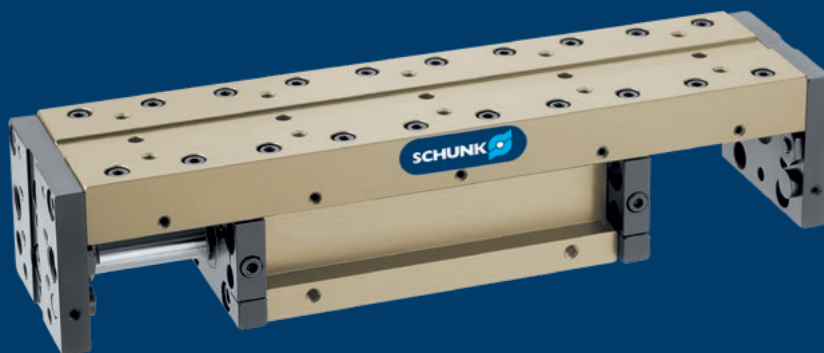




Hand in hand for tomorrow



Product data sheet

Universal linear module LM 300

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



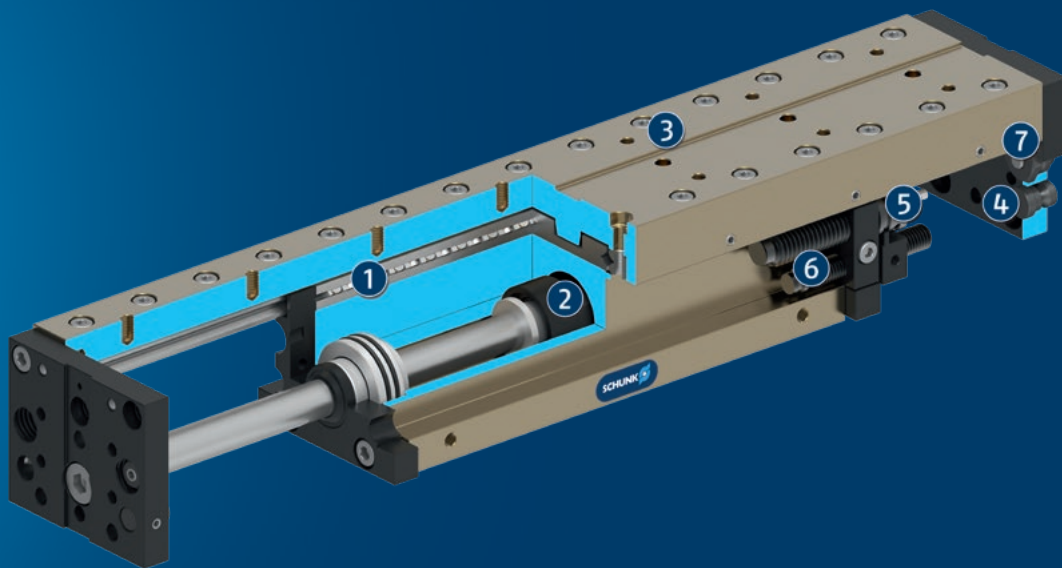
Stroke
13 .. 450 mm



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

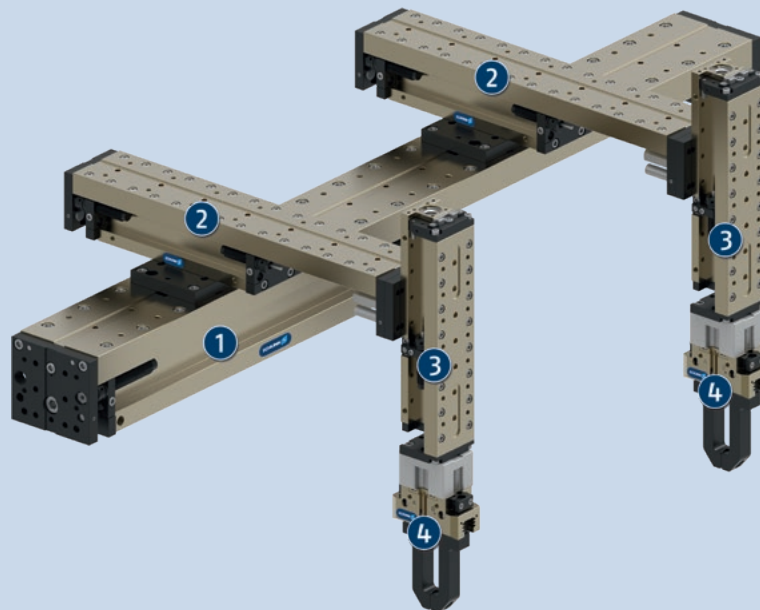
Repeat accuracy: is defined as a distribution of the end positions for 100 consecutive cycles.

