hard Damping)		SRU 10.2-H	SRU 10.2-H-M	SRU 10.2-H-2	SRU 10.2-H-M-2
ID		0356834	0356835	0356836	0356837
End position damping		Hydr. damper	Hydr. damper	Hydr. damper	Hydr. damper
Weight	[kg]	0.2	0.24	0.22	0.26
min./max. ambient temperature	[°C]	5/60	5/60	5/60	5/60
Description (Speed Damping)		SRU 10.2-S	SRU 10.2-S-M	SRU 10.2-S-2	SRU 10.2-S-M-2
ID		0356930	0356931	0356932	0356933
End position damping		Damper-elastomer	Damper-elastomer	Damper-elastomer	Damper-elastomer
min./max. operating pressure	[bar]	3/8	3/8	3/8	3/8

① The diagrams are valid for swivel angles of 90° and 180°, units without center position and for applications with a vertical swivel axis as well as for absolutely centric loads with a horizontal rotary axis and with a pneumatic operating pressure of 6 bar. The swiveling times per throttling have to be observed, otherwise the life time could reduce. We will be happy to help you to design other cases of application.

Main view



The drawing shows the unit in standard design, without considering any dimensions of the options described below.

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, swivel unit clockwise turning

B, b Main / direct connection, swivel unit counterclockwise turning

① Connection swivel unit

② Attachment connection

②⑧ Through-hole

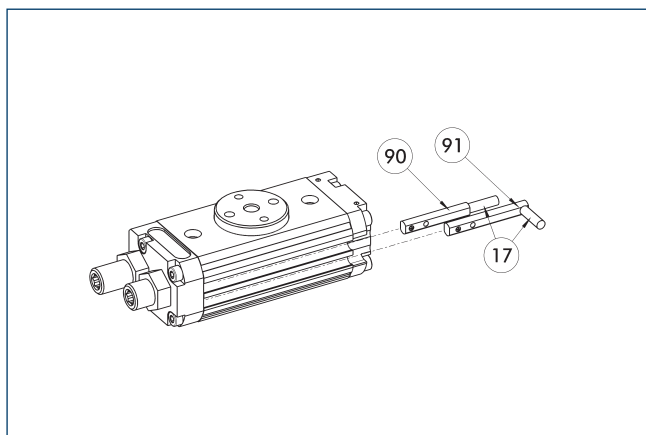
⑦② Fit for centering sleeves

⑦③ Fit for centering pins

⑧① Depth of the centering sleeve hole in the counter part

⑨① Sensor MMS 22..

Electronic magnetic switches MMS



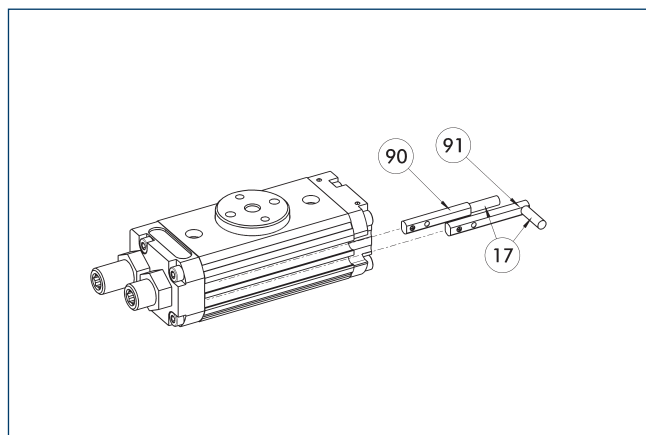
- ⑰ Cable outlet
- ① Sensor MMS 22...-SA
- ⑨ Sensor MMS 22..

End and intermediate position monitoring mounted in C-slot

Description	ID	Often combined
Electronic magnetic switches MMS		
MMS 22-S-M8-PNP	0301032	●
MMSK 22-S-PNP	0301034	
MMS electronic magnetic switches with lateral outlet		
MMS 22-S-M8-PNP-SA	0301042	●
MMSK 22-S-PNP-SA	0301044	
Cable extension		
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
clip for plug/socket		
CLI-M8	0301463	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
Sensor distributor		
V2-M8	0301775	●
V4-M8	0301746	
V8-M8	0301751	

- ① Two sensors (closer/S) are required for each unit and extension cables are available as an option. For sensor cables, note the minimum permissible bending radii. These are generally 35 mm.

