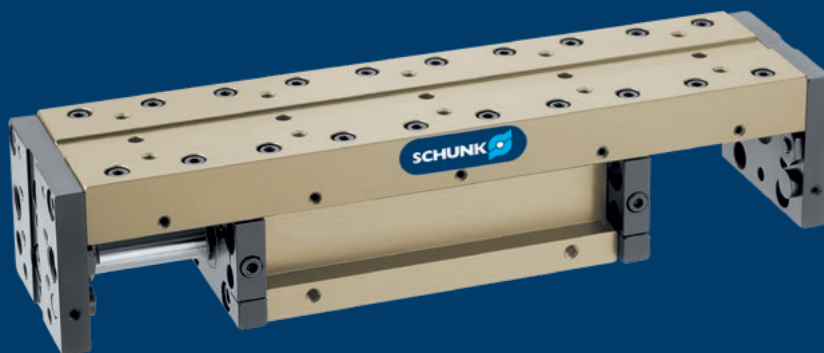




Hand in hand for tomorrow



Product data sheet

Universal linear module LM 100

Reliable. Precise. Modular.

Universal linear module LM

Linear module with pneumatic drive and pre-loaded crossed roller bearings, free from play in dovetail rails

Field of application

For use in clean environments, such as assembly and testing systems. Optimum standard solution for high-precision applications.



Advantages – Your benefits

Closed slide construction for high rigidity

Shock absorbers and proximity switches integrated in the projecting surfaces for vibration-free movements and end position monitoring

Compact dimensions for minimum interfering contours of the entire system

Pretensioned junction rollers That means absolutely scope-free

High basic load ratings in all load directions

Several intermediate positions possible for maximum flexibility in applications

Standardized mounting bores for numerous combinations with other components from the modular system

Rod lock by means of clamping cartridge for safety in case of emergency stops



Sizes
Quantity: 5



Weight
0.44 .. 15.81 kg



Driving force
67 .. 753 N



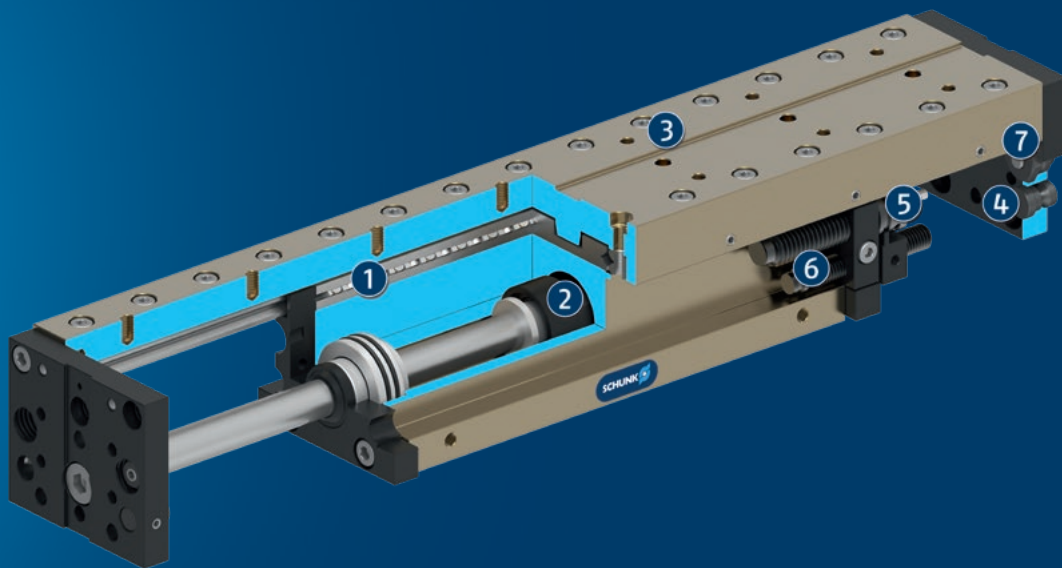
Stroke
13 .. 450 mm



Repeat accuracy
0.01 .. 0.02 mm

Functional description

The slide is guided with pretensioned crossed rollers at the base body and driven with a double-acting pneumatic cylinder which is integrated in the base body.



