



**MODULAR ASSEMBLY AUTOMATION**

---

**A U T O M A T I O N**

## Discover new horizons

SCHUNK AUTOMATION anticipates trends in technology and customer needs and implements them in unique products, solutions and services.

Profit from the synergy of our triple expertise as a pioneer in automation, in modular assembly automation and in modular robotics.

With a complete range that includes gripper modules, turning and rotary units, linear modules, robot accessories, modular assembly automation and vision systems, we possess a compatible basis for delivering industry-specific solutions in every periphery.

Discover SCHUNK, the partner that can strengthen your market position in your industry. Today – with the technological possibilities of tomorrow.



GRIPPING  
MODULES



ROTARY  
MODULES



LINEAR  
MODULES



ROBOT  
ACCESSORIES



MODULAR ASSEMBLY  
AUTOMATION



IMAGE  
PROCESSING








## GEMOTEC system

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# Product overview

GEMOTEC system



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# Synergy through SCHUNK

## **SCHUNK synergy: Clamping technology and automation**

### **Farsightedness in two technological areas**

Clamping technology and automation are our core competences. The resulting synergy effects are what make us unique. SCHUNK has a better grasp of the complex world of clamping technology and handling than almost anyone else. Thanks to many years as a specialist for components, we know the requirements and needs in both technological areas. And then there is the fascination of new possibilities. Our dual know-how enables us to offer you innovative state-of-the-art technology - from spindles through to robotics.

We call this "SCHUNK SYNERGY". Get to know us as an active "all-in-one partner" - services from one source for your benefit.



AUTOMATION

SPANNTECHNIK  
TOOLHOLDING AND  
WORKHOLDING

## Innovations for you!

### SCHUNK opens new horizons

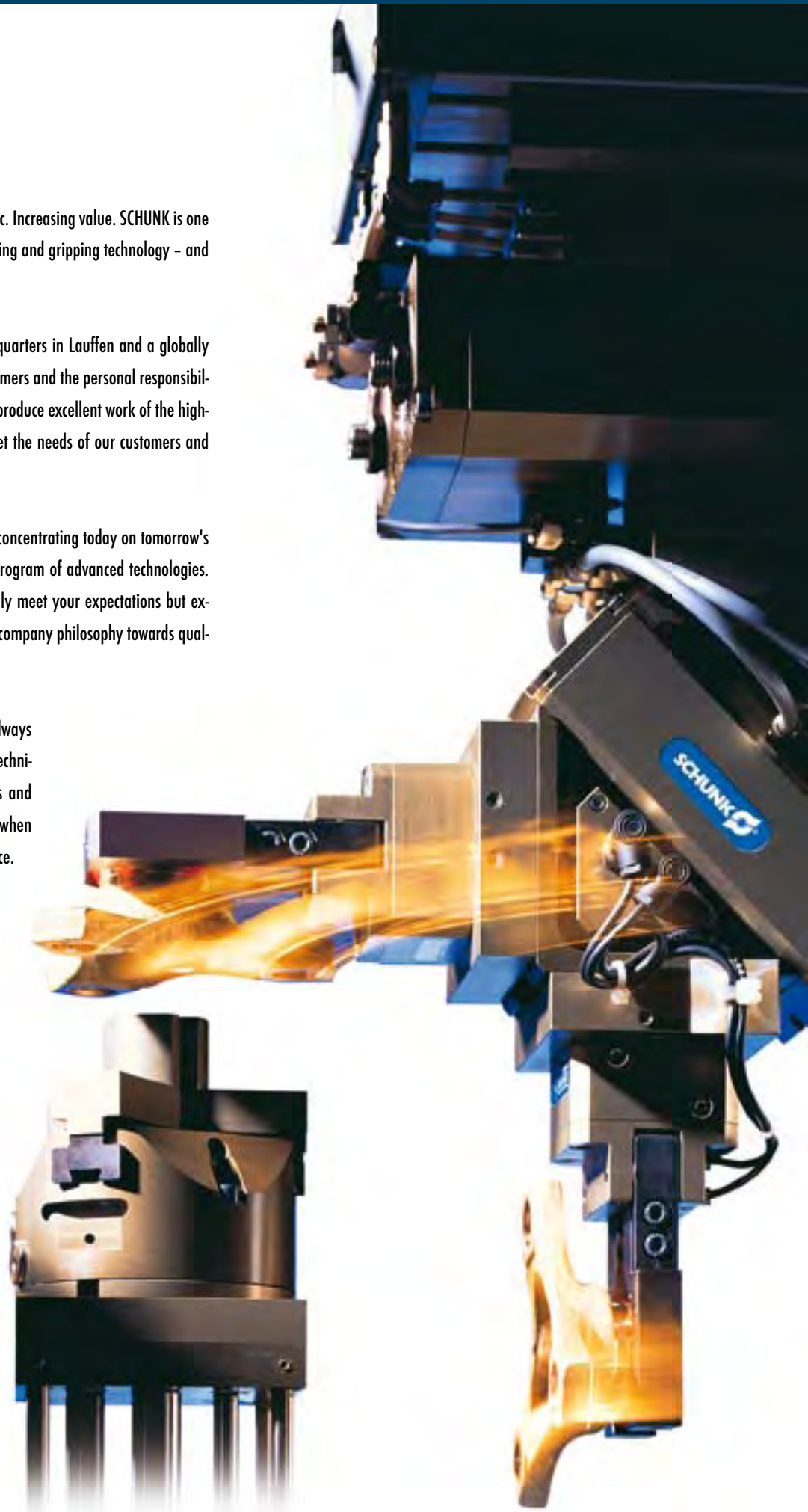
Shaping technology. Making processes dynamic. Increasing value. SCHUNK is one of the world's leading manufacturers of clamping and gripping technology – and a synonym for innovation.

We are both a family business with our headquarters in Lauffen and a globally active company. The constant dialog with customers and the personal responsibility and individual effort of every employee to produce excellent work of the highest quality result in solutions that exactly meet the needs of our customers and the high demands of the market.

SCHUNK opens new horizons. We are already concentrating today on tomorrow's possible applications and have an extensive program of advanced technologies. Our mission: top quality solutions that not only meet your expectations but exceed them! We have consistently oriented our company philosophy towards quality, reliability, and pioneering spirit.

Through permanent development, we are always opening new perspectives to our customers. Technical creativity, expert solution finding abilities and solid expertise are our success factors for you when it comes to engineering, production, and service.

We think ahead - for you!



# Partner with systems

## System partner

### Solutions from one source

As one of the most innovative market leaders, we offer unique solutions with our gripping systems, turning and swiveling units, linear modules, robot accessories, and customer-specific applications. Our broad product range also enables us to offer just the right solution for your special tasks. We are a development partner for various industries and specialize in your handling applications.

Wherever handling tasks place the highest demands for precision and economy, SCHUNK is the pioneering solution provider for perfect implementation.

You can benefit from our complete automation program from one source. From standardized and individual gripping modules up to complex functional modules. Rediscover SCHUNK! Again and again.





## Product range for automation

### Gripping modules

SCHUNK currently has the most extensive program of small component and universal gripper modules. Pneumatic or electric. From using the very latest materials and coatings in series production through

to internal media feed-through. SCHUNK's outstanding technical solution capabilities are setting standards for efficient handling in every industry and in every area.



### Rotary modules

Ultra-compact technology and functionality. The rotary module program from SCHUNK offers a complete spectrum of compact rotary and swivel units,

swivel heads and swivel fingers. In short, the optimum solution for all handling tasks.



### Linear modules

Precise mini-slides, pneumatic stroke modules, rigid gantry axes and axes with servo-electric linear drive – the SCHUNK range offers linear technology for

high-speed assembly automation. Compact and designed as a modular system.



### Robot accessories

Robot accessories from SCHUNK – a full range of modules for perfect interaction between the robot

arm and tool. Suitable for almost all robot types and the ideal supplement for flexible robot applications.



### Modular assembly automation

Based on pneumatically and electrically driven linear, rotary, and gripping modules, the GEMOTEC system offers a high-tech, extensive handling system in many versions and sizes for individual solution

finding. Compatible accessories, such as assembly sections and adapter plates, enable multiple-axis handling units to be completely configured from modular components.



### Image processing

Image processing modules from SCHUNK are the flexible solution for many sensor tasks in automated production lines. All components are high quality

and perfectly coordinated within the system. The software for object and position detection guarantees 100% reliable performance.



# SCHUNK sets standards

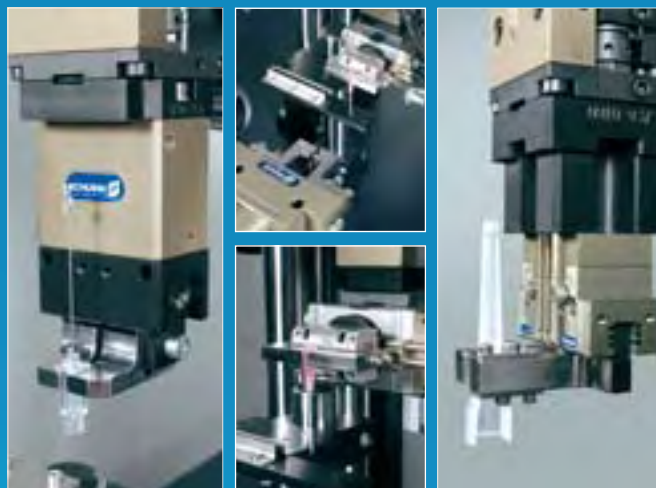
## GEMOTEC system

### The world of highly precise, modular assembly automation

From individual, multi-axis assembly solutions right up to complete functional modules – the GEMOTEC system from SCHUNK is a high-tech, extensive handling system for small part handling and assembly automation based on modular design. Modular and highly dynamic.

The possible combinations with the most current SCHUNK grippers open up new perspectives. For customer and industry-specific precision manufacturing, for complex gripping tasks, and for the configuration of both flexible and very exact handling and assembly solutions.

You can also profit from the synergy from modular systems and SCHUNK gripper quality. Also in your industry.



Automotive

Electronics

Plastic

Medical technology

### SCHUNK gripping modules

When it comes to the highest precision, perfect gripping technology is all important. With more than 400 possible combinations, the most current SCHUNK grippers offer a broad spectrum of individual solutions.

#### SCHUNK pneumatic gripping modules



#### SCHUNK adapter plates



### GEMOTEC system

Variety through modular design with pneumatically and electrically driven standard modules, there are tens of thousands of solution variants within modular systems.

#### GEMOTEC pneumatic gripping modules



#### GEMOTEC pneumatic rotary modules



#### GEMOTEC linear modules + portal modules

##### Pneumatic linear modules



##### Pneumatic portal modules



##### Electric linear modules



##### Electric portal modules



#### Assembly systems



#### Combination examples



# GEMOTEC system

## Modular system automation

### Simply modular

The GEMOTEC system has a convincingly simple modular assembly. All modules can be freely fit together and combined using adapter plates, assembly elements and centering parts.

This complementing selection of accessories enables multiple-axis handling units to be completely configured from modular components.



**SCHUNK gripping modules**

SCHUNK gripping modules are mounted directly onto the linear units using standard adapter plates. A high degree of fitting tolerance during assembly and exchange is assured.



**GEMOTEC gripping modules**

GEMOTEC system gripping modules are themselves designed to be modular units. A total of 123 gripping modules with different benchmark data can be configured from six functional principles.

### Assembly system 20 / 35 / 55



**Three standard assembly systems are available:**  
With a diameter of 55 mm – and, for more compact spaces, an assembly system with a diameter of 35 mm.  
The system with the diameter of 20 mm is for miniature applications, among other things.

### Variety with safety

With pneumatically and electrically driven linear, rotary, and gripping modules, the GEMOTEC system offers individual handling solutions in many versions and sizes. An enormous variety of automated systems can be made out of modular components by using a few standard modules – fast, simple and professional.

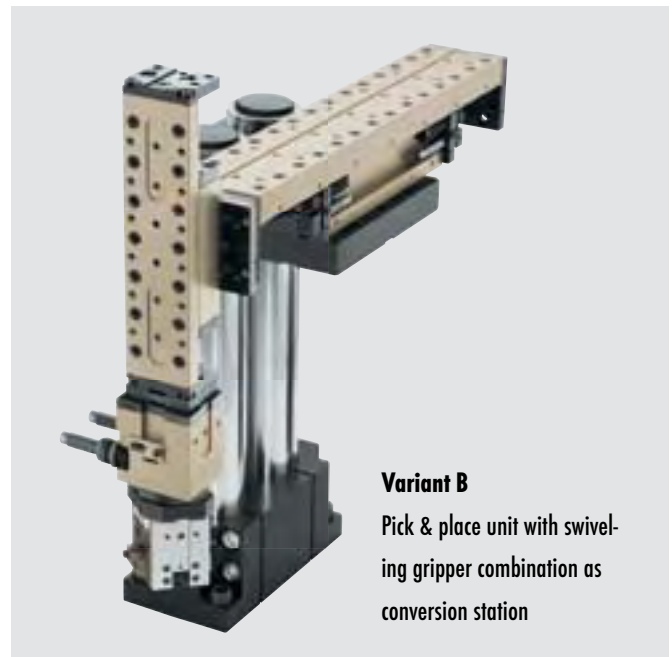
Your advantage: in very little time you can convert the system for other requirements, using exactly the same modules to solve many specific applications. This allows almost limitless flexibility and maximum investment security.

#### System advantages are customer benefits:

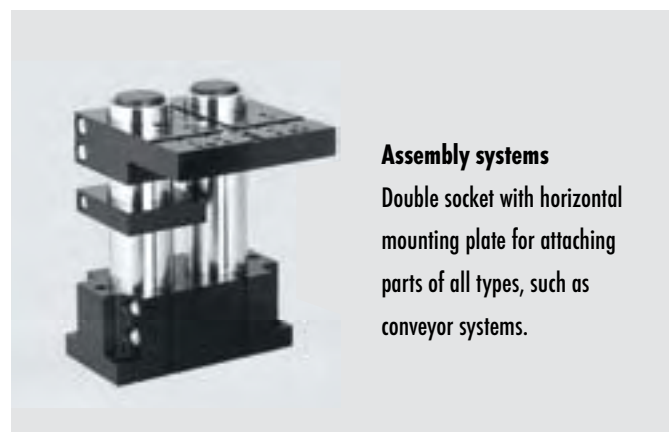
- Broad and complete range of products
- Pneumatic and electric linear drives
- High precision of all individual components
- Compatibility among all actuators
- Reproducible connection technology
- Extensive assembly adaptation system
- Planning security using software tools



**Variant A**  
Linear swiveling gripper unit as transfer station



**Variant B**  
Pick & place unit with swiveling gripper combination as conversion station



**Assembly systems**  
Double socket with horizontal mounting plate for attaching parts of all types, such as conveyor systems.



**Variant C**  
Cross slide with swiveling gripper unit as loading and unloading station

# Linear modules







# LINEAR MODULES

Series	Size	Page
<b>Linear modules</b>		
CLM		16
CLM	08	20
CLM	10	24
CLM	25	28
CLM	50	32
CLM	100	36
CLM	200	40
KLM		44
KLM	25	48
KLM	50	52
KLM	100	58
LM		64
LM	25	68
LM	50	72
LM	100	78
LM	200	84
LM	300	90
ELM		96
ELM	23	104
ELM	37	108

The SCHUNK program offers linear technology to meet every need: precise mini-slides, pneumatic stroke modules, bending resistant gantry axes and axes with servo-electric linear motor drive. Please consult our main catalog for further information about SCHUNK linear modules. Here is an extract from our range of products.



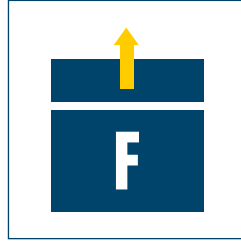
Pneumatic stroke modules		Electric linear axes	
 <p><b>Linear unit with integrated air feed-through</b></p>	 <p><b>Linear unit with ball bushing guide</b></p>	 <p><b>MLD linear axes with GAS direct drive system</b></p>	 <p><b>Linear axes with PowerCube ball screw drive system</b></p>



**Sizes**  
08 .. 200



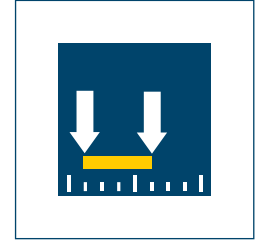
**Mass**  
0.07 kg .. 5.32 kg



**Driving force**  
30 N .. 482 N

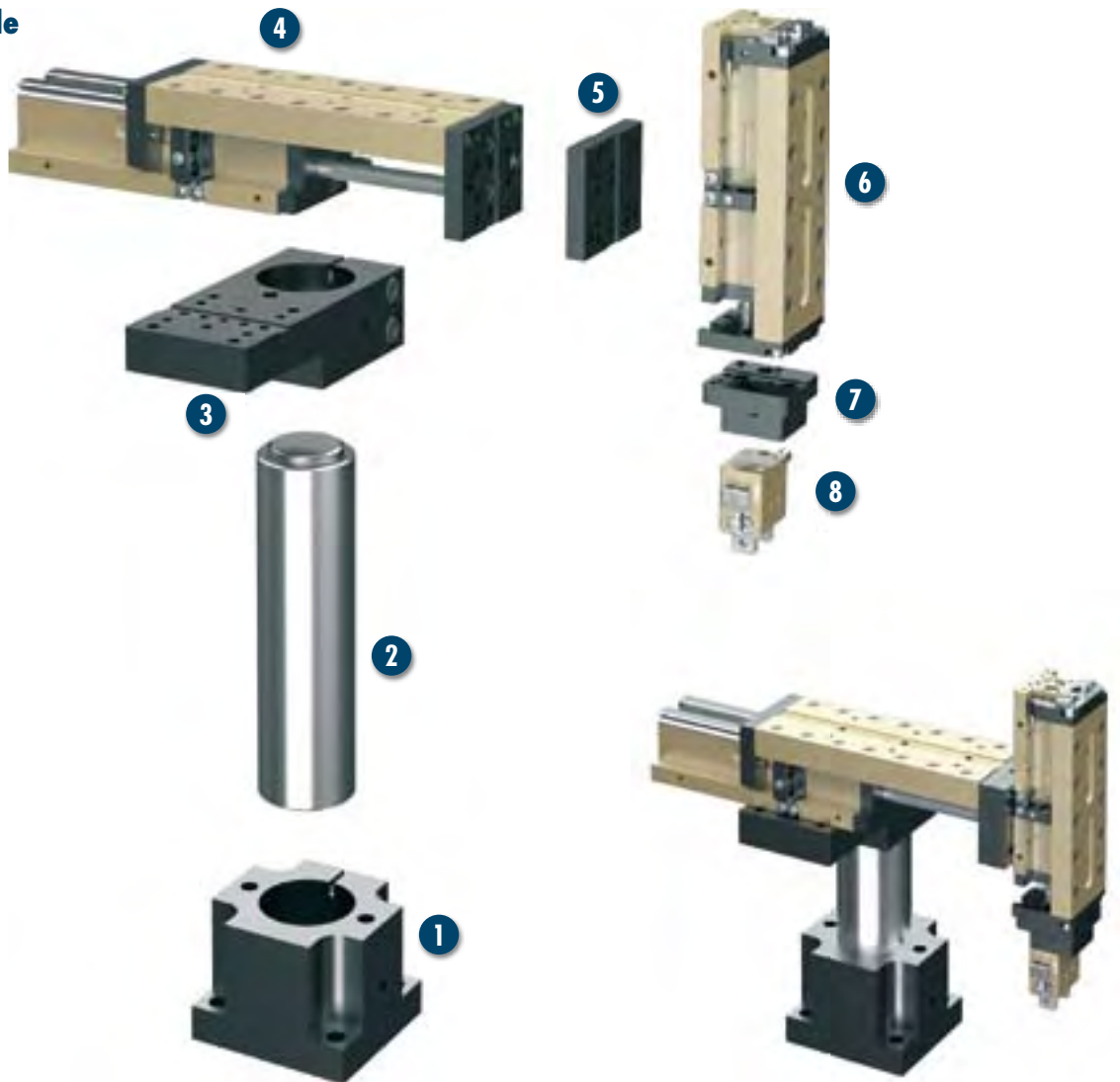


**Stroke**  
14 mm .. 150 mm



**Repeat accuracy**  
 $\pm 0.005 \text{ mm} .. \pm 0.02 \text{ mm}$

### Application example



Pneumatic pick & place unit for small components

- 1 Single base support, SOE 055
- 2 Hollow pillar, SLH 055-0200
- 3 Single mounting plate, APEH 085
- 4 Linear module, CLM 100-H075
- 5 Adapter plate, APL 120
- 6 Linear module, CLM 050-H050
- 7 Adapter, ASG 0150
- 8 2-finger gripper for small components, MPG 32



## Mini-slide

Overall length is optimized, with pneumatic drive and pre-loaded crossed rollers with no backlash

## Area of application

For use in assembly automation; for example, as pick & place solutions

## Advantages – your benefits

### Crossed roller guide design and solid construction

Guaranteed high load bearing capacities and end-position accuracy in all installation positions

### Pre-loaded crossed roller guides

That means absolutely no backlash

### High basic load ratings

In all load directions

### Standardized fixing bores and connection dimensions identical for LM series

For numerous combinations with other GEMOTEC system elements

### Shock absorber and proximity switch integrated in the projecting areas

For vibration-free movements and end-position monitoring

### Level control by means of rod lock

For safety in case of emergency stops

### Mounting pattern from rear surface (from CLM 25)

This means it can also be used as a linear unit



## General information about the series

### Guidance

Pre-loaded crossed roller bearings

### Material

Aluminum, hard-anodized steel guide

### Actuation

Pneumatic, via filtered compressed air (10 µm): dry, lubricated, or non-lubricated  
Pressurizing medium: requirements for compressed air quality class according to DIN ISO 8573-1: Quality class 4

### Ambient temperature range

From 5°C to 60°C

### Operating pressure range

2 bar to 8 bar

### Scope of delivery

Including shock absorbers

### Warranty

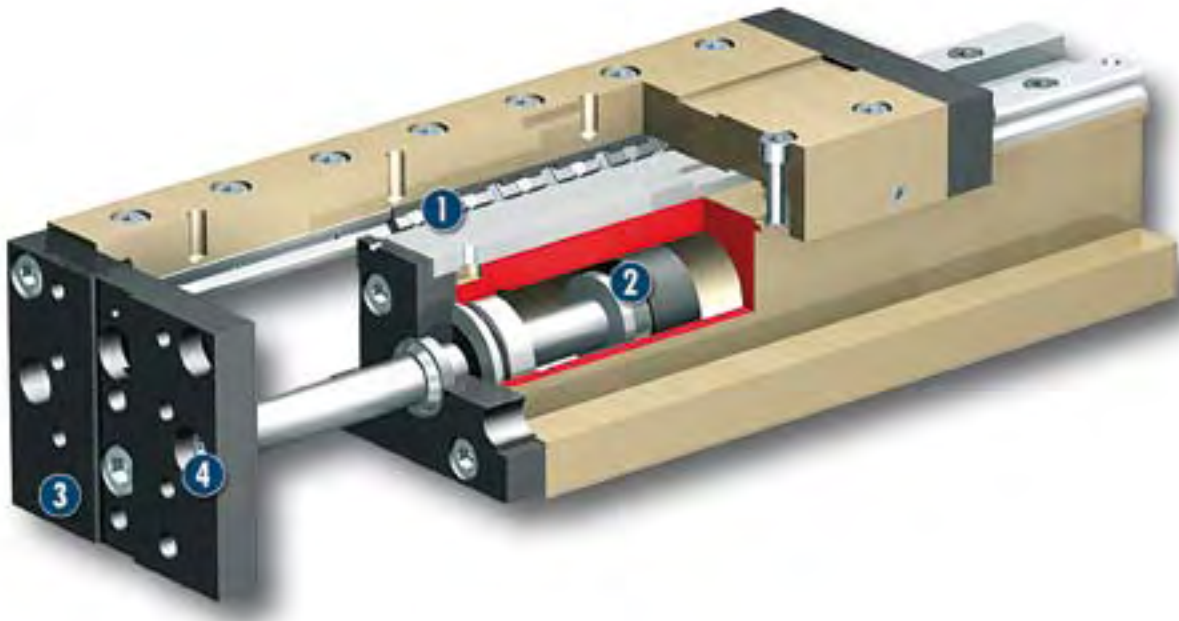
24 months

### Rod lock

Can be retrofitted by the manufacturing location or using a kit

For production reasons, the colors may vary from those shown in the catalog.

## Cross-section of function



- 1** **Crossed roller guide**  
With wiper, pre-loaded, and without backlash
- 2** **Drive**  
Powerful piston rod cylinder
- 3** **Modular design hole pattern**  
Completely integrated in the module system
- 4** **Dampening adjustment**  
Adjustment of the dampening characteristic

## Description of function

The upper part of the slide moves out and in linearly. The drive is a compressed-air driven piston.

## Options and special information

### Fall protection version

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. You can find more information in the "Accessories" chapter.

**Accessories**

Accessories from SCHUNK – the ideal components for the best functionality, reliability, and controlled production for all automation modules.

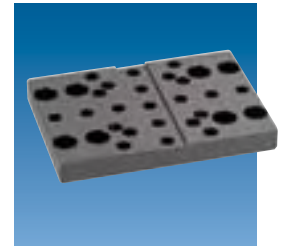
**Fittings**



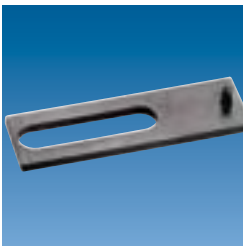
**Rod lock, ASP**



**Adapter plates**



**Centering strips**



**Sensor cable**



**Inductive proximity switch, NI**



**Pillar assembly systems**



**Pressure maintenance valve**



① Please see the side views at the end of the respective size for information concerning specific sizes, accessories availability for that size, designation, and ID numbers. You can find more information about our accessories program in the “Accessories” part of the catalog.

**General information about the series**

**Repeat accuracy**

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

**Travel times**

The 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**

The stroke is the maximum nominal stroke of the unit. This can be shortened on both sides by the shock absorbers.

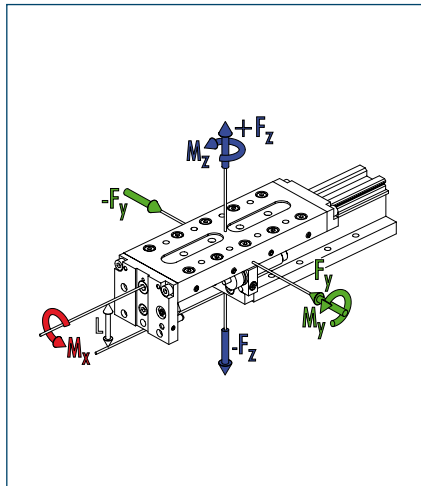
**Layout or sizing**

For layout or sizing of linear modules, we recommend using our TOOLBOX sizing software, which can be obtained at [www.schunk.com](http://www.schunk.com). Sizing the selected unit is absolutely necessary, since otherwise overloading can result.

**Ambient conditions**

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

### Moment load



$L = 12.3 \text{ mm}$

ⓘ The forces and moments shown here are maximum values for individual loading. If more than one force or moment occurs simultaneously, the application can be calculated by the TOOLBOX sizing software.

Designation	$F_z$ [N]	$M_x$ [Nm]	$M_y$ [Nm]	$M_z$ [Nm]
CLM 08-H14	136	1.56	2.09	1.04
CLM 08-H28	103	1.68	2.30	1.15
CLM 08-H42	85	1.79	2.51	1

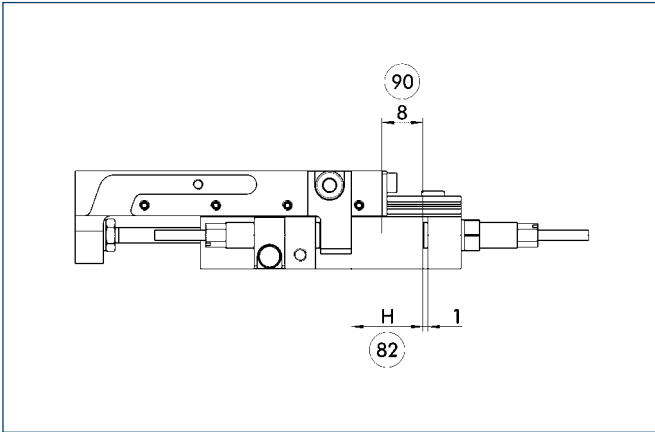
ⓘ Force  $F_y$  must be calculated by the TOOLBOX sizing software.

### Technical data

Designation		CLM 08-H14	CLM 08-H28	CLM 08-H42
	ID	0314000	0314001	0314002
Stroke length	[mm]	14	28	42
Extend force [FV] at 6 bar	[N]	30	30	30
Retract force [FR] at 6 bar	[N]	25	25	25
Piston diameter	[mm]	8	8	8
Rod diameter	[mm]	3	3	3
Overall length	[mm]	61.5	78.5	95.5
Mass	[kg]	0.07	0.086	0.103
Fluid consumption/10 mm stroke	[cm <sup>3</sup> ]	0.5	0.5	0.5
Minimum pressure	[bar]	3	3	3
Maximum pressure	[bar]	8	8	8
Nominal operating pressure	[bar]	6	6	6
IP rating		40	40	40
Min. ambient temperature	[°C]	5	5	5
Max. ambient temperature	[°C]	60	60	60
Repeat accuracy	[mm]	± 0.02	± 0.02	± 0.02
Horizontal travel time at 0.15 kg additional load	[s]	0.06	0.09	0.12
Vertical travel time at 0.15 kg additional load	[s]	0.06	0.09	0.12



### Fine adjustment, on the piston rod side



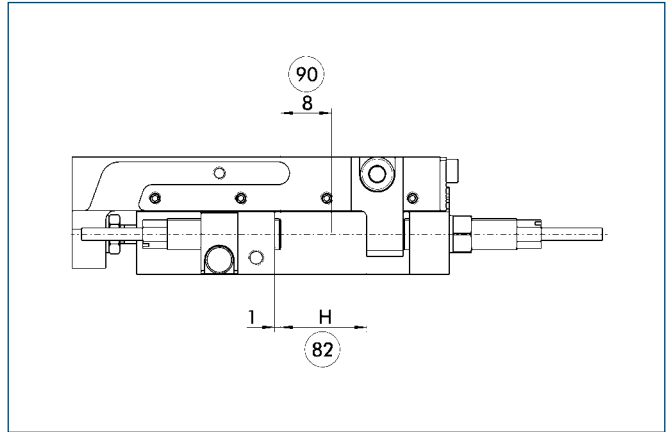
- 82 Stroke
- 90 Stroke adjustment range

To operate the unit, stops or stop sensors are needed. This illustration shows the use of the stop sensors and the possibility of stroke fine adjustment. The stops or the stop sensors are not part of the scope of delivery.

#### End stop without sensor system

Designation	ID
LMAS 08-KT	0314105

### Fine adjustment, on the piston side



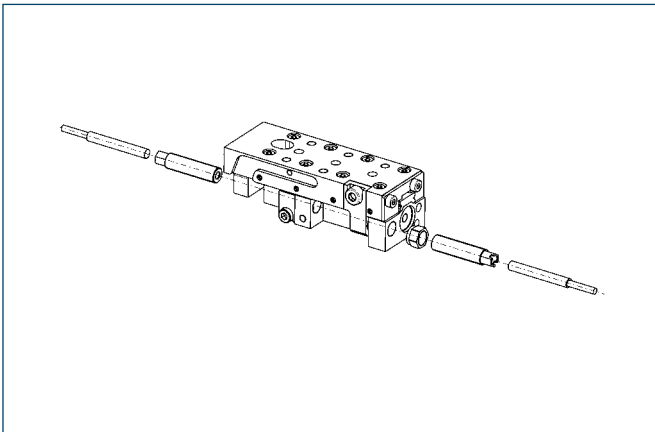
- 82 Stroke
- 90 Stroke adjustment range

To operate the unit, stops or stop sensors are needed. This illustration shows the use of the stop sensors and the possibility of stroke fine adjustment. The stops or the stop sensors are not part of the scope of delivery.

#### End stop without sensor system

Designation	ID
LMAS 08-KT	0314105

## Sensor systems



End position monitoring incl. stop  
Inductive proximity switch, can be directly mounted

Designation	ID
NIA 50-KT	0313422

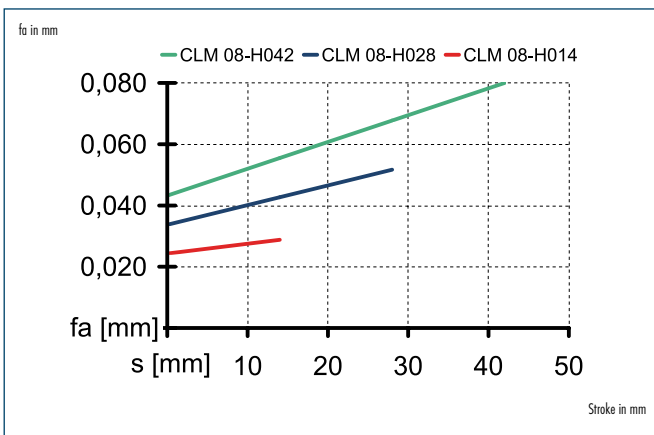
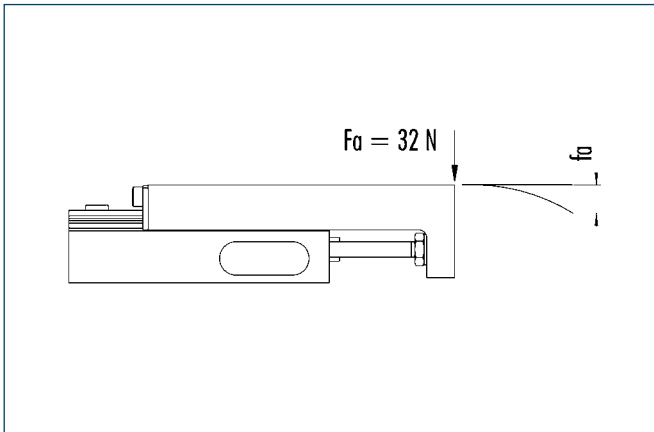
#### Extension cable for proximity switch

Designation	ID	Remark
STV 10	0313432	Sleeve M8x1, straight
STV 20	0313433	Sleeve M8x1, angled

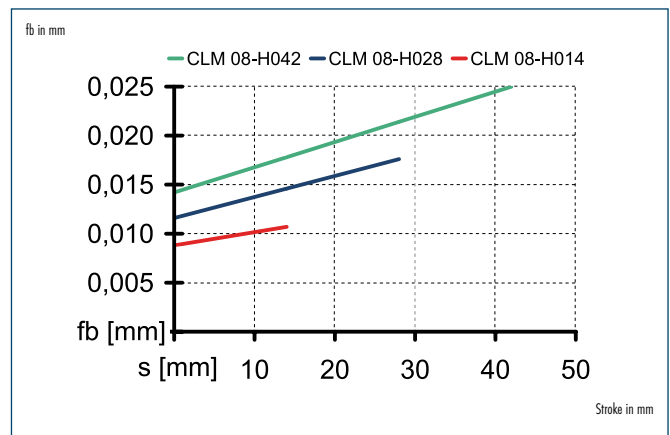
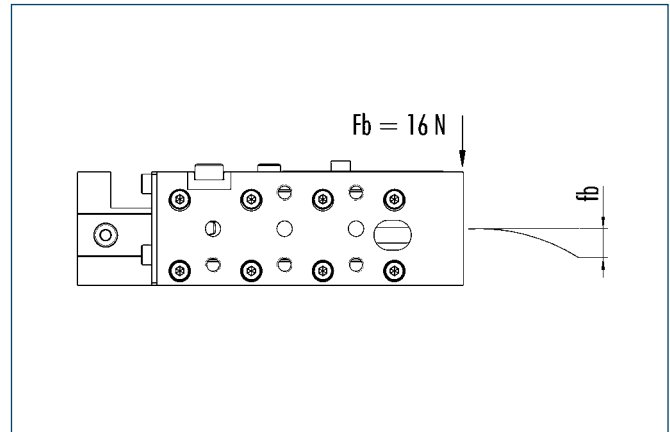
① Generally, two sensors are needed for each linear unit.


 You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.

### Deflection under load: $f_a$

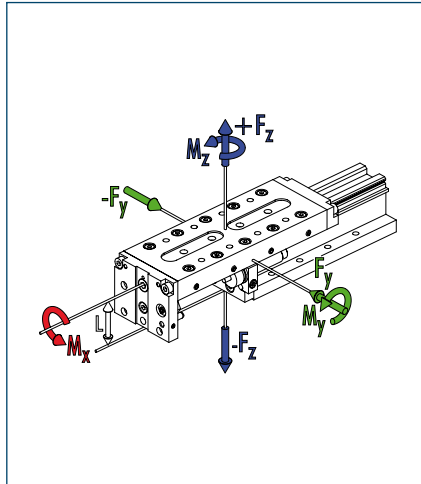


### Deflection under load: $f_b$



 You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.

### Moment load



$L = 17.1 \text{ mm}$

ⓘ The forces and moments shown here are maximum values for individual loading. If more than one force or moment occurs simultaneously, the application can be calculated by the TOOLBOX sizing software.

Designation	$F_z$ [N]	$M_x$ [Nm]	$M_y$ [Nm]	$M_z$ [Nm]
CLM 10-H20	113	1.77	2.09	1.04
CLM 10-H34	98	2.09	2.51	1.25
CLM 10-H48	90	2.41	2.93	1.46

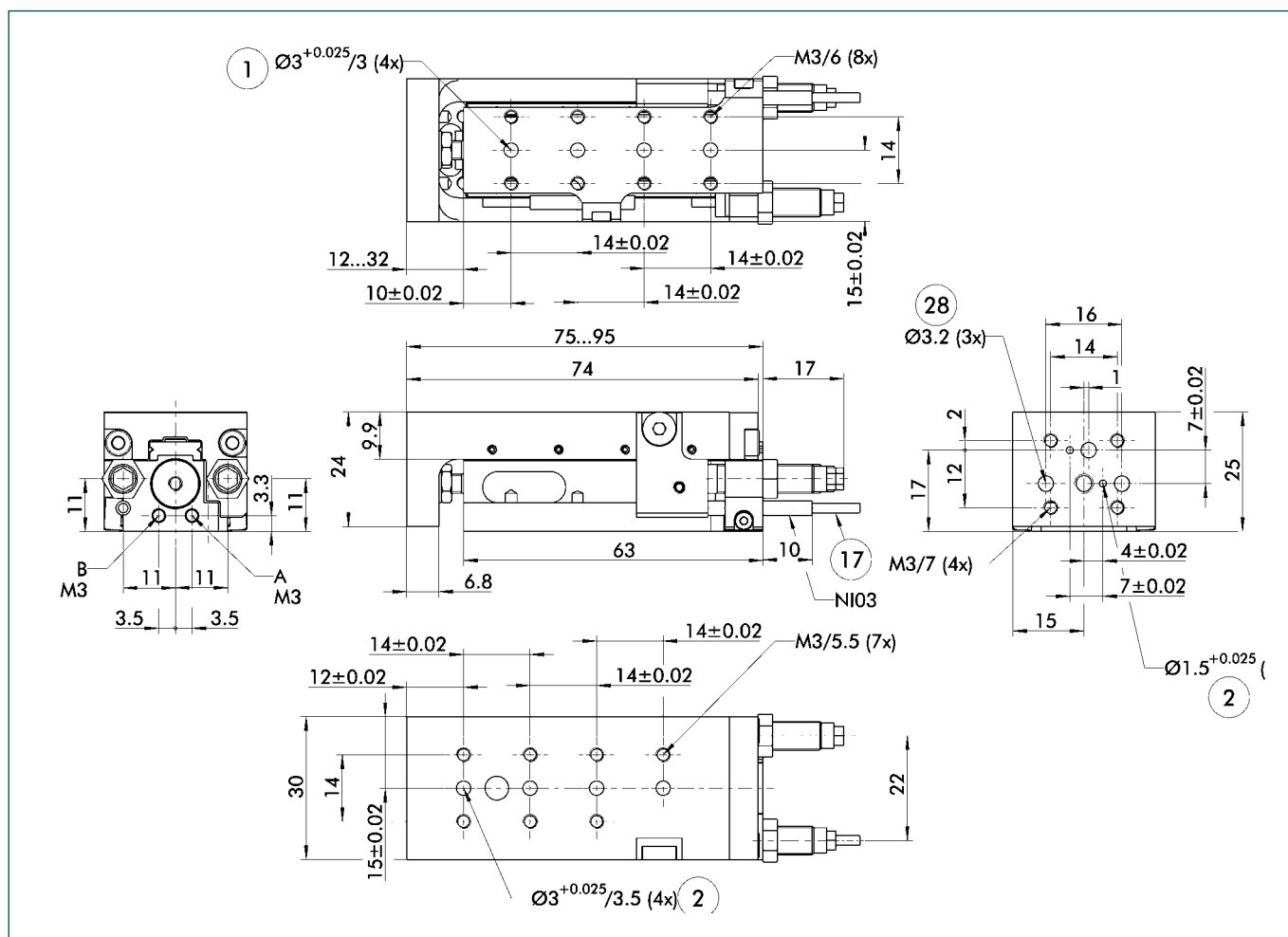
ⓘ Force  $F_y$  must be calculated by the TOOLBOX sizing software.

### Technical data

Designation		CLM 10-H20	CLM 10-H34	CLM 10-H48
	ID	0314005	0314006	0314007
Stroke length	[mm]	20	34	48
Extend force [FV] at 6 bar	[N]	47	47	47
Retract force [FR] at 6 bar	[N]	39	39	39
Piston diameter	[mm]	10	10	10
Rod diameter	[mm]	4	4	4
Overall length	[mm]	75	95	115
Mass	[kg]	0.135	0.165	0.195
Fluid consumption/10 mm stroke	[cm <sup>3</sup> ]	0.78	0.78	0.78
Minimum pressure	[bar]	3	3	3
Maximum pressure	[bar]	8	8	8
Nominal operating pressure	[bar]	6	6	6
IP rating		40	40	40
Min. ambient temperature	[°C]	5	5	5
Max. ambient temperature	[°C]	60	60	60
Repeat accuracy	[mm]	± 0.005	± 0.005	± 0.005
Horizontal travel time at 0.5 kg additional load	[s]	0.08	0.1	0.12
Vertical travel time at 0.5 kg additional load	[s]	0.08	0.1	0.12



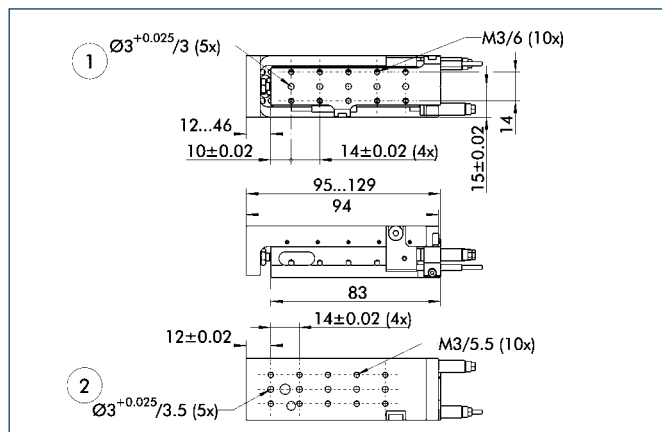
### Main views, CLM 10-H020



- A, a Main and direct connections, extend linear unit
- B, b Main and direct connections, retract linear unit
- ① Connection, linear unit
- ② Connection of the assembly
- ⑰ Cable outlet
- ⑳ Through-bore

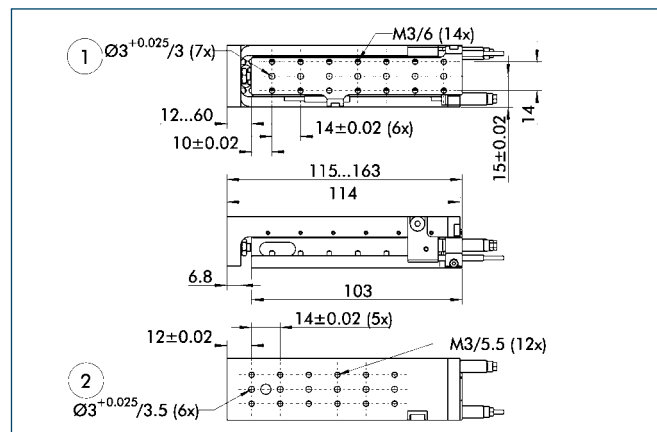
The linear module can be fastened either to the base body or the slide. The structure can also optionally be fastened to either the slide or the base body. This view shows the mounting of the module to the base body and the mounting of the structure to the slide.

### Variant CLM 10-H034



- ① Connection, linear unit
- ② Connection of the assembly

### Variant CLM 10-H048

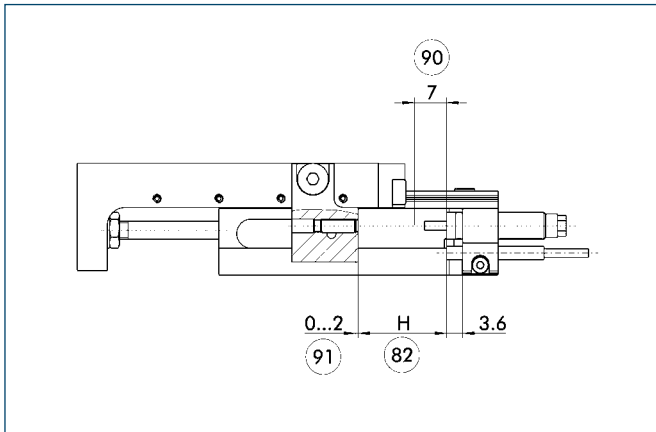


- ① Connection, linear unit
- ② Connection of the assembly

Not all dimensions shown can be seen in the main view.

Not all dimensions shown can be seen in the main view.

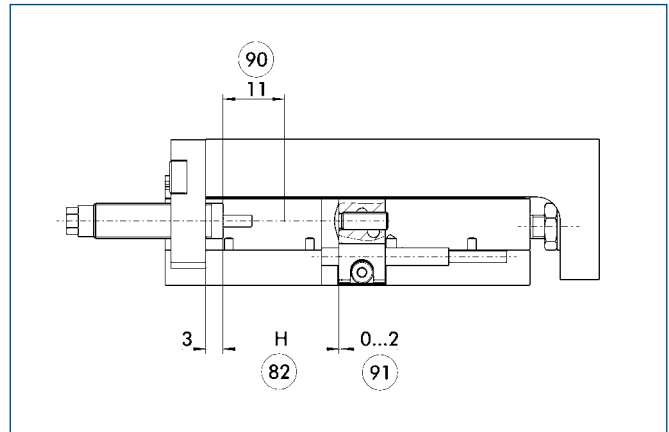
## Fine adjustment, on the piston rod side



- 82 Stroke
- 90 Stroke adjustment range
- 91 Dampening stroke adjustment range

This illustration shows the possibility of the “Retraction” stroke fine adjustment.

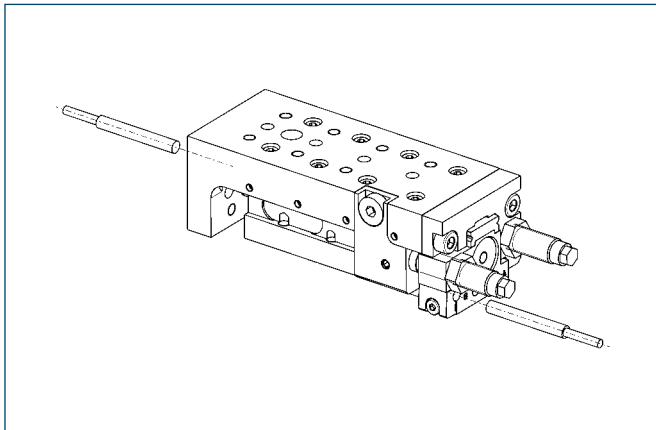
## Fine adjustment, on the piston side



- 82 Stroke
- 90 Stroke adjustment range
- 91 Dampening stroke adjustment range

This illustration shows the possibility of the “Extend” stroke fine adjustment.

## Sensor systems




End-position monitoring:  
Inductive proximity switch, can be directly mounted

Designation	ID
NI 03	0313426

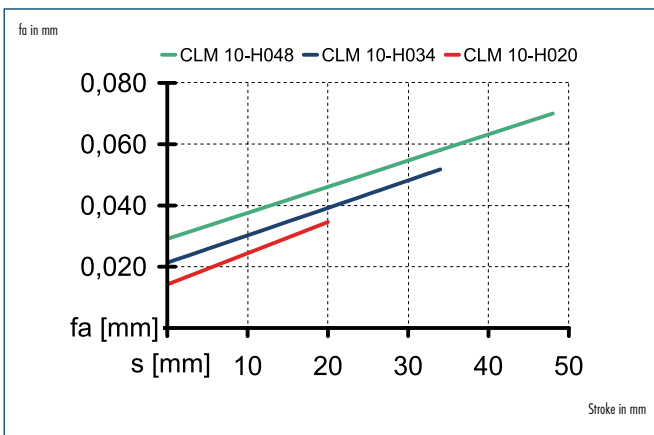
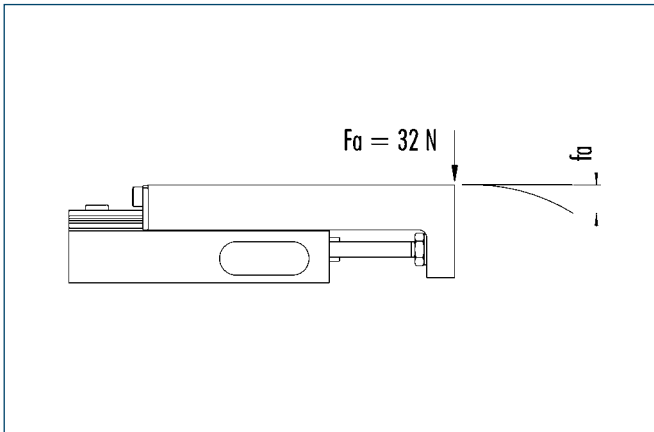
Extension cable for proximity switch

Designation	ID	Remark
STV 10	0313432	Sleeve M8x1, straight
STV 20	0313433	Sleeve M8x1, angled

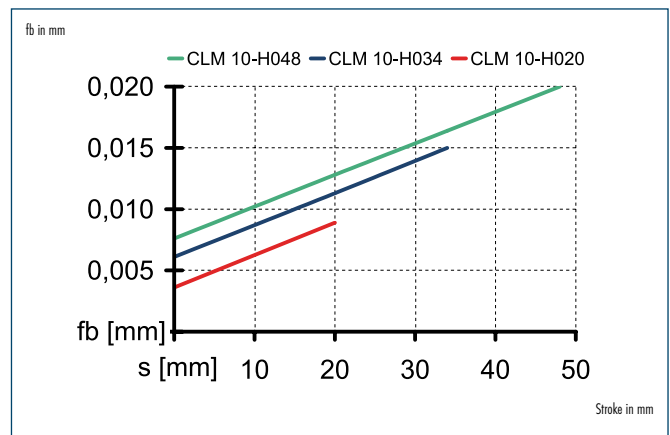
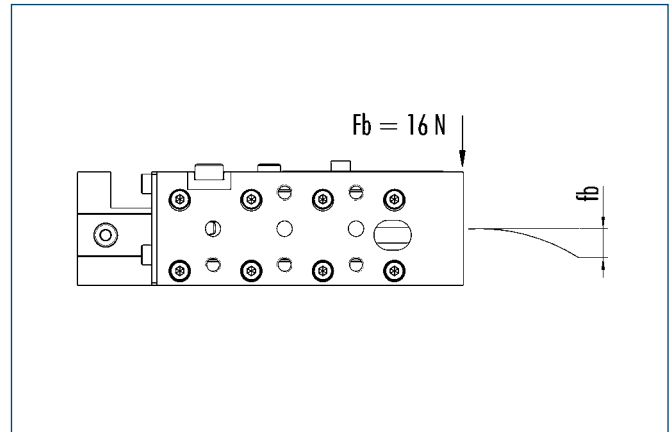
ⓘ Generally, two sensors are needed for each linear unit.


 You can find further information and components for the accessories mentioned here in the “Accessories” part of the catalog.

### Deflection under load: $f_a$

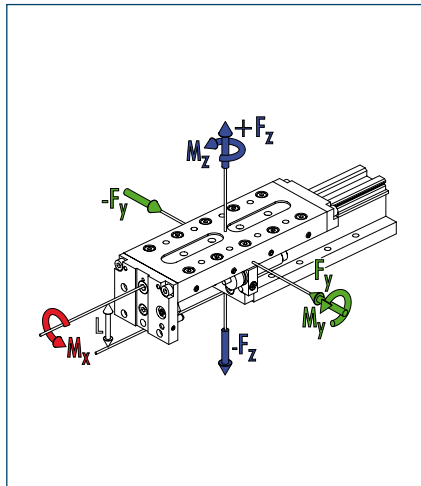


### Deflection under load: $f_b$



 You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.

### Moment load



L = 23 mm

ⓘ The forces and moments shown here are maximum values for individual loading. If more than one force or moment occurs simultaneously, the application can be calculated by the TOOLBOX sizing software.

Designation	$F_z$ [N]	$M_x$ [Nm]	$M_y$ [Nm]	$M_z$ [Nm]
CLM 025-H025	179	5.7	4.7	2.35
CLM 025-H042	162	6.7	5.7	2.85
CLM 025-H059	152	7.7	6.7	3.35

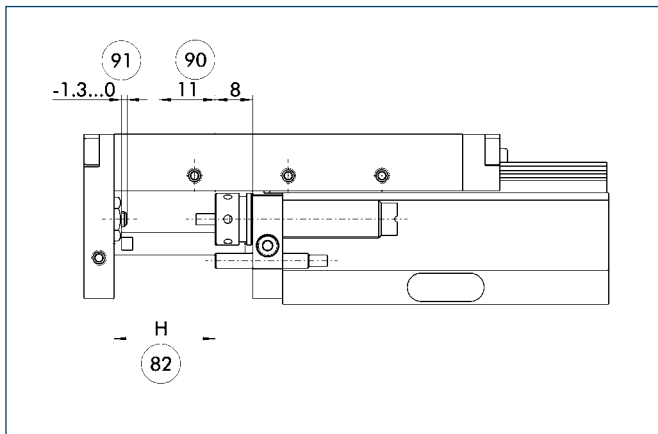
ⓘ Force  $F_y$  must be calculated by the TOOLBOX sizing software.

### Technical data

Designation		CLM 25-H025	CLM 25-H042	CLM 25-H059
	ID	0314035	0314036	0314037
Stroke length	[mm]	25	42	59
Extend force [FV] at 6 bar	[N]	67	67	67
Retract force [FR] at 6 bar	[N]	50	50	50
Piston diameter	[mm]	12	12	12
Rod diameter	[mm]	6	6	6
Overall length	[mm]	105	130	155
Mass	[kg]	0.44	0.52	0.6
Fluid consumption/10 mm stroke	[cm <sup>3</sup> ]	1.13	1.13	1.13
Minimum pressure	[bar]	3	3	3
Maximum pressure	[bar]	8	8	8
Nominal operating pressure	[bar]	6	6	6
IP rating		40	40	40
Min. ambient temperature	[°C]	5	5	5
Max. ambient temperature	[°C]	60	60	60
Repeat accuracy	[mm]	± 0.005	± 0.005	± 0.005
Horizontal travel time at 1 kg additional load	[s]	0.17	0.18	0.19
Vertical travel time at 1 kg additional load	[s]	0.17	0.18	0.19



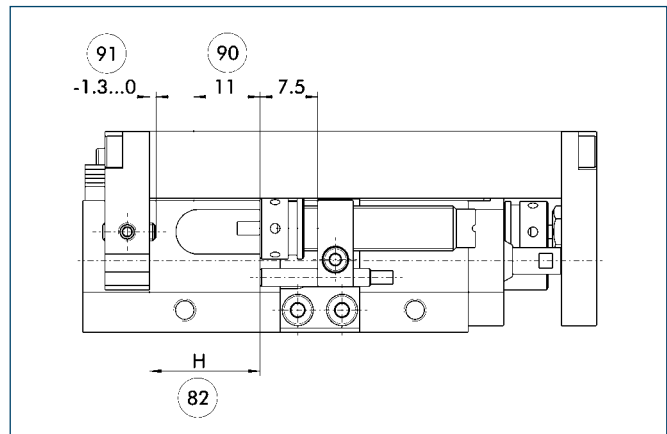
## Fine adjustment, on the piston rod side



- 82 Stroke
- 90 Stroke adjustment range
- 91 Dampening stroke adjustment range

This illustration shows the possibility of the “Return” stroke fine adjustment.

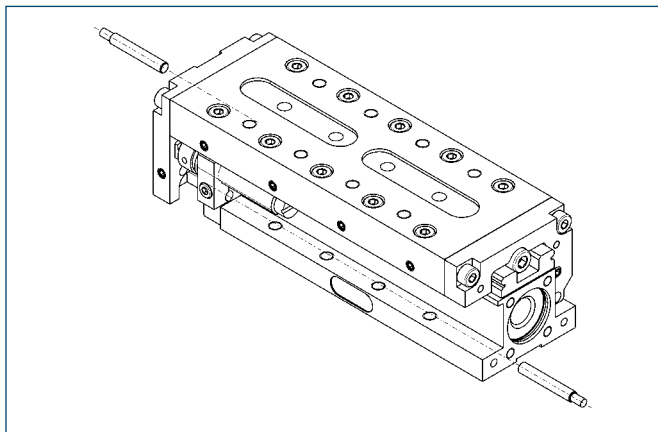
## Fine adjustment, on the piston side



- 82 Stroke
- 90 Stroke adjustment range
- 91 Dampening stroke adjustment range

This illustration shows the possibility of the “Extend” stroke fine adjustment.

## Sensor systems



### End-position monitoring:

Inductive proximity switch, can be directly mounted

Designation	ID
NI 10	0313427

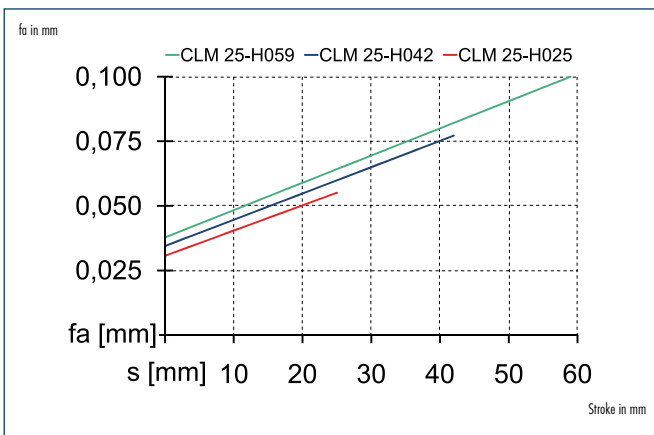
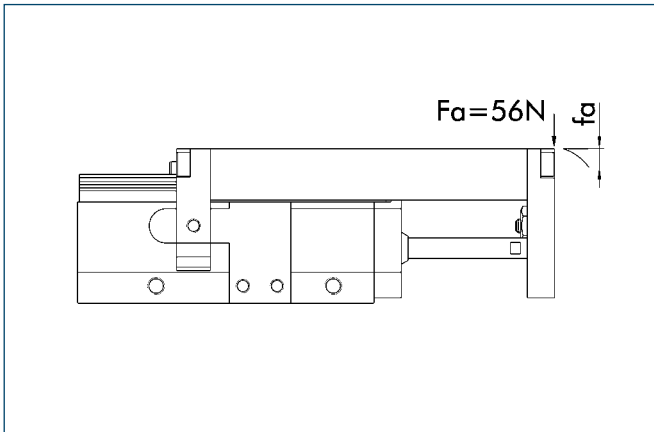
### Extension cable for proximity switch

Designation	ID	Remark
STV 10	0313432	Sleeve M8x1, straight
STV 20	0313433	Sleeve M8x1, angled

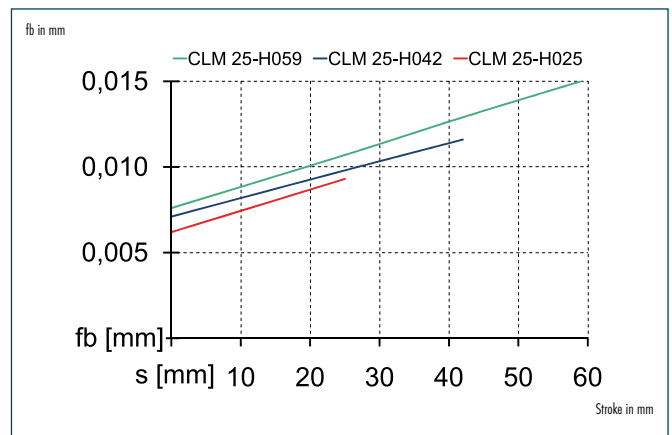
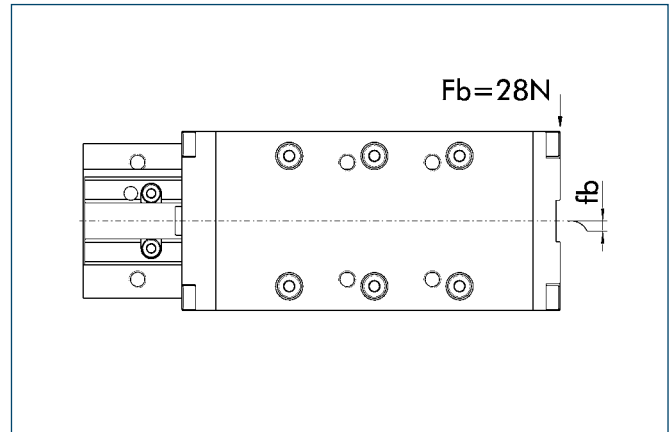
ⓘ Generally, two sensors are needed for each linear unit.

 You can find further information and components for the accessories mentioned here in the “Accessories” part of the catalog.