Programmable magnetic switches MMS PI1



- ⑰ Cable outlet
- ① Sensor MMS 22 ..-PI1-...-SA
- ⑨ Sensor MMS 22 PI1-...

Position monitoring with one programmable position per sensor and electronics integrated in the sensor. Can be programmed using MT magnetic teaching tool (included in scope of delivery) or ST plug teaching tool (optional). End position monitoring is mounted in the C-slot. If the ST plug teaching tools are listed in the table provided, teaching is only possible with the ST teaching tools.

Description	ID	Often combined
Programmable magnetic switches MMS PI1		
MMS 22-PI1-S-M8-PNP	0301160	●
MMSK 22-PI1-S-PNP	0301162	
Programmable magnetic switches MMS PI1 with lateral cable outlet		
MMS 22-PI1-S-M8-PNP-SA	0301166	●
MMSK 22-PI1-S-PNP-SA	0301168	
Programmable magnetic switches MMS PI1 with stainless steel housing		
MMS 22-PI1-S-M8-PNP-HD	0301110	●
MMSK 22-PI1-S-PNP-HD	0301112	

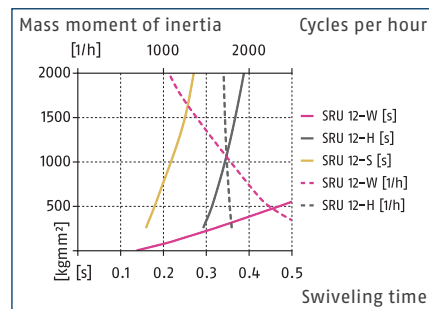
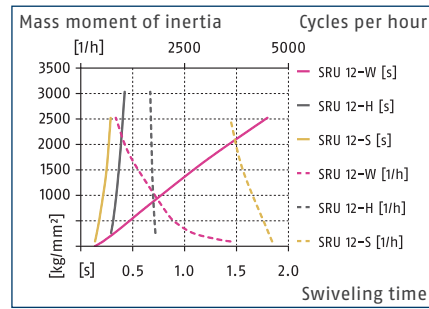
- ① Two sensors (closer/S) are required for each unit and extension cables are available as an option. For sensor cables, note the minimum permissible bending radii. These are generally 35 mm.