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

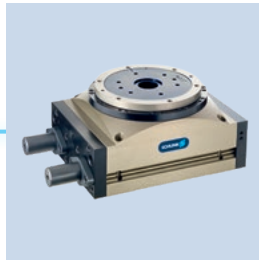
- ③ Linear module CLM
- ④ Universal gripper PGN-plus

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



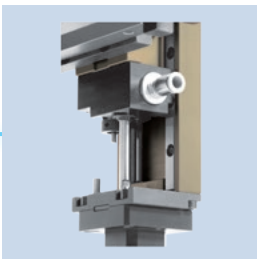
Intermediate stop cylinder



Pillar assembly system



Rotary gripper module



Rod lock



Pressure maintenance valve



Inductive proximity switch

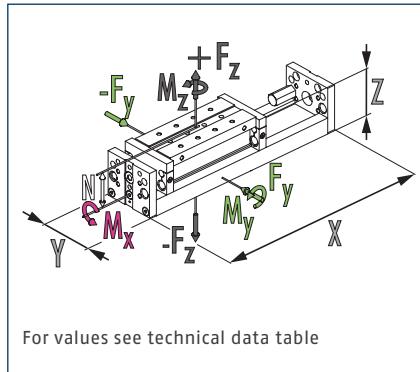
① For more information on these products can be found on the following product pages or at [schunk.com](https://www.schunk.com).

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 300-H025	LM 300-H050	LM 300-H075	LM 300-H100	LM 300-H125	LM 300-H150
ID		0314084	0314085	0314086	0314087	0314088	0314089
Stroke	[mm]	25	50	75	100	125	150
extend force	[N]	753	753	753	753	753	753
retracted force	[N]	633	633	633	633	633	633
Repeat accuracy	[mm]	0.02	0.02	0.02	0.02	0.02	0.02
Piston diameter	[mm]	40	40	40	40	40	40
Bar diameter	[mm]	16	16	16	16	16	16
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]	12.57	12.57	12.57	12.57	12.57	12.57
Overall length	[mm]	224	224	324	324	424	424
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]	4.85	4.85	6.2	6.2	7.55	7.55
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]	224 x 90 x 85	224 x 90 x 85	324 x 90 x 85	324 x 90 x 85	424 x 90 x 85	424 x 90 x 85
Clearance N (for moment load)	[mm]	64.5	64.5	64.5	64.5	64.5	64.5
Moments Mx max./My max./Mz max.	[Nm]	70/63/31.5	70/63/31.5	92/90/45	92/90/45	114/117/58.5	114/117/58.5
Forces Fz max.	[N]	2190	2190	2170	2170	2150	2150
Options and their characteristics							
Rod lock version		LM 300-H025-ASP	LM 300-H050-ASP	LM 300-H075-ASP	LM 300-H100-ASP	LM 300-H125-ASP	LM 300-H150-ASP
ID		0314484	0314485	0314486	0314487	0314488	0314489
Stroke loss of nominal stroke (on the rod side)	[mm]	18	18	18	18	18	18
Weight	[kg]	5.01	5.01	6.36	6.36	7.71	7.71
Static holding force	[N]	1000	1000	1000	1000	1000	1000
Max. axial play of the clamping	[mm]	0.3	0.3	0.3	0.3	0.3	0.3
Min. release pressure	[bar]	3	3	3	3	3	3