### Deflection under load: $f_a$

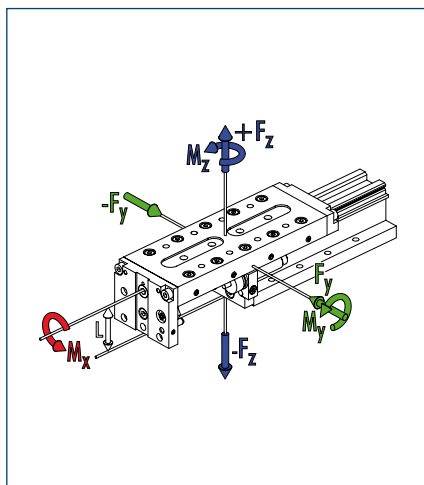


### Deflection under load: $f_b$



 You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.

### Moment load



$L = 34 \text{ mm}$

ⓘ The forces and moments shown here are maximum values for individual loading. If more than one force or moment occurs simultaneously, the application can be calculated by the TOOLBOX sizing software.

Designation	$F_z$ [N]	$M_x$ [Nm]	$M_y$ [Nm]	$M_z$ [Nm]
CLM 050-H025	396	13.2	11.6	5.8
CLM 050-H050	365	15.7	15.1	7.55
CLM 050-H075	333	18	18.6	9.3

ⓘ Force  $F_y$  must be calculated by the TOOLBOX sizing software.

### Technical data

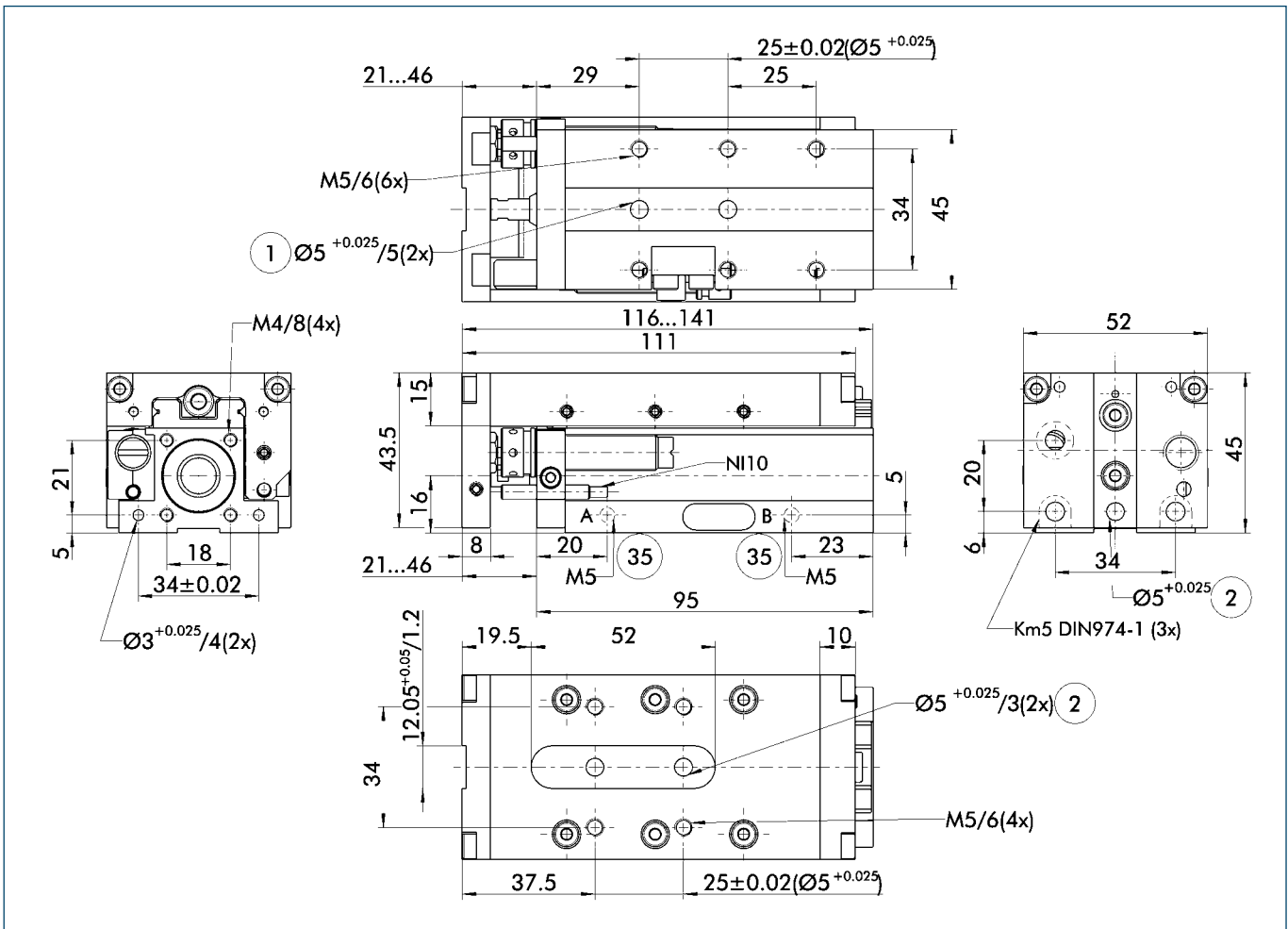
Designation		CLM 50-H025	CLM 50-H050	CLM 50-H075
	ID	0314038	0314039	0314040
Stroke length	[mm]	25	50	75
Extend force [FV] at 6 bar	[N]	120	120	120
Retract force [FR] at 6 bar	[N]	103	103	103
Piston diameter	[mm]	16	16	16
Rod diameter	[mm]	6	6	6
Overall length	[mm]	116	156	191
Mass	[kg]	0.76	0.98	1.16
Fluid consumption/10 mm stroke	[cm <sup>3</sup> ]	2	2	2
Minimum pressure	[bar]	3	3	3
Maximum pressure	[bar]	8	8	8
Nominal operating pressure	[bar]	6	6	6
IP rating		40	40	40
Min. ambient temperature	[°C]	5	5	5
Max. ambient temperature	[°C]	60	60	60
Repeat accuracy	[mm]	± 0.01	± 0.01	± 0.01
Horizontal travel time at 3 kg additional load	[s]	0.11	0.14	0.16
Vertical travel time at 3 kg additional load	[s]	0.13	0.17	0.2

#### OPTIONS and their characteristics

Full protection version	ID	0314439	0314440
Designation		CLM 50-H050-ASP	CLM 50-H075-ASP
Stroke loss of nominal stroke (on the rod side)	[mm]	10	10
Mass	[kg]	1.01	1.19
Static holding force	[N]	180	180
Max. axial backlash of the clamping	[mm]	0.2	0.2
ZZA intermediate stop on the rod side possible		No	No
ZZA intermediate stop on the piston side possible		No	No
LMZAW intermediate stop possible		No	No



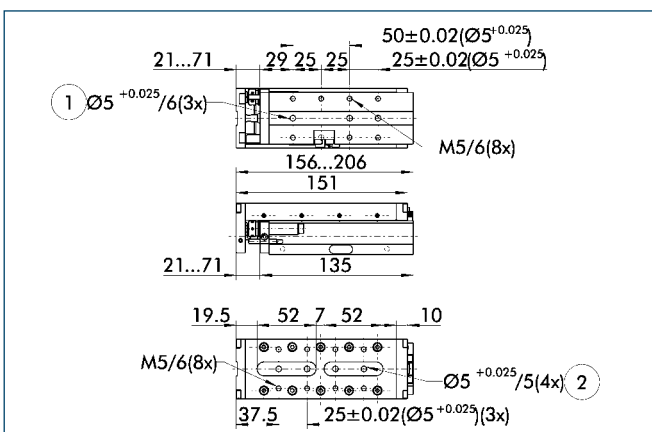
### Main views, CLM 50-H025



- A, a Main and direct connections, extend linear unit
- B, b Main and direct connections, retract linear unit
- ① Connection, linear unit
- ② Connection of the assembly
- ③ Back

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.

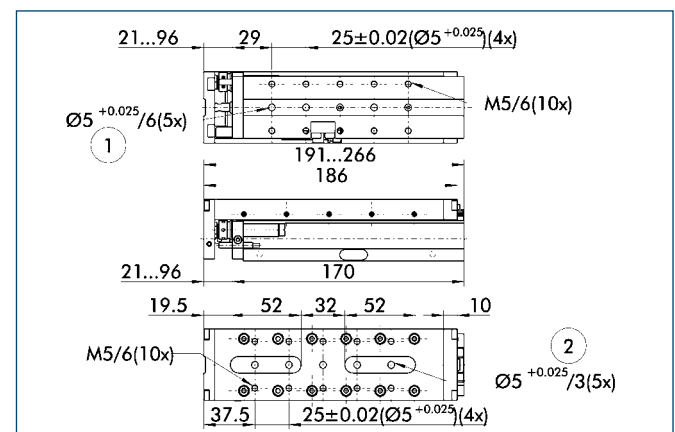
### Variant CLM 50-H050



- ① Connection, linear unit
- ② Connection of the assembly

Not all dimensions shown can be seen in the main view.

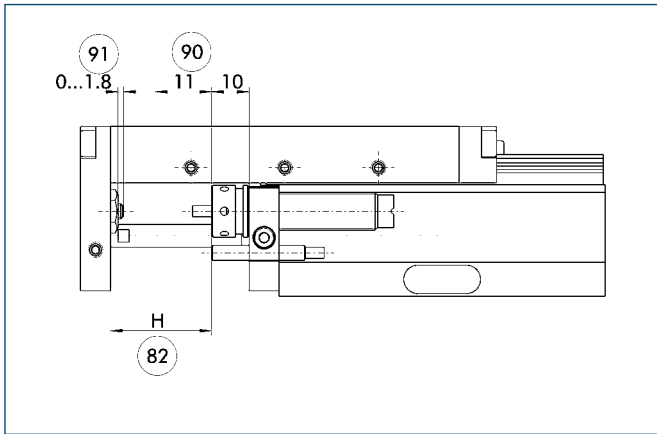
### Variant CLM 50-H075



- ① Connection, linear unit
- ② Connection of the assembly

Not all dimensions shown can be seen in the main view.

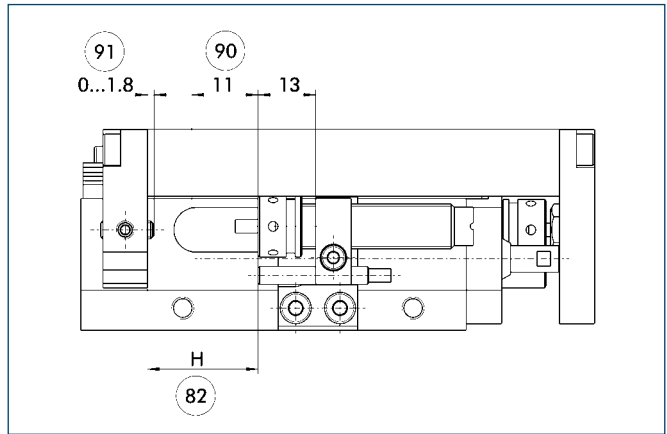
## Fine adjustment, on the piston rod side



- 82 Stroke
- 90 Stroke adjustment range
- 91 Dampening stroke adjustment range

This illustration shows the possibility of the "Return" stroke fine adjustment.

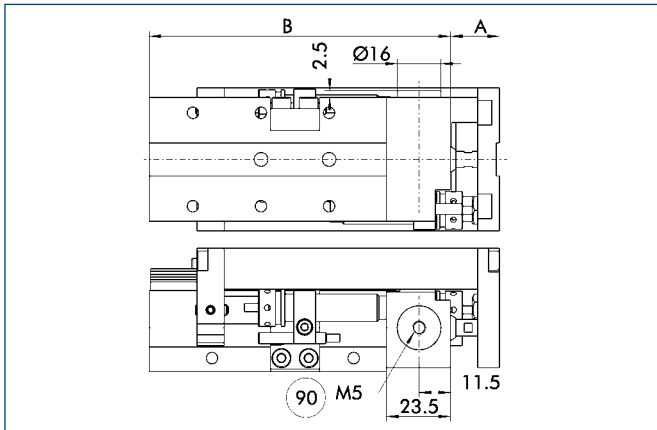
## Fine adjustment, on the piston side



- 82 Stroke
- 90 Stroke adjustment range
- 91 Dampening stroke adjustment range

This illustration shows the possibility of the "Extend" stroke fine adjustment.

## Rod lock



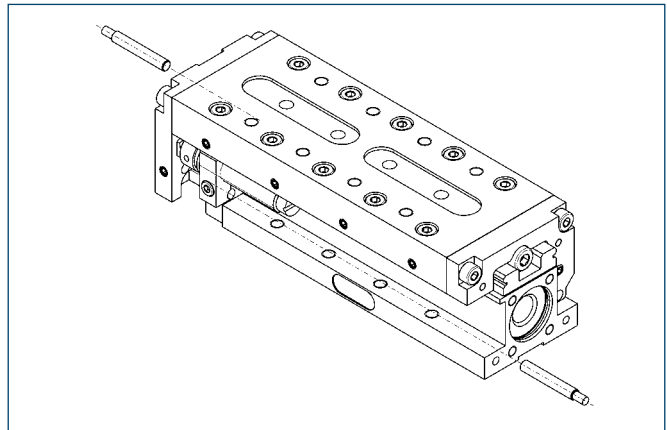
- 90 Air connection, rod lock

### Variable dimensions of rod lock

Type	Stroke [mm]	A [mm]	B [mm]
CLM 50-H050	34.5	21...55.5	150.5
CLM 50-H075	59.5	21...80.5	185.5

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 useful stroke.

## Sensor systems




End-position monitoring:  
Inductive proximity switch, can be directly mounted

Designation	ID
NI 10	0313427

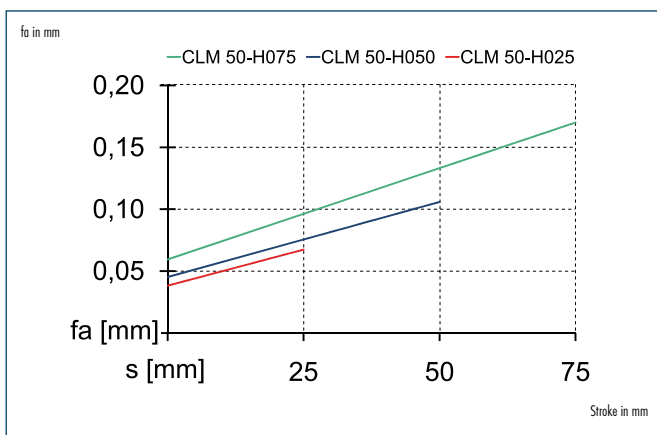
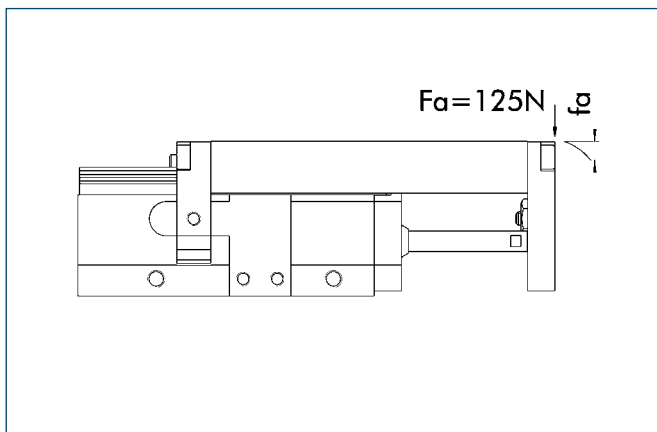
Extension cable for proximity switch

Designation	ID	Remark
STV 10	0313432	Sleeve M8x1, straight
STV 20	0313433	Sleeve M8x1, angled

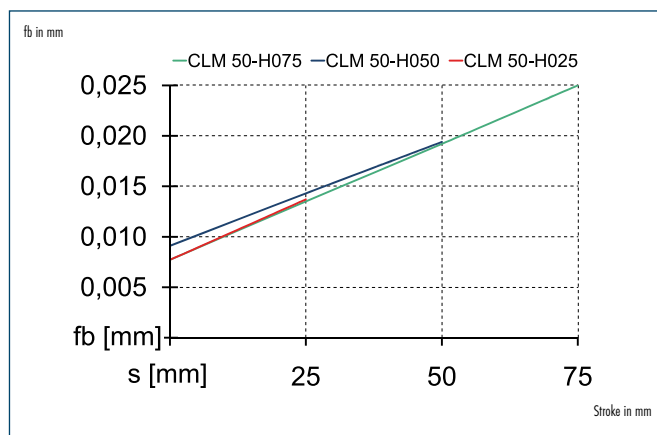
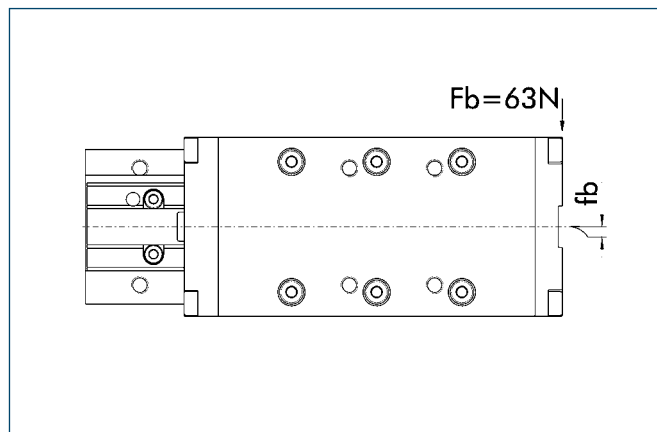
Generally, two sensors are needed for each linear unit.

 You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.

### Deflection under load: $f_a$

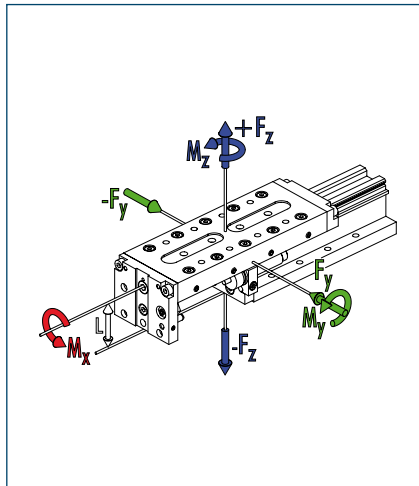


### Deflection under load: $f_b$



You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.

### Moment load



L = 44 mm

ⓘ The forces and moments shown here are maximum values for individual loading. If more than one force or moment occurs simultaneously, the application can be calculated by the TOOLBOX sizing software.

Designation	$F_z$ [N]	$M_x$ [Nm]	$M_y$ [Nm]	$M_z$ [Nm]
CLM 100-H025	812	28.2	26.4	13.2
CLM 100-H050	734	34	33.1	16.55
CLM 100-H075	684	39.4	39.7	19.85
CLM 100-H100	658	44.6	46.3	23.15

ⓘ Force  $F_y$  must be calculated by the TOOLBOX sizing software.

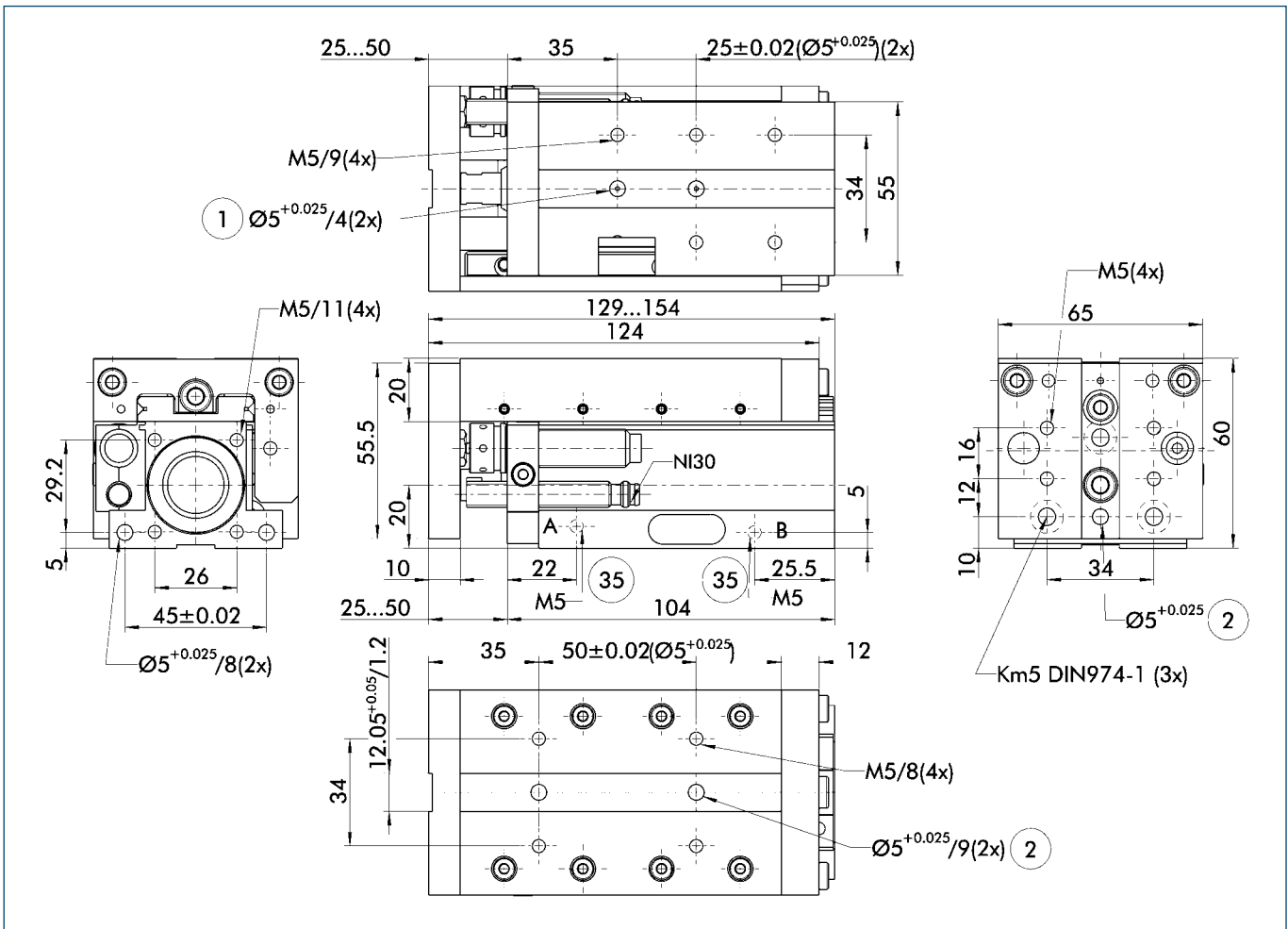
### Technical data

Designation		CLM 100-H025	CLM 100-H050	CLM 100-H075	CLM 100-H100
	ID	0314041	0314042	0314043	0314044
Stroke length	[mm]	25	50	75	100
Extend force [FV] at 6 bar	[N]	294	294	294	294
Retract force [FR] at 6 bar	[N]	247	247	247	247
Piston diameter	[mm]	25	25	25	25
Rod diameter	[mm]	10	10	10	10
Overall length	[mm]	129	167	204	242
Mass	[kg]	1.45	1.75	2.1	2.4
Fluid consumption/10 mm stroke	[cm <sup>3</sup> ]	4.9	4.9	4.9	4.9
Minimum pressure	[bar]	3	3	3	3
Maximum pressure	[bar]	8	8	8	8
Nominal operating pressure	[bar]	6	6	6	6
IP rating		40	40	40	40
Min. ambient temperature	[°C]	5	5	5	5
Max. ambient temperature	[°C]	60	60	60	60
Repeat accuracy	[mm]	± 0.01	± 0.01	± 0.01	± 0.01
Horizontal travel time at 5 kg additional load	[s]	0.11	0.15	0.18	0.21
Vertical travel time at 5 kg additional load	[s]	0.11	0.15	0.18	0.21

### OPTIONS and their characteristics

Full protection version	ID	0314442	0314443	0314444
Designation		CLM 100-H050-ASP	CLM 100-H075-ASP	CLM 100-H100-ASP
Stroke loss of nominal stroke (on the rod side)	[mm]	12	12	12
Mass	[kg]	1.82	2.17	2.47
Static holding force	[N]	350	350	350
Max. axial backlash of the clamping	[mm]	0.25	0.25	0.25
ZZA intermediate stop on the rod side possible		No	No	No
ZZA intermediate stop on the piston side possible		No	No	No
LMZAW intermediate stop possible		No	No	No

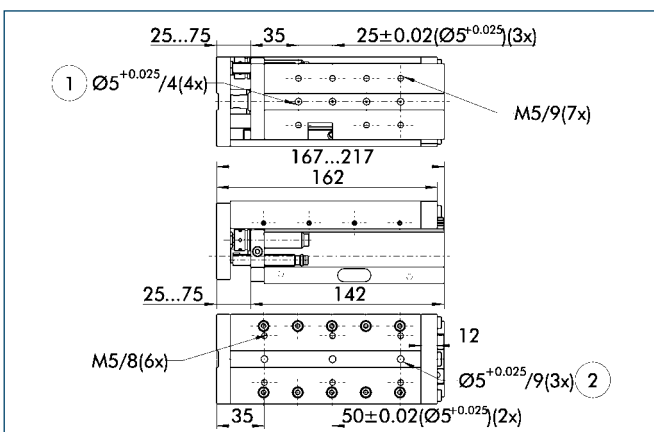
### Main views, CLM 100-H025



- A, a Main and direct connections, extend linear unit
- B, b Main and direct connections, retract linear unit
- ① Connection, linear unit
- ② Connection of the assembly
- ⊕ Back

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.

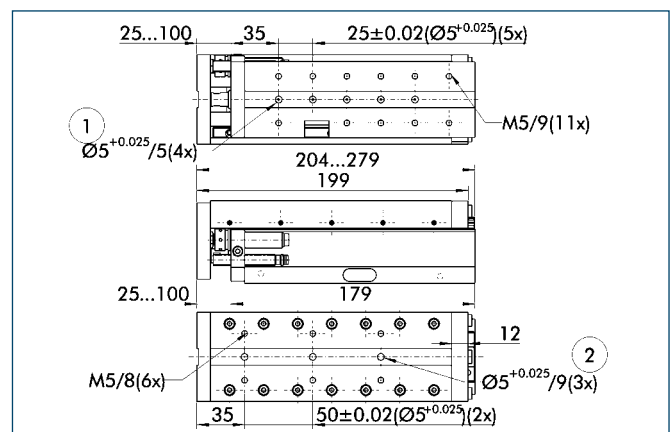
### Variant CLM 100-H050



- ① Connection, linear unit
- ② Connection of the assembly

Not all dimensions shown can be seen in the main view.

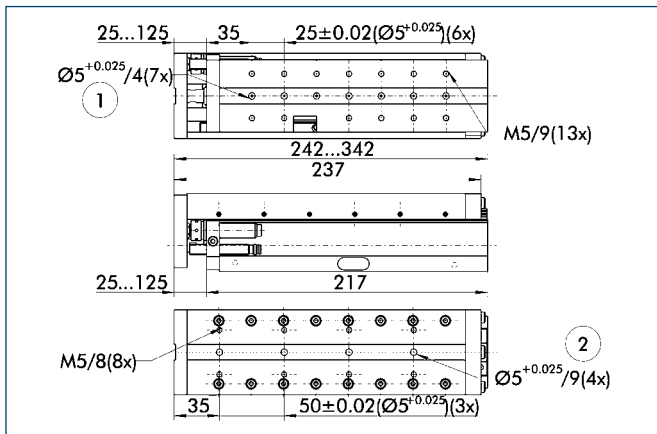
### Variant CLM 100-H075



- ① Connection, linear unit
- ② Connection of the assembly

Not all dimensions shown can be seen in the main view.

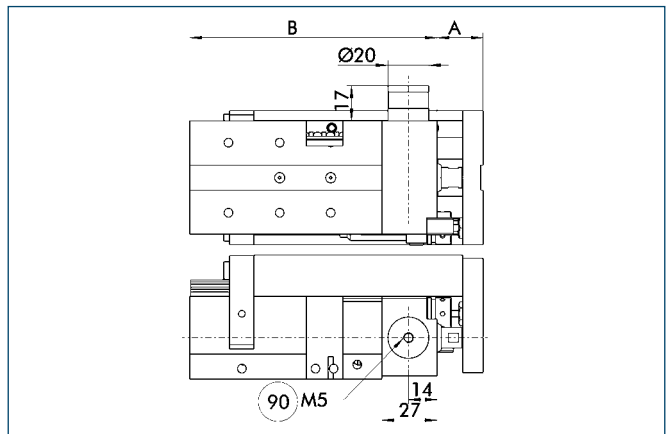
## Variant CLM 100-H100



- ① Connection, linear unit
- ② Connection of the assembly

Not all dimensions shown can be seen in the main view.

## Rod lock



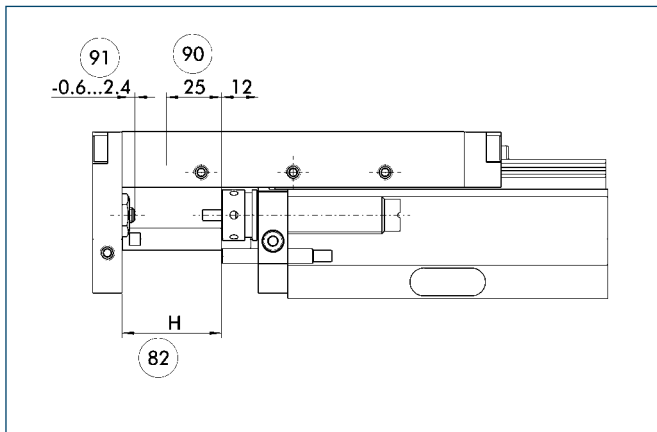
- ⑨⑩ Air connection, rod lock

### Variable dimensions of rod lock

Type	Stroke [mm]	A [mm]	B [mm]
CLM 100-H050	33	25...58	159
CLM 100-H075	58	25...83	196
CLM 100-H100	83	25...108	234

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 useful stroke.

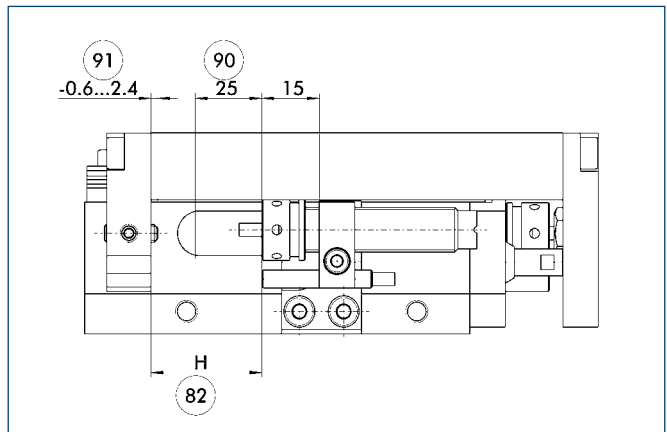
## Fine adjustment, on the piston rod side



- ⑧② Stroke
- ⑨⑩ Stroke adjustment range
- ⑨① Dampening stroke adjustment range

This illustration shows the possibility of the "Return" stroke fine adjustment.

## Fine adjustment, on the piston side

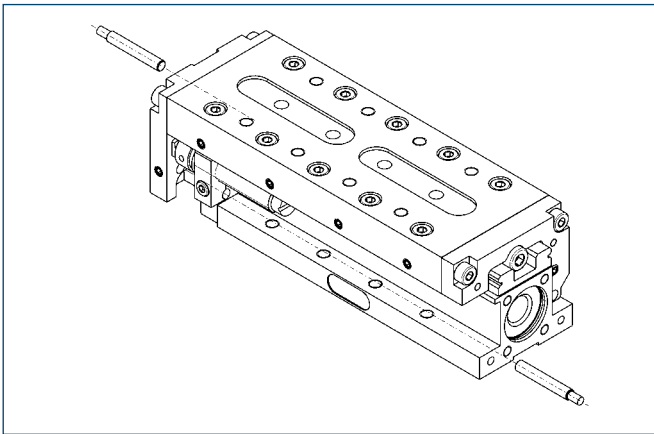


- ⑧② Stroke
- ⑨⑩ Stroke adjustment range
- ⑨① Dampening stroke adjustment range

This illustration shows the possibility of the "Extend" stroke fine adjustment.

 You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.

### Sensor systems



#### End-position monitoring:

Inductive proximity switch, can be directly mounted

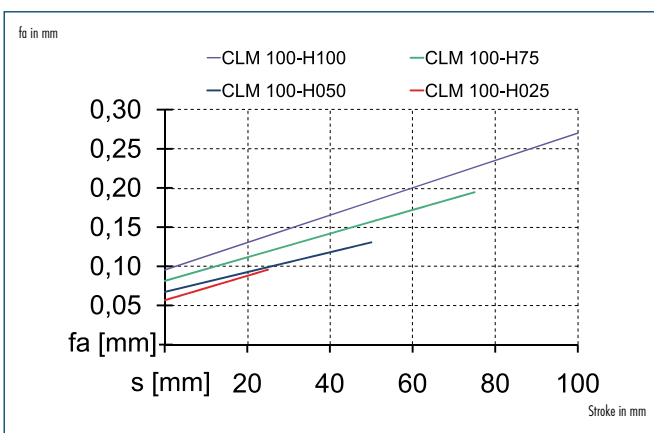
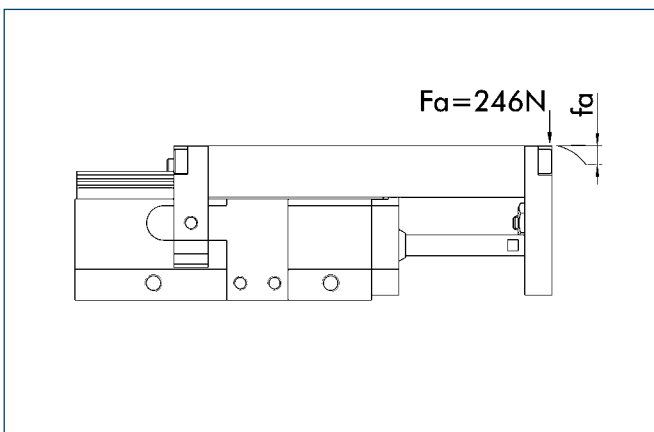
Designation	ID	Remark
NI 30-KT	0313429	For basic version
NI 32	0313425	For ASP version

#### Extension cable for proximity switch

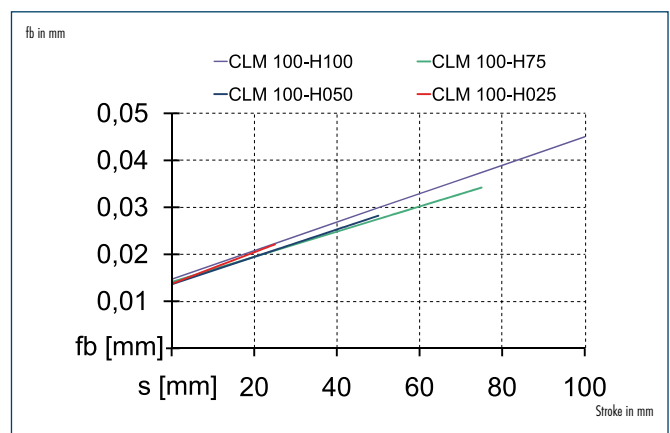
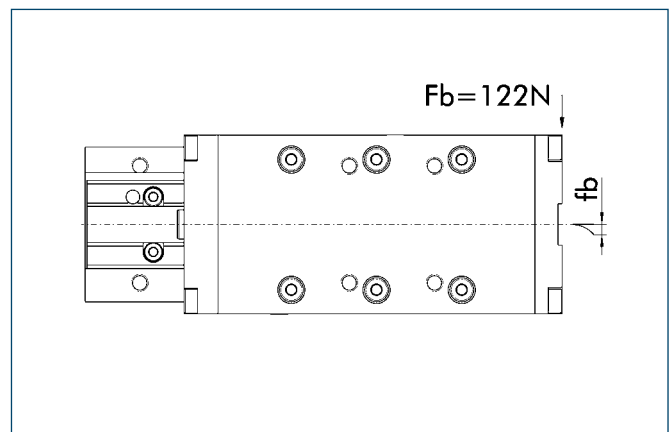
Designation	ID	Remark
STV 20	0313433	Sleeve M8x1, angled

**i** Generally, two sensors are needed for each linear unit.

### Deflection under load: $f_a$

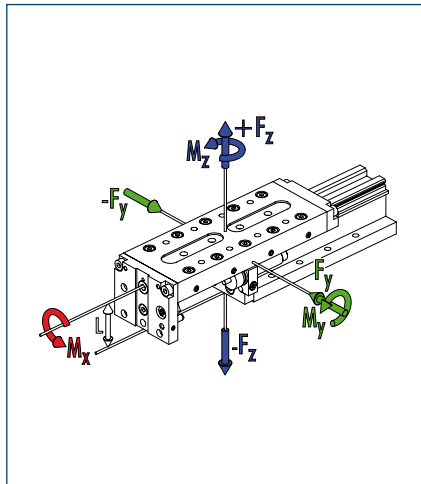


### Deflection under load: $f_b$



**i** You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.

### Moment load



L = 56.5 mm

ⓘ The forces and moments shown here are maximum values for individual loading. If more than one force or moment occurs simultaneously, the application can be calculated by the TOOLBOX sizing software.

Designation	$F_z$ [N]	$M_x$ [Nm]	$M_y$ [Nm]	$M_z$ [Nm]
CLM 200-H050	1.218	46.7	63	31.5
CLM 200-H100	1.160	64.8	90	45
CLM 200-H150	1.145	81.7	117	58.5

ⓘ Force  $F_y$  must be calculated by the TOOLBOX sizing software.

### Technical data

Designation		CLM 200-H050	CLM 200-H100	CLM 200-H150
	ID	0314045	0314046	0314047
Stroke length	[mm]	50	100	150
Extend force [FV] at 6 bar	[N]	482	482	482
Retract force [FR] at 6 bar	[N]	415	415	415
Piston diameter	[mm]	32	32	32
Rod diameter	[mm]	12	12	12
Overall length	[mm]	178	252	328
Mass	[kg]	3.1	4.15	5.25
Fluid consumption/10 mm stroke	[cm <sup>3</sup> ]	8.04	8.04	8.04
Minimum pressure	[bar]	3	3	3
Maximum pressure	[bar]	8	8	8
Nominal operating pressure	[bar]	6	6	6
IP rating		40	40	40
Min. ambient temperature	[°C]	5	5	5
Max. ambient temperature	[°C]	60	60	60
Repeat accuracy	[mm]	± 0.01	± 0.01	± 0.01
Horizontal travel time at 10 kg additional load	[s]	0.12	0.18	0.23
Vertical travel time at 10 kg additional load	[s]	0.12	0.18	0.24

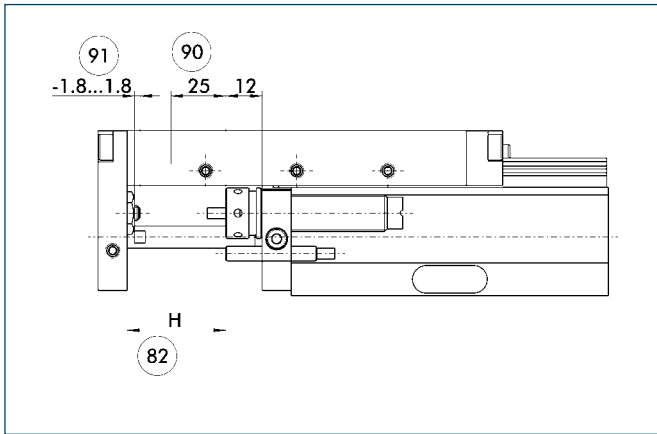
### OPTIONS and their characteristics

Full protection version	ID	0314446	0314447
Designation		CLM 200-H100-ASP	CLM 200-H150-ASP
Stroke loss of nominal stroke (on the rod side)	[mm]	15	15
Mass	[kg]	4.22	5.32
Static holding force	[N]	600	600
Max. axial backlash of the clamping	[mm]	0.25	0.25
ZZA intermediate stop on the rod side possible		No	No
ZZA intermediate stop on the piston side possible		No	No
LMZAW intermediate stop possible		No	No





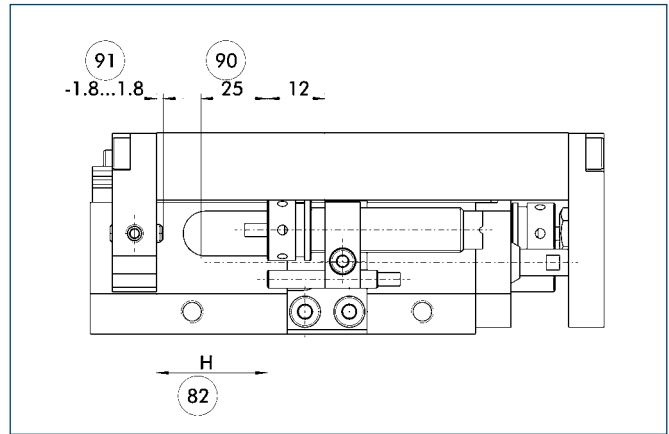
## Fine adjustment, on the piston rod side



- 82 Stroke
- 90 Stroke adjustment range
- 91 Dampening stroke adjustment range

This illustration shows the possibility of the “Return” stroke fine adjustment.

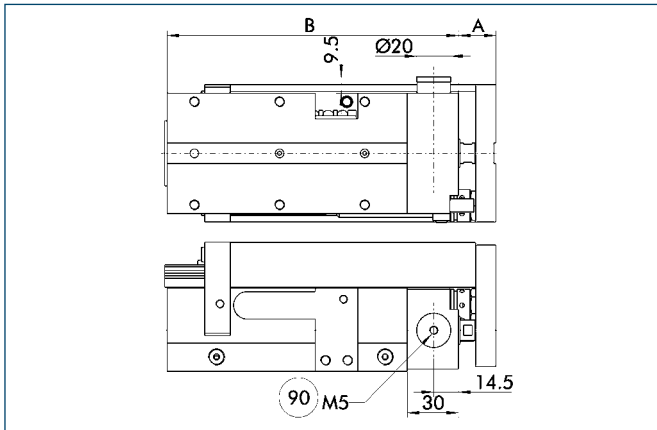
## Fine adjustment, on the piston side



- 82 Stroke
- 90 Stroke adjustment range
- 91 Dampening stroke adjustment range

This illustration shows the possibility of the “Extend” stroke fine adjustment.

## Rod lock



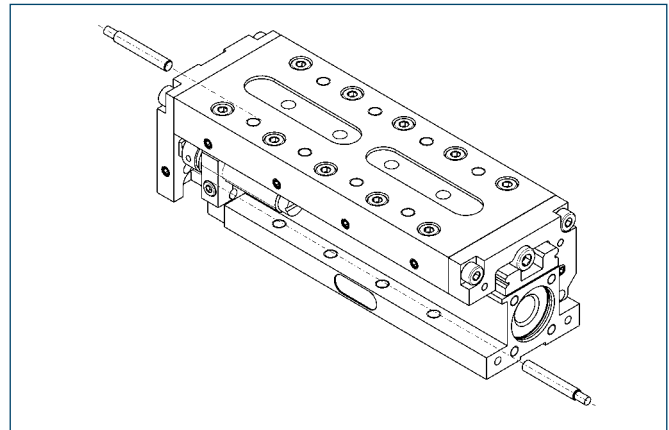
- 90 Air connection, rod lock

### Variable dimensions of rod lock

Type	Stroke [mm]	A [mm]	B [mm]
CLM 200-H100	85	22...107	245
CLM 200-H150	135	22...157	321

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 useful stroke.

## Sensor systems




**End-position monitoring:**  
Inductive proximity switch, can be directly mounted

Designation	ID
NI 30-KT	0313429

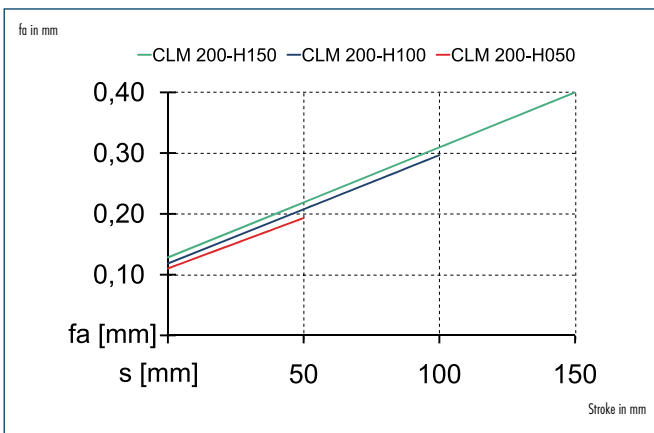
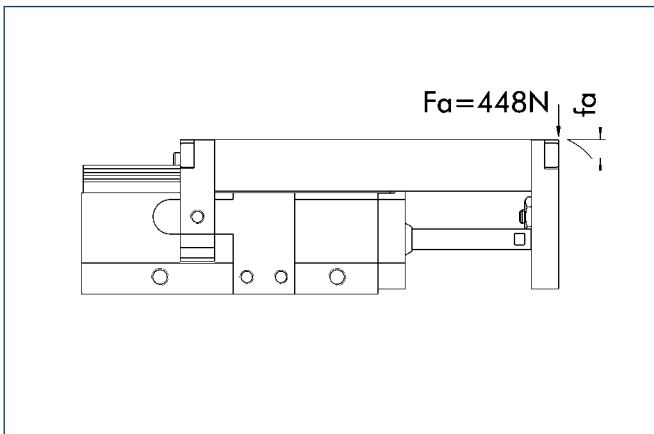
**Extension cable for proximity switch**

Designation	ID	Remark
STV 20	0313433	Sleeve M8x1, angled

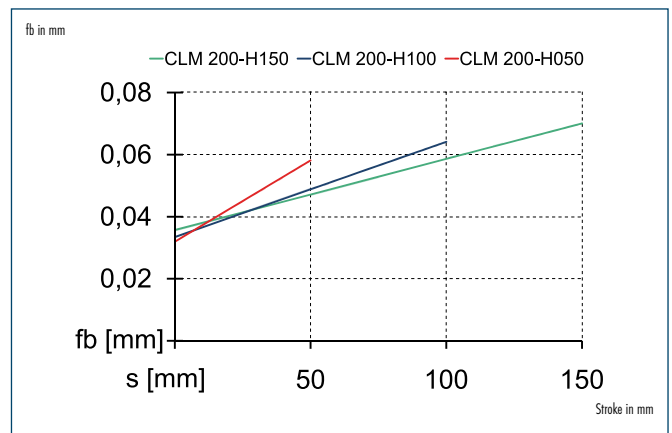
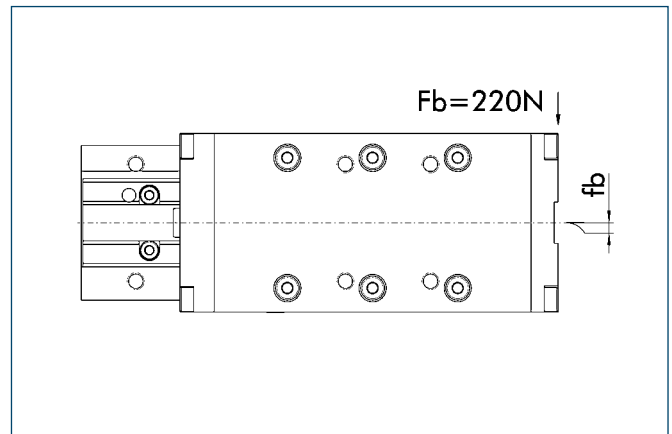
- ① Generally, two sensors are needed for each linear unit.

 You can find further information and components for the accessories mentioned here in the “Accessories” part of the catalog.

### Deflection under load: $f_a$



### Deflection under load: $f_b$



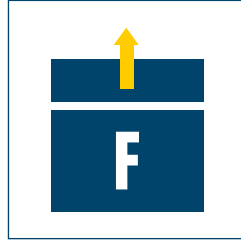
You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.



**Sizes**  
25 .. 100



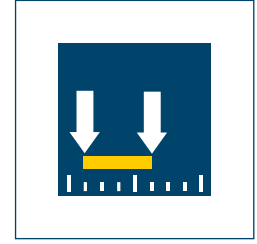
**Mass**  
0.5 kg .. 5.18 kg



**Driving force**  
50 N .. 294 N

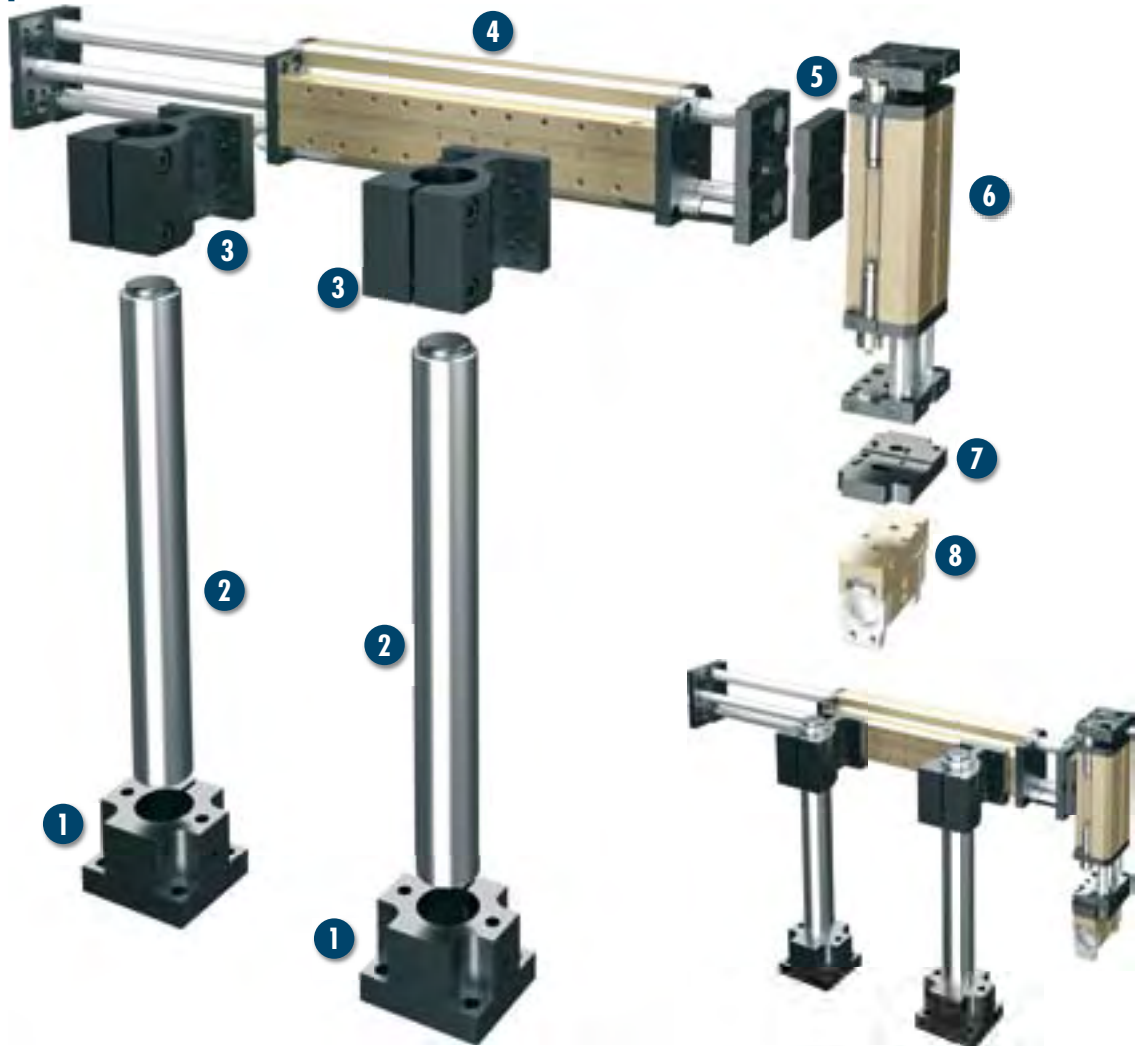


**Stroke**  
25 mm .. 225 mm



**Repeat accuracy**  
± 0.01 mm .. ± 0.015 mm

### Application example



Pneumatic two-axis system with pillar assembly and gripper for assembly processes

- 1 Single base support, SOE 035
- 2 Hollow pillar, SLH 035-0300
- 3 Single mounting plate, APEV 035
- 4 Linear module, KLM 100-H200
- 5 Adapter plate, APL 121
- 6 Linear module, KLM 050-H075
- 7 Adapter, ASG 0280
- 8 2-finger gripper for small components, KGG 80

## Stroke module

With pneumatic drive and ball bushing guide

### Area of application

For use in clean and slightly dirty environments. Simple economic linear movements or, in combination, as multi-axis positioning systems for assembly and handling technology

### Advantages – your benefits

#### Double bearing of the guide shafts in the ball bushing

For high load bearing capacity and repeat accuracy < 0.015 mm

#### Shock absorber and proximity switch integrated in the projecting areas

For vibration-free movements and end-position monitoring

#### Heavy-duty sized guide shafts

For high rigidity

#### High basic load ratings

In all load directions

#### Standardized mounting bores

For numerous combinations with other GEMOTEC system elements

#### Several intermediate positions possible

For maximum flexibility in applications

#### Level control by means of rod lock

For safety in case of emergency stops



### General information about the series

#### Guidance

Ball bushing guide

#### Material

Body Aluminium, hard-anodized

#### Actuation

Pneumatic, via filtered compressed air (10 µm): dry, lubricated, or non-lubricated  
Pressurizing medium: requirements for compressed air quality class according to DIN ISO 8573-1:  
Quality class 4

#### Ambient temperature range

From 5°C to 60°C

#### Operating pressure range

2 bar to 8 bar

#### Scope of delivery

Shock absorber and driver for proximity switch

#### Warranty

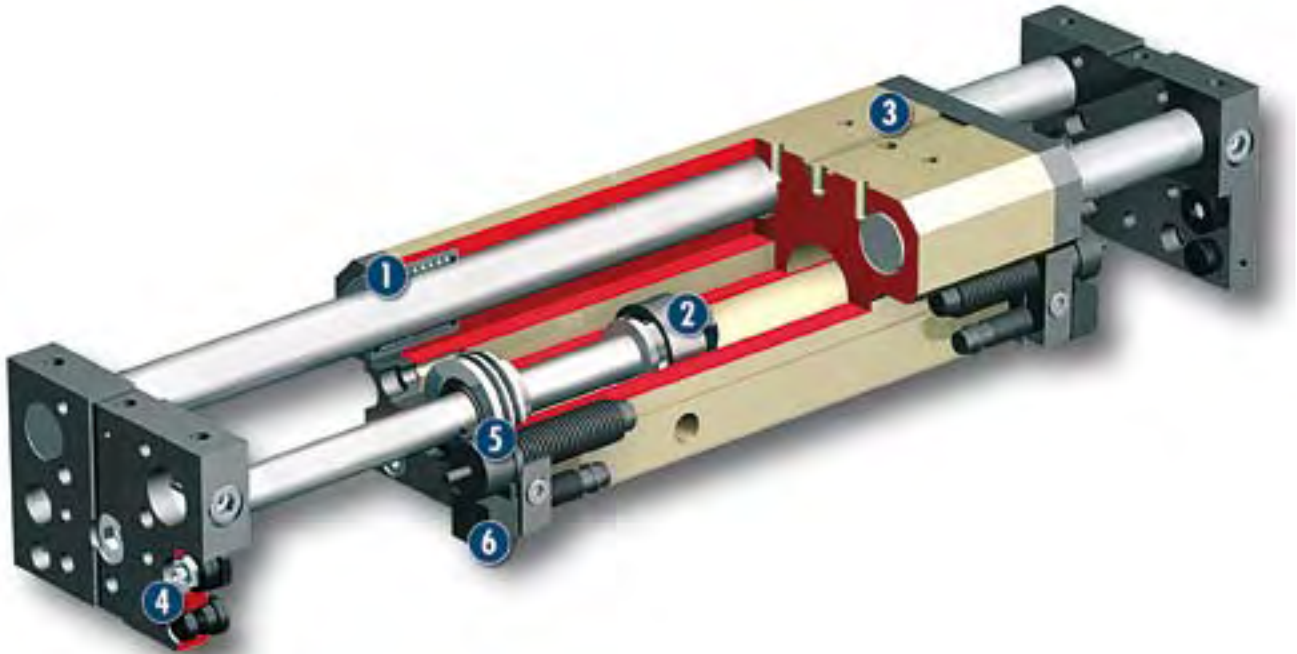
24 months

#### Rod lock

Can be retrofitted by using a kit

For production reasons, the colors may vary from those shown in the catalog.

## Cross-section of function



- 1 Ball bushing guide**  
With wiper; minimal backlash and low friction
- 2 Drive**  
Powerful piston rod cylinder
- 3 Modular design hole pattern**  
Completely integrated in the module system
- 4 Dampening adjustment**  
Adjustment of the dampening characteristic
- 5 End position setting**  
Convenient adjustment using the shock absorber threads
- 6 Sensor systems**  
With sensor driver for convenient adjustment

## Description of function

The linear module is driven via a double-acting pneumatic cylinder which is integrated in the base body and guided by two opposing guide rods.

## Options and special information

### Fall protection version

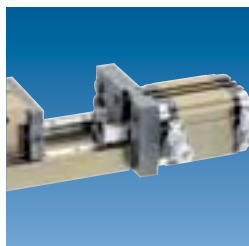
Prevents the structure from falling in the event of a sudden loss of energy.

This module can be combined as standard with many elements from the modular system. You can find more information in the "Accessories" chapter.

## Accessories

Accessories from SCHUNK – the ideal components for the best functionality, reliability, and controlled production for all automation modules.

Intermediate stop, ZZA



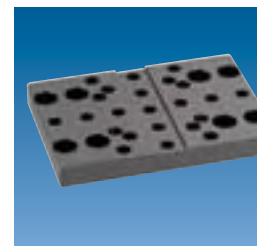
Fittings



Rod lock, ASP



Adapter plates



## Centering strips



## Inductive proximity switch, NI



## Pressure maintenance valve



## Sensor cable



## Pillar assembly systems



ⓘ Please see the side views at the end of the respective size for information concerning specific sizes, accessories availability for that size, designation, and ID numbers. You can find more information about our accessories program in the “Accessories” part of the catalog.

## General information about the series

### Repeat accuracy

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

### Travel times

The 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

The stroke is the maximum nominal stroke of the unit. This can be shortened on both sides by the shock absorbers.

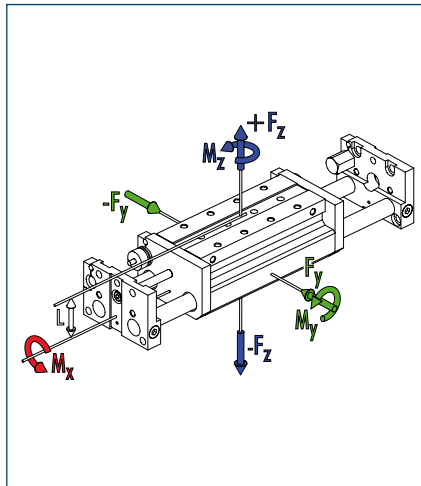
### Layout or sizing

For layout or sizing of linear modules, we recommend using our TOOLBOX sizing software, which can be obtained at [www.schunk.com](http://www.schunk.com). Sizing the selected unit is absolutely necessary, since otherwise overloading can result.

### Ambient conditions

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

### Moment load



L = 20 mm

ⓘ The forces and moments shown here are maximum values for individual loading. If more than one force or moment occurs simultaneously, the application can be calculated by the TOOLBOX sizing software.