SRU-mini 12

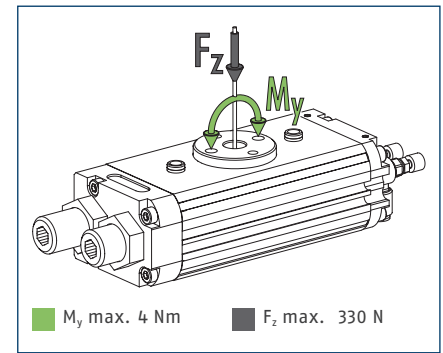
Miniature swivel unit



Max. admissible inertia J



Pinion load



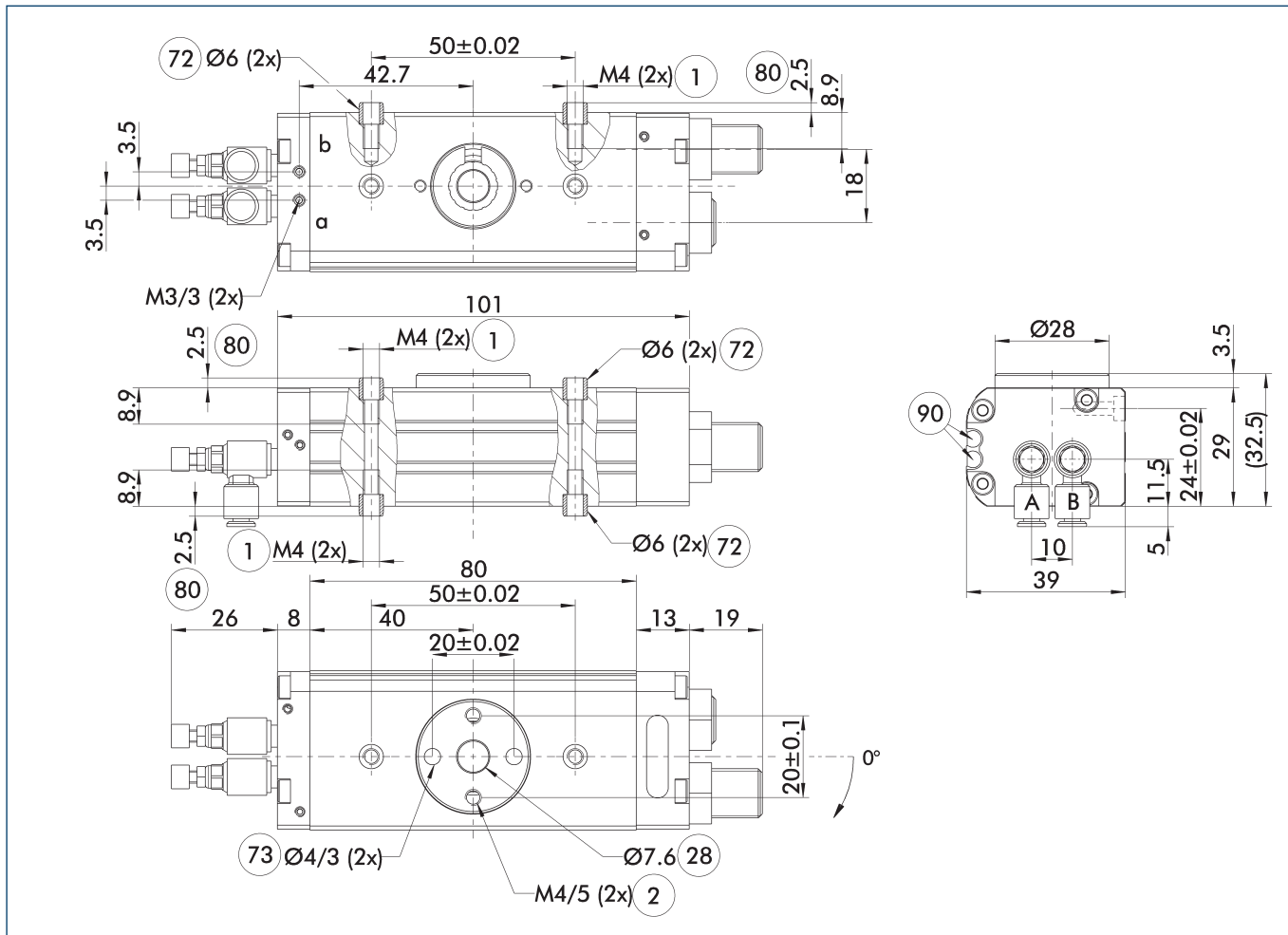
① The indicated moments and forces are static values and should not appear simultaneously. Throttling has to be done for ensuring that the rotary motion takes place without impact or bouncing, otherwise the service life reduces.

Technical data

Description		SRU 12.2-W	SRU 12.2-W-M	SRU 12.2-W-4	SRU 12.2-W-M-4
ID		0356850	0356851	0356852	0356853
Angle of rotation	[°]	180.0	180.0	180.0	180.0
End position adjustability	[°]	90.0	90.0	90.0	90.0
End position damping		Elastomer	Elastomer	Elastomer	Elastomer
Torque	[Nm]	0.75	0.75	0.6	0.6
Middle position		none	1 x M (pneumatic)	none	1 x M (pneumatic)
Adjustability of middle position	[°]		45.0		45.0
Protection class IP		65	65	65	65
Weight	[kg]	0.39	0.47	0.44	0.52
Fluid consumption (2 x nominal angle)	[cm³]	11.8	14.5	11.8	14.5
Nominal operating pressure	[bar]	6.0	6.0	6.0	6.0
min./max. operating pressure	[bar]	4.5/8	4.5/8	4.5/8	4.5/8
Diameter of connecting hose		3 x 1.8 x 0.6	3 x 1.8 x 0.6	3 x 1.8 x 0.6	3 x 1.8 x 0.6
No. of fluid feed-throughs				4	4
max. pressure in the air feed-through	[bar]			8	8
min./max. ambient temperature	[°C]	5/90	5/90	5/90	5/90
Repeat accuracy	[°]	0.07	0.07	0.07	0.07
Cleanroom class ISO 14644-1		5	5	5	5
Options and their characteristics					
Description (Hard Damping)		SRU 12.2-H	SRU 12.2-H-M	SRU 12.2-H-4	SRU 12.2-H-M-4
ID		0356854	0356855	0356856	0356857
End position damping		Hydr. damper	Hydr. damper	Hydr. damper	Hydr. damper
Weight	[kg]	0.41	0.49	0.46	0.54
min./max. ambient temperature	[°C]	5/60	5/60	5/60	5/60
Description (Speed Damping)		SRU 12.2-S	SRU 12.2-S-M	SRU 12.2-S-4	SRU 12.2-S-M-4
ID		0356950	0356951	0356952	0356953
End position damping		Damper-elastomer	Damper-elastomer	Damper-elastomer	Damper-elastomer
min./max. operating pressure	[bar]	3/8	3/8	3/8	3/8