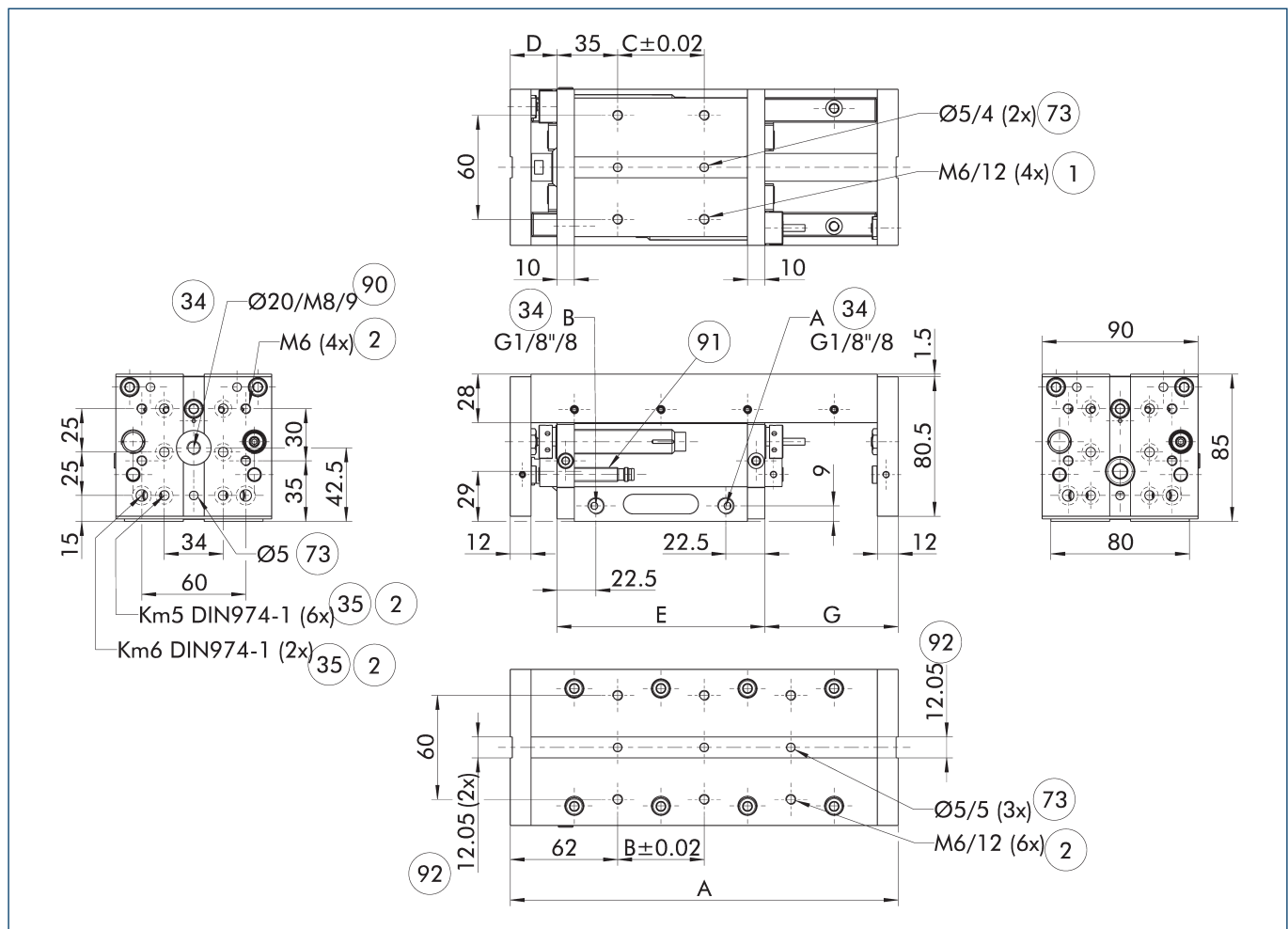
Description		LM 300-H175	LM 300-H200	LM 300-H225	LM 300-H250	LM 300-H275	LM 300-H300
ID		0314090	0314091	0314092	0314093	0314094	0314095
Stroke	[mm]	175	200	225	250	275	300
extend force	[N]	753	753	753	753	753	753
retracted force	[N]	633	633	633	633	633	633
Repeat accuracy	[mm]	0.02	0.02	0.02	0.02	0.02	0.02
Piston diameter	[mm]	40	40	40	40	40	40
Bar diameter	[mm]	16	16	16	16	16	16
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]	12.57	12.57	12.57	12.57	12.57	12.57
Overall length	[mm]	524	524	624	624	724	724
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]	8.9	8.9	10.25	10.25	11.6	11.6
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]	524 x 90 x 85	524 x 90 x 85	624 x 90 x 85	624 x 90 x 85	724 x 90 x 85	724 x 90 x 85
Clearance N (for moment load)	[mm]	64.5	64.5	64.5	64.5	64.5	64.5
Moments Mx max./My max./Mz max.	[Nm]	136/144/72	136/144/72	158/171/85.5	158/171/85.5	180/198/99	180/198/99
ForcesFz max.	[N]	2145	2145	2140	2140	2135	2135
Options and their characteristics							
Rod lock version		LM 300-H175-ASP	LM 300-H200-ASP	LM 300-H225-ASP	LM 300-H250-ASP	LM 300-H275-ASP	LM 300-H300-ASP
ID		0314490	0314491	0314492	0314493	0314494	0314495
Stroke loss of nominal stroke (on the rod side)	[mm]	18	18	18	18	18	18
Weight	[kg]	9.06	9.06	10.41	10.41	11.76	11.76
Static holding force	[N]	1000	1000	1000	1000	1000	1000
Max. axial play of the clamping	[mm]	0.3	0.3	0.3	0.3	0.3	0.3
Min. release pressure	[bar]	3	3	3	3	3	3

