



Superior Clamping and Gripping

Product Information

Universal swivel units SRU-plus

Robust. Fast. High Performance. SRU-plus universal rotary actuator

Universal unit for pneumatic swivel and turning movements.

Field of application

Can be used in either clean or contaminated areas, anywhere where pneumatic swiveling is 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

Swivel angle can be selected as either 90° or 180° complete flexibility in selecting the swivel angle; special angles available on request

End position adjustability +3°/-3° (small) or +3°/-90° (large) can be selected

Middle position can be selected as pneumatic or locked The locked middle position can be unlocked when loaded. The two types of middle positions always allow further rotation in either direction. Fluid feed-through can be used for gases, fluids, and vacuum therefore no interfering hoses

Electrical rotary feed-through for long-lasting, reliable feed-through of sensor, actuator or optionally bus signals

Choice of electronic magnetic sensors or inductive proximity sensors for absolute variability of position monitoring

Exchangeable screw-in guide sleeves (bushing) allow for easy maintenance and rapid exchange t after several million cycles.

Series extends downwards with the SRU-mini series, for a wide range of applications



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 Drive

Pneumatic, powerful double piston drive

2 Pinion

Stable pinion, optionally available with fluid feedthrough, for transforming the piston movement into a rotary movement **3** Housing

weight-optimized due to the use of hard-anodized aluminum alloy

Geeve technology For radial adjustment of the end positions without a settling effect and ensuring rapid exchange for maintenance

Damping Hydraulic shock absorbers for high moments of inertia

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

General notes about the series

Standard conditions: The technical data shown refers to an environment of 20 °C and atmospheric pressure.

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 valves, centering bushings, 0-rings for direct connection, fitting screws (SRU-plus 63 only), assembly and operating manual with manufacturer's declaration

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

Unit for rotary exchange of roughly positioned small components Unit for turning and joining of small components

- Rotary Actuator SRU-plus
- 2 TCU tolerance compensation unit
- **9** PGN-plus 2-finger parallel gripper

SCHUNK offers more ...

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



gripper

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

gripper

Options and special information

PWG-plus

For particularly damping-intensive swivel movements, additional, external shock absorbers can be fitted. Due to the innovative sleeve technology, special rotation angles of more than 180° can be provided quickly and economically. Please contact us for assistance.

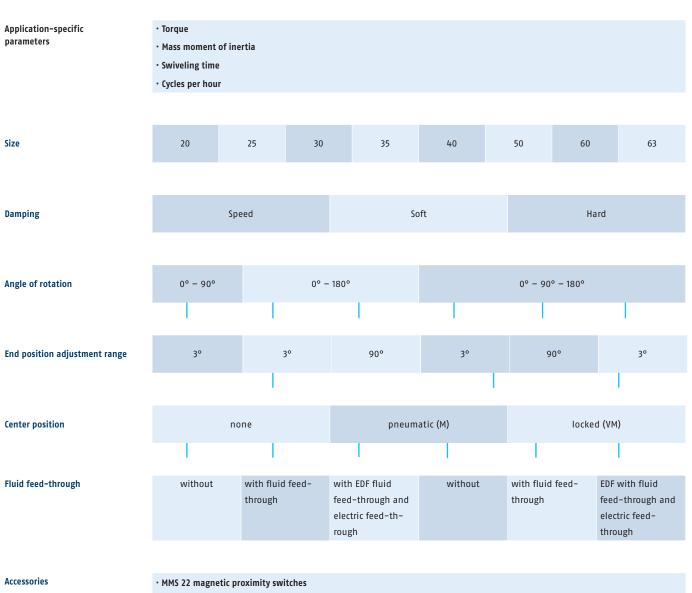
We are also happy to provide our electrical feed-throughs with M5 or M12 connections on request. On request the electrical feed-throughs can also be used to transmit bus signals.

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.

SRU-plus

Universal swivel units



(see catalog section "Accessories")

MMS 22 magnetic proximity switches
 IN 80 inductive proximity switches and mounting kits

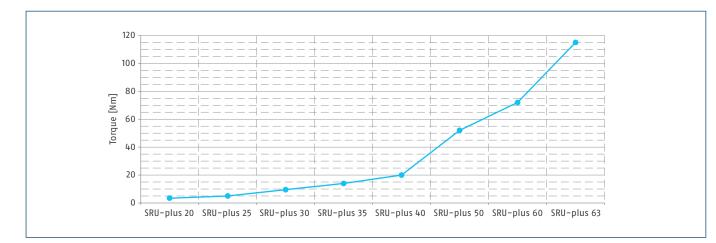
We are happy to assist you with your selection. SCHUNK Technical Hotline +49-7133-103-2696

Sample Order

	SRU-plus	20	1	s ·	- 180	-	3	Ċ.	Μ	5	4	-	M8	- /	45
Designation															
SRU-plus															
Size															
20 / 25 / 30 / 35 / 40 / 50 / 60 / 63															
Damping method															
S = Speed (for size 20)															
W = Soft															
H = Hard (for high payload)															
Angle of rotation															
90° / 180°															
End position adjustment range															
3° / 90°															
Center position															
- = none															
M = Center position pneumatic															
VM = Center position locked															
Number of fluid feed-throughs															
 = no fluid feed-through 															
4 = for sizes 20 - 35															
8 = for sizes 40 - 63															
Plug size for electric feed-through															
 = no electric feed-through 															
M5 = M5 plug on the rotating side															
M8 = M8 plug on the rotating side															
M12 = M12 plug on the rotating side															
Mounting kit for inductive proximity switches															
 – = no mounting kit 															

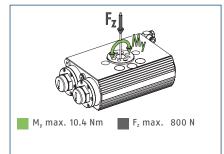
AS = with mounting kit

Torque Graduation





Pinion load

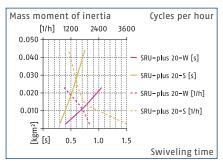


The indicated moments and forces are statical values and should not appear simultaneously Throttling has to be done for ensuring that the rotary motion takes place without impact or bouncing. otherwise the service life reduces.

Technical data of SRU-plus without middle position

Designation (soft damping)		SRU-plus 20-W-90-3	SRU-plus 20-W-180-3	SRU-plus 20-W-180-90
ID		0361400	0361420	0361450
End position damping		Spring-elastomer	Spring-elastomer	Spring-elastomer
Description (Speed Damping)		SRU-plus 20-S-90-3	SRU-plus 20-S-180-3	SRU-plus 20-S-180-90
ID		0361300	0361320	0361350
End position damping		Damper-elastomer	Damper-elastomer	Damper-elastomer
Angle of rotation	[°]	90.0	180.0	180.0
End position adjustability	[°]	3.0	3.0	90.0
Torque	[Nm]	3.4	3.4	3.4
Middle position		none	none	none
Protection class IP		67	67	67
Weight	[kg]	1.20	1.20	1.24
Fluid consumption (2 x nominal angle)	[cm³]	36.0	60.0	60.0
Nominal operating pressure	[bar]	6.0	6.0	6.0
min./max. operating pressure	[bar]	4/8	4/8	4/8
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
Repeat accuracy	[°]	0.05	0.05	0.05
Cleanroom class ISO 14644-1		5	5	5
Options with fluid feed-through				
Designation (soft damping)		SRU-plus 20-W-90-3-4	SRU-plus 20-W-180-3-4	SRU-plus 20-W-180-90-4
ID		0361402	0361422	0361452
Description (Speed Damping)		SRU-plus 20-S-90-3-4	SRU-plus 20-S-180-3-4	SRU-plus 20-S-180-90-4
ID		0361302	0361322	0361352
Torque	[Nm]	3.0	3.0	3.0
Weight	[kg]	1.4	1.4	1.44
No. of fluid feed-throughs		4	4	4
max. pressure in the air feed-through	[bar]	8	8	8
Options with fluid and electric feed	l-through			
Designation (soft damping)		SRU-plus 20-W-90-3-4-M8	SRU-plus 20-W-180-3-4-M8	SRU-plus 20-W-180-90-4-M8
ID		0361404	0361424	0361454
Description (Speed Damping)		SRU-plus 20-S-90-3-4-M8	SRU-plus 20-S-180-3-4-M8	SRU-plus 20-S-180-90-4-M8
ID		0361304	0361324	0361354
Weight	[kg]	2.05	2.05	2.09
Number / size of E-fittings on the output side		6/M8	6/M8	6/M8
Number of wires		10	10	10
max. voltage	[V]	24	24	24
Max. current per wire / total	[A]	1/1	1/1	1/1
Options with fluid and electric feed	l-through a	nd mounting kit		
Designation (soft damping)		SRU-plus 20-W-90-3-4-M8-AS	SRU-plus 20-W-180-3-4-M8-AS	SRU-plus 20-W-180-90-4-M8-AS
ID		0361407	0361427	0361457
Description (Speed Damping)		SRU-plus 20-S-90-3-4-M8-AS	SRU-plus 20-S-180-3-4-M8-AS	SRU-plus 20-S-180-90-4-M8-AS
ID		0361307	0361327	0361357

Max. admissible inertia J



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.

Technical data of SRU-plus with middle position

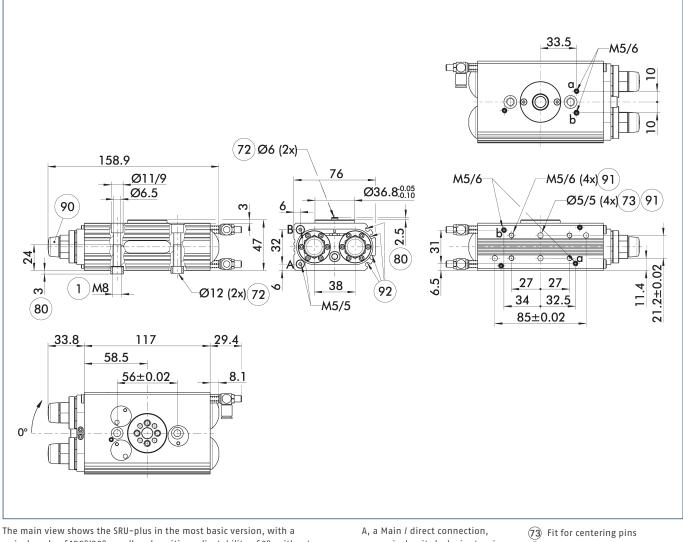
Description (Speed Damping)		SRU-plus 20-S-180-3-M	SRU-plus 20-S-180-3-VM	SRU-plus 20-S-180-90-M
ID		0361330	0361340	0361360
End position damping		Damper-elastomer	Damper-elastomer	Damper-elastomer
Angle of rotation	[°]	180.0	180.0	180.0
End position adjustability	[°]	3.0	3.0	90.0
Torque	[Nm]	3.4	3.4	3.4
Middle position		1 x M (pneumatic)	1 x VM (locked)	1 x M (pneumatic)
Adjustability of middle position	[°]	3.0	3.0	3.0
Protection class IP		67	67	67
Weight	[kg]	1.55	1.76	1.60
Fluid consumption (2 x nominal angle)	[cm³]	60.0	60.0	60.0
Nominal operating pressure	[bar]	6.0	6.0	6.0
min./max. operating pressure	[bar]	4/8	4/6.5	4/8
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
Repeat accuracy	[°]	0.05	0.05	0.05
Cleanroom class ISO 14644-1		5	5	5
Options with fluid feed-through				
Description (Speed Damping)		SRU-plus 20-S-180-3-M-4	SRU-plus 20-S-180-3-VM-4	SRU-plus 20-S-180-90-M-4
ID		0361332	0361342	0361362
Torque	[Nm]	3.0	3.0	3.0
Weight	[kg]	1.75	1.96	1.8
No. of fluid feed-throughs		4	4	4
max. pressure in the air feed-through	[bar]	8	8	8
Options with fluid and electric feed	l-through			
Description (Speed Damping)		SRU-plus 20-S-180-3-M-4-M8	SRU-plus 20-S-180-3-VM-4-M8	SRU-plus 20-S-180-90-M-4-M8
ID		0361334	0361344	0361364
Weight	[kg]	2.4	2.61	2.45
Number / size of E-fittings on the output side		6/M8	6/M8	6/M8
Number of wires		10	10	10
max. voltage	[V]	24	24	24
Max. current per wire / total	[A]	1/1	1/1	1/1
Options with fluid and electric feed	d-through a	and mounting kit		
Description (Speed Damping)		SRU-plus 20-S-180-3-M-4-M8-AS	SRU-plus 20-S-180-3-VM-4-M8-AS	SRU-plus 20-S-180-90-M-4-M8-AS
ID		0361337	0361347	0361367

() All modules are also available in a Viton version. Please contact us for details.

SRU-plus 20

Universal swivel units

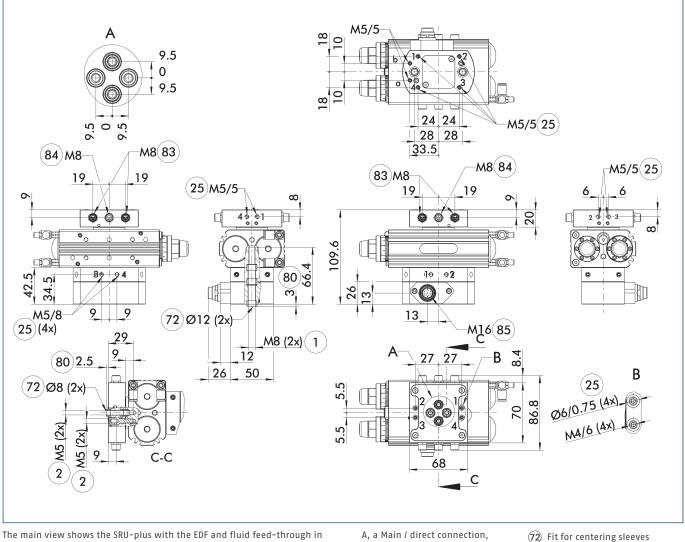
Main view for SRU-plus without EDF



The main view shows the SRU-plus in the most basic version, with a swivel angle of 180°/90°, small end position adjustability of 3°, without a middle position, and without fluid feed-through.

- 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
- $\overline{(72)}$ Fit for centering sleeves
- 80 Depth of the centering sleeve hole in the counter part
- 90 Cover caps
- (91) Not intended for mounting the unit, only for attachments
- (92) Sensor MMS 22..

Main view for SRU-plus with EDF



The main view shows the SRU-plus with the EDF and fluid feed-through in the most basic version, with a swivel angle of 180°/90°, small end position adjustability of 3°, and without a middle position.

- 1 The SRU-plus swivel unit with the EDF option can only be mounted from the bottom.
- A, a Main / direct connection, swivel unit clockwise turning
- B, b Main / direct connection, swivel unit counterclockwise turning
- (1) Connection swivel unit $(\mathbf{\hat{2}})$ Attachment connection

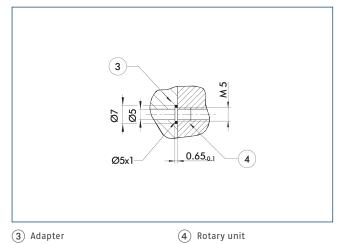
(25) Fluid feed-through

- (80) Depth of the centering sleeve hole in the counter part
- (83) Input for 3 pole sensor feed-through
- (84) Input for 4 pole sensor feed-through
- (85) Sensor feed-through output

SRU-plus 20

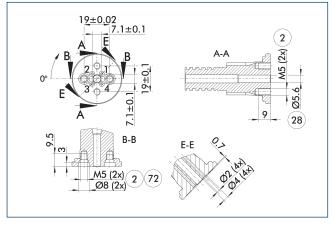
Universal swivel units

Hose-free direct connection M5



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

Pinion with fluid feed-through



2 Attachment connection

 $(\overline{72})$ Fit for centering sleeves

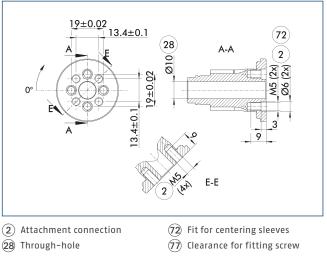
28 Through-hole

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Pinion screw connection diagram for the fluid feed-through option. The preferred drilling pattern is 2 x screws and 2 x screws with centering sleeve (in Ø 8 H7).

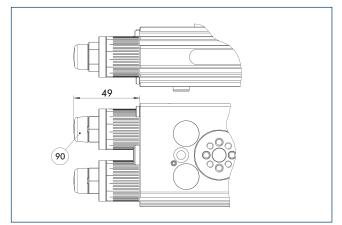
() View applicable only for versions without EDF!

Pinion without fluid feed-through



Mounting pattern for fastening the rotating load to the pinion. The ",4x large threads for 4 screws and 2 counter bores for centering sleeves" option is preferable to the ",4x small threads for 2 screws and 2 shoulder bots (in the deeper counter bores)" option.

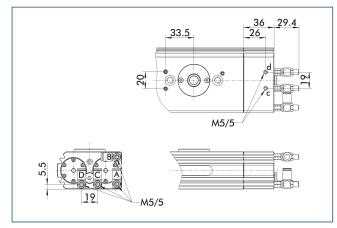
Large end position adjustability 90°



(90) Cover caps

Dimensional changes for the option with "large end position adjustability (90°)". This permits the end positions to be adjusted by up to 93°. More information can be found in the introduction to the series.

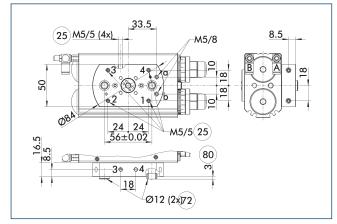
Pneumatic middle position (M)



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

Dimensional changes for the option with the "pneumatic middle position". Heavy attachments may swing before they reach the final position. The locked middle position (VM) can resolve this.

Connections for fluid feed-through



A, a Main / direct connection, swivel unit clockwise turning

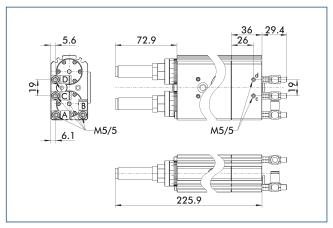
turning

- B, b Main / direct connection, swivel unit counterclockwise
- (25) Fluid feed-through
- (72) Fit for centering sleeves (80) Depth of the centering sleeve
- hole in the counter part

Lower mounting plate for the fluid feed-through option. Vacuum, gases or fluids can be fed through. The connection may be a screw type or a direct connection.

() View applicable only for versions without EDF!

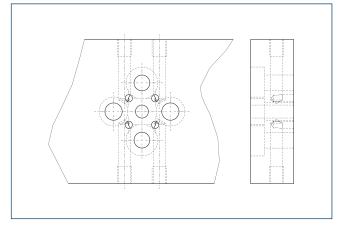
Locked middle position (VM)



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

Dimensional changes with the "locked middle position (VM)" option. The middle position is locked and is actuated with the force of the main drive piston. Shock absorbers dampen the travel to the middle position and prevent overshooting.

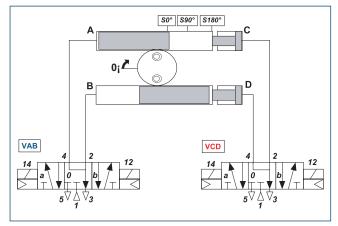
Adapter plate design



Suggested here is an adapter plate design which allows for all fluid feed-throughs to be accessed as easily as possible.

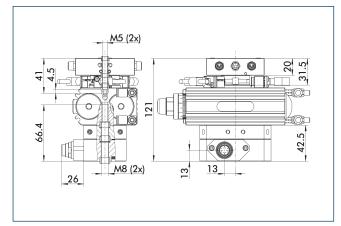
View applicable only for versions without EDF!

Pneumatic diagram of SRU-plus-VM — vertical axis



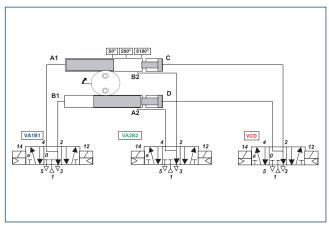
VM rotary actuators with a vertical rotary axis are generally actuated by two 5/3 directional control valves with an exhausted middle position. To prevent damage, it is essential to pay attention to the actuation sequence indicated in the operating manual.

Attachment kit for proximity switch at SRU-plus with EDF



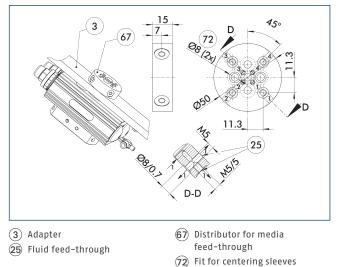
The attachment kit cannot be ordered separately. The SRU-plus with EDF and attachment kit are delivered as a complete unit by SCHUNK. Please pay attention to our options SRU-plus ...-AS.

Pneumatic diagram of SRU-plus-VM — horizontal axis



VM rotary actuators with a horizontal or non-vertical rotary axis must generally be actuated by three 5/3 directional control valves with an exhausted middle position. To prevent damage, it is essential to pay attention to the actuation sequence indicated in the operating manual.

Distributor for SRU-plus

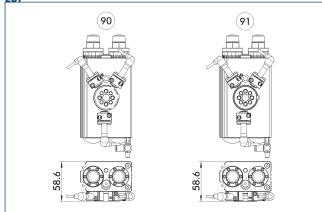


The distributor for SRU-plus facilitates the use of the fluid feed-throughs, both at the direct attachment to the distributor, and in the lines conveying the fluid inside the adapter plate. Due to the distributor, only a simple drilling pattern has to be drilled in the adapter plate located between the pinion and the distributor.

Description	ID
Distributor for SRU-plus	
V-SRU-plus 20/25/30	0357392

① View applicable only for versions without EDF!

Attachment kit for proximity switch at SRU-plus without EDF



90 AS-NHS-F-SRU-plus 20

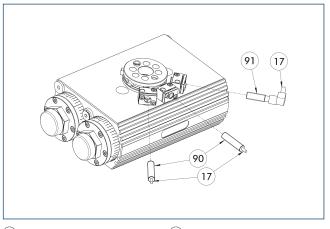
(91) AS-NHS-SRU-plus 20

The size-specific attachment kit is required for installing the inductive proximity switches. Up to three proximity switches (2x end position, 1x middle position) can be attached using the attachment kit.

Description	ID	
Mounting kit for proximity switch wit	h adjustable o	am
AS-NHS-SRU-plus 20/25/30-4	0361491	
AS-NHS-SRU-plus 20/30	0361490	
Mounting kit for proximity switch wit	h fixed cam	
AS-NHS-F-SRU-plus 20	0361495	
AS-NHS-F-SRU-plus 20-4	0361494	

Please note the number of necessary feed-throughs for your swivel unit when selecting the proper attachment kit.

Inductive proximity switches IN for SRU-plus without EDF



(17) Cable outlet(90) Sensor IN ...