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 B, b Main / direct connection, swivel unit counterclockwise turning

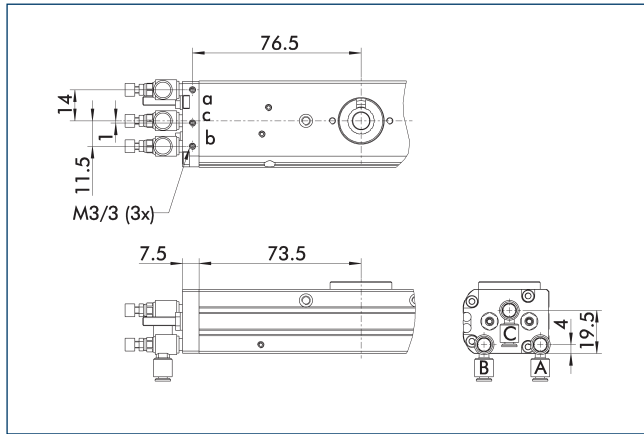
① Connection swivel unit
 ② Attachment connection

②8 Through-hole
 ⑦2 Fit for centering sleeves
 ⑦3 Fit for centering pins
 ⑧0 Depth of the centering sleeve hole in the counter part
 ⑨0 Sensor MMS 22..

SRU-mini 12

Miniature swivel unit

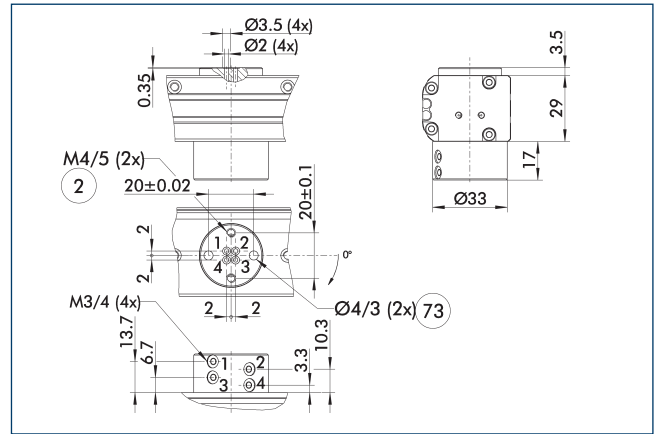
Pneumatic middle position (M)



- A, a Main / direct connection, swivel unit clockwise turning
- B, b Main / direct connection, swivel unit counterclockwise turning
- C, c Main / direct connection, middle position

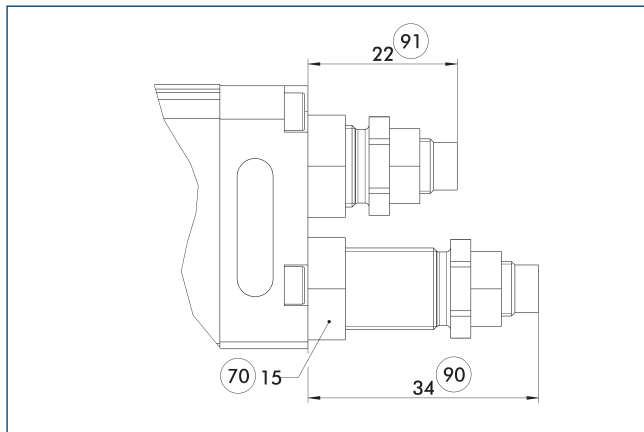
Dimensional changes with the „Pneumatic Middle Position“ option. Heavy attachments may have to settle before they reach the final position.

Connections for fluid feed-through



- ② Attachment connection
- ⑦③ Fit for centering pins
- ① Maximum permissible pressure in the fluid feed-through is 8 bar.

