



Hand in hand for tomorrow



Product data sheet

Linear module KLM

Modular. Robust. Reliable.

Linear module KLM

Linear module with pneumatic drive and ball bushing guide

Field of application

For use in clean and slightly polluted 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 absorbers and proximity switches integrated in the projecting surfaces for vibration-free movements and end position monitoring

Strongly dimensioned guide shafts for high rigidity

High basic load ratings in all load directions

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

Several intermediate positions possible for maximum flexibility in applications

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



Sizes
Quantity: 4



Weight
0.5 .. 13.2 kg



Driving force
67 .. 753 N



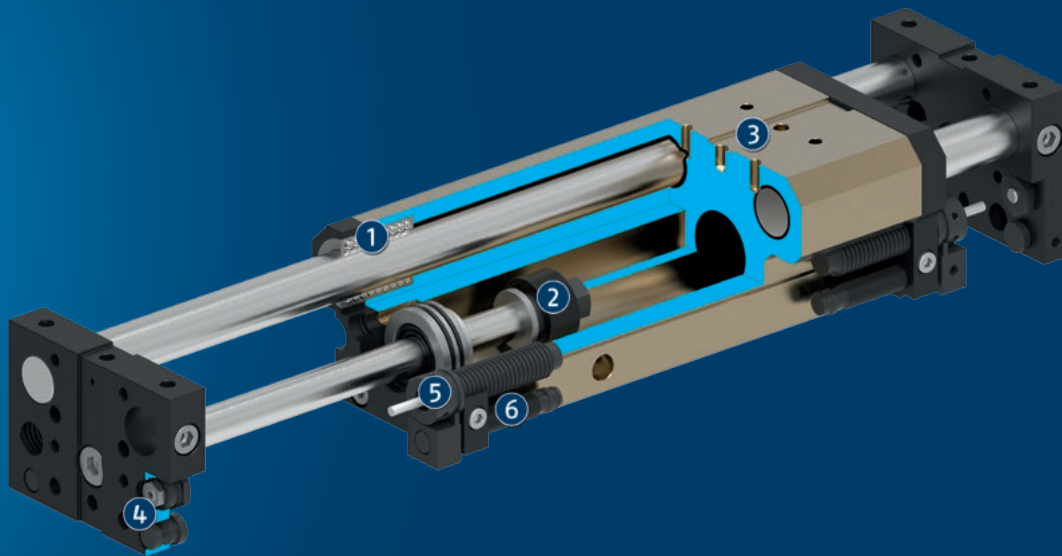
Stroke
13 .. 300 mm



Repeat accuracy
0.02 .. 0.03 mm

Functional description

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.



- ① **Ball bushing guide**
scope-free at a low friction
- ② **Drive**
Powerful piston rod cylinders
- ③ **Mounting pattern**
Completely integrated in the module system
- ④ **Damping adjustment**
Adjustment of the damping characteristics
- ⑤ **End position adjustability**
Convenient adjustment using the shock absorber threads
- ⑥ **Sensor system**
with sensor driver for convenient adjustment

General notes about the series

Housing material: Aluminum alloy, anodized

Guidance: Ball bushing guide

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

Scope of delivery: Shock absorber and driver for proximity switch

Warranty: 24 months

Service life characteristics: on request

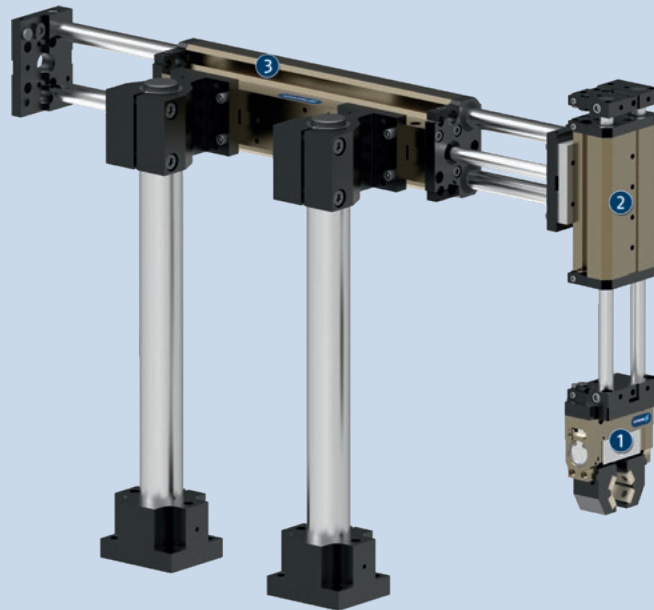
Repeat accuracy: is defined as a distribution of the end positions for 100 consecutive cycles.