(91) Sensor IN..-SA

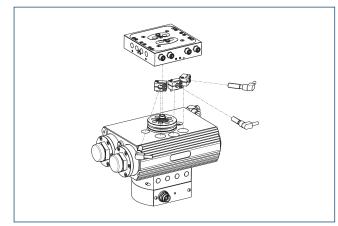
End and intermediate position monitoring can be mounted with mounting kit

Description	ID	Often combined
Mounting kit for proximity switch wit	h adjustable o	am
AS-NHS-SRU-plus 20/25/30-4	0361491	
AS-NHS-SRU-plus 20/30	0361490	
Mounting kit for proximity switch wit	h fixed cam	
AS-NHS-F-SRU-plus 20	0361495	
AS-NHS-F-SRU-plus 20-4	0361494	
Inductive Proximity Switches		
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	•
IN-C 80-S-M8	0301475	
INK 80-S	0301550	
INK 80-SL	0301579	
Inductive proximity switch with later	al outlet	
IN 80-S-M12-SA	0301587	
IN 80-S-M8-SA	0301483	•
INK 80-S-SA	0301566	

() View applicable only for versions without EDF!

1.2

Inductive proximity switches IN for SRU-plus with EDF

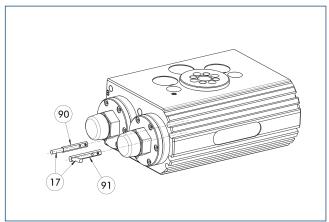


End and intermediate position monitoring mounted directly

Description	ID	Often combined
Inductive Proximity Switches		
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	•
IN-C 80-S-M8	0301475	
INK 80-S	0301550	
INK 80-SL	0301579	
Inductive proximity switch with la	teral outlet	
IN 80-S-M12-SA	0301587	
IN 80-S-M8-SA	0301483	•
INK 80-S-SA	0301566	
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	
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-M12	0301776	•
V2-M8	0301775	•
V4-M12	0301747	
V4-M8	0301746	
V8-M12	0301752	
V8-M8	0301751	

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.

Electronic magnetic switches MMS



(17) Cable outlet

(91) Sensor MMS 22...-SA

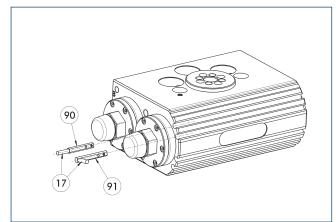
90 Sensor MMS 22..

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 o	utlet
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	

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.

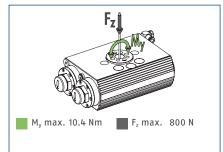
Description	ID	Often combined
Programmable magnetic switc	hes MMS PI1	
MMS 22-PI1-S-M8-PNP	0301160	•
MMSK 22-PI1-S-PNP	0301162	
Programmable magnetic switc	hes MMS PI1 wi	th lateral cable outlet
MMS 22-PI1-S-M8-PNP-SA	0301166	•
MMSK 22-PI1-S-PNP-SA	0301168	
Programmable magnetic switc	hes MMS PI1 wi	th stainless steel housing
MMS 22-PI1-S-M8-PNP-HD	0301110	•
MMSK 22-PI1-S-PNP-HD	0301112	

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.

SCHUNK



Pinion load

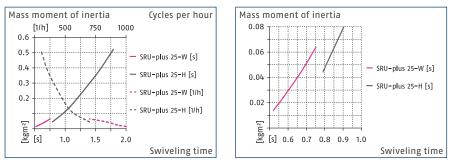


The indicated moments and forces are statical values and should not appear simultaneously Throttling has to be done for ensuring that the rotary motion takes place without impact or bouncing. otherwise the service life reduces.

Technical data of SRU-plus without middle position

Designation (soft damping)		SRU-plus 25-W-90-3	SRU-plus 25-W-180-3	SRU-plus 25-W-180-90
ID		0361600	0361620	0361650
Description (Hard Damping)		SRU-plus 25-H-90-3	SRU-plus 25-H-180-3	SRU-plus 25-H-180-90
ID		0361700	0361720	0361750
End position damping		Hydr. damper	Hydr. damper	Hydr. damper
Angle of rotation	[°]	90.0	180.0	180.0
End position adjustability	[°]	3.0	3.0	90.0
Torque	[Nm]	5.0	5.0	5.0
Middle position		none	none	none
Protection class IP		67	67	67
Weight	[kg]	1.60	1.60	1.65
Fluid consumption (2 x nominal angle)	[cm³]	60.0	88.0	88.0
Nominal operating pressure	[bar]	6.0	6.0	6.0
min./max. operating pressure	[bar]	4/8	4/8	4/8
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
Repeat accuracy	[°]	0.05	0.05	0.05
Cleanroom class ISO 14644-1		5	5	5
Options with fluid feed-through				
Designation (soft damping)		SRU-plus 25-W-90-3-4	SRU-plus 25-W-180-3-4	SRU-plus 25-W-180-90-4
ID		0361602	0361622	0361652
Description (Hard Damping)		SRU-plus 25-H-90-3-4	SRU-plus 25-H-180-3-4	SRU-plus 25-H-180-90-4
ID		0361702	0361722	0361752
Torque	[Nm]	4.6	4.6	4.6
Weight	[kg]	1.8	1.8	1.85
No. of fluid feed-throughs		4	4	4
max. pressure in the air feed-through	[bar]	8	8	8
Options with fluid and electric feed	l-through			
Designation (soft damping)		SRU-plus 25-W-90-3-4-M8	SRU-plus 25-W-180-3-4-M8	SRU-plus 25-W-180-90-4-M8
ID		0361604	0361624	0361654
Description (Hard Damping)		SRU-plus 25-H-90-3-4-M8	SRU-plus 25-H-180-3-4-M8	SRU-plus 25-H-180-90-4-M8
ID		0361704	0361724	0361754
Weight	[kg]	2.45	2.45	2.5
Number / size of E-fittings on the output side		6/M8	6/M8	6/M8
Number of wires		10	10	10
max. voltage	[V]	24	24	24
Max. current per wire / total	[A]	1/1	1/1	1/1
Options with fluid and electric feed	l-through a	ind mounting kit		
Designation (soft damping)		SRU-plus 25-W-90-3-4-M8-AS	SRU-plus 25-W-180-3-4-M8-AS	SRU-plus 25-W-180-90-4-M8-AS
ID		0361607	0361627	0361657
Description (Hard Damping)		SRU-plus 25-H-90-3-4-M8-AS	SRU-plus 25-H-180-3-4-M8-AS	SRU-plus 25-H-180-90-4-M8-AS
ID		0361707	0361727	0361757

Max. admissible inertia J



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.

Technical data of SRU-plus with middle position

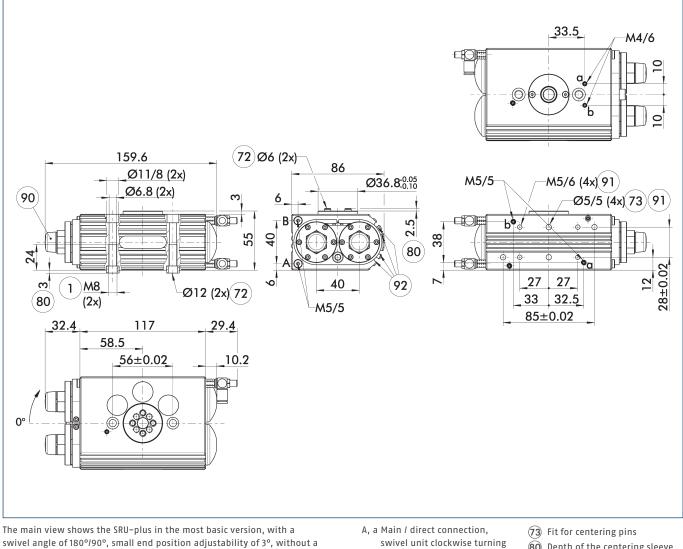
Designation (soft damping)		SRU-plus 25-W-180-3-M	SRU-plus 25-W-180-3-VM	SRU-plus 25-W-180-90-M
ID		0361630	0361640	0361660
End position damping		Hydr. damper	Hydr. damper	Hydr. damper
Angle of rotation	[°]	180.0	180.0	180.0
End position adjustability	[°]	3.0	3.0	90.0
Torque	[Nm]	5.0	5.0	5.0
Middle position		1 x M (pneumatic)	1 x VM (locked)	1 x M (pneumatic)
Adjustability of middle position	[°]	3.0	3.0	3.0
Protection class IP		67	67	67
Weight	[kg]	2.20	2.60	2.25
Fluid consumption (2 x nominal angle)	[cm³]	88.0	88.0	88.0
Nominal operating pressure	[bar]	6.0	6.0	6.0
min./max. operating pressure	[bar]	4/8	4/6.5	4/8
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
Repeat accuracy	[°]	0.05	0.05	0.05
Cleanroom class ISO 14644-1		5	5	5
Options with fluid feed-through				
Designation (soft damping)		SRU-plus 25-W-180-3-M-4	SRU-plus 25-W-180-3-VM-4	SRU-plus 25-W-180-90-M-4
ID		0361632	0361642	0361662
Torque	[Nm]	4.6	4.6	4.6
Weight	[kg]	2.4	2.8	2.45
No. of fluid feed-throughs		4	4	4
max. pressure in the air feed-through	[bar]	8	8	8
Options with fluid and electric feed	-through			
Designation (soft damping)		SRU-plus 25-W-180-3-M-4-M8	SRU-plus 25-W-180-3-VM-4-M8	SRU-plus 25-W-180-90-M-4-M8
ID		0361634	0361644	0361664
Weight	[kg]	3.05	3.45	3.1
Number / size of E-fittings on the output side		6/M8	6/M8	6/M8
Number of wires		10	10	10
max. voltage	[V]	24	24	24
Max. current per wire / total	[A]	1/1	1/1	1/1
Options with fluid and electric feed	-through a	nd mounting kit		
Designation (soft damping)		SRU-plus 25-W-180-3-M-4-M8-AS	SRU-plus 25-W-180-3-VM-4-M8-AS	SRU-plus 25-W-180-90-M-4-M8-AS
ID		0361637	0361647	0361667

() All modules are also available in a Viton version. Please contact us for details.

SRU-plus 25

Universal swivel units

Main view for SRU-plus without EDF

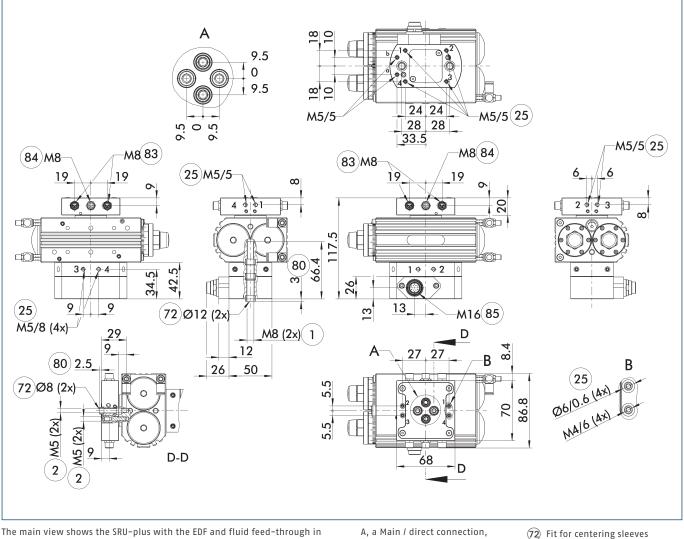


The SDV-P pressure maintenance valve can be used to maintain the position in the case of a loss of pressure (see "Accessories" catalog section).

middle position, and without fluid feed-through.

- swivel unit clockwise turning B, b Main / direct connection, swivel unit counterclockwise
- turning
- $\underbrace{\textcircled{1}}_{\bigcirc}$ Connection swivel unit
- $\overline{72}$ Fit for centering sleeves
- 80 Depth of the centering sleeve hole in the counter part
- 90 Cover caps
- (91) Not intended for mounting the unit, only for attachments
- (92) Sensor MMS 22..

Main view for SRU-plus with EDF



The main view shows the SRU-plus with the EDF and fluid feed-through in the most basic version, with a swivel angle of 180°/90°, small end position adjustability of 3°, and without a middle position.

- 1 The SRU-plus swivel unit with the EDF option can only be mounted from the bottom.
- A, a Main / direct connection, swivel unit clockwise turning
- B, b Main / direct connection, swivel unit counterclockwise turning
- (1) Connection swivel unit $(\mathbf{\hat{2}})$ Attachment connection

(25) Fluid feed-through

- (83) Input for 3 pole sensor feed-through
- (84) Input for 4 pole sensor feed-through
- (85) Sensor feed-through output

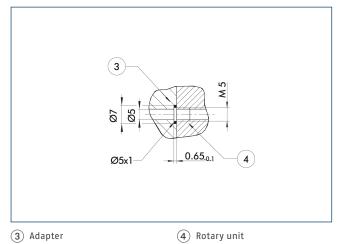
(80) Depth of the centering sleeve

hole in the counter part

SRU-plus 25

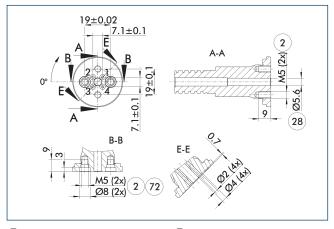
Universal swivel units

Hose-free direct connection M5



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

Pinion with fluid feed-through



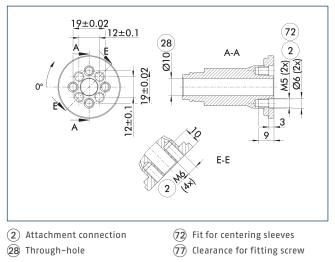
(2) Attachment connection(28) Through-hole

72 Fit for centering sleeves

Pinion screw connection diagram for the fluid feed-through option. The preferred drilling pattern is 2 x screws and 2 x screws with centering sleeve (in Ø 8 H7).

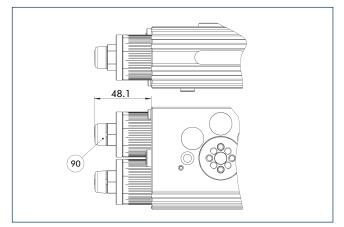
() View applicable only for versions without EDF!

Pinion without fluid feed-through



Mounting pattern for fastening the rotating load to the pinion. The ",4x large threads for 4 screws and 2 counter bores for centering sleeves" option is preferable to the ",4x small threads for 2 screws and 2 shoulder bots (in the deeper counter bores)" option.

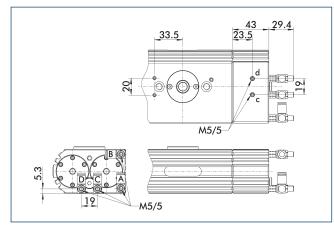
Large end position adjustability 90°



(90) Cover caps

Dimensional changes for the option with "large end position adjustability (90°)". This permits the end positions to be adjusted by up to 93°. More information can be found in the introduction to the series.

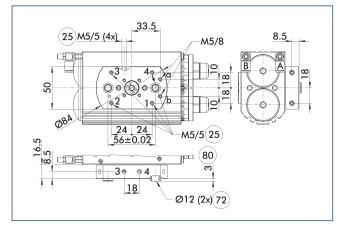
Pneumatic middle position (M)



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

Dimensional changes for the option with the "pneumatic middle position". Heavy attachments may swing before they reach the final position. The locked middle position (VM) can resolve this.

Connections for fluid feed-through



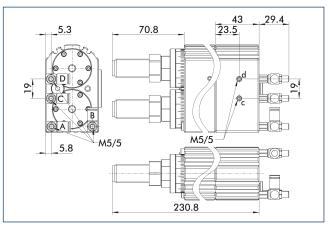
A, a Main / direct connection, swivel unit clockwise turning

- B, b Main / direct connection, swivel unit counterclockwise turning
- (25) Fluid feed-through
- (72) Fit for centering sleeves (80) Depth of the centering sleeve
- hole in the counter part

Lower mounting plate for the fluid feed-through option. Vacuum, gases or fluids can be fed through. The connection may be a screw type or a direct connection.

() View applicable only for versions without EDF!

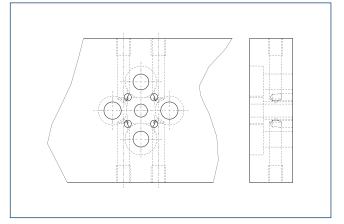
Locked middle position (VM)



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

Dimensional changes with the "locked middle position (VM)" option. The middle position is locked and is actuated with the force of the main drive piston. Shock absorbers dampen the travel to the middle position and prevent overshooting.

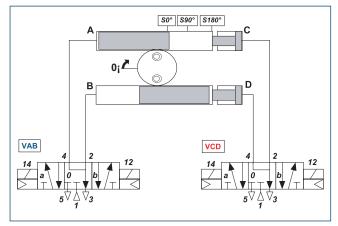
Adapter plate design



Suggested here is an adapter plate design which allows for all fluid feed-throughs to be accessed as easily as possible.

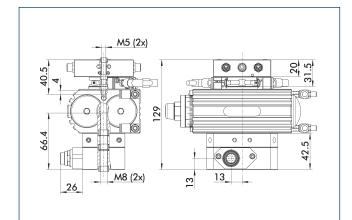
() View applicable only for versions without EDF!

Pneumatic diagram of SRU-plus-VM — vertical axis



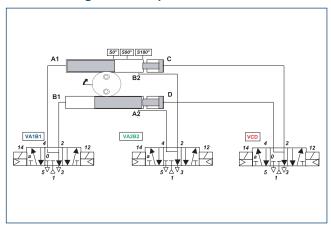
VM rotary actuators with a vertical rotary axis are generally actuated by two 5/3 directional control valves with an exhausted middle position. To prevent damage, it is essential to pay attention to the actuation sequence indicated in the operating manual.

Attachment kit for proximity switch at SRU-plus with EDF



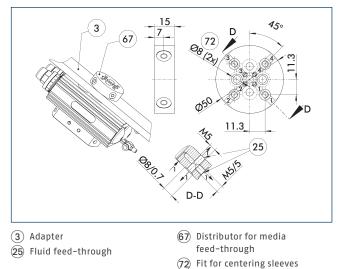
The attachment kit cannot be ordered separately. The SRU-plus with EDF and attachment kit are delivered as a complete unit by SCHUNK. Please pay attention to our options SRU-plus ...-AS.

Pneumatic diagram of SRU-plus-VM — horizontal axis



VM rotary actuators with a horizontal or non-vertical rotary axis must generally be actuated by three 5/3 directional control valves with an exhausted middle position. To prevent damage, it is essential to pay attention to the actuation sequence indicated in the operating manual.

Distributor for SRU-plus

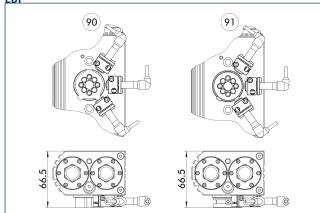


The distributor for SRU-plus facilitates the use of the fluid feed-throughs, both at the direct attachment to the distributor, and in the lines conveying the fluid inside the adapter plate. Due to the distributor, only a simple drilling pattern has to be drilled in the adapter plate located between the pinion and the distributor.

Description	ID
Distributor for SRU-plus	
V-SRU-plus 20/25/30	0357392

() View applicable only for versions without EDF!

Attachment kit for proximity switch at SRU-plus without EDF



(90) AS-NHS-F-SRU-plus 25/30

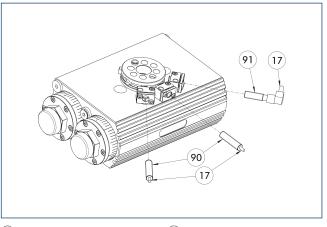
(91) AS-NHS-SRU-plus 25

The size-specific attachment kit is required for installing the inductive proximity switches. Up to three proximity switches (2x end position, 1x middle position) can be attached using the attachment kit.

Description	ID			
Mounting kit for proximity switch with adjustable cam				
AS-NHS-SRU-plus 20/25/30-4	0361491			
AS-NHS-SRU-plus 25	0361690			
Mounting kit for proximity switch with fixed cam				
AS-NHS-F-SRU-plus 25/30	0361695			
AS-NHS-F-SRU-plus 25/30-4	0361496			

Please note the number of necessary feed-throughs for your swivel unit when selecting the proper attachment kit.

Inductive proximity switches IN for SRU-plus without EDF



(17) Cable outlet(90) Sensor IN ...

(91) Sensor IN..-SA

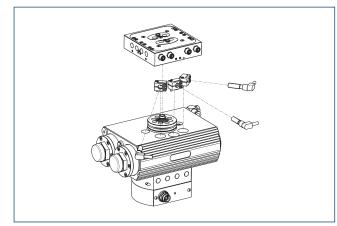
End and intermediate position monitoring can be mounted with mounting kit

Description	ID	Often combined			
Mounting kit for proximity switch with adjustable cam					
AS-NHS-SRU-plus 20/25/30-4	0361491				
AS-NHS-SRU-plus 25	0361690				
Mounting kit for proximity switch wit	h fixed cam				
AS-NHS-F-SRU-plus 25/30	0361695				
AS-NHS-F-SRU-plus 25/30-4	0361496				
Inductive Proximity Switches					
IN 80-S-M12	0301578				
IN 80-S-M8	0301478	٠			
IN-C 80-S-M8	0301475				
INK 80-S	0301550				
INK 80-SL	0301579				
Inductive proximity switch with lateral outlet					
IN 80-S-M12-SA	0301587				
IN 80-S-M8-SA	0301483	•			
INK 80-S-SA	0301566				

() View applicable only for versions without EDF!

25

Inductive proximity switches IN for SRU-plus with EDF

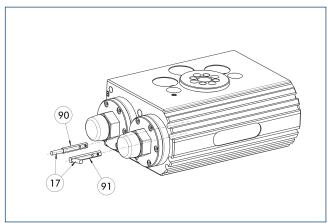


End and intermediate position monitoring mounted directly

Description	ID	Often combined
Inductive Proximity Switches		
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	•
IN-C 80-S-M8	0301475	
INK 80-S	0301550	
INK 80-SL	0301579	
Inductive proximity switch with la	teral outlet	
IN 80-S-M12-SA	0301587	
IN 80-S-M8-SA	0301483	•
INK 80-S-SA	0301566	
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	
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-M12	0301776	•
V2-M8	0301775	•
V4-M12	0301747	
V4-M8	0301746	
V8-M12	0301752	
V8-M8	0301751	

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.

Electronic magnetic switches MMS



(17) Cable outlet

(91) Sensor MMS 22...-SA

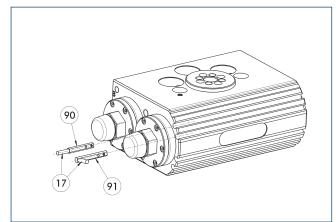
90 Sensor MMS 22..

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 o	utlet
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	

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.