LM 300

Universal linear module

Description		LM 300-H325	LM 300-H350	LM 300-H375	LM 300-H400	LM 300-H425	LM 300-H450
ID		0314096	0314097	0314098	0314099	0314100	0314101
Stroke	[mm]	325	350	375	400	425	450
extend force	[N]	753	753	753	753	753	753
retracted force	[N]	633	633	633	633	633	633
Repeat accuracy	[mm]	0.02	0.02	0.02	0.02	0.02	0.02
Piston diameter	[mm]	40	40	40	40	40	40
Bar diameter	[mm]	16	16	16	16	16	16
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	[cm³]	12.57	12.57	12.57	12.57	12.57	12.57
Overall length	[mm]	824	824	924	924	1024	1024
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]	12.95	12.95	14.3	14.3	15.65	15.65
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]	824 x 90 x 85	824 x 90 x 85	924 x 90 x 85	924 x 90 x 85	1024 x 90 x 85	1024 x 90 x 85
Clearance N (for moment load)	[mm]	64.5	64.5	64.5	64.5	64.5	64.5
Moments Mx max./My max./Mz max.	[Nm]	202/225/112.5	202/225/112.5	224/252/126	224/252/126	246/279/139.5	246/279/139.5
ForcesFz max.	[N]	2130	2130	2125	2125	2125	2125
Options and their characteristics							
Rod lock version		LM 300-H325-ASP	LM 300-H350-ASP	LM 300-H375-ASP	LM 300-H400-ASP	LM 300-H425-ASP	LM 300-H450-ASP
ID		0314496	0314497	0314498	0314499	0314500	0314501
Stroke loss of nominal stroke (on the rod side)	[mm]	18	18	18	18	18	18
Weight	[kg]	13.11	13.11	14.46	14.46	15.81	15.81
Static holding force	[N]	1000	1000	1000	1000	1000	1000
Max. axial play of the clamping	[mm]	0.3	0.3	0.3	0.3	0.3	0.3
Min. release pressure	[bar]	3	3	3	3	3	3