Travel times: are pure movement times of the slide or the base body. Valve switching times, hose filling times, or PLC reaction times are not a part of this and are to be considered when cycle times are calculated.

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

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

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



Application example

Sorting unit for small components which require an especially long gripper stroke due to their variation in size.

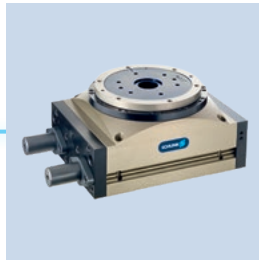
- ① 2-finger parallel gripper KGG with workpiece-specific fingers
- ② Linear module KLM for vertical movement
- ③ Linear module KLM for horizontal movement

SCHUNK offers more ...

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



Vane swivel unit



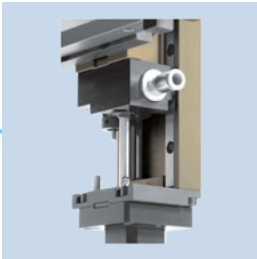
Rotary indexing table



Gripper for small components



Universal gripper



Rod lock



Intermediate stop cylinder



Pillar assembly system



Rotary gripper module



Pressure maintenance valve



Inductive proximity switch

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

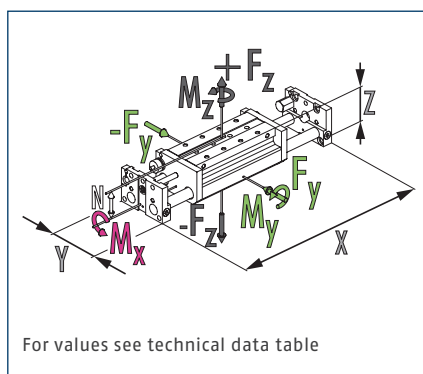
Options and special information

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