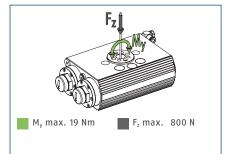
Description	ID	Often combined			
Programmable magnetic switc	hes MMS PI1				
MMS 22-PI1-S-M8-PNP	0301160	•			
MMSK 22-PI1-S-PNP	0301162				
Programmable magnetic switc	Programmable magnetic switches MMS PI1 with lateral cable outlet				
MMS 22-PI1-S-M8-PNP-SA	0301166	•			
MMSK 22-PI1-S-PNP-SA	0301168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

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.

SCHUNK



Pinion load

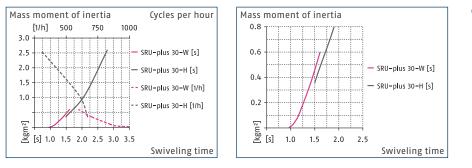


The indicated moments and forces are statical values and should not appear simultaneously Throttling has to be done for ensuring that the rotary motion takes place without impact or bouncing. otherwise the service life reduces.

Technical data of SRU-plus without middle position

Designation (soft damping)		SRU-plus 30-W-90-3	SRU-plus 30-W-180-3	SRU-plus 30-W-180-90
ID		0361800	0361820	0361850
Description (Hard Damping)		SRU-plus 30-H-90-3	SRU-plus 30-H-180-3	SRU-plus 30-H-180-90
ID		0361900	0361920	0361950
End position damping		Hydr. damper	Hydr. damper	Hydr. damper
Angle of rotation	[°]	90.0	180.0	180.0
End position adjustability	[°]	3.0	3.0	90.0
Torque	[Nm]	9.5	9.5	9.5
Middle position		none	none	none
Protection class IP		67	67	67
Weight	[kg]	2.40	2.40	2.40
Fluid consumption (2 x nominal angle)	[cm³]	90.0	145.0	145.0
Nominal operating pressure	[bar]	6.0	6.0	6.0
min./max. operating pressure	[bar]	4/8	4/8	4/8
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
Repeat accuracy	[°]	0.05	0.05	0.05
Cleanroom class ISO 14644-1		5	5	5
Options with fluid feed-through				
Designation (soft damping)		SRU-plus 30-W-90-3-4	SRU-plus 30-W-180-3-4	SRU-plus 30-W-180-90-4
ID		0361802	0361822	0361852
Description (Hard Damping)		SRU-plus 30-H-90-3-4	SRU-plus 30-H-180-3-4	SRU-plus 30-H-180-90-4
ID		0361902	0361922	0361952
Torque	[Nm]	9.0	9.0	9.0
Weight	[kg]	2.7	2.7	2.7
No. of fluid feed-throughs		4	4	4
max. pressure in the air feed-through	[bar]	8	8	8
Options with fluid and electric feed	l-through			
Designation (soft damping)		SRU-plus 30-W-90-3-4-M8	SRU-plus 30-W-180-3-4-M8	SRU-plus 30-W-180-90-4-M8
ID		0361804	0361824	0361854
Description (Hard Damping)		SRU-plus 30-H-90-3-4-M8	SRU-plus 30-H-180-3-4-M8	SRU-plus 30-H-180-90-4-M8
ID		0361904	0361924	0361954
Weight	[kg]	3.4	3.4	3.4
Number / size of E-fittings on the output side		6/M8	6/M8	6/M8
Number of wires		10	10	10
max. voltage	[V]	24	24	24
Max. current per wire / total	[A]	1/1	1/1	1/1
Options with fluid and electric feed	l-through a	and mounting kit		
Designation (soft damping)		SRU-plus 30-W-90-3-4-M8-AS	SRU-plus 30-W-180-3-4-M8-AS	SRU-plus 30-W-180-90-4-M8-AS
ID		0361807	0361827	0361857
Description (Hard Damping)		SRU-plus 30-H-90-3-4-M8-AS	SRU-plus 30-H-180-3-4-M8-AS	SRU-plus 30-H-180-90-4-M8-AS
ID		0361907	0361927	0361957

Max. admissible inertia J



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.

Technical data of SRU-plus with middle position

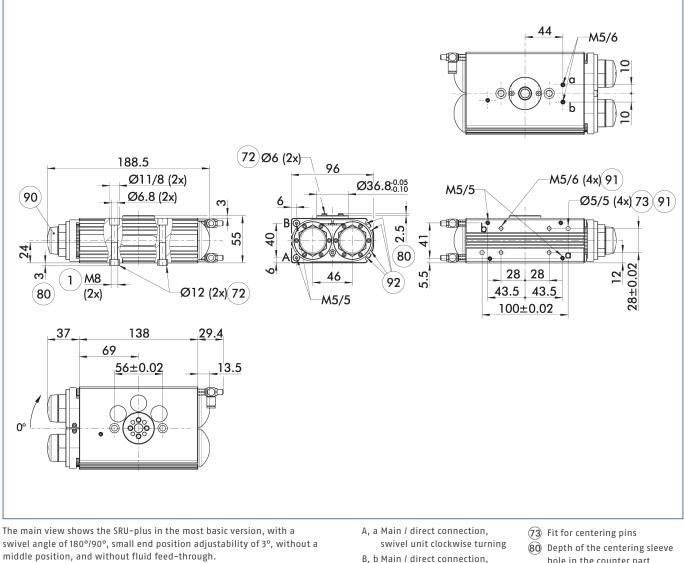
Designation (soft damping)		SRU-plus 30-W-180-3-M	SRU-plus 30-W-180-3-VM	SRU-plus 30-W-180-90-M
ID		0361830	0361840	0361860
End position damping		Hydr. damper	Hydr. damper	Hydr. damper
Angle of rotation	[°]	180.0	180.0	180.0
End position adjustability	[°]	3.0	3.0	90.0
Torque	[Nm]	9.5	9.5	9.5
Middle position		1 x M (pneumatic)	1 x VM (locked)	1 x M (pneumatic)
Adjustability of middle position	[°]	3.0	3.0	3.0
Protection class IP		67	67	67
Weight	[kg]	3.20	3.40	3.30
Fluid consumption (2 x nominal angle)	[cm³]	145.0	145.0	145.0
Nominal operating pressure	[bar]	6.0	6.0	6.0
min./max. operating pressure	[bar]	4/8	4/6.5	4/8
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
Repeat accuracy	[°]	0.05	0.05	0.05
Cleanroom class ISO 14644-1		5	5	5
Options with fluid feed-through				
Designation (soft damping)		SRU-plus 30-W-180-3-M-4	SRU-plus 30-W-180-3-VM-4	SRU-plus 30-W-180-90-M-4
ID		0361832	0361842	0361862
Torque	[Nm]	9.0	9.0	9.0
Weight	[kg]	3.5	3.7	3.6
No. of fluid feed-throughs		4	4	4
max. pressure in the air feed-through	[bar]	8	8	8
Options with fluid and electric feed	l-through			
Designation (soft damping)		SRU-plus 30-W-180-3-M-4-M8	SRU-plus 30-W-180-3-VM-4-M8	SRU-plus 30-W-180-90-M-4-M8
ID		0361834	0361844	0361864
Weight	[kg]	4.2	4.4	4.3
Number / size of E-fittings on the output side		6/M8	6/M8	6/M8
Number of wires		10	10	10
max. voltage	[V]	24	24	24
Max. current per wire / total	[A]	1/1	1/1	1/1
Options with fluid and electric feed	l-through a	nd mounting kit		
Designation (soft damping)		SRU-plus 30-W-180-3-M-4-M8-AS	SRU-plus 30-W-180-3-VM-4-M8-AS	SRU-plus 30-W-180-90-M-4-M8-AS
ID		0361837	0361847	0361867

() All modules are also available in a Viton version. Please contact us for details.

SRU-plus 30

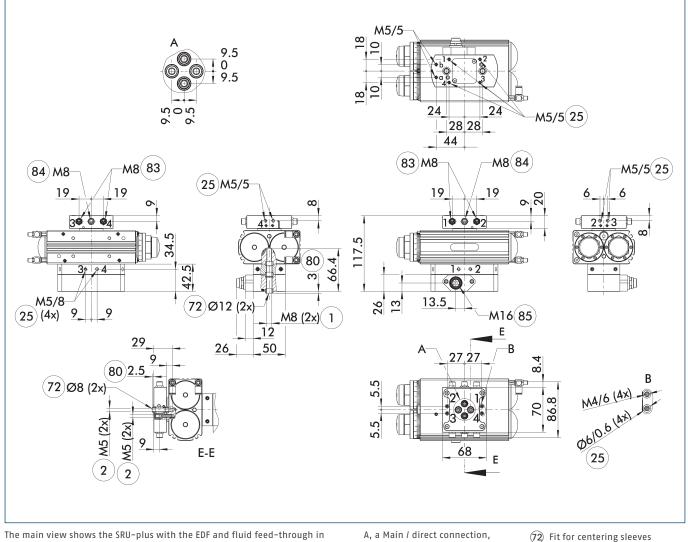
Universal swivel units

Main view for SRU-plus without EDF



- 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).
- B, b Main / direct connection,
- swivel unit counterclockwise turning
- 1 Connection swivel unit
- $\overline{(72)}$ Fit for centering sleeves
- hole in the counter part
- (90) Cover caps
- (91) Not intended for mounting the unit, only for attachments
- (92) Sensor MMS 22..

Main view for SRU-plus with EDF



the most basic version, with a swivel angle of 180°/90°, small end position adjustability of 3°, and without a middle position.

- 1 The SRU-plus swivel unit with the EDF option can only be mounted from the bottom.
- swivel unit clockwise turning
- B, b Main / direct connection, swivel unit counterclockwise turning
- (1) Connection swivel unit $(\mathbf{\hat{2}})$ Attachment connection

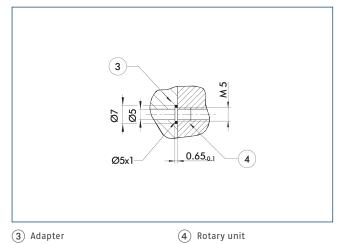
(25) Fluid feed-through

- (80) Depth of the centering sleeve hole in the counter part
- (83) Input for 3 pole sensor feed-through
- (84) Input for 4 pole sensor feed-through
- (85) Sensor feed-through output

SRU-plus 30

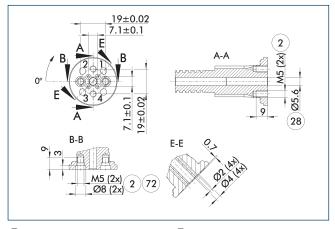
Universal swivel units

Hose-free direct connection M5



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

Pinion with fluid feed-through



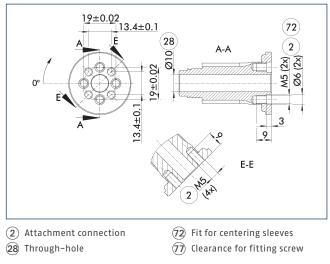
(2) Attachment connection(28) Through-hole

72 Fit for centering sleeves

Pinion screw connection diagram for the fluid feed-through option. The preferred drilling pattern is 2 x screws and 2 x screws with centering sleeve (in \emptyset 8 H7).

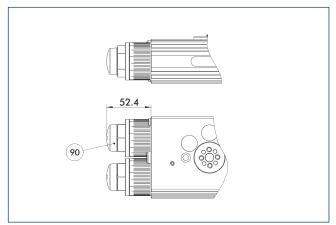
() View applicable only for versions without EDF!

Pinion without fluid feed-through



Mounting pattern for fastening the rotating load to the pinion. The "4x large threads for 4 screws and 2 counter bores for centering sleeves" option is preferable to the "4x small threads for 2 screws and 2 shoulder bots (in the deeper counter bores)" option.

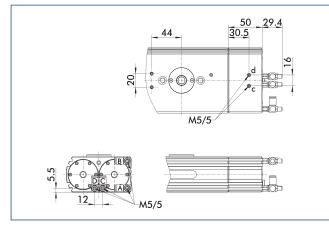
Large end position adjustability 90°



(90) Cover caps

Dimensional changes for the option with "large end position adjustability (90°)". This permits the end positions to be adjusted by up to 93°. More information can be found in the introduction to the series.

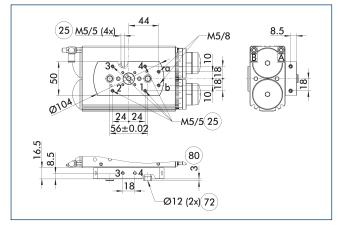
Pneumatic middle position (M)



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

Dimensional changes for the option with the "pneumatic middle position". Heavy attachments may swing before they reach the final position. The locked middle position (VM) can resolve this.

Connections for fluid feed-through



A, a Main / direct connection, swivel unit clockwise turning

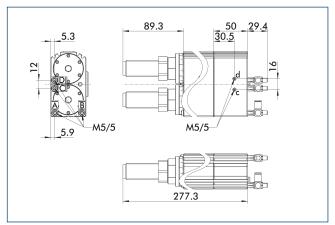
turning

- B, b Main / direct connection, swivel unit counterclockwise
- (25) Fluid feed-through (72) Fit for centering sleeves
- (80) Depth of the centering sleeve hole in the counter part

Lower mounting plate for the fluid feed-through option. Vacuum, gases or fluids can be fed through. The connection may be a screw type or a direct connection.

() View applicable only for versions without EDF!

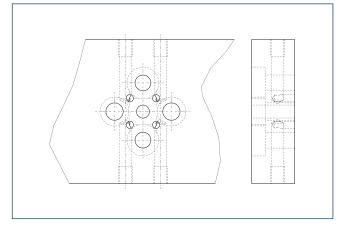
Locked middle position (VM)



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

Dimensional changes with the "locked middle position (VM)" option. The middle position is locked and is actuated with the force of the main drive piston. Shock absorbers dampen the travel to the middle position and prevent overshooting.

Adapter plate design

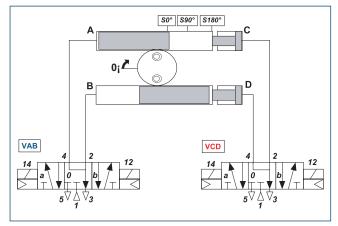


Suggested here is an adapter plate design which allows for all fluid feed-throughs to be accessed as easily as possible.

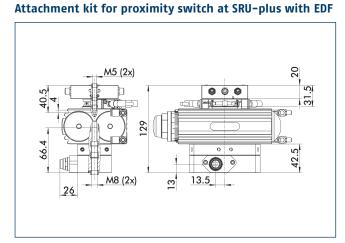
View applicable only for versions without EDF!



Pneumatic diagram of SRU-plus-VM — vertical axis

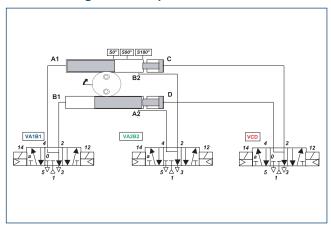


VM rotary actuators with a vertical rotary axis are generally actuated by two 5/3 directional control valves with an exhausted middle position. To prevent damage, it is essential to pay attention to the actuation sequence indicated in the operating manual.



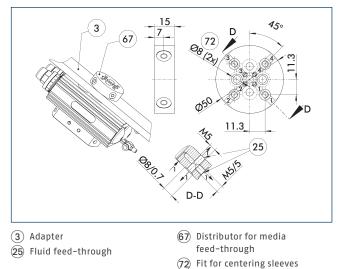
The attachment kit cannot be ordered separately. The SRU-plus with EDF and attachment kit are delivered as a complete unit by SCHUNK. Please pay attention to our options SRU-plus ...-AS.

Pneumatic diagram of SRU-plus-VM — horizontal axis



VM rotary actuators with a horizontal or non-vertical rotary axis must generally be actuated by three 5/3 directional control valves with an exhausted middle position. To prevent damage, it is essential to pay attention to the actuation sequence indicated in the operating manual.

Distributor for SRU-plus

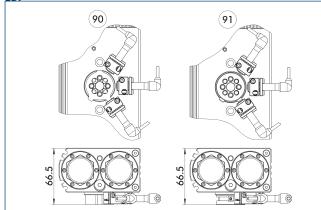


The distributor for SRU-plus facilitates the use of the fluid feed-throughs, both at the direct attachment to the distributor, and in the lines conveying the fluid inside the adapter plate. Due to the distributor, only a simple drilling pattern has to be drilled in the adapter plate located between the pinion and the distributor.

Description	ID
Distributor for SRU-plus	
V-SRU-plus 20/25/30	0357392

() View applicable only for versions without EDF!

Attachment kit for proximity switch at SRU-plus without EDF



(90) AS-NHS-F-SRU-plus 25/30

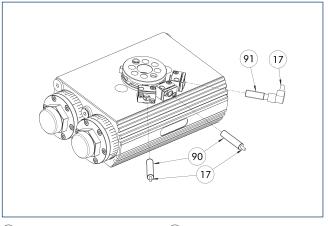
(91) AS-NHS-SRU-plus 30

The attachment kit cannot be ordered separately. The SRU-plus with EDF and attachment kit are delivered as a complete unit by SCHUNK. Please pay attention to our options SRU-plus ...-AS.

Description	ID			
Mounting kit for proximity switch with adjustable cam				
AS-NHS-SRU-plus 20/25/30-4	0361491			
AS-NHS-SRU-plus 20/30	0361490			
Mounting kit for proximity switch with fixed cam				
AS-NHS-F-SRU-plus 25/30	0361695			
AS-NHS-F-SRU-plus 25/30-4	0361496			

Please note the number of necessary feed-throughs for your swivel unit when selecting the proper attachment kit.

Inductive proximity switches IN for SRU-plus without EDF



(17) Cable outlet(90) Sensor IN ...

91) Sensor IN..-SA

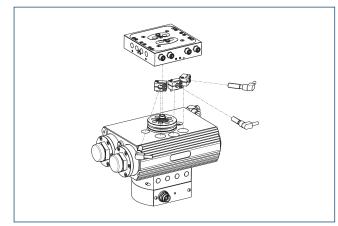
End and intermediate position monitoring can be mounted with mounting kit

Description	ID	Often combined			
Mounting kit for proximity switch with adjustable cam					
AS-NHS-SRU-plus 20/25/30-4	0361491				
AS-NHS-SRU-plus 20/30	0361490				
Mounting kit for proximity switch wit	h fixed cam				
AS-NHS-F-SRU-plus 25/30	0361695				
AS-NHS-F-SRU-plus 25/30-4	0361496				
Inductive Proximity Switches	Inductive Proximity Switches				
IN 80-S-M12	0301578				
IN 80-S-M8	0301478	•			
IN-C 80-S-M8	0301475				
INK 80-S	0301550				
INK 80-SL	0301579				
Inductive proximity switch with lateral outlet					
IN 80-S-M12-SA	0301587				
IN 80-S-M8-SA	0301483	•			
INK 80-S-SA	0301566				

() View applicable only for versions without EDF!

35

Inductive proximity switches IN for SRU-plus with EDF

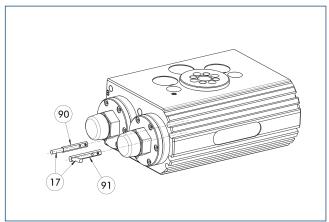


End and intermediate position monitoring mounted directly

Description	ID	Often combined				
Inductive Proximity Switches						
IN 80-S-M12	0301578					
IN 80-S-M8	0301478	•				
IN-C 80-S-M8	0301475					
INK 80-S	0301550					
INK 80-SL	0301579					
Inductive proximity switch with I	ateral outlet					
IN 80-S-M12-SA	0301587					
IN 80-S-M8-SA	0301483	•				
INK 80-S-SA	0301566					
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					
clip for plug/socket						
CLI-M12	0301464					
CLI-M8	0301463					
Connection cables	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	Sensor distributor					
V2-M12	0301776	•				
V2-M8	0301775	•				
V4-M12	0301747					
V4-M8	0301746					
V8-M12	0301752					
V8-M8	0301751					

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.

Electronic magnetic switches MMS



(17) Cable outlet

(91) Sensor MMS 22...-SA

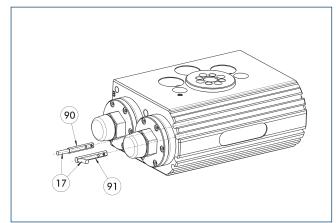
90 Sensor MMS 22..

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 o	utlet			
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				

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.

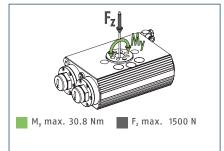
Description	ID	Often combined
Programmable magnetic switch	es MMS PI1	
MMS 22-PI1-S-M8-PNP	0301160	•
MMSK 22-PI1-S-PNP	0301162	
Programmable magnetic switch	es MMS PI1 wi	th lateral cable outlet
MMS 22-PI1-S-M8-PNP-SA	0301166	•
MMSK 22-PI1-S-PNP-SA	0301168	
Programmable magnetic switch	es MMS PI1 wi	th stainless steel housing
MMS 22-PI1-S-M8-PNP-HD	0301110	•
MMSK 22-PI1-S-PNP-HD	0301112	

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.

SCHUNK



Pinion load

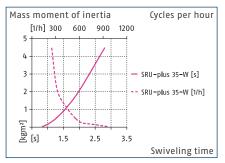


The indicated moments and forces are statical values and should not appear simultaneously Throttling has to be done for ensuring that the rotary motion takes place without impact or bouncing. otherwise the service life reduces.

Technical data of SRU-plus without middle position

Designation (soft damping)		SRU-plus 35-W-90-3	SRU-plus 35-W-180-3	SRU-plus 35-W-180-90
ID		0362000	0362020	0362050
End position damping		Hydr. damper	Hydr. damper	Hydr. damper
Angle of rotation	[°]	90.0	180.0	180.0
End position adjustability	[°]	3.0	3.0	90.0
Torque	[Nm]	14.0	14.0	14.0
Middle position		none	none	none
Protection class IP		67	67	67
Weight	[kg]	2.65	2.65	2.75
Fluid consumption (2 x nominal angle)	[cm³]	132.0	216.0	216.0
Nominal operating pressure	[bar]	6.0	6.0	6.0
min./max. operating pressure	[bar]	4/8	4/8	4/8
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
Repeat accuracy	[°]	0.05	0.05	0.05
Cleanroom class ISO 14644-1		5	5	5
Options with fluid feed-through				
Designation (soft damping)		SRU-plus 35-W-90-3-4	SRU-plus 35-W-180-3-4	SRU-plus 35-W-180-90-4
ID		0362002	0362022	0362052
Torque	[Nm]	13.4	13.4	13.4
Weight	[kg]	2.95	2.95	3.05
No. of fluid feed-throughs		4	4	4
max. pressure in the air feed-through	[bar]	8	8	8
Options with fluid and electric feed	-through			
Designation (soft damping)		SRU-plus 35-W-90-3-4-M8	SRU-plus 35-W-180-3-4-M8	SRU-plus 35-W-180-90-4-M8
ID		0362004	0362024	0362054
Weight	[kg]	3.7	3.7	3.8
Number / size of E-fittings on the output side		6/M8	6/M8	6/M8
Number of wires		10	10	10
max. voltage	[V]	24	24	24
Max. current per wire / total	[A]	1/1	1/1	1/1
Options with fluid and electric feed	l-through a	nd mounting kit		
Designation (soft damping)		SRU-plus 35-W-90-3-4-M8-AS	SRU-plus 35-W-180-3-4-M8-AS	SRU-plus 35-W-180-90-4-M8-AS
ID		0362007	0362027	0362057

Max. admissible inertia J



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.

