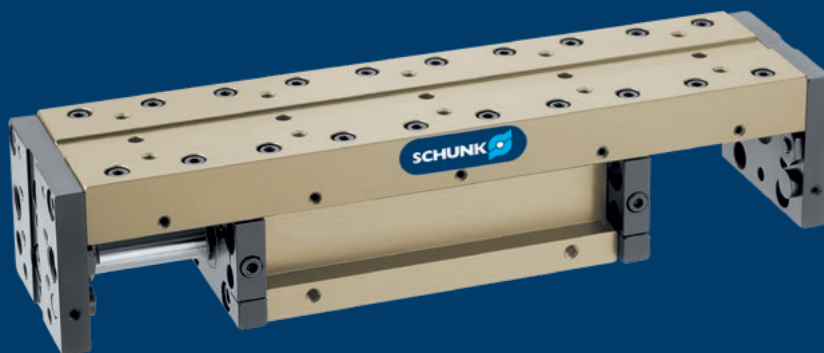




Hand in hand for tomorrow



## Product data sheet

Universal linear module LM 50

# 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



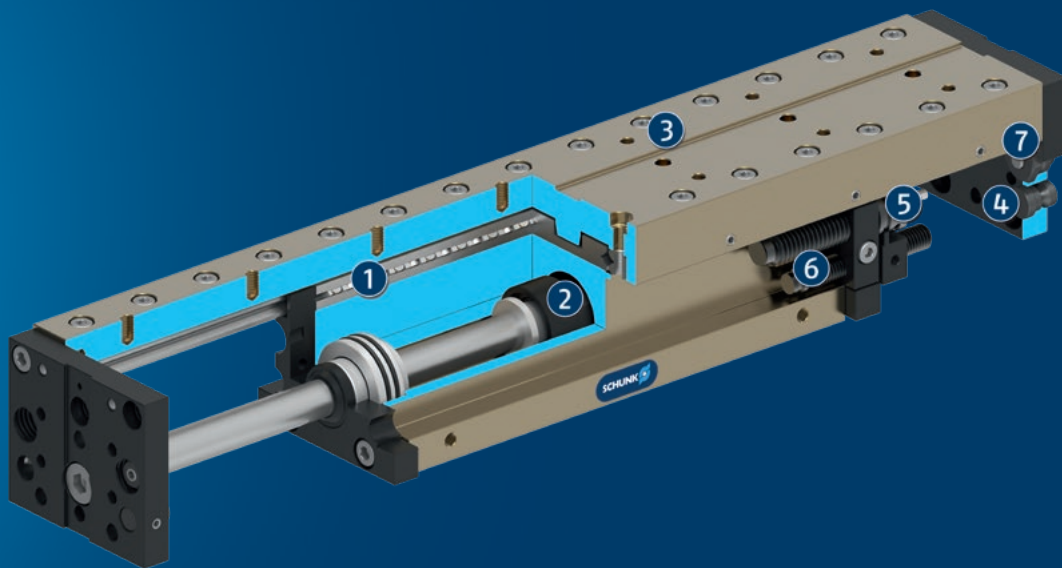
Stroke  
13 .. 450 mm



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

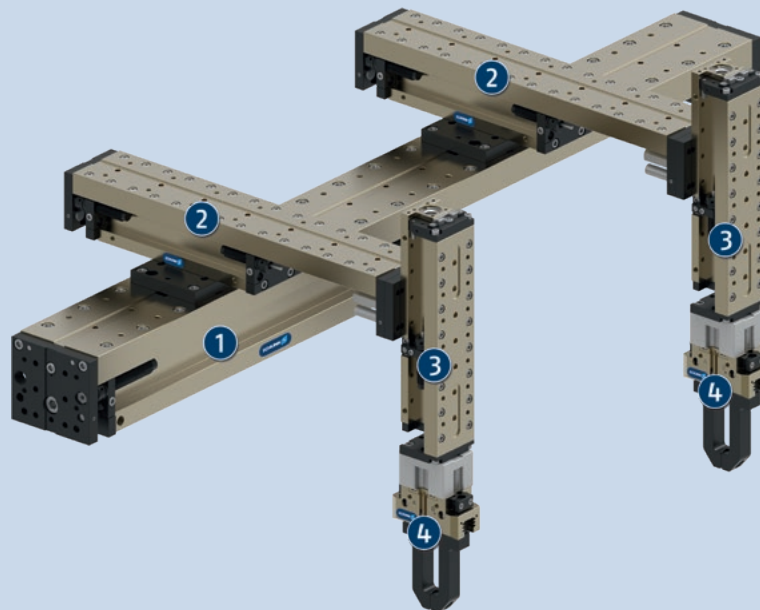
**Repeat accuracy:** is defined as a distribution of the end positions for 100 consecutive cycles.