- ① **Cross roller guidance**
Pretensioned and scope-free
- ② **Drive**
Powerful piston rod cylinders
- ③ **Mounting pattern**
Completely integrated in the module system
- ④ **Switching cam**
for inductive proximity switch
- ⑤ **End position adjustability**
Convenient adjustment using the shock absorber threads
- ⑥ **Sensor system**
with sensor driver for convenient adjustment
- ⑦ **Damping adjustment**
Adjustment of the damping characteristics

General notes about the series

Housing material: Aluminum alloy, anodized

Guidance: Backlash-free, pre-loaded cross roller guide

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

Scope of delivery: Shock absorber and driver for proximity switch

Warranty: 24 months

Service life characteristics: on request

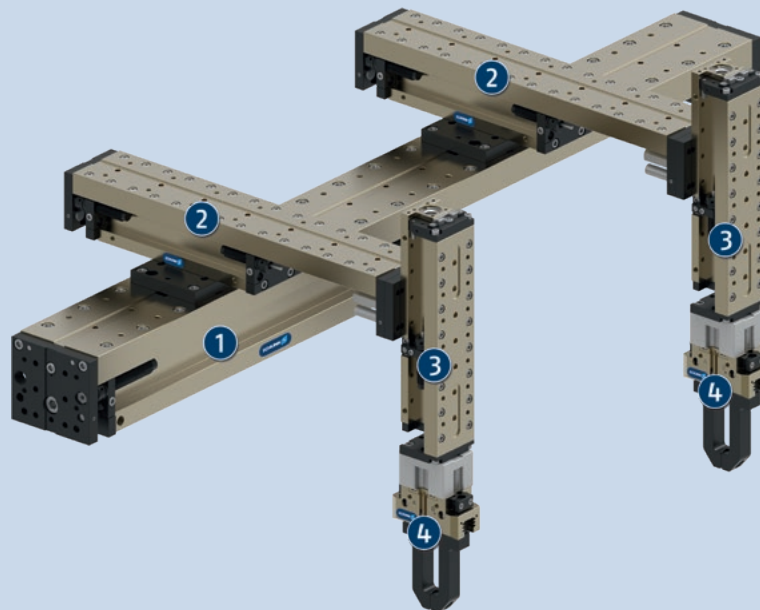
Repeat accuracy: is defined as a distribution of the end positions for 100 consecutive cycles.

Travel times: are pure movement times of the slide or the base body. 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.

Stroke: is the maximum nominal stroke of the unit. It can be shortened on both sides by the shock absorbers.

Layout or control calculation: For configuration or control calculation of the units, we recommend to use our Toolbox software, which is available online. A control calculation for the selected unit must be carried out to prevent overloading.

Ambient conditions: The modules are mainly designed for the use in clean ambient conditions. Please note that the life time of the modules can shorten if they are used in harsh ambient conditions, and that SCHUNK cannot assume liability in such cases. Please contact us for assistance.



Application example

Double three-axis gantry with superimposed machining areas for high throughput rates and simultaneous work processes

- ① Linear module LM
- ② Linear module LM

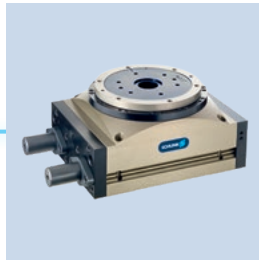
- ③ Linear module CLM
- ④ Universal gripper PGN-plus

SCHUNK offers more ...

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



Vane swivel unit



Rotary indexing table



Gripper for small components



Universal gripper



Intermediate stop



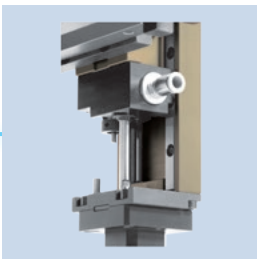
Intermediate stop cylinder



Pillar assembly system



Rotary gripper module



Rod lock



Pressure maintenance valve



Inductive proximity switch

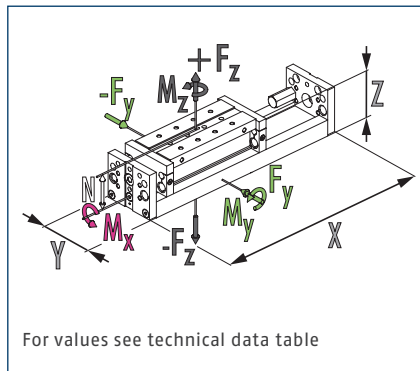
① For more information on these products can be found on the following product pages or at [schunk.com](https://www.schunk.com).

Options and special information

Version rod lock: prevents the structure from falling in the event of a sudden loss of energy. This module can be combined as standard with many elements from the modular system. We can assist you with questions.