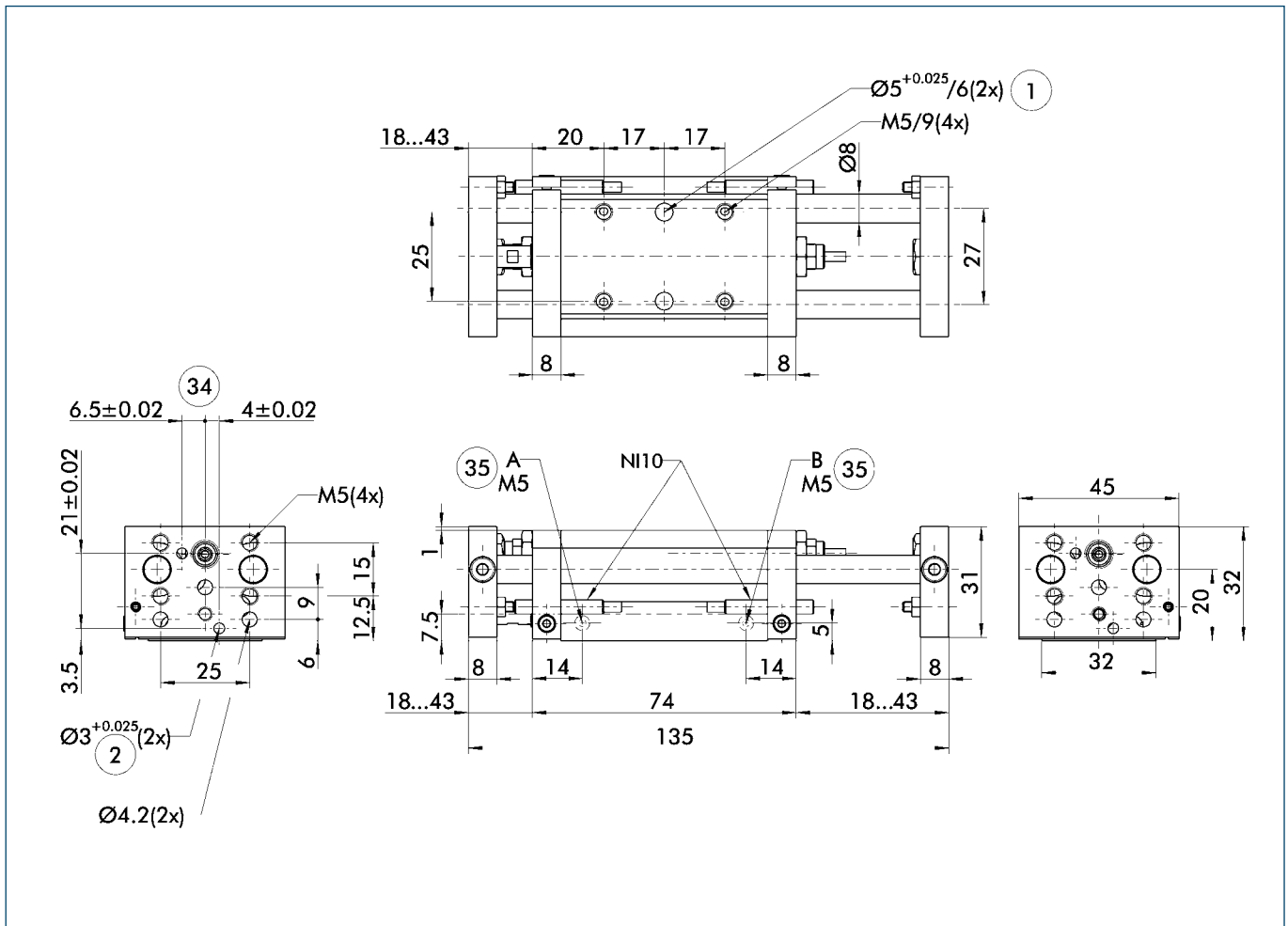
Designation	$F_y/F_z$ [N]	$M_x$ [Nm]	$M_y$ [Nm]	$M_z$ [Nm]
KLM 025-H025	103	1.3	3.2	3.2
KLM 025-H042	74	1	2.8	2.8
KLM 025-H059	59	0.7	2.6	2.6

### Technical data

Designation		KLM 25-H025	KLM 25-H042	KLM 25-H059
	ID	0314010	0314011	0314012
Stroke length	[mm]	25	42	59
Extend force [FV] at 6 bar	[N]	67	67	67
Retract force [FR] at 6 bar	[N]	50	50	50
Piston diameter	[mm]	12	12	12
Rod diameter	[mm]	6	6	6
Overall length	[mm]	135	169	203
Mass	[kg]	0.5	0.58	0.66
Fluid consumption/10 mm stroke	[cm <sup>3</sup> ]	1.13	1.13	1.13
Minimum pressure	[bar]	3	3	3
Maximum pressure	[bar]	8	8	8
Nominal operating pressure	[bar]	6	6	6
IP rating		40	40	40
Min. ambient temperature	[°C]	5	5	5
Max. ambient temperature	[°C]	60	60	60
Repeat accuracy	[mm]	± 0.01	± 0.01	± 0.01
Horizontal travel time at 1 kg additional load	[s]	0.17	0.18	0.19
Vertical travel time at 1 kg additional load	[s]	0.17	0.18	0.19



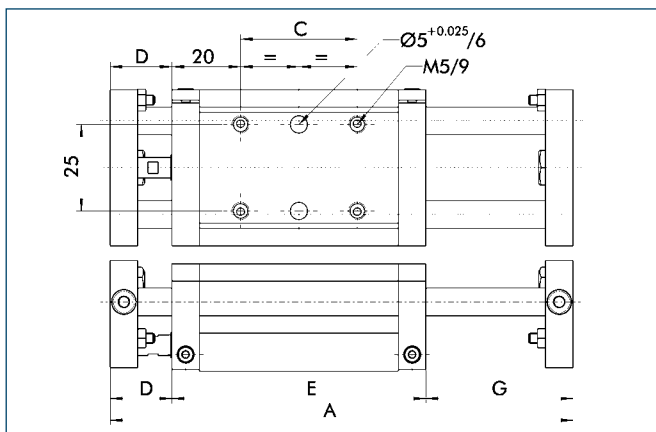
## Main views, KLM 25-H025



- A, a Main and direct connections, extend linear unit
- B, b Main and direct connections, retract linear unit
- ① Connection, linear unit
- ② Connection of the assembly
- ③④ On both attachment faces
- ③⑤ Back

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

## Stroke variants

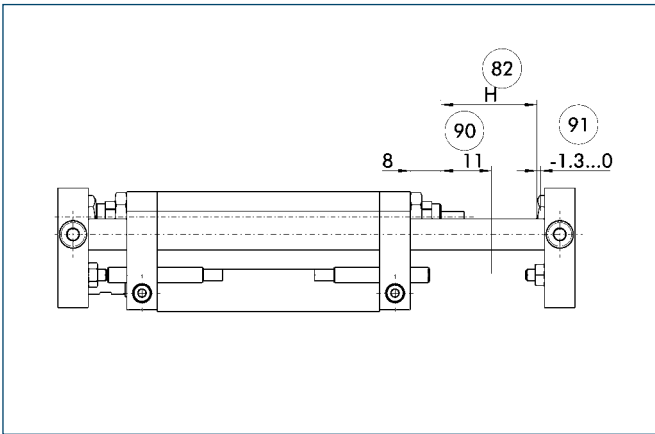


Not all dimensions shown can be seen in the main view.

## Variable dimensions of stroke variants

Type	Stroke [mm]	A [mm]	C [mm]	D [mm]	E [mm]	G [mm]
KLM 25-H025	25	135	1x34	18...43	74	43...18
KLM 25-H042	42	169	1x34	18...60	91	60...18
KLM 25-H059	59	203	2x34	18...77	108	77...18

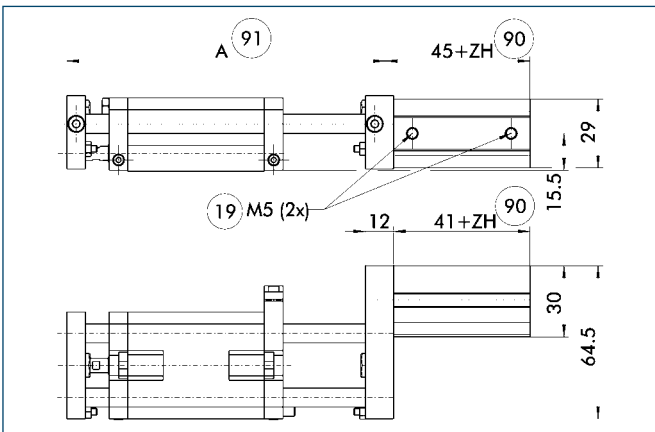
### Fine adjustment



- 82 Stroke
- 90 Stroke adjustment range
- 91 Dampening stroke adjustment range

This illustration shows the possibility of the stroke fine adjustment.

### Intermediate stop, ZZA on the piston side



- 19 Air connection
- 90 Intermediate stroke
- 91 Overall length "A", the variant without intermediate stroke (see dimension table of stroke variants)

#### ZZA 28

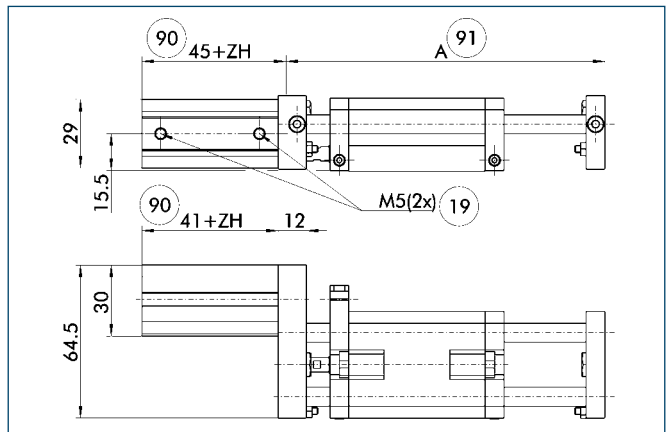
Holding force at 6 bar	[N]	54
Additional mass at 0 mm stroke	[kg]	0.2
Additional mass per mm stroke	[kg]	0.002

**Sample order** KLM 25-H59-ZZA028-H15

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.

You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.

### Intermediate stop, ZZA on the rod side



- 19 Air connection
- 90 Intermediate stroke
- 91 Overall length "A", the variant without intermediate stroke (see dimension table of stroke variants)

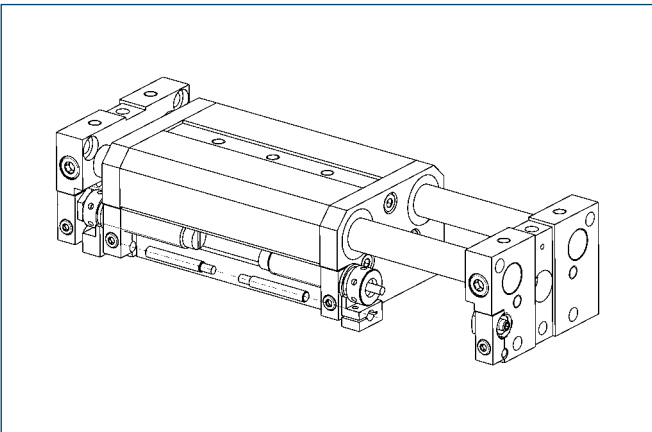
#### ZZA 29

Holding force at 6 bar	[N]	54
Additional mass at 0 mm stroke	[kg]	0.2
Additional mass per mm stroke	[kg]	0.002

**Sample order** KLM 25-H59-ZZA029-H15

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.

### Sensor systems



End-position monitoring:  
Inductive proximity switch, can be directly mounted

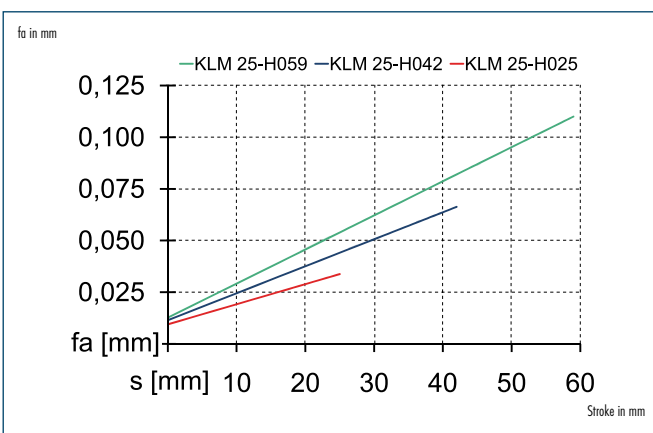
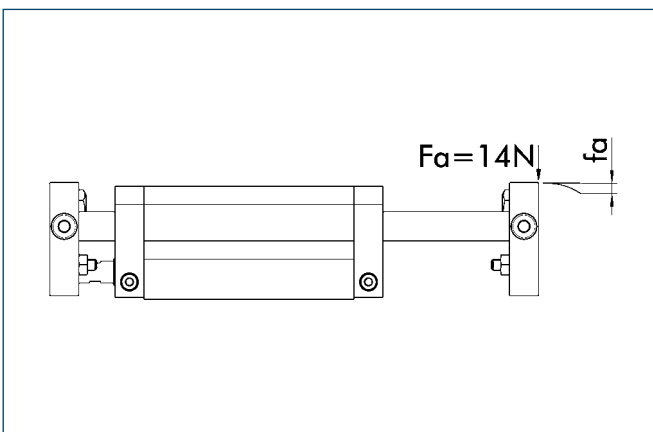
Designation	ID
NI 10	0313427

Extension cable for proximity switch

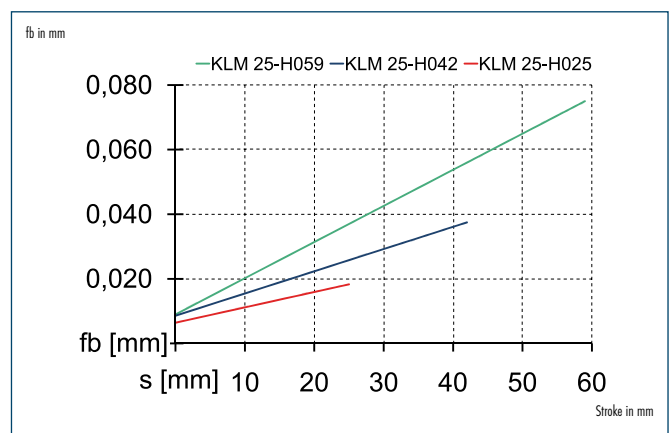
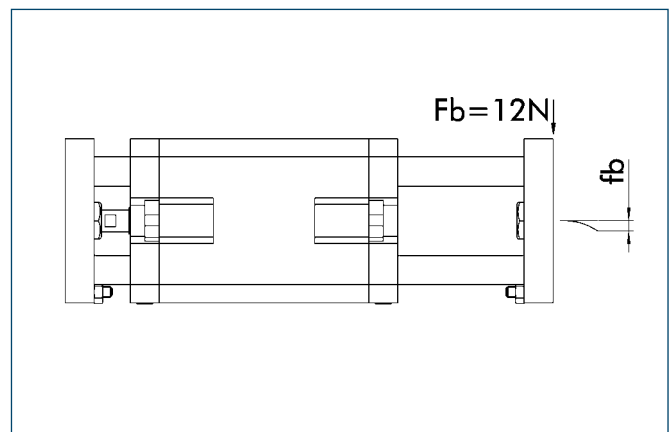
Designation	ID	Remark
STV 10	0313432	Sleeve M8x1, straight
STV 20	0313433	Sleeve M8x1, angled

ⓘ Generally, two sensors are needed for each linear unit. For additional monitoring of the intermediate positions, one sensor per additional position as well as (optionally) one extension cable will be needed.

### Deflection under load: $f_a$

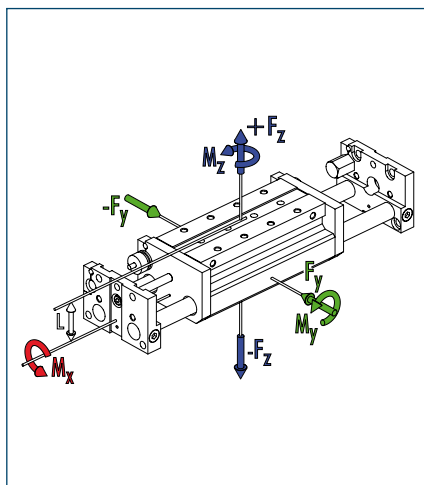


### Deflection under load: $f_b$



ⓘ You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.

### Moment load



L = 32.5 mm

ⓘ The forces and moments shown here are maximum values for individual loading. If more than one force or moment occurs simultaneously, the application can be calculated by the TOOLBOX sizing software.

Designation	$F_y/F_z$ [N]	$M_x$ [Nm]	$M_y$ [Nm]	$M_z$ [Nm]
KLM 050-H013	335	6.5	12.1	12.1
KLM 050-H025	335	6.5	12.1	12.1
KLM 050-H038	231	4.4	10.2	10.2
KLM 050-H050	231	4.4	10.2	10.2
KLM 050-H063	166	3.4	9.2	9.2
KLM 050-H075	166	3.4	9.2	9.2
KLM 050-H088	139	2.6	8.6	8.6
KLM 050-H100	139	2.6	8.6	8.6
KLM 050-H113	112	2.1	8.2	8.2
KLM 050-H125	112	2.1	8.2	8.2

### Technical data

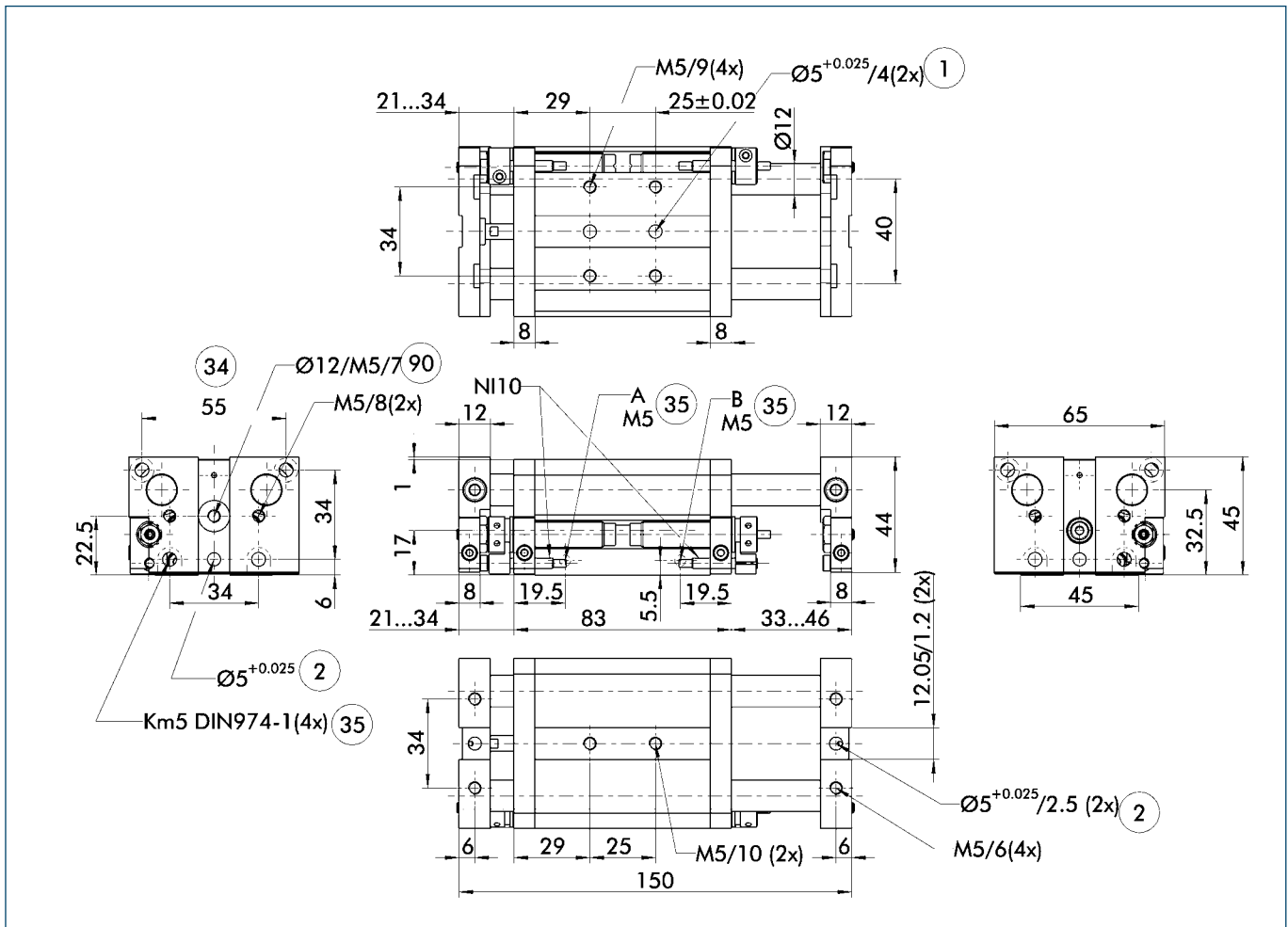
Designation		KLM 50-H013	KLM 50-H025	KLM 50-H038	KLM 50-H050
	ID	0314013	0314014	0314015	0314016
Stroke length	[mm]	13	25	38	50
Extend force [FV] at 6 bar	[N]	120	120	120	120
Retract force [FR] at 6 bar	[N]	103	103	103	103
Piston diameter	[mm]	16	16	16	16
Rod diameter	[mm]	6	6	6	6
Overall length	[mm]	150	150	200	200
Mass	[kg]	1.3	1.3	1.5	1.5
Fluid consumption/10 mm stroke	[cm <sup>3</sup> ]	2	2	2	2
Minimum pressure	[bar]	3	3	3	3
Maximum pressure	[bar]	8	8	8	8
Nominal operating pressure	[bar]	6	6	6	6
IP rating		40	40	40	40
Min. ambient temperature	[°C]	5	5	5	5
Max. ambient temperature	[°C]	60	60	60	60
Repeat accuracy	[mm]	± 0.01	± 0.01	± 0.01	± 0.01
Horizontal travel time at 2 kg additional load	[s]	0.09	0.1	0.11	0.13
Vertical travel time at 2 kg additional load	[s]	0.1	0.11	0.12	0.13

### OPTIONS and their characteristics

Full protection version	ID	0314414	0314415	0314416
Designation		KLM 50-H025-ASP	KLM 50-H038-ASP	KLM 50-H050-ASP
Stroke loss of nominal stroke (on the rod side)	[mm]	10	10	10
Mass	[kg]	1.34	1.54	1.54
Static holding force	[N]	180	180	180
Max. axial backlash of the clamping	[mm]	0.2	0.2	0.2
ZZA intermediate stop on the rod side possible		Yes	Yes	Yes
ZZA intermediate stop on the piston side possible		Yes	Yes	Yes
LMZAW intermediate stop possible		No	No	No

KLM 50-H063	KLM 50-H075	KLM 50-H088	KLM 50-H100	KLM 50-H113	KLM 50-H125
0314017	0314018	0314019	0314020	0314021	0314022
63	75	88	100	113	125
120	120	120	120	120	120
103	103	103	103	103	103
16	16	16	16	16	16
6	6	6	6	6	6
250	250	300	300	350	350
1.7	1.7	1.9	1.9	2.1	2.1
2	2	2	2	2	2
3	3	3	3	3	3
8	8	8	8	8	8
6	6	6	6	6	6
40	40	40	40	40	40
5	5	5	5	5	5
60	60	60	60	60	60
± 0.01	± 0.01	± 0.01	± 0.01	± 0.01	± 0.01
0.14	0.15	0.16	0.17	0.19	0.21
0.14	0.15	0.16	0.17	0.19	0.21
0314417	0314418	0314419	0314420	0314421	0314422
KLM 50-H063-ASP	KLM 50-H075-ASP	KLM 50-H088-ASP	KLM 50-H100-ASP	KLM 50-H113-ASP	KLM 50-H125-ASP
10	10	10	10	10	10
1.74	1.74	1.94	1.94	2.14	2.14
180	180	180	180	180	180
0.2	0.2	0.2	0.2	0.2	0.2
Yes	Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes	Yes
No	No	No	No	No	No

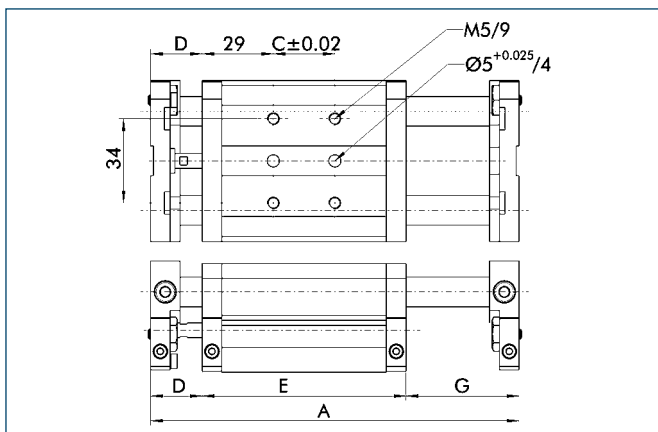
## Main views, KLM 50-H013



- A, a Main and direct connections, extend linear unit
- B, b Main and direct connections, retract linear unit
- ① Connection, linear unit
- ② Connection of the assembly
- ③④ On both attachment faces
- ③⑤ Back
- ⑨⑩ Through-bores in the face plate and thread in the base body (only single sided)

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

## Stroke variants



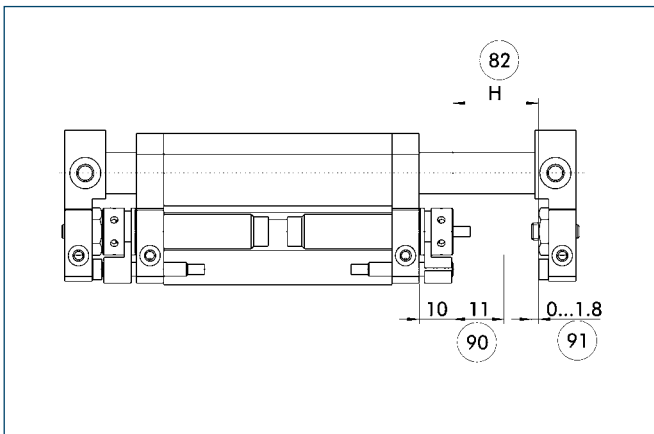
Not all dimensions shown can be seen in the main view.

## Variable dimensions of stroke variants

Type	Stroke [mm]	A [mm]	C [mm]	D [mm]	E [mm]	G [mm]
KLM 50-H013	13	150	1x25	21...34	83	46...33
KLM 50-H025	25	150	1x25	21...46	83	46...21
KLM 50-H038	38	200	2x25	21...59	108	71...33
KLM 50-H050	50	200	2x25	21...71	108	71...21
KLM 50-H063	63	250	3x25	21...84	133	96...33
KLM 50-H075	75	250	3x25	21...96	133	96...21
KLM 50-H088	88	300	4x25	21...109	158	121...33
KLM 50-H100	100	300	4x25	21...121	158	121...21
KLM 50-H113	113	350	5x25	21...134	183	146...33
KLM 50-H125	125	350	5x25	21...146	183	146...21

You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.

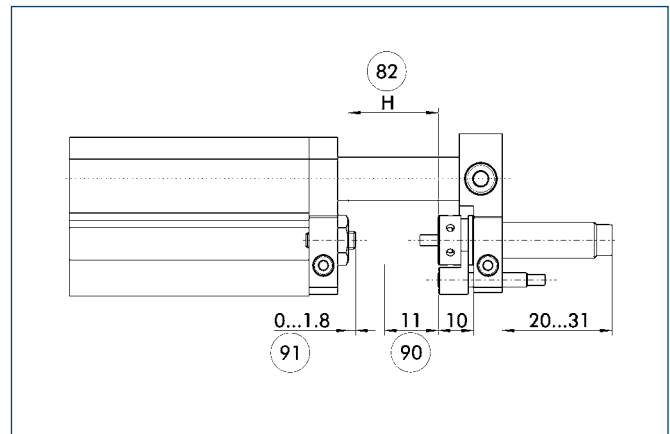
### Fine adjustment



- 82 Stroke
- 90 Stroke adjustment range
- 91 Dampening stroke adjustment range

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

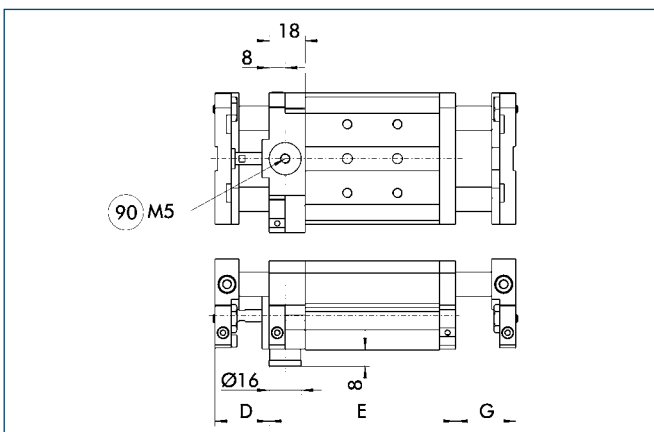
### Fine adjustment



- 82 Stroke
- 90 Stroke adjustment range
- 91 Dampening stroke adjustment range

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

### Rod lock




- 90 Air connection, rod lock

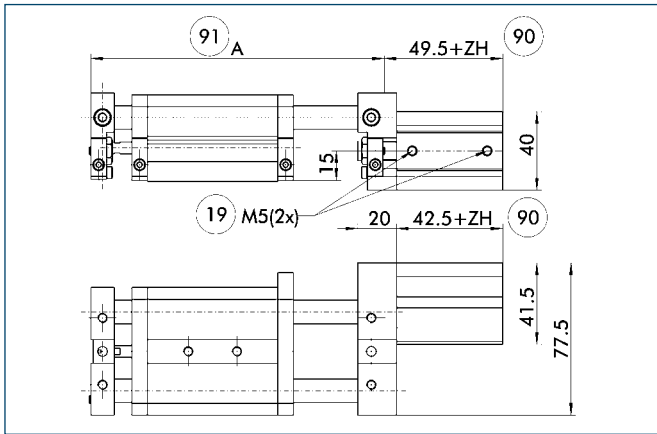
The rod lock prevents weights from falling in the event of energy loss, such as emergency stop situations. The rod lock can also be retrofitted, but this will reduce the useful stroke.

### Variable dimensions of rod lock

Type	Stroke [mm]	D [mm]	E [mm]	G [mm]
KLM 50-H025	15	21...36	93	36...21
KLM 50-H038	28	21...49	118	61...33
KLM 50-H050	40	21...61	118	61...21
KLM 50-H063	53	21...74	143	86...33
KLM 50-H075	65	21...86	143	86...21
KLM 50-H088	78	21...99	168	111...33
KLM 50-H100	90	21...111	168	111...21
KLM 50-H113	103	21...124	193	136...33
KLM 50-H125	115	21...136	193	136...21

 You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.

### Intermediate stop, ZZA on the piston side



- ①⑨ Air connection
- ⑨⑩ Intermediate stroke
- ⑨① Overall length "A", the variant without intermediate stroke (see dimension table of stroke variants)

#### ZZA 55

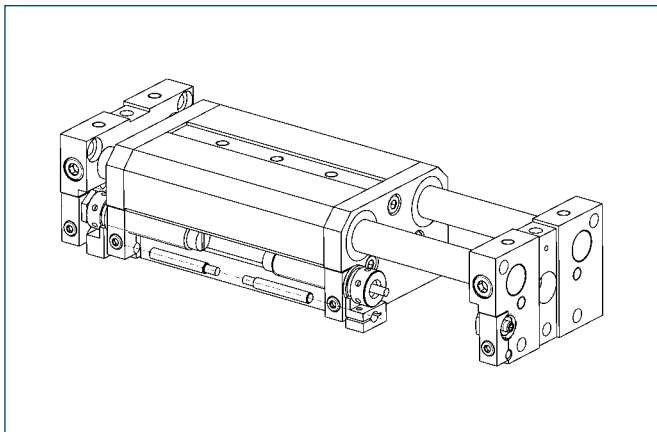
Holding force at 6 bar	[N]	175
Additional mass at 0 mm stroke	[kg]	0.35
Additional mass per mm stroke	[kg]	0.003

#### Sample order

KLM 50-H100-ZZA055-H30

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.

### Sensor systems



#### End-position monitoring:


Inductive proximity switch, can be directly mounted

Designation	ID
NI 10	0313427

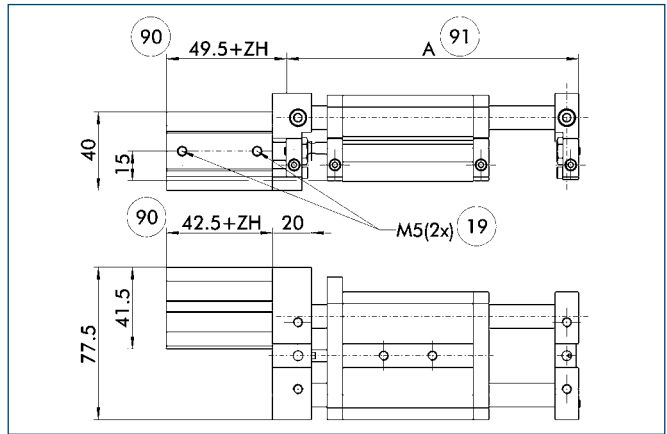
#### Extension cable for proximity switch

Designation	ID	Remark
STV 10	0313432	Sleeve M8x1, straight
STV 20	0313433	Sleeve M8x1, angled

① Generally, two sensors are needed for each linear unit. For additional monitoring of the intermediate positions, one sensor per additional position as well as (optionally) one extension cable will be needed.

 You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.

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



- ①⑨ Air connection
- ⑨⑩ Intermediate stroke
- ⑨① Overall length "A", the variant without intermediate stroke (see dimension table of stroke variants)

#### ZZA 56

Holding force at 6 bar	[N]	175
Additional mass at 0 mm stroke	[kg]	0.35
Additional mass per mm stroke	[kg]	0.003

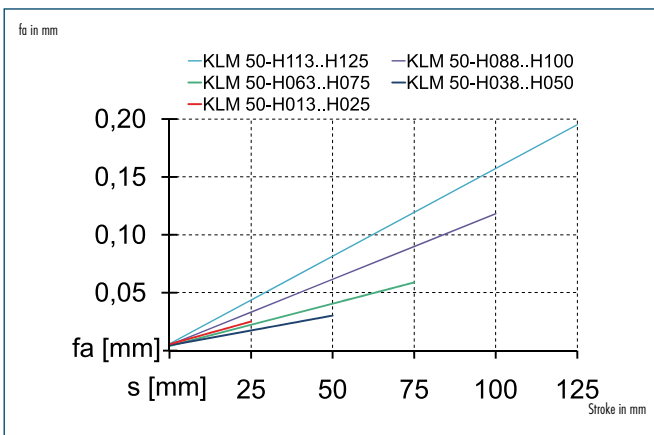
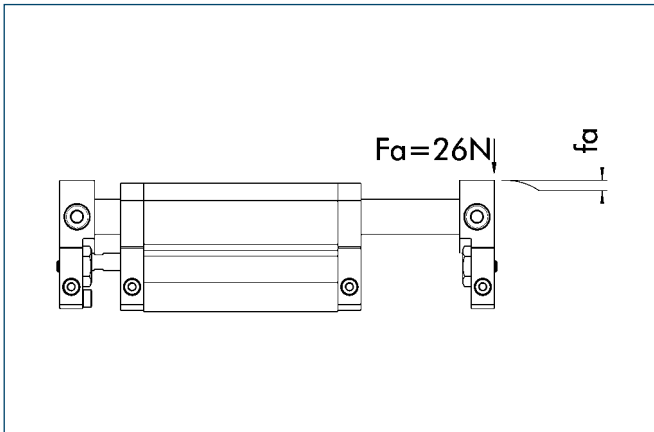
#### Sample order

KLM 50-H100-ZZA056-H30

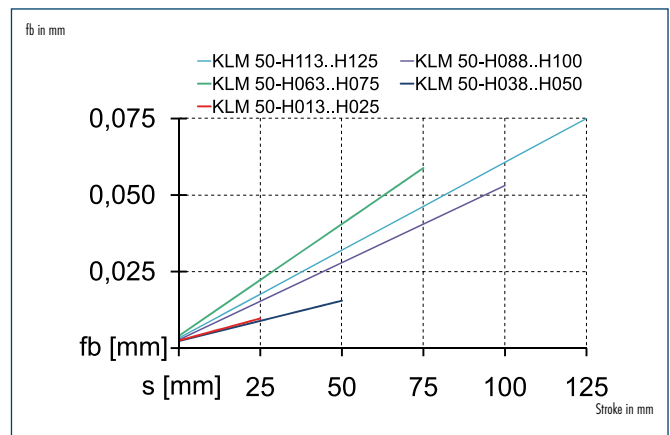
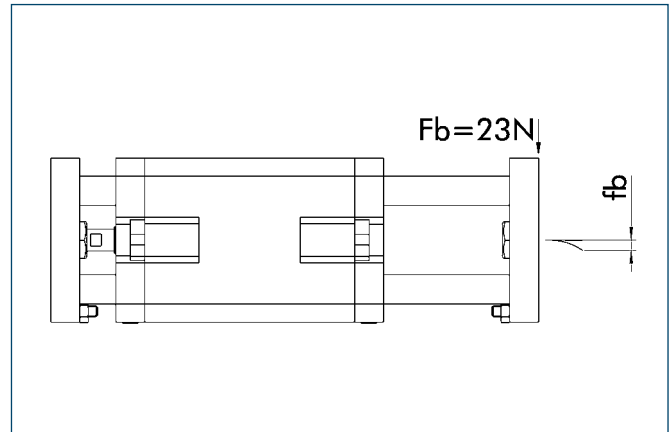
The intermediate position is measured from the respective end position. The intermediate position can be approached from both sides and can proceed in the original stroke direction.. The holding force is the piston force of the intermediate stop less the piston force of the linear module.



### Deflection under load: $f_a$

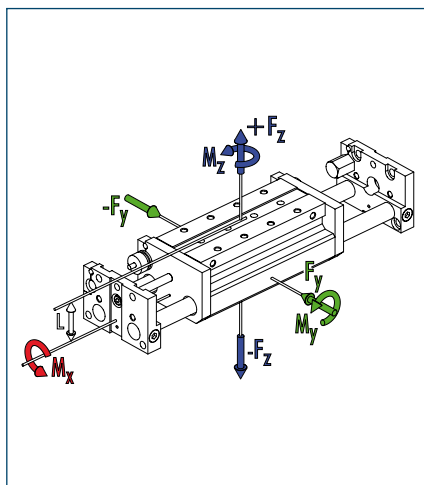


### Deflection under load: $f_b$



 You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.

### Moment load



L = 44 mm

ⓘ The forces and moments shown here are maximum values for individual loading. If more than one force or moment occurs simultaneously, the application can be calculated by the TOOLBOX sizing software.

Designation	$F_y/F_z$ [N]	$M_x$ [Nm]	$M_y$ [Nm]	$M_z$ [Nm]
KLM 100-H025	712	17.7	28	28
KLM 100-H050	485	12	28.1	28.1
KLM 100-H075	485	12	28.1	28.1
KLM 100-H100	351	8.7	27	27
KLM 100-H125	351	8.7	27	27
KLM 100-H150	256	6.3	24.5	24.5
KLM 100-H175	256	6.3	24.5	24.5
KLM 100-H200	200	4.9	22.9	22.9
KLM 100-H225	200	4.9	22.9	22.9

### Technical data

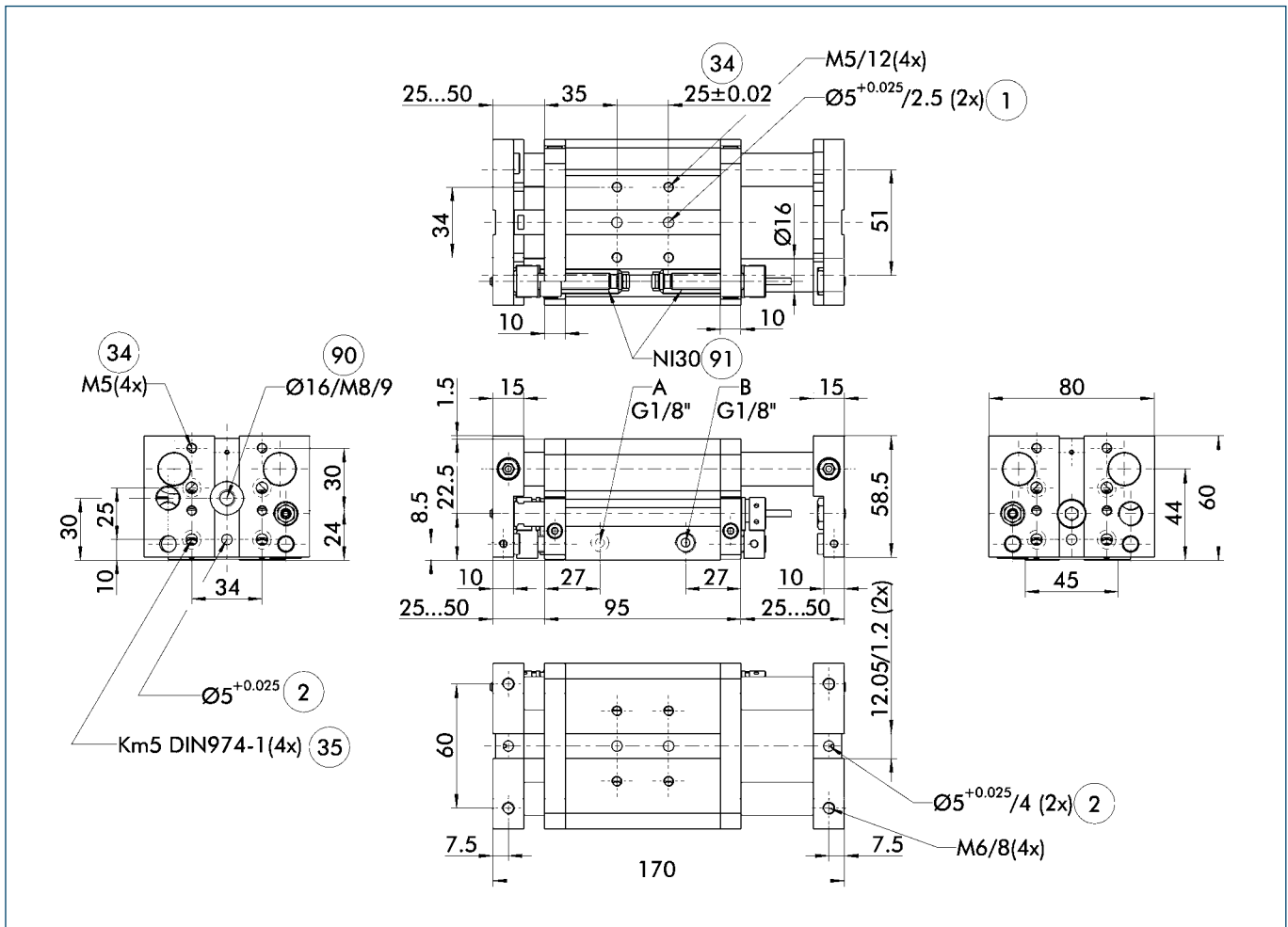
Designation		KLM 100-H025	KLM 100-H050	KLM 100-H075	KLM 100-H100
	ID	0314023	0314024	0314025	0314026
Stroke length	[mm]	25	50	75	100
Extend force [FV] at 6 bar	[N]	294	294	294	294
Retract force [FR] at 6 bar	[N]	226	226	226	226
Piston diameter	[mm]	25	25	25	25
Rod diameter	[mm]	12	12	12	12
Overall length	[mm]	170	270	270	370
Mass	[kg]	2.3	3.0	3.0	3.7
Fluid consumption/10 mm stroke	[cm <sup>3</sup> ]	4.9	4.9	4.9	4.9
Minimum pressure	[bar]	3	3	3	3
Maximum pressure	[bar]	8	8	8	8
Nominal operating pressure	[bar]	6	6	6	6
IP rating		40	40	40	40
Min. ambient temperature	[°C]	5	5	5	5
Max. ambient temperature	[°C]	60	60	60	60
Repeat accuracy	[mm]	± 0.015	± 0.015	± 0.015	± 0.015
Horizontal travel time at 3 kg additional load	[s]	0.1	0.13	0.16	0.19
Vertical travel time at 3 kg additional load	[s]	0.12	0.14	0.16	0.19

### OPTIONS and their characteristics

Full protection version	ID	0314424	0314425	0314426
Designation		KLM 100-H050-ASP	KLM 100-H075-ASP	KLM 100-H100-ASP
Stroke loss of nominal stroke (on the rod side)	[mm]	12	12	12
Mass	[kg]	3.08	3.08	3.78
Static holding force	[N]	600	600	600
Max. axial backlash of the clamping	[mm]	0.25	0.25	0.25
ZZA intermediate stop on the rod side possible		Yes	Yes	Yes
ZZA intermediate stop on the piston side possible		Yes	Yes	Yes
LMZAW intermediate stop possible		No	No	No

KLM 100-H125	KLM 100-H150	KLM 100-H175	KLM 100-H200	KLM 100-H225
0314027	0314028	0314029	0314030	0314031
125	150	175	200	225
294	294	294	294	294
226	226	226	226	226
25	25	25	25	25
12	12	12	12	12
370	470	470	570	570
3.7	4.4	4.4	5.1	5.1
4.9	4.9	4.9	4.9	4.9
3	3	3	3	3
8	8	8	8	8
6	6	6	6	6
40	40	40	40	40
5	5	5	5	5
60	60	60	60	60
± 0.015	± 0.015	± 0.015	± 0.015	± 0.015
0.22	0.25	0.28	0.31	0.34
0.22	0.25	0.28	0.31	0.34
0314427	0314428	0314429	0314430	0314431
KLM 100-H125-ASP	KLM 100-H150-ASP	KLM 100-H175-ASP	KLM 100-H200-ASP	KLM 100-H225-ASP
12	12	12	12	12
3.78	4.48	4.48	5.18	5.18
600	600	600	600	600
0.25	0.25	0.25	0.25	0.25
Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes
No	No	No	No	No

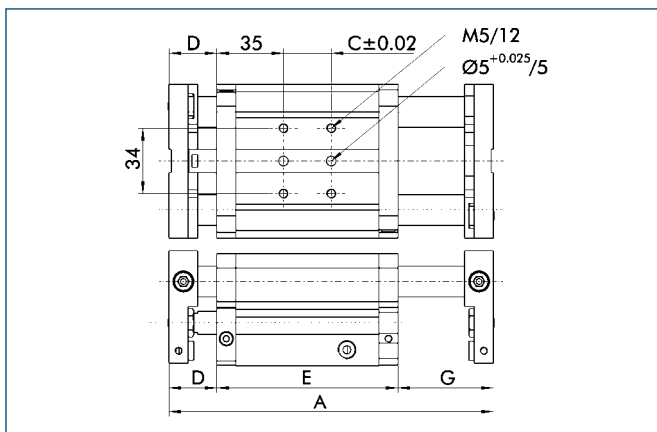
## Main views, KLM 100-H025



- A, a Main and direct connections, extend linear unit
- B, b Main and direct connections, retract linear unit
- ① Connection, linear unit
- ② Connection of the assembly
- ③④ On both attachment faces
- ③⑤ Back
- ⑨⑩ Through-bores in the face plate and thread in the base body (only single sided)
- ⑨⑪ Sensors and shock absorbers can also be fastened to the back. For variant H025, the sensors, shock absorbers, and the air connections have to be fastened crosswise.

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

### Stroke variants



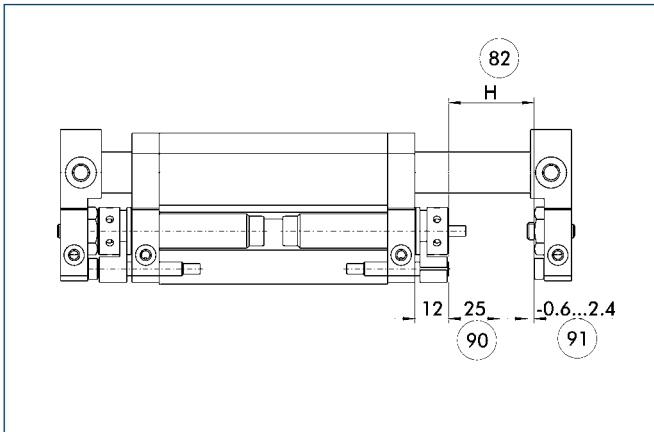
Not all dimensions shown can be seen in the main view.

### Variable dimensions of stroke variants

Type	Stroke [mm]	A [mm]	C [mm]	D [mm]	E [mm]	G [mm]
KLM 100-H025	25	170	1x25	25...50	95	50...25
KLM 100-H050	50	270	3x25	25...75	145	100...50
KLM 100-H075	75	270	3x25	25...100	145	100...25
KLM 100-H100	100	370	5x25	25...125	195	150...50
KLM 100-H125	125	370	5x25	25...150	195	150...25
KLM 100-H150	150	470	7x25	25...175	245	200...50
KLM 100-H175	175	470	7x25	25...200	245	200...25
KLM 100-H200	200	570	9x25	25...225	295	250...50
KLM 100-H225	225	570	9x25	25...250	295	250...25

 You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.

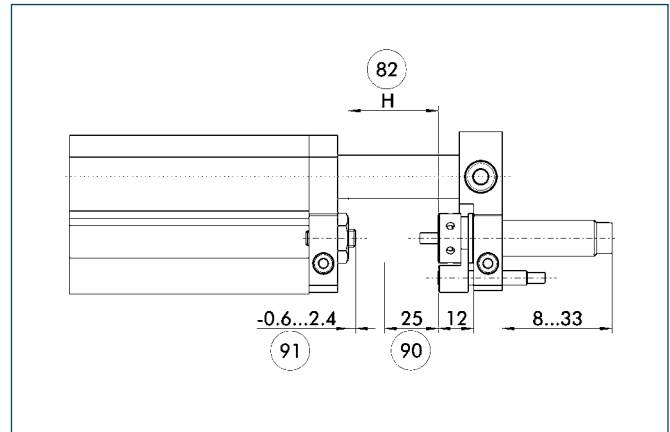
### Fine adjustment



- 82 Stroke
- 90 Stroke adjustment range
- 91 Dampening stroke adjustment range

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

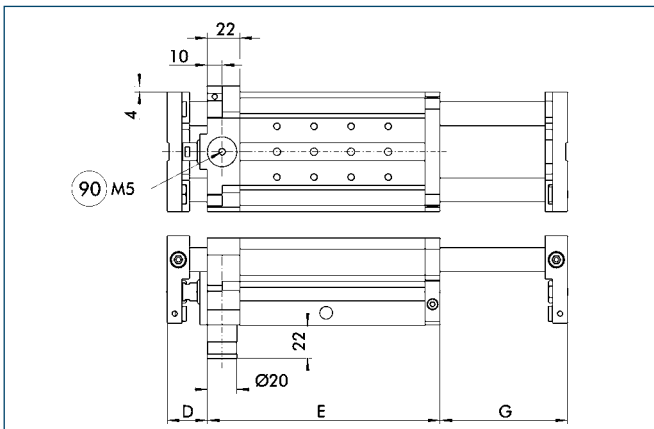
### Fine adjustment



- 82 Stroke
- 90 Stroke adjustment range
- 91 Dampening stroke adjustment range

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

### Rod lock




- 90 Air connection, rod lock

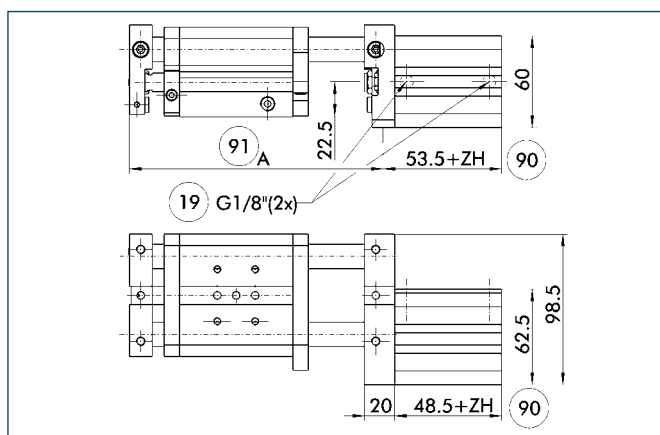
The rod lock prevents weights from falling in the event of energy loss, such as emergency stop situations. The rod lock can also be retrofitted, but this will reduce the useful stroke.

### Variable dimensions of rod lock

Type	Stroke [mm]	D [mm]	E [mm]	G [mm]
KLM 100-H050	38	25...63	157	88...50
KLM 100-H075	63	25...88	157	88...25
KLM 100-H100	88	25...113	207	138...50
KLM 100-H125	113	25...138	207	138...25
KLM 100-H150	138	25...163	257	188...50
KLM 100-H175	163	25...188	257	188...25
KLM 100-H200	188	25...213	307	238...50
KLM 100-H225	213	25...238	307	238...25

 You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.

### Intermediate stop, ZZA on the piston side



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

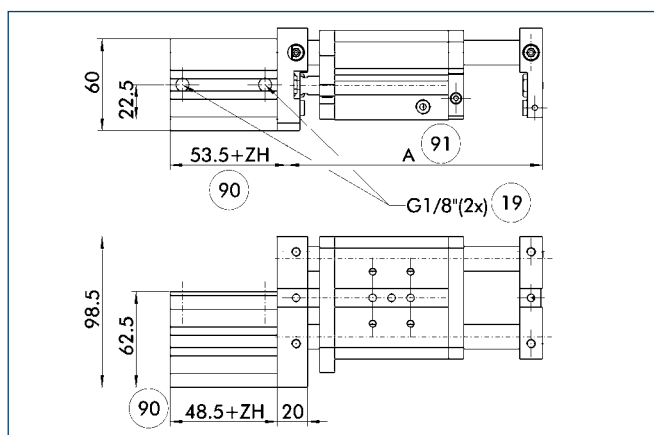
#### ZZA 105

Holding force at 6 bar	[N]	460
Additional mass at 0 mm stroke	[kg]	0.75
Additional mass per mm stroke	[kg]	0.006

Sample order **KLM 100-H100-ZZA105-H30**

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.

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



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

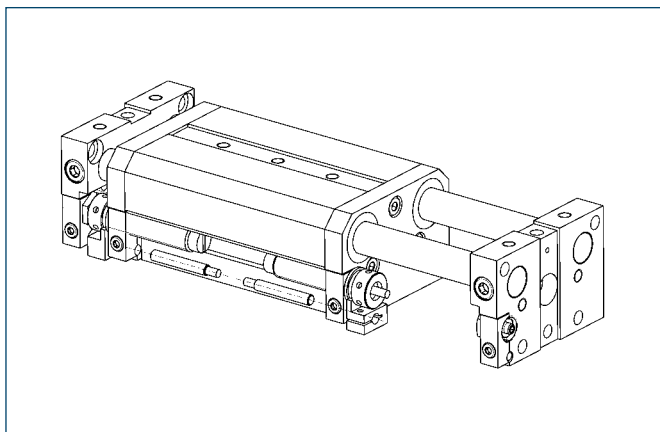
#### ZZA 106

Holding force at 6 bar	[N]	460
Additional mass at 0 mm stroke	[kg]	0.75
Additional mass per mm stroke	[kg]	0.006

Sample order **KLM 100-H100-ZZA106-H30**

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.

### Inductive attachment, NHS



#### End-position monitoring:

Inductive proximity switch, can be directly mounted

Designation	ID
NI 30-KT	0313429

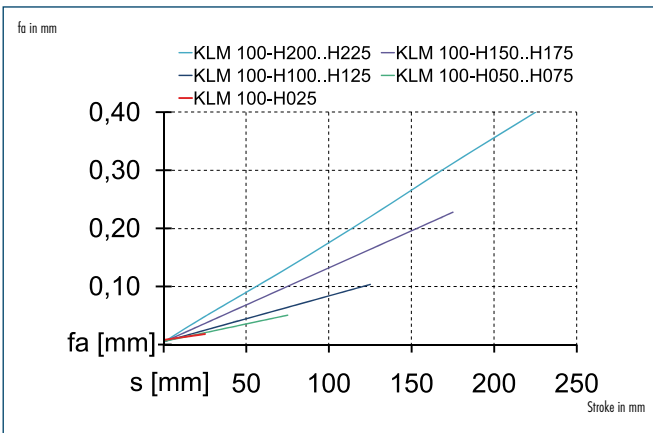
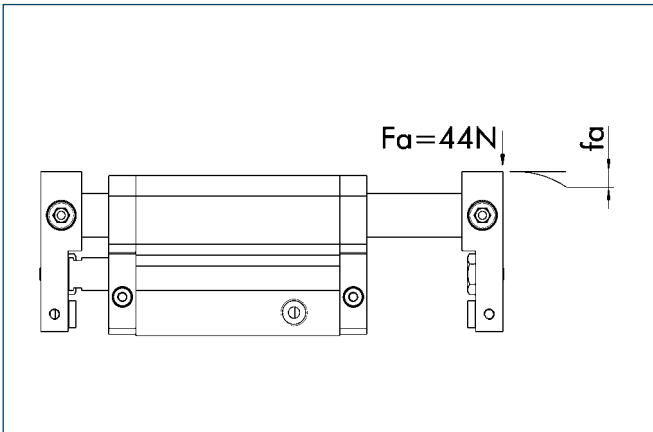
#### Extension cable for proximity switch

Designation	ID	Remark
STV 10	0313432	Sleeve M8x1, straight
STV 20	0313433	Sleeve M8x1, angled

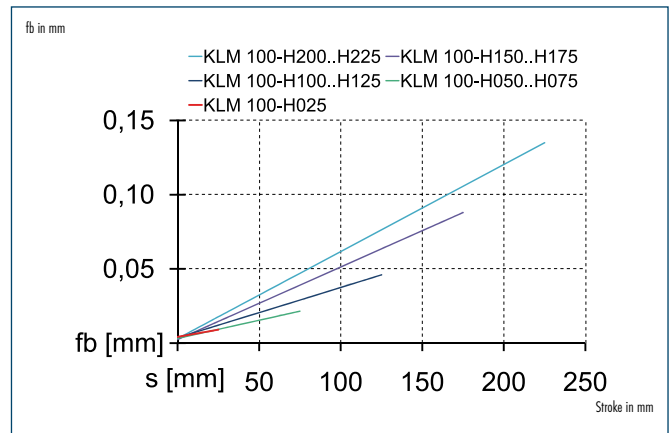
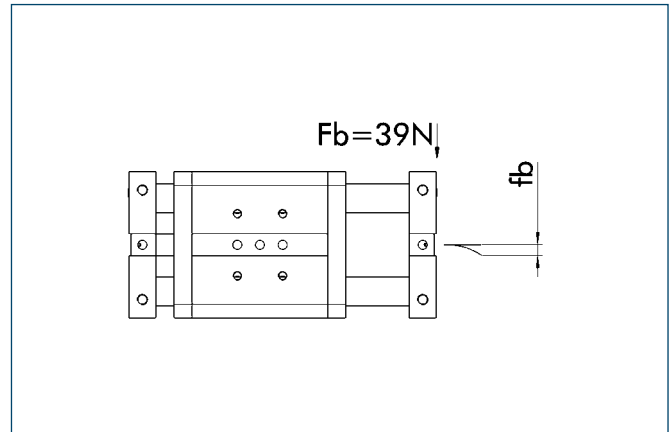
① Generally, two sensors are needed for each linear unit. For additional monitoring of the intermediate positions, one sensor per additional position as well as (optionally) one extension cable will be needed.

 You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.

### Deflection under load: $f_a$



### Deflection under load: $f_b$



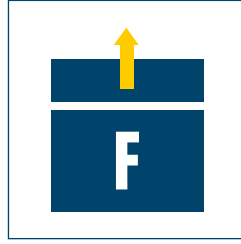
You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.



**Sizes**  
25 .. 300



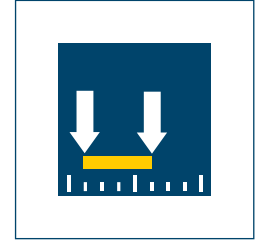
**Mass**  
0.44 kg .. 15.81 kg



**Driving force**  
50 N .. 753 N



**Stroke**  
25 mm .. 450 mm



**Repeat accuracy**  
± 0.005 mm .. ± 0.01 mm

### Application example



**Pneumatic three-axis handling unit with third vertical position and gripper**

- 1** Single base support, SOE 055
- 2** Hollow pillar, SLH 055-0400
- 3** Single mounting plate, APEH 085
- 4** Linear module, LM 200-H300
- 5** Adapter plate, APL 220
- 6** Linear module, LM 100-H125
- 7** Adapter plate, APL 120
- 8** Linear module with intermediate stop, LM 50-H100-ZZA052-H20
- 9** Adapter, ASG 0190
- 10** 2-finger universal gripper PGN plus 50



## Stroke module

Pneumatically driven with pre-loaded crossed roller bearings.

### Area of application

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

### Advantages – your benefits

#### Closed slide construction

For high rigidity

#### Integrated shock absorbers and proximity switches.

For vibration-free movements and end-position monitoring

#### Compact dimensions

For minimum interfering contours of the entire system

#### Pre-loaded crossed roller guides

That means absolutely no backlash

#### 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 GEMOTEC system elements

#### Level control by means of rod lock

For safety in case of emergency stops



### General information about the series

#### Guidance

Pre-loaded crossed roller bearings

#### Material

Aluminum, hard-anodized

#### Actuation

Pneumatic, via filtered compressed air (10 µm): dry, lubricated, or non-lubricated  
 Pressurizing medium: requirements for compressed air quality class according to DIN ISO 8573-1:  
 Quality class 4

#### Ambient temperature range

From 5°C to 60°C

#### Operating pressure range

2 bar to 8 bar

#### Scope of delivery

Including shock absorbers and driver for proximity switch

#### Warranty

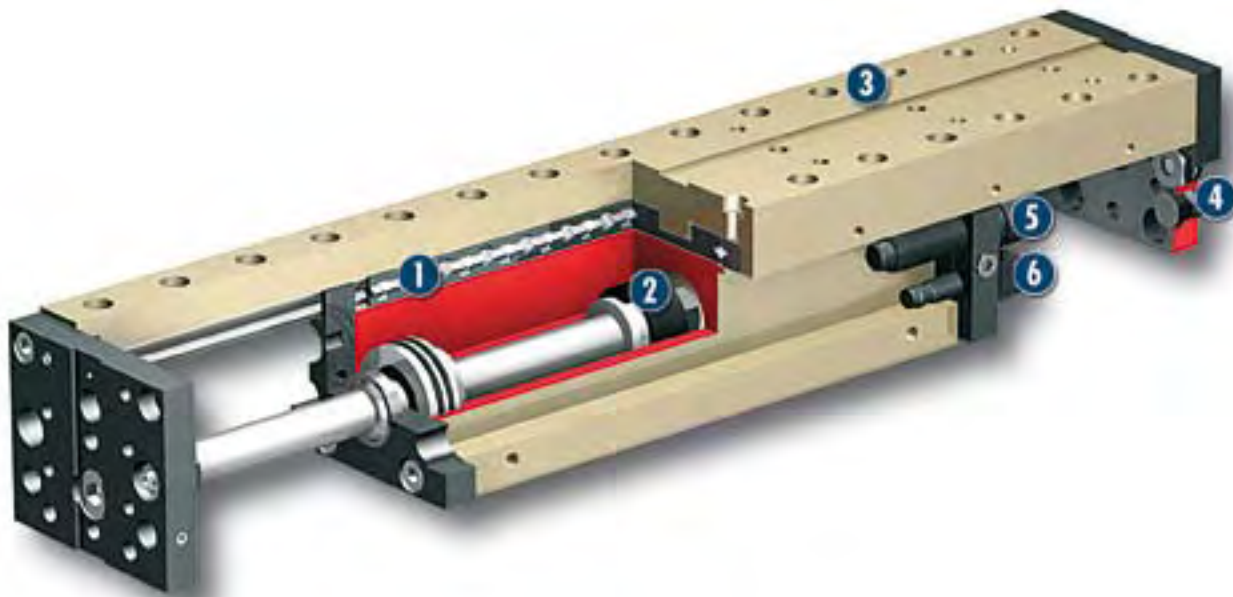
24 months

#### Rod lock

Can be retrofitted by using a kit

For production reasons, the colors may vary from those shown in the catalog.

## Cross-section of function



- 1** **Crossed roller guide**  
With wiper, pre-loaded, and without backlash
- 2** **Drive**  
Powerful piston rod cylinder
- 3** **Modular design hole pattern**  
Completely integrated in the module system
- 4** **Dampening adjustment**  
Adjustment of the dampening characteristic
- 5** **End position setting**  
Convenient adjustment using the shock absorber threads
- 6** **Sensor systems**  
With sensor driver for convenient adjustment

## Description of function

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

## Options and special information

### Fall protection version

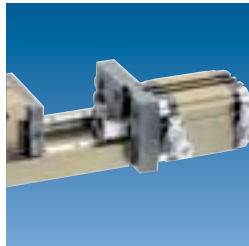
Prevents the structure from falling in the event of a sudden loss of energy.