Main view



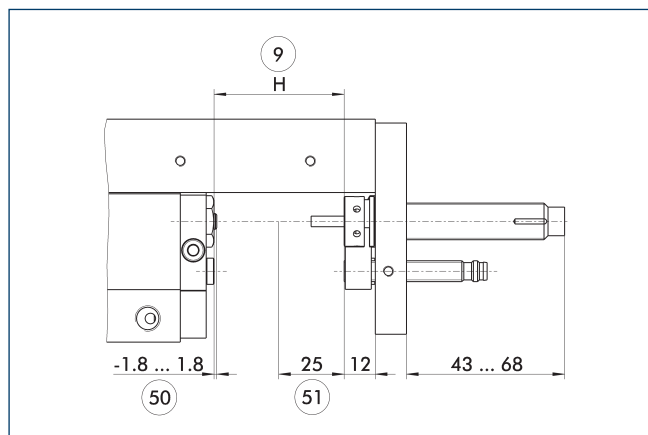
The linear module can be fastened either to the base body or the slide. The structure can also optionally be fastened to either the slide or the base body. This view shows the mounting of the module to the base body and the mounting of the structure to the slide.

- A Main connection – linear unit extended
 B Main connection – linear unit retracted
 ① Connection linear unit
 ② Attachment connection
 ③ 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 300-H025	0314084	224	50	2	50	1	27	120	77
LM 300-H050	0314085	224	50	2	50	1	27	120	77
LM 300-H075	0314086	324	50	4	50	2	27	170	127
LM 300-H100	0314087	324	50	4	50	2	27	170	127
LM 300-H125	0314088	424	50	6	50	3	27	220	177
LM 300-H150	0314089	424	50	6	50	3	27	220	177
LM 300-H175	0314090	524	50	8	50	4	27	270	227
LM 300-H200	0314091	524	50	8	50	4	27	270	227
LM 300-H225	0314092	624	50	10	50	5	27	320	277
LM 300-H250	0314093	624	50	10	50	5	27	320	277
LM 300-H275	0314094	724	50	12	50	6	27	370	327
LM 300-H300	0314095	724	50	12	50	6	27	370	327
LM 300-H325	0314096	824	50	14	50	7	27	420	377
LM 300-H350	0314097	824	50	14	50	7	27	420	377
LM 300-H375	0314098	924	50	16	50	8	27	470	427
LM 300-H400	0314099	924	50	16	50	8	27	470	427
LM 300-H425	0314100	1024	50	18	50	9	27	520	477
LM 300-H450	0314101	1024	50	18	50	9	27	520	477

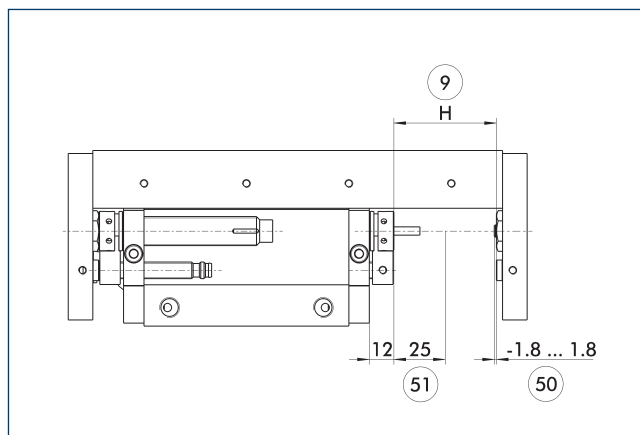
Fine adjustment



- ⑨ Nominal stroke
- ⑤① Stroke adjustment range
- ⑤① 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.