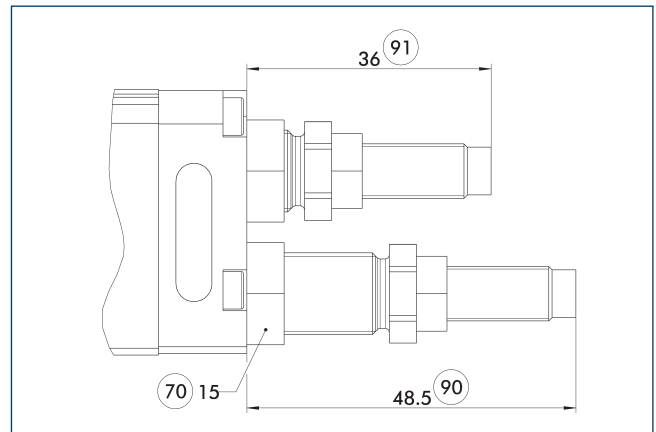
Version with shock absorbers



- ⑦① Wrench size
- ⑨① Projection with min. end position adjustability
- ⑨① Projection with max. end position adjustability
- ⑨① Projection with max. end position adjustability

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

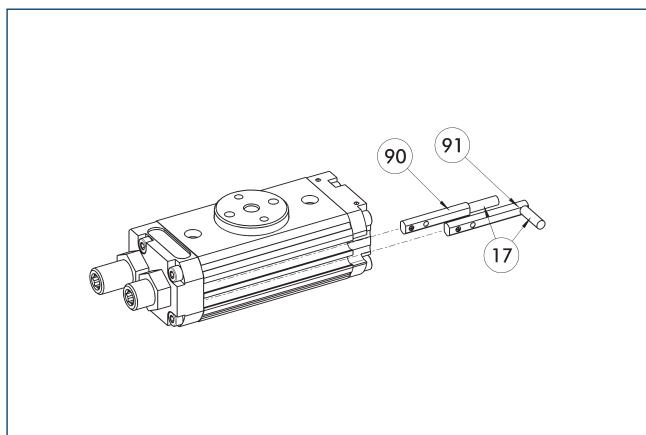
Speed version S



- ⑦① Wrench size
- ⑨① Projection with min. end position adjustability
- ⑨① Projection with max. end position adjustability
- ⑨① Projection with max. end position adjustability

The speed version S offers reduced closing and opening times by using a different internal gear ratio. The drawing shows the changes in dimension of the speed version in comparison to the basic version illustrated in the main view.

Electronic magnetic switches MMS



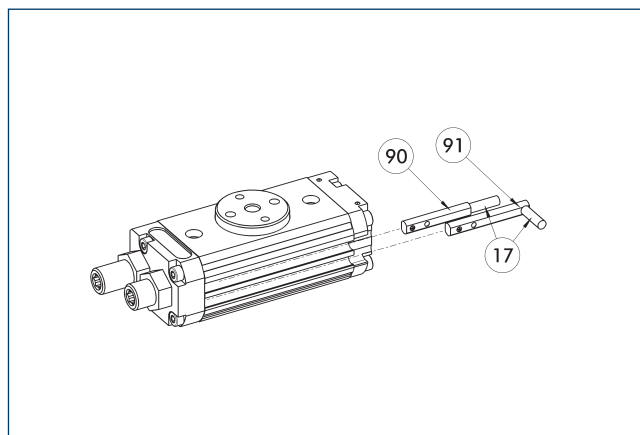
- 17 Cable outlet
- 91 Sensor MMS 22...-SA
- 90 Sensor MMS 22..

End and intermediate position monitoring mounted in C-slot

Description	ID	Often combined
Electronic magnetic switches MMS		
MMS 22-S-M8-PNP	0301032	●
MMSK 22-S-PNP	0301034	
MMS electronic magnetic switches with lateral outlet		
MMS 22-S-M8-PNP-SA	0301042	●
MMSK 22-S-PNP-SA	0301044	
Cable extension		
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
clip for plug/socket		
CLI-M8	0301463	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
Sensor distributor		
V2-M8	0301775	●
V4-M8	0301746	
V8-M8	0301751	

- ① Two sensors (closer/S) are required for each unit and extension cables are available as an option. For sensor cables, note the minimum permissible bending radii. These are generally 35 mm.

Programmable magnetic switches MMS PI1



- 17 Cable outlet
- 91 Sensor MMS 22 ..-PI1-...-SA
- 90 Sensor MMS 22 PI1-...

Position monitoring with one programmable position per sensor and electronics integrated in the sensor. Can be programmed using MT magnetic teaching tool (included in scope of delivery) or ST plug teaching tool (optional). End position monitoring is mounted in the C-slot. If the ST plug teaching tools are listed in the table provided, teaching is only possible with the ST teaching tools.