Food-grade lubrication: The product contains food-compliant lubricants as standard. The requirements of standard EN 1672-2:2020 are not fully met. The relevant NSF certificates are available at <https://info.nsf.org/USDA/Listings.asp> using the lubricant information in the operating manual. Components such as rolling bearings, linear guides, or shock absorbers are not provided with food-compliant lubricants.

Dimensions and maximum loads



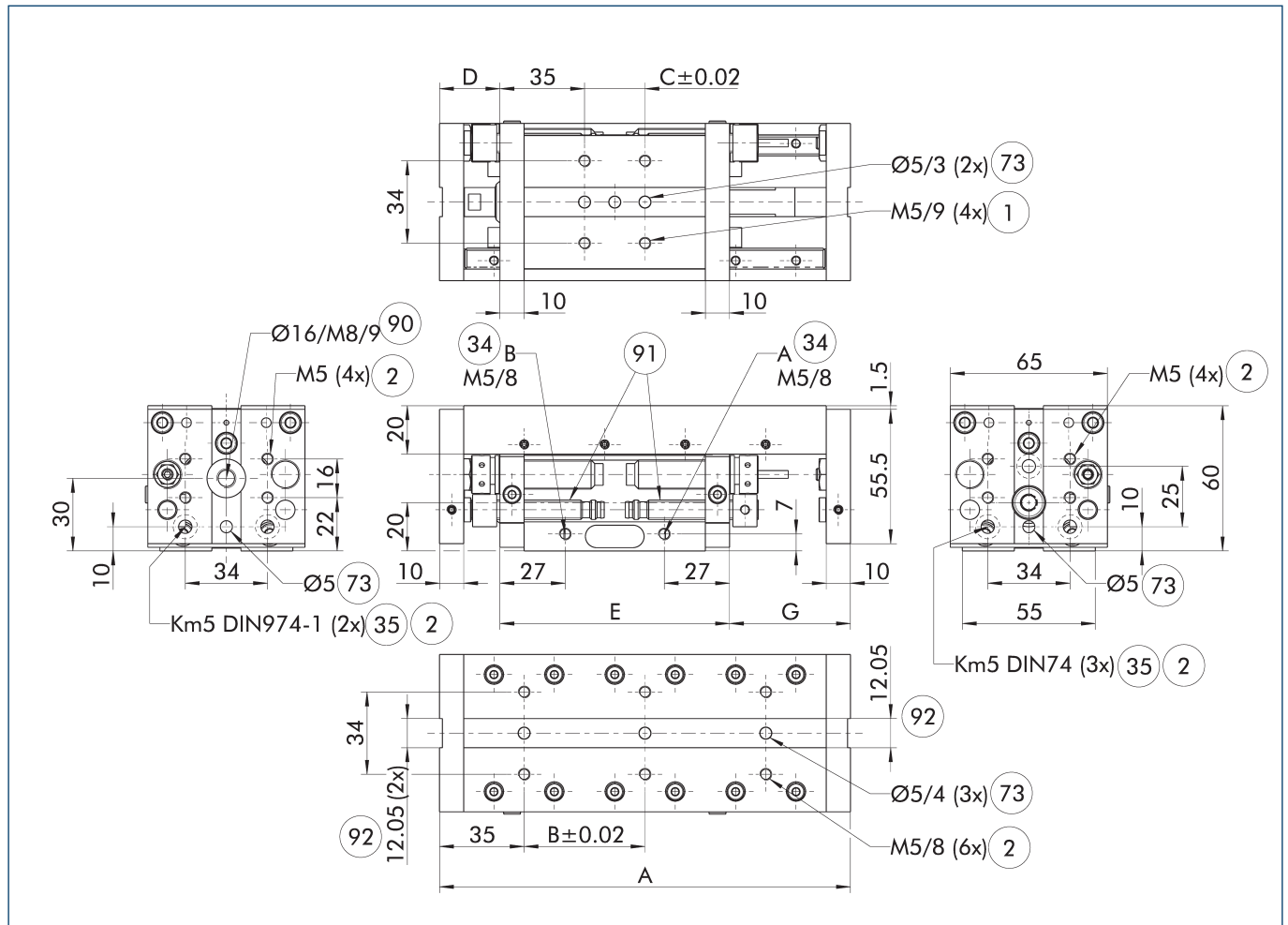
- ① The indicated forces and moments are maximum values for single load. If more than one force and/or torque occurs simultaneously, the case of application can be calculated by using the Toolbox. The force F_y can only be calculated by using the Toolbox.