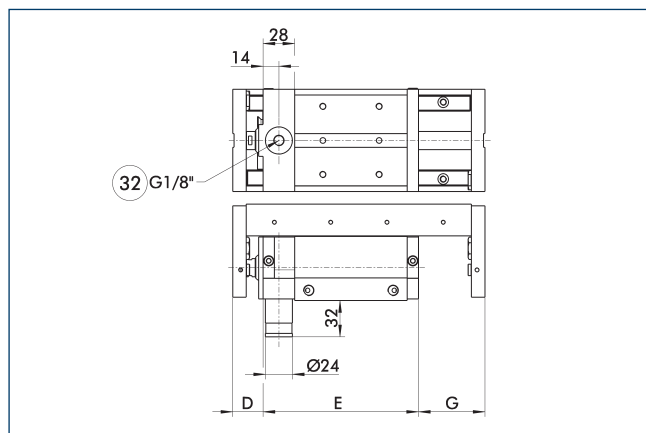
Fine adjustment



- ⑨ Nominal stroke
- ⑤① Stroke adjustment range
- ⑤① 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

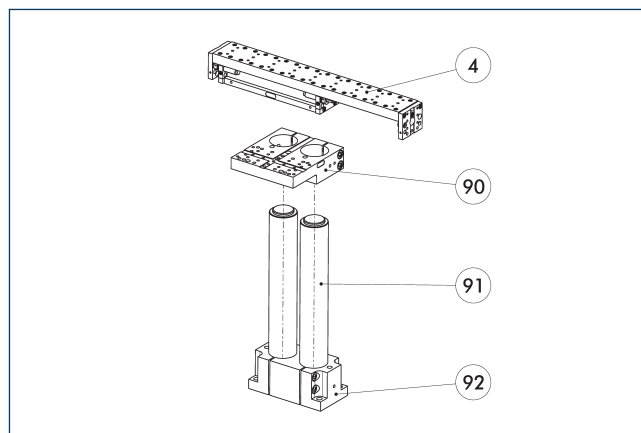


- 32 Pneumatic connection for holding brake

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 300-H025-ASP	27	138	59
LM 300-H050-ASP	27	138	59
LM 300-H075-ASP	27	188	109
LM 300-H100-ASP	27	188	109
LM 300-H125-ASP	27	238	159
LM 300-H150-ASP	27	238	159
LM 300-H175-ASP	27	288	209
LM 300-H200-ASP	27	288	209
LM 300-H225-ASP	27	338	259
LM 300-H250-ASP	27	338	259
LM 300-H275-ASP	27	388	309
LM 300-H300-ASP	27	388	309
LM 300-H325-ASP	27	438	359
LM 300-H350-ASP	27	438	359
LM 300-H375-ASP	27	488	409
LM 300-H400-ASP	27	488	409
LM 300-H425-ASP	27	538	459
LM 300-H450-ASP	27	538	459

Attachment to a pillar assembly system



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

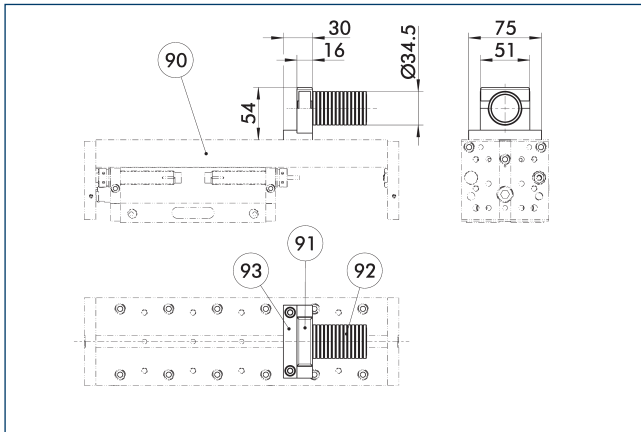
This unit can be attached to the pillar assembly system as standard. See the Kombibox software, which can be found online, for the right arrangement for your application.