Description	ID	Often combined
Programmable magnetic switches MMS PI1		
MMS 22-PI1-S-M8-PNP	0301160	●
MMSK 22-PI1-S-PNP	0301162	
Programmable magnetic switches MMS PI1 with lateral cable outlet		
MMS 22-PI1-S-M8-PNP-SA	0301166	●
MMSK 22-PI1-S-PNP-SA	0301168	
Programmable magnetic switches MMS PI1 with stainless steel housing		
MMS 22-PI1-S-M8-PNP-HD	0301110	●
MMSK 22-PI1-S-PNP-HD	0301112	

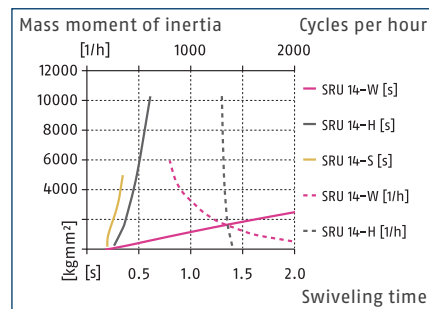
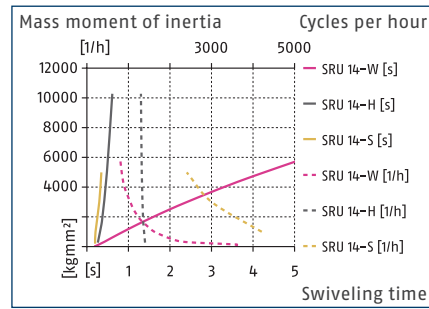
- ① Two sensors (closer/S) are required for each unit and extension cables are available as an option. For sensor cables, note the minimum permissible bending radii. These are generally 35 mm.

SRU-mini 14

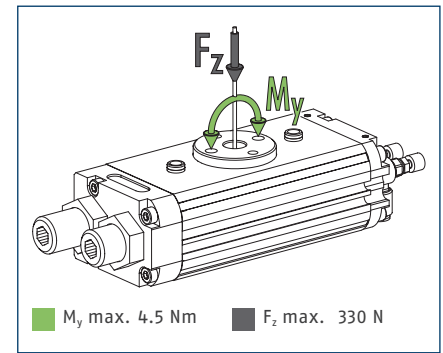
Miniature swivel unit



Max. admissible inertia J



Pinion load



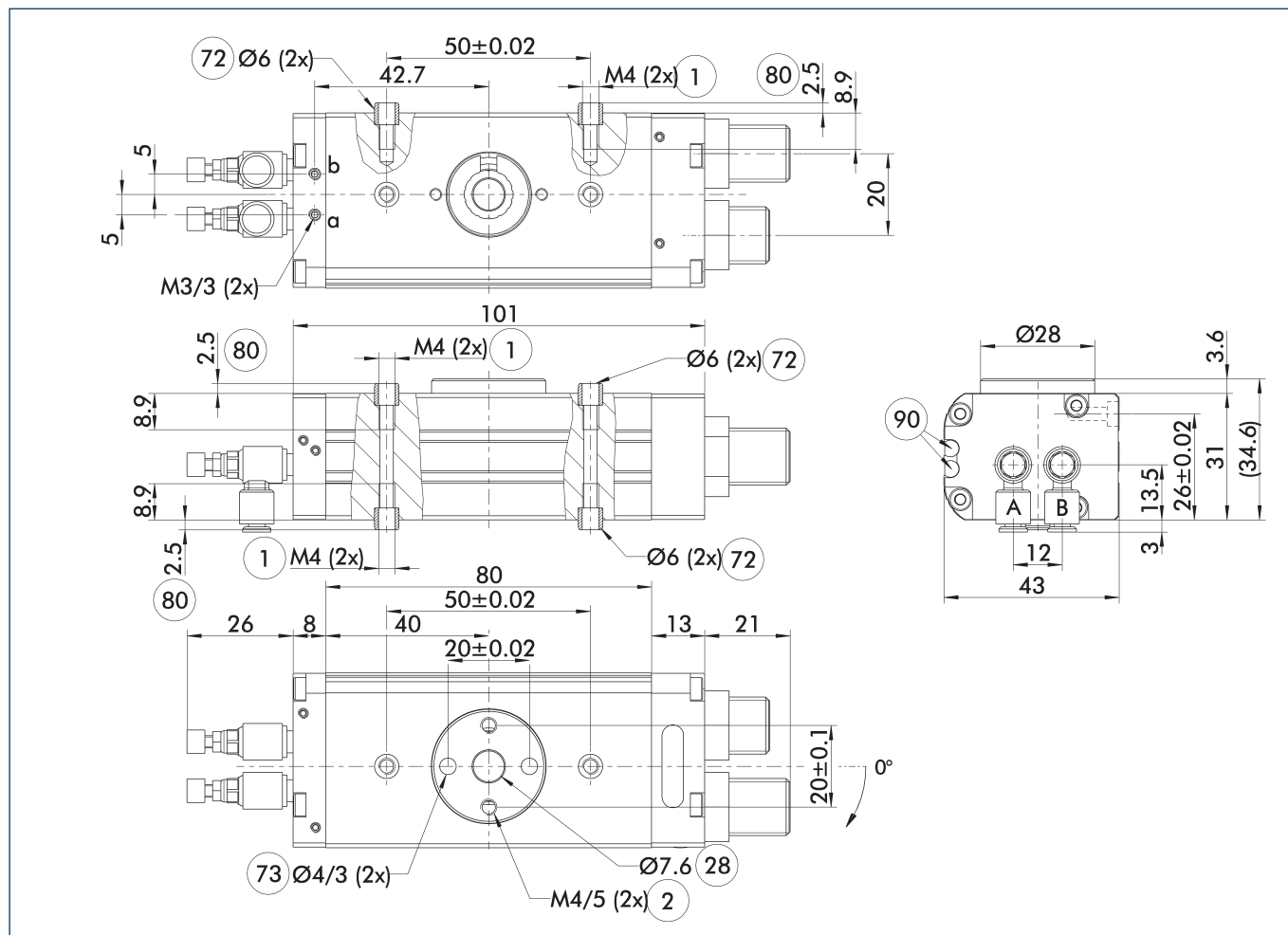
① The indicated moments and forces are static values and should not appear simultaneously. Throttling has to be done for ensuring that the rotary motion takes place without impact or bouncing, otherwise the service life reduces.