Technical data

Description		LM 100-H025	LM 100-H050	LM 100-H075	LM 100-H100	LM 100-H125	LM 100-H150
ID		0314061	0314062	0314063	0314064	0314065	0314066
Stroke	[mm]	25	50	75	100	125	150
extend force	[N]	294	294	294	294	294	294
retracted force	[N]	226	226	226	226	226	226
Repeat accuracy	[mm]	0.02	0.02	0.02	0.02	0.02	0.02
Piston diameter	[mm]	25	25	25	25	25	25
Bar diameter	[mm]	12	12	12	12	12	12
Min./nom./max. operating pressure	[bar]	3/6/8	3/6/8	3/6/8	3/6/8	3/6/8	3/6/8
Cylinder volume/10 mm per double stroke	[cm ³]	4.9	4.9	4.9	4.9	4.9	4.9
Overall length	[mm]	170	270	270	370	370	470
IP protection class		40	40	40	40	40	40
Min./max. ambient temperature	[°C]	5/60	5/60	5/60	5/60	5/60	5/60
Cleanroom class ISO 14644-1:1999		6	6	6	6	6	6
Weight	[kg]	1.9	2.6	2.6	3.3	3.3	4
Drive concept		Piston rod cylinders	Piston rod cylinders	Piston rod cylinders	Piston rod cylinders	Piston rod cylinders	Piston rod cylinders
Dimensions X x Y x Z	[mm]	170 x 65 x 60	270 x 65 x 60	270 x 65 x 60	370 x 65 x 60	370 x 65 x 60	470 x 65 x 60
Clearance N (for moment load)	[mm]	44	44	44	44	44	44
Moments Mx max./My max./Mz max.	[Nm]	36/29.8/14.9	50/43/21.5	50/43/21.5	64/56.3/28.15	64/56.3/28.15	78/69.5/34.75
Forces Fz max.	[N]	1570	1352	1352	1264	1264	1216
Options and their characteristics							
Rod lock version		LM 100-H025-ASP	LM 100-H050-ASP	LM 100-H075-ASP	LM 100-H100-ASP	LM 100-H125-ASP	LM 100-H150-ASP
ID		0314461	0314462	0314463	0314464	0314465	0314466
Stroke loss of nominal stroke (on the rod side)	[mm]	12	12	12	12	12	12
Weight	[kg]	1.98	2.68	2.68	3.38	3.38	4.08
Static holding force	[N]	600	600	600	600	600	600
Max. axial play of the clamping	[mm]	0.25	0.25	0.25	0.25	0.25	0.25
Min. release pressure	[bar]	3	3	3	3	3	3

Description		LM 100-H175	LM 100-H200	LM 100-H225
ID		0314067	0314068	0314069
Stroke	[mm]	175	200	225
extend force	[N]	294	294	294
retracted force	[N]	226	226	226
Repeat accuracy	[mm]	0.02	0.02	0.02
Piston diameter	[mm]	25	25	25
Bar diameter	[mm]	12	12	12
Min./nom./max. operating pressure	[bar]	3/6/8	3/6/8	3/6/8
Cylinder volume/10 mm per double stroke	[cm ³]	4.9	4.9	4.9
Overall length	[mm]	470	570	570
IP protection class		40	40	40
Min./max. ambient temperature	[°C]	5/60	5/60	5/60
Cleanroom class ISO 14644-1:1999		6	6	6
Weight	[kg]	4	4.7	4.7
Drive concept		Piston rod cylinders	Piston rod cylinders	Piston rod cylinders
Dimensions X x Y x Z	[mm]	470 x 65 x 60	570 x 65 x 60	570 x 65 x 60
Clearance N (for moment load)	[mm]	44	44	44
Moments Mx max./My max./Mz max.	[Nm]	78/69.5/34.75	92/82.8/41.4	92/82.8/41.4
ForcesFz max.	[N]	1216	1187	1187
Options and their characteristics				
Rod lock version		LM 100-H175-ASP	LM 100-H200-ASP	LM 100-H225-ASP
ID		0314467	0314468	0314469
Stroke loss of nominal stroke (on the rod side)	[mm]	12	12	12
Weight	[kg]	4.08	4.78	4.78
Static holding force	[N]	600	600	600
Max. axial play of the clamping	[mm]	0.25	0.25	0.25
Min. release pressure	[bar]	3	3	3