This module can be combined as standard with many elements from the modular system. You can find more information in the "Accessories" chapter.

**Accessories**

Accessories from SCHUNK – the ideal components for the best functionality, reliability, and controlled production for all automation modules.

**Intermediate stop, ZZA**



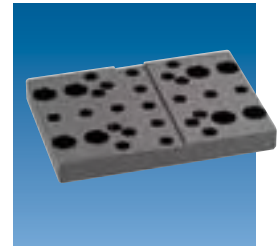
**Intermediate stop, LMZAW**



**Rod lock, ASP**



**Adapter plates**



**Fittings**



**Inductive proximity switch, NI**



**Pressure maintenance valve**



**Sensor cable**



**Pillar assembly systems**



**Centering strips**



ⓘ Please see the side views at the end of the respective size for information concerning specific sizes, accessories availability for that size, designation, and ID numbers. You can find more information about our accessories program in the “Accessories” part of the catalog.

**General information about the series**

**Repeat accuracy**

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

**Travel times**

The 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**

The stroke is the maximum nominal stroke of the unit. This can be shortened on both sides by the shock absorbers.

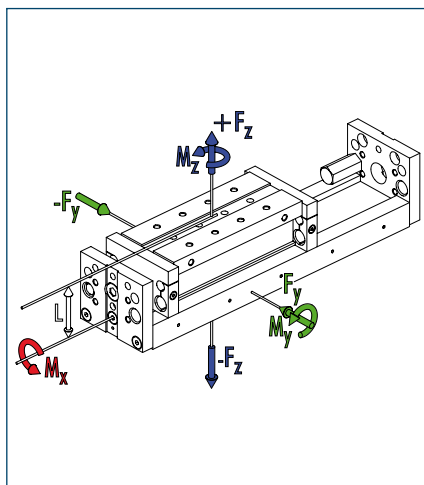
**Layout or sizing**

For layout or sizing of linear modules, we recommend using our TOOLBOX sizing software, which can be obtained at [www.schunk.com](http://www.schunk.com). Sizing the selected unit is absolutely necessary, since otherwise overloading can result.

**Ambient conditions**

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

## Moment load



L = 23 mm

ⓘ The forces and moments shown here are maximum values for individual loading. If more than one force or moment occurs simultaneously, the application can be calculated by the TOOLBOX sizing software.

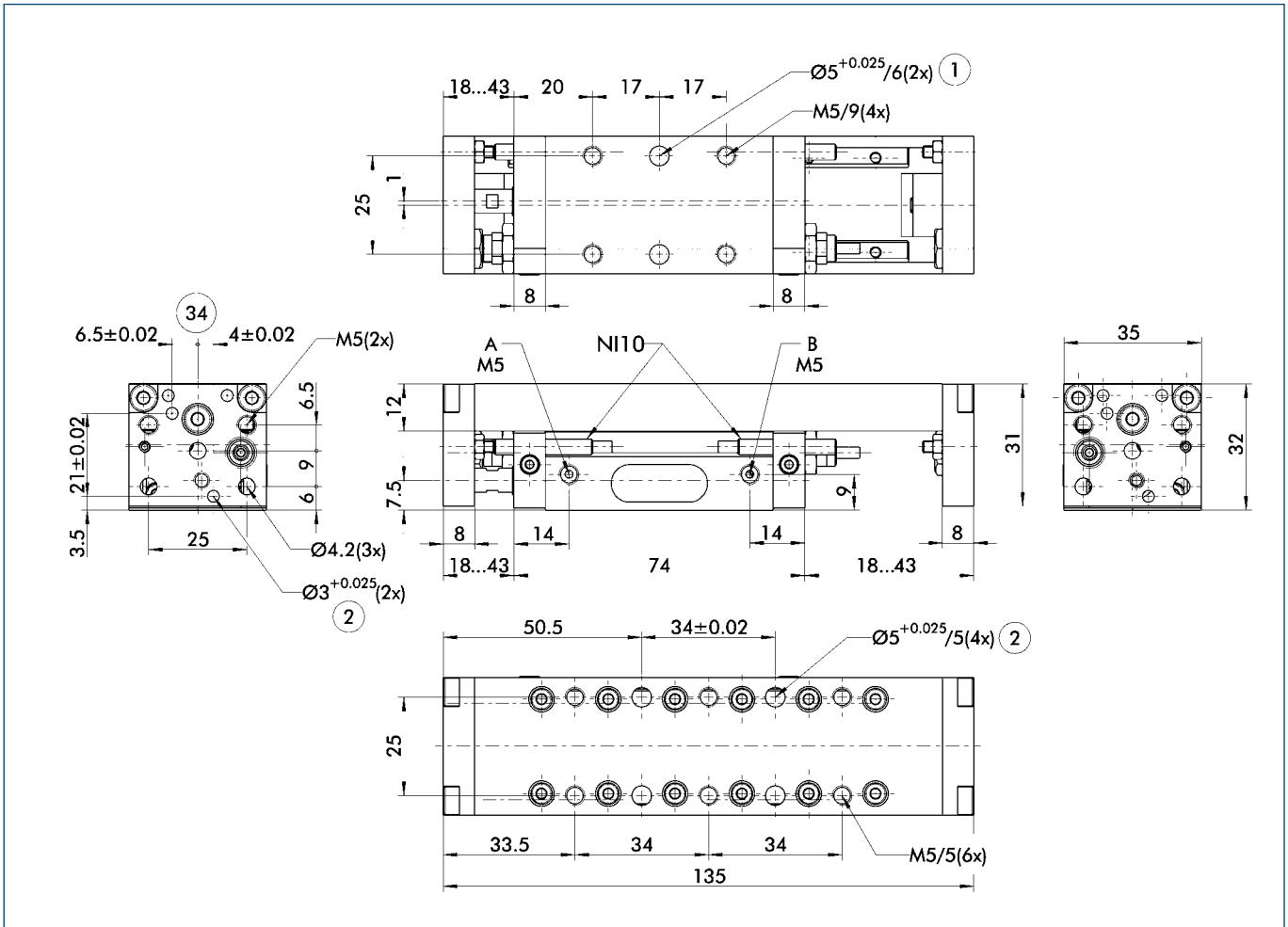
Designation	$F_z$ [N]	$M_x$ [Nm]	$M_y$ [Nm]	$M_z$ [Nm]
LM 25-H025	348	4.3	4.7	2.35
LM 25-H042	322	5.1	5.7	2.85
LM 25-H059	299	5.8	6.7	3.35

ⓘ Force  $F_y$  must be calculated by the TOOLBOX sizing software.

## Technical data

Designation		LM 25-H025	LM 25-H042	LM 25-H059
	ID	0314050	0314051	0314052
Stroke length	[mm]	25	42	59
Extend force [FV] at 6 bar	[N]	67	67	67
Retract force [FR] at 6 bar	[N]	50	50	50
Piston diameter	[mm]	12	12	12
Rod diameter	[mm]	6	6	6
Overall length	[mm]	135	169	203
Mass	[kg]	0.44	0.52	0.60
Fluid consumption/10 mm stroke	[cm <sup>3</sup> ]	1.13	1.13	1.13
Minimum pressure	[bar]	3	3	3
Maximum pressure	[bar]	8	8	8
Nominal operating pressure	[bar]	6	6	6
IP rating		40	40	40
Min. ambient temperature	[°C]	5	5	5
Max. ambient temperature	[°C]	60	60	60
Repeat accuracy	[mm]	± 0.005	± 0.005	± 0.005
Horizontal travel time at 1 kg additional load	[s]	0.17	0.18	0.19
Vertical travel time at 1 kg additional load	[s]	0.17	0.18	0.19

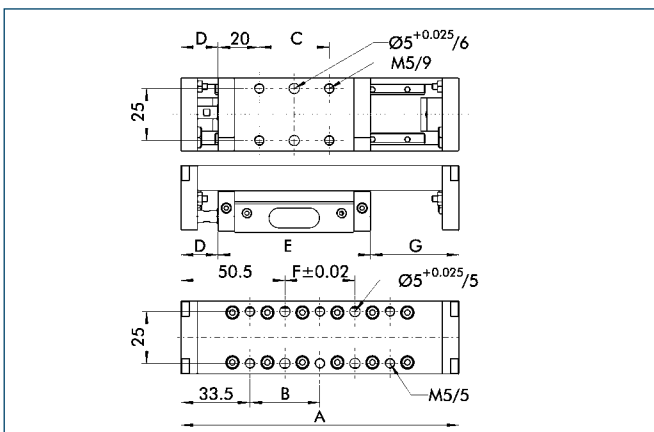
## Main views, LM 25-H025



- A, a Main and direct connections, extend linear unit
- B, b Main and direct connections, retract linear unit
- ① Connection, linear unit
- ② Connection of the assembly
- ③④ On both attachment faces

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.

## Stroke variants

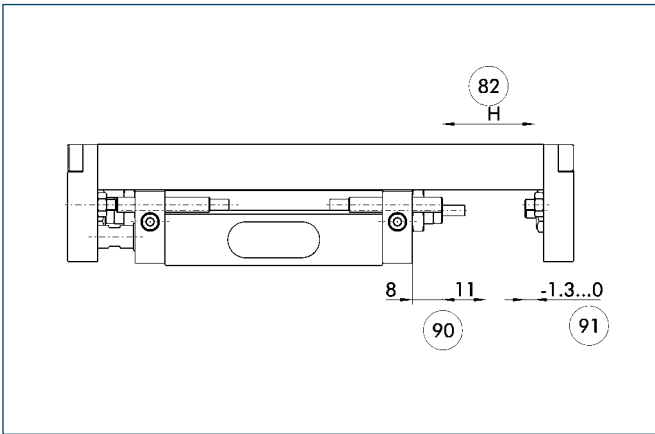


Not all dimensions shown can be seen in the main view.

## Variable dimensions of stroke variants

Type	Stroke	A	B	C	D	E	F	G
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
LM 25-H025	25	135	2x34	1x34	18...43	74	1x34	43...18
LM 25-H042	42	169	3x34	1x34	18...60	91	2x34	60...18
LM 25-H059	59	203	4x34	2x34	18...77	108	3x34	77...18

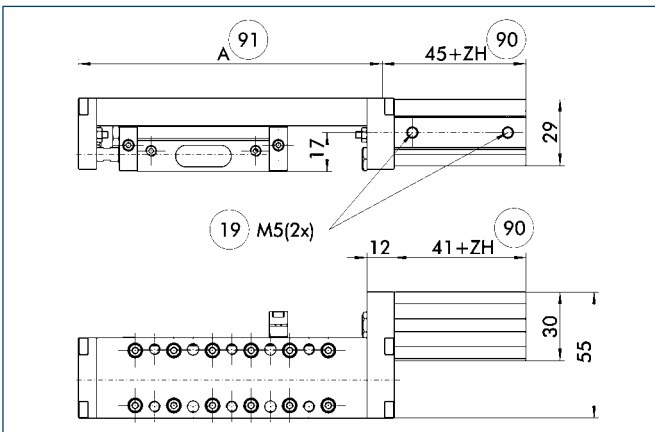
## Fine adjustment



- 82 Stroke
- 90 Stroke adjustment range
- 91 Dampening stroke adjustment range

This illustration shows the possibility of the stroke fine adjustment.

## Intermediate stop, ZZA on the piston side



- 19 Air connection
- 90 Intermediate stroke
- 91 Overall length "A", the variant without intermediate stroke (see dimension table of stroke variants)

### ZZA 26

Holding force at 6 bar	[N]	54
Additional mass at 0 mm stroke	[kg]	0.2
Additional mass per mm stroke	[kg]	0.002

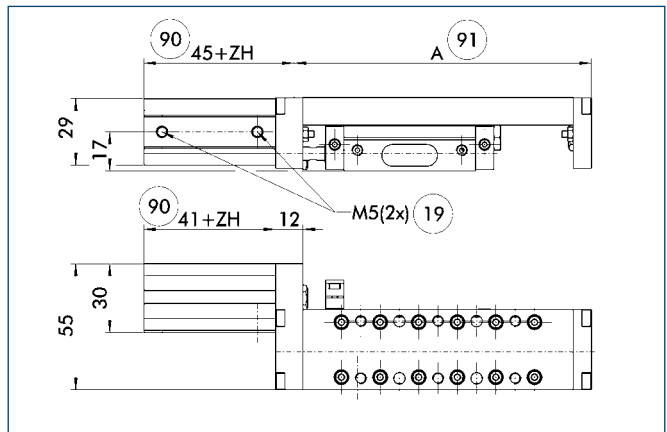
### Sample order

LM 25-H59-ZZA026-H15

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.

You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.

## Intermediate stop, ZZA on the piston rod side



- 19 Air connection
- 90 Intermediate stroke
- 91 Overall length "A", the variant without intermediate stroke (see dimension table of stroke variants)

### ZZA 27

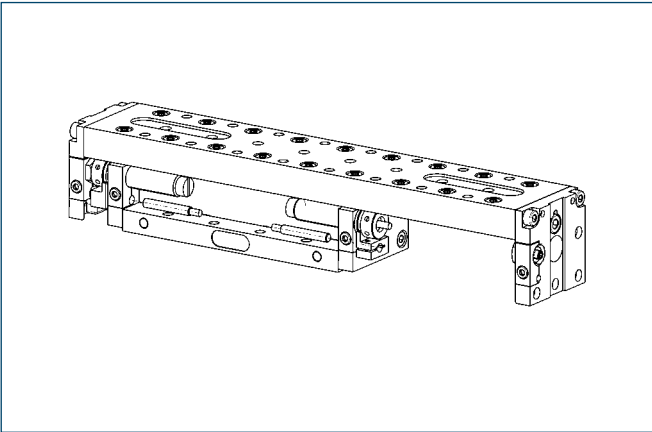
Holding force at 6 bar	[N]	54
Additional mass at 0 mm stroke	[kg]	0.2
Additional mass per mm stroke	[kg]	0.002

### Sample order

LM 25-H59-ZZA027-H15

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.

## Sensor systems



End-position monitoring:  
Inductive proximity switch, can be directly mounted

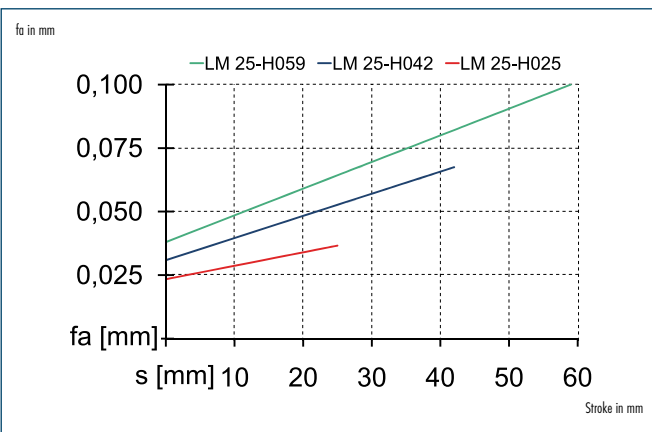
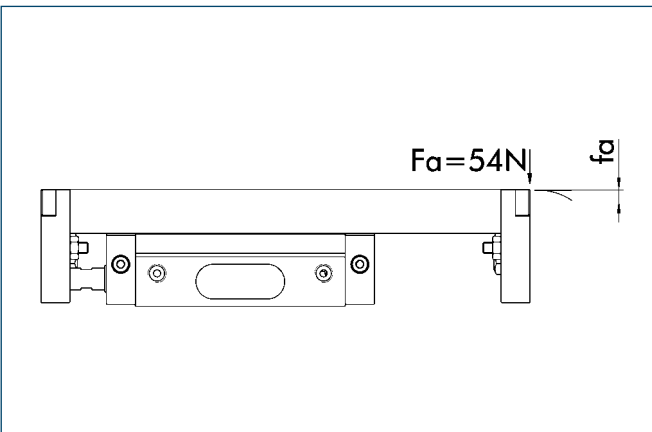
Designation	ID
NI 10	0313427

Extension cable for proximity switch

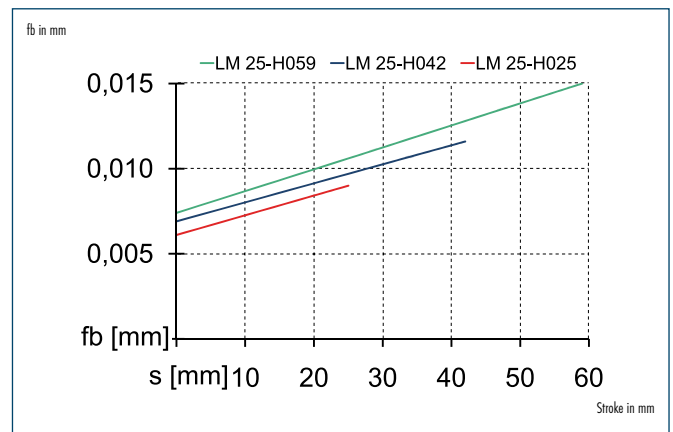
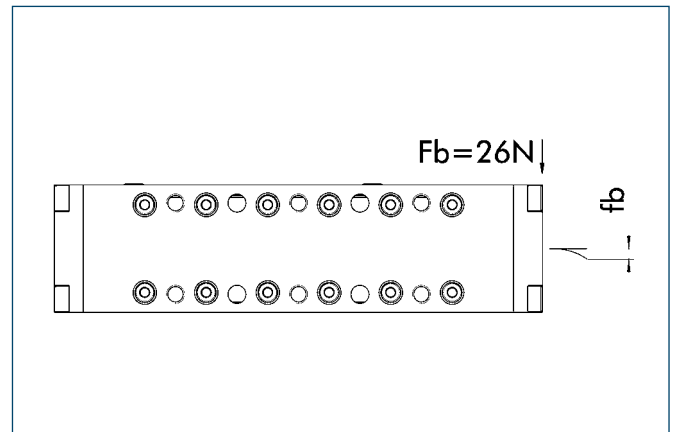
Designation	ID	Remark
STV 10	0313432	Sleeve M8x1, straight
STV 20	0313433	Sleeve M8x1, angled

ⓘ Generally, two sensors are needed for each linear unit. For additional monitoring of the intermediate positions, one sensor per additional position as well as (optionally) one extension cable will be needed.

## Deflection under load: $f_a$

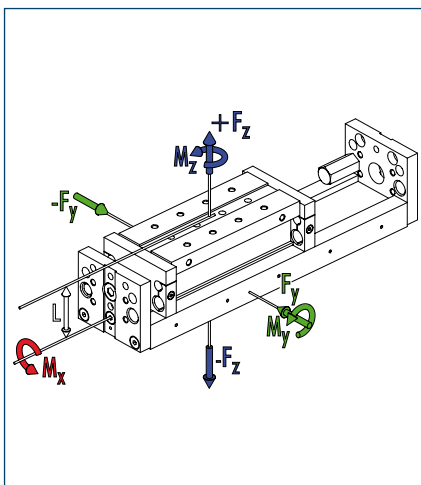


## Deflection under load: $f_b$



ⓘ You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.

## Moment load



$L = 35 \text{ mm}$

① The forces and moments shown here are maximum values for individual loading. If more than one force or moment occurs simultaneously, the application can be calculated by the TOOLBOX sizing software.

Designation	$F_z$ [N]	$M_x$ [Nm]	$M_y$ [Nm]	$M_z$ [Nm]
LM 050-H013	806	10.2	11.6	5.8
LM 050-H025	731	10.2	11.6	5.8
LM 050-H038	705	12.6	15.1	7.55
LM 050-H050	683	12.6	15.1	7.55
LM 050-H063	656	14.9	18.6	9.3
LM 050-H075	656	14.9	18.6	9.3
LM 050-H088	627	17.1	22	11
LM 050-H100	627	17.1	22	11

① Force  $F_y$  must be calculated by the TOOLBOX sizing software.

## Technical data

Designation		LM 50-H013	LM 50-H025	LM 50-H038
	ID	0314053	0314054	0314055
Stroke length	[mm]	13	25	38
Extend force [FV] at 6 bar	[N]	120	120	120
Retract force [FR] at 6 bar	[N]	103	103	103
Piston diameter	[mm]	16	16	16
Rod diameter	[mm]	6	6	6
Overall length	[mm]	150	150	200
Mass	[kg]	0.88	0.88	1.06
Fluid consumption/10 mm stroke	[cm <sup>3</sup> ]	2.0	2.0	2.0
Minimum pressure	[bar]	3	3	3
Maximum pressure	[bar]	8	8	8
Nominal operating pressure	[bar]	6	6	6
IP rating		40	40	40
Min. ambient temperature	[°C]	5	5	5
Max. ambient temperature	[°C]	60	60	60
Repeat accuracy	[mm]	± 0.01	± 0.01	± 0.01
Horizontal travel time at 3 kg additional load	[s]	0.1	0.11	0.12
Vertical travel time at 3 kg additional load	[s]	0.11	0.13	0.15

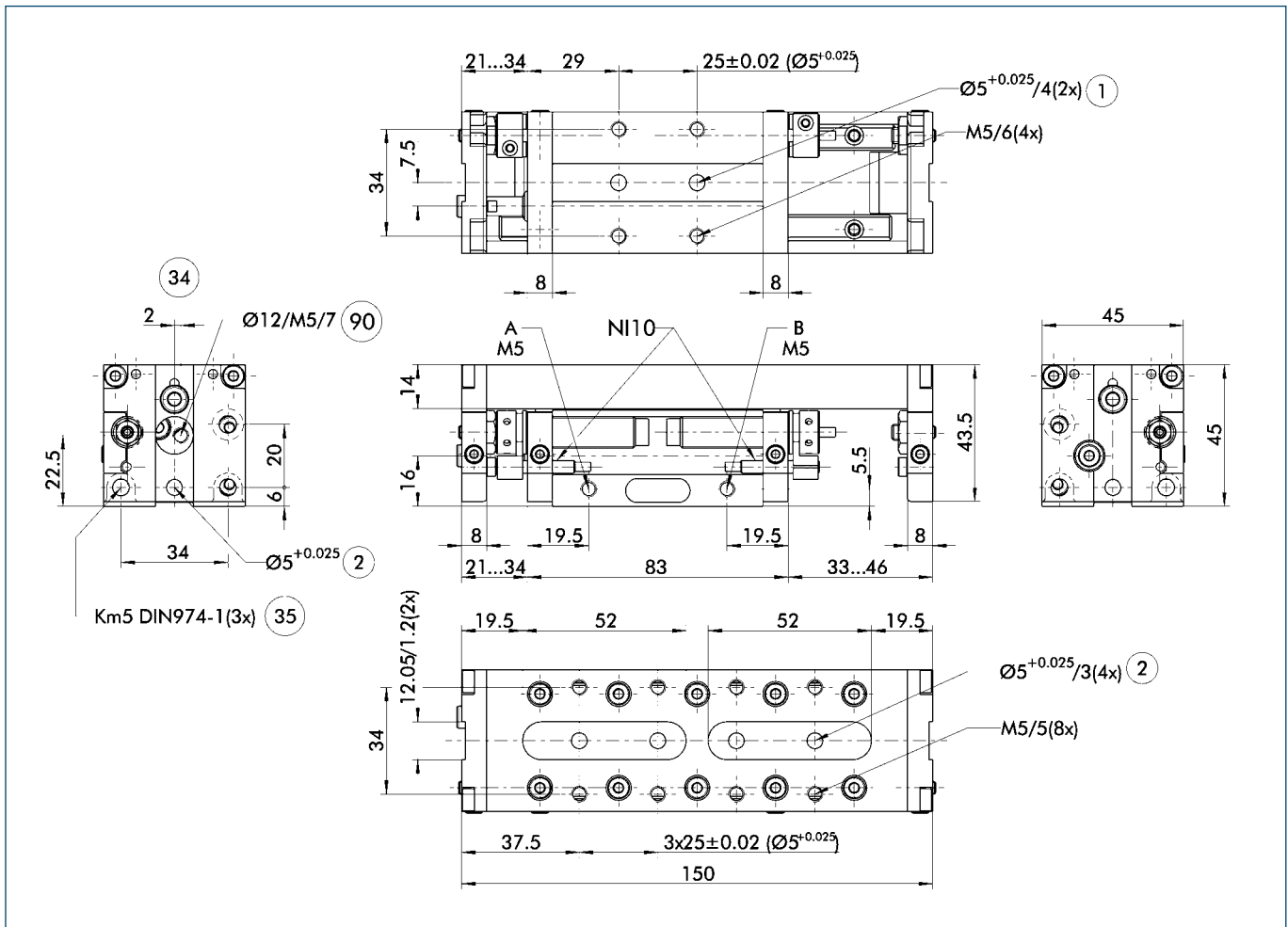
### OPTIONS and their characteristics

Full protection version	ID	0314454	0314455
Designation		LM 50-H025-ASP	LM 50-H038-ASP
Stroke loss of nominal stroke (on the rod side)	[mm]	10	10
Mass	[kg]	0.91	1.09
Static holding force	[N]	180	180
Max. axial backlash of the clamping	[mm]	0.2	0.2
ZZA intermediate stop on the rod side possible		Yes	Yes
ZZA intermediate stop on the piston side possible		Yes	Yes
LMZAW intermediate stop possible		No	No



LM 50-H050	LM 50-H063	LM 50-H075	LM 50-H088	LM 50-H100
0314056	0314057	0314058	0314059	0314060
50	63	75	88	100
120	120	120	120	120
103	103	103	103	103
16	16	16	16	16
6	6	6	6	6
200	250	250	300	300
1.06	1.24	1.24	1.42	1.42
2.0	2.0	2.0	2.0	2.0
3	3	3	3	3
8	8	8	8	8
6	6	6	6	6
40	40	40	40	40
5	5	5	5	5
60	60	60	60	60
± 0.01	± 0.01	± 0.01	± 0.01	± 0.01
0.14	0.15	0.16	0.17	0.18
0.17	0.18	0.2	0.21	0.22
0314456	0314457	0314458	0314459	0314460
LM 50-H050-ASP	LM 50-H063-ASP	LM 50-H075-ASP	LM 50-H088-ASP	LM 50-H100-ASP
10	10	10	10	10
1.09	1.27	1.27	1.45	1.45
180	180	180	180	180
0.2	0.2	0.2	0.2	0.2
Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes
No	No	No	No	No

## Main views, LM 50-H013



A, a Main and direct connections, extend linear unit

B, b Main and direct connections, retract linear unit

① Connection, linear unit

② Connection of the assembly

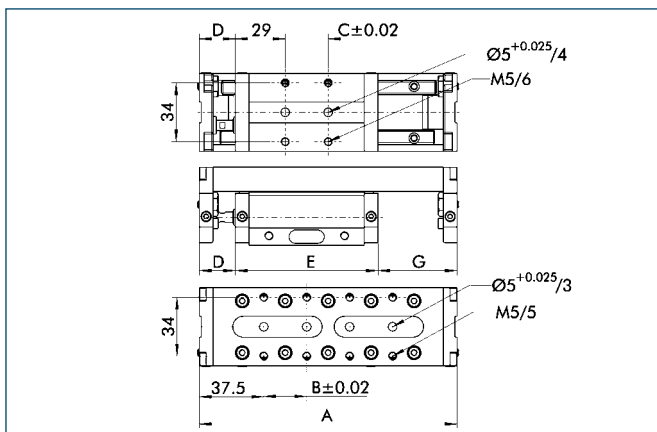
③④ On both attachment faces

③⑤ Back

③⑥ Through-bores in the face plate and thread in the base body (only single sided)

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.


## Stroke variants



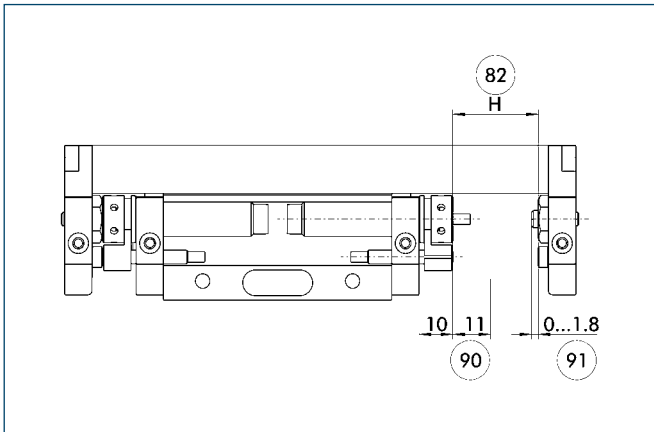
Not all dimensions shown can be seen in the main view.

## Variable dimensions of stroke variants

Type	Stroke	A	B	C	D	E	G
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
LM 50-H013	13	150	3x25	1x25	21...34	83	46...33
LM 50-H025	25	150	3x25	1x25	21...46	83	46...21
LM 50-H038	38	200	5x25	2x25	21...59	108	71...33
LM 50-H050	50	200	5x25	2x25	21...71	108	71...21
LM 50-H063	63	250	7x25	3x25	21...84	133	96...33
LM 50-H075	75	250	7x25	3x25	21...96	133	96...21
LM 50-H088	88	300	9x25	4x25	21...109	158	121...33
LM 50-H0100	100	300	9x25	4x25	21...121	158	121...21

 You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.

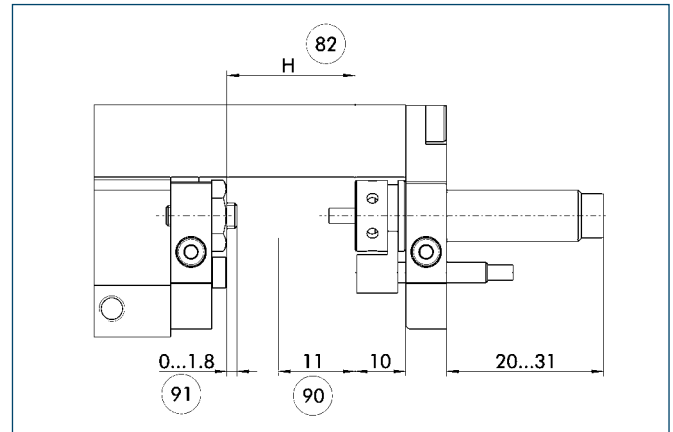
### Fine adjustment



- 82 Stroke
- 90 Stroke adjustment range
- 91 Dampening 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.

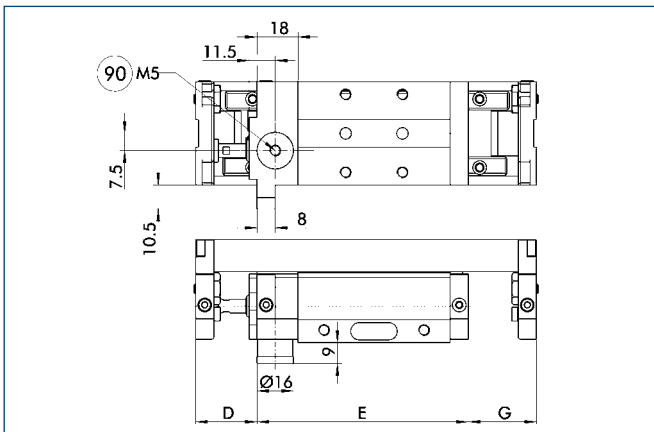
### Fine adjustment



- 82 Stroke
- 90 Stroke adjustment range
- 91 Dampening 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.

### Rod lock




- 90 Air connection, rod lock

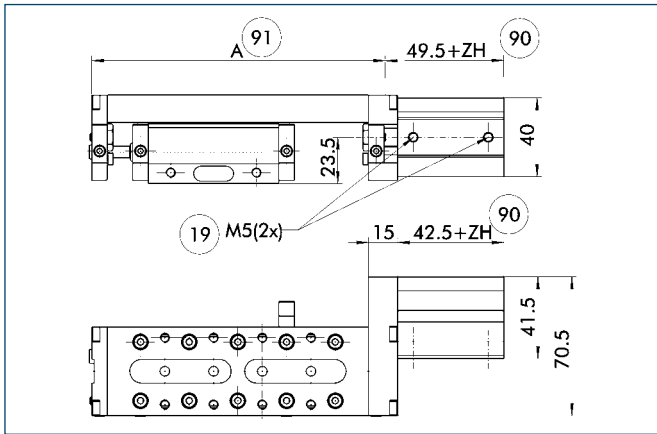
The rod lock prevents weights from falling in the event of energy loss, such as emergency stop situations. The rod lock can also be retrofitted, but this will reduce the useful stroke.

### Variable dimensions of rod lock

Type	Stroke [mm]	D [mm]	E [mm]	G [mm]
LM 50-H025	15	21...36	93	36...21
LM 50-H038	28	21...49	118	61...33
LM 50-H050	40	21...61	118	61...21
LM 50-H063	53	21...74	143	86...33
LM 50-H075	65	21...86	143	86...21
LM 50-H088	78	21...99	168	111...33
LM 50-H0100	90	21...111	168	111...21

 You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.

## Intermediate stop, ZZA on the piston side



- ①⑨ Air connection
- ⑨⑩ Intermediate stroke
- ⑨① Overall length "A", the variant without intermediate stroke (see dimension table of stroke variants)

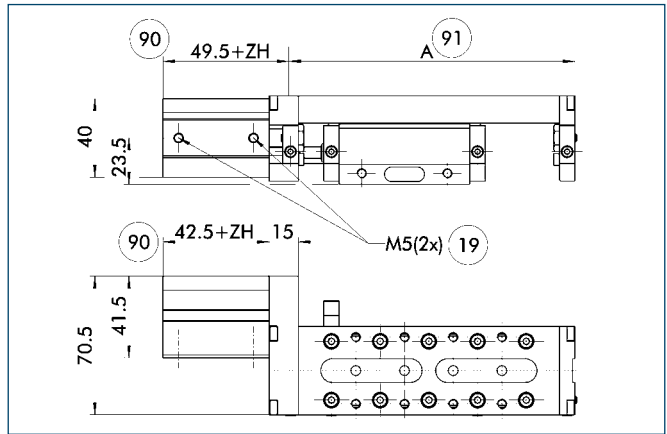
### ZZA 51

Holding force at 6 bar	[N]	175
Additional mass at 0 mm stroke	[kg]	0.35
Additional mass per mm stroke	[kg]	0.003

Sample order **LM 50-H100-ZZA051-H30**

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.

## Intermediate stop, ZZA on the piston rod side



- ①⑨ Air connection
- ⑨⑩ Intermediate stroke
- ⑨① Overall length "A", the variant without intermediate stroke (see dimension table of stroke variants)

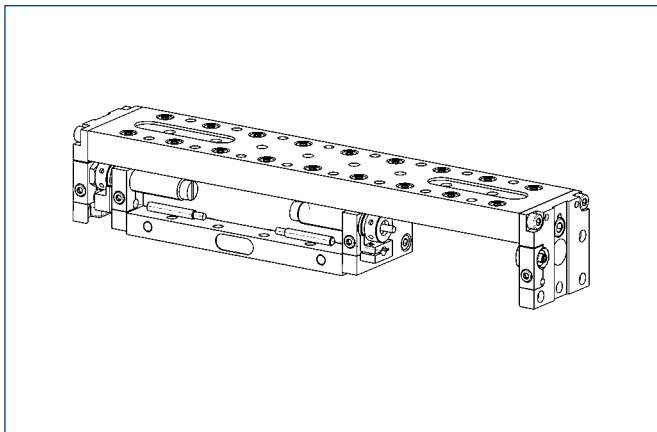
### ZZA 52

Holding force at 6 bar	[N]	175
Additional mass at 0 mm stroke	[kg]	0.35
Additional mass per mm stroke	[kg]	0.003

Sample order **LM 50-H100-ZZA052-H30**

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.

## Sensor systems



End-position monitoring:  
Inductive proximity switch, can be directly mounted

Designation	ID
NI 10	0313427

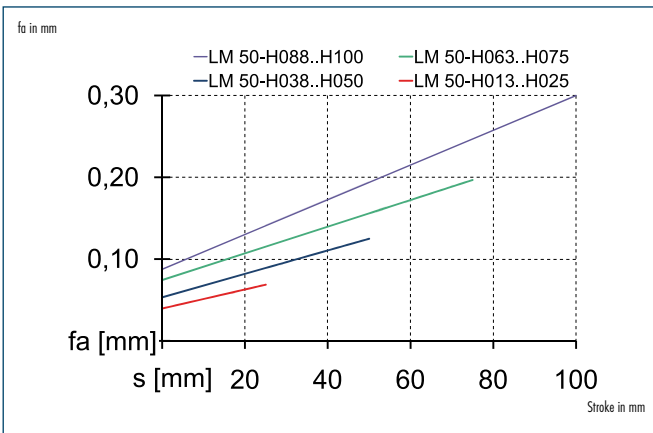
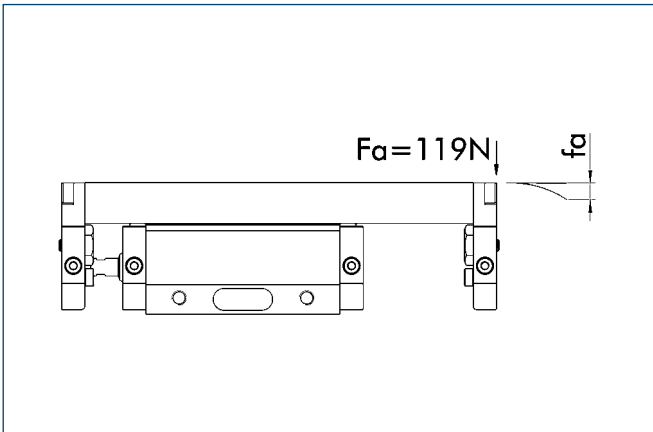
Extension cable for proximity switch

Designation	ID	Remark
STV 10	0313432	Sleeve M8x1, straight
STV 20	0313433	Sleeve M8x1, angled

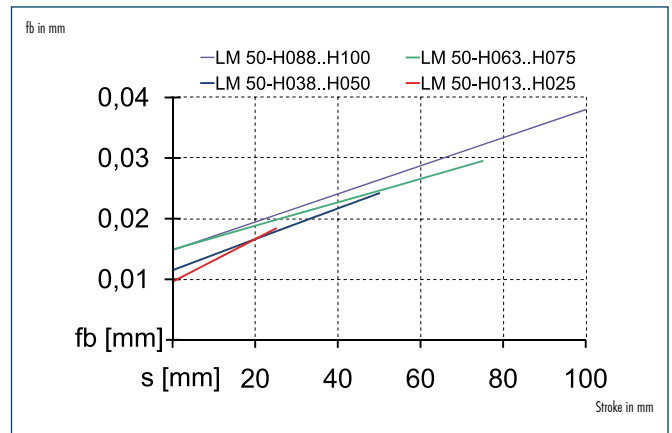
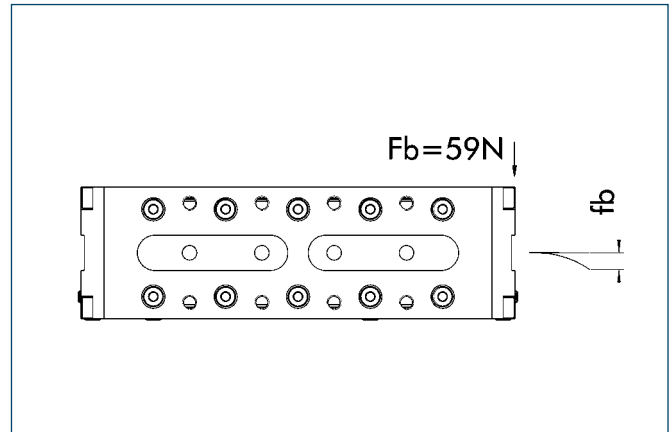
① Generally, two sensors are needed for each linear unit. For additional monitoring of the intermediate positions, one sensor per additional position as well as (optionally) one extension cable will be needed.

 You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.

## Deflection under load: $f_a$

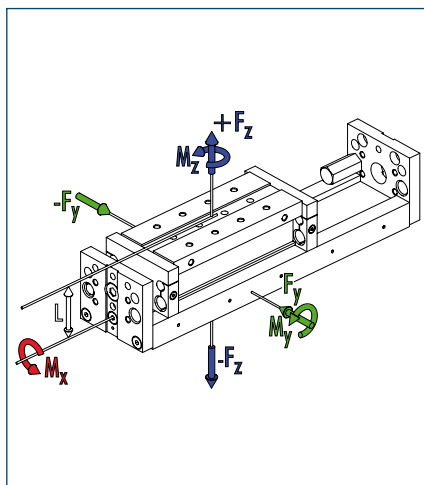


## Deflection under load: $f_b$



You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.

## Moment load



L = 44 mm

ⓘ The forces and moments shown here are maximum values for individual loading. If more than one force or moment occurs simultaneously, the application can be calculated by the TOOLBOX sizing software.

Designation	$F_z$ [N]	$M_x$ [Nm]	$M_y$ [Nm]	$M_z$ [Nm]
LM 100-H25	1.570	34.8	29.8	14.9
LM 100-H50	1.352	47.1	43	21.5
LM 100-H75	1.352	47.1	43	21.5
LM 100-H100	1.264	58.8	56.3	28.15
LM 100-H125	1.264	58.8	56.3	28.15
LM 100-H150	1.216	69.9	69.5	34.75
LM 100-H175	1.216	69.9	69.5	34.75
LM 100-H200	1.187	80.5	82.8	41.4
LM 100-H225	1.187	80.5	82.8	41.4

ⓘ Force  $F_y$  must be calculated by the TOOLBOX sizing software.

## Technical data

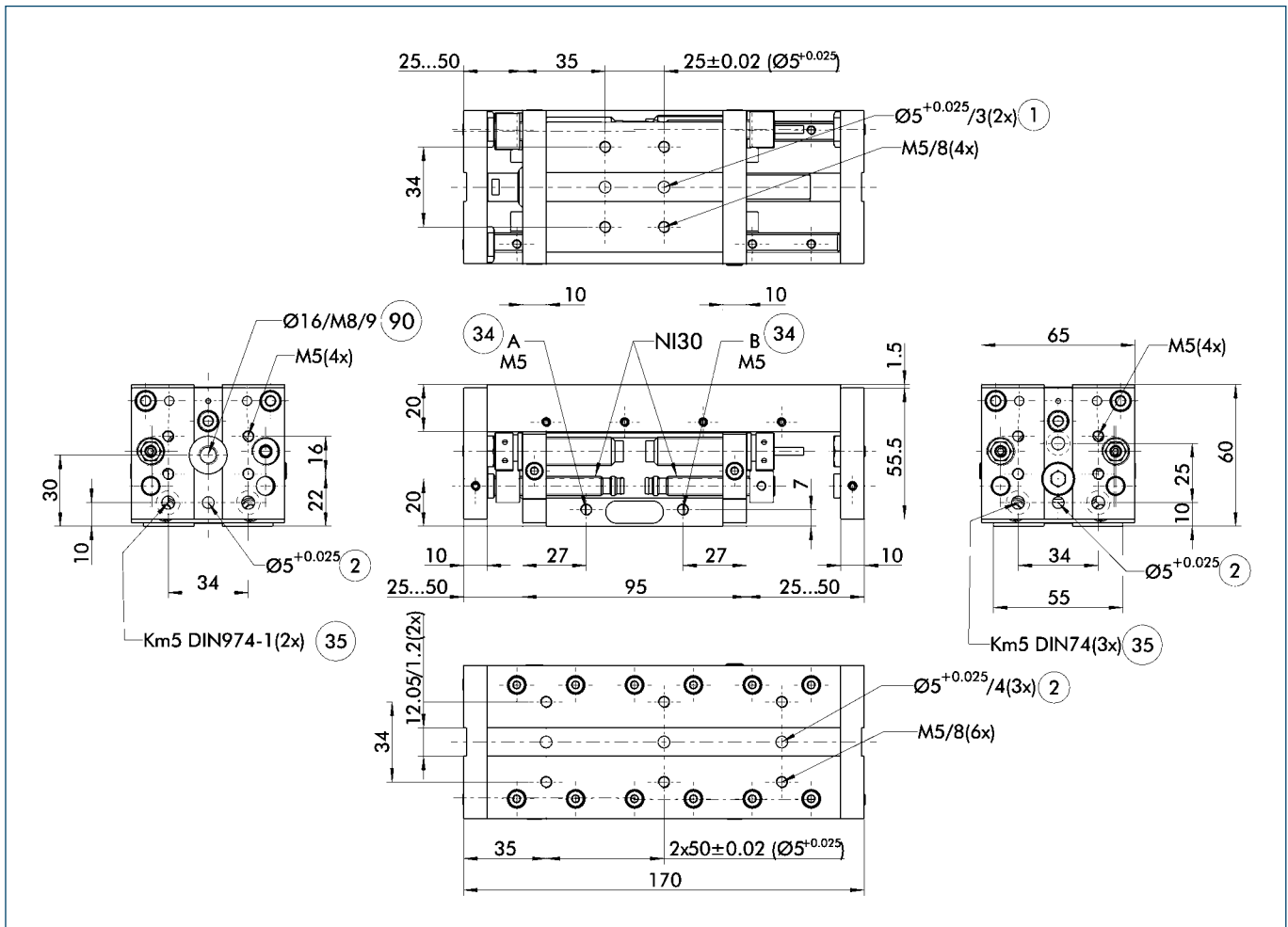
Designation		LM 100-H025	LM 100-H050	LM 100-H075	LM 100-H100
	ID	0314061	0314062	0314063	0314064
Stroke length	[mm]	25	50	75	100
Extend force [FV] at 6 bar	[N]	294	294	294	294
Retract force [FR] at 6 bar	[N]	226	226	226	226
Piston diameter	[mm]	25	25	25	25
Rod diameter	[mm]	12	12	12	12
Overall length	[mm]	170	270	270	370
Mass	[kg]	1.9	2.6	2.6	3.3
Fluid consumption/10 mm stroke	[cm <sup>3</sup> ]	4.9	4.9	4.9	4.9
Minimum pressure	[bar]	3	3	3	3
Maximum pressure	[bar]	8	8	8	8
Nominal operating pressure	[bar]	6	6	6	6
IP rating		40	40	40	40
Min. ambient temperature	[°C]	5	5	5	5
Max. ambient temperature	[°C]	60	60	60	60
Repeat accuracy	[mm]	± 0.01	± 0.01	± 0.01	± 0.01
Horizontal travel time at 5 kg additional load	[s]	0.11	0.15	0.18	0.21
Vertical travel time at 5 kg additional load	[s]	0.11	0.15	0.18	0.21

### OPTIONS and their characteristics

Fall protection version	ID	0314461	0314462	0314463	0314464
Designation		LM 100-H025-ASP	LM 100-H050-ASP	LM 100-H075-ASP	LM 100-H100-ASP
Stroke loss of nominal stroke (on the rod side)	[mm]	12	12	12	12
Mass	[kg]	1.98	2.68	2.68	3.38
Static holding force	[N]	600	600	600	600
Max. axial backlash of the clamping	[mm]	0.25	0.25	0.25	0.25
ZZA intermediate stop on the rod side possible		Yes	Yes	Yes	Yes
ZZA intermediate stop on the piston side possible		Yes	Yes	Yes	Yes
LMZAW intermediate stop possible		Yes	Yes	Yes	Yes

LM 100-H125	LM 100-H150	LM 100-H175	LM 100-H200	LM 100-H225
0314065	0314066	0314067	0314068	0314069
125	150	175	200	225
294	294	294	294	294
226	226	226	226	226
25	25	25	25	25
12	12	12	12	12
370	470	470	570	570
3.3	4.0	4.0	4.7	4.7
4.9	4.9	4.9	4.9	4.9
3	3	3	3	3
8	8	8	8	8
6	6	6	6	6
40	40	40	40	40
5	5	5	5	5
60	60	60	60	60
± 0.01	± 0.01	± 0.01	± 0.01	± 0.01
0.24	0.27	0.3	0.33	0.35
0.24	0.27	0.3	0.33	0.35
0314465	0314466	0314467	0314468	0314469
LM 100-H125-ASP	LM 100-H150-ASP	LM 100-H175-ASP	LM 100-H200-ASP	LM 100-H225-ASP
12	12	12	12	12
3.38	4.08	4.08	4.78	4.78
600	600	600	600	600
0.25	0.25	0.25	0.25	0.25
Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes

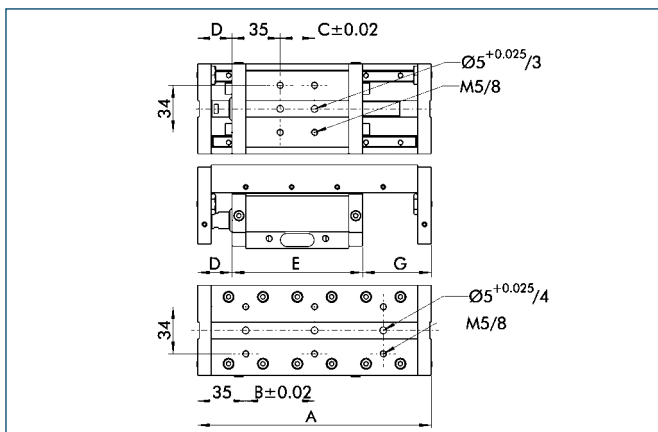
## Main views, LM 100-H025



- A, a Main and direct connections, extend linear unit
- B, b Main and direct connections, retract linear unit
- ① Connection, linear unit
- ② Connection of the assembly
- ③④ On both attachment faces
- ③⑤ Back
- ⑨⑩ Through-bores in the face plate and thread in the base body (only single sided)

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.


## Stroke variants



Not all dimensions shown can be seen in the main view.

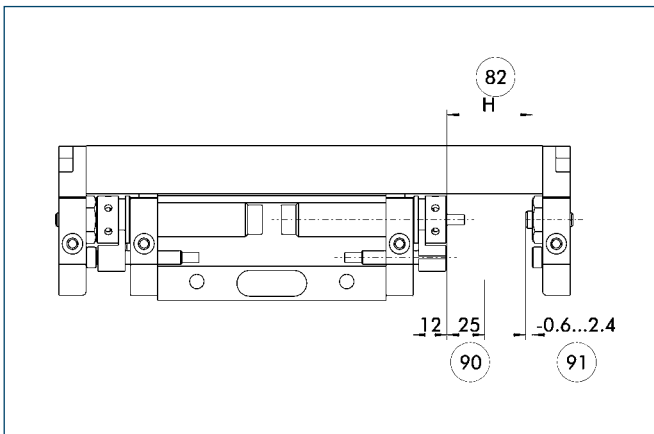
## Variable dimensions of stroke variants

Type	Stroke	A	B	C	D	E	G
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
LM 100-H025	25	170	2x50	1x25	25...50	95	50...25
LM 100-H050	50	270	4x50	3x25	25...75	145	100...50
LM 100-H075	75	270	4x50	3x25	25...100	145	100...25
LM 100-H100	100	370	6x50	5x25	25...125	195	150...50
LM 100-H125	125	370	6x50	5x25	25...150	195	150...25
LM 100-H150	150	470	8x50	7x25	25...175	245	200...50
LM 100-H175	175	470	8x50	7x25	25...200	245	200...25
LM 100-H200	200	570	10x50	9x25	25...225	295	250...50
LM 100-H225	225	570	10x50	9x25	25...250	295	250...25

 You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.



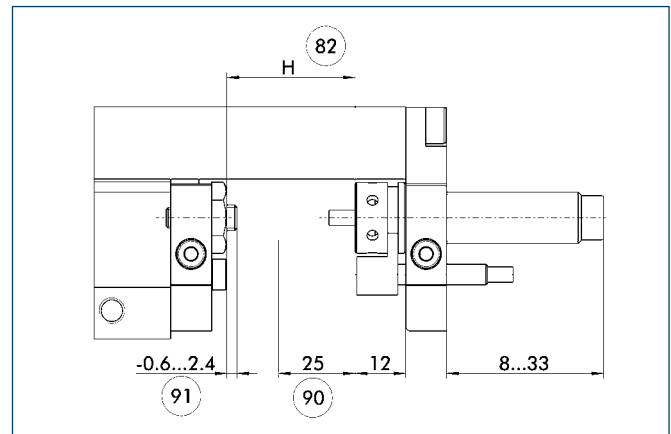
### Fine adjustment



- 82 Stroke
- 90 Stroke adjustment range
- 91 Dampening 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.

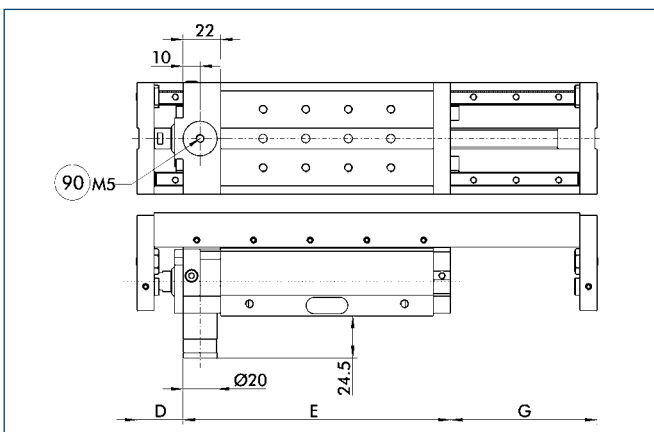
### Fine adjustment



- 82 Stroke
- 90 Stroke adjustment range
- 91 Dampening 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.

### Rod lock




- 90 Air connection, rod lock

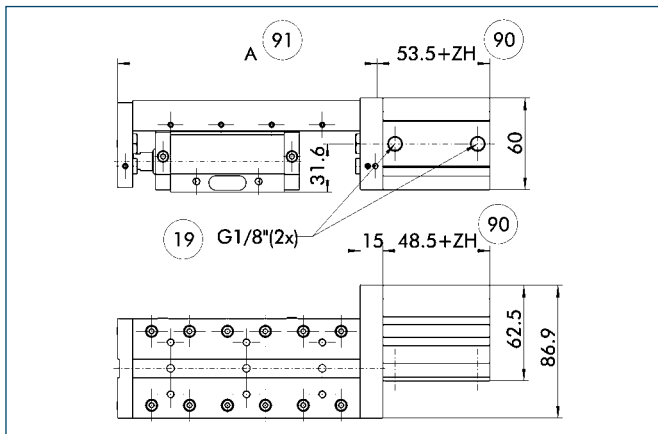
The rod lock prevents weights from falling in the event of energy loss, such as emergency stop situations. The rod lock can also be retrofitted, but this will reduce the useful stroke.

### Variable dimensions of rod lock

Type	Stroke [mm]	D [mm]	E [mm]	G [mm]
LM 100-H025	13	25...38	107	38...25
LM 100-H050	38	25...63	157	88...50
LM 100-H075	63	25...88	157	88...25
LM 100-H100	88	25...113	207	138...50
LM 100-H125	113	25...138	207	138...25
LM 100-H150	138	25...163	257	188...50
LM 100-H175	163	25...188	257	188...25
LM 100-H200	188	25...213	307	238...50
LM 100-H225	213	25...238	307	238...25

 You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.

## Intermediate stop, ZZA on the piston side



- 19 Air connection
- 90 Intermediate stroke
- 91 Overall length "A", the variant without intermediate stroke (see dimension table of stroke variants)

### ZZA 101

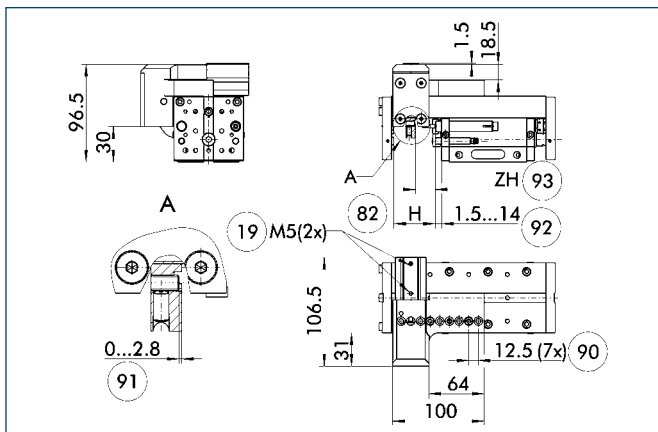
Holding force at 6 bar	[N]	460
Additional mass at 0 mm stroke	[kg]	0.75
Additional mass per mm stroke	[kg]	0.006

### Sample order

LM 100-H100-ZZA101-H30

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.

## Intermediate stop, LMZAW

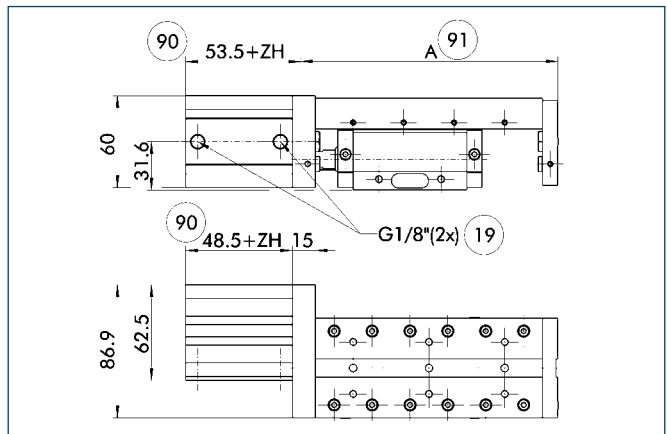


- 19 Air connection
- 82 Stroke
- 90 Grid dimension, stroke adjustment
- 91 Dampening stroke adjustment range
- 92 Stroke fine adjustment range
- 93 Intermediate stroke (min. 12.5 mm / max. useful stroke H-4 mm)

Designation	ID	Mass [kg]
LMZAW 100	0314115	0.98

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.

## Intermediate stop, ZZA on the piston rod side



- 19 Air connection
- 90 Intermediate stroke
- 91 Overall length "A", the variant without intermediate stroke (see dimension table of stroke variants)

### ZZA 102

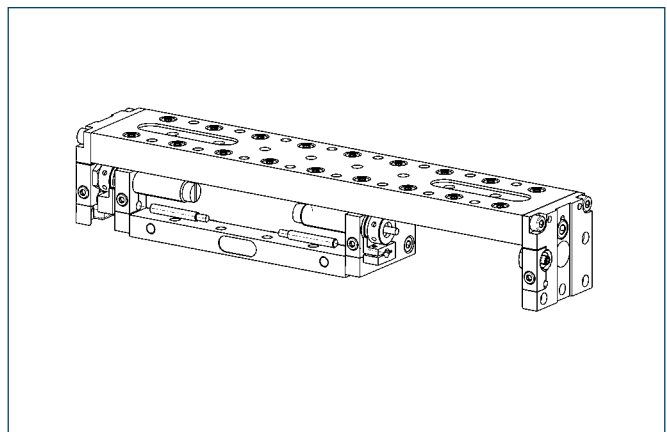
Holding force at 6 bar	[N]	460
Additional mass at 0 mm stroke	[kg]	0.75
Additional mass per mm stroke	[kg]	0.006

### Sample order

LM 100-H100-ZZA102-H30

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.

## Sensor systems



End-position monitoring:  
Inductive proximity switch, can be directly mounted

Designation	ID
NI 30-KT	0313429

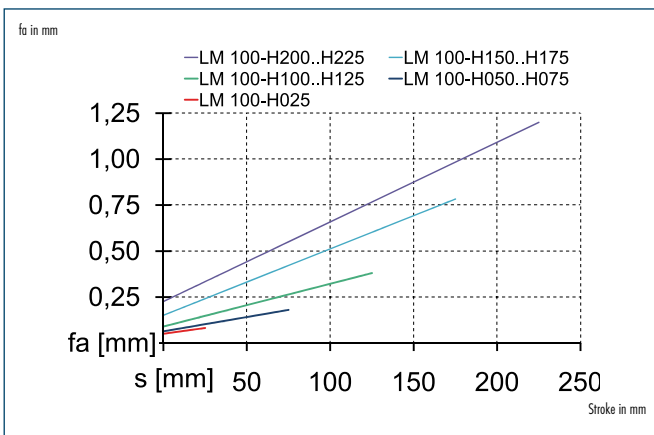
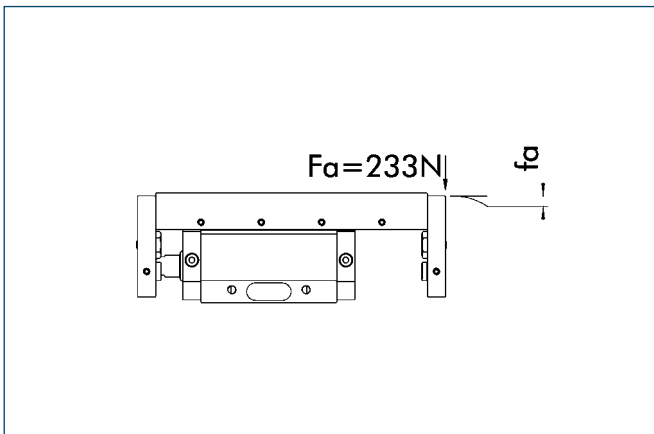
Extension cable for proximity switch

Designation	ID	Remark
STV 10	0313432	Sleeve M8x1, straight
STV 20	0313433	Sleeve M8x1, angled

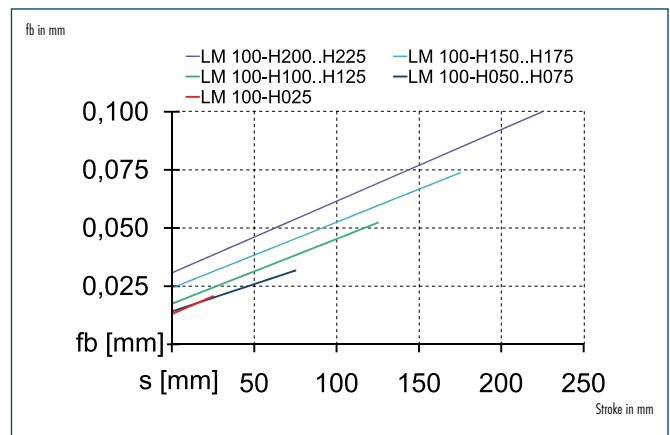
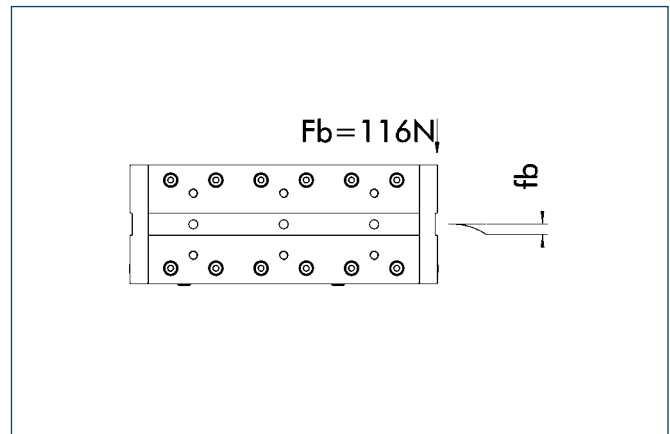
ⓘ Generally, two sensors are needed for each linear unit. For additional monitoring of the intermediate positions, one sensor per additional position as well as (optionally) one extension cable will be needed.