**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

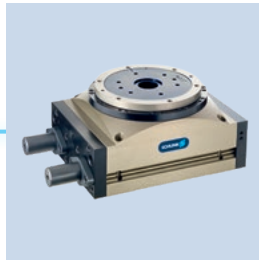
- ③ Linear module CLM
- ④ Universal gripper PGN-plus

## 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



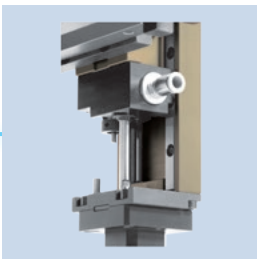
Intermediate stop cylinder



Pillar assembly system



Rotary gripper module



Rod lock



Pressure maintenance valve



Inductive proximity switch

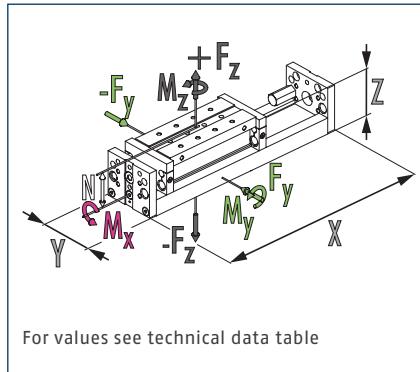
① For more information on these products can be found on the following product pages or at [schunk.com](https://www.schunk.com).