Main view

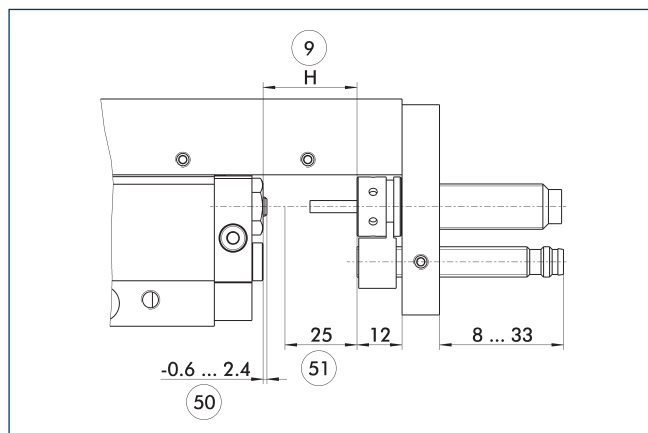


The linear module can be fastened either to the base body or the slide. The structure can also optionally be fastened to either the slide or the base body. This view shows the mounting of the module to the base body and the mounting of the structure to the slide.

- A Main connection - linear unit extended
- B Main connection - linear unit retracted
- ① Connection linear unit
- ② Attachment connection
- ③④ On both sides
- ③⑤ Back side
- ⑦③ Fit for centering pins
- ⑨⑩ Through-holes in the face plate and thread in the base body (only single sided)
- ⑨① Inductive proximity switch
- ⑨② Fit for centering strip LMZL

Description	ID	A	B	Quantity B	C	Quantity C	D	E	G
		[mm]	[mm]		[mm]		[mm]	[mm]	[mm]
LM 100-H025	0314061	170	50	2	25	1	25	95	50
LM 100-H050	0314062	270	50	4	25	3	25	145	100
LM 100-H075	0314063	270	50	4	25	3	25	145	100
LM 100-H100	0314064	370	50	6	25	5	25	195	150
LM 100-H125	0314065	370	50	6	25	5	25	195	150
LM 100-H150	0314066	470	50	8	25	7	25	245	200
LM 100-H175	0314067	470	50	8	25	7	25	245	200
LM 100-H200	0314068	570	50	10	25	9	25	295	250
LM 100-H225	0314069	570	50	10	25	9	25	295	250

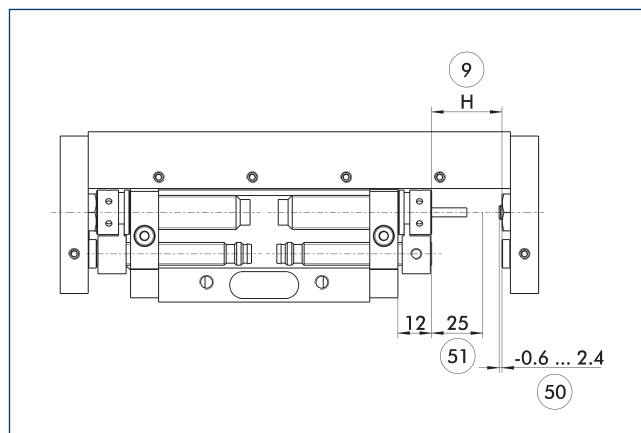
Fine adjustment



- ⑨ Nominal stroke
 ⑤① Stroke adjustment range
 ⑤② Damping stroke adjustment range

Shock absorbers can be mounted either on the base body or on the slide. This illustration shows the mounting on the slide and the possibility of stroke fine adjustment.

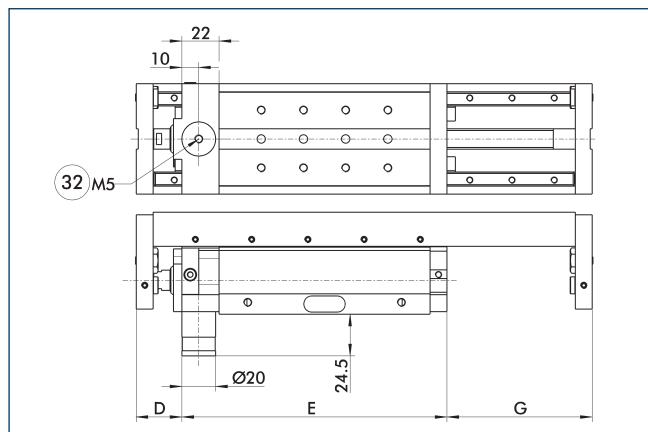
Fine adjustment



- ⑨ Nominal stroke
 ⑤① Stroke adjustment range
 ⑤② Damping stroke adjustment range

Shock absorbers can be mounted either on the base body or on the slide. This illustration shows the mounting on the base body and the possibility of stroke fine adjustment.