 You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.

## Deflection under load: $f_a$

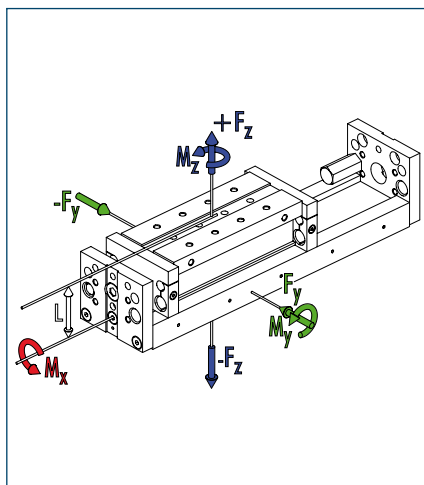


## Deflection under load: $f_b$



You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.

## Moment load



L = 56.5 mm

ⓘ The forces and moments shown here are maximum values for individual loading. If more than one force or moment occurs simultaneously, the application can be calculated by the TOOLBOX sizing software.

Designation	F <sub>z</sub> [N]	M <sub>x</sub> [Nm]	M <sub>y</sub> [Nm]	M <sub>z</sub> [Nm]
LM 200-H025	1.925	48	63	31.5
LM 200-H050	1.925	48	63	31.5
LM 200-H075	1.980	67	90	45
LM 200-H100	1.980	67	90	45
LM 200-H125	2.010	87	117	58.5
LM 200-H150	2.010	87	117	58.5
LM 200-H175	2.030	105	144	72
LM 200-H200	2.030	105	144	72
LM 200-H225	2.040	123	171	85.5
LM 200-H250	2.040	123	171	85.5
LM 200-H275	2.050	140	198	99
LM 200-H300	2.050	140	198	99
LM 200-H325	2.060	156	225	112.5
LM 200-H350	2.060	156	225	112.5

ⓘ Force F<sub>y</sub> must be calculated by the TOOLBOX sizing software.

## Technical data

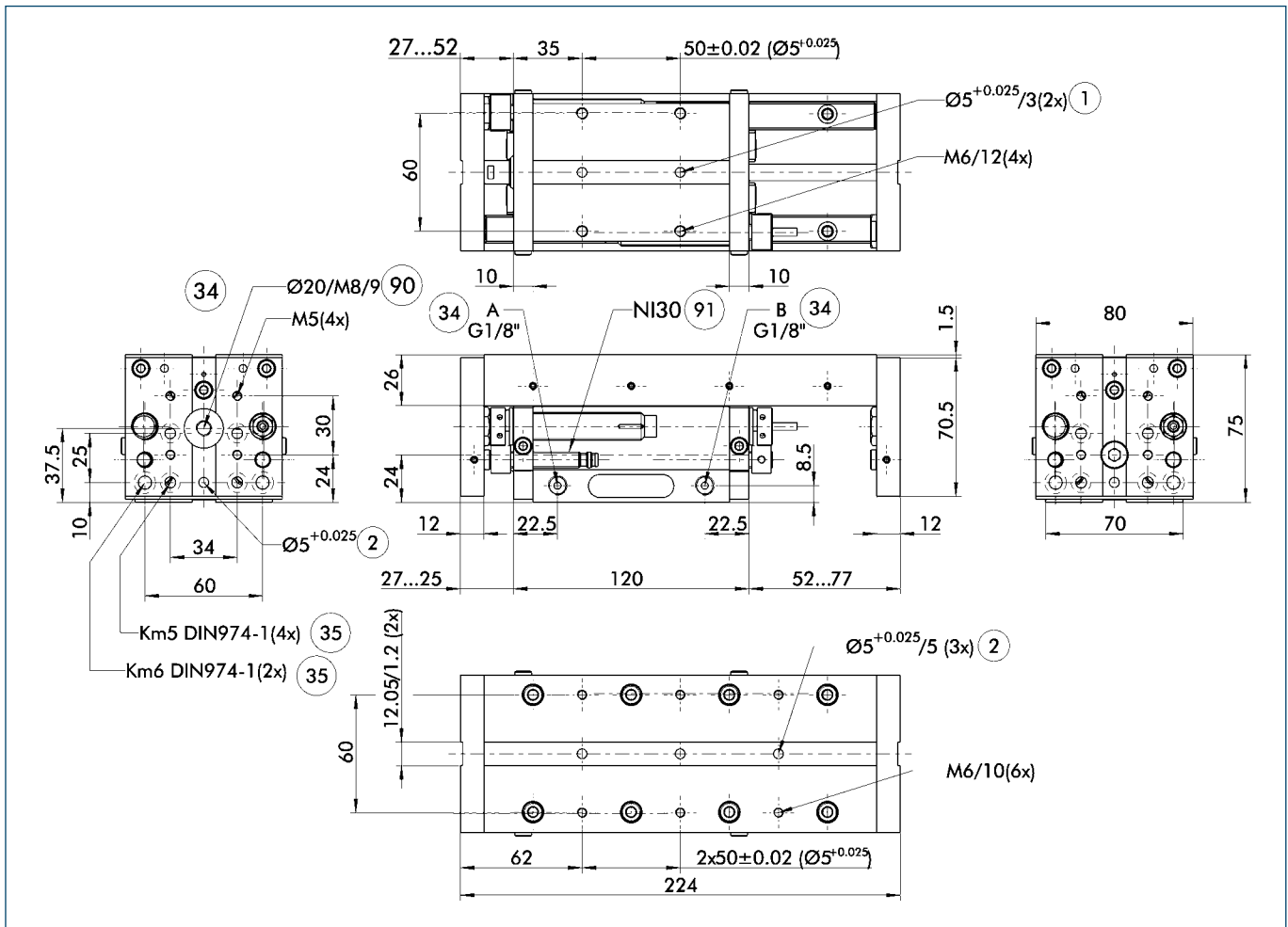
Designation		LM 200-H025	LM 200-H050	LM 200-H075	LM 200-H100	LM 200-H125	LM 200-H150
	ID	0314070	0314071	0314072	0314073	0314074	0314075
Stroke length	[mm]	25	50	75	100	125	150
Extend force [FV] at 6 bar	[N]	482	482	482	482	482	482
Retract force [FR] at 6 bar	[N]	415	415	415	415	415	415
Piston diameter	[mm]	32	32	32	32	32	32
Rod diameter	[mm]	12	12	12	12	12	12
Overall length	[mm]	224	224	324	324	424	424
Mass	[kg]	3.9	3.9	5.0	5.0	6.1	6.1
Fluid consumption/10 mm stroke	[cm <sup>3</sup> ]	8.04	8.04	8.04	8.04	8.04	8.04
Minimum pressure	[bar]	3	3	3	3	3	3
Maximum pressure	[bar]	8	8	8	8	8	8
Nominal operating pressure	[bar]	6	6	6	6	6	6
IP rating		40	40	40	40	40	40
Min. ambient temperature	[°C]	5	5	5	5	5	5
Max. ambient temperature	[°C]	60	60	60	60	60	60
Repeat accuracy	[mm]	± 0.01	± 0.01	± 0.01	± 0.01	± 0.01	± 0.01
Horizontal travel time at 10 kg additional load	[s]	0.09	0.12	0.16	0.18	0.21	0.23
Vertical travel time at 10 kg additional load	[s]	0.09	0.12	0.16	0.18	0.22	0.24

### OPTIONS and their characteristics

Fall protection version	ID	0314470	0314471	0314472	0314473	0314474	0314475
Designation		LM 200-H025-ASP	LM 200-H050-ASP	LM 200-H075-ASP	LM 200-H100-ASP	LM 200-H125-ASP	LM 200-H150-ASP
Stroke loss of nominal stroke (on the rod side)	[mm]	12	12	12	12	12	12
Mass	[kg]	3.99	3.99	5.09	5.09	6.19	6.19
Static holding force	[N]	600	600	600	600	600	600
Max. axial backlash of the clamping	[mm]	0.25	0.25	0.25	0.25	0.25	0.25
ZZA intermediate stop on the rod side possible		Yes	Yes	Yes	Yes	Yes	Yes
ZZA intermediate stop on the piston side possible		Yes	Yes	Yes	Yes	Yes	Yes
LMZAW intermediate stop possible		Yes	Yes	Yes	Yes	Yes	Yes

LM 200-H175	LM 200-H200	LM 200-H225	LM 200-H250	LM 200-H275	LM 200-H300	LM 200-H325	LM 200-H350
0314076	0314077	0314078	0314079	0314080	0314081	0314082	0314083
175	200	225	250	275	300	325	350
482	482	482	482	482	482	482	482
415	415	415	415	415	415	415	415
32	32	32	32	32	32	32	32
12	12	12	12	12	12	12	12
524	524	624	624	724	724	824	824
7.2	7.2	8.3	8.3	9.4	9.4	10.5	10.5
8.04	8.04	8.04	8.04	8.04	8.04	8.04	8.04
3	3	3	3	3	3	3	3
8	8	8	8	8	8	8	8
6	6	6	6	6	6	6	6
40	40	40	40	40	40	40	40
5	5	5	5	5	5	5	5
60	60	60	60	60	60	60	60
± 0.01	± 0.01	± 0.01	± 0.01	± 0.01	± 0.01	± 0.01	± 0.01
0.26	0.28	0.31	0.33	0.36	0.37	0.4	0.42
0.28	0.3	0.34	0.36	0.4	0.42	0.47	0.48
0314476	0314477	0314478	0314479	0314480	0314481	0314482	0314483
LM 200-H175-ASP	LM 200-H200-ASP	LM 200-H225-ASP	LM 200-H250-ASP	LM 200-H275-ASP	LM 200-H300-ASP	LM 200-H325-ASP	LM 200-H350-ASP
12	12	12	12	12	12	12	12
7.29	7.29	8.39	8.39	9.49	9.49	10.59	10.59
600	600	600	600	600	600	600	600
0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

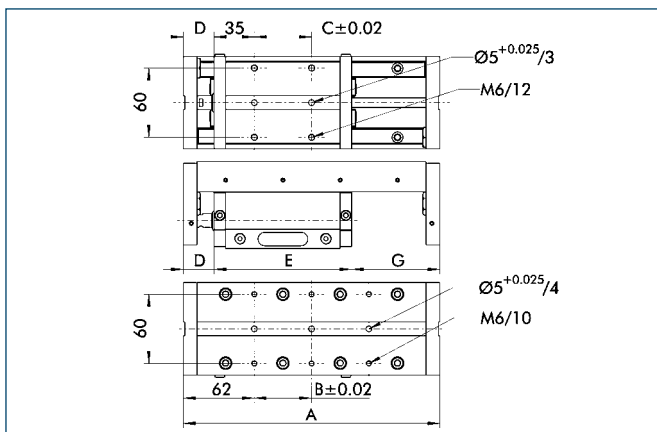
## Main views, LM 200-H025



- A, a Main and direct connections, extend linear unit  
 B, b Main and direct connections, retract linear unit  
 ① Connection, linear unit  
 ② Connection of the assembly  
 ③ On both attachment faces  
 ④ Back  
 ⑤ Through-bores in the face plate and thread in the base body (only single sided)  
 ⑥ Sensors and shock absorbers can also be fastened to the back. For variant H025, the shock absorbers have to be fastened crosswise.

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.

### Stroke variants



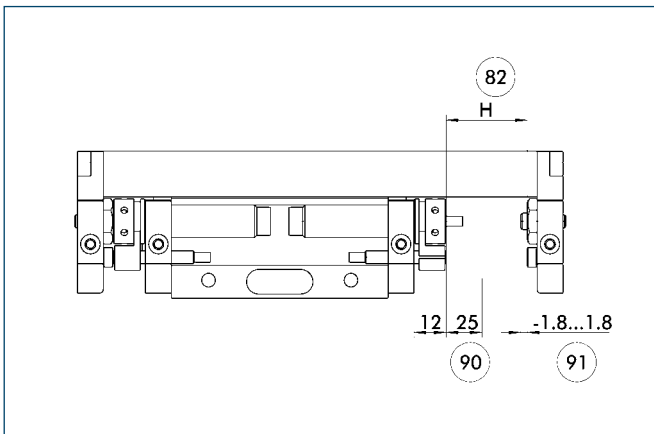
Not all dimensions shown can be seen in the main view.

### Variable dimensions of stroke variants

Type	Stroke [mm]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	G [mm]
LM 200-H025	25	224	2x50	1x50	27...52	120	77...52
LM 200-H050	50	224	2x50	1x50	27...77	120	77...27
LM 200-H075	75	324	4x50	2x50	27...102	170	127...52
LM 200-H100	100	324	4x50	2x50	27...127	170	127...27
LM 200-H125	125	424	6x50	3x50	27...152	220	177...52
LM 200-H150	150	424	6x50	3x50	27...177	220	177...27
LM 200-H175	175	524	8x50	4x50	27...202	270	227...52
LM 200-H200	200	524	8x50	4x50	27...227	270	227...27
LM 200-H225	225	624	10x50	5x50	27...252	320	277...52
LM 200-H250	250	624	10x50	5x50	27...277	320	277...27
LM 200-H275	275	724	12x50	6x50	27...302	370	327...52
LM 200-H300	300	724	12x50	6x50	27...327	370	327...27
LM 200-H325	325	824	14x50	7x50	27...352	420	377...52
LM 200-H350	350	824	14x50	7x50	27...377	420	377...27

You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.

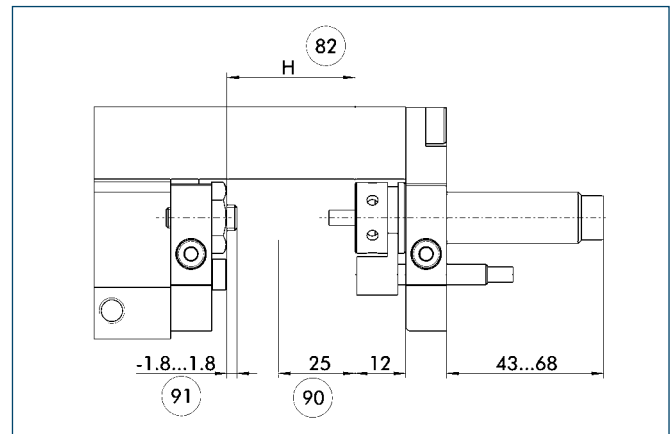
### Fine adjustment



- 82 Stroke
- 90 Stroke adjustment range
- 91 Dampening 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.

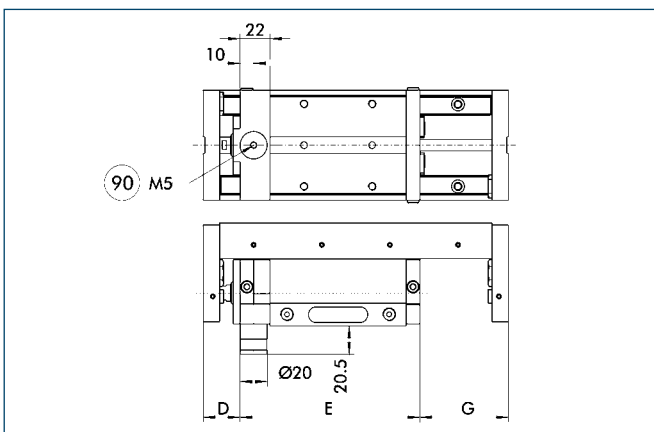
### Fine adjustment



- 82 Stroke
- 90 Stroke adjustment range
- 91 Dampening 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.

### Rod lock




- 90 Air connection, rod lock

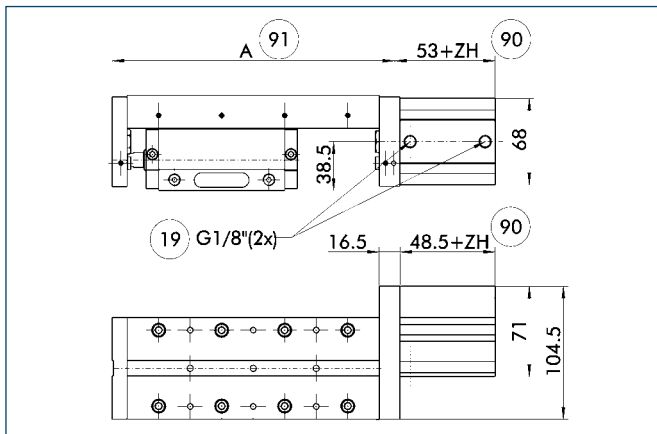
The rod lock prevents weights from falling in the event of energy loss, such as emergency stop situations. The rod lock can also be retrofitted, but this will reduce the useful stroke.

### Variable dimensions of rod lock

Type	Stroke [mm]	D [mm]	E [mm]	G [mm]
LM 200-H025	13	27...40	132	65...52
LM 200-H050	38	27...65	132	65...27
LM 200-H075	63	27...90	182	115...52
LM 200-H100	88	27...115	182	115...27
LM 200-H125	113	27...140	232	165...52
LM 200-H150	138	27...165	232	165...27
LM 200-H175	163	27...190	282	215...52
LM 200-H200	188	27...215	282	215...27
LM 200-H225	213	27...240	332	265...52
LM 200-H250	238	27...265	332	265...27
LM 200-H275	263	27...290	382	315...52
LM 200-H300	288	27...315	382	315...27
LM 200-H325	313	27...340	432	365...52
LM 200-H350	338	27...365	432	365...27

 You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.

## Intermediate stop, ZZA on the piston side



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

### ZZA 201

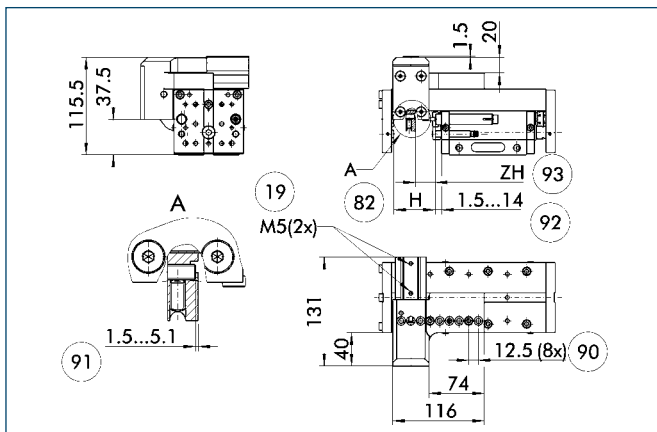
Holding force at 6 bar	[N]	696
Additional mass at 0 mm stroke	[kg]	0.9
Additional mass per mm stroke	[kg]	0.008

### Sample order

LM 200-H100-ZZA201-H30

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.

## Intermediate stop, LMZAW



- ①⑨ Air connection
- ⑧② Stroke
- ⑨① Grid dimension, stroke adjustment
- ⑨① Dampening stroke adjustment range
- ⑨② Stroke fine adjustment range
- ⑨③ Intermediate stroke (min. 18.5 mm / max. useful stroke H-5 mm)

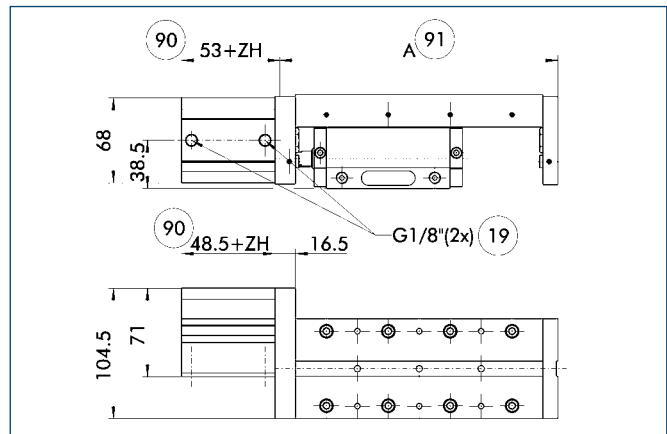
Designation	ID	Mass [kg]
LMZAW 200	0314116	1.4

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.



You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.

## Intermediate stop, ZZA on the piston rod side



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

### ZZA 202

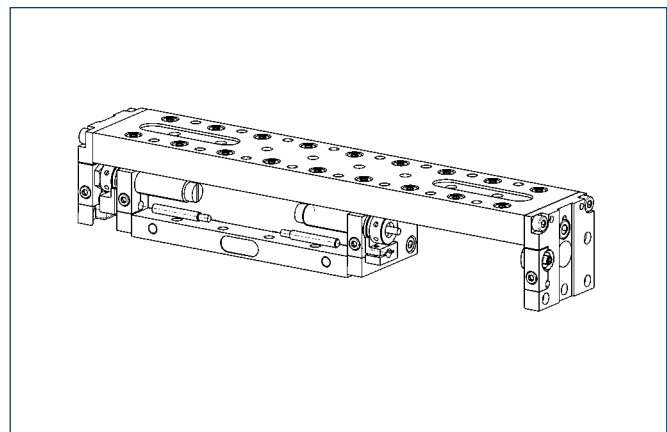
Holding force at 6 bar	[N]	696
Additional mass at 0 mm stroke	[kg]	0.9
Additional mass per mm stroke	[kg]	0.008

### Sample order

LM 200-H100-ZZA202-H30

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.

## Sensor systems



### End-position monitoring:

Inductive proximity switch, can be directly mounted

Designation	ID
NI 30-KT	0313429

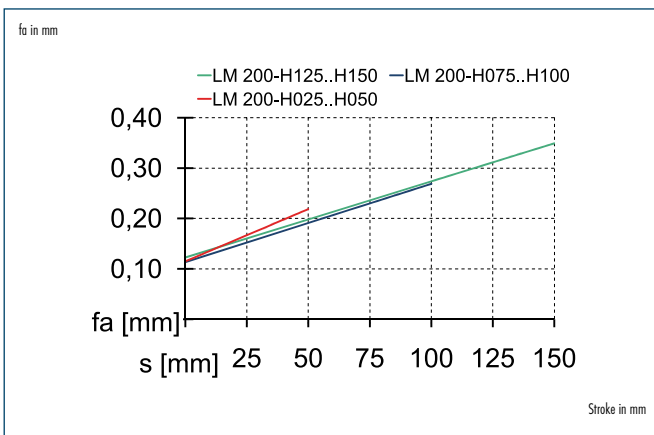
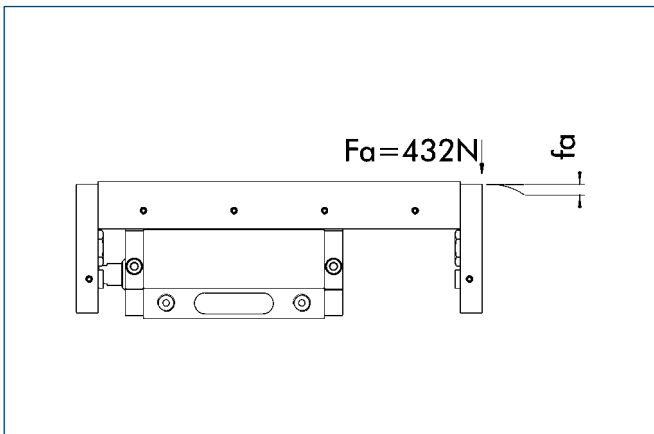
### Extension cable for proximity switch

Designation	ID	Remark
STV 10	0313432	Sleeve M8x1, straight
STV 20	0313433	Sleeve M8x1, angled

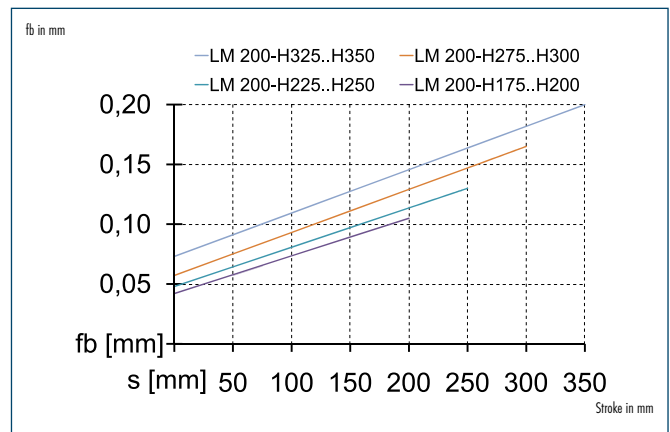
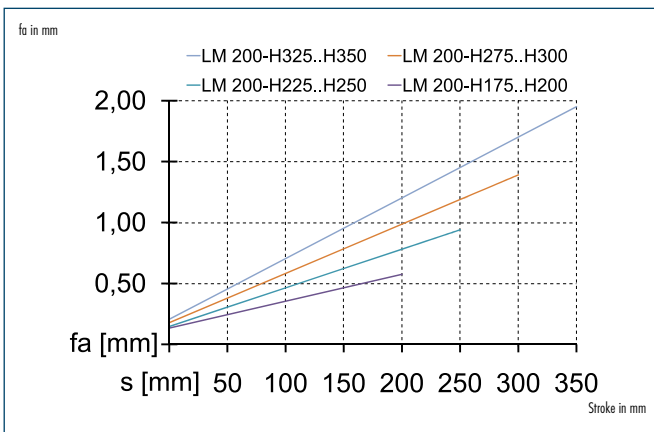
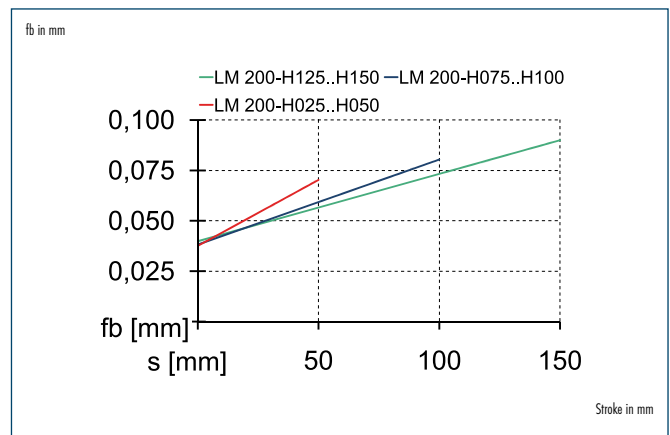
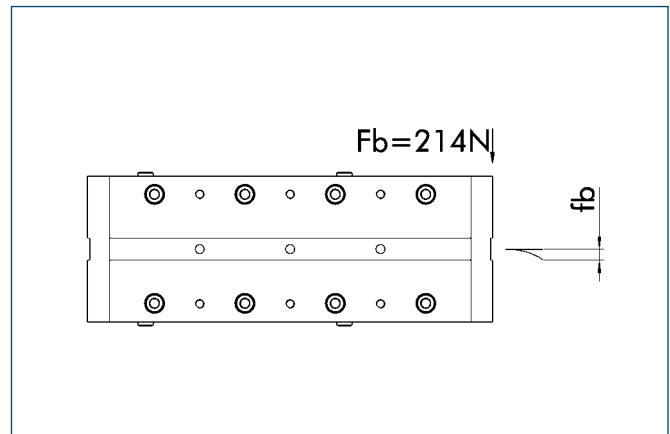
① Generally, two sensors are needed for each linear unit. For additional monitoring of the intermediate positions, one sensor per additional position as well as (optionally) one extension cable will be needed.




### Deflection under load: $f_a$

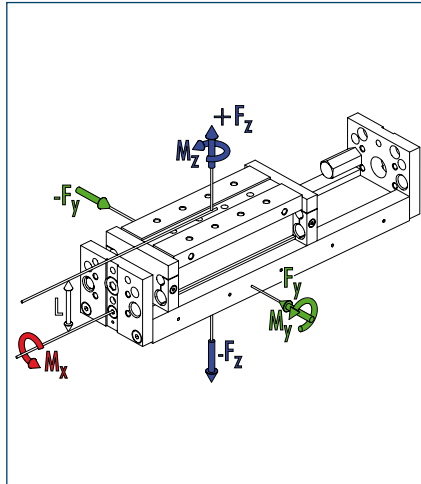


### Deflection under load: $f_b$



 You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.

## Moment load



L = 64.5 mm

ⓘ The forces and moments shown here are maximum values for individual loading. If more than one force or moment occurs simultaneously, the application can be calculated by the TOOLBOX sizing software.

Designation	F <sub>z</sub> [N]	M <sub>x</sub> [Nm]	M <sub>y</sub> [Nm]	M <sub>z</sub> [Nm]
LM 300-H025	1.925	66	63	31.5
LM 300-H050	1.925	66	63	31.5
LM 300-H075	1.980	85	90	45
LM 300-H100	1.980	85	90	45
LM 300-H125	2.010	103	117	58.5
LM 300-H150	2.010	103	117	58.5
LM 300-H175	2.030	121	144	72
LM 300-H200	2.030	121	144	72
LM 300-H225	2.040	138	171	85.5
LM 300-H250	2.040	138	171	85.5
LM 300-H275	2.050	155	198	99
LM 300-H300	2.050	155	198	99
LM 300-H325	2.060	171	225	112.5
LM 300-H350	2.060	171	225	112.5
LM 300-H375	2.065	186	252	126
LM 300-H400	2.065	186	252	126
LM 300-H425	2.070	201	279	139.5
LM 300-H450	2.070	201	279	139.5

ⓘ Force F<sub>y</sub> must be calculated by the TOOLBOX sizing software.

## Technical data

Designation		LM 300-H025	LM 300-H050	LM 300-H075	LM 300-H100	LM 300-H125	LM 300-H150	LM 300-H175
	ID	0314084	0314085	0314086	0314087	0314088	0314089	0314090
Stroke length	[mm]	25	50	75	100	125	150	175
Extend force [FV] at 6 bar	[N]	753	753	753	753	753	753	753
Retract force [FR] at 6 bar	[N]	633	633	633	633	633	633	633
Piston diameter	[mm]	40	40	40	40	40	40	40
Rod diameter	[mm]	16	16	16	16	16	16	16
Overall length	[mm]	224	224	324	324	424	424	524
Mass	[kg]	4.85	4.85	6.2	6.2	7.55	7.55	8.9
Fluid consumption/10 mm stroke	[cm <sup>3</sup> ]	12.57	12.57	12.57	12.57	12.57	12.57	12.57
Minimum pressure	[bar]	3	3	3	3	3	3	3
Maximum pressure	[bar]	8	8	8	8	8	8	8
Nominal operating pressure	[bar]	6	6	6	6	6	6	6
IP rating		40	40	40	40	40	40	40
Min. ambient temperature	[°C]	5	5	5	5	5	5	5
Max. ambient temperature	[°C]	60	60	60	60	60	60	60
Repeat accuracy	[mm]	± 0.01	± 0.01	± 0.01	± 0.01	± 0.01	± 0.01	± 0.01
Horizontal travel time at 10 kg additional load	[s]	0.09	0.12	0.17	0.19	0.24	0.26	0.3
Vertical travel time at 10 kg additional load	[s]	0.09	0.13	0.18	0.21	0.26	0.29	0.34

### OPTIONS and their characteristics

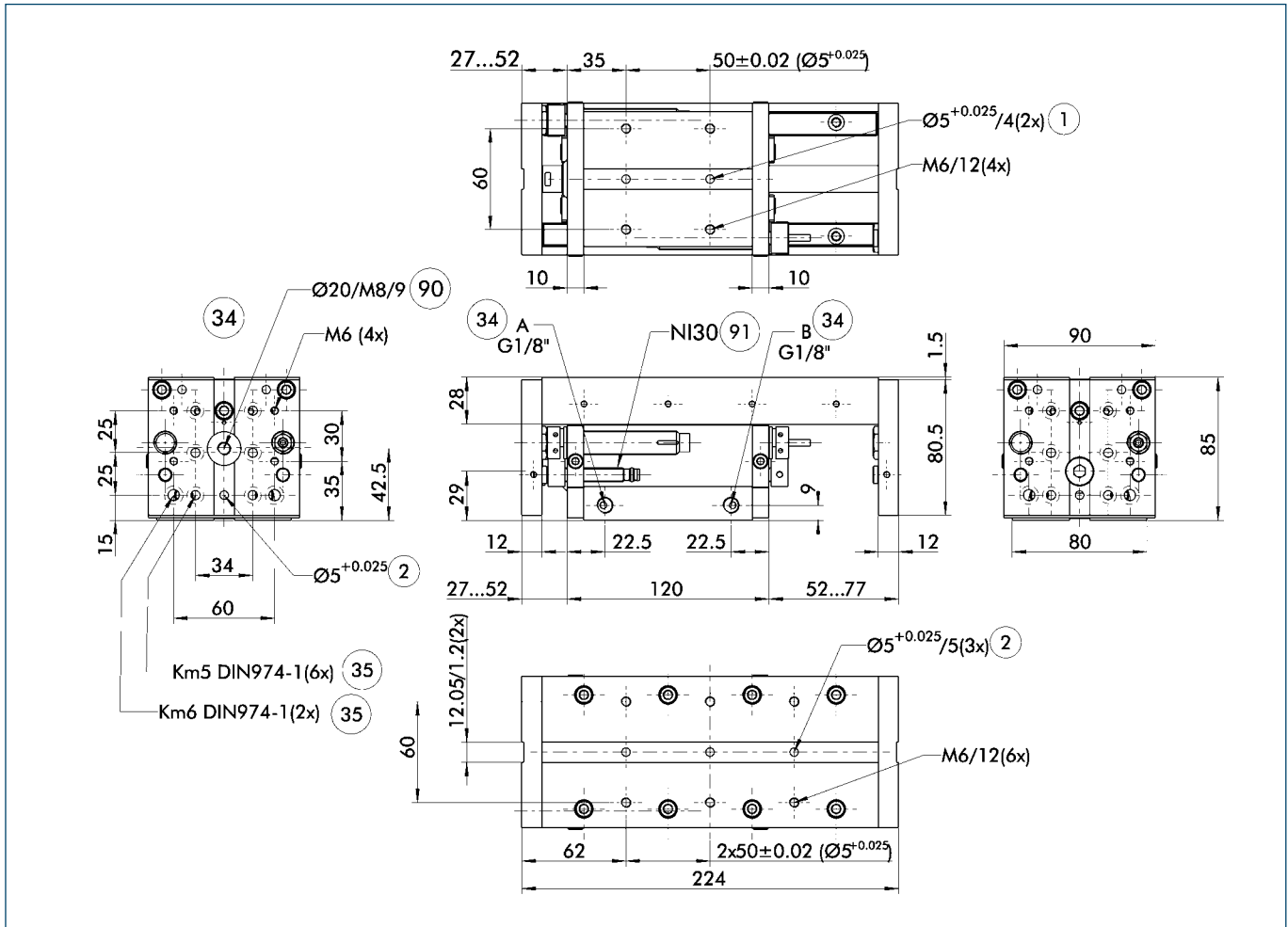
Fall protection version	ID	0314484	0314485	0314486	0314487	0314488	0314489	0314490
Designation		LM 300-H025-ASP	LM 300-H050-ASP	LM 300-H075-ASP	LM 300-H100-ASP	LM 300-H125-ASP	LM 300-H150-ASP	LM 300-H175-ASP
Stroke loss of nominal stroke (on the rod side)	[mm]	18	18	18	18	18	18	18
Mass	[kg]	5.01	5.01	6.36	6.36	7.71	7.71	9.06
Static holding force	[N]	1000	1000	1000	1000	1000	1000	1000
Max. axial backlash of the clamping	[mm]	0.25	0.25	0.25	0.25	0.25	0.25	0.25
ZZA intermediate stop on the rod side possible		Yes	Yes	Yes	Yes	Yes	Yes	Yes
ZZA intermediate stop on the piston side possible		Yes	Yes	Yes	Yes	Yes	Yes	Yes
LMZAW intermediate stop possible		Yes	Yes	Yes	Yes	Yes	Yes	Yes

LM 300-H200	LM 300-H225	LM 300-H250	LM 300-H275	LM 300-H300	LM 300-H325	LM 300-H350	LM 300-H375	LM 300-H400	LM 300-H425	LM 300-H450
0314091	0314092	0314093	0314094	0314095	0314096	0314097	0314098	0314099	0314100	0314101
200	225	250	275	300	325	350	375	400	425	450
753	753	753	753	753	753	753	753	753	753	753
633	633	633	633	633	633	633	633	633	633	633
40	40	40	40	40	40	40	40	40	40	40
16	16	16	16	16	16	16	16	16	16	16
524	624	624	724	724	824	824	924	924	1024	1024
8.9	10.25	10.25	11.6	11.6	12.95	12.95	14.3	14.3	15.65	15.65
12.57	12.57	12.57	12.57	12.57	12.57	12.57	12.57	12.57	12.57	12.57
3	3	3	3	3	3	3	3	3	3	3
8	8	8	8	8	8	8	8	8	8	8
6	6	6	6	6	6	6	6	6	6	6
40	40	40	40	40	40	40	40	40	40	40
5	5	5	5	5	5	5	5	5	5	5
60	60	60	60	60	60	60	60	60	60	60
± 0.01	± 0.01	± 0.01	± 0.01	± 0.01	± 0.01	± 0.01	± 0.01	± 0.01	± 0.01	± 0.01
0.33	0.37	0.4	0.45	0.47	0.52	0.54	0.6	0.62	0.68	0.7
0.37	0.42	0.45	0.51	0.53	0.6	0.62	0.7	0.72	0.8	0.82

0314491	0314492	0314493	0314494	0314495	0314496	0314497	0314498	0314499	0314500	0314501
LM 300-H200-	LM 300-H225-	LM 300-H250-	LM 300-H275-	LM 300-H300-	LM 300-H325-	LM 300-H350-	LM 300-H375-	LM 300-H400-	LM 300-H425-	LM 300-H450-
18	18	18	18	18	18	18	18	18	18	18
9.06	10.41	10.41	11.76	11.76	13.11	13.11	14.46	14.46	15.81	15.81
1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

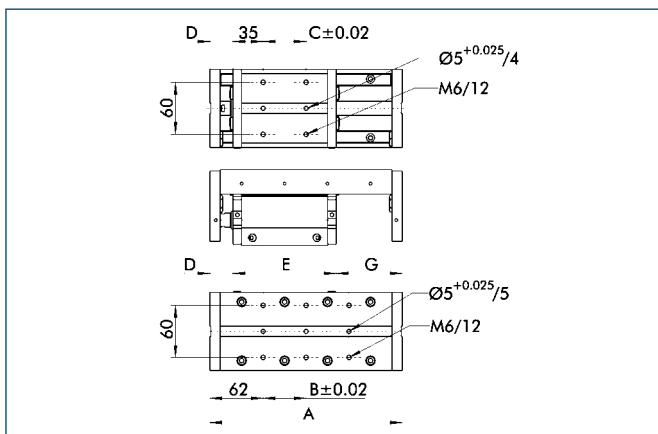
## Main views, LM 300-H025



- A, a Main and direct connections, extend linear unit
- B, b Main and direct connections, retract linear unit
- ① Connection, linear unit
- ② Connection of the assembly
- ③④ On both attachment faces
- ③⑤ Back
- ⑨⑩ Through-bores in the face plate and thread in the base body (only single sided)
- ⑨⑪ Sensors and shock absorbers can also be fastened to the back. For variant H025, the shock absorbers have to be fastened crosswise.

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.

## Stroke variants

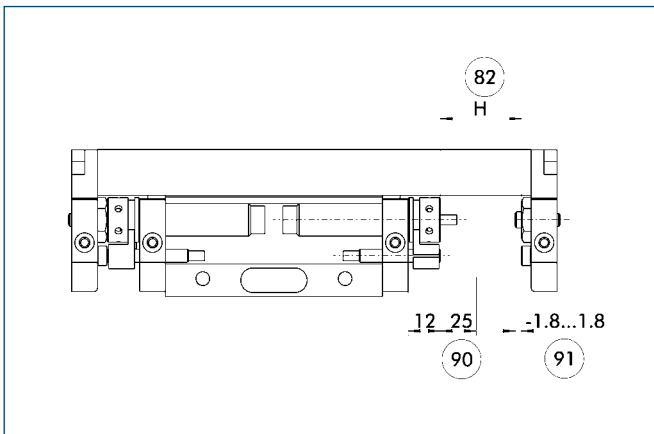


Not all dimensions shown can be seen in the main view.

## Variable dimensions of stroke variants

Type	Stroke [mm]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	G [mm]
LM 300-H025	25	224	2x50	1x50	27...52	120	77...52
LM 300-H050	50	224	2x50	1x50	27...77	120	77...27
LM 300-H075	75	324	4x50	2x50	27...102	170	127...52
LM 300-H100	100	324	4x50	2x50	27...127	170	127...27
LM 300-H125	125	424	6x50	3x50	27...152	220	177...52
LM 300-H150	150	424	6x50	3x50	27...177	220	177...27
LM 300-H175	175	524	8x50	4x50	27...202	270	227...52
LM 300-H200	200	524	8x50	4x50	27...227	270	227...27
LM 300-H225	225	624	10x50	5x50	27...252	320	277...52
LM 300-H250	250	624	10x50	5x50	27...277	320	277...27
LM 300-H275	275	724	12x50	6x50	27...302	370	327...52
LM 300-H300	300	724	12x50	6x50	27...327	370	327...27
LM 300-H325	325	824	14x50	7x50	27...352	420	377...52
LM 300-H350	350	824	14x50	7x50	27...377	420	377...27
LM 300-H375	375	924	16x50	8x50	27...402	470	427...52
LM 300-H400	400	924	16x50	8x50	27...427	470	427...27
LM 300-H425	425	1024	18x50	9x50	27...452	520	477...52
LM 300-H450	450	1024	18x50	9x50	27...477	520	477...27

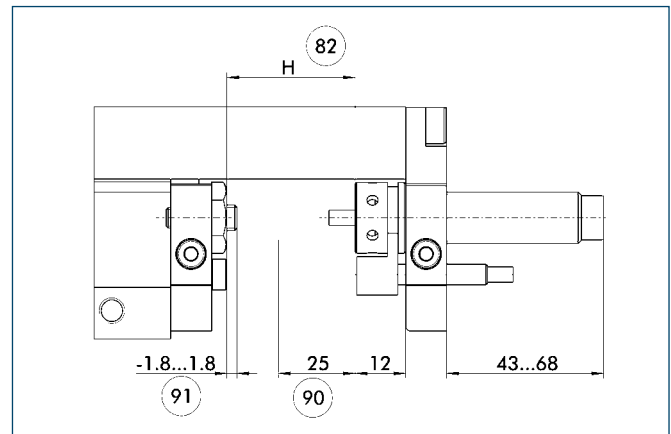
### Fine adjustment



- ⑧② Stroke
- ⑨① Stroke adjustment range
- ⑨① Dampening 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.

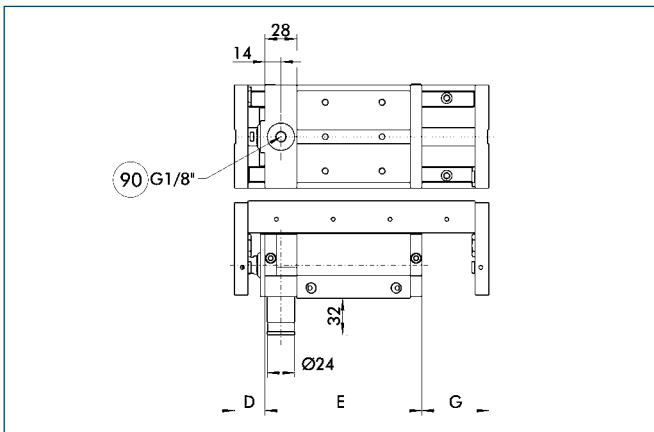
### Fine adjustment



- ⑧② Stroke
- ⑨① Stroke adjustment range
- ⑨① Dampening 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




- ⑨① Air connection, rod lock

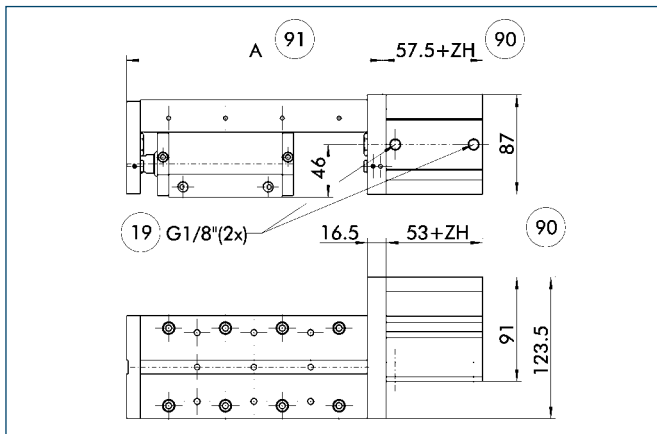
The rod lock prevents weights from falling in the event of energy loss, such as emergency stop situations. The rod lock can also be retrofitted, but this will reduce the useful stroke.

### Variable dimensions of rod lock

Type	Stroke [mm]	D [mm]	E [mm]	G [mm]
LM 300-H025	7	27...34	138	59...52
LM 300-H050	32	27...59	138	59...27
LM 300-H075	57	27...84	188	109...52
LM 300-H100	82	27...109	188	109...27
LM 300-H125	107	27...134	238	159...52
LM 300-H150	132	27...159	238	159...27
LM 300-H175	157	27...184	288	209...52
LM 300-H200	182	27...209	288	209...27
LM 300-H225	207	27...234	338	259...52
LM 300-H250	232	27...259	338	259...27
LM 300-H275	257	27...284	388	309...52
LM 300-H300	282	27...309	388	309...27
LM 300-H325	307	27...334	438	359...52
LM 300-H350	332	27...359	438	359...27
LM 300-H375	357	27...384	488	409...52
LM 300-H400	382	27...409	488	409...27
LM 300-H425	407	27...434	538	459...52
LM 300-H450	432	27...459	538	459...27

 You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.

## Intermediate stop, ZZA on the piston side



- 19 Air connection
- 90 Intermediate stroke
- 91 Overall length "A", the variant without intermediate stroke (see dimension table of stroke variants)

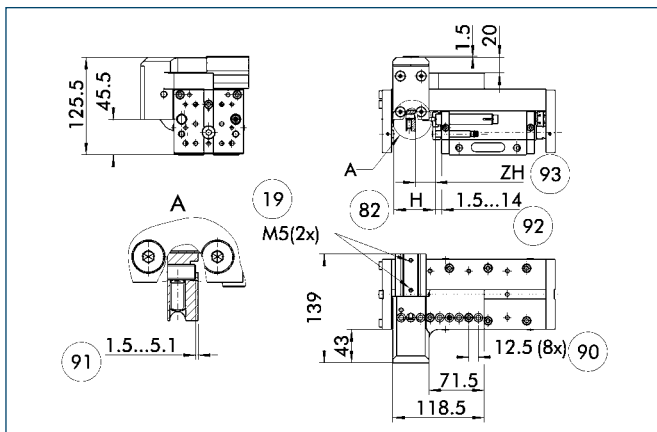
### ZZA 301

Holding force at 6 bar	[N]	1117
Additional mass at 0 mm stroke	[kg]	1.7
Additional mass per mm stroke	[kg]	0.011

Sample order **LM 300-H100-ZZA301-H30**

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.

## Intermediate stop, LMZAW



- 19 Air connection
- 82 Stroke
- 90 Grid dimension, stroke adjustment
- 91 Dampening stroke adjustment range
- 92 Stroke fine adjustment range
- 93 Intermediate stroke (min. 18.5 mm / max. useful stroke H-5 mm)

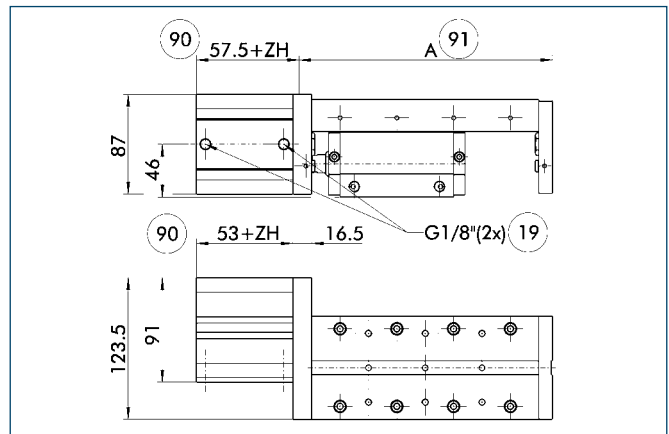
Designation	ID	Mass [kg]
LMZAW 300	0314117	1.6

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.



You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.

## Intermediate stop, ZZA on the piston rod side



- 19 Air connection
- 90 Intermediate stroke
- 91 Overall length "A", the variant without intermediate stroke (see dimension table of stroke variants)

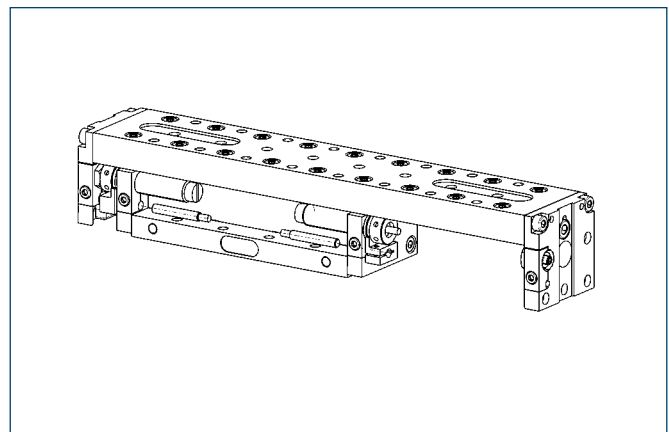
### ZZA 302

Holding force at 6 bar	[N]	1117
Additional mass at 0 mm stroke	[kg]	1.7
Additional mass per mm stroke	[kg]	0.011

Sample order **LM 300-H100-ZZA302-H30**

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.

## Sensor systems



End-position monitoring:  
Inductive proximity switch, can be directly mounted

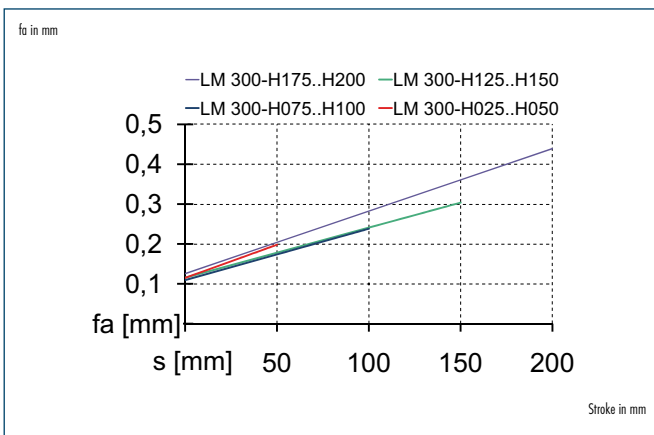
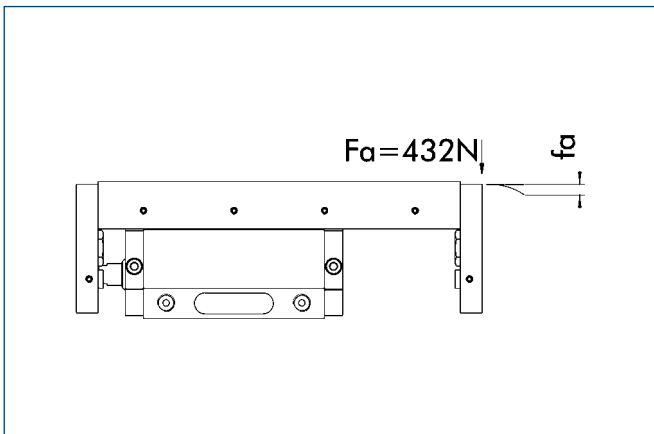
Designation	ID
NI 30-KT	0313429

Extension cable for proximity switch

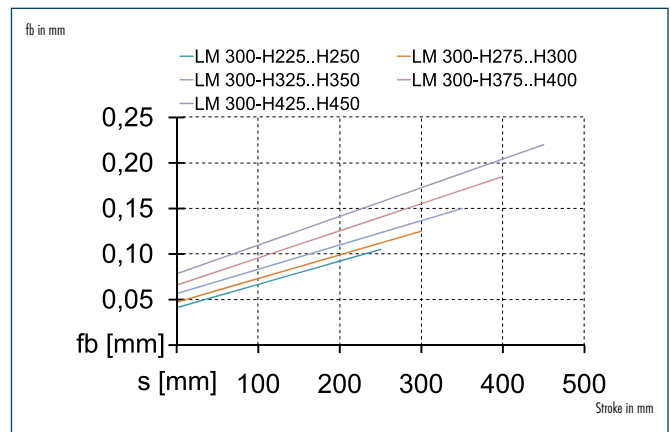
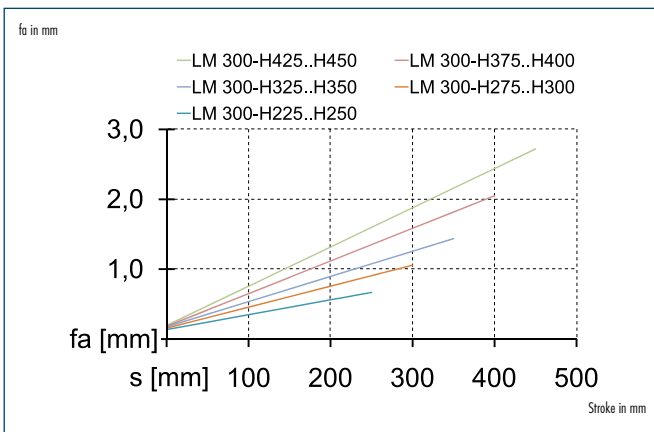
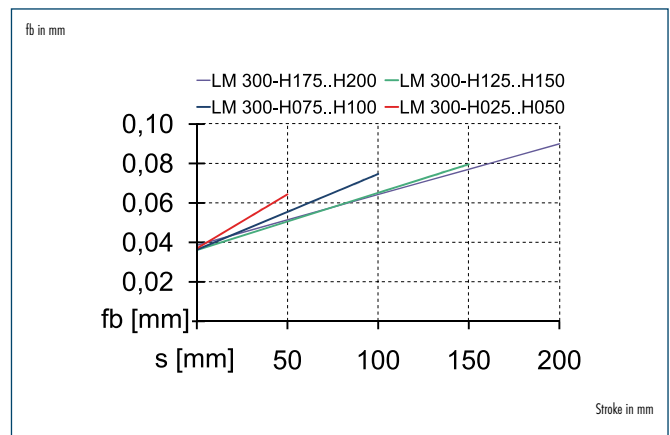
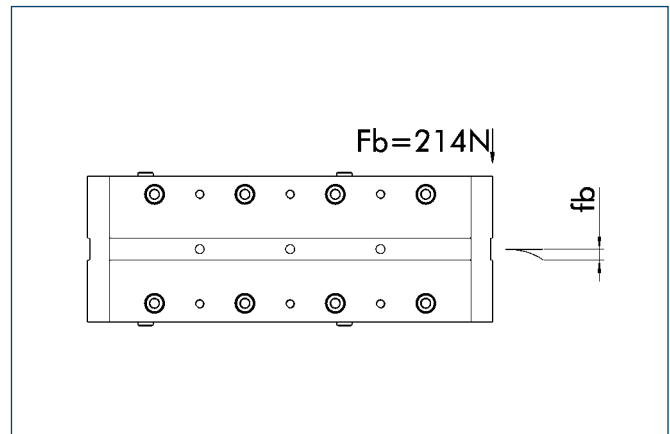
Designation	ID	Remark
STV 10	0313432	Sleeve M8x1, straight
STV 20	0313433	Sleeve M8x1, angled


ⓘ Generally, two sensors are needed for each linear unit. For additional monitoring of the intermediate positions, one sensor per additional position as well as (optionally) one extension cable will be needed.

## Deflection under load: $f_a$



## Deflection under load: $f_b$



 You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.

### GEMOTEC system

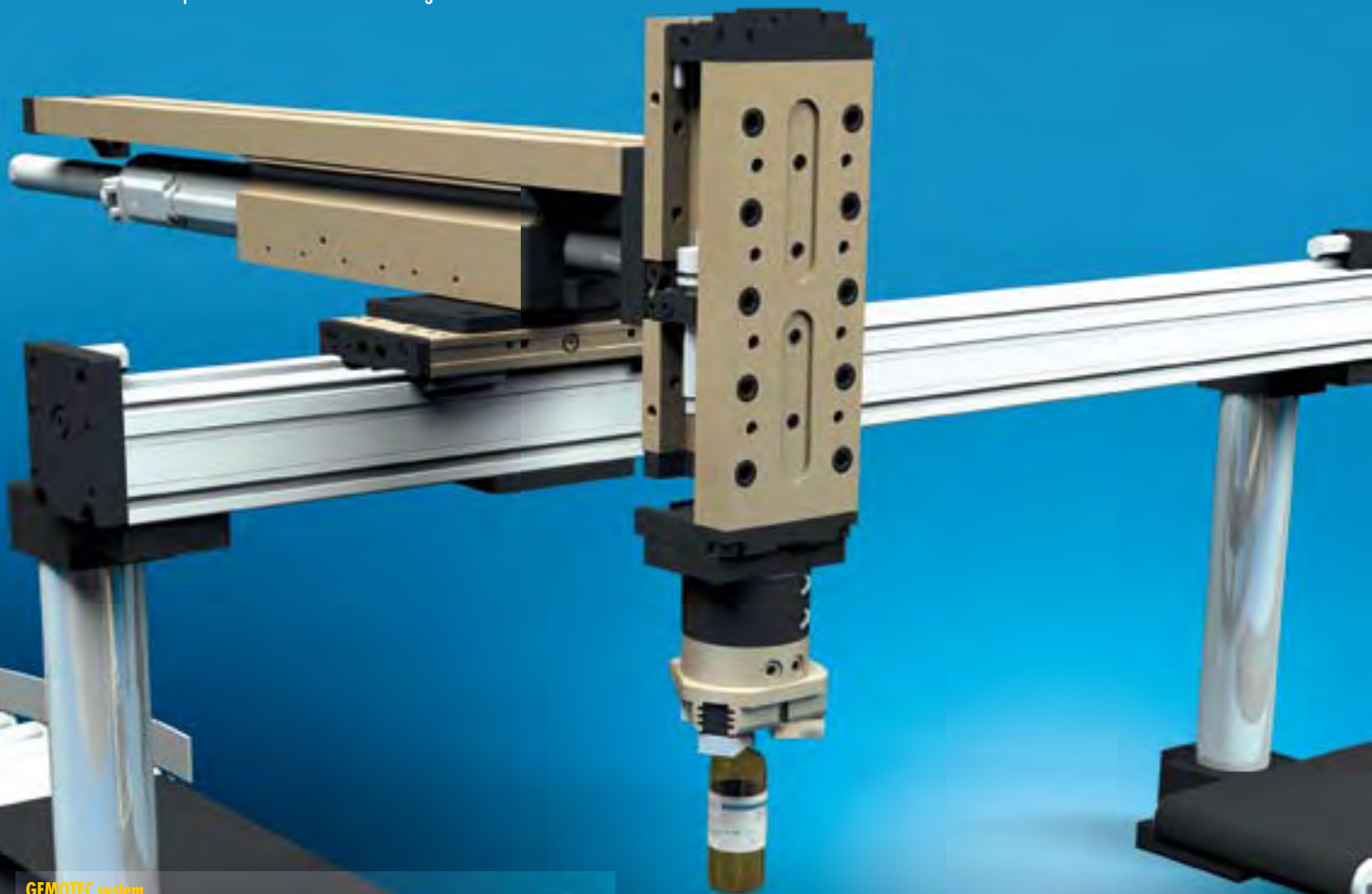
#### Modular system automation

ELM modules are simple to use, completely electric positioning systems. The position-detection measuring system, the temperature monitoring, and a precision ball track are integrated. The modules have been especially developed for versatile and highly dynamic positioning tasks which are beyond the capabilities of pneumatic drives.

The high flexibility and the unlimited compatibility with the GEMOTEC module system ensures simple solutions as well as fast, uncomplicated planning even for tasks which pose difficult technical challenges for drives.

#### Power from linear motors

ELM modules are completely ready for use and offer the highest dynamic values and accuracy. The design permits variable strokes and motion profiles. The modules are almost free from wear. They all have in common the integrated measuring system and the integrated precision ball track. Control is system-neutral or can be done using a bus system.