## 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

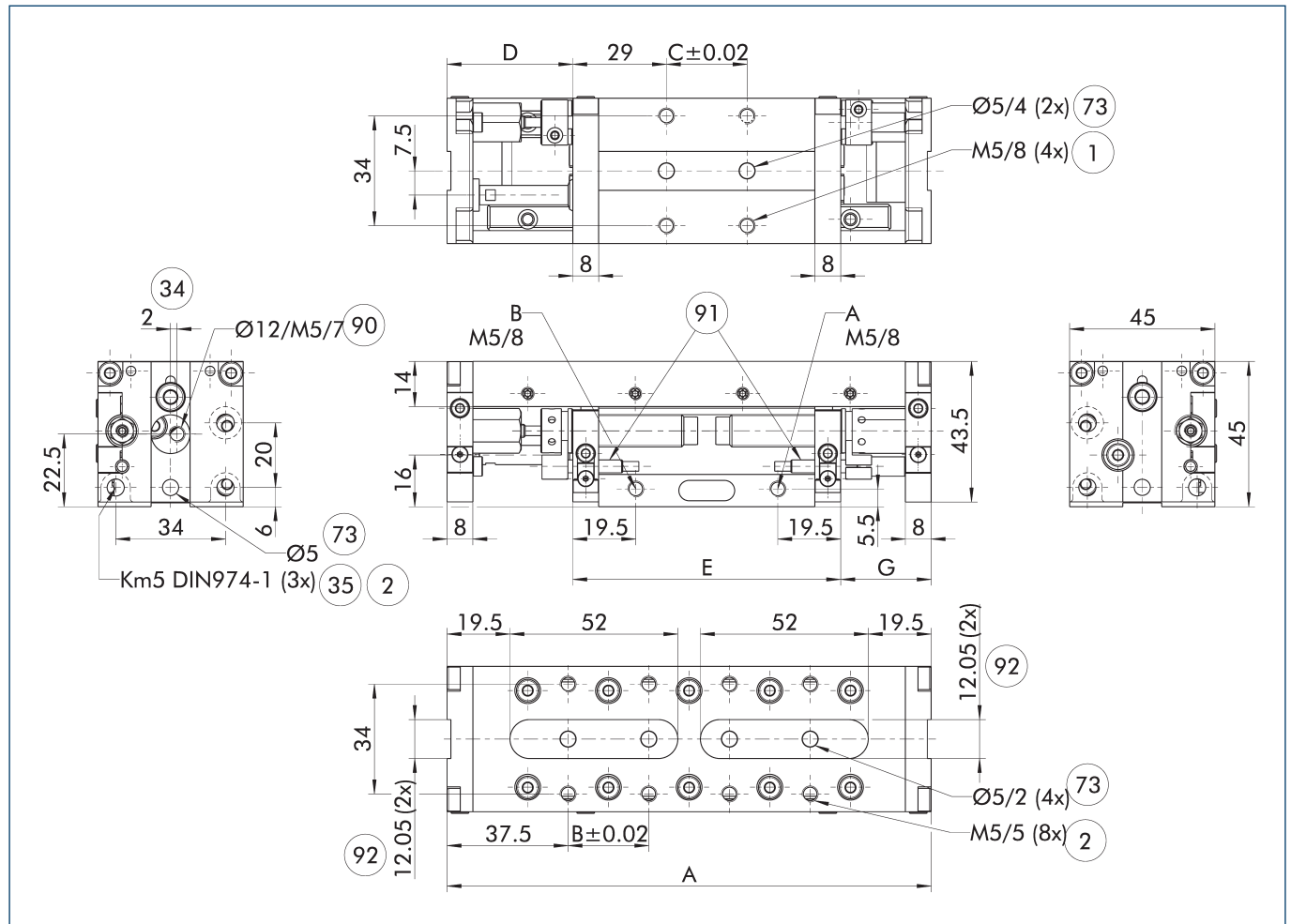
| Description                                     |                    | LM 50-H013           | LM 50-H025           | LM 50-H038           | LM 50-H050           | LM 50-H063           | LM 50-H075           |
|-------------------------------------------------|--------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| ID                                              |                    | 0314053              | 0314054              | 0314055              | 0314056              | 0314057              | 0314058              |
| Stroke                                          | [mm]               | 13                   | 25                   | 38                   | 50                   | 63                   | 75                   |
| extend force                                    | [N]                | 120                  | 120                  | 120                  | 120                  | 120                  | 120                  |
| retracted force                                 | [N]                | 103                  | 103                  | 103                  | 103                  | 103                  | 103                  |
| Repeat accuracy                                 | [mm]               | 0.02                 | 0.02                 | 0.02                 | 0.02                 | 0.02                 | 0.02                 |
| Piston diameter                                 | [mm]               | 16                   | 16                   | 16                   | 16                   | 16                   | 16                   |
| Bar diameter                                    | [mm]               | 6                    | 6                    | 6                    | 6                    | 6                    | 6                    |
| 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 <sup>3</sup> ] | 2                    | 2                    | 2                    | 2                    | 2                    | 2                    |
| Overall length                                  | [mm]               | 150                  | 150                  | 200                  | 200                  | 250                  | 250                  |
| 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]               | 0.88                 | 0.88                 | 1.06                 | 1.06                 | 1.24                 | 1.24                 |
| 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]               | 150 x 45 x 45        | 150 x 45 x 45        | 200 x 45 x 45        | 200 x 45 x 45        | 250 x 45 x 45        | 250 x 45 x 45        |
| Clearance N (for moment load)                   | [mm]               | 35                   | 35                   | 35                   | 35                   | 35                   | 35                   |
| Moments Mx max./My max./Mz max.                 | [Nm]               | 10.5/11.6/5.8        | 10.5/11.6/5.8        | 13/15.1/7.55         | 13/15.1/7.55         | 15.5/18.6/9.3        | 15.5/18.6/9.3        |
| Forces Fz max.                                  | [N]                | 806                  | 806                  | 705                  | 705                  | 656                  | 656                  |
| <b>Options and their characteristics</b>        |                    |                      |                      |                      |                      |                      |                      |
| Rod lock version                                |                    |                      | LM 50-H025-ASP       | LM 50-H038-ASP       | LM 50-H050-ASP       | LM 50-H063-ASP       | LM 50-H075-ASP       |
| ID                                              |                    |                      | 0314454              | 0314455              | 0314456              | 0314457              | 0314458              |
| Stroke loss of nominal stroke (on the rod side) | [mm]               |                      | 10                   | 10                   | 10                   | 10                   | 10                   |
| Weight                                          | [kg]               |                      | 0.91                 | 1.09                 | 1.09                 | 1.27                 | 1.27                 |
| Static holding force                            | [N]                |                      | 180                  | 180                  | 180                  | 180                  | 180                  |
| Max. axial play of the clamping                 | [mm]               |                      | 0.2                  | 0.2                  | 0.2                  | 0.2                  | 0.2                  |
| Min. release pressure                           | [bar]              |                      | 3                    | 3                    | 3                    | 3                    | 3                    |