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



Dimensions and maximum loads

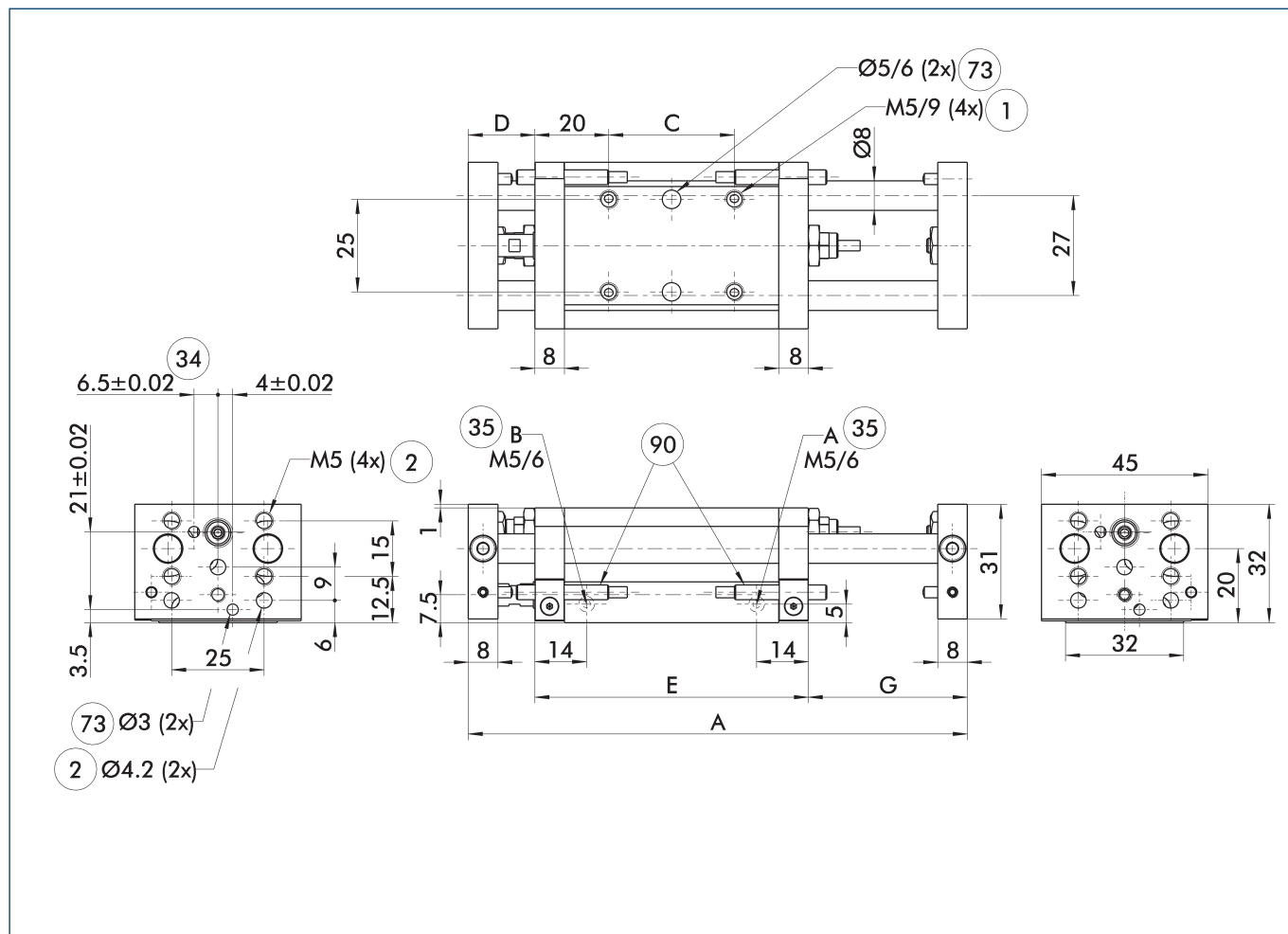


- ① The indicated forces and moments are maximum values for single load. If more than one force and/or torque occurs simultaneously, the case of application can be calculated by using the Toolbox. The force F_y can only be calculated by using the Toolbox.

Technical data

Description		KLM 25-H025	KLM 25-H042	KLM 25-H059
ID		0314010	0314011	0314012
Stroke	[mm]	25	42	59
extend force	[N]	67	67	67
retracted force	[N]	50	50	50
Repeat accuracy	[mm]	0.02	0.02	0.02
Piston diameter	[mm]	12	12	12
Bar diameter	[mm]	6	6	6
Min./nom./max. operating pressure	[bar]	3/6/8	3/6/8	3/6/8
Cylinder volume/10 mm per double stroke	[cm ³]	1.13	1.13	1.13
Overall length	[mm]	135	169	203
IP protection class		40	40	40
Min./max. ambient temperature	[°C]	5/60	5/60	5/60
Cleanroom class ISO 14644-1:1999		6	6	6
Weight	[kg]	0.5	0.58	0.66
Drive concept		Piston rod cylinders	Piston rod cylinders	Piston rod cylinders
Dimensions X x Y x Z	[mm]	135 x 45 x 32	169 x 45 x 32	203 x 45 x 32
Clearance N (for moment load)	[mm]	20	20	20
Moments Mx max./My max./Mz max.	[Nm]	3/10.5/10.5	1.9/9.5/9.5	1.3/8.5/8.5
Forces Fz max.	[N]	223	142	97

Main view



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.