GEMOTEC system



#### Other electric components



Cable



Drive controller



Interfaces



Software



<b>ELM</b>	<b>Sizes</b> 23 and 37 (2 variants)	<b>Useful stroke</b> Up to 260 mm	<b>Driving force</b> Up to 160 N	<b>Deflection</b> -	<b>Useful load</b> Up to 8.0 kg	<b>Repeat accuracy</b> ± 0.05 mm	<b>Speed</b> Up to 1.50 m/s
<b>EPM</b>	37 and 48 (2 variants)	Up to 1.380 mm	Up to 580 N	Up to 0.75 mm	Up to 50.0 kg	± 0.1 mm	Up to 2.10 m/s

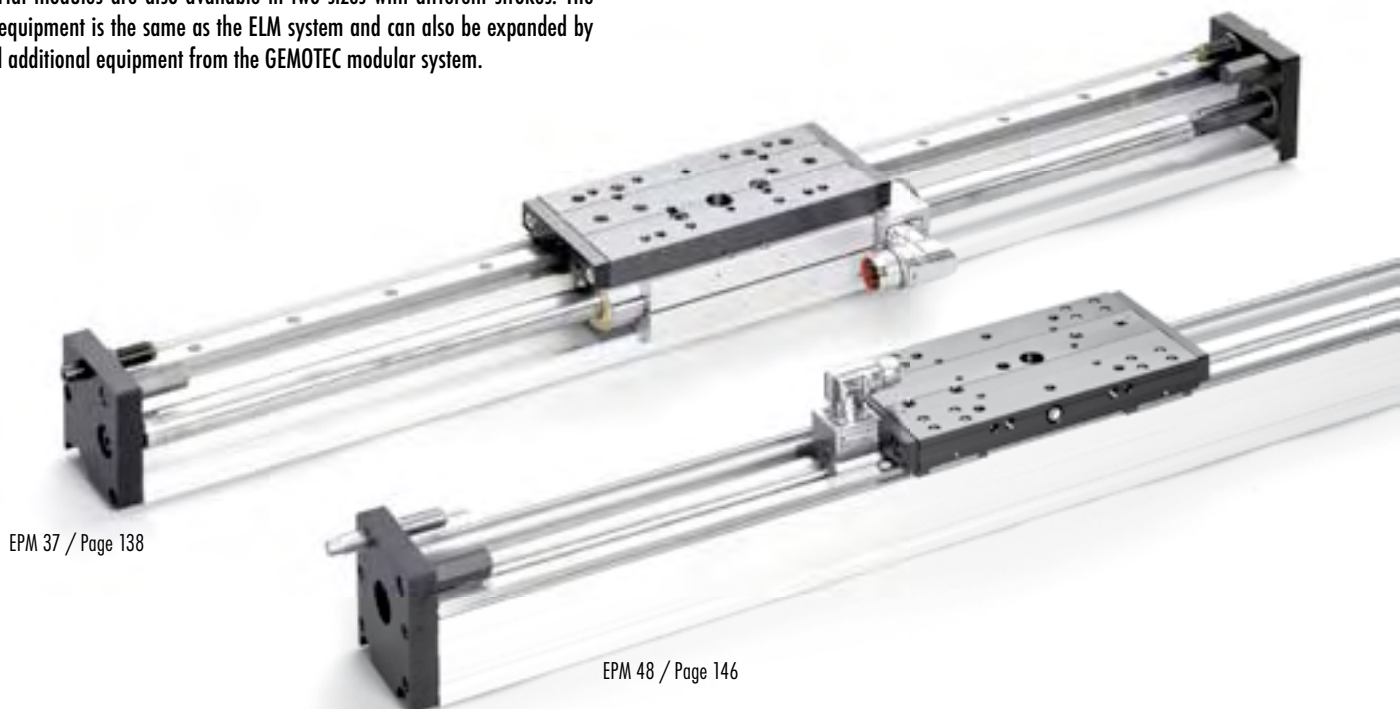
## ELM linear module, GEMOTEC system

ELM linear modules are available in two sizes with different strokes. Besides the measuring system, the temperature monitoring system is also integrated, so no further add-on pieces are needed.



## EPM portal module, GEMOTEC system

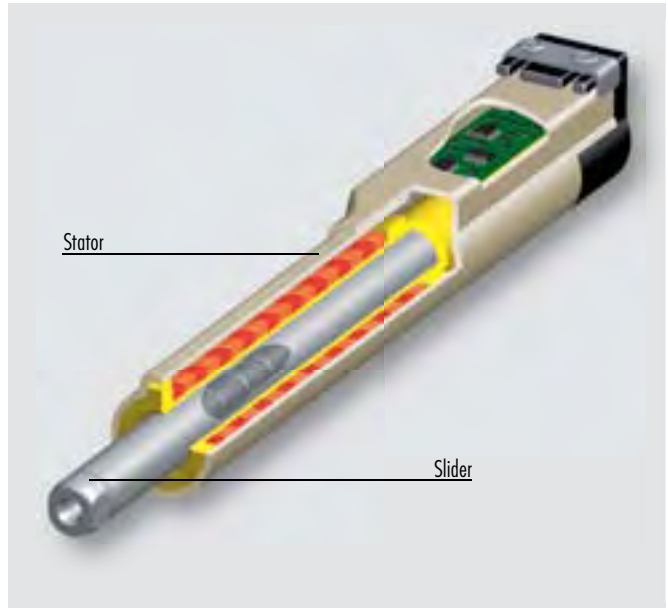
EPM portal modules are also available in two sizes with different strokes. The system equipment is the same as the ELM system and can also be expanded by optional additional equipment from the GEMOTEC modular system.



### System equipment

#### Motor

Linear motor: ELM and EPM modules are driven by linear servo motors. Movement takes place without mechanical gears. No seals or dampers are involved, which ensures a long life span even for highly dynamic rates and fast cycle times.



### Options

#### Cable sets

A single preconfigured cable between the linear motor and the servo-controller is all that is needed for the installation. The standard cables are 2, 4 and 8 m long but can also be made in lengths of up to 50 m upon request.



#### Stroke measuring system

EPM portal modules can also be equipped with an external stroke measuring system. The position is directly output to the axis controller using a non-contact measuring sensor and a magnetic strip.



## Options

### Controller/drive control device

The servo controllers are configured as simple positioning units. The positions which are to be approached are saved in the controller and called up by a higher-level controller (SP, IPC,...) using digital I/Os (24 VDC). As soon as the linear module has reached the position, a corresponding "InPosition" output will become active.

Up to 8 or 256 positions or commands can be stored in a table in the controller. The command table is created with the MPC software on the PC and loaded via the serial interface on the controller. Controllers for most bus systems are also available.

### Standard interfaces for customer-specific application

The following interfaces are available to you (for standard servo controller, E 1100)

Profibus, DP	RS 232/485
CANopen	DeviceNET
Special	

### Start up software

ELM and EPM systems can be put into service very quickly and easily – no complicated or expensive mechanical adjusting. For the configuration of operating cycles, all that is needed is the input of the target position, speed, and additional load.

### The following commands can be used:

#### ■ Absolute movement

The linear module moves at the desired speed to the entered position.

#### ■ Relative movement

This movement is a displacement from the current position by the entered distance.

#### ■ Press

Here a target position will be approached with one preprogrammed force. As soon as this force has been reached, this will be signaled via an output.

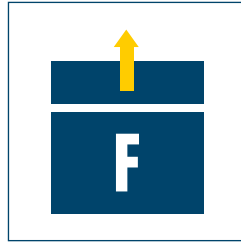




**Sizes**  
23 .. 37



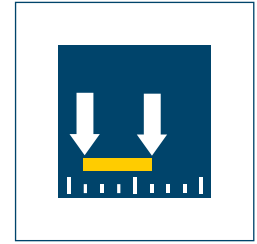
**Mass**  
1.50 kg .. 5.83 kg



**Driving force**  
Up to 160 N



**Stroke**  
0 .. 260 mm



**Repeat accuracy**  
± 0.05 mm

### Application example



Pick & place unit driven by linear motor for dynamic movements

- |  |   |
|--|---|
| <b>1</b> Double socket, SOD 055              | <b>6</b> Reinforcing bracket, VW 50         |
| <b>2</b> Hollow pillar, SLH 055-0300         | <b>7</b> Electric linear module, ELM 23-H70 |
| <b>3</b> Double mounting plate, APDH 085     | <b>8</b> Adapter plate, APL 051             |
| <b>4</b> Electric linear module, ELM 37-H160 | <b>9</b> Angular gripper, GMW 12            |
| <b>5</b> Adapter plate, APL 101              |   |

## Linear axes with direct drive

and profiled rail guide with integrated measuring system for position detection and temperature monitoring.

### Area of application

For highly dynamic positioning tasks which are beyond what pneumatic drives can do; for example:

- Handling and assembly technology
- Measuring and testing technology
- Component marking and identification
- Component assembly and final inspection in microelectronics
- Medical technology

### Advantages – your benefits

Linear motor drives require no further mechanical elements for force transmission.

#### Almost no wearing parts

For long service life and reliability of the system

#### Integrated motor in the axis

For minimum interfering contours

#### Freely programmable

Up to 256 positions with different parameters (e.g. speed and force) per axis

#### Low oscillations and high holding force

For the shortest positioning times and stable processing

#### “Pneumatic weight compensation” option for vertical installation position

For compensation of mass and for fast cycle times

#### “Cooling” option via fan or compressed air

For applications with increased need for constant force

#### Different controllers

Profibus, DeviceNet, CanOpen (and many others) controller can be used



## General information about the series

### Guidance

Profiled rail guide

### Drive

Linear motor drive

### Material

Base body and slide  
Aluminum, hard-anodized

### Ambient temperature range

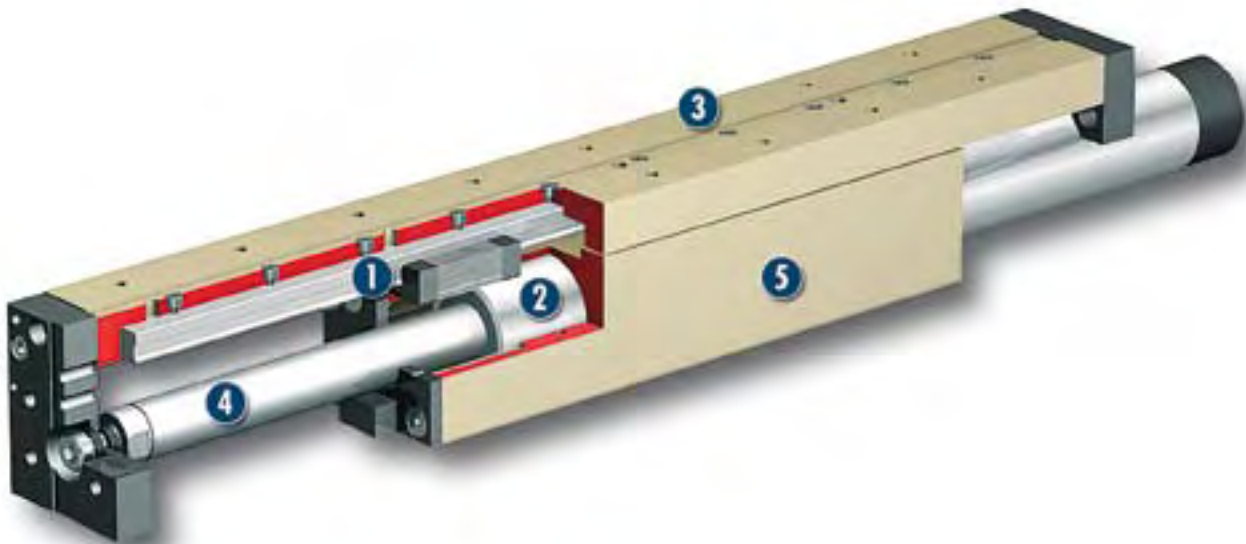
From 10 °C to 65 °C

### Warranty

24 months

For production reasons, the colors may vary from those shown in the catalog.

## Cross-section of function



- 1 Profiled rail guide**  
For maximum positioning accuracy and moment loads
- 2 Drive**  
Highly dynamic, wear-resistant linear motor drive
- 3 Modular design hole pattern**  
Completely integrated in the module system
- 4 Runner**  
With permanent magnets
- 5 Base body**  
For connection of further options such as fan cooling

## Description of function

The electric drive consists of a stator and a runner. The phase and the amplitude of the applied electrical current is regulated in the regulator. This causes the runner, which is fitted with magnets, to move.

## Options and special information

### Fall protection version

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. You can find more information in the "Accessories" chapter.

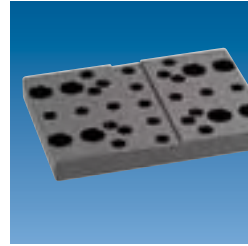
**Accessories**

Accessories from SCHUNK - the ideal components for the best functionality, reliability, and controlled production for all automation modules.

**Rod lock, ASP**



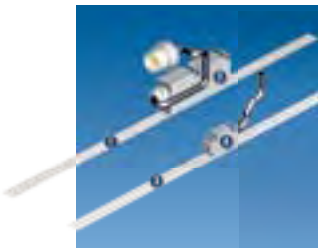
**Adapter plates**



**Controller**



**Stroke measuring system**



**Power supply unit**



**Pillar assembly systems**



**Cable sets**



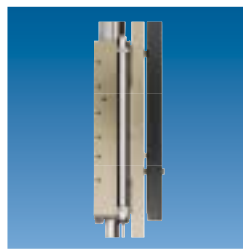
**Safety damper**



**Fan cooling**



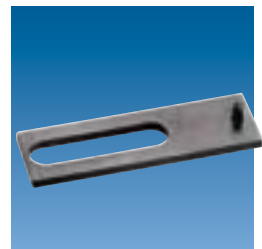
**Weight compensation**



**Cover**



**Centering strips**



ⓘ Please see the side views at the end of the respective size for information concerning specific sizes, accessories availability for that size, designation, and ID numbers. You can find more information about our accessories program in the "Accessories" part of the catalog.

**General information about the series**

**Repeat accuracy**

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

**Safety notes**

Caution: magnetic field! This applies especially for persons with implanted medical devices, such as pacemakers, hearing aids, etc.

**Layout or sizing**

Sizing the selected unit is absolutely necessary, since otherwise overloading can result. Please contact us for assistance.

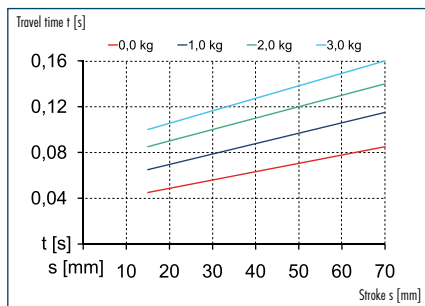
**Ambient conditions**

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

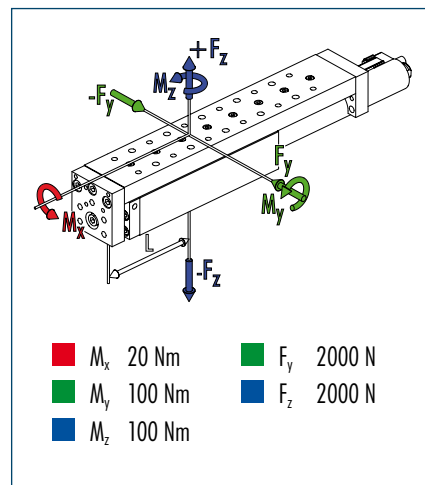
You will find more information about the direct drive on page 96.



## Travel times



## Moment load



$L = 70.5$  mm

ⓘ Moments and forces may occur simultaneously.

## Technical data

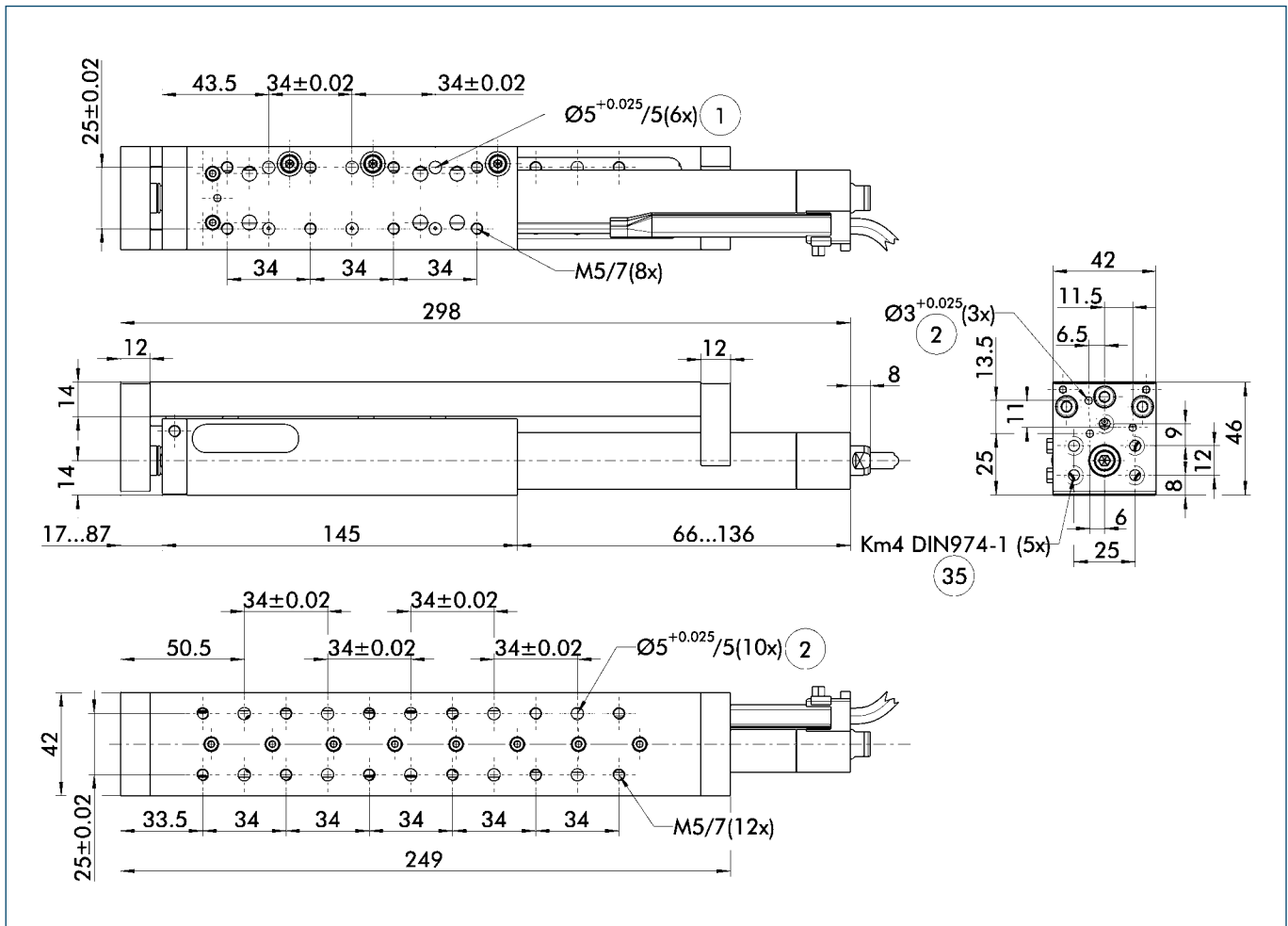
Designation	ELM 23-H070	
	ID	0314365
Max. driving force	[N]	60
Rated force	[N]	31
Max. speed	[m/s]	1.5
Max. acceleration	[m/s <sup>2</sup> ]	43
Max. useful load (horizontal)	[kg]	3
Max. useful stroke	[mm]	70
Rated current	[A]	1.4
Max. current	[A]	2.8
Mass	[kg]	1.5
Repeat accuracy	[mm]	± 0.05
Max. stator temperature	[°C]	65

### OPTIONS and their characteristics

Fall protection version	ID	
	ID	0314366
	Designation	
	ELM 23-H070-ASP	
Stroke loss of nominal stroke (on the rod side)	[mm]	0
Mass	[kg]	1.61
Static holding force	[N]	180
Max. axial backlash of the clamping	[mm]	0.2
Can be combined with GA		Yes
Can be combined with MK		Yes
Can be combined with SD		Yes
Can be combined with MA		Yes



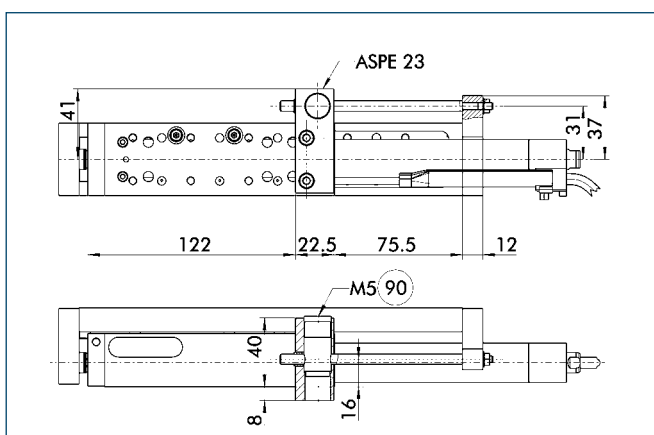
## Main views



- ① Connection, linear unit
- ① Connection of the assembly
- ③⑤ Back

The recommended method to attached the linear module is on the base body and the payload on the slide. For reverse installation, the bending radius of the cable always has to be taken into consideration.

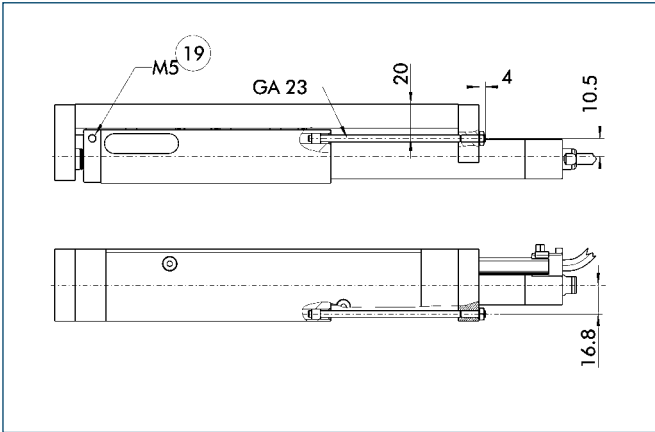
## Rod lock



- ⑨⑩ Air connection, rod lock

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.

## Weight compensation device, GA 23

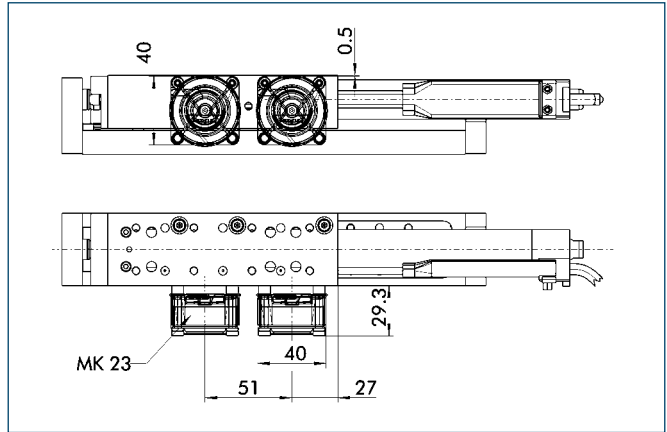


19 Air connection

For vertical use of the linear module, a pneumatic weight compensation device can be integrated to compensate for the slide weight and the additional weight in the linear module.

Designation	ID
GA 23-70	0314235

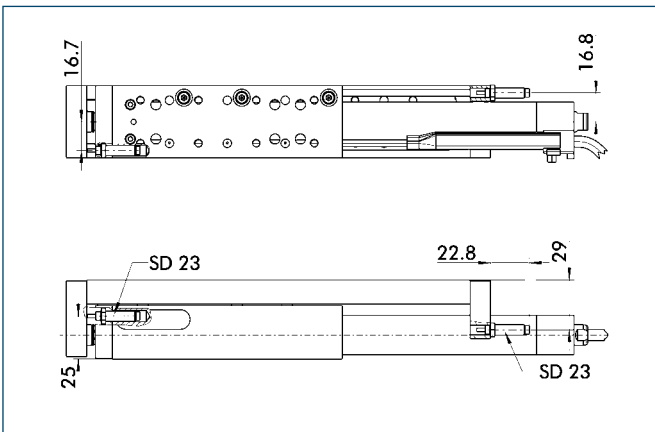
## Fan cooling, MK 23



Fans can be mounted on the modules if there is an increased need for constant force. The forced cooling leads to the constant force being nearly doubled. Alternatively to cooling with a fan, it is also possible to cool with compressed air (approximately 0.5 bar) via a connection which is provided for this.

Designation	ID
MK 23	0314241

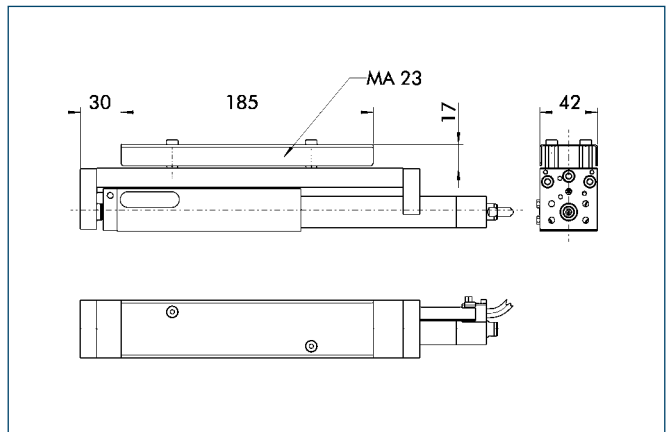
## Safety damper, SD 23



To prevent any mechanical damage due to a malfunction, the modules can be equipped with hydraulic shock absorbers.

Designation	ID
SD 23	0314262

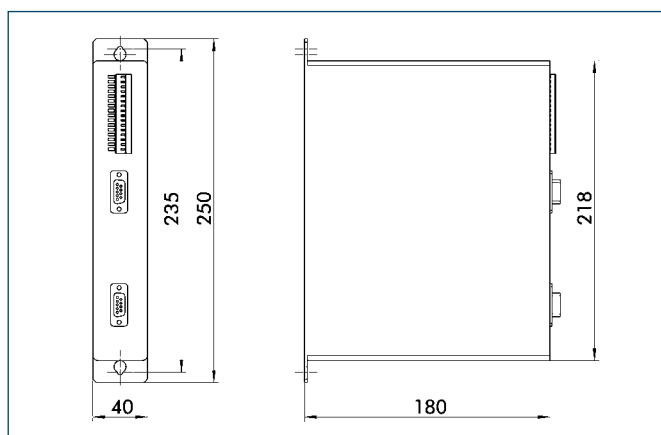
## Cover, MA 23



For guiding electric and pneumatic lines, a cover can be mounted.

Designation	ID
MA 23-70	0314238

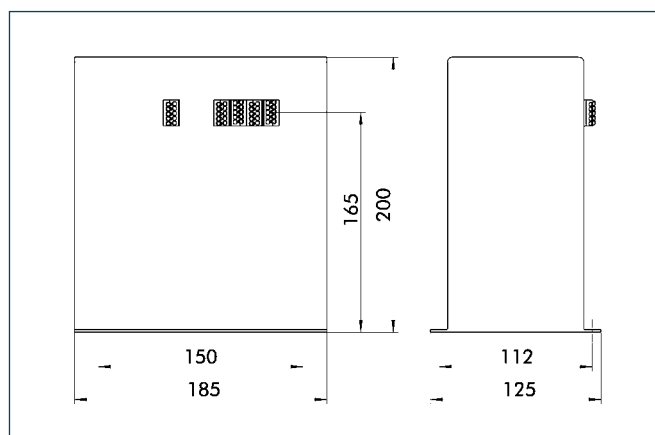
## Servo controllers




To control the portal modules, the following servo controller interfaces are possible:

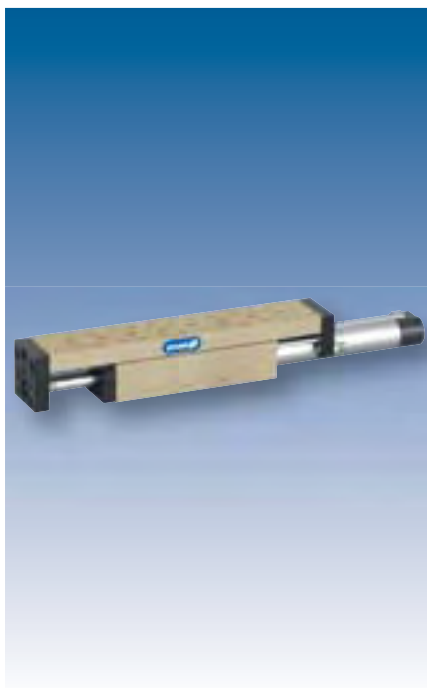
- Parallel interface with 8 positions
- Parallel interface with 256 positions
- Profibus
- CANopen
- DeviceNet
- RS232

## Transformer power supply unit

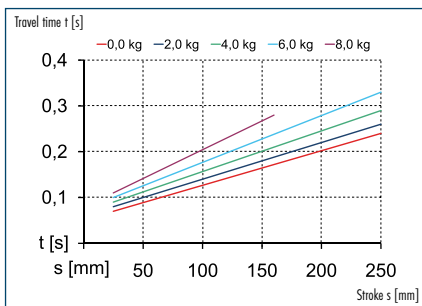


Designation	ID
T01-72/420	0314253

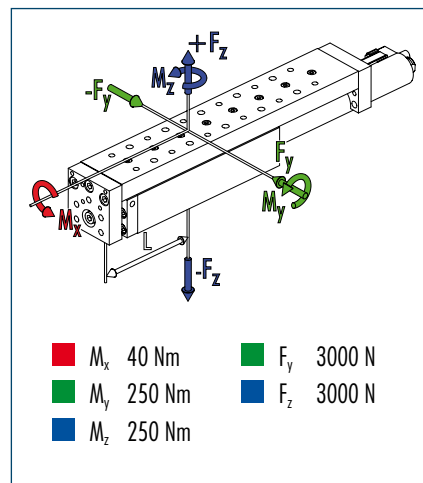
 You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.



## Travel times



## Moment load



L = 124 mm

ⓘ Moments and forces may occur simultaneously.

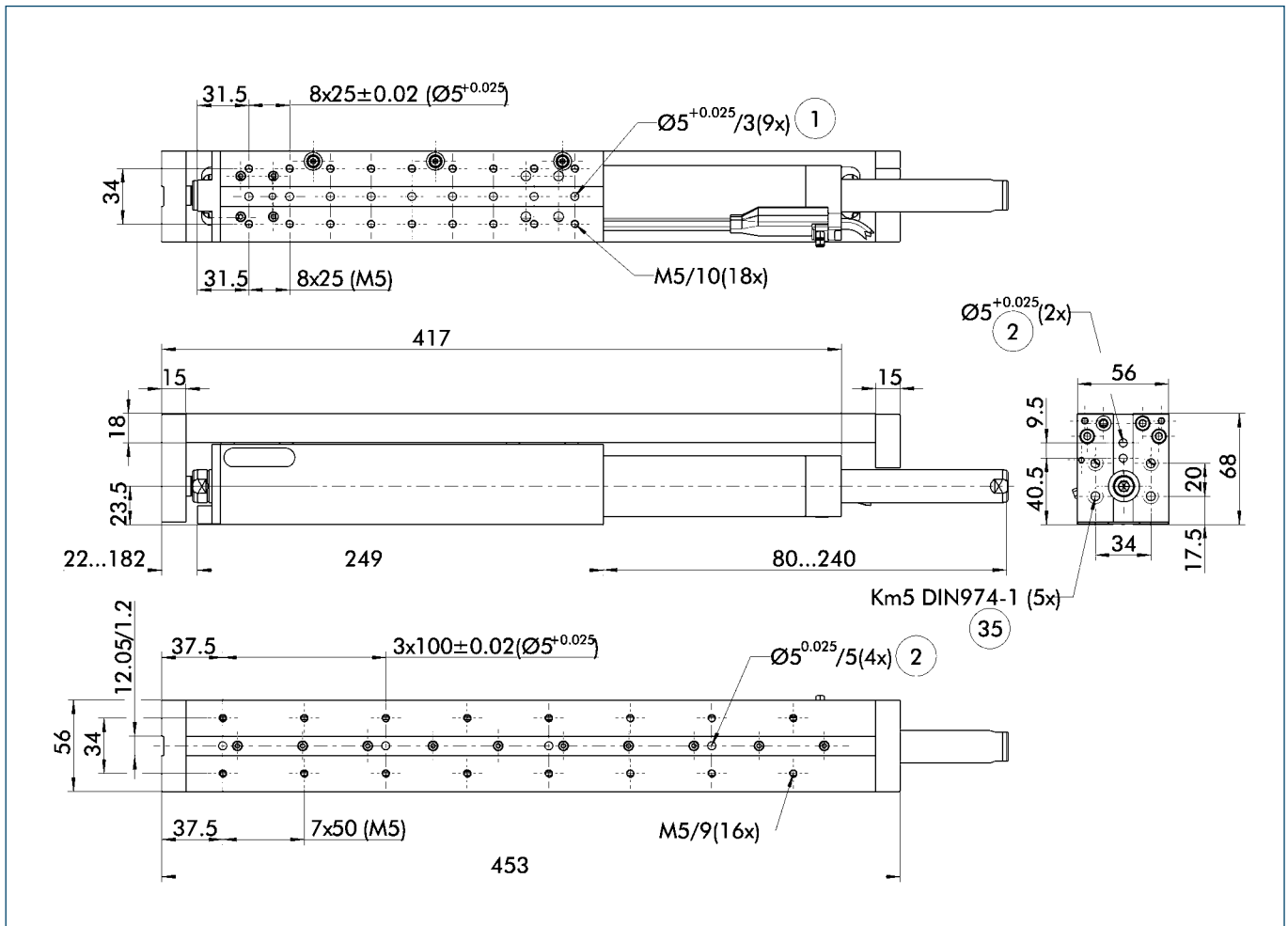
## Technical data

Designation		ELM 37-H160	ELM 37-H260
	ID	0314367	0314371
Max. driving force	[N]	160	160
Rated force	[N]	100	100
Max. speed	[m/s]	1.4	1.4
Max. acceleration	[m/s <sup>2</sup> ]	35	35
Max. useful load (horizontal)	[kg]	8	6
Max. useful stroke	[mm]	160	260
Rated current	[A]	2.4	2.4
Max. current	[A]	5	5
Mass	[kg]	4.95	5.5
Repeat accuracy	[mm]	± 0.05	± 0.05
Max. stator temperature	[°C]	65	65

### OPTIONS and their characteristics

Full protection version	ID	0314369	0314373
Designation		ELM 37-H160-ASP	ELM 37-H260-ASP
Stroke loss of nominal stroke (on the rod side)	[mm]	0	0
Mass	[kg]	5.25	5.83
Static holding force	[N]	350	350
Max. axial backlash of the clamping	[mm]	0.25	0.25
Can be combined with GA		Yes	Yes
Can be combined with MK		Yes	Yes
Can be combined with SD		Yes	Yes
Can be combined with MA		Yes	Yes

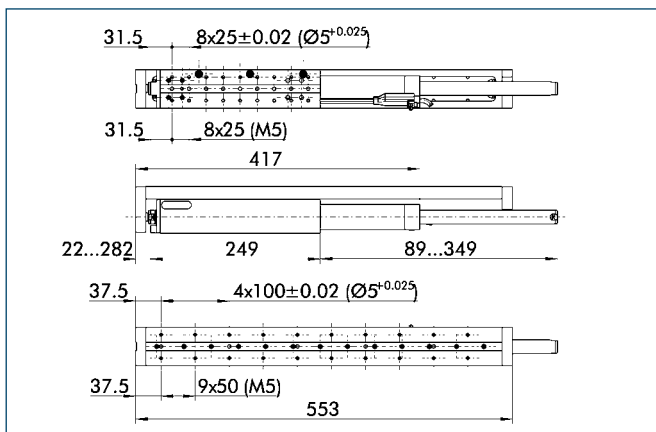
## Main views



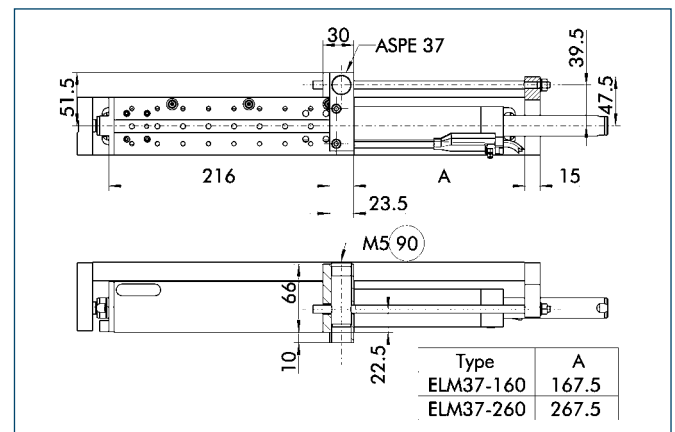
- ① Connection, linear unit
- ① Connection of the assembly
- ③⑤ Back

The recommended method to attached the linear module is on the base body and the payload on the slide. For reverse installation, the bending radius of the cable always has to be taken into consideration.

## Stroke variant, ELM 37-H260



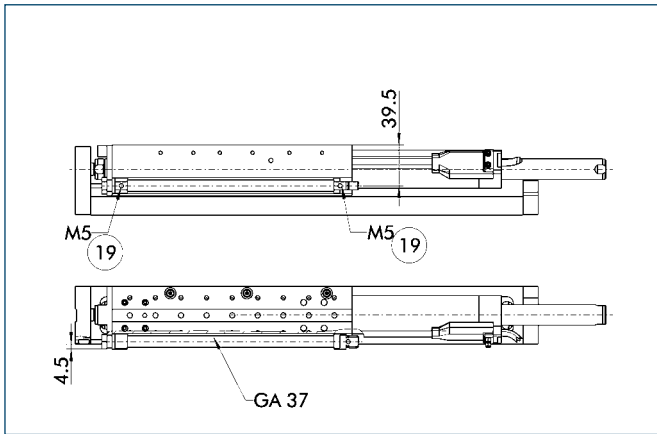
## Rod lock



- ⑨⑩ Air connection, rod-lock

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.

## Weight compensation device, GA 37

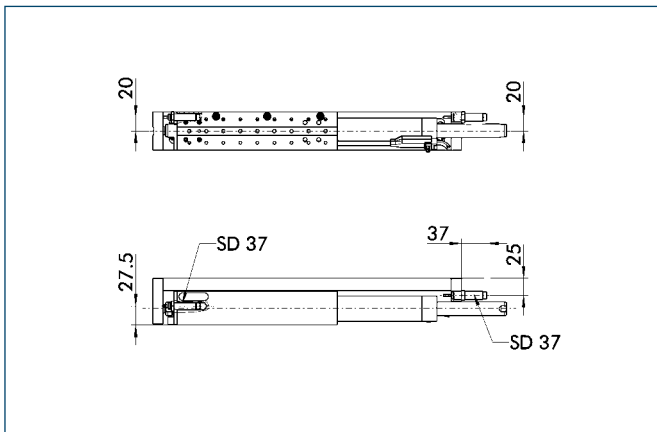


19 Air connection

For vertical use of the linear module, a pneumatic weight compensation device can be integrated to compensate for the slide weight and the additional weight in the linear module.

Designation	ID
GA 37-160	0314236
GA 37-260	0314237

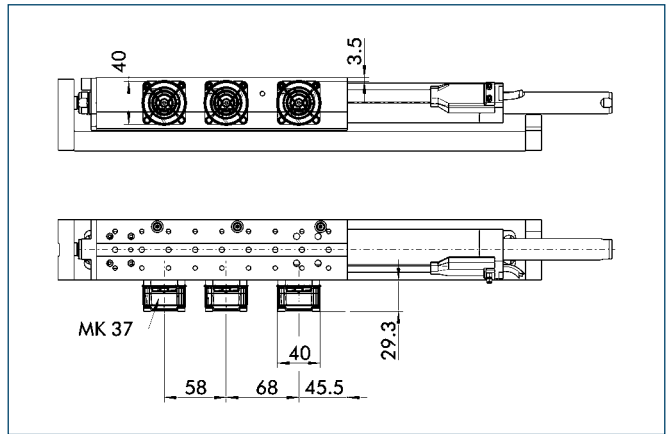
## Safety damper, SD 37



To prevent any mechanical damage due to a malfunction, the modules can be equipped with hydraulic shock absorbers.

Designation	ID
SD 37	0314263

## Fan cooling, MK 37

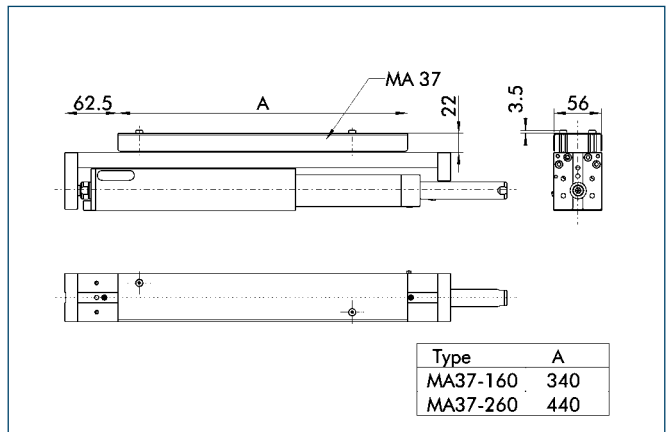


Fans can be mounted on the modules if there is an increased need for constant force. The forced cooling leads to the constant force being nearly doubled.

Alternatively to cooling with a fan, it is also possible to cool with compressed air (approximately 0.5 bar) via a connection which is provided for this.

Designation	ID
MK 37	0314242

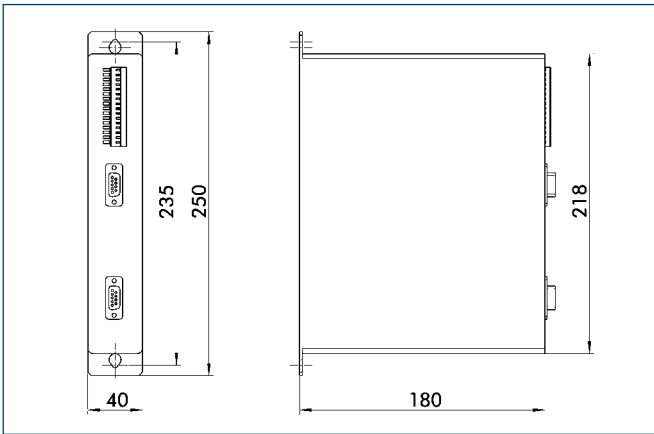
## Cover, MA 37



For guiding electric and pneumatic lines, a cover can be mounted.

Designation	ID
MA 37-160	0314239
MA 37-260	0314240

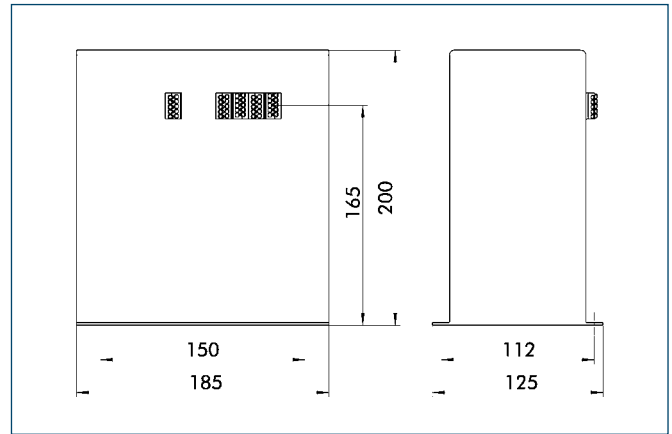
**Servo controllers**



To control the portal modules, the following servo controller interfaces are possible:

- Parallel interface with 8 positions
- Parallel interface with 256 positions
- Profibus
- CANopen
- DeviceNet
- RS232

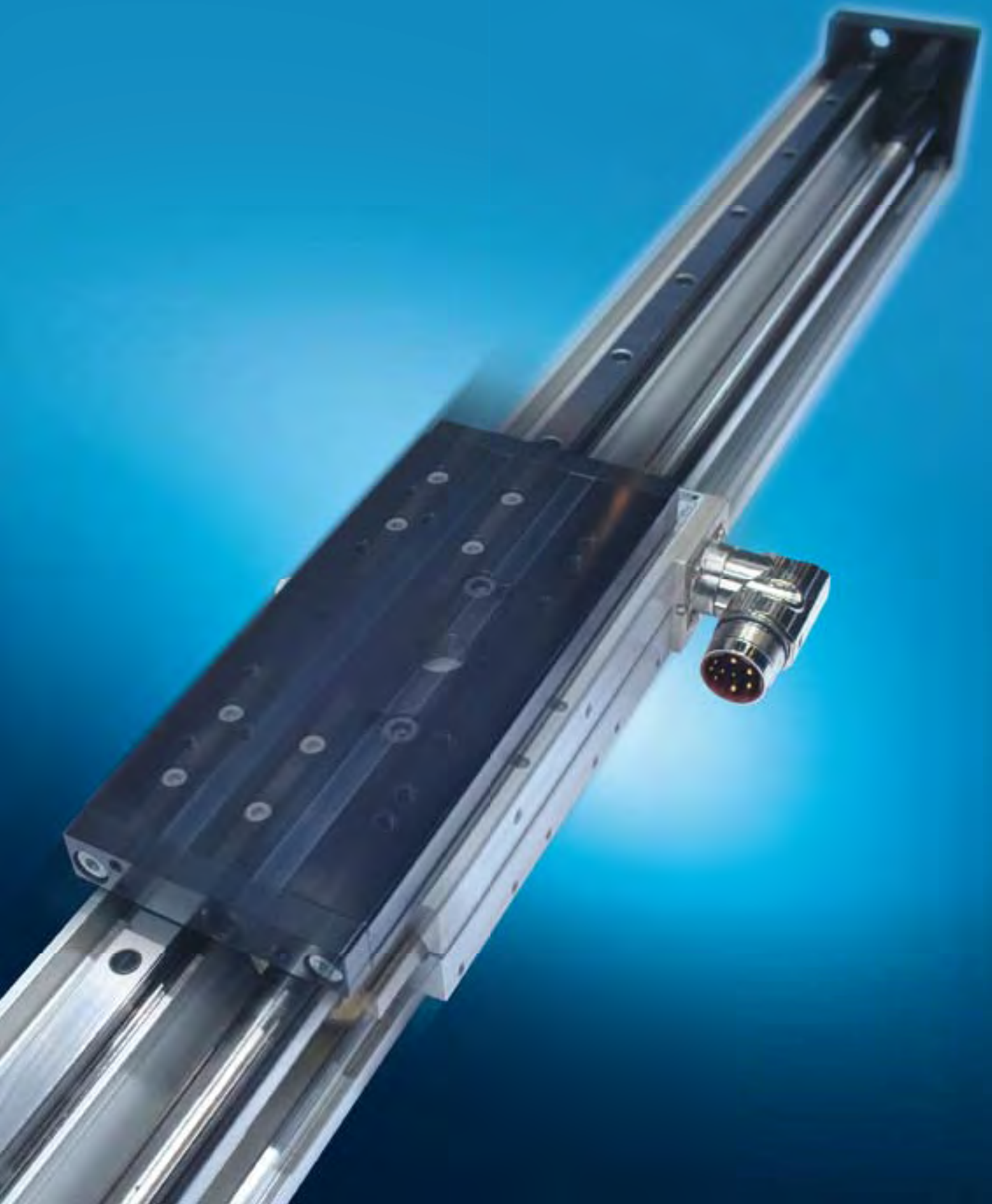
**Transformer power supply unit**



Designation	ID
T01-72/420	0314253

 You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.

# Portal modules





# PORTAL MODULES

Series	Size	Page
<b>Portal modules</b>		
PMP		114
PMP	16	118
PMP	25	124
EPM		130
EPM	37	138
EPM	48	146

The SCHUNK program offers linear technology to meet every need: precise mini-slides, pneumatic stroke modules, bending-resistant gantry axes and axes with servo-electric linear motor drive. For further information about SCHUNK linear modules, please consult our main catalog. Here is an extract from our range of products.



## Electric portal modules



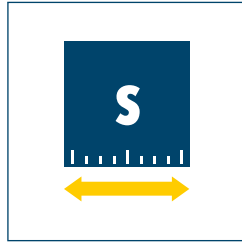
**Linear axes with toothed-belt drive and ball-screw spindle drive HSB system**



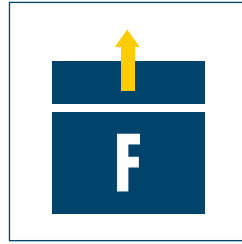
**Heavy load linear axes with direct drive and roller guide GAS system**



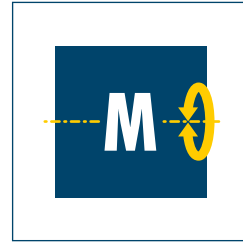
**Sizes**  
16 .. 25



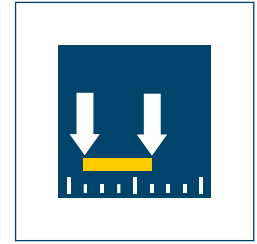
**Useful stroke**  
Up to 5000 mm



**Driving force**  
100 N .. 250 N

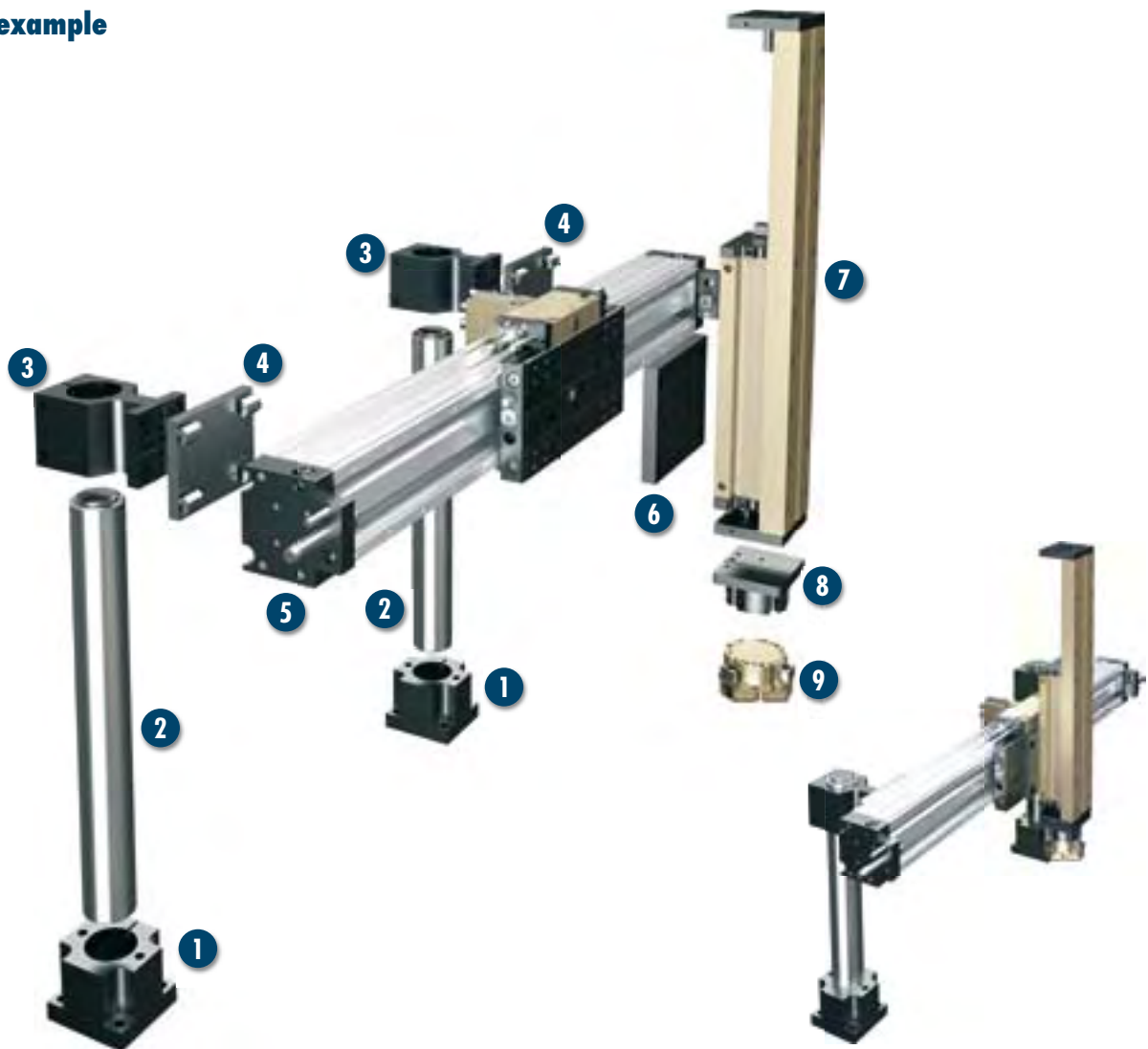


**Moment load**  
Up to 500 Nm



**Repeat accuracy**  
 $\pm 0.02$  mm

### Application example



**Pneumatic cross gantry with intermediate position for transferring medium-sized components**

- 1** Single base support, SOE 055
- 2** Hollow pillar, SLH 055-0500
- 3** Single mounting plate, APEV 085
- 4** Adapter plate, APPM 250
- 5** Portal module, PMP 25-0600
- 6** Adapter plate, APL 230
- 7** Linear module, LM 100-H150
- 8** Adapter, ASG 0560
- 9** 3-finger universal gripper, PZN-plus 64

## Portal module

With integrated pneumatic drive cylinder and pre-loaded recirculating ball-bearing guides with no backlash

### Area of application

For economical, robust and precise portal systems with long stroke range. Use in dirty environments is also possible due to the "Bellow" option. Standardized connecting elements permit numerous combinations with other GEMOTEC system elements.

### Advantages – your benefits

#### High moment load capacity

Through use of high-performance profiled rail guides

#### High degree of rigidity

Thanks to special extruded profile geometry

#### High precision

Through machined locating surfaces for the guide

#### Economical complete solutions

Thanks to numerous axis combination possibilities

#### Numerous options

(cable drag chain, bellow, intermediate position, etc.) for special optimization to fit your particular application

#### Standardized mounting bores

For numerous combinations with other GEMOTEC system elements



### General information about the series

#### Guidance

Recirculating ball-bearing guide

#### Material

Aluminum extruded section; hardened steel functional components

#### Actuation

Pneumatic, via filtered compressed air (10 µm): dry, lubricated, or non-lubricated  
Pressurizing medium: requirements for compressed air quality class according to DIN ISO 8573-1: Quality class 4

#### Ambient temperature range

From 5°C to 60°C

#### Operating pressure range

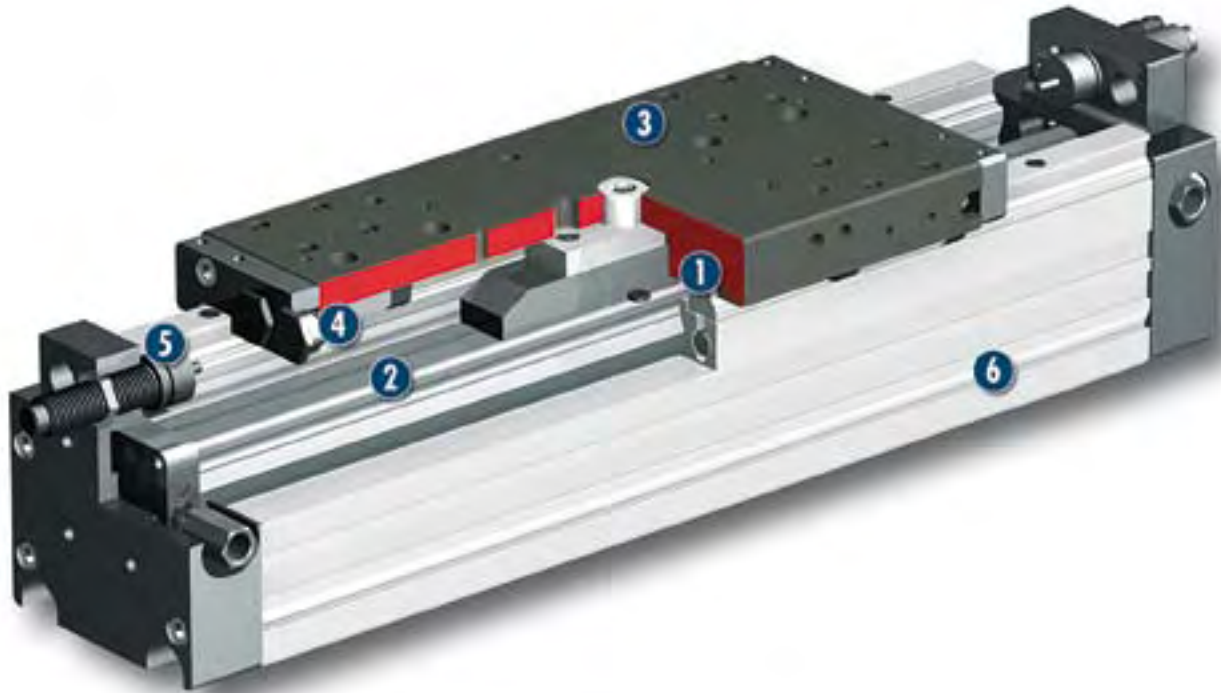
2 bar to 8 bar

#### Warranty

24 months

For production reasons, the colors may vary from those shown in the catalog.

### Cross-section of function



- 1 Profiled rail guide**  
 For maximum positioning accuracy and moment loads
- 2 Drive**  
 Rodless cylinder; simple and yet reliable
- 3 Modular design hole pattern**  
 Completely integrated in the module system
- 4 Dampening adjustment**  
 Adjustment of the dampening characteristic
- 5 End position setting**  
 Convenient adjustment using the shock absorber threads
- 6 Profile**  
 Self-supporting and robust

### Description of function

The axis carriage is driven by a rodless pneumatic cylinder and precisely guided by profiled rail guides.

### Options and special information

#### Bellow version

Increased degree of protection against penetrating materials; for use in dirty environments.

This module can be combined as standard with many elements from the modular system. You can find more information in the "Accessories" chapter.

## Accessories

Accessories from SCHUNK – the ideal components for the best functionality, reliability, and controlled production for all automation modules.

Intermediate stop, AS



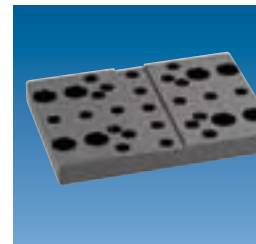
Fittings



T-nut



Adapter plates



Cable track



Sensor cable



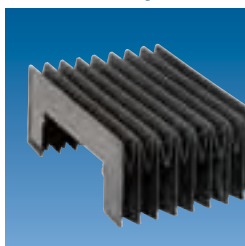
Pillar assembly systems



Pressure maintenance valve



Bellows cover, plastic



Inductive proximity switch, NI



① Please see the side views at the end of the respective size for information concerning specific sizes, accessories availability for that size, designation, and ID numbers. You can find more information about our accessories program in the “Accessories” part of the catalog.

## General information about the series

### Repeat accuracy

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

### Stroke

The stroke is the maximum nominal stroke of the unit. This can be shortened on both sides by the shock absorbers.

### Layout or sizing

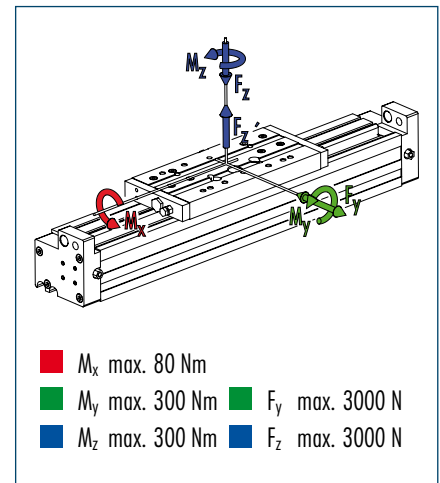
For layout or sizing of linear modules, we recommend using our TOOLBOX sizing software, which can be obtained at [www.schunk.com](http://www.schunk.com). Sizing the selected unit is absolutely necessary, since otherwise overloading can result.

### Ambient conditions

The modules are designed mainly for use in clean ambient conditions. In case of other ambient conditions, SCHUNK offers various options to protect the units. Please contact us for assistance.



## Moment load

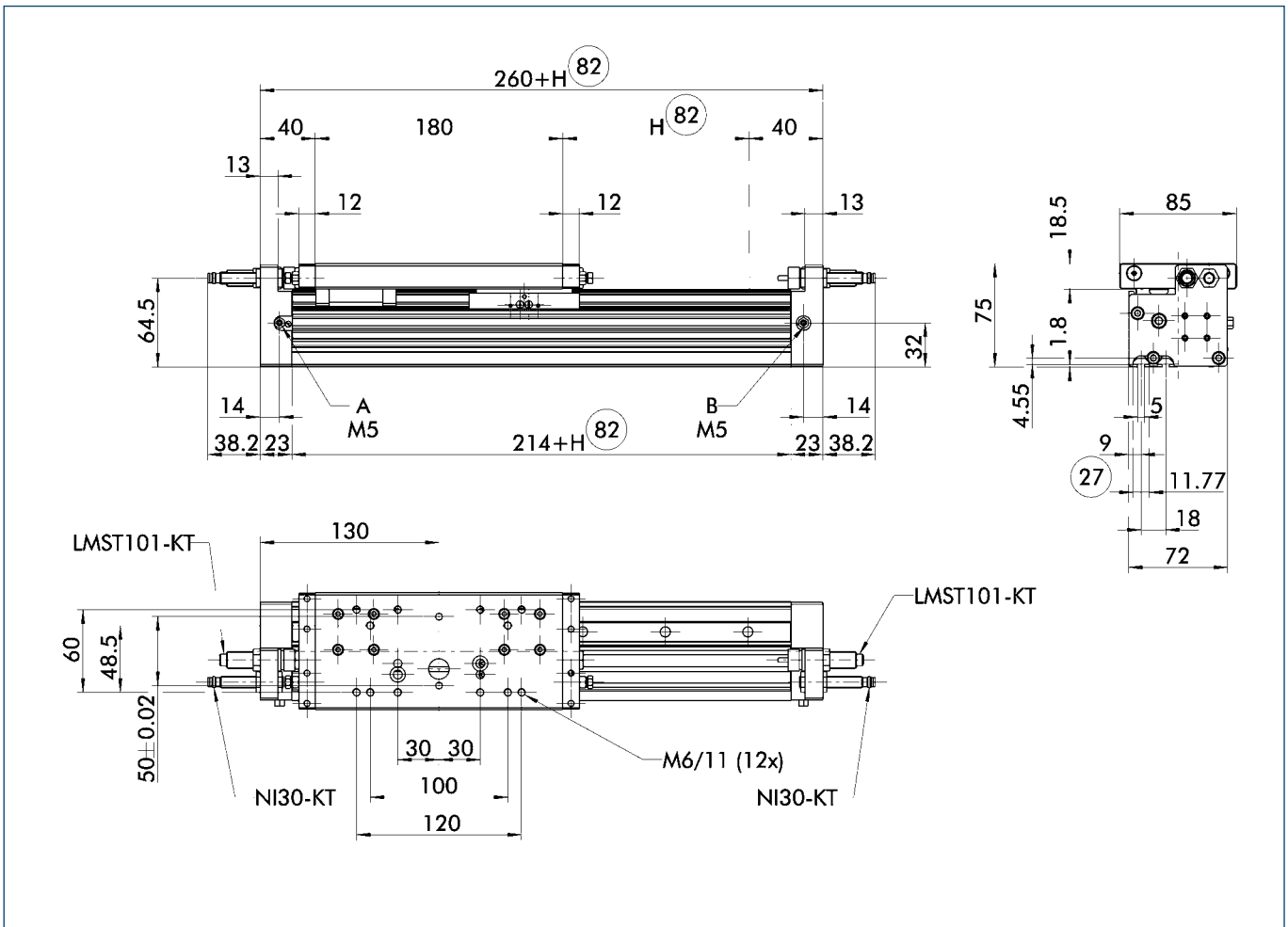


① Moments and forces may occur simultaneously.