Description	ID	
		[mm]
Pillar assembly system media feed-through		
SPL 200	0313693	
Pillar assembly system mounting plate		
APDH 85	0313414	55 Aluminum
APDV 85	0313416	55 Aluminum
APEH 85	0313413	55 Aluminum
APEV 85	0313415	55 Aluminum

LM 300

Universal linear module

Media routing hose module Ø 29

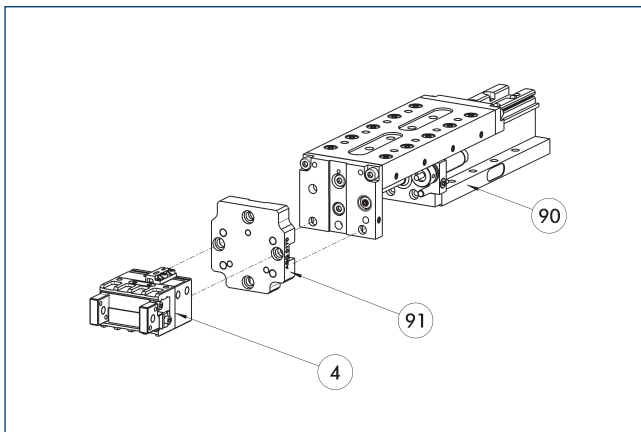


- 90 Linear module
 91 Tube fastener MFB
 92 Tube MFS
 93 Tube plate SPL

Media routing with direct mounting on SCHUNK standard modules.

Description	ID	
Pillar assembly system media feed-through		
SPL 200	0313693	

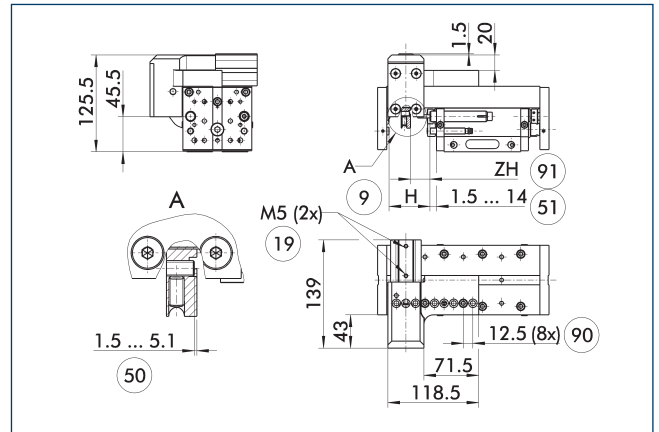
Modular Assembly Automation



- ④ Grippers
⑨① 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".

LMZAW intermediate stop

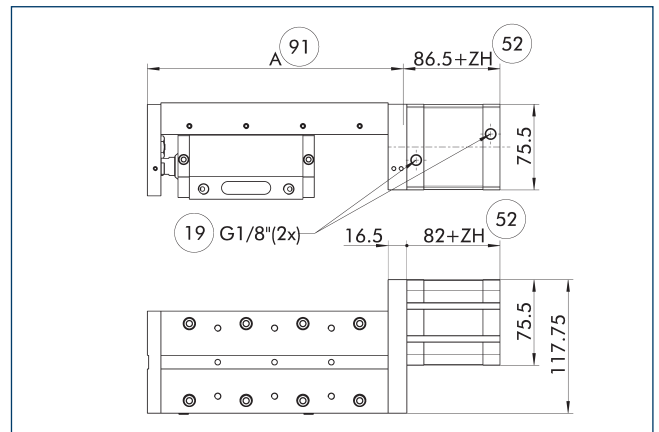


- | | | | |
|----|---------------------------------|----|---|
| 9 | Nominal stroke | 90 | Grid dimension, stroke adjustment |
| 19 | Air connection | 91 | Intermediate stroke (min. 18.5 mm/max. nominal stroke H-5 mm) |
| 50 | Damping stroke adjustment range | | |
| 51 | Stroke adjustment range | | |