| Description                                     |                    | LM 50-H088           | LM 50-H100           |
|-------------------------------------------------|--------------------|----------------------|----------------------|
| ID                                              |                    | 0314059              | 0314060              |
| Stroke                                          | [mm]               | 88                   | 100                  |
| extend force                                    | [N]                | 120                  | 120                  |
| retracted force                                 | [N]                | 103                  | 103                  |
| Repeat accuracy                                 | [mm]               | 0.02                 | 0.02                 |
| Piston diameter                                 | [mm]               | 16                   | 16                   |
| Bar diameter                                    | [mm]               | 6                    | 6                    |
| Min./nom./max. operating pressure               | [bar]              | 3/6/8                | 3/6/8                |
| Cylinder volume/10 mm per double stroke         | [cm <sup>3</sup> ] | 2                    | 2                    |
| Overall length                                  | [mm]               | 300                  | 300                  |
| IP protection class                             |                    | 40                   | 40                   |
| Min./max. ambient temperature                   | [°C]               | 5/60                 | 5/60                 |
| Cleanroom class ISO 14644-1:1999                |                    | 6                    | 6                    |
| Weight                                          | [kg]               | 1.42                 | 1.42                 |
| Drive concept                                   |                    | Piston rod cylinders | Piston rod cylinders |
| Dimensions X x Y x Z                            | [mm]               | 300 x 45 x 45        | 300 x 45 x 45        |
| Clearance N (for moment load)                   | [mm]               | 35                   | 35                   |
| Moments Mx max./My max./Mz max.                 | [Nm]               | 18/22/11             | 18/22/11             |
| ForcesFz max.                                   | [N]                | 627                  | 627                  |
| <b>Options and their characteristics</b>        |                    |                      |                      |
| Rod lock version                                |                    | LM 50-H088-ASP       | LM 50-H100-ASP       |
| ID                                              |                    | 0314459              | 0314460              |
| Stroke loss of nominal stroke (on the rod side) | [mm]               | 10                   | 10                   |
| Weight                                          | [kg]               | 1.45                 | 1.45                 |
| Static holding force                            | [N]                | 180                  | 180                  |
| Max. axial play of the clamping                 | [mm]               | 0.2                  | 0.2                  |
| Min. release pressure                           | [bar]              | 3                    | 3                    |

# LM 50

Universal linear module

## Main view

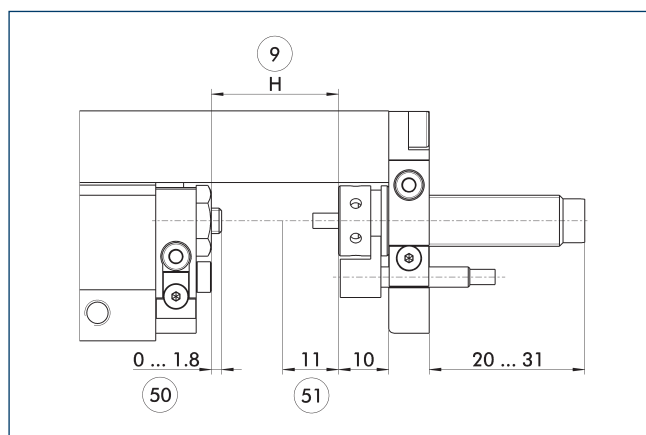


The linear module can be fastened either to the base body or the slide. The structure can also optionally be fastened to either the slide or the base body. This view shows the mounting of the module to the base body and the mounting of the structure to the slide.

- 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 50-H013  | 0314053 | 150  | 25   | 3          | 25   | 1          | 21   | 83   | 46   |
| LM 50-H025  | 0314054 | 150  | 25   | 3          | 25   | 1          | 21   | 83   | 46   |
| LM 50-H038  | 0314055 | 200  | 25   | 5          | 25   | 2          | 21   | 108  | 71   |
| LM 50-H050  | 0314056 | 200  | 25   | 5          | 25   | 2          | 21   | 108  | 71   |
| LM 50-H063  | 0314057 | 250  | 25   | 7          | 25   | 3          | 21   | 133  | 96   |
| LM 50-H075  | 0314058 | 250  | 25   | 7          | 25   | 3          | 21   | 133  | 96   |
| LM 50-H088  | 0314059 | 300  | 25   | 9          | 25   | 4          | 21   | 158  | 121  |
| LM 50-H100  | 0314060 | 300  | 25   | 9          | 25   | 4          | 21   | 158  | 121  |