## Technical data

Designation		PMP 16
Piston diameter	[mm]	16
Max. stroke length	[mm]	5000
Feeding force at 6 bar	[N]	100
Mass at 0 mm stroke	[kg]	3.0
Mass per 1 mm stroke	[kg]	0.0065
Fluid consumption/10 mm stroke	[cm <sup>3</sup> ]	2
Minimum pressure	[bar]	3
Maximum pressure	[bar]	10
Nominal operating pressure	[bar]	6
Min. ambient temperature	[°C]	5
Max. ambient temperature	[°C]	60
Repeat accuracy	[mm]	± 0.02

### Main views



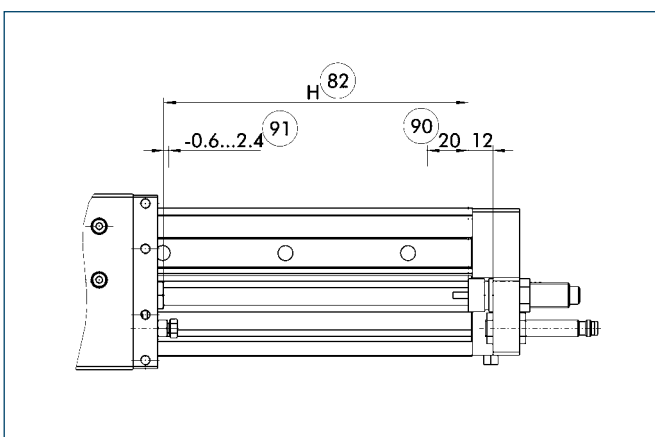
A, a Main and direct connections, extend linear unit

B, b Main and direct connections, retract linear unit

27 Mounting groove for T-nuts

82 Stroke

### Stroke adjustment



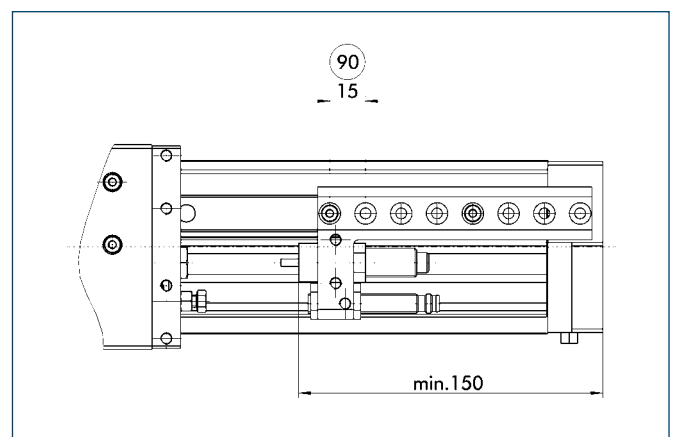
82 Stroke

90 Stroke adjustment range

91 Dampening stroke adjustment range

The nominal stroke for each end position can be finely adjusted by screwing out the shock absorber.

### Variable final stop, VE



90 Grid dimension, stroke adjustment (continuous fine adjustment; see stroke adjustment illustration)

With the variable end stop, the end positions can be continuously set over the whole length of the stroke to, for example, arrange for profile lengths to be independent of actual used stroke. Additional carrier profiles are then not needed.

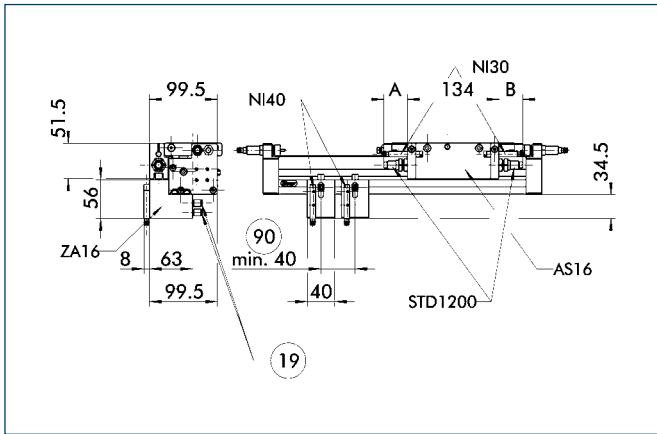
Designation

ID

VE 16

0313609

### Stop slide/intermediate stop



- 19 Air connection
- 90 Minimum distance between the intermediate stops, ZA

By assembling AS and ZA, several intermediate positions can be achieved. For the AS 16-1 stop slide, the intermediate position can only be approached from one side. For the AS 16-2 stop slide, the intermediate position can be approached from both sides.

The first intermediate position is at a minimum of 30 mm before the end position.

Designation	A	B	Number of shock absorbers
AS 16-1	5	35	1
AS 16-2	35	35	2

### Cable track KSH, horizontal slide

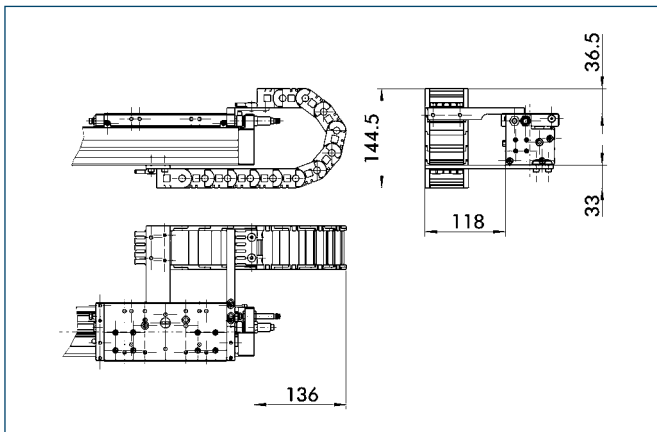
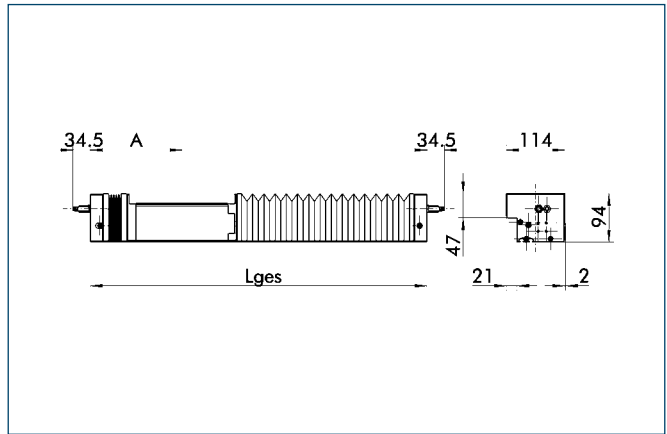


Figure: Attachment variant 1  
Other attachment variants are possible as standard. Please contact us for assistance.

### Bellow



The "Bellow" option increases the degree of protection against penetrating materials. The variable dimensions are calculated as follows:

**Formulas for calculation of variable dimensions:**

$$FZ = \text{nominal stroke} \times 0.0375 \text{ [rounded off to the nearest whole number]}$$

$$FBB = FZ \times 3.3 \text{ [rounded off to the nearest whole number]}$$

$$Lges = 278 + \text{nominal stroke} + 2 \times FBB$$

$$A = 139 + FBB$$

**Sample calculation; nominal stroke, 500 mm:**

$$FZ = 500 \text{ mm} \times 0.0375 = 18.75 \Rightarrow FZ = 19 \text{ [rounded off to the nearest whole number]}$$

$$FBB = 19 \times 3.3 = 62.7 \Rightarrow FBB = 63 \text{ [rounded off to the nearest whole number]}$$

$$Lges = 278 + 500 \text{ mm} + 2 \times 63 \Rightarrow Lges = 904 \text{ mm}$$

$$A = 139 + 63 \Rightarrow A = 202 \text{ mm}$$

### Cable track KSV, vertical slide

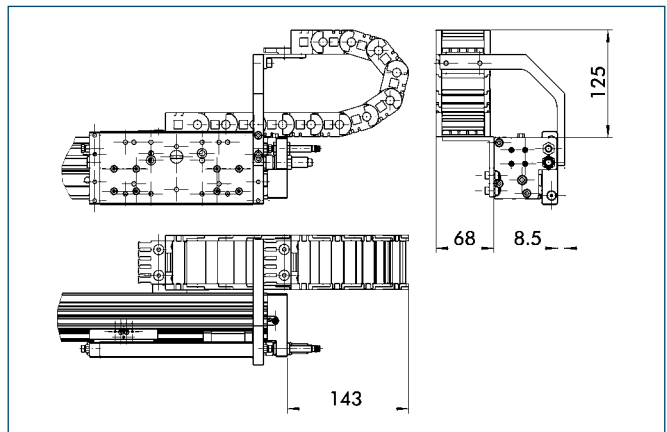
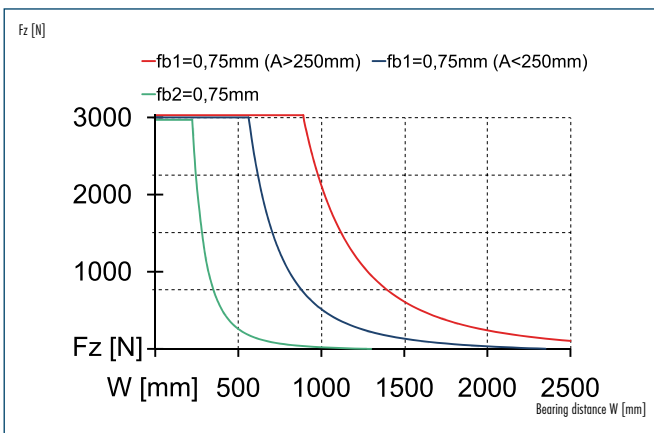
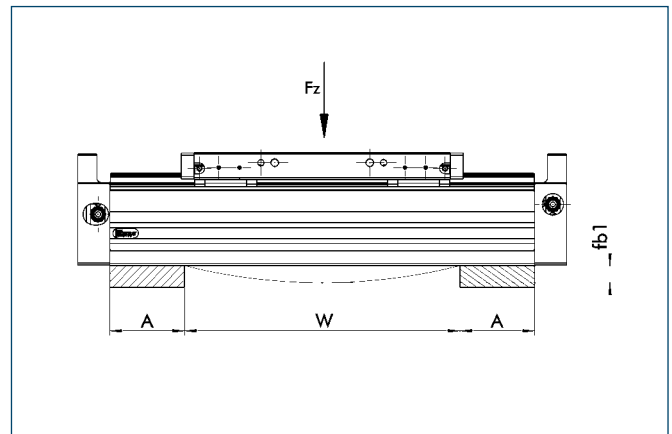
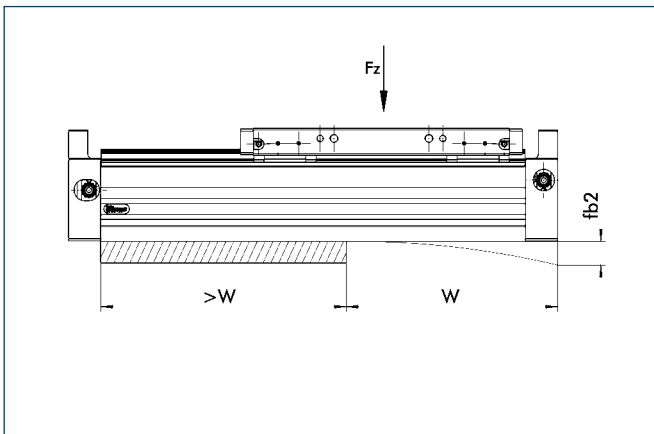


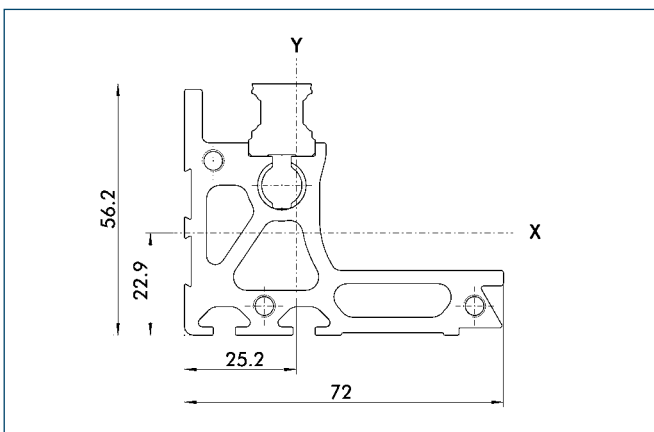
Figure: Attachment variant 1  
Other attachment variants are possible as standard. Please contact us for assistance.



### Deflection



### Section data



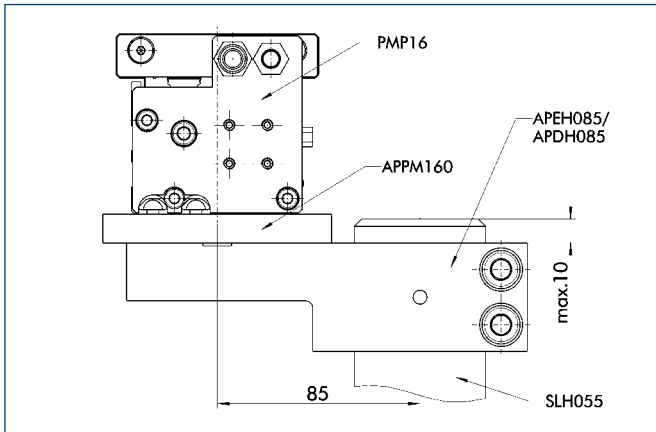
#### Designation

Profile surface A	[mm <sup>2</sup> ]	1294
Mass/1000 mm	[kg]	4.8
Planar moment of inertia $I_x$	[cm <sup>4</sup> ]	37.1
Planar moment of inertia $I_y$	[cm <sup>4</sup> ]	47.3
Load torque $I_x$	[cm <sup>3</sup> ]	11.1
Load torque $I_y$	[cm <sup>3</sup> ]	10.1



You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.

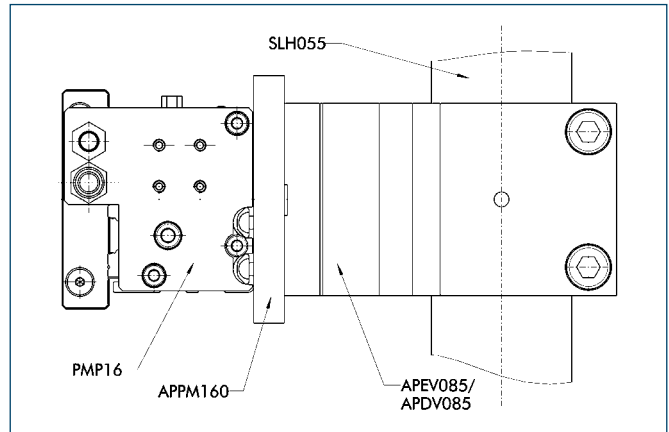
### Attachment to the pillar profile modular system,



This view shows the attachment of the portal module to the pillar profile modular system. You can find more information and components in the “Assembly systems” chapter.

Designation	ID	Scope of delivery
APPM 160	0313397	4 x NT-M5, 4 x M5 x 12 DIN912

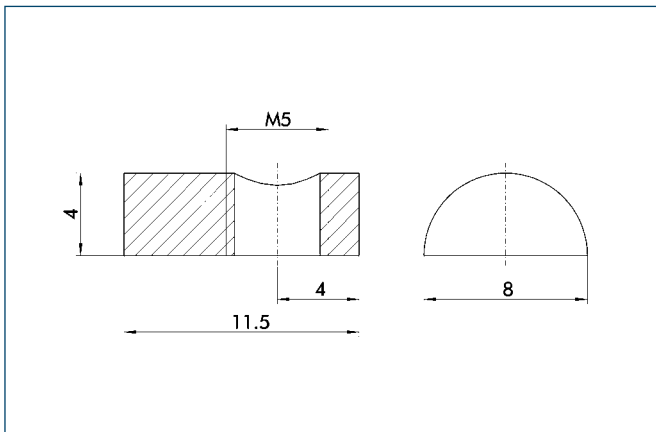
### Attachment to the pillar profile modular system,




This view shows the attachment of the portal module to the pillar profile modular system. You can find more information and components in the “Assembly systems” chapter.

Designation	ID	Scope of delivery
APPM 160	0313397	4 x NT-M5, 4 x M5 x 12 DIN912

## Mounting

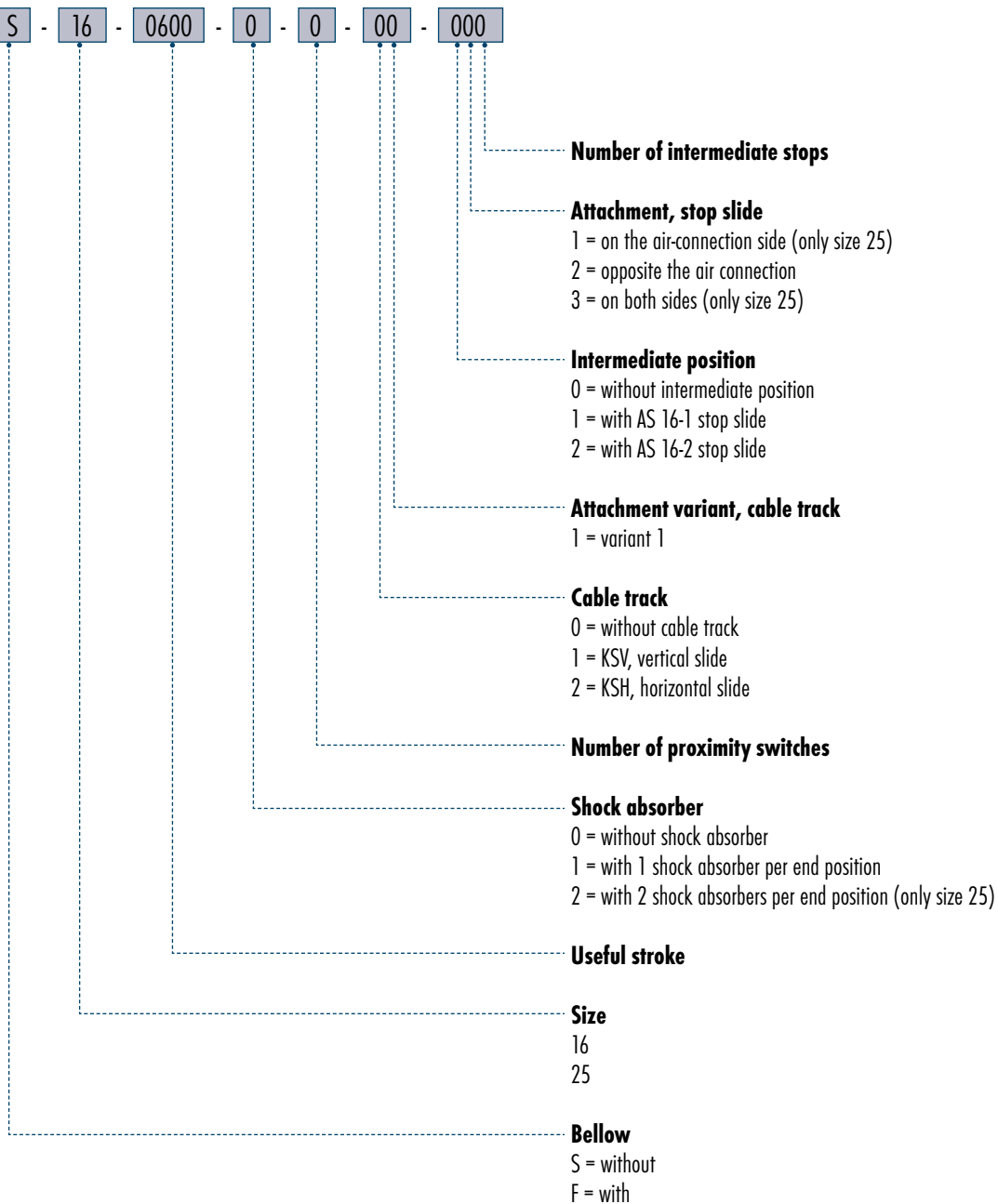


Designation	ID
NT-M5	0313607

 You can find further information and components for the accessories mentioned here in the “Accessories” part of the catalog.

### Sample order

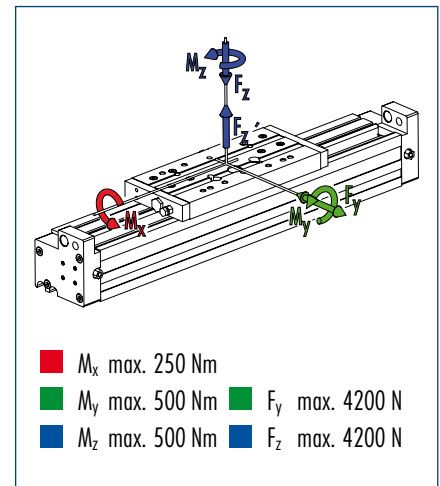
PMP - S - 16 - 0600 - 0 - 0 - 00 - 000



① Not all combinations of options are possible. Please speak to us in order to find the right combination for your application.



## Moment load

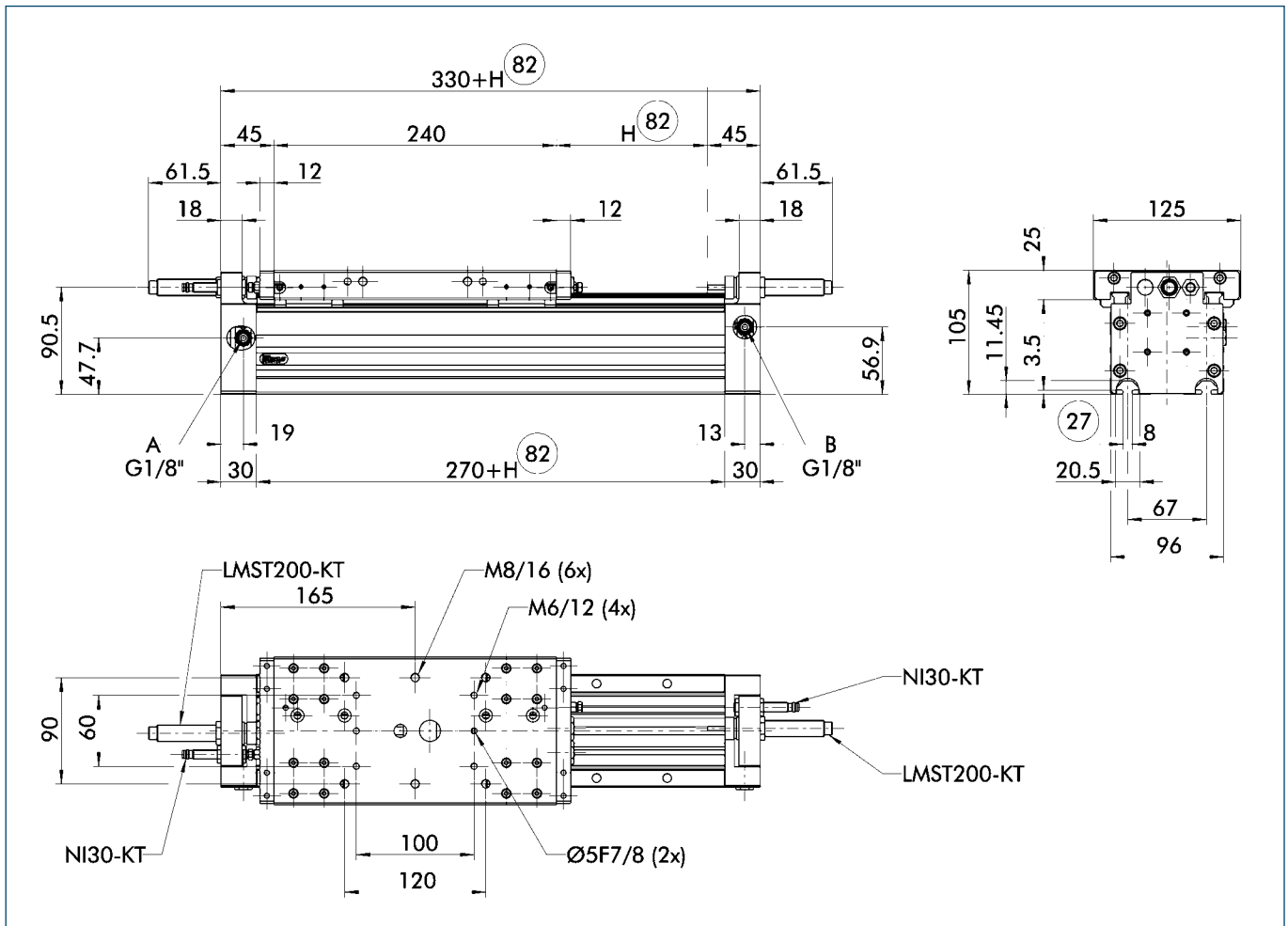


① Moments and forces may occur simultaneously.

## Technical data

Designation		PMP 25
Piston diameter	[mm]	25
Max. stroke length	[mm]	5000
Feeding force at 6 bar	[N]	250
Mass at 0 mm stroke	[kg]	6.1
Mass per 1 mm stroke	[kg]	0.0103
Fluid consumption/10 mm stroke	[cm <sup>3</sup> ]	4.9
Minimum pressure	[bar]	3
Maximum pressure	[bar]	10
Nominal operating pressure	[bar]	6
Min. ambient temperature	[°C]	5
Max. ambient temperature	[°C]	60
Repeat accuracy	[mm]	± 0.02

### Main views



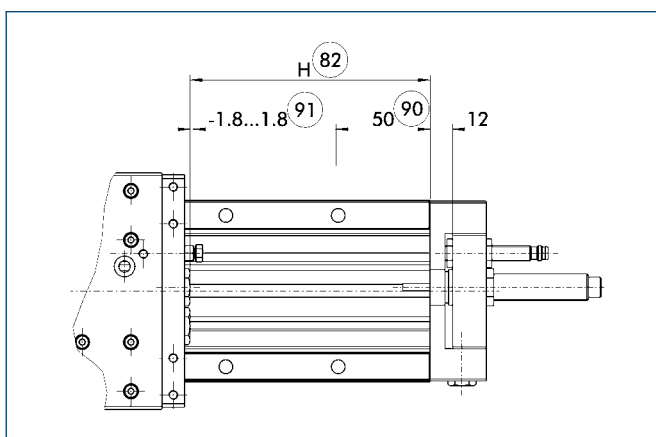
A, a Main and direct connections, extend linear unit

B, b Main and direct connections, retract linear unit

27 Mounting groove for T-nuts

82 Stroke

### Stroke adjustment



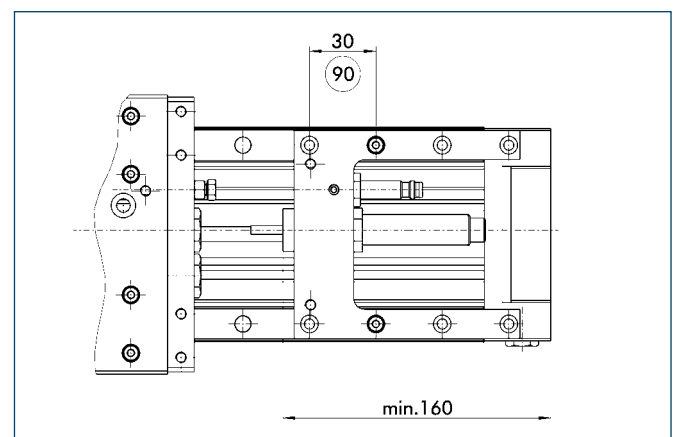
82 Stroke

90 Stroke adjustment range

91 Dampening stroke adjustment range

The nominal stroke for each end position can be finely adjusted by screwing out the shock absorber.

### Variable final stop, VE

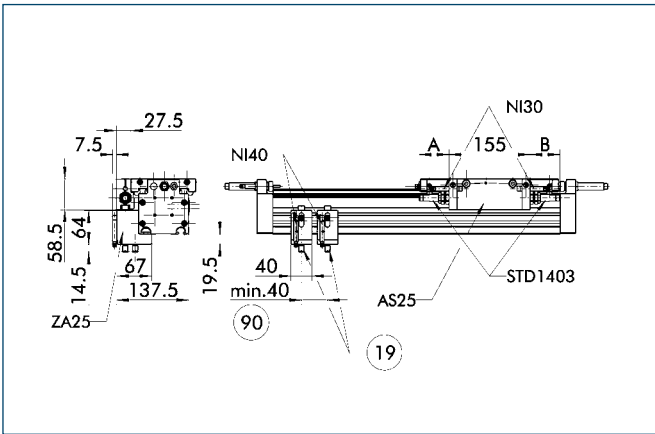


90 Grid dimension, stroke adjustment (continuous fine adjustment; see stroke adjustment illustration)

With the variable end stop, the end positions can be continuously set over the whole length of the stroke to, for example, arrange for profile lengths to be independent of actual used stroke. Additional carrier profiles are then not needed.

Designation	ID
VE 25	0313610

### Stop slide/intermediate stop



- 19 Air connection
- 90 Minimum distance between the intermediate stops, ZA

By assembling AS and ZA, several intermediate positions can be achieved. For the AS 25-1 stop slide, the intermediate position can only be approached from one side. For the AS 25-2 stop slide, the intermediate position can be approached from both sides. It is also possible to attach two stop slides to the main slide. This allows intermediate positions to be set in distances of 1 mm or less. The first intermediate position at least 30 mm before the end position.

Designation	A	B	Number of shock absorbers
AS 25-1	6	57	1
AS 25-2	57	57	2

### Cable track KSH, horizontal slide

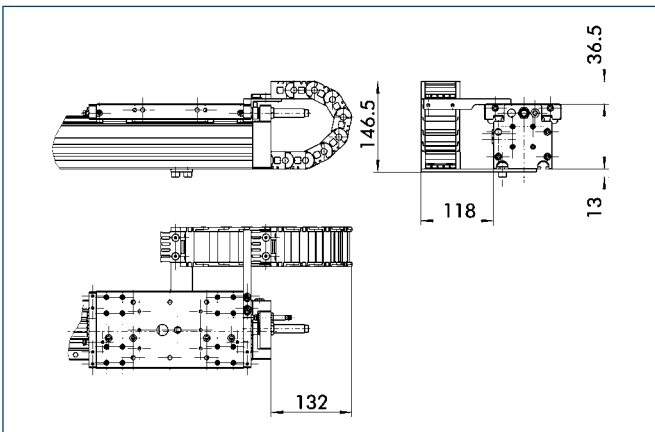
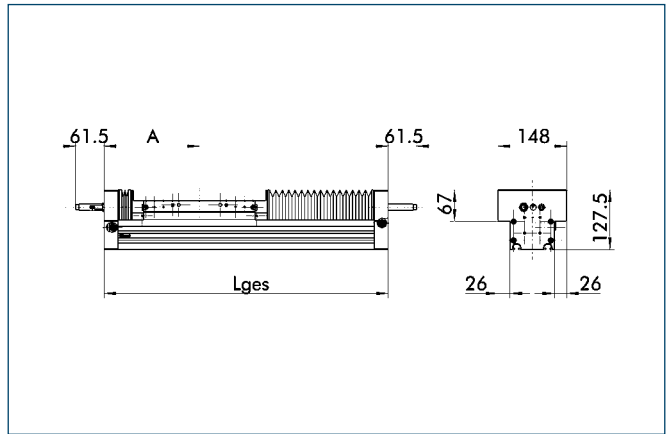


Figure: Attachment variant 1  
Other attachment variants are possible as standard. Please contact us for assistance.

### Bellow



The "Bellow" option increases the degree of protection against penetrating materials. The variable dimensions are calculated as follows:

- Formulas for calculation of variable dimensions:**  
 $FZ = \text{nominal stroke} \times 0.0288$  [rounded off to the nearest whole number]  
 $FBB = FZ \times 3.3$  [rounded off to the nearest whole number]  
 $Lges = 370 + \text{nominal stroke} + 2 \times FBB$   
 $A = 185 + FBB$

**Sample calculation; nominal stroke, 500 mm:**  
 $FZ = 500 \text{ mm} \times 0.0288 = 14.4 \Rightarrow FZ = 15$  [rounded off to the nearest whole number]  
 $FBB = 15 \times 3.3 = 49.5 \Rightarrow FBB = 50$  [rounded off to the nearest whole number]  
 $Lges = 370 + 500 \text{ mm} + 2 \times 50 \Rightarrow Lges = 970 \text{ mm}$   
 $A = 185 + 50 \Rightarrow A = 235 \text{ mm}$

### Cable track KSV, vertical slide

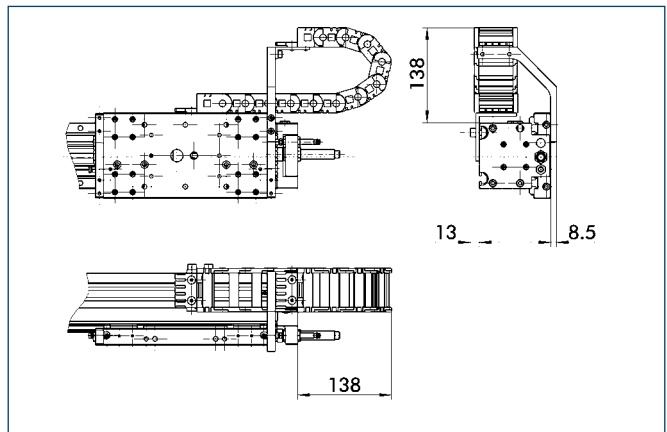
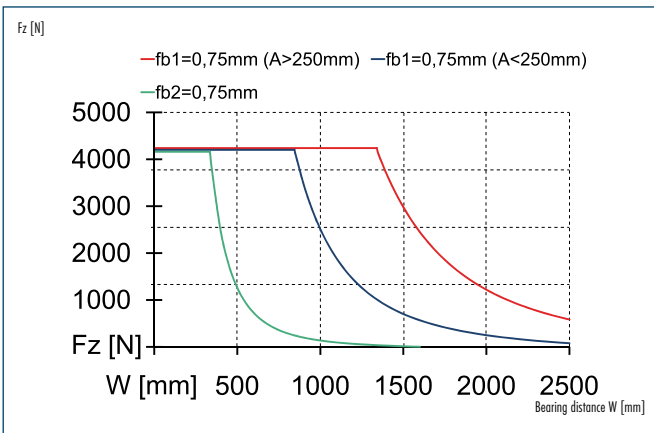
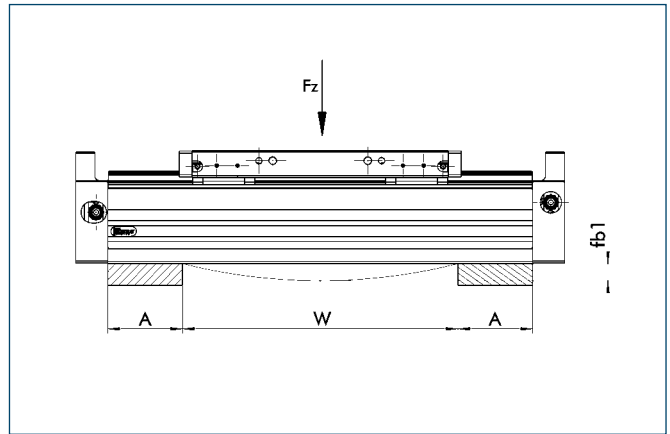
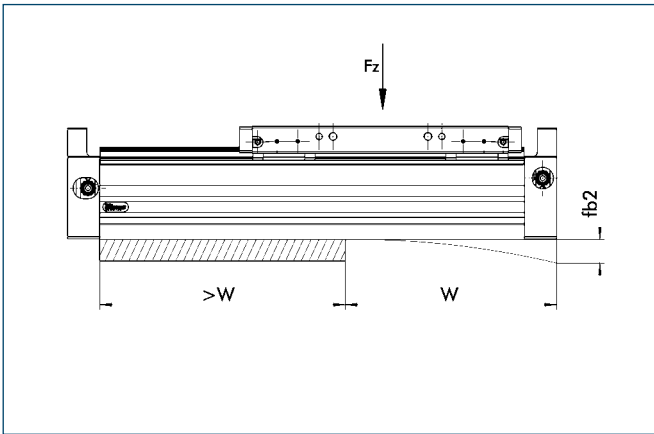
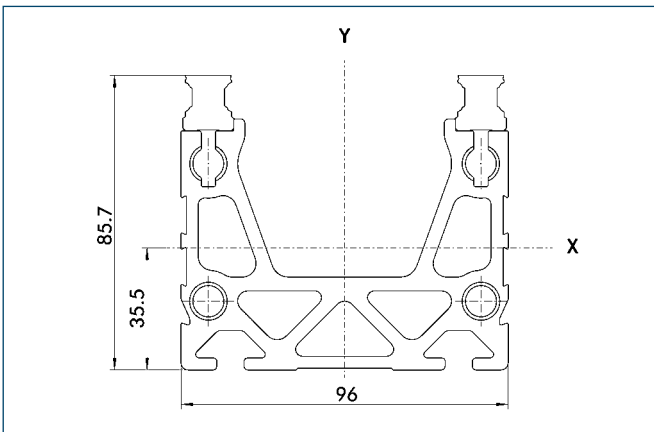


Figure: Attachment variant 1  
Other attachment variants are possible as standard. Please contact us for assistance.

### Deflection



### Section data

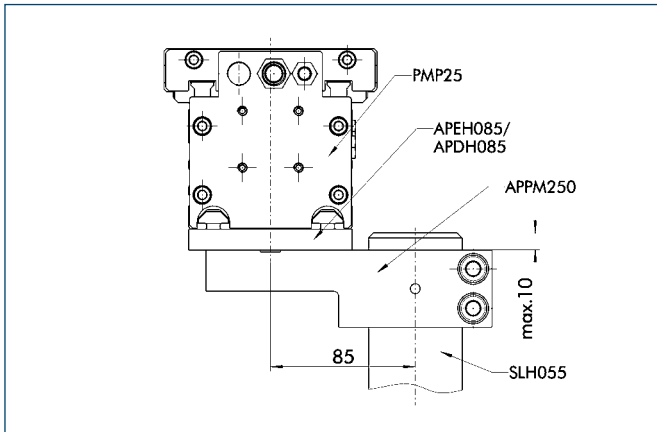


#### Designation

Profile surface A	[mm <sup>2</sup> ]	2698.4
Mass/1000 mm	[kg]	9.9
Planar moment of inertia I <sub>x</sub>	[cm <sup>4</sup> ]	177.4
Planar moment of inertia I <sub>y</sub>	[cm <sup>4</sup> ]	313.2
Load torque I <sub>x</sub>	[cm <sup>3</sup> ]	35.3
Load torque I <sub>y</sub>	[cm <sup>3</sup> ]	65.3

 You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.

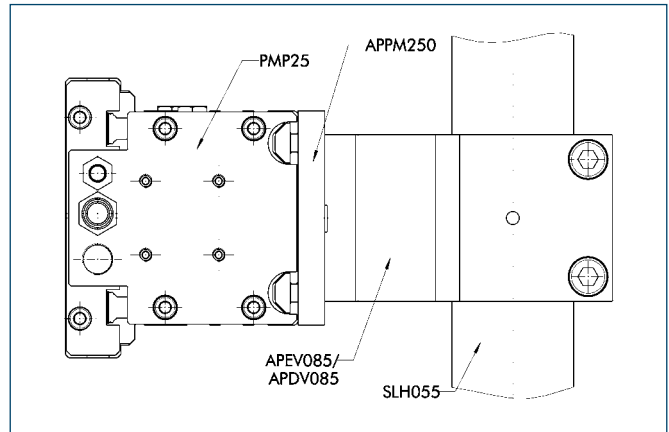
### Attachment to the pillar profile modular system,



This view shows the attachment of the portal module to the pillar profile modular system. You can find more information and components in the “Assembly systems” chapter.

Designation	ID	Scope of delivery
APPM 250	0313398	4 x NT-M8, 4 x M8 x 14 DIN912

### Attachment to the pillar profile modular system,

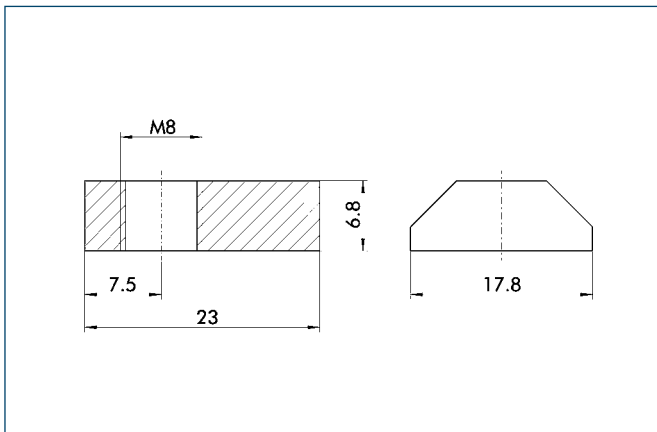


This view shows the attachment of the portal module to the pillar profile modular system.

You can find more information and components in the “Assembly systems” chapter.

Designation	ID	Scope of delivery
APPM 250	0313398	4 x NT-M8, 4 x M8 x 14 DIN912

## Mounting



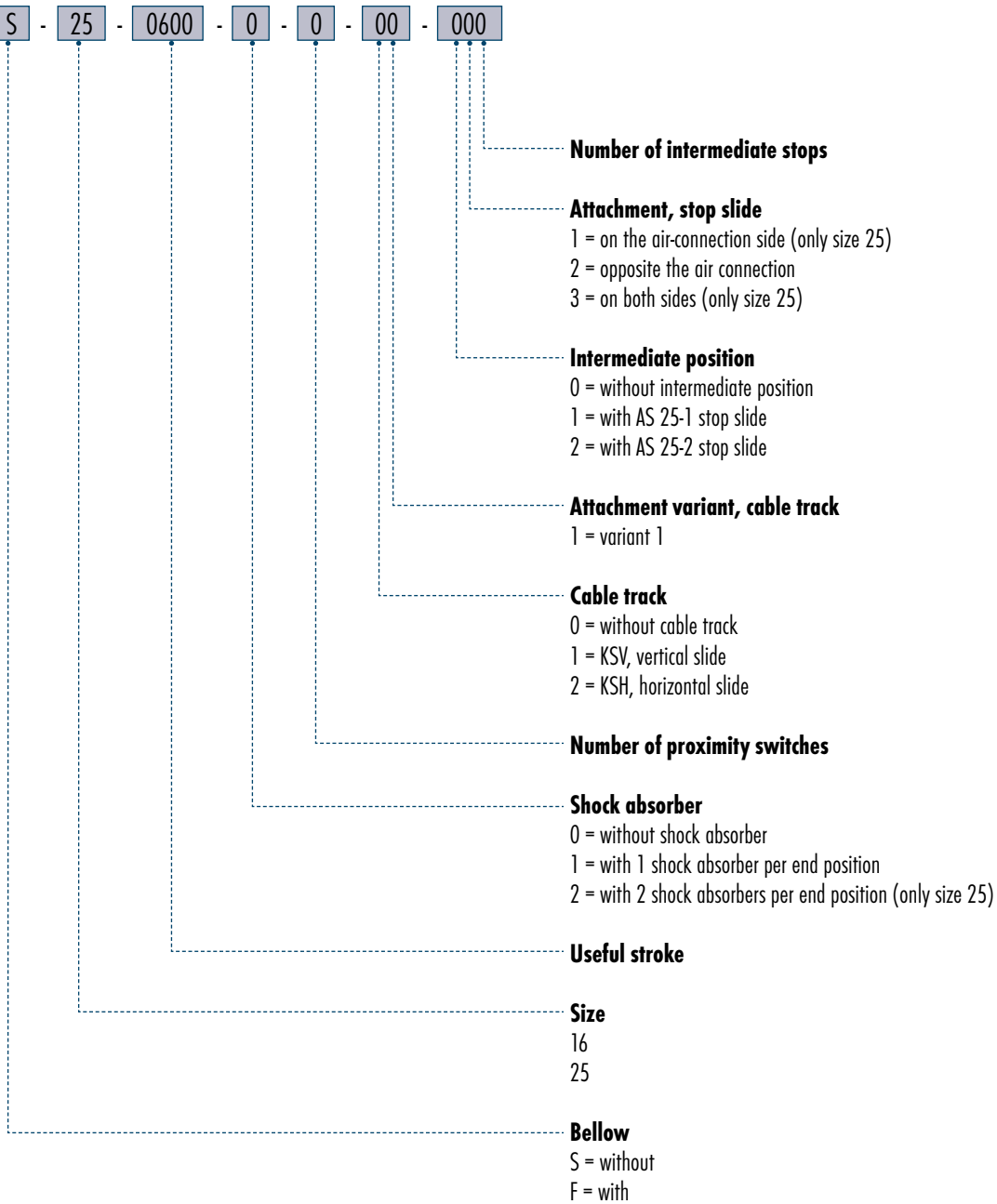
Designation	ID
NT-M8	0313608

 You can find further information and components for the accessories mentioned here in the “Accessories” part of the catalog.



### Sample order

PMP - S - 25 - 0600 - 0 - 0 - 00 - 000



① Not all combinations of options are possible. Please speak to us in order to find the right combination for your application.

### GEMOTEC system

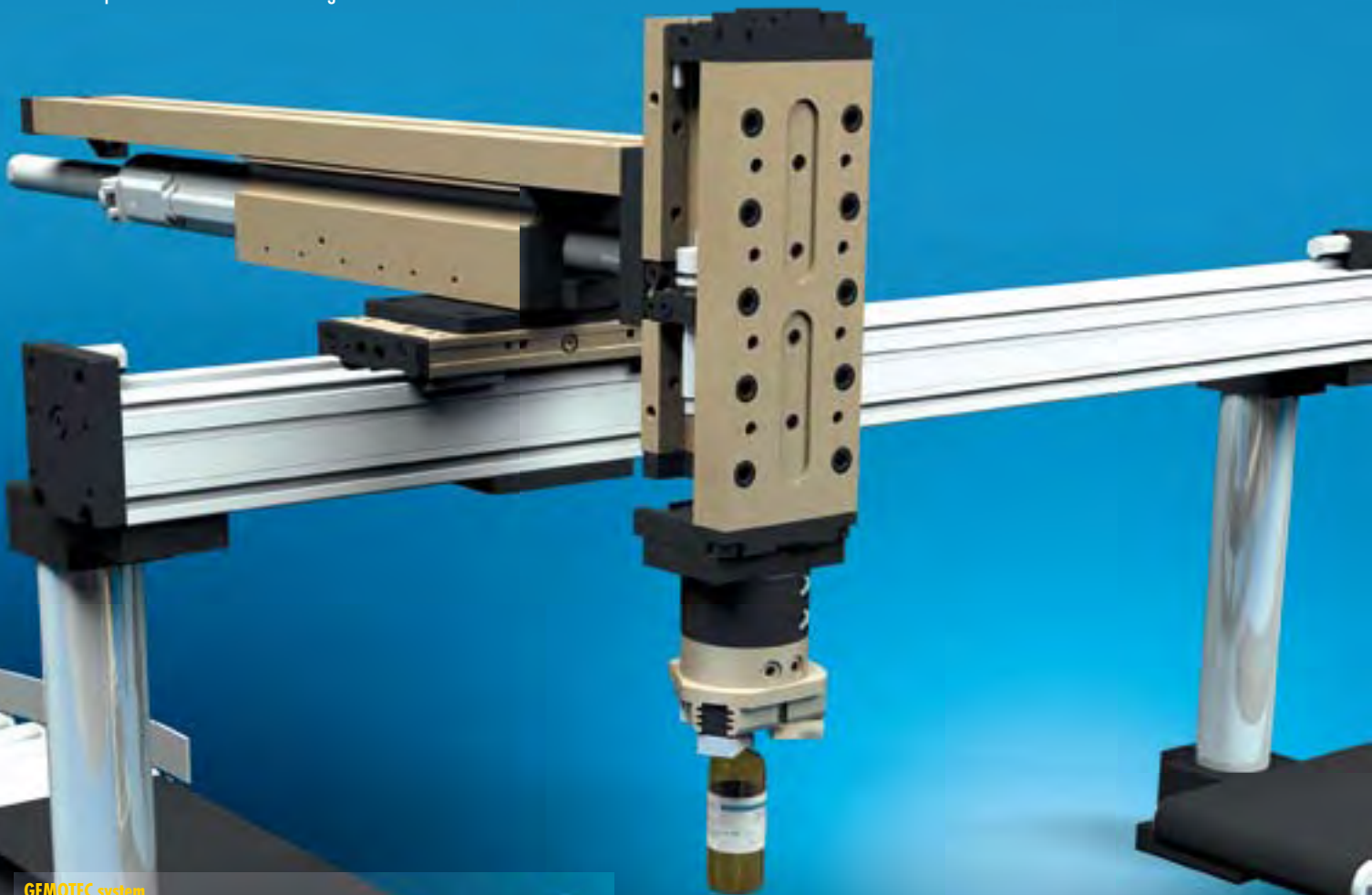
#### Modular system automation

ELM modules are simple to use, completely electric positioning systems. The position-detection measuring system, the temperature monitoring, and a precision ball track are integrated. The modules have been especially developed for versatile and highly dynamic positioning tasks which are beyond the capabilities of pneumatic drives.

The high flexibility and the unlimited compatibility with the GEMOTEC module system ensure simple solutions as well as fast, uncomplicated planning even for tasks which pose difficult technical challenges for drives.

#### Power from linear motors

ELM modules are completely ready for use and offer the highest dynamic values and accuracy. The design permits variable strokes and motion profiles. The modules are almost free from wear. They all have in common the integrated measuring system and the integrated precision ball track. Control is system-neutral or can be done using a bus system.



GEMOTEC system



#### Other electric components



Cable



Drive controller



Interfaces



Software



<b>Sizes</b>	23 and 37 (2 variants) 37 and 48 (2 variants)	<b>Useful stroke</b>	Up to 260 mm Up to 1.380 mm	<b>Driving force</b>	Up to 160 N Up to 580 N	<b>Deflection</b>	- Up to 0.75 mm	<b>Useful load</b>	Up to 8.0 kg Up to 50.0 kg	<b>Repeat accuracy</b>	± 0.05 mm ± 0.1 mm	<b>Speed</b>	Up to 1.50 m/s Up to 2.10 m/s

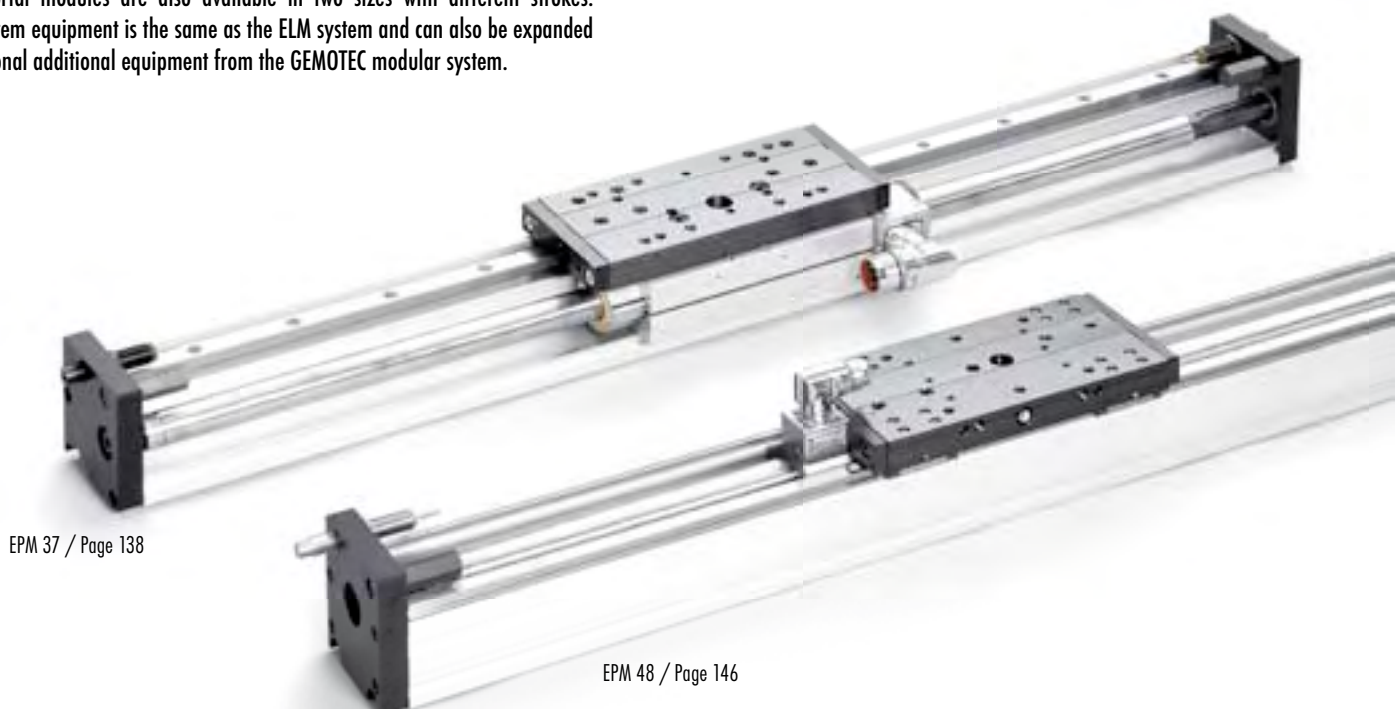
### ELM linear module, GEMOTEC system

ELM linear modules are available in two sizes with different strokes. Besides the measuring system, the temperature monitoring system is also integrated, so no further add-on pieces are needed.



### EPM portal module, GEMOTEC system

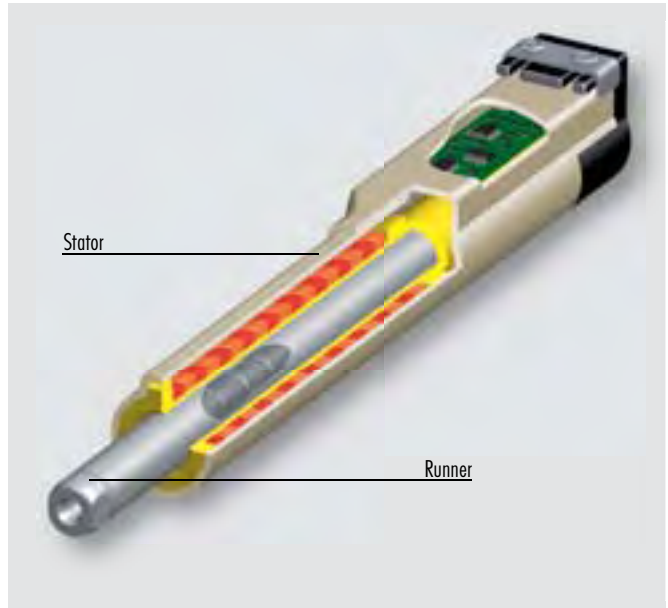
EPM portal modules are also available in two sizes with different strokes. The system equipment is the same as the ELM system and can also be expanded by optional additional equipment from the GEMOTEC modular system.



### System equipment

#### Motor

Linear motor: ELM and EPM modules are driven by linear servo motors. Movement takes place without mechanical gears. No seals or dampers are involved, which ensures a long life span even for highly dynamic rates and fast cycle times.



### Options

#### Cable sets

A single preconfigured cable between the linear motor and the servo-controller is all that is needed for the installation. The standard cables are 2, 4 and 8 m long but can also be made in lengths of up to 50 m upon request.



#### Stroke measuring system

EPM portal modules can also be equipped with an external stroke measuring system. The position is directly output to the axis controller using a non-contact measuring sensor and a magnetic strip.



## Options

### Controller/drive control device

The servo controllers are configured as simple positioning units. The positions which are to be approached are saved in the controller and called up by a higher-level controller (SP, IPC,...) using digital I/Os (24 VDC). As soon as the linear module has reached the position, a corresponding "InPosition" output will become active.

Up to 8 or 256 positions or commands can be stored in a table in the controller. The command table is created with the MPC software on the PC and loaded via the serial interface on the controller. Controllers for most bus systems are also available.

### Standard interfaces for customer-specific application

The following interfaces are available to you (for standard servo controller, E 1100)

Profibus, DP	RS 232/485
CANopen	DeviceNET
Special	

### Start up software

ELM and EPM systems can be put into service very quickly and easily – no complicated or expensive mechanical adjusting. For the configuration of operating cycles, all that is needed is the input of the target position, speed, and additional load.

### The following commands can be used:

#### ■ Absolute movement

The linear module moves at the desired speed to the entered position.

#### ■ Relative movement

This movement is a displacement from the current position by the entered distance.

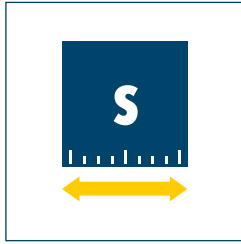
#### ■ Press

Here a target position will be approached with one preprogrammed force. As soon as this force has been reached, this will be signaled via an output.

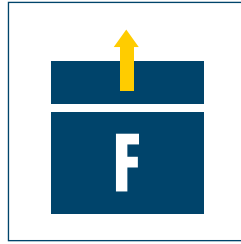




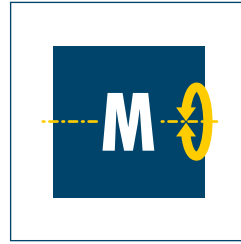
**Sizes**  
37 .. 48



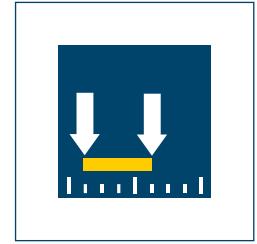
**Useful stroke**  
Up to 1380 mm



**Driving force**  
160 N .. 580 N

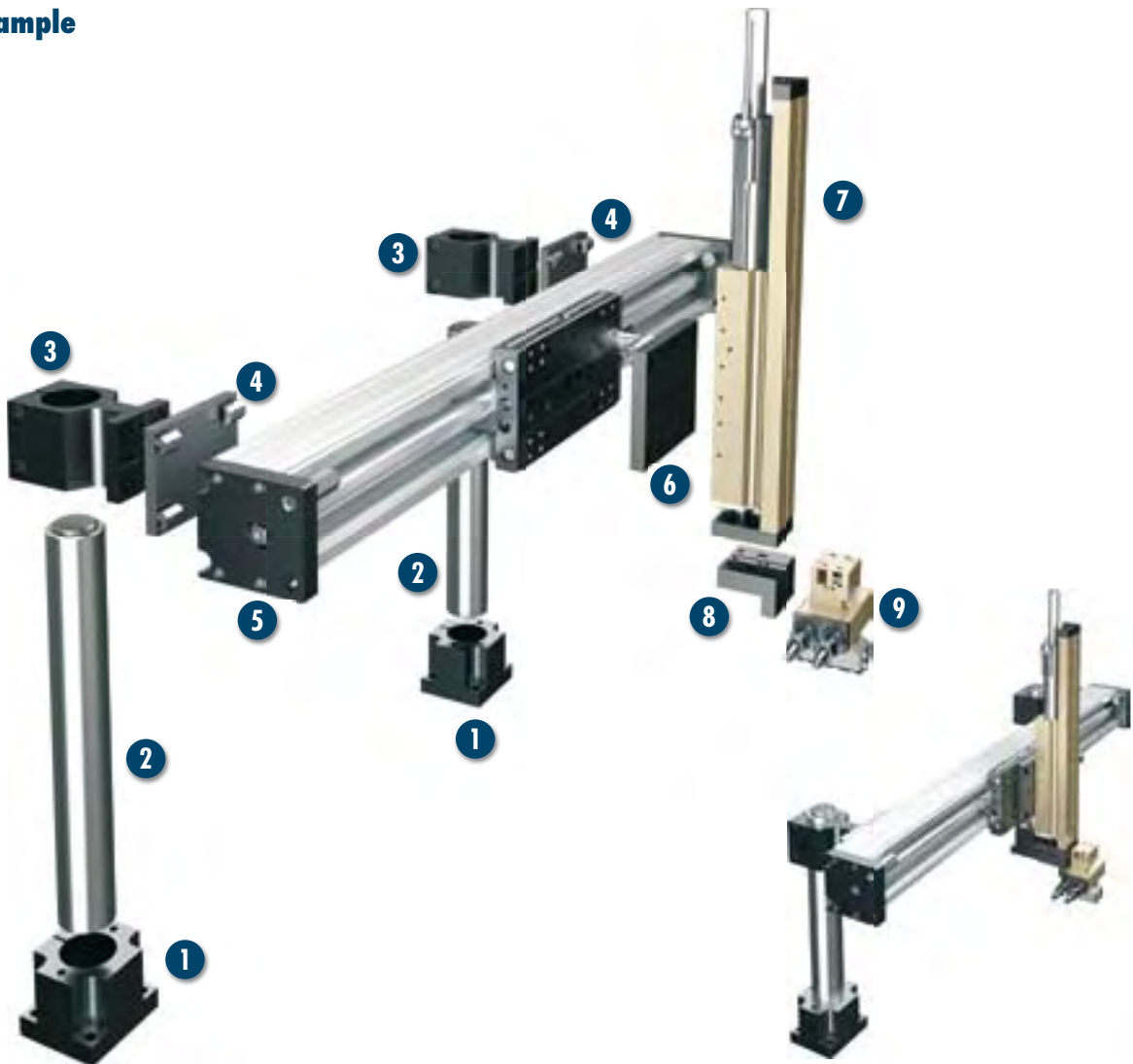


**Moment load**  
Up to 500 Nm



**Repeat accuracy**  
± 0.01 mm .. ± 0.1 mm

### Application example



Linear direct driven cross gantry for dynamic movements with workpiece rotation

- 1** Single base support, SOE 055
- 2** Hollow pillar, SLH 055-0500
- 3** Single mounting plate, APEV 085
- 4** Adapter plate, APPM 250
- 5** Electric portal module EPM 48-0600
- 6** Adapter plate, APL 230
- 7** Electric linear module, ELM 37-H160
- 8** Adapter plate, APL 123
- 9** Gripping rotary module, RP 1520

## Linear axes with direct drive

and profiled ball track with integrated measuring system for position detection and temperature monitoring.