Technical data of SRU-plus with middle position

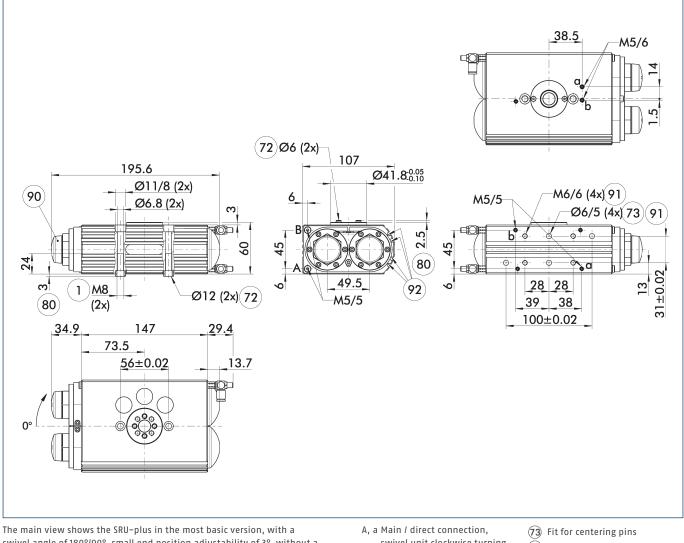
Designation (soft damping)		SRU-plus 35-W-180-3-M	SRU-plus 35-W-180-3-VM	SRU-plus 35-W-180-90-M
ID		0362030	0362040	0362060
End position damping		Hydr. damper	Hydr. damper	Hydr. damper
Angle of rotation	[°]	180.0	180.0	180.0
End position adjustability	[°]	3.0	3.0	90.0
Torque	[Nm]	14.0	14.0	14.0
Middle position		1 x M (pneumatic)	1 x VM (locked)	1 x M (pneumatic)
Adjustability of middle position	[°]	3.0	3.0	3.0
Protection class IP		67	67	67
Weight	[kg]	3.65	4.15	3.75
Fluid consumption (2 x nominal angle)	[cm³]	216.0	216.0	216.0
Nominal operating pressure	[bar]	6.0	6.0	6.0
min./max. operating pressure	[bar]	4/8	4/6.5	4/8
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
Repeat accuracy	[°]	0.05	0.05	0.05
Cleanroom class ISO 14644-1		5	5	5
Options with fluid feed-through				
Designation (soft damping)		SRU-plus 35-W-180-3-M-4	SRU-plus 35-W-180-3-VM-4	SRU-plus 35-W-180-90-M-4
ID		0362032	0362042	0362062
Torque	[Nm]	13.4	13.4	13.4
Weight	[kg]	3.95	4.45	4.05
No. of fluid feed-throughs		4	4	4
max. pressure in the air feed-through	[bar]	8	8	8
Options with fluid and electric feed	-through			
Designation (soft damping)		SRU-plus 35-W-180-3-M-4-M8	SRU-plus 35-W-180-3-VM-4-M8	SRU-plus 35-W-180-90-M-4-M8
ID		0362034	0362044	0362064
Weight	[kg]	4.7	5.2	4.8
Number / size of E-fittings on the output side		6/M8	6/M8	6/M8
Number of wires		10	10	10
max. voltage	[V]	24	24	24
Max. current per wire / total	[A]	1/1	1/1	1/1
Options with fluid and electric feed				
options with hard and ciccult iced	-through a	nd mounting kit		
Designation (soft damping)	-through a	nd mounting kit SRU-plus 35-W-180-3-M-4-M8-AS	SRU-plus 35-W-180-3-VM-4-M8-AS	SRU-plus 35-W-180-90-M-4-M8-AS

① All modules are also available in a Viton version. Please contact us for details.

SRU-plus 35

Universal swivel units

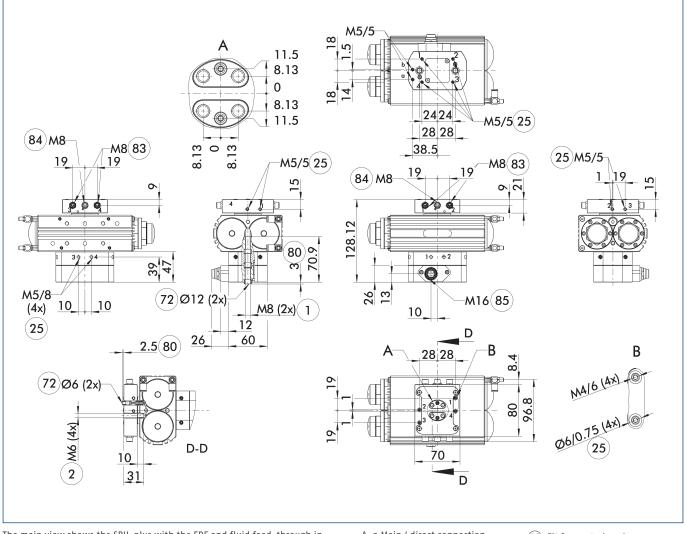
Main view for SRU-plus without EDF



swivel angle of 180°/90°, small end position adjustability of 3°, without a middle position, and without fluid feed-through.

- 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
- $\overline{(72)}$ Fit for centering sleeves
- 80 Depth of the centering sleeve hole in the counter part
- 90 Cover caps
- (91) Not intended for mounting the unit, only for attachments
- (92) Sensor MMS 22..

Main view for SRU-plus with EDF



The main view shows the SRU-plus with the EDF and fluid feed-through in the most basic version, with a swivel angle of 180°/90°, small end position adjustability of 3°, and without a middle position.

- The SRU-plus swivel unit with the EDF option can only be mounted from the bottom.
- A, a Main / direct connection, swivel unit clockwise turning
- B, b Main / direct connection, swivel unit counterclockwise turning
- Connection swivel unit
 Attachment connection

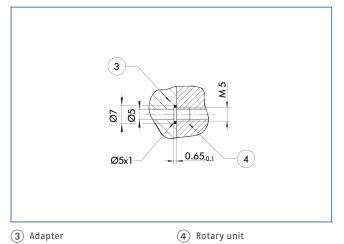
(25) Fluid feed-through

- 72) Fit for centering sleeves
- (80) Depth of the centering sleeve hole in the counter part
- (83) Input for 3 pole sensor feed-through
- (84) Input for 4 pole sensor feed-through
- (85) Sensor feed-through output

SRU-plus 35

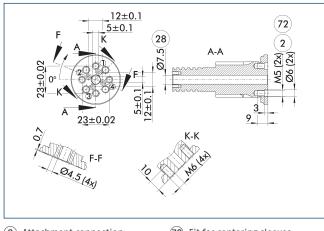
Universal swivel units

Hose-free direct connection M5



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

Pinion with fluid feed-through

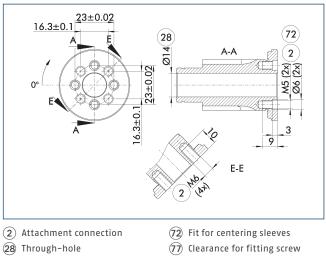


(2) Attachment connection(28) Through-hole

Mounting pattern for fastening the rotating load to the pinion. The "4x large threads for 4 screws and 2 counter bores for centering sleeves" option is preferable to the "4x small threads for 2 screws and 2 shoulder bots (in the deeper counter bores)" option.

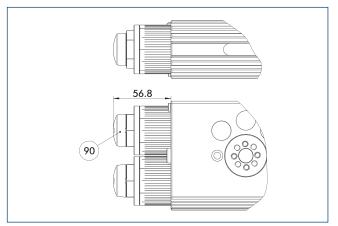
① View applicable only for versions without EDF!

Pinion without fluid feed-through



Mounting pattern for fastening the rotating load to the pinion. The ",4x large threads for 4 screws and 2 counter bores for centering sleeves" option is preferable to the ",4x small threads for 2 screws and 2 shoulder bots (in the deeper counter bores)" option.

Large end position adjustability 90°

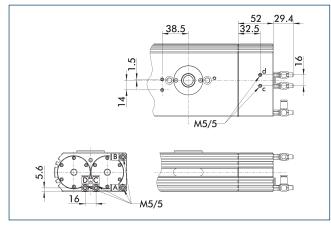


(90) Cover caps

Dimensional changes for the option with "large end position adjustability (90°)". This permits the end positions to be adjusted by up to 93°. More information can be found in the introduction to the series.

⁽⁷²⁾ Fit for centering sleeves(77) Clearance for fitting screw

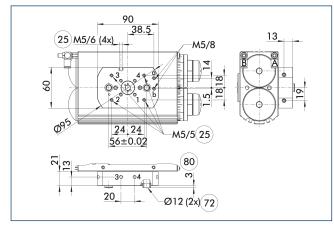
Pneumatic middle position (M)



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

Dimensional changes for the option with the "pneumatic middle position". Heavy attachments may swing before they reach the final position. The locked middle position (VM) can resolve this.

Connections for fluid feed-through

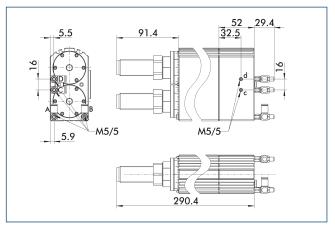


- A, a Main / direct connection, swivel unit clockwise turning
- B, b Main / direct connection, swivel unit counterclockwise turning
- (25) Fluid feed-through
- (72) Fit for centering sleeves (80) Depth of the centering sleeve
- hole in the counter part

Lower mounting plate for the fluid feed-through option. Vacuum, gases or fluids can be fed through. The connection may be a screw type or a direct connection.

() View applicable only for versions without EDF!

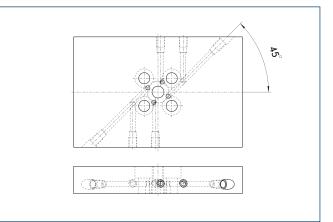
Locked middle position (VM)



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

Dimensional changes with the "locked middle position (VM)" option. The middle position is locked and is actuated with the force of the main drive piston. Shock absorbers dampen the travel to the middle position and prevent overshooting.

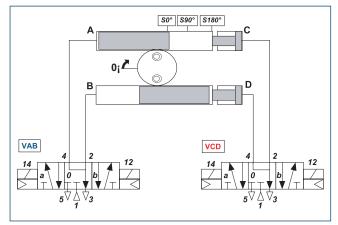
Adapter plate design



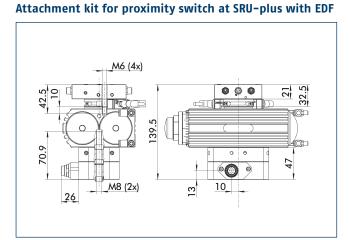
Suggested here is an adapter plate design which allows for all fluid feed-throughs to be accessed as easily as possible.

View applicable only for versions without EDF!

Pneumatic diagram of SRU-plus-VM — vertical axis

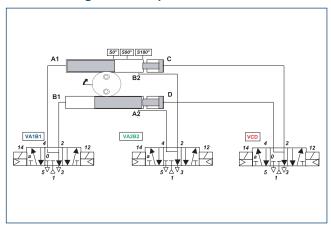


VM rotary actuators with a vertical rotary axis are generally actuated by two 5/3 directional control valves with an exhausted middle position. To prevent damage, it is essential to pay attention to the actuation sequence indicated in the operating manual.



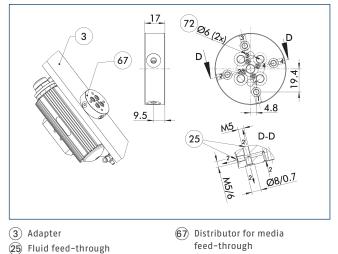
The attachment kit cannot be ordered separately. The SRU-plus with EDF and attachment kit are delivered as a complete unit by SCHUNK. Please pay attention to our options SRU-plus ...-AS.

Pneumatic diagram of SRU-plus-VM — horizontal axis



VM rotary actuators with a horizontal or non-vertical rotary axis must generally be actuated by three 5/3 directional control valves with an exhausted middle position. To prevent damage, it is essential to pay attention to the actuation sequence indicated in the operating manual.

Distributor for SRU-plus



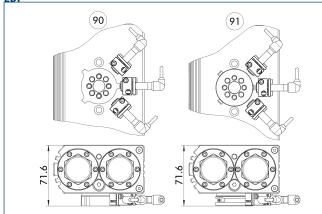
(72) Fit for centering sleeves

The distributor for SRU-plus facilitates the use of the fluid feed-throughs, both at the direct attachment to the distributor, and in the lines conveying the fluid inside the adapter plate. Due to the distributor, only a simple drilling pattern has to be drilled in the adapter plate located between the pinion and the distributor.

Description	ID
Distributor for SRL	-plus
V-SRU-plus 35	0357792

() View applicable only for versions without EDF!

Attachment kit for proximity switch at SRU-plus without EDF



90 AS-NHS-F-SRU-plus 35

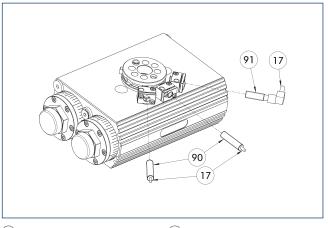
(91) AS-NHS-SRU-plus 35

The attachment kit cannot be ordered separately. The SRU-plus with EDF and attachment kit are delivered as a complete unit by SCHUNK. Please pay attention to our options SRU-plus ...-AS.

Description	ID	
Mounting kit for proximity swite	ch with adjust	able cam
AS-NHS-SRU-plus 35	0362090	
AS-NHS-SRU-plus 35-4	0362091	
Mounting kit for proximity swite	ch with fixed	cam
AS-NHS-F-SRU-plus 35	0362095	
AS-NHS-F-SRU-plus 35-4	0362096	

Please note the number of necessary feed-throughs for your swivel unit when selecting the proper attachment kit.

Inductive proximity switches IN for SRU-plus without EDF



(17) Cable outlet(90) Sensor IN ...

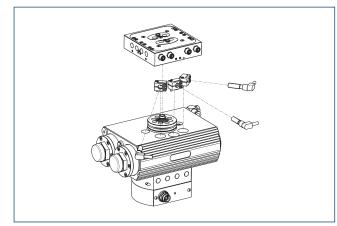
91) Sensor IN..-SA

End and intermediate position monitoring can be mounted with mounting kit

Description	ID	Often combined
Mounting kit for proximity swit	ch with adjust	table cam
AS-NHS-SRU-plus 35	0362090	
AS-NHS-SRU-plus 35-4	0362091	
Mounting kit for proximity swit	ch with fixed	cam
AS-NHS-F-SRU-plus 35	0362095	
AS-NHS-F-SRU-plus 35-4	0362096	
Inductive Proximity Switches		
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	•
IN-C 80-S-M8	0301475	
INK 80-S	0301550	
INK 80-SL	0301579	
Inductive proximity switch with	h lateral outle	t
IN 80-S-M12-SA	0301587	
IN 80-S-M8-SA	0301483	•
INK 80-S-SA	0301566	

() View applicable only for versions without EDF!

Inductive proximity switches IN for SRU-plus with EDF

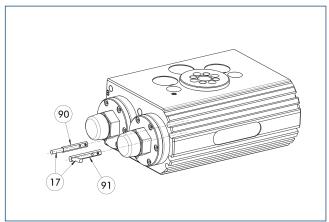


End and intermediate position monitoring mounted directly

Description	ID	Often combined
Inductive Proximity Switches		
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	•
IN-C 80-S-M8	0301475	
INK 80-S	0301550	
INK 80-SL	0301579	
Inductive proximity switch with la	teral outlet	
IN 80-S-M12-SA	0301587	
IN 80-S-M8-SA	0301483	•
INK 80-S-SA	0301566	
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	
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-M12	0301776	•
V2-M8	0301775	•
V4-M12	0301747	
V4-M8	0301746	
V8-M12	0301752	
V8-M8	0301751	

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.

Electronic magnetic switches MMS



(17) Cable outlet

(91) Sensor MMS 22...-SA

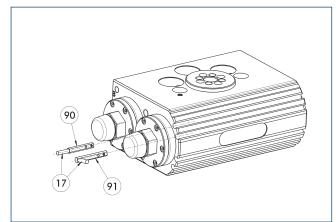
90 Sensor MMS 22..

End and intermediate position monitoring mounted in C-slot

Electronic magnetic switches MMS MMS 22-S-M8-PNP 0301032 ● MMS 22-S-PNP 0301034 ● MMS electronic magnetic switches with lateral outlet ● ● MMS 22-S-M8-PNP-SA 0301042 ● ● MMS 22-S-M8-PNP-SA 0301042 ● ● MMS 22-S-PNP-SA 0301042 ● ● MMS 22-S-PNP-SA 0301042 ● ● Cable extension ●	Description	ID	Often combined
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 0301044 KV BW08-SG08 3P-0030-PNP 0301495 KV BW08-SG08 3P-0100-PNP 0301497 KV BW08-SG08 3P-0200-PNP 0301497 Clip for plug/socket 0301463 Clinection cables 0301622 KA BG08-L 3P-0300-PNP 0301622 KA BG08-L 3P-0300-PNP 0301623 KA BG08-L 3P-0300-PNP 0301524 KA BW08-L 3P-0300-PNP 0301594 KA BW08-L 3P-0500-PNP 0301502 Sensor distributor V2-M8 V2-M8 0301775	Electronic magnetic switches MMS		
MMS electronic magnetic switches with lateral outlet MMS electronic magnetic switches with lateral outlet MMS 22-S-M8-PNP-SA 0301042 MMSK 22-S-PNP-SA 0301042 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-0500-PNP 0301594 KA BW08-L 3P-0500-PNP 0301502 Sensor distributor V2-M8 0301775 V4-M8 0301746	MMS 22-S-M8-PNP	0301032	•
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 0301523 KA BW08-L 3P-0500-PNP 0301594 KA BW08-L 3P-0500-PNP 0301502 Sensor distributor V2-M8 0301775 ● V4-M8 0301746	MMSK 22-S-PNP	0301034	
MMSK 22-S-PNP-SA 0301044 Cable extension	MMS electronic magnetic switches	with lateral o	utlet
Cable extension O301495 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 • Clip for plug/socket • CLI-M8 0301463 Connection cables • KA BG08-L 3P-0300-PNP 0301622 KA BG08-L 3P-0500-PNP 0301502 KA BW08-L 3P-0500-PNP 0301502 Sensor distributor • V2-M8 0301775 V4-M8 0301746	MMS 22-S-M8-PNP-SA	0301042	•
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 0301497 CliP Max 0301497 Clip for plug/socket 0301497 CLI-M8 0301463 Connection cables 0301622 KA BG08-L 3P-0300-PNP 0301623 KA BG08-L 3P-0300-PNP 0301594 KA BW08-L 3P-0300-PNP 0301502 Sensor distributor V2-M8 V2-M8 0301775 V4-M8 0301746	MMSK 22-S-PNP-SA	0301044	
KV BW08-SG08 3P-0100-PNP 0301496 KV BW08-SG08 3P-0200-PNP 0301497 clip for plug/socket	Cable extension		
KV BW08-SG08 3P-0200-PNP 0301497 ● clip for plug/socket 0301497 ● Cli-M8 0301463 0301463 Connection cables 0301622 ● KA BG08-L 3P-0300-PNP 0301623 ● KA BG08-L 3P-0500-PNP 0301594 ● KA BW08-L 3P-0300-PNP 0301502 ● Sensor distributor V2-M8 0301775 ● V4-M8 0301746 ● ●	KV BW08-SG08 3P-0030-PNP	0301495	
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 V2-M8 0301775 V4-M8 0301746	KV BW08-SG08 3P-0100-PNP	0301496	
CLI-M8 0301463 Connection cables 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 • •	KV BW08-SG08 3P-0200-PNP	0301497	•
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 0301594 KA BW08-L 3P-0500-PNP 0301502 Sensor distributor V2-M8 0301775 ● V4-M8 0301746	clip for plug/socket		
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 •	CLI-M8	0301463	
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 V2-M8 0301775 V4-M8 0301746	Connection cables		
KA BW08-L 3P-0300-PNP 0301594 KA BW08-L 3P-0500-PNP 0301502 Sensor distributor V2-M8 V2-M8 0301775 V4-M8 0301746	KA BG08-L 3P-0300-PNP	0301622	•
KA BW08-L 3P-0500-PNP 0301502 Sensor distributor V2-M8 V2-M8 0301775 V4-M8 0301746	KA BG08-L 3P-0500-PNP	0301623	
Sensor distributor V2-M8 0301775 V4-M8 0301746	KA BW08-L 3P-0300-PNP	0301594	
V2-M8 0301775 • V4-M8 0301746	KA BW08-L 3P-0500-PNP	0301502	
V4-M8 0301746	Sensor distributor		
	V2-M8	0301775	•
V8-M8 0301751	V4-M8	0301746	
	V8-M8	0301751	

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.

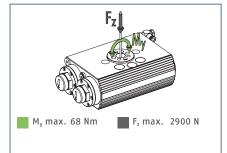
Description	ID	Often combined
Programmable magnetic switch	es MMS PI1	
MMS 22-PI1-S-M8-PNP	0301160	•
MMSK 22-PI1-S-PNP	0301162	
Programmable magnetic switch	es MMS PI1 wi	th lateral cable outlet
MMS 22-PI1-S-M8-PNP-SA	0301166	•
MMSK 22-PI1-S-PNP-SA	0301168	
Programmable magnetic switch	es MMS PI1 wi	th stainless steel housing
MMS 22-PI1-S-M8-PNP-HD	0301110	•
MMSK 22-PI1-S-PNP-HD	0301112	

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.

SCHUNK



Pinion load

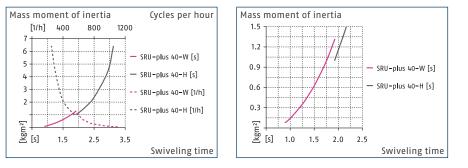


The indicated moments and forces are statical values and should not appear simultaneously Throttling has to be done for ensuring that the rotary motion takes place without impact or bouncing. otherwise the service life reduces.