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 300	0314117	1.6

Intermediate stop, ZZA on the piston side



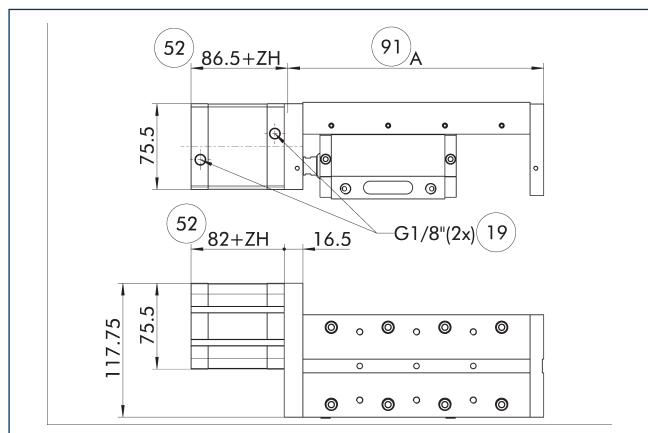
- ①9 Air connection
⑤2 Intermediate stroke
⑨1 Overall length "A," the variant without intermediate stroke (see measurement chart of stroke variants)

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 301	1117	1.7	0.011

Sample order LM 300-H100-ZZA301-H30

Intermediate stop, ZZA on the piston rod side



①⑨ Air connection

⑤② Intermediate stroke

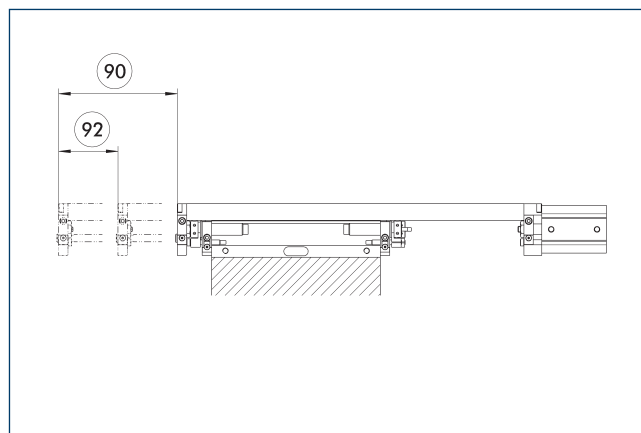
⑨① Overall length "A," the variant without intermediate stroke (see measurement chart of stroke variants)

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 302	1117	1.7	0.011

① Sample order LM 300-H100-ZZA302-H30

Design – variant 1

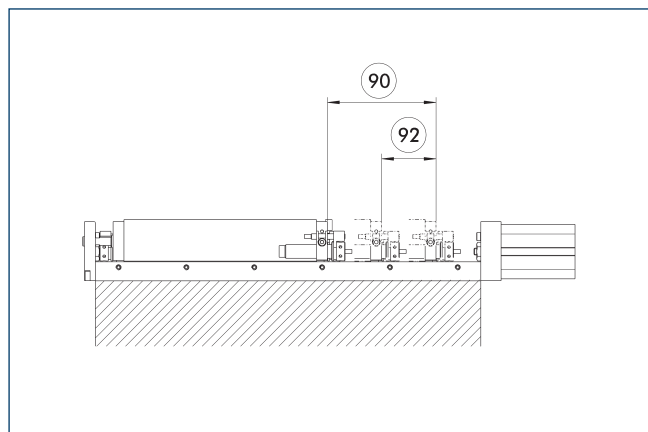


⑨① Nominal stroke

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

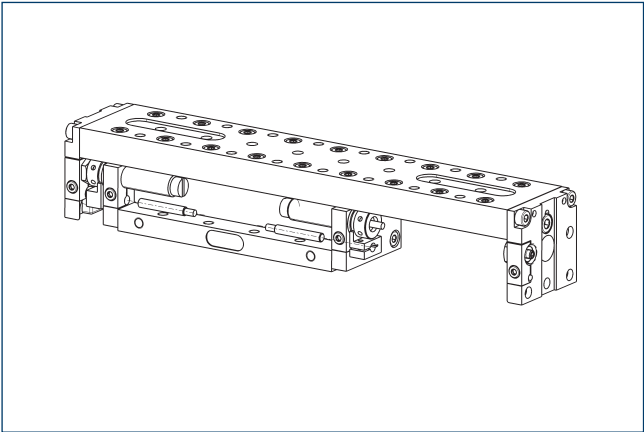


⑨① Nominal stroke

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

Folgen Sie uns | *Follow us*