Technical data

Description		SRU 14.2-W	SRU 14.2-W-M	SRU 14.2-W-4	SRU 14.2-W-M-4
ID		0356870	0356871	0356872	0356873
Angle of rotation	[°]	180.0	180.0	180.0	180.0
End position adjustability	[°]	90.0	90.0	90.0	90.0
End position damping		Elastomer	Elastomer	Elastomer	Elastomer
Torque	[Nm]	1.15	1.15	1	1
Middle position		none	1 x M (pneumatic)	none	1 x M (pneumatic)
Adjustability of middle position	[°]		45.0		45.0
Protection class IP		65	65	65	65
Weight	[kg]	0.47	0.57	0.52	0.62
Fluid consumption (2 x nominal angle)	[cm³]	15.9	18.9	15.9	18.9
Nominal operating pressure	[bar]	6.0	6.0	6.0	6.0
min./max. operating pressure	[bar]	4.5/8	4.5/8	4.5/8	4.5/8
Diameter of connecting hose		3 x 1.8 x 0.6	3 x 1.8 x 0.6	3 x 1.8 x 0.6	3 x 1.8 x 0.6
No. of fluid feed-throughs				4	4
max. pressure in the air feed-through	[bar]			8	8
min./max. ambient temperature	[°C]	5/90	5/90	5/90	5/90
Repeat accuracy	[°]	0.07	0.07	0.07	0.07
Cleanroom class ISO 14644-1		5	5	5	5
Options and their characteristics					
Description (Hard Damping)		SRU 14.2-H	SRU 14.2-H-M	SRU 14.2-H-4	SRU 14.2-H-M-4
ID		0356874	0356875	0356876	0356877
End position damping		Hydr. damper	Hydr. damper	Hydr. damper	Hydr. damper
Weight	[kg]	0.5	0.6	0.55	0.65
min./max. ambient temperature	[°C]	5/60	5/60	5/60	5/60
Description (Speed Damping)		SRU 14.2-S	SRU 14.2-S-M	SRU 14.2-S-4	SRU 14.2-S-M-4
ID		0356970	0356971	0356972	0356973
End position damping		Damper-elastomer	Damper-elastomer	Damper-elastomer	Damper-elastomer
min./max. operating pressure	[bar]	3/8	3/8	3/8	3/8

① The diagrams are valid for swivel angles of 90° and 180°, units without center position and for applications with a vertical swivel axis as well as for absolutely centric loads with a horizontal rotary axis and with a pneumatic operating pressure of 6 bar. The swiveling times per throttling have to be observed, otherwise the life time could reduce. We will be happy to help you to design other cases of application.