Technical data of SRU-plus without middle position

Designation (soft damping)		SRU-plus 40-W-90-3	SRU-plus 40-W-180-3	SRU-plus 40-W-180-90
ID		0362200	0362220	0362250
Description (Hard Damping)		SRU-plus 40-H-90-3	SRU-plus 40-H-180-3	SRU-plus 40-H-180-90
ID		0362300	0362320	0362350
End position damping		Hydr. damper	Hydr. damper	Hydr. damper
Angle of rotation	[°]	90.0	180.0	180.0
End position adjustability	[°]	3.0	3.0	90.0
Torque	[Nm]	20.0	20.0	20.0
Middle position		none	none	none
Protection class IP		67	67	67
Weight	[kg]	4.20	4.20	4.30
Fluid consumption (2 x nominal angle)	[cm³]	208.0	336.0	336.0
Nominal operating pressure	[bar]	6.0	6.0	6.0
min./max. operating pressure	[bar]	4/8	4/8	4/8
Diameter of connecting hose		8 x 6 x 1	8 x 6 x 1	8 x 6 x 1
min./max. ambient temperature	[°C]	5/60	5/60	5/60
Repeat accuracy	[°]	0.05	0.05	0.05
Cleanroom class ISO 14644–1		5	5	5
Options with fluid feed-through				
Designation (soft damping)		SRU-plus 40-W-90-3-8	SRU-plus 40-W-180-3-8	SRU-plus 40-W-180-90-8
ID		0362202	0362222	0362252
Description (Hard Damping)		SRU-plus 40-H-90-3-8	SRU-plus 40-H-180-3-8	SRU-plus 40-H-180-90-8
ID		0362302	0362322	0362352
Torque	[Nm]	19.2	19.2	19.2
Weight	[kg]	4.9	4.9	5
No. of fluid feed-throughs		8	8	8
max. pressure in the air feed-through	[bar]	8	8	8
Options with fluid and electric feed	l-through			
Designation (soft damping)		SRU-plus 40-W-90-3-8-M8	SRU-plus 40-W-180-3-8-M8	SRU-plus 40-W-180-90-8-M8
ID		0362204	0362224	0362254
Description (Hard Damping)		SRU-plus 40-H-90-3-8-M8	SRU-plus 40-H-180-3-8-M8	SRU-plus 40-H-180-90-8-M8
ID		0362304	0362324	0362354
Weight	[kg]	6.45	6.45	6.55
Number / size of E-fittings on the output side		9/M8	9/M8	9/M8
Number of wires		10	10	10
max. voltage	[V]	24	24	24
Max. current per wire / total	[A]	1/1	1/1	1/1
Options with fluid and electric feed	l-through a	and mounting kit		
Designation (soft damping)		SRU-plus 40-W-90-3-8-M8-AS	SRU-plus 40-W-180-3-8-M8-AS	SRU-plus 40-W-180-90-8-M8-AS
ID		0362207	0362227	0362257
Description (Hard Damping)		SRU-plus 40-H-90-3-8-M8-AS	SRU-plus 40-H-180-3-8-M8-AS	SRU-plus 40-H-180-90-8-M8-AS
ID		0362307	0362327	0362357
Diameter of connecting hose min./max. ambient temperature Repeat accuracy Cleanroom class ISO 14644-1 Options with fluid feed-through Designation (soft damping) ID Description (Hard Damping) ID Torque Weight No. of fluid feed-throughs max. pressure in the air feed-through Options with fluid and electric feed Designation (soft damping) ID Description (Hard Damping) ID Weight Number / size of E-fittings on the output side Number of wires max. voltage Max. current per wire / total Options with fluid and electric feed Designation (soft damping) ID Description (soft damping) ID Designation (soft damping) ID	[°C] [°] [Nm] [kg] [bar] [bar] [kg] [kg]	8 x 6 x 1 5/60 0.05 5 V SRU-plus 40-W-90-3-8 0362202 SRU-plus 40-H-90-3-8 0362302 19.2 4.9 8 0362204 SRU-plus 40-W-90-3-8-M8 0362204 SRU-plus 40-W-90-3-8-M8 0362204 SRU-plus 40-H-90-3-8-M8 0362304 6.45 9/M8 10 24 1/1 mounting kit SRU-plus 40-W-90-3-8-M8-AS 0362207 SRU-plus 40-W-90-3-8-M8-AS	8 x 6 x 1 5/60 0.05 5 V SRU-plus 40-W-180-3-8 0362222 SRU-plus 40-H-180-3-8 0362322 19.2 4.9 8 0362224 SRU-plus 40-H-180-3-8 0362322 19.2 4.9 8 8 SRU-plus 40-W-180-3-8-M8 0362224 SRU-plus 40-H-180-3-8-M8 0362224 SRU-plus 40-H-180-3-8-M8 0362324 6.45 9/M8 10 24 1/1 V SRU-plus 40-W-180-3-8-M8-AS 0362227 SRU-plus 40-W-180-3-8-M8-AS	8 x 6 x 1 5/60 0.05 5 SRU-plus 40-W-180-90-8 0362252 SRU-plus 40-H-180-90-8 0362352 19.2 5 8 0362254 SRU-plus 40-H-180-90-8-M8 0362254 SRU-plus 40-H-180-90-8-M8 0362254 SRU-plus 40-H-180-90-8-M8 0362354 6.55 9/M8 10 24 1/1 SRU-plus 40-W-180-90-8-M8-AS 0362257 SRU-plus 40-W-180-90-8-M8-AS 0362257 SRU-plus 40-H-180-90-8-M8-AS

Max. admissible inertia J



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.

Technical data of SRU-plus with middle position

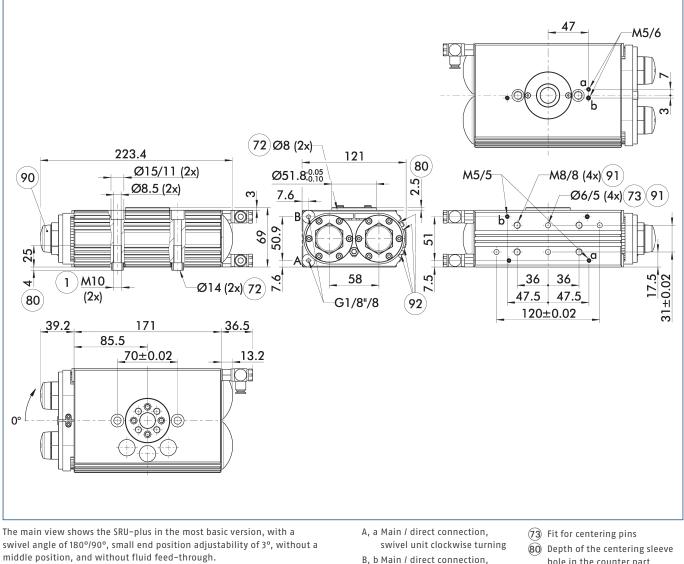
Angle of rotation Mdr. damper Mydr. damper Mydr. damper Angle of rotation [*] 180.0 180.0 180.0 Angle of rotation [*] 180.0 180.0 180.0 Torque [*] 20.0 20.0 20.0 Middle position [*] 1.4 (Ipourmatic) 1.4 (Ipourmatic) 1.4 (Ipourmatic) Algistability of middle position [*] 3.0 3.0 3.0 Protection class IP [*] 6.7 6.7 6.7 Ruid consumption (2 x nominal) [*] 3.6.0 5.0 5.0 Nominal operating pressure [*] 6.0 6.0 6.0 Inimax, operating pressure [*] 8.6 x 1.3 8.5 x 1.3 8.5 x 5.1 Rotation class ISO 1464-1 [*] 160 0.5 0.0 0.0 Repeat accurate Mereature [*] 8.6 x 1.3 8.5 x 1.3 8.5 x 1.3 8.5 x 1.3 Digitation (find fed-through [*] 8.0 x 1.3 0.0 1.0 1.0	Designation (soft damping)		SRU-plus 40-W-180-3-M	SRU-plus 40-W-180-3-VM	SRU-plus 40-W-180-90-M
Angle of rotation [9] 180.0 180.0 180.0 End position adjustability [1] 3.0.0 9.0.0 Torque Nm 20.0 20.0 Middle position [1] 3.0.0 3.0.0 3.0.0 Adjustability of middle position [2] 3.0.0 3.0.0 3.0.0 Adjustability of middle position [2] 3.0.0 3.0.0 3.0.0 Potection class IP [6] 5.70 6.7 6.7 Weight [kg] 5.50 6.50 5.70 Nominal operating pressure [ba] 6.0 6.0 6.0 Ininmax. operating pressure [ba] 6.0 5.50 5.50 Dimeter of Connecting hose 8 x 6 x 1 8 x 5 x 1 5.50 Ininmax. ambient temperature [°C] 5.60 5.50 5.50 Options with fluid feed-through 5 x 5 1 5.50 5.50 Options with fluid feed-through 6.2 7.2 5.2 5.50 Option with fluid feed-t	ID		0362230	0362240	0362260
End position algostability $?!$ 3.0 3.0 3.0 3.0 TorqueN 2.0 2.0 2.0 2.0 Midde position $!$ 3.0 3.0 3.0 3.0 Adjustability of middle position $!$ 3.0 3.0 3.0 3.0 Protection class IP $!$ 7.0 5.0 5.0 5.0 5.0 Neight $!$ 3.0 5.0 5.0 3.0 3.0 Nominal constraints $!$ 3.0 3.0 3.0 3.0 Nominal constraints $!$ 3.0 3.0 3.0 3.0 Nominal constraints $!$ 8.0 1.0 3.0 3.0 Nominal constraints $!$ 8.0 1.0 3.0 3.0 Nominal constraints $!$ 8.0 8.0 1.0 3.0 Nominal constraints $!$ 8.0 8.0 1.0 1.0 Nominal constraints $!$ 8.0 1.0 1.0 1.0 Nominal constraints $!$ 1.0 1.0 1.0 1.0 Nominal constraints	End position damping		Hydr. damper	Hydr. damper	Hydr. damper
Torque[Mi]0.020.00.00.0Midde position1 × M (penumatic)1 × M (locked)1 × M (locked)1 × M (locked)Algustability of midde position[93.03.03.0Protection class IP667.07.0Weight[kg]5.06.05.05.0Fluid consumption [2 x nomp][ba]3.0.03.0.03.0.0Nominal operating pressure[ba]6.06.06.0Inmax, apperating pressure[ba]8.6 x 18.6 x 18.6 x 1Patteret orionecting hose8.6 x 18.6 x 18.6 x 18.6 x 1Inimax, ambient emperature[°]5.05.05.0Clearcow class ID 1644-155.05.05.0Deteret orionecting hose06.00.00.0Interet orionecting hose05.05.05.0Potome Wth fluid feed-through10.00.055.0Drouge Wth fluid feed-through00.022200.02202Torque[M]9.20.20.022020.02202Torque[M]9.20.00.00.0No. of fluid feed-through00.00.00.0Drouge Wth fluid and electricet-truet00.02240.02040.0Potome Wth fluid and electricet-truet00.02140.02140.0214Potome Wth fluid And electricet-truet0.00.02140.02140.0214Number / s	Angle of rotation	[°]	180.0	180.0	180.0
Midde positionI1 x M (pneumatic)1 x V (locked)1 x M (pneumatic)Adjustability of midde positionI3.03.03.0Protection class IPS676767WeightRg15.505.05.05.0Fluid consumption (2 x nominal angle)Rm136.036.036.0Nominal operating pressureDat6.06.06.0Nominal operating pressureDat8 x 6 x 18 x 6 x 18 x 6 x 1Nominal operating pressureIP5.05.05.05.0Nominal operating pressurePC5.05.05.05.0Nominal operating pressurePC5.05.05.05.0Nominal operating pressurePC5.05.05.05.0Nominal operating pressurePC5.05.05.05.0Repeat accuracyPC0.00.05.05.05.0Ottom class 150 1464-100.50.05.05.05.0Differed-throughPC5.05.05.05.05.0Differed-throughP0.052220.05.25.05.0Differed-throughP0.05.25.05.05.0Differed-throughP0.05.25.05.05.0Differed-throughRu9.25.25.05.05.0Differed-throughP0.05.25.05.05.0	End position adjustability	[°]	3.0	3.0	90.0
Adjustability of middle position [*] 3.0 3.0 3.0 Protection class IP 57 67 67 67 Weight [kg] 5.50 6.50 5.70 Flidid consumption [2 x nominal angle) [kg] 336.0 336.0 336.0 Nominal operating pressure [ba] 6.0 6.0 6.0 Ini.n.max. operating pressure [ba] 4/8 4/6.5 4/8 Diameter of connecting pressure [ba] 4/8 4/6.5 4/8 Diameter of connecting pressure [ba] 4/8 4/6.5 4/8 Clarroom class [50 16464-1 [5 5 5 5 Clarroom class [50 16464-1 [ca] 5 5 5 Clarroom class [50 16464-1 [ca] 5 5 5 5 Options with fluid feed-through [ca] SRU-plus 40-W-180-3-M-8 SRU-plus 40-W-180-90-M-8 SU-plus 40-W-180-90-M-8-M8 SU-plus 40-W-180-90-M-8-M8 SU-plus 40-W-180-90-M-8	Torque	[Nm]	20.0	20.0	20.0
Protection class IPNo67676767Weight[kg]5.506.505.70Fluid consumption (2 x noninal agle)[cm]36.038.038.0Nominal operating pressure[bar]6.06.06.0Ibameter of connecting hores[bar]4/84/6.54/8Diameter of connecting hores8 x 6 x 1x 6 x 1x 6 x 1Diameter of connecting hores[°C]5/605/605/60Diameter of connecting hore0555Options with fluid feed-through5555Options with fluid feed-through052242036224203622420362262Orque[Ma]9.29.20.59.69.6No. of fluid feed-through8889.89.89.8No. of fluid feed-through[Ma]9.29.29.29.29.2Options with fluid and electric feed-through889.89.89.89.8Options with fluid and electric feed-through003622400362244036224 <t< td=""><td>Middle position</td><td></td><td>1 x M (pneumatic)</td><td>1 x VM (locked)</td><td>1 x M (pneumatic)</td></t<>	Middle position		1 x M (pneumatic)	1 x VM (locked)	1 x M (pneumatic)
Weight[kg]5.06.505.70Fluid cosumption (2 x nominal angle)Gml-336.036.036.0Nominal operating pressure[bar]6.06.06.0min.Jmax. operating pressure[bar]8.748.76 x 18.76 x 1Diameter of connecting hose*8.76 x 18.76 x 18.76 x 1Bepeat accuracy[9]0.500.050.05Bergenat science*555Optioner thild feed-through*8.10 x 10.0 x 10.	Adjustability of middle position	[°]	3.0	3.0	3.0
Fluid consumption (2 x nominal angle)NomSac.onSac.onSac.onNominal operating pressure[bar]6.06.06.0Nominal operating pressure[bar]6.06.06.0Diameter of connecting pressure[bar]8 x 6 x 18 x 6 x 18 x 6 x 1Diameter of connecting pressure[bar]8 x 6 x 18 x 6 x 18 x 6 x 1Diameter of connecting pressure[Cu]5.005.005.00Repeat accuracy[Cu]0.050.050.05Clearnoom class (50 1464+1)[Cu]5503622242Designation (soft damping)[Cu]5.020.6222420.622242Torque[Mi]19.20.250.6222420.622242Torque[Mi]19.20.250.62No. of fluid feed-through[Ru]8.08.08.0Max. pressure in the air feed-through[Ru]8.08.08.0Potome with fluid and electric feed-through[Ru]36.20362244362.20Dignation (soft damping)[Xu]1.0362.20362.20362.20No. of fluid feed-through[Ru]8.08.08.09.0Potome with fluid and electric feed-through[Ru]36.0362.20362.20Dignation (soft damping)[Ru]9.0362.20362.20362.20Dignation (soft damping)[Ru]36.20362.20362.20362.20Dignation (soft damping)[Ru]36.20<	Protection class IP		67	67	67
angle LCm ² 35.0 35.0 35.0 Nominal operating pressure [bar] 6.0 6.0 6.0 min./max. operating pressure [bar] 4/8 4/6.5 4/8 Diameter of connecting hose 8 x 6 x 1 8 x 6 x 1 8 x 6 x 1 min./max. ambient temperature [°C] 5/60 5/60 5/60 Repeat accuracy [°] 0.05 0.05 0.05 Options with fluid feed-through 5 8/0-plus 40-W-180-3-M-8 S/0-plus 40-W-180-3-M-8 Do 362232 0362242 0362262 0362262 Torque [M] 19.2 19.2 19.2 0.4 No. of fluid feed-through 6 8 8 8 Weight [Sur] 6.2 7.2 6.4 8 No. of fluid feed-through 8 8 8 8 8 Dottons with fluid red-through 9 8 8 8 8 Designation (soft damping) [Sur] Surplus 40-W180-3-M-8	Weight	[kg]	5.50	6.50	5.70
Inimax Iparl 4/8 4/6.5 4/8 Diameter of connecting hose 8 × 6 × 1 8 × 6 × 1 8 × 6 × 1 Diameter of connecting hose 8 × 6 × 1 8 × 6 × 1 8 × 6 × 1 min./max. ambient temperature [°C] 5/60 5/60 Repeat accuracy [°] 0.05 0.05 Clearnoom class 150 14644-1 5 5 5 Options with fluid feed-through [°] 0.05232 0362242 0362262 Options with fluid feed-through [N] 9.2 19.2 0362262 Torque [M] 19.2 12.2 0362242 0362262 No. of fluid feed-throughs [R] 8 8 8 8 No. of fluid feed-throughs [R] 8 8 8 8 No. of fluid feed-through [Surplus 40-W-180-3-M-8-MS 8 8 8 Options with fluid and electric feed-through 8 8 8 8 8 Number / size of E-fittings on the [Surplus 40-W-180-3-M-8-MS <t< td=""><td>Fluid consumption (2 x nominal angle)</td><td>[cm³]</td><td>336.0</td><td>336.0</td><td>336.0</td></t<>	Fluid consumption (2 x nominal angle)	[cm³]	336.0	336.0	336.0
Dimeter of connecting hose 8 x 6 x 1 8 x 6 x 1 8 x 6 x 1 min./max. ambient temperature [°C] 5/60 5/60 5/60 Repeat accuracy [°] 0.05 0.05 0.05 Options with fluid feed-through 5 5 5 Designation (soft damping) SRU-plus 40-W-180-3-M-8 SRU-plus 40-W-180-3-VM-8 SRU-plus 40-W-180-90-M-8 ID 0362232 0362242 0362262 0362262 Torque [Nm] 19.2 19.2 19.2 0.4 Weight [kg] 6.2 7.2 6.4 0.4 No. of fluid feed-throughs 8 8 8 8 8 max. pressure in the air fluid feed-through [bar] 8 SRU-plus 40-W-180-3-M-8-MS SRU-plus 40-W-180-90-M-8-MS ID 0a62234 0a62244 0a62244 0a62264 Veight [kg] 7.75 8.75 7.95 Number / size of E-fittings on the output side 9/M8 9/M8 9/M8 Number / size of E-fittings on the output sid	Nominal operating pressure	[bar]	6.0	6.0	6.0
min.max. ambient meperature IP(1) 5/60 5/60 Repeat accuracy IP(1) 0.05 0.05 0.05 Cleanroom class 150 1464-1 5 5 5 Options with fluid feed-through 5 SRU-plus 40-W-180-3-M-8 SRU-plus 40-W-180-3-W-8 SRU-p	min./max. operating pressure	[bar]	4/8	4/6.5	4/8
Repeat accuracy [9] 0.05 0.05 0.05 Cleanroom class IS0 14644-1 5 5 5 Options with fluid feed-through 5 5 5 Designation (soft damping) 10 SRU-plus 40-W-180-3-M-8 SRU-plus 40-W-180-3-M-8-M8 SRU-plus 40-W-180-3-M-8-M8-AS SRU-plus 40-W-180-3-	Diameter of connecting hose		8 x 6 x 1	8 x 6 x 1	8 x 6 x 1
Cleancoon class ISO 1464-1isSecondSecondSecondOptions with fluid feed-throughDesignation (soft damping)ISRU-plus 40-W-180-3-M-8SRU-plus 40-W-180-3-VM-8SRU-plus 40-W-180-3-VM-8ID056232056224203622620362262TorqueIM19.219.219.20.4WeightIg6.27.26.410.0No. of fluid feed-throughsIg8888max. pressure in the air feed-throughIg8888Optionswith FutureDesignation (soft damping)ImSRU-plus 40-W-180-3-M-8-M8SRU-plus 40-W-180-3-VM-8-M8SRU-plus 40-W-180-3-VM-8-M8IDOptionswith FutureIDOptionswith FutureIDSRU-plus 40-W-180-3-M-8-M8SRU-plus 40-W-180-3-VM-8-M8IDSRU-plus 40-W-180-3-M-8-M8SRU-plus 40-W-180-3-VM-8-M8IDOptionswith FutureIDOptionswith FutureIDSRU-plus 40-W-180-3-M-8-M8IDSRU-plus 40-W-180-3-M-8-M8IDSRU-plus 40-W-180-3-M-8-M8IDOptionswith FutureIDOptionswith FutureIDOptionswith FutureIDOptionswith FutureIDOptionswith FutureIDOptionswith FutureIDID<	min./max. ambient temperature	[°C]	5/60	5/60	5/60
Options with fluid feed-through SRU-plus 40-W-180-3-M-8 SRU-plus 40-W-180-3-VM-8 SRU-plus 40-W-180-9-M-8 Designation (soft damping) Image: SRU-plus 40-W-180-3-M-8 SRU-plus 40-W-180-3-VM-8 SRU-plus 40-W-180-90-M-8 ID 0362232 0362242 0362262 0362262 Torque [Mm] 19.2 19.2 19.2 Weight [Kg] 6.2 7.2 6.4 No. of fluid feed-throughs Image: SRU-plus 40-W-180 8 8 Max. pressure in the air feed-through Image: SRU-plus 40-W-180-3-M-8-M8 8 8 Options with fluid and electric feed-through Image: SRU-plus 40-W-180-3-M-8-M8 SRU-plus 40-W-180-3-M-8-M8 SRU-plus 40-W-180-3-M-8-M8 ID SRU-plus 40-W-180-3-M-8-M8 SRU-plus 40-W-180-3-M-8-M8 SRU-plus 40-W-180-3-M-8-M8 SRU-plus 40-W-180-3-M-8-M8 ID SRU-plus 40-W-180-3-M-8-M8 SRU-plus 40-W-180-3-M-8-M8 SRU-plus 40-W-180-3-M-8-M8 SRU-plus 40-W-180-3-M-8-M8 ID SRU-plus 40-W-180-3-M-8-M8 SRU-plus 40-W-180-3-M-8-M8 SRU-plus 40-W-180-3-M-8-M8 SRU-plus 40-W-180-3-M-8-M8 ID SRU-plus 40-W-180-3-M-8-M8 SRU	Repeat accuracy	[°]	0.05	0.05	0.05
Designation (soft damping)IMSRU-plus 40-W-180-3-M-8SRU-plus 40-W-180-3-VM-8SRU-plus 40-W-180-90-M-8ID036223203622420362262Torque[Mm]19.219.219.2Weight[kg]6.27.26.4No. of fluid feed-throughs888max. pressure in the air feed-through[bar]88Objector with fluid and electric feed-throughIbar]88Otions with fluid and electric feed-through9SRU-plus 40-W-180-3-M-8-M8SRU-plus 40-W-180-3-VM-8-M8Designation (soft damping)NSRU-plus 40-W-180-3-VM-8-M8SRU-plus 40-W-180-3-VM-8-M8ID036223403622440362264Weight[kg]7.758.757.95Number / size of E-fritings on the soutput side9/M89/M89/M8Number of wiresI01010max. voltage[k]1/11/11/1Muther of wires[k]1/11/11/1Designation (soft damping)[k]SRU-plus 40-W-180-3-M-8-ASSRU-plus 40-W-180-90-M-8-AS-AS	Cleanroom class ISO 14644-1		5	5	5
ID 0362232 0362242 0362262 Torque [Nm] 19.2 19.2 19.2 Weight [kg] 6.2 7.2 6.4 No. of fluid feed-throughs 8 8 8 max. pressure in the air feed-through [bar] 8 8 8 Obtions with fluid and electric feed-through 8 8 8 8 Options with fluid and electric feed-through 5RU-plus 40-W-180-3-M-8-M8 SRU-plus 40-W-180-3-M-8-M8 SRU-plus 40-W-180-90-M-8-M8 Dotions with fluid and electric feed-through 5RU-plus 40-W-180-3-M-8-M8 SRU-plus 40-W-180-90-M-8-M8 ID 0362234 0362244 0362264 Weight [kg] 7.75 8.75 7.95 Number / size of E-fittings on the output side 9/M8 9/M8 9/M8 Number of wires 10 10 10 10 max. voltage [V] 24 24 24 24 Max. current per wire / total [A] 1/1 1/1 1/1 Options w	Options with fluid feed-through				
InqueIngle19.219.219.219.2Weight[kg]6.27.26.4No. of fluid feed-throughs888max. pressure in the air feed-throughload88Detomsuth fluid and electric electrome888Designation (soft damping)Image: Stand St	Designation (soft damping)		SRU-plus 40-W-180-3-M-8	SRU-plus 40-W-180-3-VM-8	SRU-plus 40-W-180-90-M-8
Weight[kg]6.27.26.4No. of fluid feed-throughs888max. pressure in the air feed-through[bar]888Options with fluid and electric feed-through888Options with fluid and electric feed-through5RU-plus 40-W-180-3-M-8-M8SRU-plus 40-W-180-3-VM-8-M8SRU-plus 40-W-180-9-M-8-M8Designation (soft damping)0362234036224403622640362264Weight[kg]7.758.757.95Number / size of E-fittings on the output side101010Number of wires101010max. voltage[M]242424Max. current per wire / total[A]1/11/1[A]1/11/11/1Options with fluid and electric feed-throughSRU-plus 40-W-180-3-M-8-M8-ASSRU-plus 40-W-180-9-M-8-M8-ASDesignation (soft damping)SRU-plus 40-W-180-3-M-8-M8-ASSRU-plus 40-W-180-3-M-8-M8-AS	ID		0362232	0362242	0362262
No. of fluid feed-throughs888max. pressure in the air feed-through[bar]888Options with fluid and electric feed-throughOptions with fluid and electric feed-throughSRU-plus 40-W-180-3-M-8-M8SRU-plus 40-W-180-3-VM-8-M8SRU-plus 40-W-180-90-M-8-M8Designation (soft damping)SRU-plus 40-W-180-3-M-8-M8SRU-plus 40-W-180-3-VM-8-M8SRU-plus 40-W-180-90-M-8-M8ID0362234036224403622640362264Weight[kg]7.758.757.95Number / size of E-fittings on the output side9/M89/M89/M8Number of wires101010max. voltage[V]242424Max. current per wire / total[A]1/11/1Options with fluid and electric feed-throughUnit sideDesignation (soft damping)SRU-plus 40-W-180-3-M-8-M8-ASSRU-plus 40-W-180-3-M-8-M8-AS	Torque	[Nm]	19.2	19.2	19.2
max. pressure in the air feed-through[bar]888Designation (soft damping)[bar]888Designation (soft damping)SNU-plus 40-W-180-3-M-8-M8SNU-plus 40-W-180-3-VM-8-M8SNU-plus 40-W-180-9-M-8-M8ID0362234036224403622640362264Weight[kg]7.758.757.95Number / size of E-fittings on the output side9/M89/M89/M89/M8Number of wires10101010max. voltage[V]24242424Max. current per wire / total[A]1/11/11/1Options with fluid and electric fee-tr-ture tettDesignation (soft damping)[N]SNU-plus 40-W-180-3-M-8-MSSNU-plus 40-W-180-3-VM-8-MSDesignation (soft damping)[N]SNU-plus 40-W-180-3-M-8-MSSNU-plus 40-W-180-3-VM-8-MS	Weight	[kg]	6.2	7.2	6.4
feed-throughbarl8888Options with fluid and electric feed-throughUUUSRU-plus 40-W-180-3-M-8-M8SRU-plus 40-W-180-3-VM-8-M8SRU-plus 40-W-180-90-M-8-M8Designation (soft damping)1362234362244362264362264Weight[kg]7.758.757.95.95Number / size of E-fittings on the output side101010.06Number of wires101010.06.06Number of wires[V]24242424Max. current per wire / total[A]1/111.11Designation (soft damping)[M]SRU-plus 40-W-180-3-M-8-MSSRU-plus 40-W-180-3-M-8-MSSRU-plus 40-W-180-3-M-8-MS	No. of fluid feed-throughs		8	8	8
Designation (soft damping) N SRU-plus 40-W-180-3-M-8 SRU-plus 40-W-180-3-M-8 SRU-plus 40-W-180-90-M-8-M8 ID 0362234 0362244 0362264 Weight [kg] 7.75 8.75 7.95 Number / size of E-fittings on the output side 9/M8 9/M8 9/M8 Number of wires 10 10 10 max. voltage [V] 24 24 24 Max. current per wire / total [A] 1/1 1/1 Options with fluid and electric feed-through Worplus 40-W-180-3-M-8-M8 SRU-plus 40-W-180-3-M-8-M8 Designation (soft damping) SRU-plus 40-W-180-3-M-8-M8-AS SRU-plus 40-W-180-3-M-8-M8-AS SRU-plus 40-W-180-3-M-8-M8-AS	max. pressure in the air feed-through	[bar]	8	8	8
ID062234062244062264WeightKg]7.58.757.95Number/sizeofE-fittingsonthImage: Image:	Options with fluid and electric feed	l-through			
Weight[kg]7.58.759.95Number / size of E-fittings on the output side y /M8 y /M8 y /M8Number of wires i j j j Number of wires i i i i Max. current per wire / total i i i i Otions with fluid and electric feet w i i i Designation (soft damping) i i i i i Number of wires i i i i i <td>Designation (soft damping)</td> <td></td> <td>SRU-plus 40-W-180-3-M-8-M8</td> <td>SRU-plus 40-W-180-3-VM-8-M8</td> <td>SRU-plus 40-W-180-90-M-8-M8</td>	Designation (soft damping)		SRU-plus 40-W-180-3-M-8-M8	SRU-plus 40-W-180-3-VM-8-M8	SRU-plus 40-W-180-90-M-8-M8
Number / size of E-fittings on the output sideSymBaSymBaSymBaSymBaNumber of wires10101010Number of wires1024242424Max. outrage for the output of th	ID		0362234	0362244	0362264
output side 9/M8 9/M8 9/M8 9/M8 9/M8 Number of wires 10 10 10 10 max. voltage [V] 24 24 24 24 Max. current per wire / total [A] 1/1 1/1 1/1 1/1 Options with fluid and electric feed-through mutting kit	Weight	[kg]	7.75	8.75	7.95
max. voltage [V] 24 24 24 Max. current per wire / total [A] 1/1 1/1 1/1 Options with fluid and electric feed - througe - th	Number / size of E-fittings on the output side		9/M8	9/M8	9/M8
Max. current per wire / total [A] 1/1 1/1 1/1 Options with fluid and electric feed-through and mounting kit Image: Constraint of the second se	Number of wires		10	10	10
Options with fluid and electric feed-through and mounting kit Designation (soft damping) SRU-plus 40-W-180-3-M-8-M8-AS SRU-plus 40-W-180-3-VM-8-M8-AS SRU-plus 40-W-180-90-M-8-M8-AS	max. voltage	[V]	24	24	24
Designation (soft damping) SRU-plus 40-W-180-3-M-8-M8-AS SRU-plus 40-W-180-3-VM-8-M8-AS SRU-plus 40-W-180-90-M-8-M8-AS	Max. current per wire / total	[A]	1/1	1/1	1/1
	Options with fluid and electric feed	l-through a	nd mounting kit		
ID 0362237 0362247 0362267	Designation (soft damping)		SRU-plus 40-W-180-3-M-8-M8-AS	SRU-plus 40-W-180-3-VM-8-M8-AS	SRU-plus 40-W-180-90-M-8-M8-AS
	ID		0362237	0362247	0362267