### Area of application

For versatile and highly dynamic positioning tasks that are beyond what pneumatic drives can do; for example:

- Handling and assembly technology
- Measuring and testing technology
- Component marking and identification
- Component assembly and final inspection in microelectronics
- Medical technology

### Advantages – your benefits

Linear motor drives require no further mechanical elements for force transmission.

#### Almost no wearing parts

For long service life and reliability of the system

#### Integrated motor in the axis

For minimum interfering contours

#### Freely programmable

**Up to 256 positions with different parameters (for example, speed and force) per axis**

#### Low oscillations and high holding force

For the shortest positioning times and stable processing

#### “Cooling” option via fan or compressed air

For applications with increased need for constant force

#### Different controllers

Profibus, DeviceNet, CanOpen (and many others) controllers can be used



## General information about the series

### Guidance

Precision ball track

### Drive

Linear motor drive

### Material

Profile guide

Aluminum extruded section

### Ambient temperature range

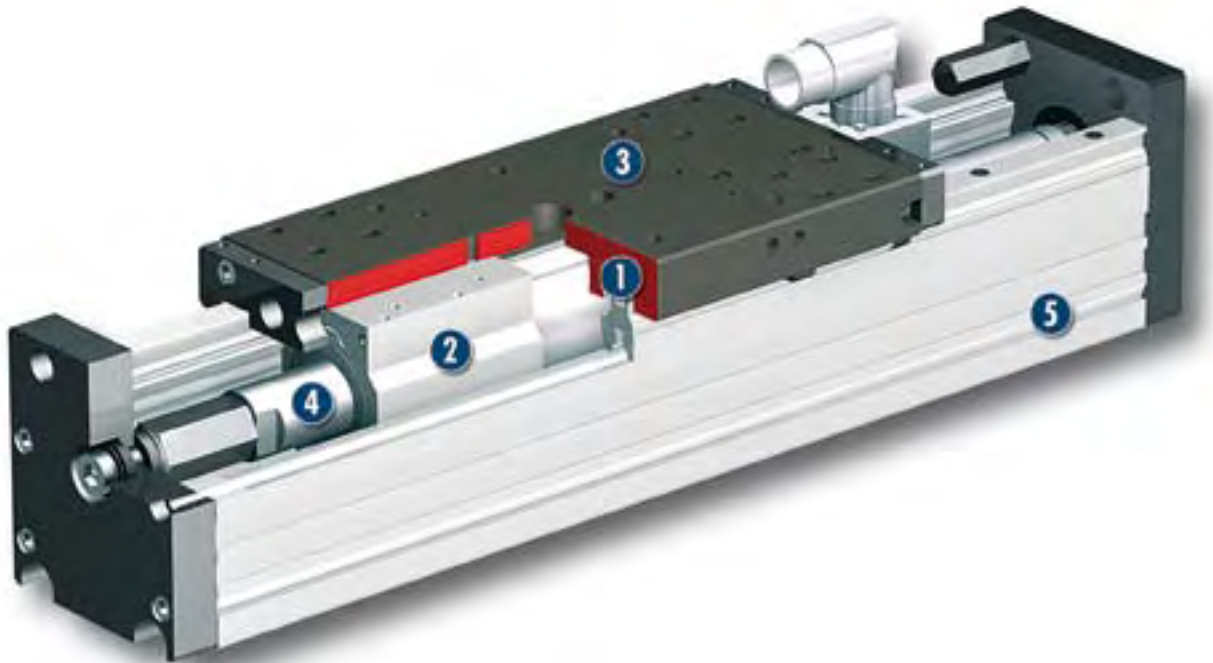
From 10°C to 65°C

### Warranty

24 months

For production reasons, the colors may vary from those shown in the catalog.

## Cross-section of function



- 1 Profiled rail guide**  
For maximum positioning accuracy and moment loads
- 2 Drive**  
Highly dynamic, wear-resistant linear motor drive
- 3 Modular design hole pattern**  
Completely integrated in the module system
- 4 Runner**  
With permanent magnets
- 5 Profile**  
Self-supporting and robust

## Description of function

The electric drive consists of a stator and a runner. The phase and the amplitude of the applied electrical current is regulated in the regulator. This causes the runner, which is fitted with magnets, to move.

## Options and special information

### Bellow version

Increased degree of protection against penetrating materials; for use in dirty environments

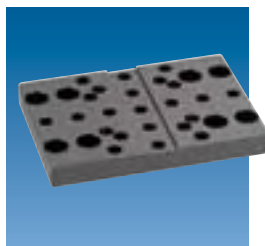
This module can be combined as standard with many elements from the modular system. You can find more information in the "Accessories" chapter.



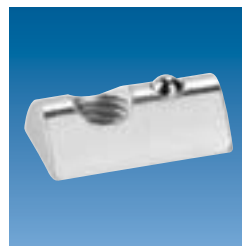
**Accessories**

Accessories from SCHUNK – the ideal components for the best functionality, reliability, and controlled production for all automation modules.

**Adapter plates**



**T-nut**



**Controller**



**Cable track**



**Power supply unit**



**Stroke measuring system**



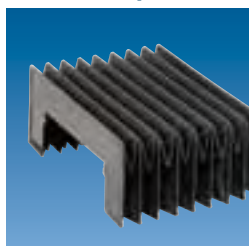
**Pillar assembly systems**



**Safety damper**



**Bellow cover, plastic**



**Centering strips**



**Fan cooling**



**Cable sets**



ⓘ Please see the side views at the end of the respective size for information concerning specific sizes, accessories availability for that size, designation, and ID numbers. You can find more information about our accessories program in the “Accessories” part of the catalog.

**General information about the series**

**Repeat accuracy**

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

**Safety notes**

Caution: magnetic field! This applies especially for persons with implanted medical devices, such as pacemakers, hearing aids, etc.

**Layout or sizing**

Sizing the selected unit is absolutely necessary, since otherwise overloading can result.. Please contact us for assistance.

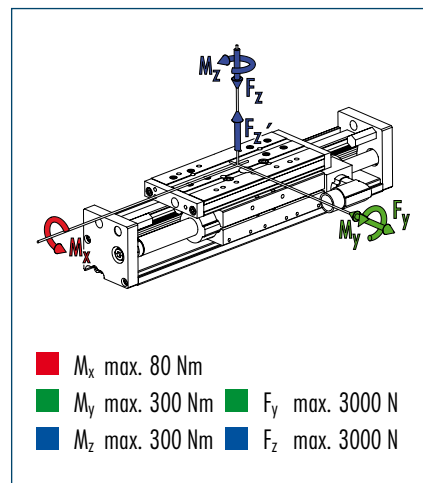
**Ambient conditions**

The modules are designed mainly for use in clean ambient conditions. If case of other ambient conditions, SCHUNK offers various options to protect the units. Please contact us for assistance.

You will find more information about the direct drive on page 130.



## Moment load



① Moments and forces may occur simultaneously.

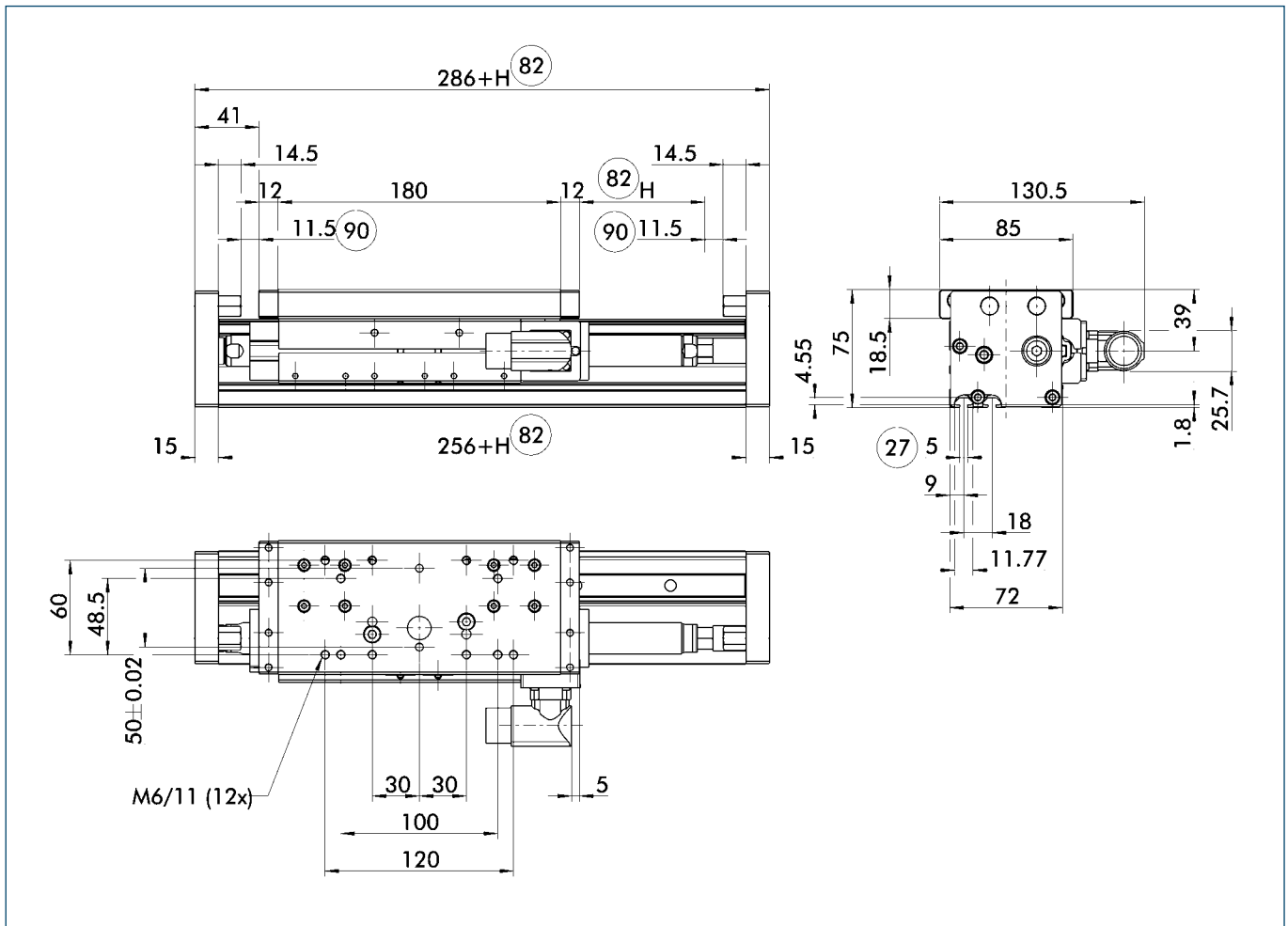
## Technical data

Designation		EPM 37
Stroke	[mm]	80, 175, 280, 380, 480, 580, 680, 780, 980, 1180, 1380
Max. driving force	[N]	160
Rated force	[N]	54
Max. speed	[m/s]	2.1
Max. acceleration	[m/s <sup>2</sup> ]	42.5
Max. useful load (horizontal)	[kg]	15
Max. useful stroke	[mm]	1380
Rated current	[I]	2.6
Max. current	[I]	8
Repeat accuracy	[mm]	± 0.1
Max. stator temperature	[°C]	65

### OPTIONS and their characteristics

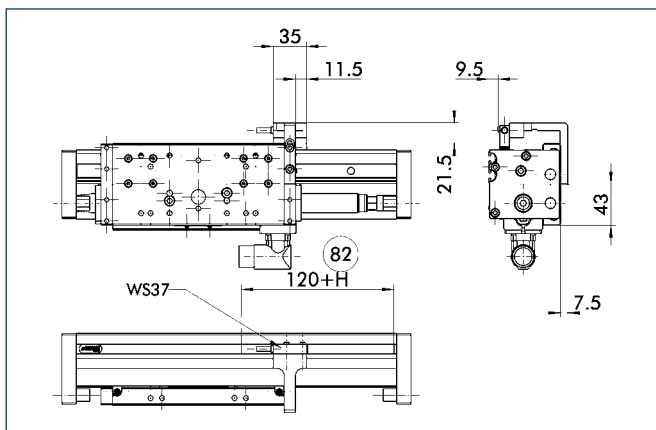
Stroke measuring system		
Designation		WSE 37
Operating voltage	[VDC]	5 (± 5 %)
Repeat accuracy	[mm]	± 0.01
Resolution	[mm]	0.001
Pulse spacing	[s]	0.00025
Fan cooling		
Designation		MK 37
Operating voltage	[VDC]	24 (± 20 %)

## Main views



- 27 Mounting groove for T-nuts
- 82 Stroke
- 90 Reference stroke

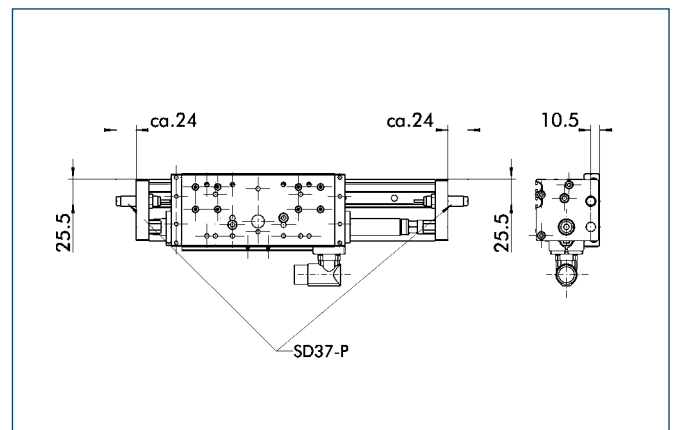
## Stroke measuring system, WSE



- 82 Stroke

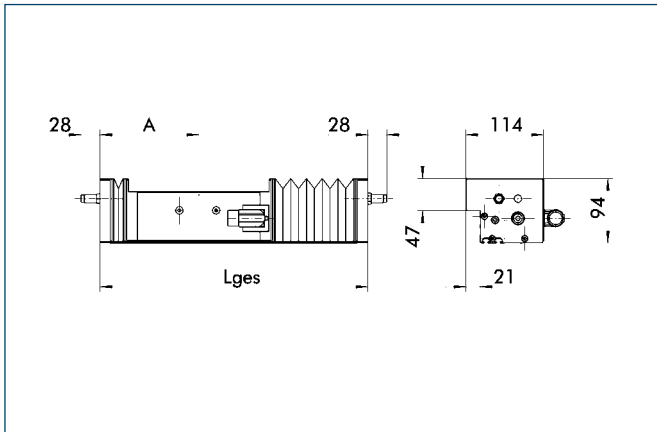
If greater positioning accuracy is required, the portal module can be equipped with an external measuring system. The position is directly detected and digitally output to the axis controller using a non-contact sensor and a magnetic strip.

## Safety damper, SD



To prevent any mechanical damage due to a malfunction, the modules can be equipped with hydraulic shock absorbers.

## Bellow



The "Bellow" option increases the degree of protection against penetrating materials. This version is only possible for the listed stroke variants.

Designation	Lges	A
	[mm]	[mm]
EPM-F-37-0080	393	156.5
EPM-F-37-0175	514	169.5
EPM-F-37-0280	645	182.5
EPM-F-37-0380	771	195.5
EPM-F-37-0480	891	205.5
EPM-F-37-0580	1017	218.5
EPM-F-37-0680	1145	232.5
EPM-F-37-0780	1271	245.5

## Cable track KSH, horizontal slide

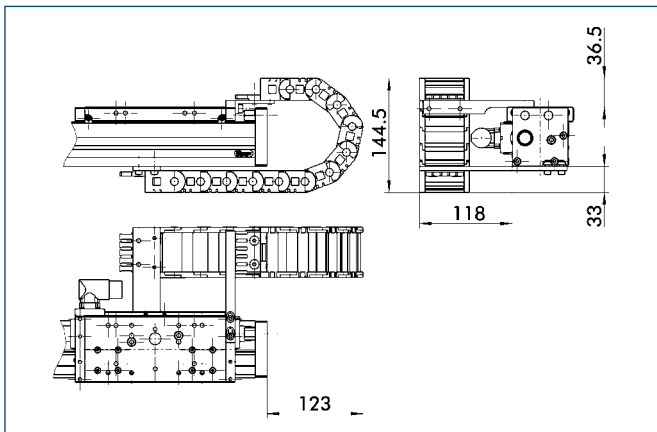
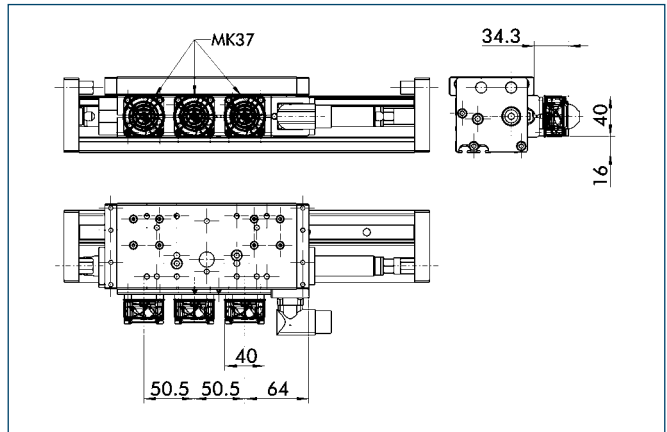


Figure: Attachment variant 1  
Other attachment variants are possible as standard. Please contact us for assistance.

## Fan cooling, MK



Fans can be mounted on the modules if there is an increased need for constant force. The forced cooling leads to the constant force being nearly doubled. Alternatively to cooling with a fan, it is also possible to cool with compressed air (approximately 0.5 bar) via a connection which is provided for this.

## Cable track KSV, vertical slide

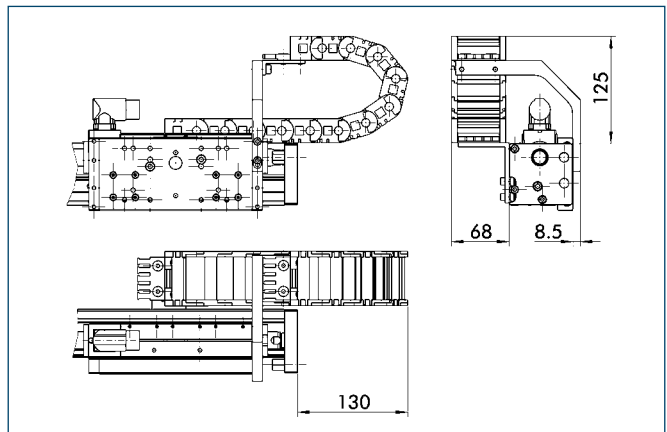
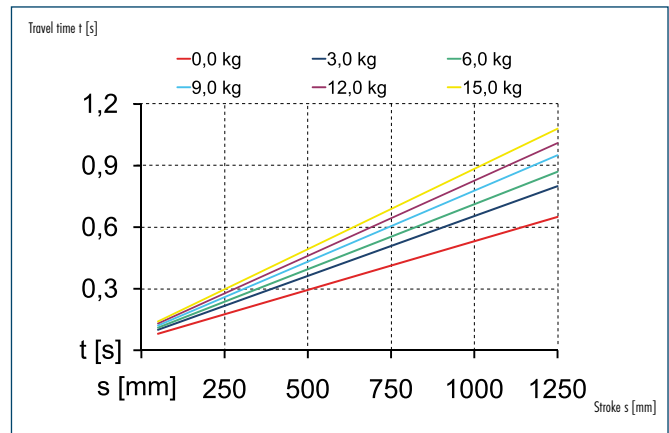
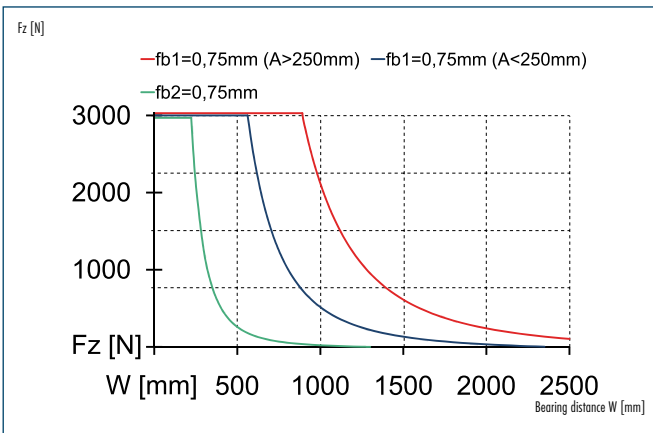
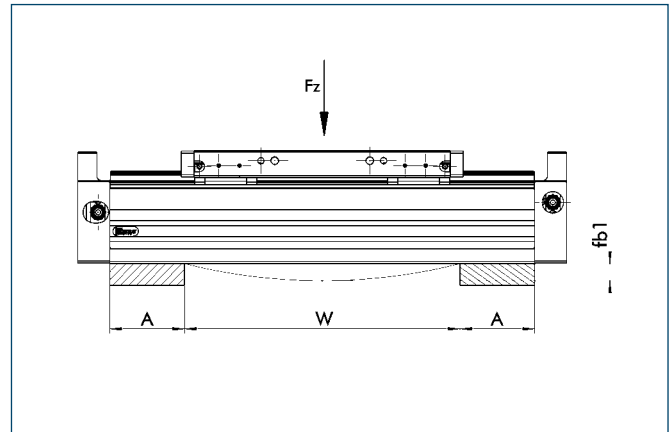
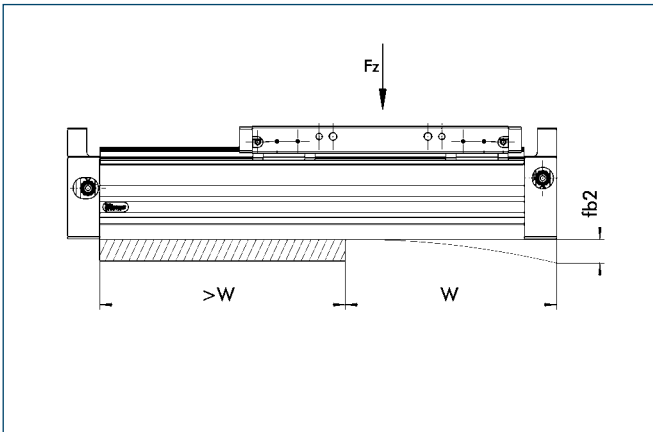
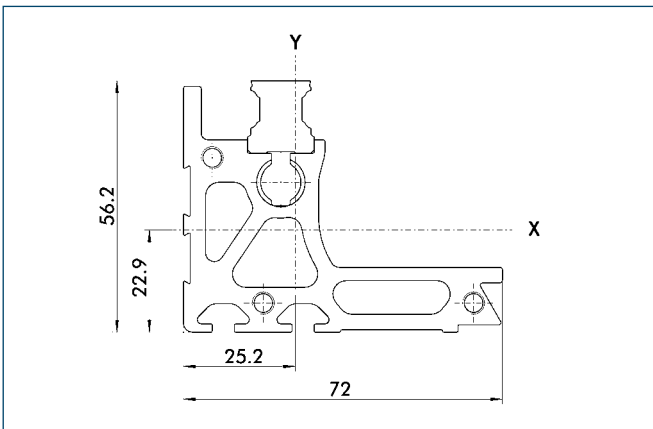


Figure: Attachment variant 1  
Other attachment variants are possible as standard. Please contact us for assistance.

### Deflection




### Section data

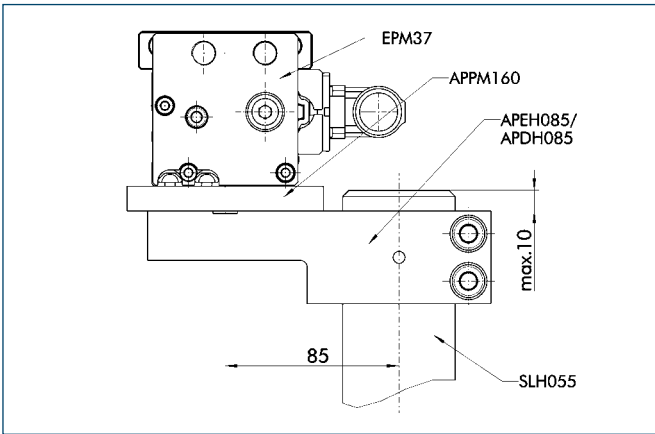


#### Designation

Profile surface A	[mm <sup>2</sup> ]	1294
Mass/1000 mm m	[kg]	4.8
Planar moment of inertia I <sub>x</sub>	[cm <sup>4</sup> ]	37.1
Planar moment of inertia I <sub>y</sub>	[cm <sup>4</sup> ]	47.3
Load torque I <sub>x</sub>	[cm <sup>3</sup> ]	11.1
Load torque I <sub>y</sub>	[cm <sup>3</sup> ]	10.1

 You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.

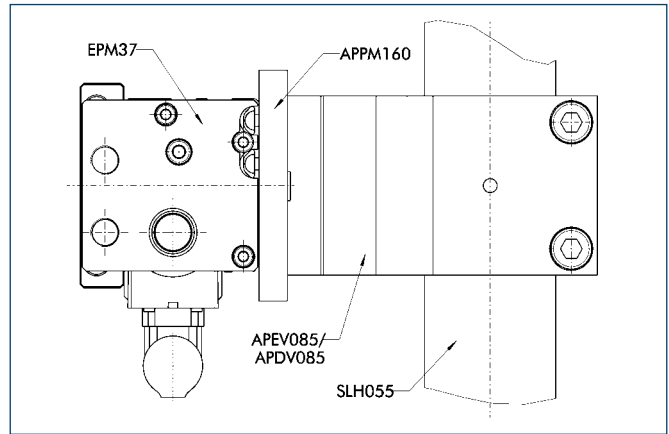
## Attachment to the pillar profile modular system,



This view shows the attachment of the portal module to the pillar profile modular system.  
You can find more information and components in the “Assembly systems” chapter.

Designation	ID	Scope of delivery
APPM 160	0313397	4 x NT-M5, 4 x M5 x 12 DIN912

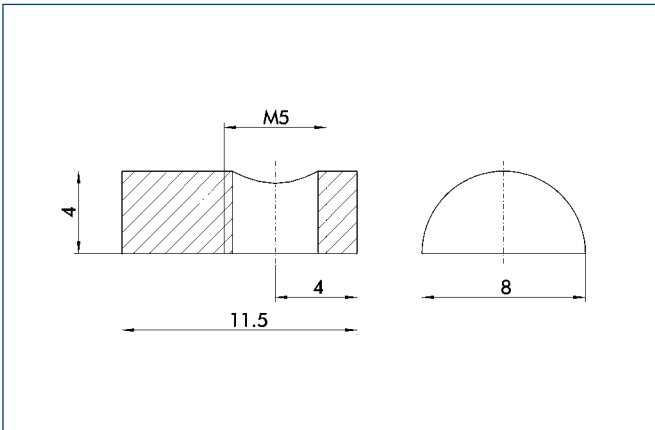
## Attachment to the pillar profile modular system,



This view shows the attachment of the portal module to the pillar profile modular system.  
You can find more information and components in the “Assembly systems” chapter.

Designation	ID	Scope of delivery
APPM 160	0313397	4 x NT-M5, 4 x M5 x 12 DIN912

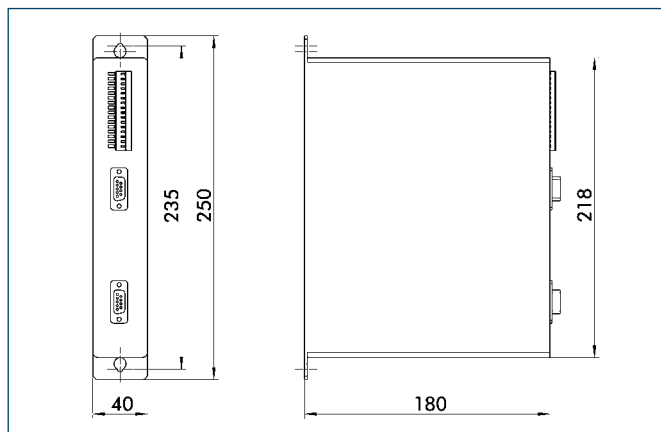
## Mounting



Designation	ID
NT-M5	0313607

 You can find further information and components for the accessories mentioned here in the “Accessories” part of the catalog.

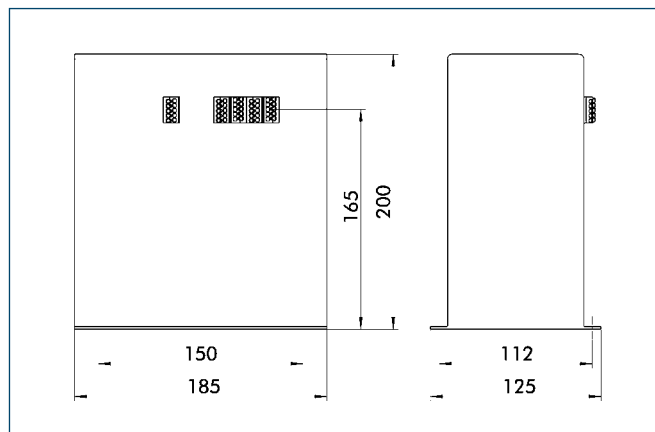
### Servo controllers




To control the portal modules, the following servo controller interfaces are possible:

- Parallel interface with 8 positions
- Parallel interface with 256 positions
- Profibus
- CANopen
- DeviceNet
- RS232

### Transformer power supply unit

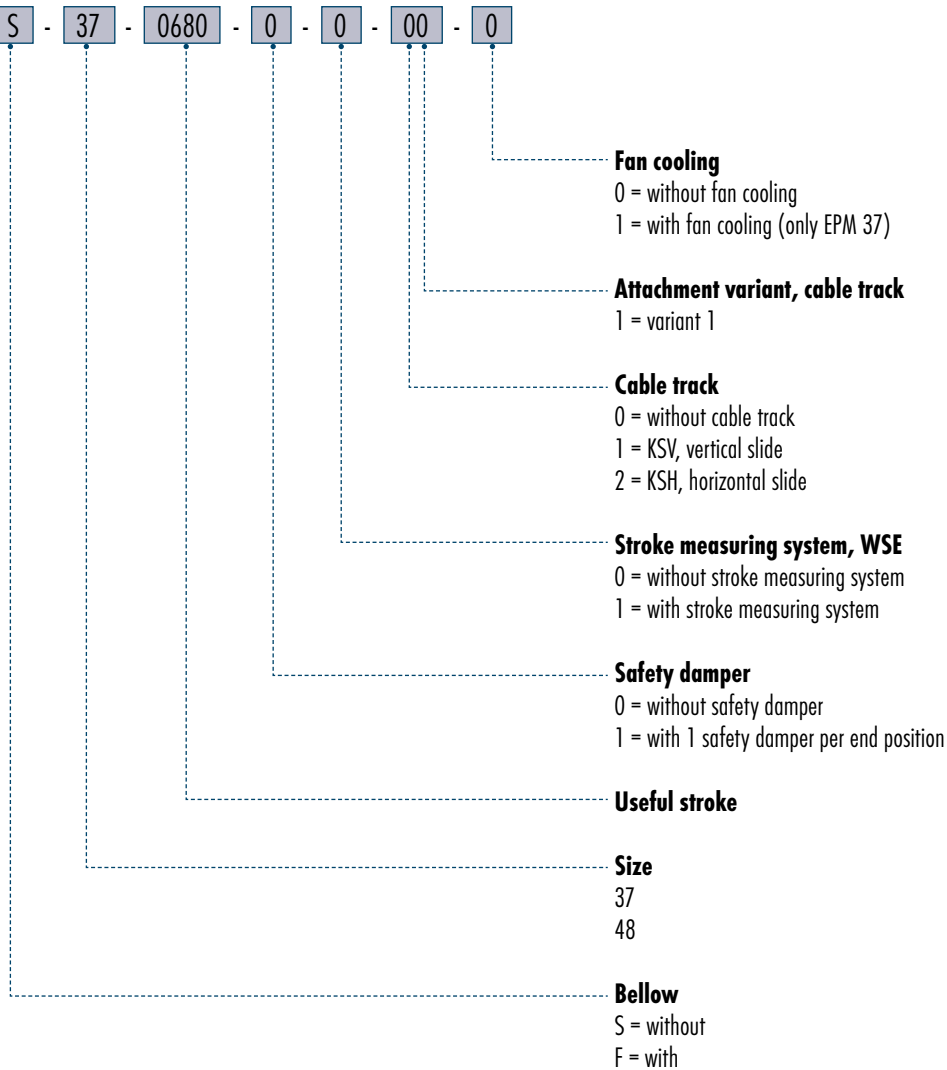


Designation	ID
T01-72/420	0314253

 You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.

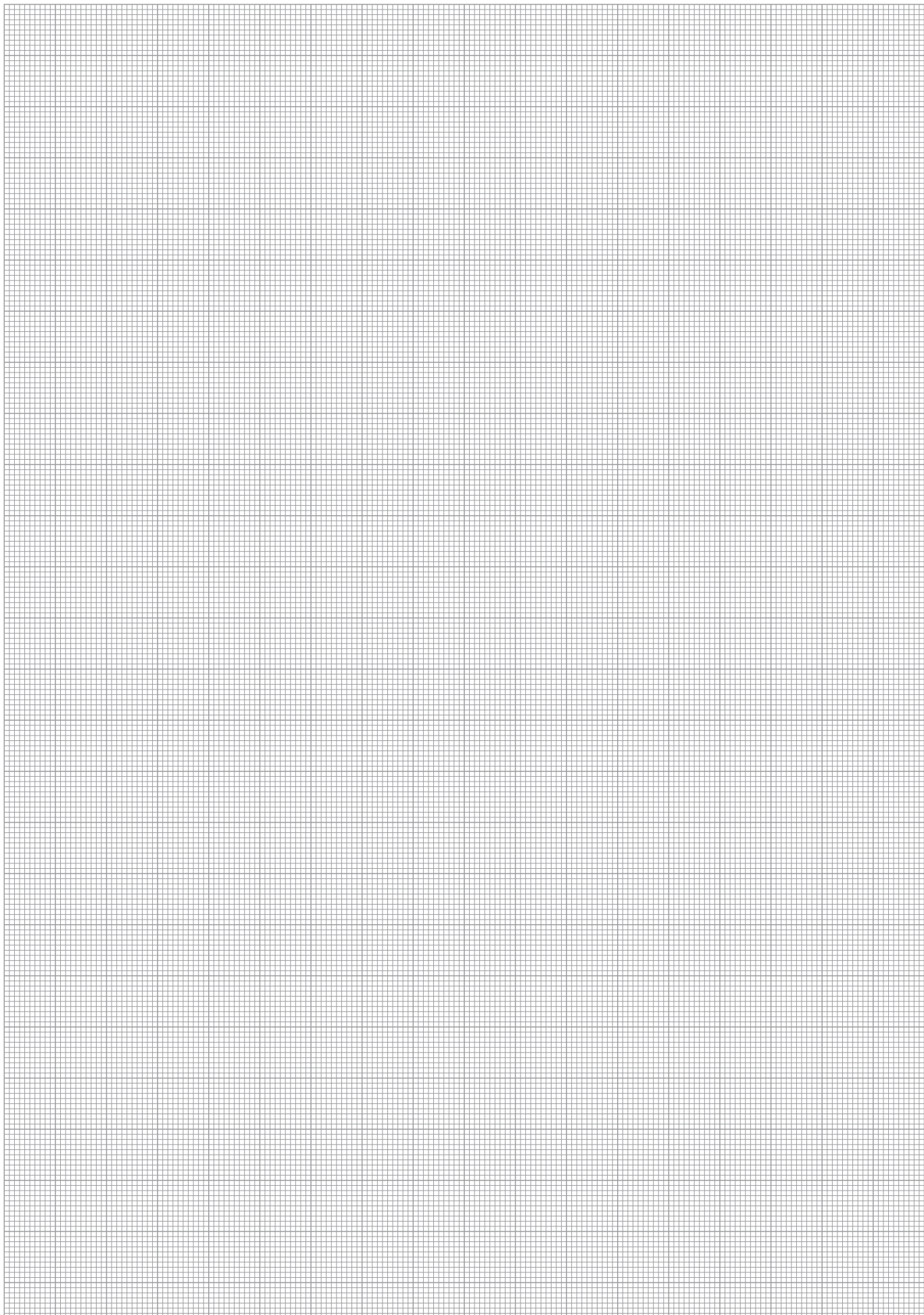
## Sample order

EPM - S - 37 - 0680 - 0 - 0 - 00 - 0



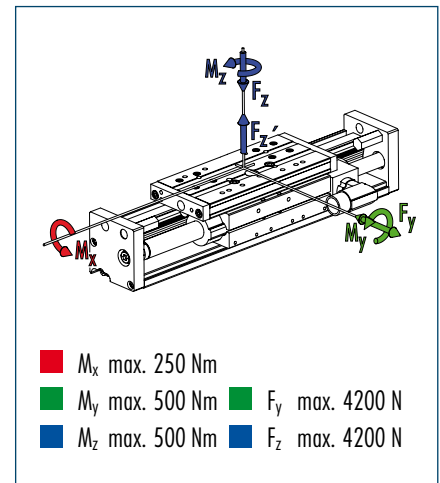
ⓘ Not all combinations of options are possible. Please speak to us in order to find the right combination for your application.







## Moment load



① Moments and forces may occur simultaneously.

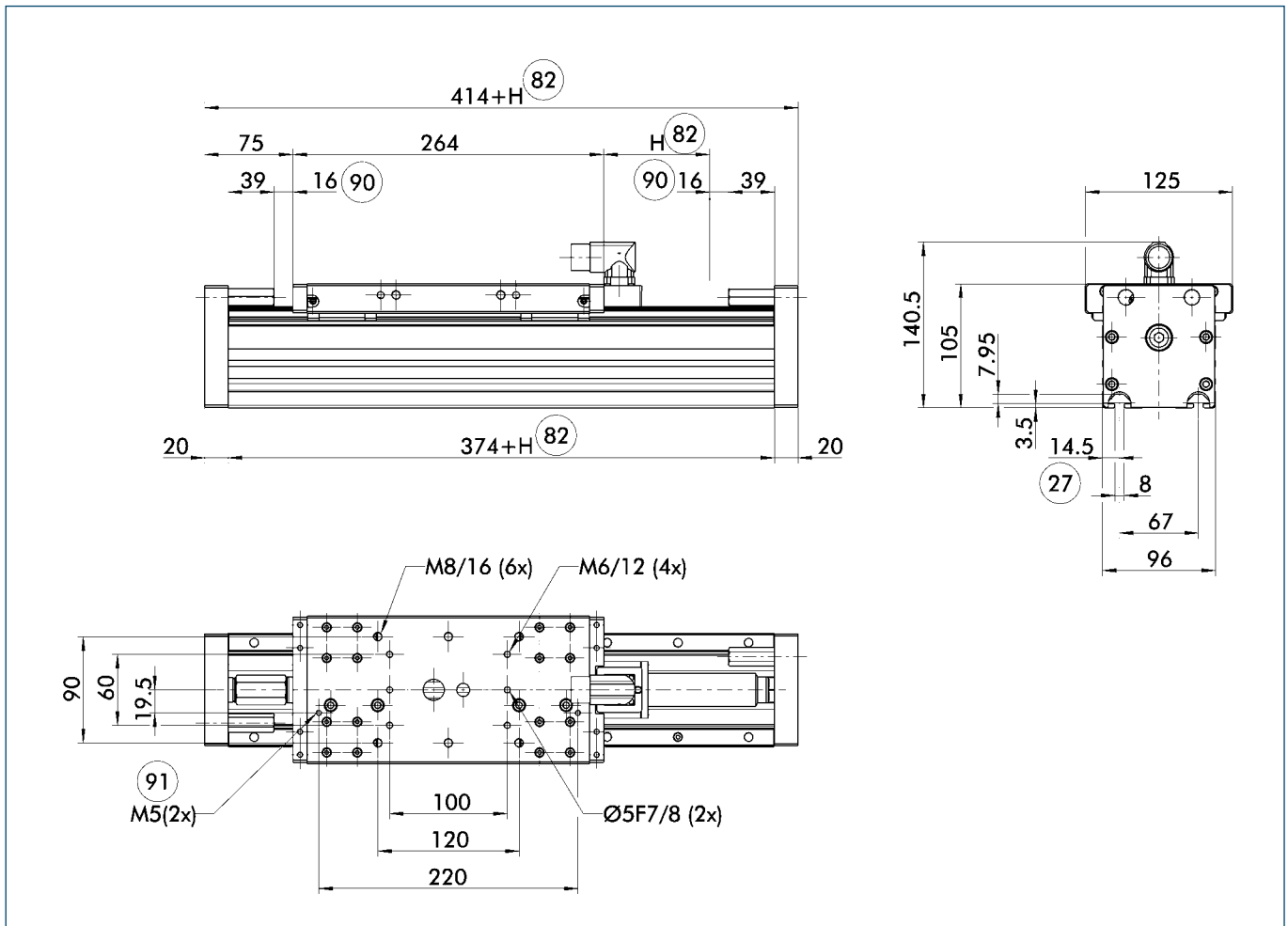
## Technical data

Designation		EPM 48
Stroke	[mm]	90, 180, 300, 390, 480, 600, 690, 900, 1080, 1290
Max. driving force	[N]	580
Rated force	[N]	257
Max. speed	[m/s]	2.3
Max. acceleration	[m/s <sup>2</sup> ]	82
Max. useful load (horizontal)	[kg]	50
Max. useful stroke	[mm]	1290
Rated current	[A]	6.5
Max. current	[A]	15
Repeat accuracy	[mm]	± 0.1
Max. stator temperature	[°C]	65

### OPTIONS and their characteristics

Stroke measuring system		WSE 48
Designation		
Operating voltage	[VDC]	5 (± 5 %)
Repeat accuracy	[mm]	± 0.01
Resolution	[mm]	0.001
Pulse spacing	[s]	0.00025

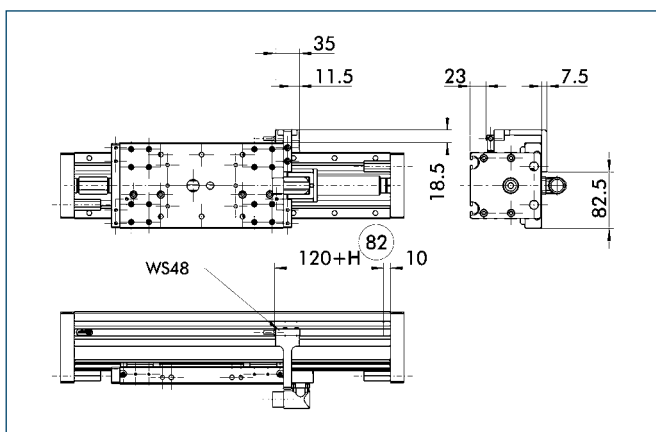
## Main views



- ②7 Mounting groove for T-nuts
- ⑧2 Stroke
- ⑨0 Reference stroke
- ① Connection for compressed air cooling

For increased need for constant force, it is possible to cool with compressed air (approx. 0.5 bar) via a connection ⑨1 which is provided for this.

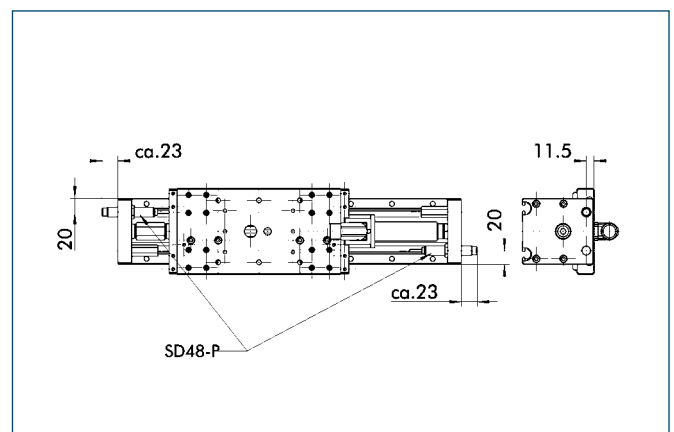
## Stroke measuring system, WSE



- ⑧2 Stroke

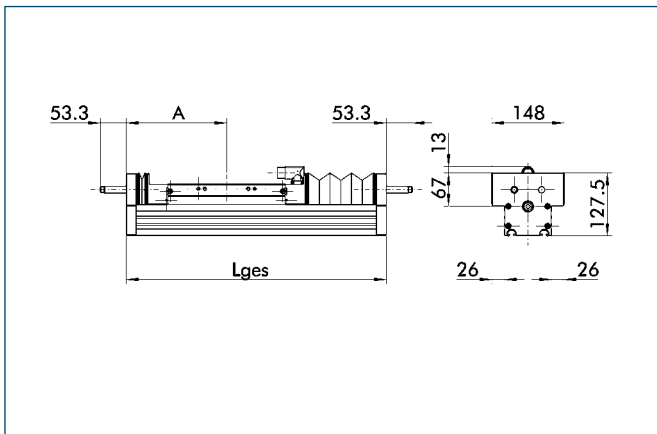
If greater positioning accuracy is required, the portal module can be equipped with an external measuring system. The position is directly detected and digitally output to the axis controller using a non-contact sensor and a magnetic strip.

## Safety damper, SD



To prevent any mechanical damage due to a malfunction, the modules can be equipped with hydraulic shock absorbers.

## Bellow



The “Bellow” option increases the degree of protection against penetrating materials. This version is only possible for the listed stroke variants.

Designation	Lges [mm]	A [mm]
EPM-F-48-0090	532	221
EPM-F-48-0180	642	231
EPM-F-48-0300	780	240
EPM-F-48-0390	890	250
EPM-F-48-0480	994	257
EPM-F-48-0600	1140	270
EPM-F-48-0690	1244	277
EPM-F-48-0900	1494	297

## Cable track KSH, horizontal slide

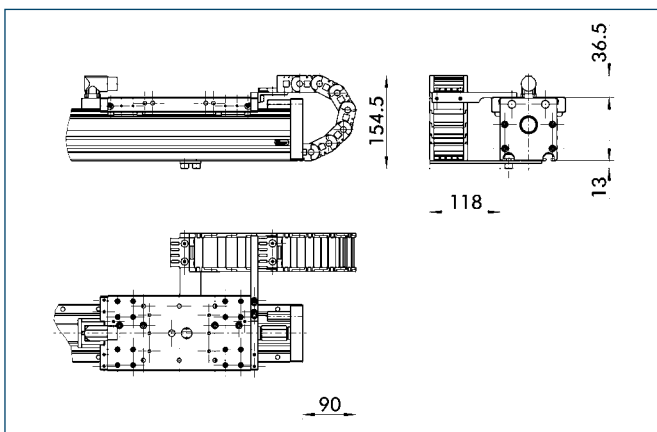


Figure: Attachment variant 1  
Other attachment variants are possible as standard. Please contact us for assistance.

## Cable track KSV, vertical slide

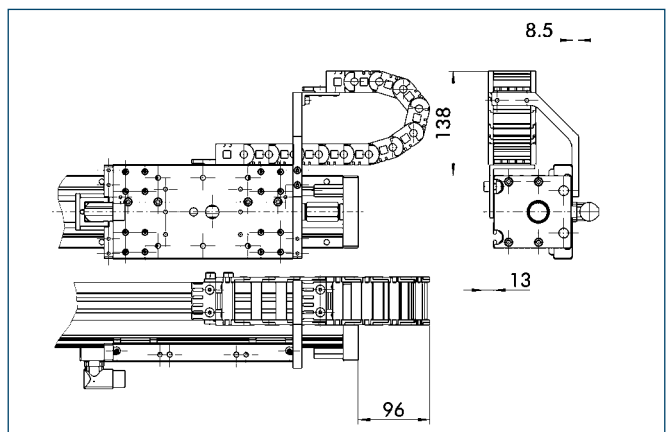
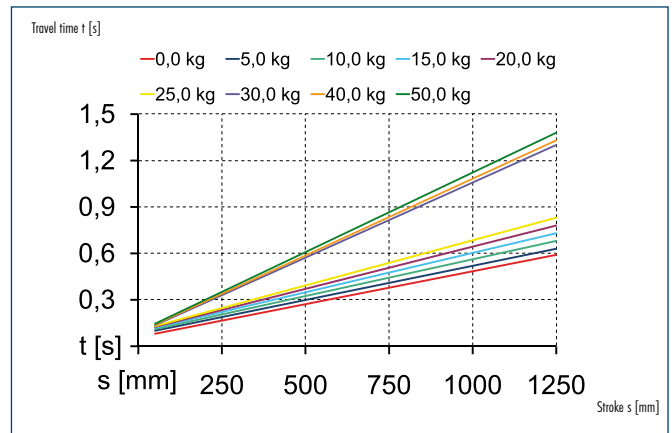
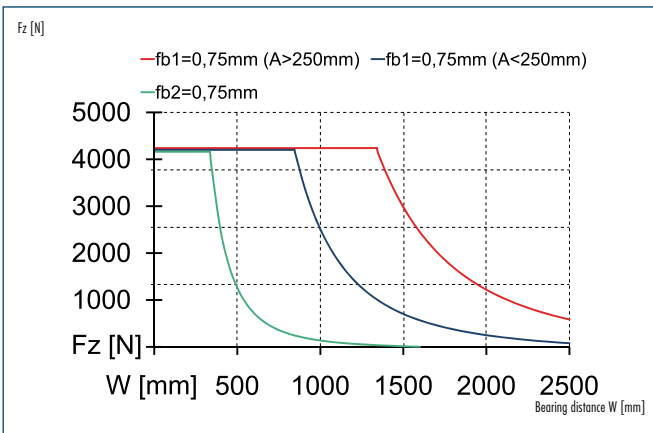
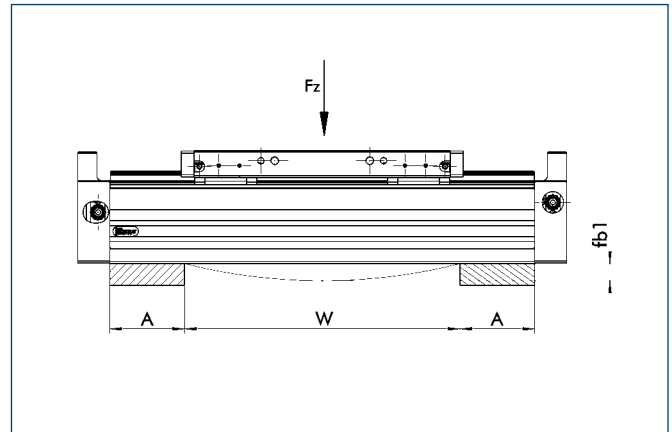
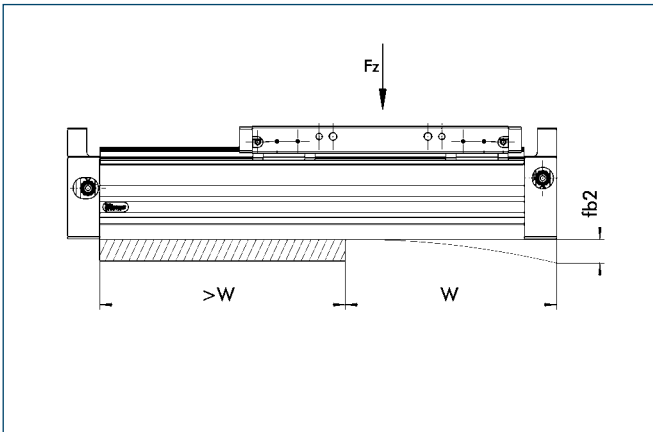
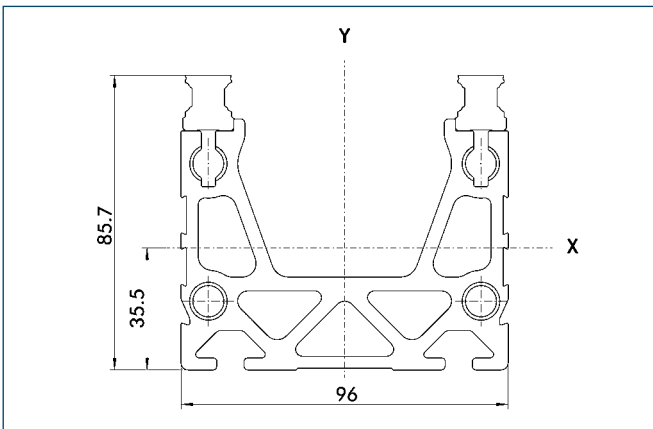


Figure: Attachment variant 1  
Other attachment variants are possible as standard. Please contact us for assistance.

### Deflection



### Section data

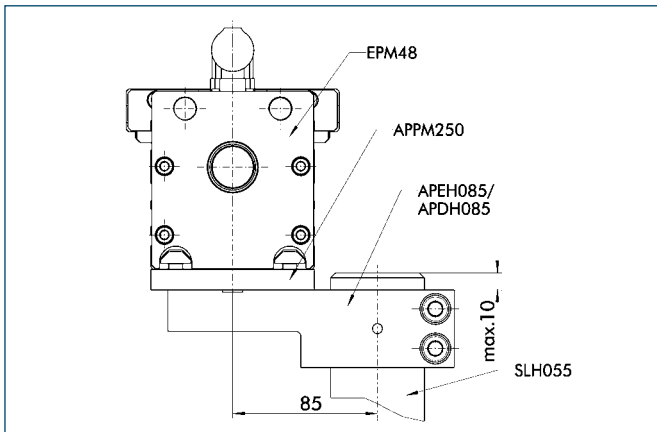


#### Designation

Profile surface A	[mm <sup>2</sup> ]	2698.4
Mass/1000 mm m	[kg]	9.9
Planar moment of inertia I <sub>x</sub>	[cm <sup>4</sup> ]	177.4
Planar moment of inertia I <sub>y</sub>	[cm <sup>4</sup> ]	313.2
Load torque I <sub>x</sub>	[cm <sup>3</sup> ]	35.3
Load torque I <sub>y</sub>	[cm <sup>3</sup> ]	65.3

 You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.

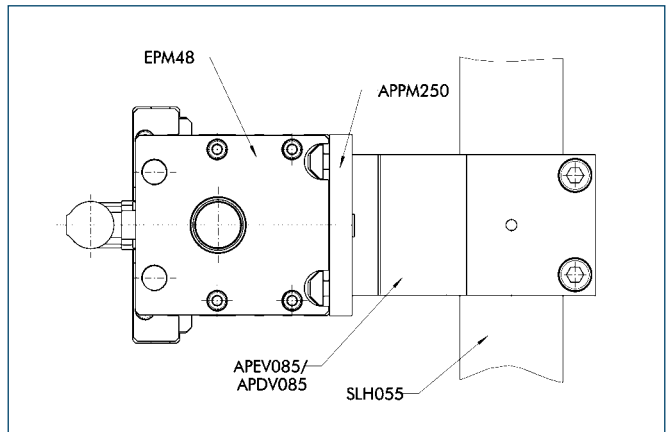
## Attachment to the pillar profile modular system, horizontal



This view shows the attachment of the portal module to the pillar profile modular system. You can find more information and components in the “Assembly systems” chapter.

Designation	ID	Scope of delivery
APPM 250	0313398	4 x NT-M8, 4 x M8 x 14 DIN912

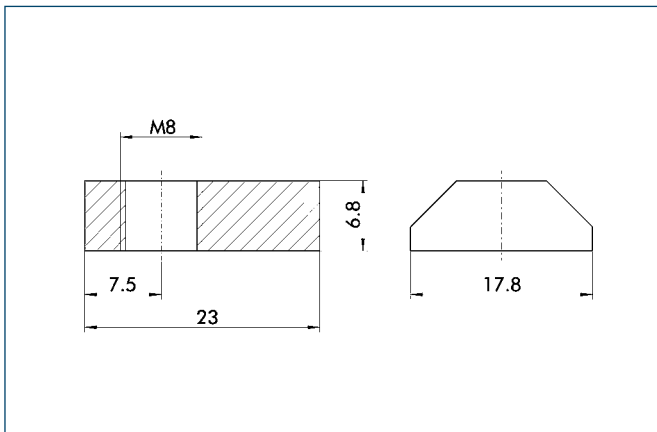
## Attachment to the pillar profile modular system, vertical




This view shows the attachment of the portal module to the pillar profile modular system. You can find more information and components in the “Assembly systems” chapter.

Designation	ID	Scope of delivery
APPM 250	0313398	4 x NT-M8, 4 x M8 x 14 DIN912

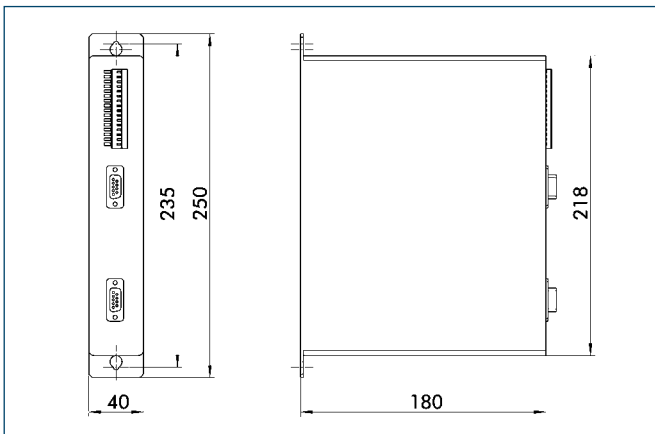
## Mounting



Designation	ID
NT-M8	0313608

 You can find further information and components for the accessories mentioned here in the “Accessories” part of the catalog.

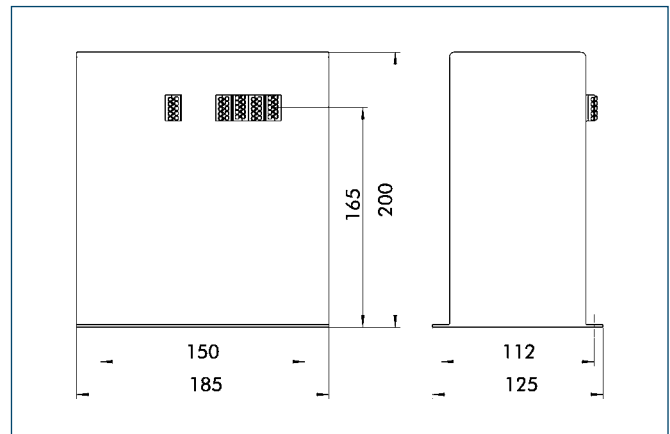
### Servo controllers




To control the portal modules, the following servo controller interfaces are possible:

- Parallel interface with 8 positions
- Parallel interface with 256 positions
- Profibus
- CANopen
- DeviceNet
- RS232

### Transformer power supply unit

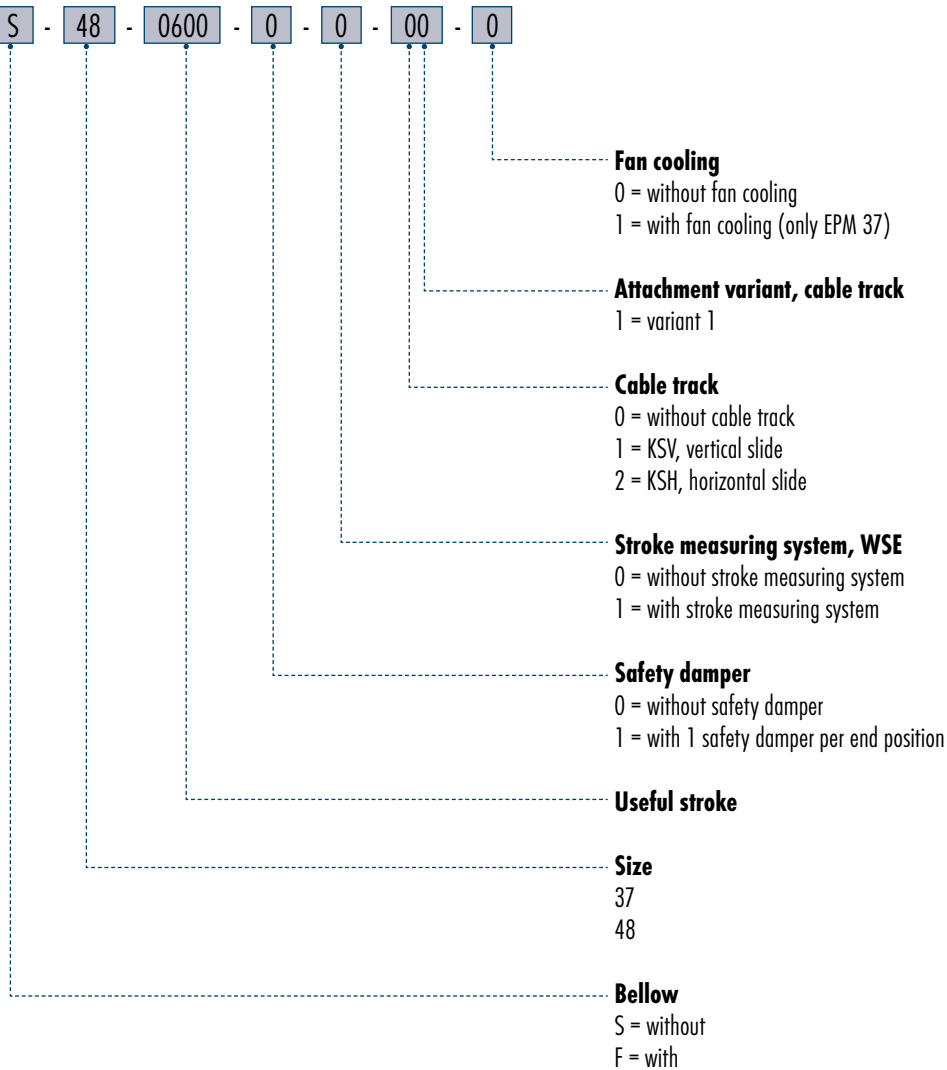


Designation	ID
T01-72/420	0314253

 You can find further information and components for the accessories mentioned here in the "Accessories" part of the catalog.

### Sample order

EPM - S - 48 - 0600 - 0 - 0 - 00 - 0



ⓘ Not all combinations of options are possible. Please speak to us in order to find the right combination for your application.