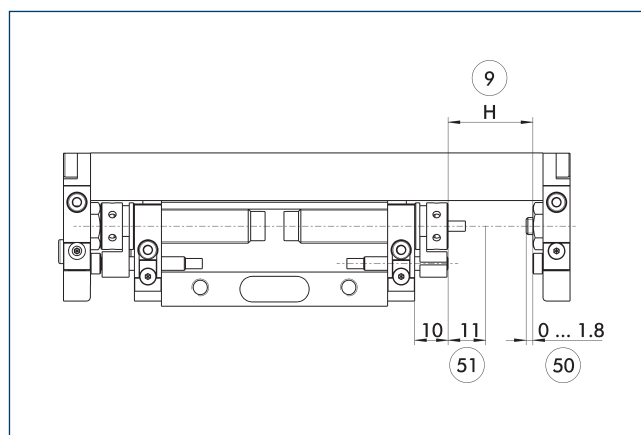
## Fine adjustment



- 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.

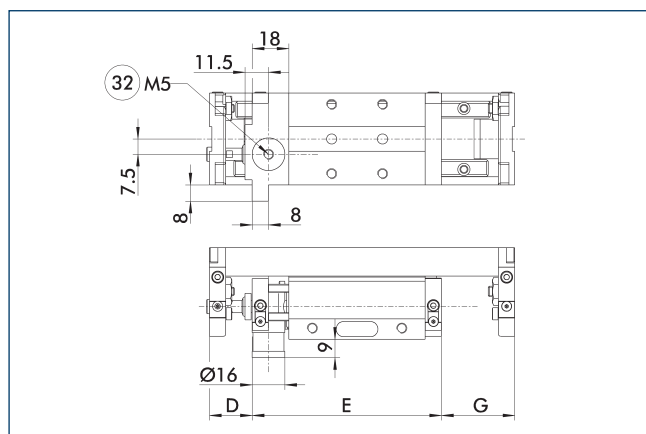
## Fine adjustment



- 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

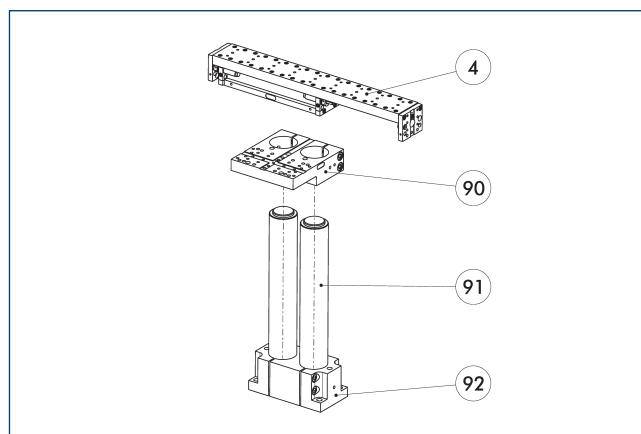


- ③② Pneumatic connection for holding brake

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 50-H025-ASP | 21   | 93   | 36   |
| LM 50-H038-ASP | 21   | 118  | 61   |
| LM 50-H050-ASP | 21   | 118  | 61   |
| LM 50-H063-ASP | 21   | 143  | 86   |
| LM 50-H075-ASP | 21   | 143  | 86   |
| LM 50-H088-ASP | 21   | 168  | 111  |
| LM 50-H100-ASP | 21   | 168  | 111  |

## Attachment to a pillar assembly system

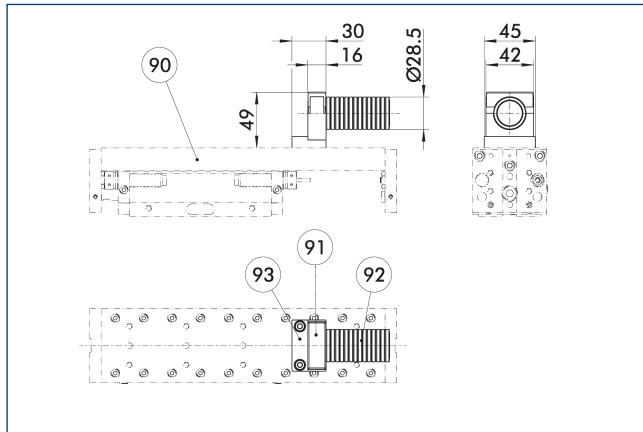


- ④ Linear unit  
 ⑨① Double mounting plate, APDH  
 ⑨② Pillars, hard-chromium plated, ground  
 ⑨③ Double socket S0D