Rod lock

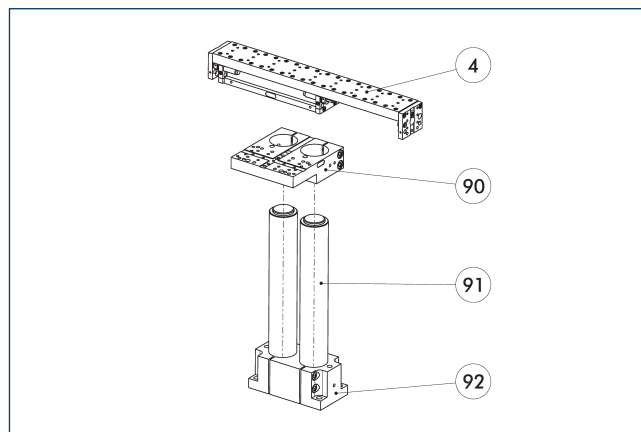


- ③② Pneumatic connection for holding brake

The rod lock prevents weights from falling in the event of energy loss, such as emergency stop situations. The rod lock can also be retrofitted, but this will reduce the nominal stroke.

Description	D	E	G
	[mm]	[mm]	[mm]
LM 100-H025-ASP	25	107	38
LM 100-H050-ASP	25	157	88
LM 100-H075-ASP	25	157	88
LM 100-H100-ASP	25	207	138
LM 100-H125-ASP	25	207	138
LM 100-H150-ASP	25	257	188
LM 100-H175-ASP	25	257	188
LM 100-H200-ASP	25	307	238
LM 100-H225-ASP	25	307	238

Attachment to a pillar assembly system

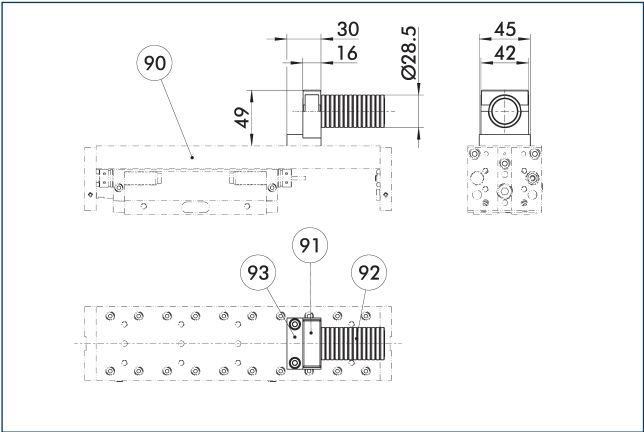


- ④ Linear unit
 ⑨② Double mounting plate, APDH
 ⑨① Pillars, hard-chromium plated, ground
 ⑨② Double socket S0D

This unit can be attached to the pillar assembly system as standard. See the Kombibox software, which can be found online, for the right arrangement for your application.

Description	ID	
		[mm]
Pillar assembly system media feed-through		
SPL 50	0313692	
Pillar assembly system mounting plate		
APDH 85	0313414	55 Aluminum
APDV 35	0313896	35 Aluminum
APDV 85	0313416	55 Aluminum
APEH 35	0313893	35 Aluminum
APEH 85	0313413	55 Aluminum
APEV 35	0313895	35 Aluminum
APEV 85	0313415	55 Aluminum

Media routing hose module Ø 21

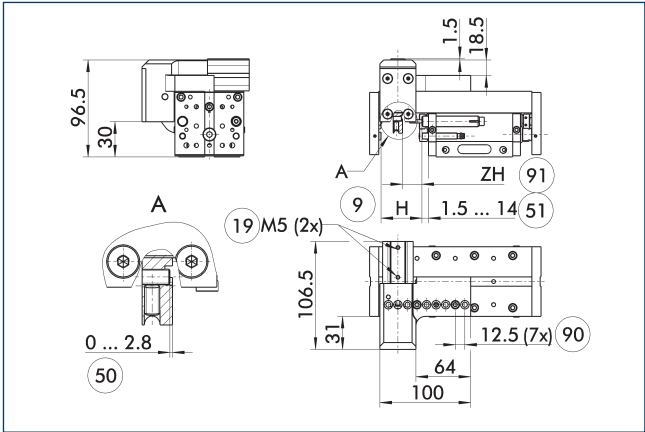


- 90 Linear module
- 91 Tube fastener MFB
- 92 Tube MFS
- 93 Tube plate SPL

Media routing with direct mounting on SCHUNK standard modules.