() All modules are also available in a Viton version. Please contact us for details.

SRU-plus 40

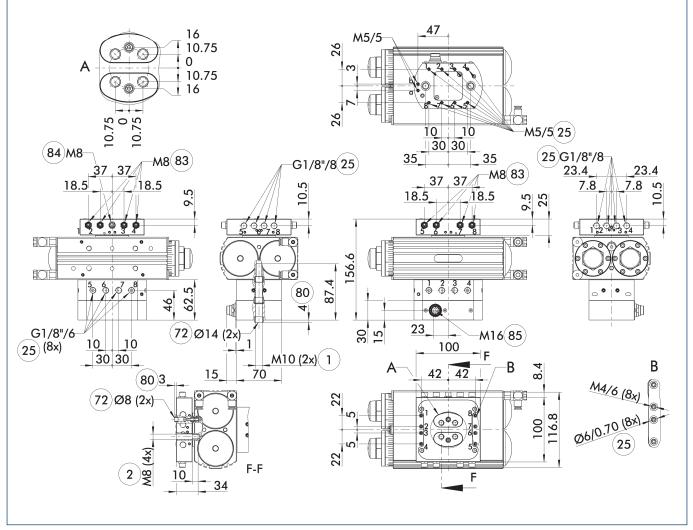
Universal swivel units

Main view for SRU-plus without EDF



- () 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).
- B, b Main / direct connection, swivel unit counterclockwise
- turning
- 1 Connection swivel unit $\overline{(72)}$ Fit for centering sleeves
- hole in the counter part
 - (90) Cover caps
 - (91) Not intended for mounting the unit, only for attachments
 - (92) Sensor MMS 22..

Main view for SRU-plus with EDF



The main view shows the SRU-plus with the EDF and fluid feed-through in the most basic version, with a swivel angle of 180°/90°, small end position adjustability of 3°, and without a middle position.

- $\ensuremath{\textcircled{}}$ The SRU-plus swivel unit with the EDF option can only be mounted from the bottom.
- A, a Main / direct connection, swivel unit clockwise turning
- B, b Main / direct connection, swivel unit counterclockwise turning
- Connection swivel unit
 Attachment connection

(25) Fluid feed-through

80 Depth of the centering sleeve hole in the counter part

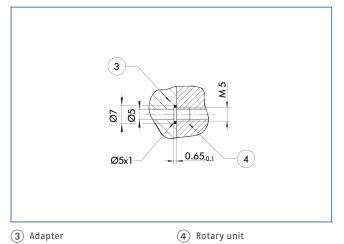
(72) Fit for centering sleeves

- (83) Input for 3 pole sensor feed-through
- (84) Input for 4 pole sensor feed-through
- (85) Sensor feed-through output

SRU-plus 40

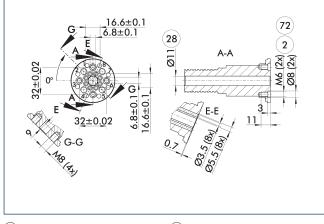
Universal swivel units

Hose-free direct connection M5



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

Pinion with fluid feed-through

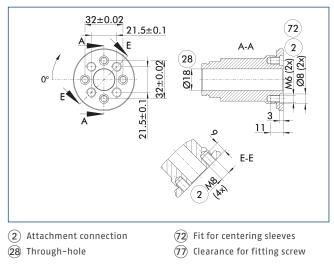


(2) Attachment connection(28) Through-hole

Mounting pattern for fastening the rotating load to the pinion. The "4x large threads for 4 screws and 2 counter bores for centering sleeves" option is preferable to the "4x small threads for 2 screws and 2 shoulder bots (in the deeper counter bores)" option.

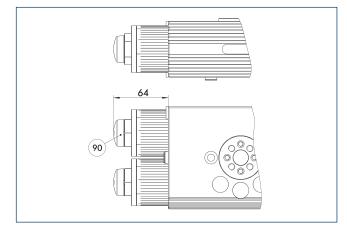
① View applicable only for versions without EDF!

Pinion without fluid feed-through



Mounting pattern for fastening the rotating load to the pinion. The ",4x large threads for 4 screws and 2 counter bores for centering sleeves" option is preferable to the ",4x small threads for 2 screws and 2 shoulder bots (in the deeper counter bores)" option.

Large end position adjustability 90°

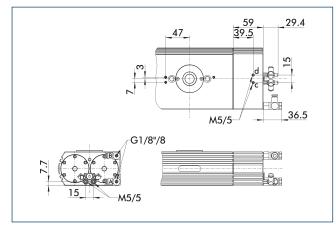


(90) Cover caps

Dimensional changes for the option with "large end position adjustability (90°)". This permits the end positions to be adjusted by up to 93°. More information can be found in the introduction to the series.

⁽⁷²⁾ Fit for centering sleeves(77) Clearance for fitting screw

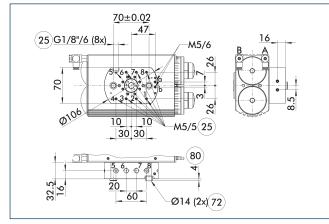
Pneumatic middle position (M)



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

Dimensional changes for the option with the "pneumatic middle position". Heavy attachments may swing before they reach the final position. The locked middle position (VM) can resolve this.

Connections for fluid feed-through



A, a Main / direct connection, swivel unit clockwise turning

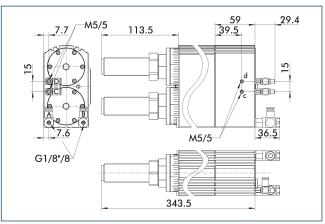
turning

- B, b Main / direct connection, swivel unit counterclockwise
- (25) Fluid feed-through
- (72) Fit for centering sleeves (80) Depth of the centering sleeve
- hole in the counter part

Lower mounting plate for the fluid feed-through option. Vacuum, gases or fluids can be fed through. The connection may be a screw type or a direct connection.

() View applicable only for versions without EDF!

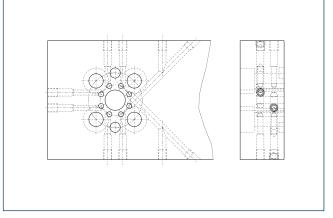
Locked middle position (VM)



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

Dimensional changes with the "locked middle position (VM)" option. The middle position is locked and is actuated with the force of the main drive piston. Shock absorbers dampen the travel to the middle position and prevent overshooting.

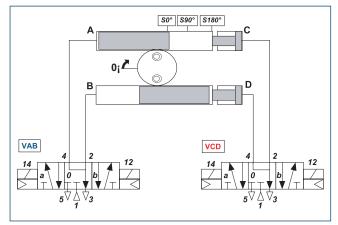
Adapter plate design



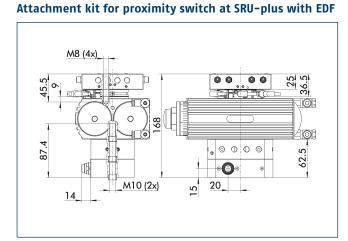
Suggested here is an adapter plate design which allows for all fluid feed-throughs to be accessed as easily as possible.

View applicable only for versions without EDF!

Pneumatic diagram of SRU-plus-VM — vertical axis

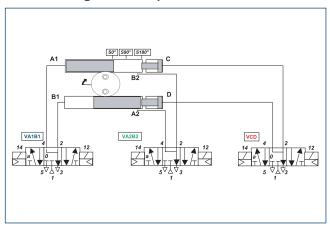


VM rotary actuators with a vertical rotary axis are generally actuated by two 5/3 directional control valves with an exhausted middle position. To prevent damage, it is essential to pay attention to the actuation sequence indicated in the operating manual.



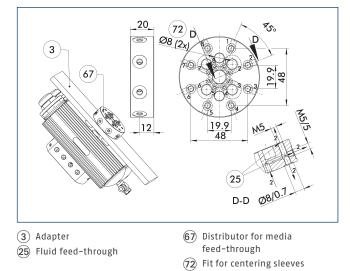
The attachment kit cannot be ordered separately. The SRU-plus with EDF and attachment kit are delivered as a complete unit by SCHUNK. Please pay attention to our options SRU-plus ...-AS.

Pneumatic diagram of SRU-plus-VM — horizontal axis



VM rotary actuators with a horizontal or non-vertical rotary axis must generally be actuated by three 5/3 directional control valves with an exhausted middle position. To prevent damage, it is essential to pay attention to the actuation sequence indicated in the operating manual.

Distributor for SRU-plus

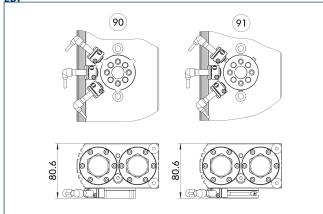


The distributor for SRU-plus facilitates the use of the fluid feed-throughs, both at the direct attachment to the distributor, and in the lines conveying the fluid inside the adapter plate. Due to the distributor, only a simple drilling pattern has to be drilled in the adapter plate located between the pinion and the distributor.

Description	ID
Distributor for SRI	I-plus
V-SRU-plus 40	0357992

() View applicable only for versions without EDF!

Attachment kit for proximity switch at SRU-plus without EDF



90 AS-NHS-F-SRU-plus 40

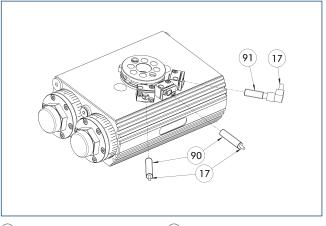
(91) AS-NHS-SRU-plus 40

The size-specific attachment kit is required for installing the inductive proximity switches. Up to three proximity switches (2x end position, 1x middle position) can be attached using the attachment kit.

ID					
Mounting kit for proximity switch with adjustable cam					
AS-NHS-SRU-plus 40 0362290					
0362291					
Mounting kit for proximity switch with fixed cam					
0362295					
0362296					
	ch with adjust 0362290 0362291 ch with fixed 0362295				

Please note the number of necessary feed-throughs for your swivel unit when selecting the proper attachment kit.

Inductive proximity switches IN for SRU-plus without EDF



(17) Cable outlet(90) Sensor IN ...

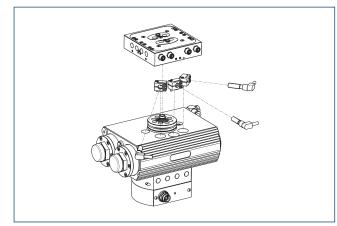
91) Sensor IN..-SA

End and intermediate position monitoring can be mounted with mounting kit

Description	ID	Often combined
Mounting kit for proximity swi	tch with adjust	table cam
AS-NHS-SRU-plus 40	0362290	
AS-NHS-SRU-plus 40-8	0362291	
Mounting kit for proximity swi	tch with fixed	cam
AS-NHS-F-SRU-plus 40	0362295	
AS-NHS-F-SRU-plus 40-8	0362296	
Inductive Proximity Switches		
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	•
IN-C 80-S-M8	0301475	
INK 80-S	0301550	
INK 80-SL	0301579	
Inductive proximity switch wit	h lateral outle	t
IN 80-S-M12-SA	0301587	
IN 80-S-M8-SA	0301483	•
INK 80-S-SA	0301566	

() View applicable only for versions without EDF!

Inductive proximity switches IN for SRU-plus with EDF

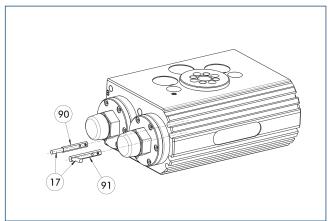


End and intermediate position monitoring mounted directly

Description	ID	Often combined		
Inductive Proximity Switches				
IN 80-S-M12	0301578			
IN 80-S-M8	0301478	•		
IN-C 80-S-M8	0301475			
INK 80-S	0301550			
INK 80-SL	0301579			
Inductive proximity switch with I	ateral outlet			
IN 80-S-M12-SA	0301587			
IN 80-S-M8-SA	0301483	•		
INK 80-S-SA	0301566			
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			
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-M12	0301776	•		
V2-M8	0301775	•		
V4-M12	0301747			
V4-M8	0301746			
V8-M12	0301752			
V8-M8	0301751			

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.

Electronic magnetic switches MMS



(17) Cable outlet

(91) Sensor MMS 22...-SA

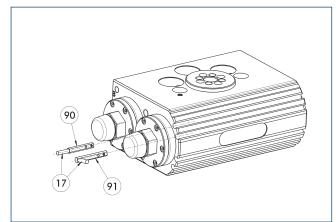
90 Sensor MMS 22..

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 o	utlet
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	

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.

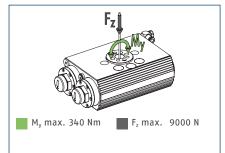
Description	ID	Often combined			
Programmable magnetic switches MMS PI1					
MMS 22-PI1-S-M8-PNP	0301160	•			
MMSK 22-PI1-S-PNP	0301162				
Programmable magnetic switches MMS PI1 with lateral cable outlet					
MMS 22-PI1-S-M8-PNP-SA	0301166	•			
MMSK 22-PI1-S-PNP-SA	0301168				
Programmable magnetic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

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.

SCHUNK



Pinion load

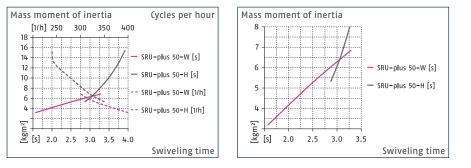


The indicated moments and forces are statical values and should not appear simultaneously Throttling has to be done for ensuring that the rotary motion takes place without impact or bouncing. otherwise the service life reduces.