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

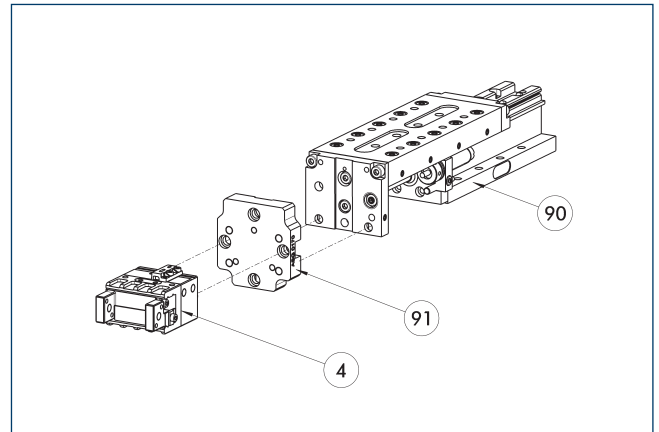


- 90 Linear module
- 91 Tube fastener MFB
- 92 Tube MFS
- 93 Tube plate SPL

Media routing with direct mounting on SCHUNK standard modules.

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

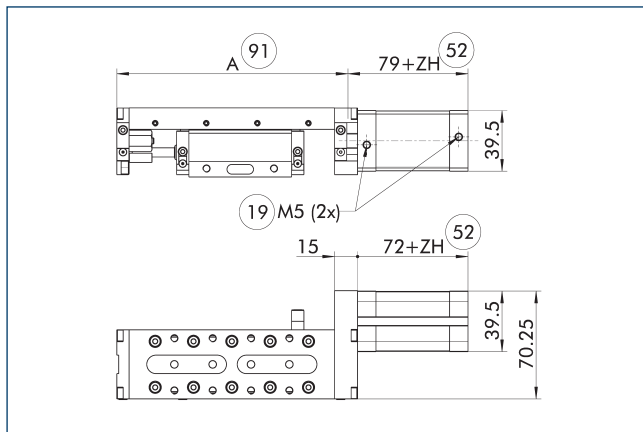
### Modular Assembly Automation



- 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



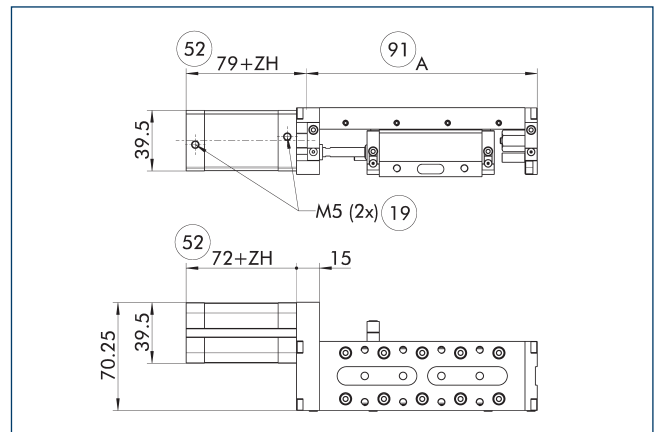
- 19 Air connection
- 52 Intermediate stroke
- 91 Overall length "A," the variant without intermediate stroke (see measurement chart of stroke variants)

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 51            | 175           | 0.35                 | 0.003                |

① Sample order LM 50-H100-ZZA051-H30

### Intermediate stop, ZZA on the piston rod side



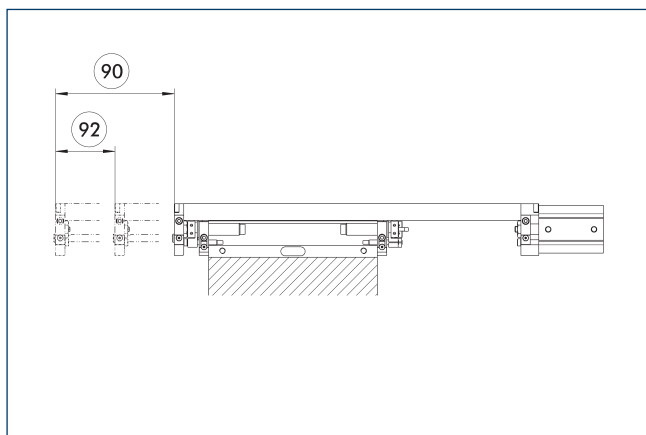
- 19 Air connection
- 52 Intermediate stroke
- 91 Overall length "A," the variant without intermediate stroke (see measurement chart of stroke variants)