Description	ID
Pillar assembly system media feed-through	
SPL 50	0313692

LMZAW intermediate stop

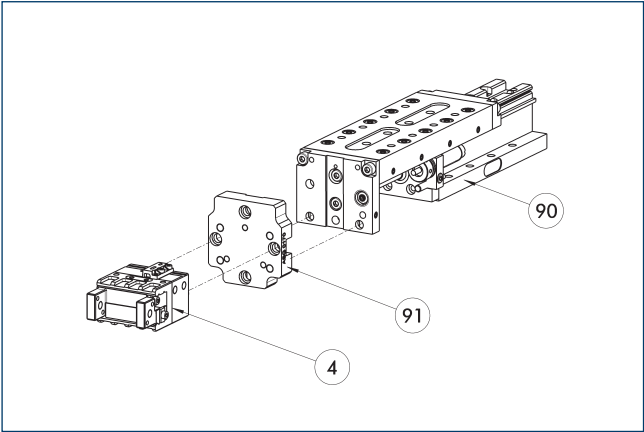


- 9 Nominal stroke
- 19 Air connection
- 50 Damping stroke adjustment range
- 51 Stroke adjustment range
- 90 Grid dimension, stroke adjustment
- 91 Intermediate stroke (min. 12.5 mm/max. nominal stroke H-4 mm)

Depending on the application, the end position can be approached without a repeat stroke. The possible operating cycles can be obtained from the operating manual

Description	ID	Weight
		[kg]
Intermediate stop		
LMZAW 100	0314115	0.98

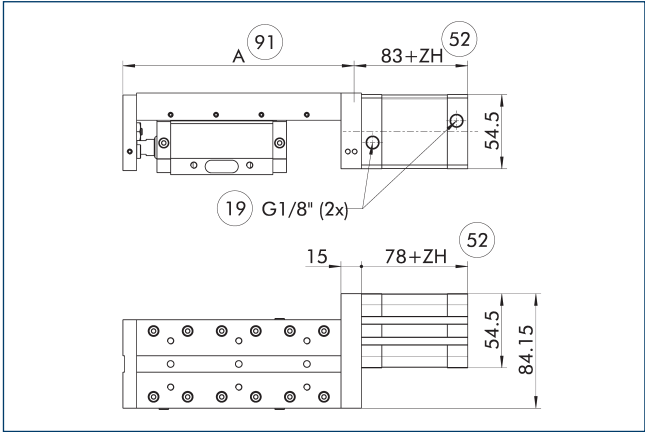
Modular Assembly Automation



- 4 Grippers
- 90 Linear module CLM/KLM/LM/ELP/ELM/ELS/HLM
- 91 ASG adapter plate

Grippers and linear modules can be combined with standard adapter plates from the modular assembly system. For more information see our main catalog "Modular Assembly Automation".

Intermediate stop, ZZA on the piston side



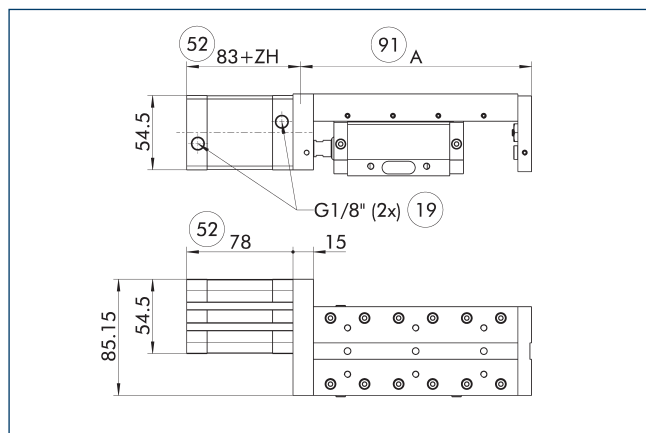
- 19 Air connection
- 52 Intermediate stroke
- 91 Overall length "A," the variant without intermediate stroke (see measurement chart of stroke variants)

The intermediate position is measured from the respective end position. The intermediate position can be approached from both sides and can proceed in the original stroke direction. The holding force is the piston force of the intermediate stop less the piston force of the linear module.