Technical data of SRU-plus without middle position

Designation (soft damping)		SRU-plus 50-W-90-3	SRU-plus 50-W-180-3	SRU-plus 50-W-180-90
ID		0362600	0362620	0362650
Description (Hard Damping)		SRU-plus 50-H-90-3	SRU-plus 50-H-180-3	SRU-plus 50-H-180-90
ID		0362700	0362720	0362750
End position damping		Hydr. damper	Hydr. damper	Hydr. damper
Angle of rotation	[°]	90.0	180.0	180.0
End position adjustability	[°]	3.0	3.0	90.0
Torque	[Nm]	52.0	52.0	52.0
Middle position		none	none	none
Protection class IP		67	67	67
Weight	[kg]	9.40	9.40	9.80
Fluid consumption (2 x nominal angle)	[cm³]	448.0	776.0	776.0
Nominal operating pressure	[bar]	6.0	6.0	6.0
min./max. operating pressure	[bar]	4/8	4/8	4/8
Diameter of connecting hose		8 x 6 x 1	8 x 6 x 1	8 x 6 x 1
min./max. ambient temperature	[°C]	5/60	5/60	5/60
Repeat accuracy	[°]	0.05	0.05	0.05
Cleanroom class ISO 14644-1		5	5	5
Options with fluid feed-through				
Designation (soft damping)		SRU-plus 50-W-90-3-8	SRU-plus 50-W-180-3-8	SRU-plus 50-W-180-90-8
ID		0362602	0362622	0362652
Description (Hard Damping)		SRU-plus 50-H-90-3-8	SRU-plus 50-H-180-3-8	SRU-plus 50-H-180-90-8
ID		0362702	0362722	0362752
Torque	[Nm]	50.3	50.3	50.3
Weight	[kg]	9.6	9.6	10
No. of fluid feed-throughs		8	8	8
max. pressure in the air feed-through	[bar]	8	8	8
Options with fluid and electric feed	d-through			
Designation (soft damping)		SRU-plus 50-W-90-3-8-M8	SRU-plus 50-W-180-3-8-M8	SRU-plus 50-W-180-90-8-M8
ID		0362604	0362624	0362654
Description (Hard Damping)		SRU-plus 50-H-90-3-8-M8	SRU-plus 50-H-180-3-8-M8	SRU-plus 50-H-180-90-8-M8
ID		0362704	0362724	0362754
Weight	[kg]	11.55	11.55	11.95
Number / size of E-fittings on the output side		9/M8	9/M8	9/M8
Number of wires		10	10	10
max. voltage	[V]	24	24	24
Max. current per wire / total	[A]	1/1	1/1	1/1
Options with fluid and electric fee	d-through	and mounting kit		
Designation (soft damping)		SRU-plus 50-W-90-3-8-M8-AS	SRU-plus 50-W-180-3-8-M8-AS	SRU-plus 50-W-180-90-8-M8-AS
ID		0362607	0362627	0362657
Description (Hard Damping)		SRU-plus 50-H-90-3-8-M8-AS	SRU-plus 50-H-180-3-8-M8-AS	SRU-plus 50-H-180-90-8-M8-AS
ID		0362707	0362727	0362757
U		0502101	0502121	0502151

Max. admissible inertia J



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.

Technical data of SRU-plus with middle position

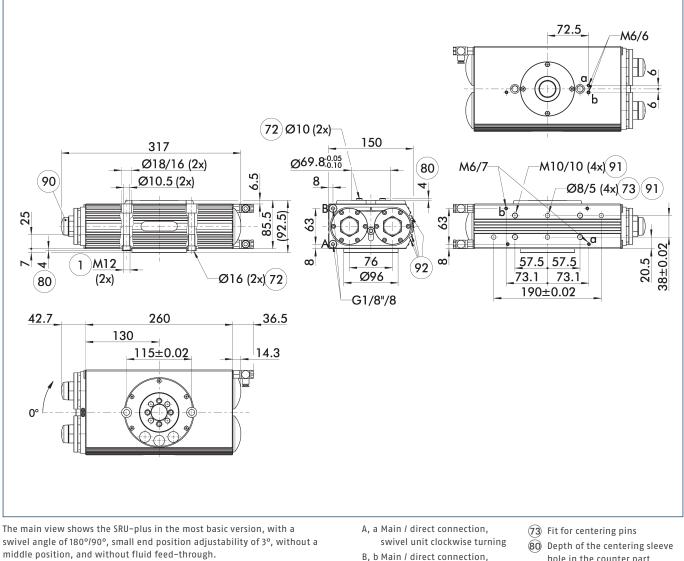
	[°] [°] [Nm]	0362630 Hydr. damper 180.0	0362640 Hydr. damper	0362660 Hydr. damper
le of rotation [[°]	180.0	Hydr. damper	Hydr. damper
-	[°]			
position adjustability			180.0	180.0
presented and pre	[Nm]	3.0	3.0	90.0
jue [[initial	52.0	52.0	52.0
dle position		1 x M (pneumatic)	1 x VM (locked)	1 x M (pneumatic)
ustability of middle position [[°]	3.0	3.0	3.0
ection class IP		67	67	67
ght [[kg]	12.20	12.80	12.60
d consumption (2 x nominal [[cm³]	776.0	776.0	776.0
ninal operating pressure [[bar]	6.0	6.0	6.0
./max. operating pressure [[bar]	4/8	4/6.5	4/8
neter of connecting hose		8 x 6 x 1	8 x 6 x 1	8 x 6 x 1
./max. ambient temperature [[°C]	5/60	5/60	5/60
eat accuracy [[°]	0.05	0.05	0.05
nroom class ISO 14644-1		5	5	5
ions with fluid feed-through				
ignation (soft damping)		SRU-plus 50-W-180-3-M-8	SRU-plus 50-W-180-3-VM-8	SRU-plus 50-W-180-90-M-8
		0362632	0362642	0362662
jue [[Nm]	50.3	50.3	50.3
ght [[kg]	12.4	13	12.8
of fluid feed-throughs		8	8	8
c. pressure in the air I-through	[bar]	8	8	8
ions with fluid and electric feed-t	through			
ignation (soft damping)		SRU-plus 50-W-180-3-M-8-M8	SRU-plus 50-W-180-3-VM-8-M8	SRU-plus 50-W-180-90-M-8-M8
		0362634	0362644	0362664
ght [[kg]	14.35	14.95	14.75
nber / size of E-fittings on the put side		9/M8	9/M8	9/M8
nber of wires		10	10	10
k. voltage [[V]	24	24	24
. current per wire / total [[A]	1/1	1/1	1/1
ions with fluid and electric feed-t	through ar	nd mounting kit		
ignation (soft damping)		SRU-plus 50-W-180-3-M-8-M8-AS	SRU-plus 50-W-180-3-VM-8-M8-AS	SRU-plus 50-W-180-90-M-8-M8-AS
		0362637	0362647	0362667

() All modules are also available in a Viton version. Please contact us for details.

SRU-plus 50

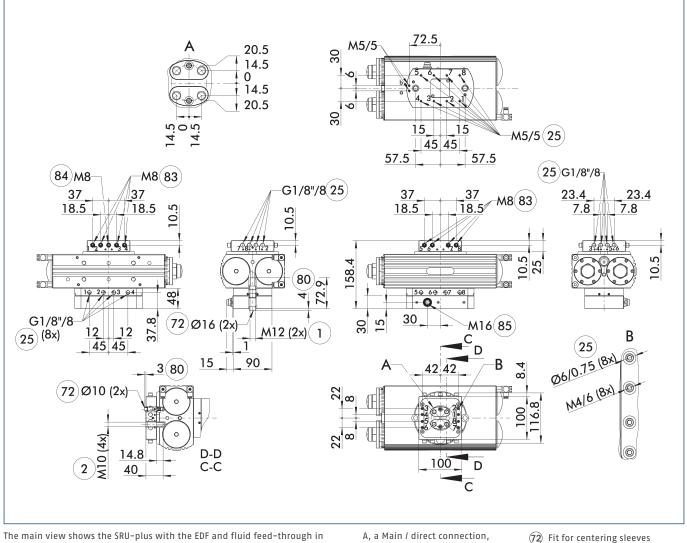
Universal swivel units

Main view for SRU-plus without EDF



- () 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).
- B, b Main / direct connection,
- swivel unit counterclockwise turning
- (1) Connection swivel unit
- $\overline{(2)}$ Attachment connection
- (80) Depth of the centering sleeve hole in the counter part
- (90) Cover caps
- (91) Not intended for mounting the unit, only for attachments
- (92) Sensor MMS 22..

Main view for SRU-plus with EDF



the most basic version, with a swivel angle of 180°/90°, small end position adjustability of 3°, and without a middle position.

- 1 The SRU-plus swivel unit with the EDF option can only be mounted from the bottom.
- A, a Main / direct connection, swivel unit clockwise turning
- B, b Main / direct connection, swivel unit counterclockwise turning
- (1) Connection swivel unit $(\mathbf{\hat{2}})$ Attachment connection

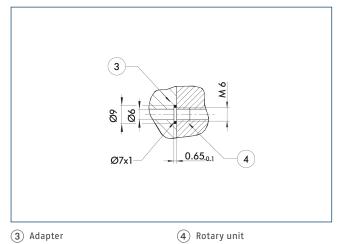
(25) Fluid feed-through

- (80) Depth of the centering sleeve
- hole in the counter part (83) Input for 3 pole sensor feed-through
- (84) Input for 4 pole sensor feed-through
- (85) Sensor feed-through output

SRU-plus 50

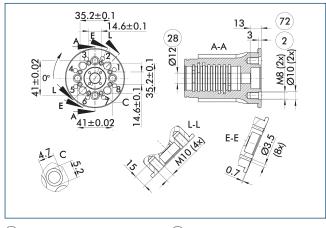
Universal swivel units

Hose-free direct connection M6



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

Pinion with fluid feed-through



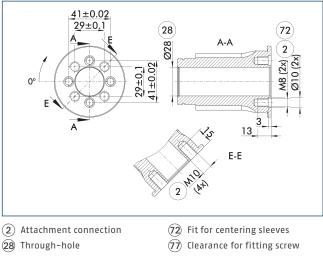
(2) Attachment connection(28) Through-hole

(72) Fit for centering sleeves(77) Clearance for fitting screw

Mounting pattern for fastening the rotating load to the pinion. The "4x large threads for 4 screws and 2 counter bores for centering sleeves" option is preferable to the "4x small threads for 2 screws and 2 shoulder bots (in the deeper counter bores)" option.

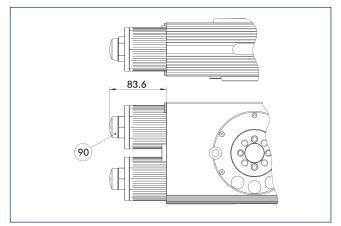
① View applicable only for versions without EDF!

Pinion without fluid feed-through



Mounting pattern for fastening the rotating load to the pinion. The ",4x large threads for 4 screws and 2 counter bores for centering sleeves" option is preferable to the ",4x small threads for 2 screws and 2 shoulder bots (in the deeper counter bores)" option.

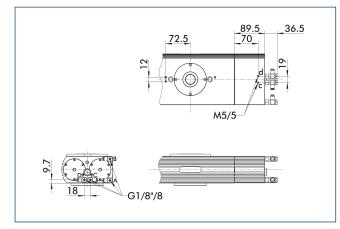
Large end position adjustability 90°



(90) Cover caps

Dimensional changes for the option with "large end position adjustability (90°)". This permits the end positions to be adjusted by up to 93°. More information can be found in the introduction to the series.

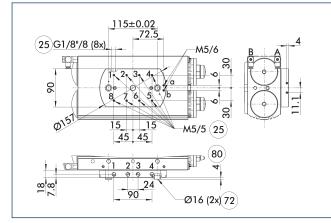
Pneumatic middle position (M)



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

Dimensional changes for the option with the "pneumatic middle position". Heavy attachments may swing before they reach the final position. The locked middle position (VM) can resolve this.

Connections for fluid feed-through



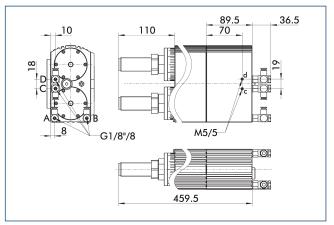
A, a Main / direct connection, swivel unit clockwise turning

- B, b Main / direct connection, swivel unit counterclockwise turning
- (25) Fluid feed-through
- (72) Fit for centering sleeves (80) Depth of the centering sleeve
- hole in the counter part

Lower mounting plate for the fluid feed-through option. Vacuum, gases or fluids can be fed through. The connection may be a screw type or a direct connection.

() View applicable only for versions without EDF!

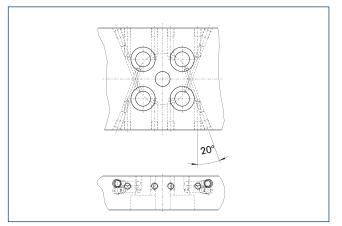
Locked middle position (VM)



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

Dimensional changes with the "locked middle position (VM)" option. The middle position is locked and is actuated with the force of the main drive piston. Shock absorbers dampen the travel to the middle position and prevent overshooting.

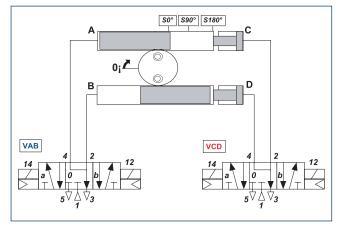
Adapter plate design



Suggested here is an adapter plate design which allows for all fluid feed-throughs to be accessed as easily as possible.

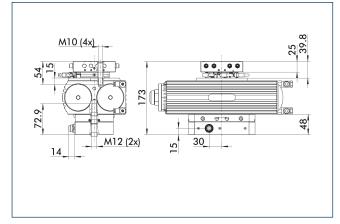
View applicable only for versions without EDF!

Pneumatic diagram of SRU-plus-VM — vertical axis



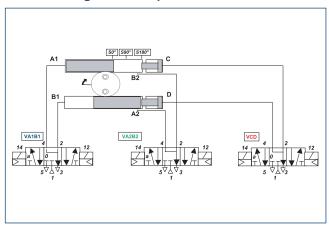
VM rotary actuators with a vertical rotary axis are generally actuated by two 5/3 directional control valves with an exhausted middle position. To prevent damage, it is essential to pay attention to the actuation sequence indicated in the operating manual.

Attachment kit for proximity switch at SRU-plus with EDF



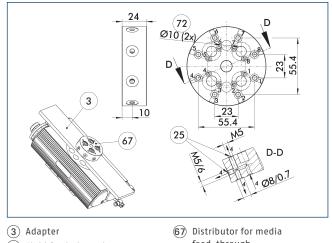
The attachment kit cannot be ordered separately. The SRU-plus with EDF and attachment kit are delivered as a complete unit by SCHUNK. Please pay attention to our options SRU-plus ...-AS.

Pneumatic diagram of SRU-plus-VM — horizontal axis



VM rotary actuators with a horizontal or non-vertical rotary axis must generally be actuated by three 5/3 directional control valves with an exhausted middle position. To prevent damage, it is essential to pay attention to the actuation sequence indicated in the operating manual.

Distributor for SRU-plus



25 Fluid feed-through

feed-through

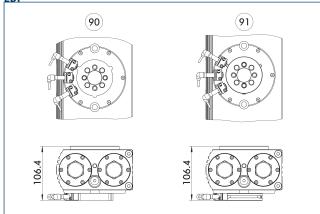
(72) Fit for centering sleeves

The distributor for SRU-plus facilitates the use of the fluid feed-throughs, both at the direct attachment to the distributor, and in the lines conveying the fluid inside the adapter plate. Due to the distributor, only a simple drilling pattern has to be drilled in the adapter plate located between the pinion and the distributor.

Description	ID
Distributor for SRU-p	lus
V-SRU-plus 50/60	0358192

() View applicable only for versions without EDF!

Attachment kit for proximity switch at SRU-plus without EDF



90 AS-NHS-F-SRU-plus 50

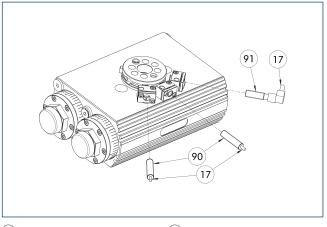
(91) AS-NHS-SRU-plus 50

The size-specific attachment kit is required for installing the inductive proximity switches. Up to three proximity switches (2x end position, 1x middle position) can be attached using the attachment kit.

ID				
Mounting kit for proximity switch with adjustable cam				
AS-NHS-SRU-plus 50/60 0362690				
0362691				
Mounting kit for proximity switch with fixed cam				
0362695				
0362696				
	ith adjustable 0362690 0362691 ith fixed cam 0362695			

Please note the number of necessary feed-throughs for your swivel unit when selecting the proper attachment kit.

Inductive proximity switches IN for SRU-plus without EDF



(17) Cable outlet(90) Sensor IN ...

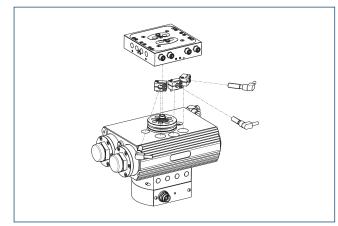
(91) Sensor IN..-SA

End and intermediate position monitoring can be mounted with mounting kit

Description	ID	Often combined	
Mounting kit for proximity switch w	ith adjustable	cam	
AS-NHS-SRU-plus 50/60	0362690		
AS-NHS-SRU-plus 50/60-8	0362691		
Mounting kit for proximity switch w	ith fixed cam		
AS-NHS-F-SRU-plus 50/60	0362695		
AS-NHS-F-SRU-plus 50/60-8	0362696		
Inductive Proximity Switches			
IN 80-S-M12	0301578		
IN 80-S-M8	0301478	•	
IN-C 80-S-M8	0301475		
INK 80-S	0301550		
INK 80-SL	0301579		
Inductive proximity switch with lateral outlet			
IN 80-S-M12-SA	0301587		
IN 80-S-M8-SA	0301483	•	
INK 80-S-SA	0301566		

() View applicable only for versions without EDF!

Inductive proximity switches IN for SRU-plus with EDF

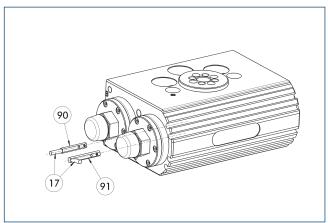


End and intermediate position monitoring mounted directly

Description	ID	Often combined			
Inductive Proximity Switches					
IN 80-S-M12	0301578				
IN 80-S-M8	0301478	•			
IN-C 80-S-M8	0301475				
INK 80-S	0301550				
INK 80-SL	0301579				
Inductive proximity switch with la	Inductive proximity switch with lateral outlet				
IN 80-S-M12-SA	0301587				
IN 80-S-M8-SA	0301483	•			
INK 80-S-SA	0301566				
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				
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-M12	0301776	•			
V2-M8	0301775	•			
V4-M12	0301747				
V4-M8	0301746				
V8-M12	0301752				
V8-M8	0301751				

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.

Electronic magnetic switches MMS



(17) Cable outlet

(91) Sensor MMS 22...-SA

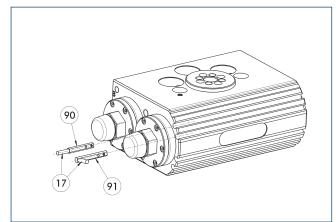
90 Sensor MMS 22..

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 o	utlet
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	

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-...

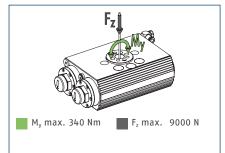
Position monitoring with one programmable position per sensor and electronics integrated in the sensor. Can be programmed using MT magnetic teaching tool (included in scope of delivery) or ST plug teaching tool (optional). End position monitoring is mounted in the C-slot. If the ST plug teaching tools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

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.



Pinion load

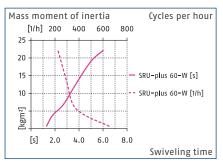


The indicated moments and forces are statical values and should not appear simultaneously Throttling has to be done for ensuring that the rotary motion takes place without impact or bouncing. otherwise the service life reduces.

Technical data of SRU-plus without middle position

Designation (soft damping)		SRU-plus 60-W-90-3	SRU-plus 60-W-180-3	SRU-plus 60-W-180-90
ID		0362800	0362820	0362850
End position damping		Hydr. damper	Hydr. damper	Hydr. damper
Angle of rotation	[°]	90.0	180.0	180.0
End position adjustability	[°]	3.0	3.0	90.0
Torque	[Nm]	72.0	72.0	72.0
Middle position		none	none	none
Protection class IP		67	67	67
Weight	[kg]	12.80	12.80	13.50
Fluid consumption (2 x nominal angle)	[cm³]	656.0	1120.0	1120.0
Nominal operating pressure	[bar]	6.0	6.0	6.0
min./max. operating pressure	[bar]	4/8	4/8	4/8
Diameter of connecting hose		8 x 6 x 1	8 x 6 x 1	8 x 6 x 1
min./max. ambient temperature	[°C]	5/60	5/60	5/60
Repeat accuracy	[°]	0.05	0.05	0.05
Cleanroom class ISO 14644-1		5	5	5
Options with fluid feed-through				
Designation (soft damping)		SRU-plus 60-W-90-3-8	SRU-plus 60-W-180-3-8	SRU-plus 60-W-180-90-8
ID		0362802	0362822	0362852
Torque	[Nm]	70.0	70.0	70.0
Weight	[kg]	13	13	13.7
No. of fluid feed-throughs		8	8	8
max. pressure in the air feed-through	[bar]	8	8	8
Options with fluid and electric feed	l-through			
Designation (soft damping)		SRU-plus 60-W-90-3-8-M8	SRU-plus 60-W-180-3-8-M8	SRU-plus 60-W-180-90-8-M8
ID		0362804	0362824	0362854
Weight	[kg]	14.95	14.95	15.65
Number / size of E-fittings on the output side		9/M8	9/M8	9/M8
Number of wires		10	10	10
max. voltage	[V]	24	24	24
Max. current per wire / total	[A]	1/1	1/1	1/1
Options with fluid and electric feed	l-through a	nd mounting kit		
Designation (soft damping)		SRU-plus 60-W-90-3-8-M8-AS	SRU-plus 60-W-180-3-8-M8-AS	SRU-plus 60-W-180-90-8-M8-AS
		5NO PIUS 00 W 50 5 0 HO AS		5110 plas 00 11 200 50 0 110 115

Max. admissible inertia J



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.