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 52            | 175           | 0.35                 | 0.003                |

① Sample order LM 50-H100-ZZA052-H30

## Design – variant 1

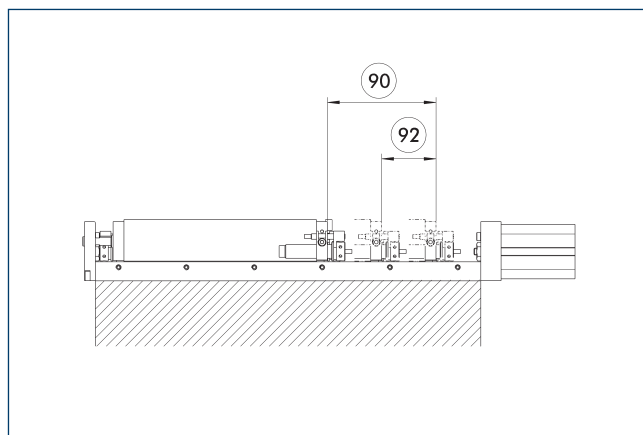


90 Nominal stroke

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  $\pm 3$  mm.

## Design – variant 2

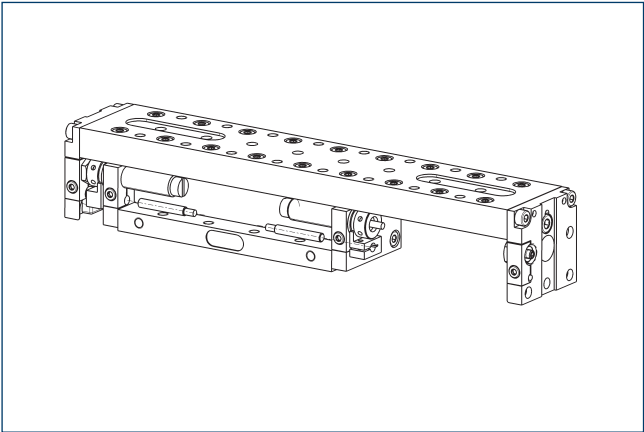


90 Nominal stroke

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  $\pm 3$  mm.

Inductive proximity switches



Directly mounted end position monitoring.

| Description                                          | ID       | Often combined |
|------------------------------------------------------|----------|----------------|
| Inductive proximity switch                           |          |                |
| IN 40-S-M12                                          | 0301574  |                |
| IN 40-S-M8                                           | 0301474  | ●              |
| INK 40-S                                             | 0301555  |                |
| Inductive proximity switch with lateral cable outlet |          |                |
| IN 40-S-M12-SA                                       | 0301577  |                |
| IN 40-S-M8-SA                                        | 0301473  | ●              |
| INK 40-S-SA                                          | 0301565  |                |
| 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  |                |
| Clip for connector/socket                            |          |                |
| CLI-M12                                              | 0301464  |                |
| CLI-M8                                               | 0301463  |                |
| Cable extension                                      |          |                |
| KV BG12-SG12 3P-0030-PNP                             | 0301999  |                |
| KV BG12-SG12 3P-0060-PNP                             | 0301998  |                |
| KV BW08-SG08 3P-0030-PNP                             | 0301495  |                |
| KV BW08-SG08 3P-0100-PNP                             | 0301496  |                |
| KV BW08-SG08 3P-0200-PNP                             | 0301497  | ●              |
| KV BW12-SG12 3P-0030-PNP                             | 0301595  |                |
| KV BW12-SG12 3P-0100-PNP                             | 0301596  |                |
| KV BW12-SG12 3P-0200-PNP                             | 0301597  |                |
| Sensor distributor                                   |          |                |
| V2-M12                                               | 0301776  | ●              |
| V2-M8                                                | 0301775  | ●              |
| V4-M8                                                | 0301746  |                |
| V8-M8                                                | 0301751  |                |

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





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**Automatisierungstechnik**

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