Main view



The drawing shows the unit in standard design, without considering any dimensions of the options described below.

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, swivel unit clockwise turning

B, b Main / direct connection, swivel unit counterclockwise turning

① Connection swivel unit

② Attachment connection

②⑧ Through-hole

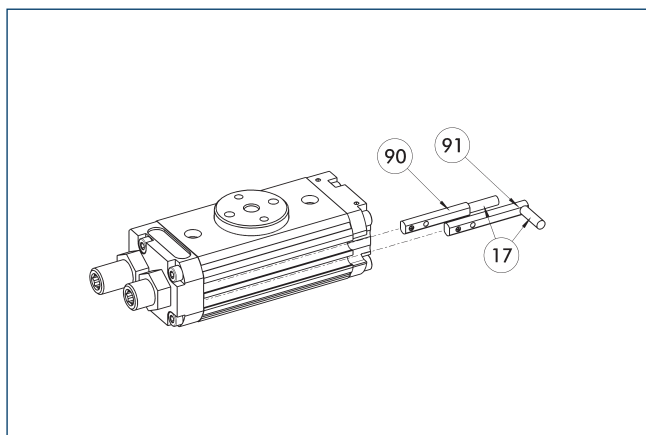
⑦② Fit for centering sleeves

⑦③ Fit for centering pins

⑧① Depth of the centering sleeve hole in the counter part

⑨① Sensor MMS 22..

Electronic magnetic switches MMS



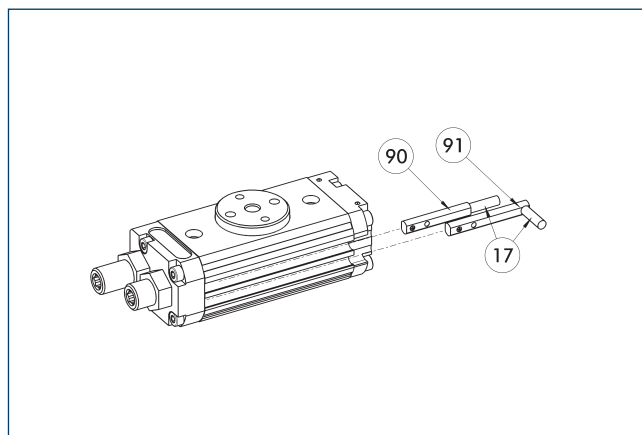
- ⑰ Cable outlet
- ① Sensor MMS 22...-SA
- ⑨ Sensor MMS 22..

End and intermediate position monitoring mounted in C-slot

Description	ID	Often combined
Electronic magnetic switches MMS		
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MMSK 22-S-PNP	0301034	
MMS electronic magnetic switches with lateral outlet		
MMS 22-S-M8-PNP-SA	0301042	●
MMSK 22-S-PNP-SA	0301044	
Cable extension		
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
clip for plug/socket		
CLI-M8	0301463	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
Sensor distributor		
V2-M8	0301775	●
V4-M8	0301746	
V8-M8	0301751	

- ① Two sensors (closer/S) are required for each unit and extension cables are available as an option. For sensor cables, note the minimum permissible bending radii. These are generally 35 mm.

Programmable magnetic switches MMS PI1



- ⑰ Cable outlet
- ① Sensor MMS 22 ..-PI1-...-SA
- ⑨ Sensor MMS 22 PI1-...




Position monitoring with one programmable position per sensor and electronics integrated in the sensor. Can be programmed using MT magnetic teaching tool (included in scope of delivery) or ST plug teaching tool (optional). End position monitoring is mounted in the C-slot. If the ST plug teaching tools are listed in the table provided, teaching is only possible with the ST teaching tools.

Description	ID	Often combined
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MMSK 22-PI1-S-PNP	0301162	
Programmable magnetic switches MMS PI1 with lateral cable outlet		
MMS 22-PI1-S-M8-PNP-SA	0301166	●
MMSK 22-PI1-S-PNP-SA	0301168	
Programmable magnetic switches MMS PI1 with stainless steel housing		
MMS 22-PI1-S-M8-PNP-HD	0301110	●
MMSK 22-PI1-S-PNP-HD	0301112	

- ① Two sensors (closer/S) are required for each unit and extension cables are available as an option. For sensor cables, note the minimum permissible bending radii. These are generally 35 mm.

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