Description	Holding force	With with 0mm stroke	Weight per mm stroke
	[N]	[kg]	[kg]
Intermediate stop			
ZZA 101	460	0.75	0.006

① Sample order LM 100-H100-ZZA101-H30

Intermediate stop, ZZA on the piston rod side



①⑨ Air connection

⑤② Intermediate stroke

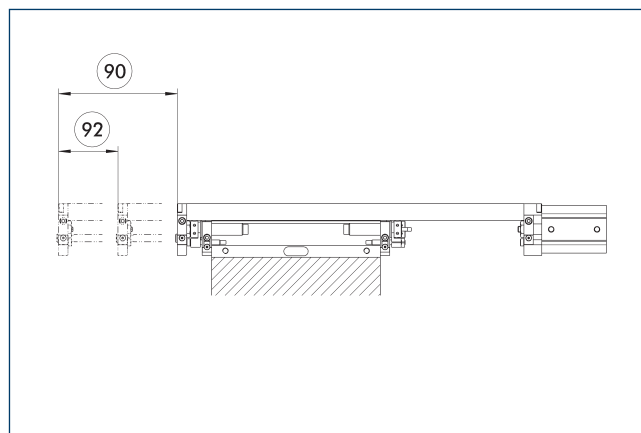
①⑨ Overall length "A," the variant without intermediate stroke (see measurement chart of stroke variants)

The intermediate position is measured from the respective end position. The intermediate position can be approached from both sides and can proceed in the original stroke direction. The holding force is the piston force of the intermediate stop less the piston force of the linear module.

Description	Holding force	With with 0mm stroke	Weight per mm stroke
	[N]	[kg]	[kg]
Intermediate stop			
ZZA 102	460	0.75	0.006

① Sample order LM 100-H100-ZZA102-H30

Design – variant 1

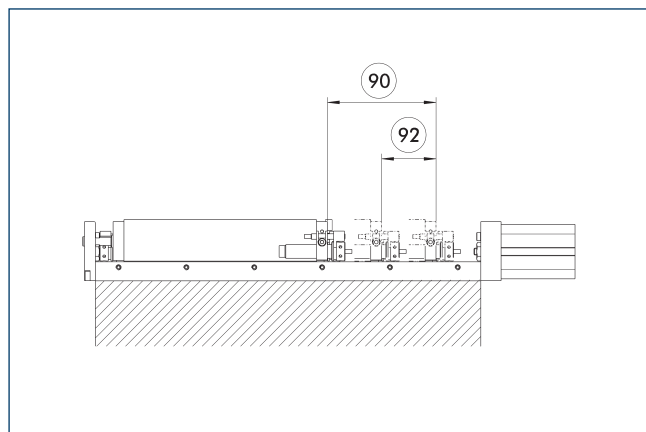


⑨⑨ Nominal stroke

⑨② Intermediate stroke

The corresponding intermediate stroke (ZH) is calculated by subtracting the intermediate stop cylinder stroke from the nominal stroke of the module. The intermediate stroke adjustment is ± 3 mm.

Design – variant 2

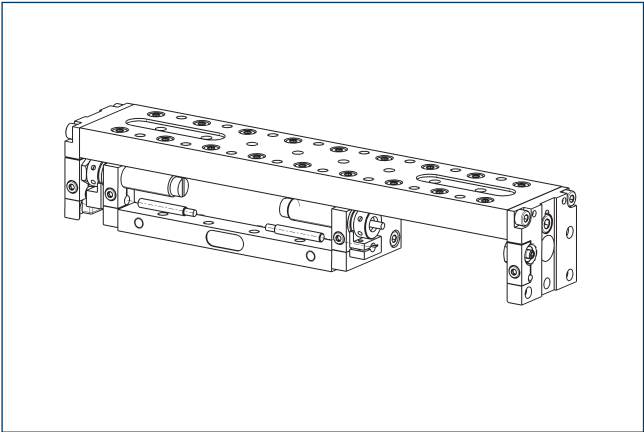


⑨⑨ Nominal stroke

⑨② Intermediate stroke

The corresponding intermediate stroke (ZH) is calculated by subtracting the intermediate stop cylinder stroke from the nominal stroke of the module. The intermediate stroke adjustment is ± 3 mm.

Inductive proximity switches



Directly mounted end position monitoring.

Description	ID	Often combined
Inductive proximity switch		
NI 30-KT	0313429	
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	
Cable extension		
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●

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



SCHUNK SE & Co. KG

Spanntechnik

Greiftechnik

Automatisierungstechnik

Bahnhofstr. 106 - 134

D-74348 Lauffen/Neckar

Tel. +49-7133-103-0

Fax +49-7133-103-2399

info@de.schunk.com

schunk.com

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