Technical data of SRU-plus with middle position

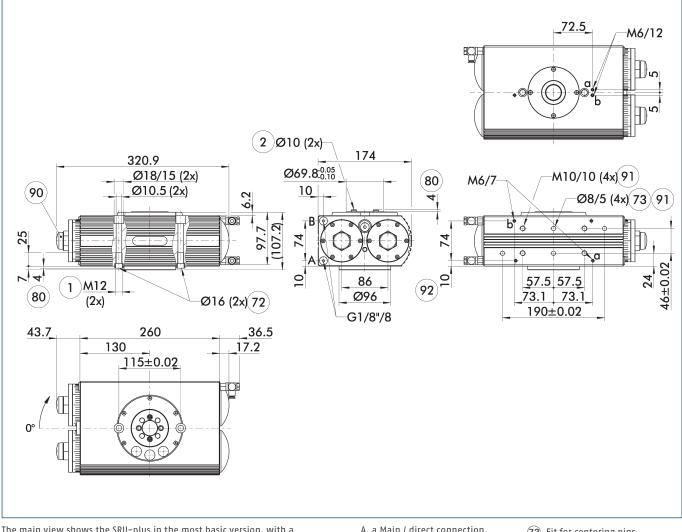
Designation (soft damping)		SRU-plus 60-W-180-3-M	SRU-plus 60-W-180-3-VM	SRU-plus 60-W-180-90-M
ID		0362830	0362840	0362860
End position damping		Hydr. damper	Hydr. damper	Hydr. damper
Angle of rotation	[°]	180.0	180.0	180.0
End position adjustability	[°]	3.0	3.0	90.0
Torque	[Nm]	72.0	72.0	72.0
Middle position		1 x M (pneumatic)	1 x VM (locked)	1 x M (pneumatic)
Adjustability of middle position	[°]	3.0	3.0	3.0
Protection class IP		67	67	67
Weight	[kg]	16.80	17.80	17.50
Fluid consumption (2 x nominal angle)	[cm³]	1120.0	1120.0	1120.0
Nominal operating pressure	[bar]	6.0	6.0	6.0
min./max. operating pressure	[bar]	4/8	4/6.5	4/8
Diameter of connecting hose		8 x 6 x 1	8 x 6 x 1	8 x 6 x 1
min./max. ambient temperature	[°C]	5/60	5/60	5/60
Repeat accuracy	[°]	0.05	0.05	0.05
Cleanroom class ISO 14644-1		5	5	5
Options with fluid feed-through				
Designation (soft damping)		SRU-plus 60-W-180-3-M-8	SRU-plus 60-W-180-3-VM-8	SRU-plus 60-W-180-90-M-8
ID		0362832	0362842	0362862
Torque	[Nm]	70.0	70.0	70.0
Weight	[kg]	17	18	17.7
No. of fluid feed-throughs		8	8	8
max. pressure in the air feed-through	[bar]	8	8	8
Options with fluid and electric feed	-through			
Designation (soft damping)		SRU-plus 60-W-180-3-M-8-M8	SRU-plus 60-W-180-3-VM-8-M8	SRU-plus 60-W-180-90-M-8-M8
ID		0362834	0362844	0362864
Weight	[kg]	18.95	19.95	19.65
Number / size of E-fittings on the output side		9/M8	9/M8	9/M8
Number of wires		10	10	10
max. voltage	[V]	24	24	24
Max. current per wire / total	[A]	1/1	1/1	1/1
Options with fluid and electric feed	-through a	nd mounting kit		
Designation (soft damping)		SRU-plus 60-W-180-3-M-8-M8-AS	SRU-plus 60-W-180-3-VM-8-M8-AS	SRU-plus 60-W-180-90-M-8-M8-AS
ID		0362837	0362847	0362867

() All modules are also available in a Viton version. Please contact us for details.

SRU-plus 60

Universal swivel units

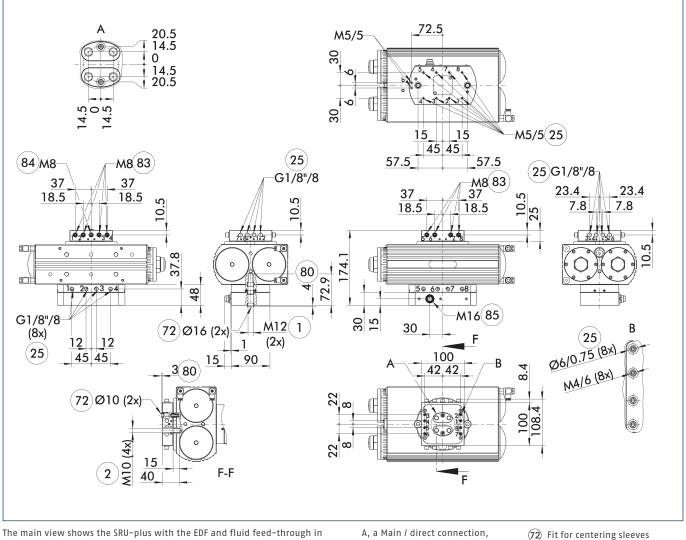
Main view for SRU-plus without EDF



The main view shows the SRU-plus in the most basic version, with a swivel angle of 180°/90°, small end position adjustability of 3°, without a middle position, and without fluid feed-through.

- 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
- $(\mathbf{\hat{2}})$ Attachment connection
- (72) Fit for centering sleeves
- (73) Fit for centering pins
- (80) Depth of the centering sleeve hole in the counter part
- (90) Cover caps
- (91) Not intended for mounting the unit, only for attachments
- (92) Sensor MMS 22..

Main view for SRU-plus with EDF



The main view shows the SRU-plus with the EDF and fluid feed-through in the most basic version, with a swivel angle of 180°/90°, small end position adjustability of 3°, and without a middle position.

- 1 The SRU-plus swivel unit with the EDF option can only be mounted from the bottom.
- A, a Main / direct connection, swivel unit clockwise turning
- B, b Main / direct connection, swivel unit counterclockwise turning
- (1) Connection swivel unit $(\mathbf{\hat{2}})$ Attachment connection

(25) Fluid feed-through

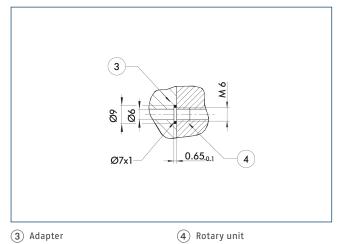
- hole in the counter part (83) Input for 3 pole sensor
- feed-through
- (84) Input for 4 pole sensor feed-through
- (85) Sensor feed-through output

(80) Depth of the centering sleeve

SRU-plus 60

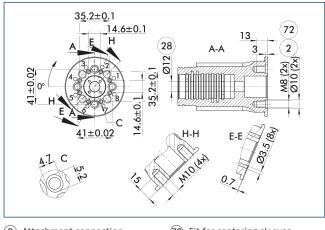
Universal swivel units

Hose-free direct connection M6



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

Pinion with fluid feed-through



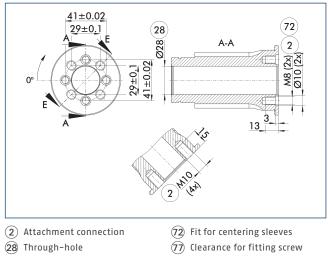
(2) Attachment connection(28) Through-hole

(72) Fit for centering sleeves(77) Clearance for fitting screw

Mounting pattern for fastening the rotating load to the pinion. The "4x large threads for 4 screws and 2 counter bores for centering sleeves" option is preferable to the "4x small threads for 2 screws and 2 shoulder bots (in the deeper counter bores)" option.

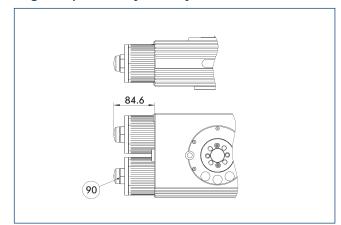
① View applicable only for versions without EDF!

Pinion without fluid feed-through



Mounting pattern for fastening the rotating load to the pinion. The "4x large threads for 4 screws and 2 counter bores for centering sleeves" option is preferable to the "4x small threads for 2 screws and 2 shoulder bots (in the deeper counter bores)" option.

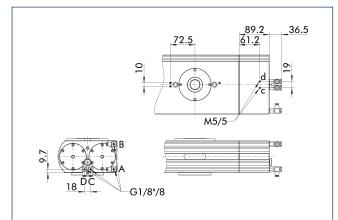
Large end position adjustability 90°



(90) Cover caps

Dimensional changes for the option with "large end position adjustability (90°)". This permits the end positions to be adjusted by up to 93°. More information can be found in the introduction to the series.

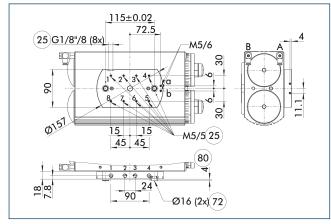
Pneumatic middle position (M)



- 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
- D, d Main / direct connection, middle position

Dimensional changes for the option with the "pneumatic middle position". Heavy attachments may swing before they reach the final position. The locked middle position (VM) can resolve this.

Connections for fluid feed-through



A, a Main / direct connection, swivel unit clockwise turning

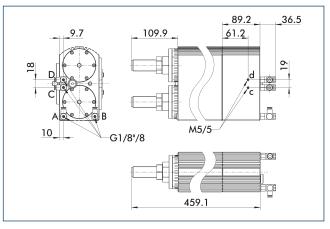
turning

- B, b Main / direct connection, swivel unit counterclockwise
- (25) Fluid feed-through
- (72) Fit for centering sleeves (80) Depth of the centering sleeve
- hole in the counter part

Lower mounting plate for the fluid feed-through option. Vacuum, gases or fluids can be fed through. The connection may be a screw type or a direct connection.

() View applicable only for versions without EDF!

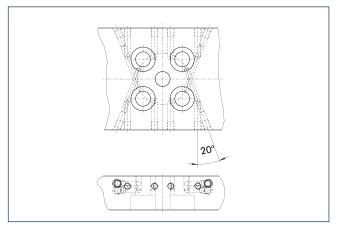
Locked middle position (VM)



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

Dimensional changes with the "locked middle position (VM)" option. The middle position is locked and is actuated with the force of the main drive piston. Shock absorbers dampen the travel to the middle position and prevent overshooting.

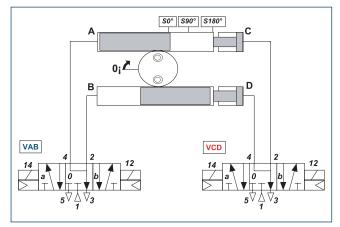
Adapter plate design



Suggested here is an adapter plate design which allows for all fluid feed-throughs to be accessed as easily as possible.

View applicable only for versions without EDF!

Pneumatic diagram of SRU-plus-VM — vertical axis



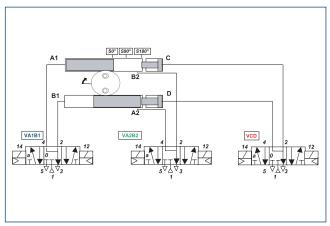
VM rotary actuators with a vertical rotary axis are generally actuated by two 5/3 directional control valves with an exhausted middle position. To prevent damage, it is essential to pay attention to the actuation sequence indicated in the operating manual.

Attachment kit for proximity switch at SRU-plus with EDF

M10 (4x)

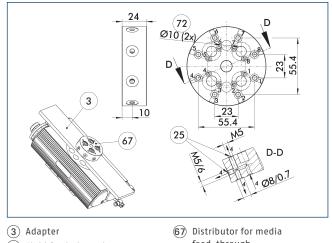
The attachment kit cannot be ordered separately. The SRU-plus with EDF and attachment kit are delivered as a complete unit by SCHUNK. Please pay attention to our options SRU-plus ...-AS.

Pneumatic diagram of SRU-plus-VM — horizontal axis



VM rotary actuators with a horizontal or non-vertical rotary axis must generally be actuated by three 5/3 directional control valves with an exhausted middle position. To prevent damage, it is essential to pay attention to the actuation sequence indicated in the operating manual.

Distributor for SRU-plus



25 Fluid feed-through

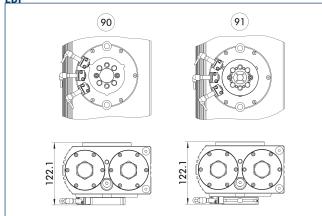
feed-through (72) Fit for centering sleeves

The distributor for SRU-plus facilitates the use of the fluid feed-throughs, both at the direct attachment to the distributor, and in the lines conveying the fluid inside the adapter plate. Due to the distributor, only a simple drilling pattern has to be drilled in the adapter plate located between the pinion and the distributor.

Description	ID
Distributor for SRU-	plus
V-SRU-plus 50/60	0358192

() View applicable only for versions without EDF!

Attachment kit for proximity switch at SRU-plus without EDF



90 AS-NHS-F-SRU-plus 60

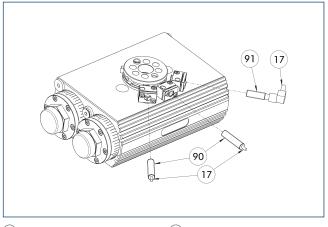
(91) AS-NHS-SRU-plus 60

The size-specific attachment kit is required for installing the inductive proximity switches. Up to three proximity switches (2x end position, 1x middle position) can be attached using the attachment kit.

ID					
Mounting kit for proximity switch with adjustable cam					
0362690					
0362691					
Mounting kit for proximity switch with fixed cam					
0362695					
0362696					
	ith adjustable 0362690 0362691 ith fixed cam 0362695				

Please note the number of necessary feed-throughs for your swivel unit when selecting the proper attachment kit.

Inductive proximity switches IN for SRU-plus without EDF



(17) Cable outlet(90) Sensor IN ...

(91) Sensor IN..-SA

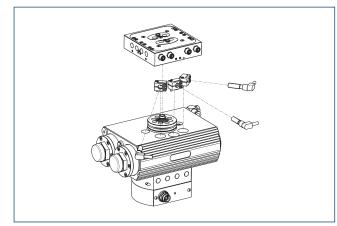
End and intermediate position monitoring can be mounted with mounting kit

Description	ID	Often combined			
Mounting kit for proximity switch with adjustable cam					
AS-NHS-SRU-plus 50/60	0362690				
AS-NHS-SRU-plus 50/60-8	0362691				
Mounting kit for proximity switch w	ith fixed cam				
AS-NHS-F-SRU-plus 50/60	0362695				
AS-NHS-F-SRU-plus 50/60-8	0362696				
Inductive Proximity Switches					
IN 80-S-M12	0301578				
IN 80-S-M8	0301478	•			
IN-C 80-S-M8	0301475				
INK 80-S	0301550				
INK 80-SL	0301579				
Inductive proximity switch with lateral outlet					
IN 80-S-M12-SA	0301587				
IN 80-S-M8-SA	0301483	•			
INK 80-S-SA	0301566				

() View applicable only for versions without EDF!

75

Inductive proximity switches IN for SRU-plus with EDF

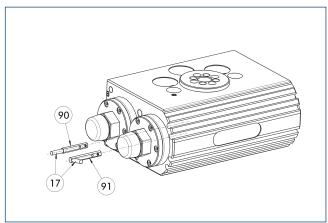


End and intermediate position monitoring mounted directly

Description	ID	Often combined
Inductive Proximity Switches		
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	•
IN-C 80-S-M8	0301475	
INK 80-S	0301550	
INK 80-SL	0301579	
Inductive proximity switch with I	ateral outlet	
IN 80-S-M12-SA	0301587	
IN 80-S-M8-SA	0301483	•
INK 80-S-SA	0301566	
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	
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-M12	0301776	•
V2-M8	0301775	•
V4-M12	0301747	
V4-M8	0301746	
V8-M12	0301752	
V8-M8	0301751	

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.

Electronic magnetic switches MMS



(17) Cable outlet

(91) Sensor MMS 22...-SA

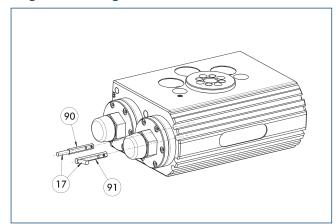
90 Sensor MMS 22..

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 o	utlet
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	

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-...

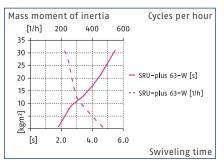
Position monitoring with one programmable position per sensor and electronics integrated in the sensor. Can be programmed using MT magnetic teaching tool (included in scope of delivery) or ST plug teaching tool (optional). End position monitoring is mounted in the C-slot. If the ST plug teaching tools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

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.

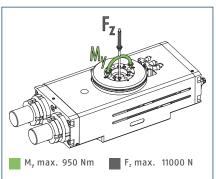


Max. admissible inertia J



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.

Pinion load

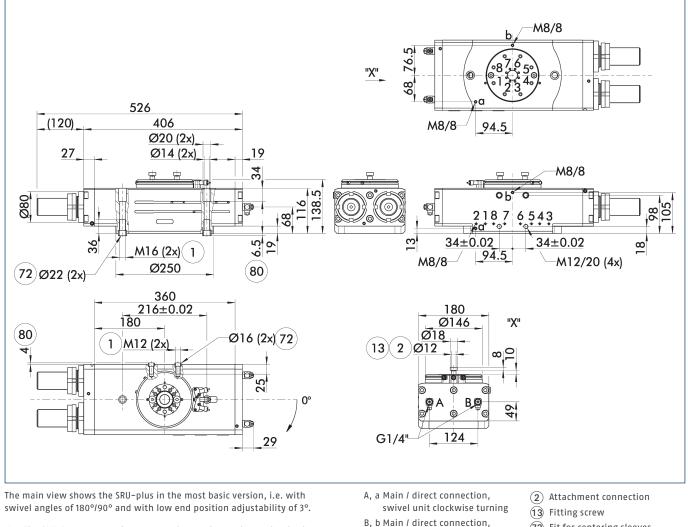


The indicated moments and forces are statical values and should not appear simultaneously Throttling has to be done for ensuring that the rotary motion takes place without impact or bouncing. otherwise the service life reduces.

Technical data of SRU-plus without middle position

Designation (soft damping)		SRU-plus 63-W-90-3-8-L	SRU-plus 63-W-90-3-8-R	SRU-plus 63-W-180-3-8
ID		0354841	0354851	0354801
Angle of rotation	[°]	90.0	90.0	180.0
End position adjustability	[°]	2.0	2.0	2.0
Torque	[Nm]	115.0	115.0	115.0
Middle position		none	none	none
Protection class IP		67	67	67
Weight	[kg]	26.50	26.50	26.50
Fluid consumption (2 x nominal angle)	[cm³]	656.0	656.0	1120.0
Nominal operating pressure	[bar]	6.0	6.0	6.0
min./max. operating pressure	[bar]	4.5/8	4.5/8	4.5/8
Diameter of connecting hose		8 x 6 x 1	8 x 6 x 1	8 x 6 x 1
No. of fluid feed-throughs		8	8	8
min./max. ambient temperature	[°C]	5/60	5/60	5/60
Repeat accuracy	[°]	0.05	0.05	0.05
Cleanroom class ISO 14644-1		5	5	5

Main view for SRU-plus

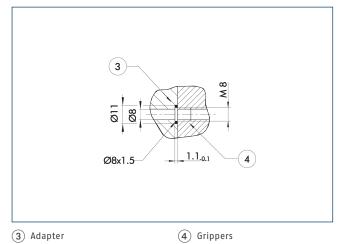


- The SDV-P pressure maintenance valve can be used to maintain the position in the case of a loss of pressure (see "Accessories" catalog section).
- swivel unit counterclockwise turning
- (1) Connection swivel unit
- $\fbox{(72)}$ Fit for centering sleeves
- 80 Depth of the centering sleeve hole in the counter part

SRU-plus 63

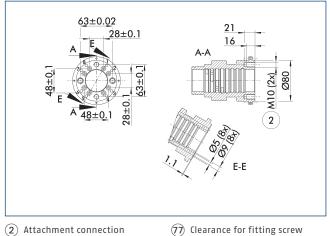
Universal swivel units

Hose-free direct connection M8



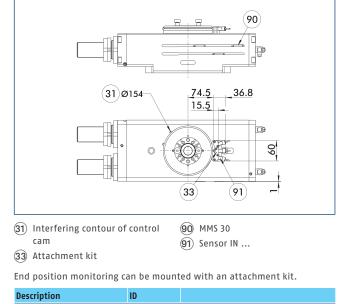
The direct connection is used for supplying compressed air without hoses. Instead, the pressure medium is fed through bore-holes in the mounting plate.

Pinion with fluid feed-through



Mounting pattern for assembling the rotating load to the pinion.

Attachment kit for proximity switch IN 80

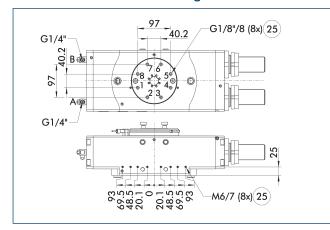


Description	ID		
Mounting kit for proximity switch with adjustable cam			
AS-NHS-SRU-plus 63	0300762		
Mounting kit for proximity switch with fixed cam			

AS-NHS-F-SRU-plus 63 0300772

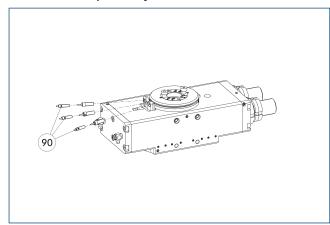
① This attachment kit needs to be ordered optionally as an accessory.

Connections for fluid feed-through



Lower mounting plate for the fluid feed-through option. Vacuum, gases or fluids can be fed through. The connection may be a screw type or a direct connection.

IN 80 inductive proximity switches



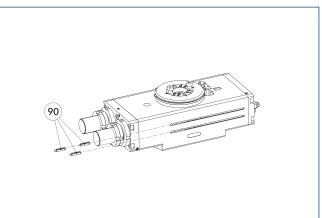
90 Sensor IN ...

End position monitoring can be mounted with an attachment kit.

Description	ID	Often combined			
Mounting kit for proximity s	Mounting kit for proximity switch with adjustable cam				
AS-NHS-SRU-plus 63	0300762				
Mounting kit for proximity s	witch with fix	ed cam			
AS-NHS-F-SRU-plus 63	0300772				
Inductive Proximity Switche	S				
IN 80-S-M12	0301578				
IN 80-S-M8	0301478	•			
IN-C 80-S-M8	0301475				
INK 80-S	0301550				
INK 80-SL	0301579				
Inductive proximity switch w	with lateral ou	tlet			
IN 80-S-M12-SA	0301587				
IN 80-S-M8-SA	0301483	•			
INK 80-S-SA	0301566				

Two sensors (closer/S) are required for each unit and extension cables are available as an option. This attachment kit needs to be ordered optionally as an accessory. For sensor cables, note the minimum permissible bending radii. These are generally 35 mm.

Electronic magnetic switches MMS



90 MMS 30

End position monitoring for mounting in the C-slot.

Description	ID	Often combined
Electronic magnetic switches MMS		
MMS 30-S-M12-PNP	0301571	
MMS 30-S-M8-PNP	0301471	•
MMSK 30-S-PNP	0301563	
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	
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	
Sensor distributor		
V2-M8	0301775	•
V4-M8	0301746	
V8-M8	0301751	

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.

SCHUNK GmbH & Co. KG Spann- und Greiftechnik

Bahnhofstr. 106 - 134 D-74348 Lauffen/Neckar Tel. +49-7133-103-0 Fax +49-7133-103-2239 info@de.schunk.com www.schunk.com

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