A Main connection – linear unit extended

B Main connection – linear unit retracted

① Connection linear unit

② Attachment connection

③④ On both sides

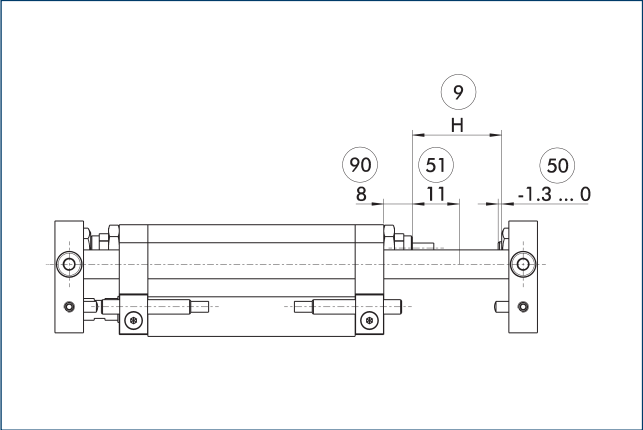
③⑤ Back side

⑦③ Fit for centering pins

⑨⑩ Inductive proximity switch

Description	ID	A	C	Quantity C	D	E	G
		[mm]	[mm]		[mm]	[mm]	[mm]
KLM 25-H025	0314010	135	34	1	18	74	43
KLM 25-H042	0314011	169	34	1	18	91	60
KLM 25-H059	0314012	203	34	2	18	108	77

Fine adjustment



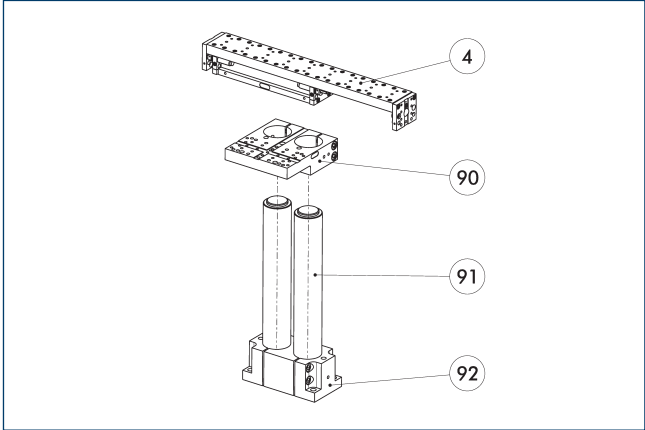
- 9 Nominal stroke

50 Damping stroke adjustment range
- 51 Stroke adjustment range

90 This dimension may not drop below this minimum value.

This illustration shows the possible fine adjustment of the stroke.

Attachment to a pillar assembly system



- 4 Linear unit

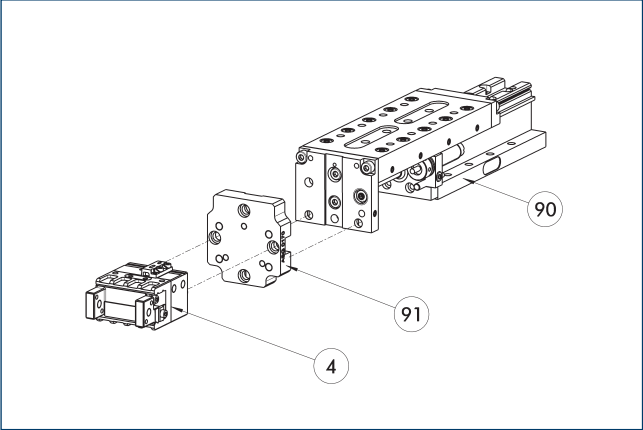
90 Double mounting plate, APDH
- 91 Pillars, hard-chromium plated, ground

92 Double socket SOD

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

Description	ID	pillar diameter	Material
		[mm]	
Pillar assembly system mounting plate			
APDH 20	0313614	20	Aluminum
APDV 20	0313616	20	Aluminum
APDV 35	0313896	35	Aluminum
APEH 20	0313613	20	Aluminum
APEH 35	0313893	35	Aluminum
APEV 20	0313615	20	Aluminum
APEV 35	0313895	35	Aluminum

Modular Assembly Automation

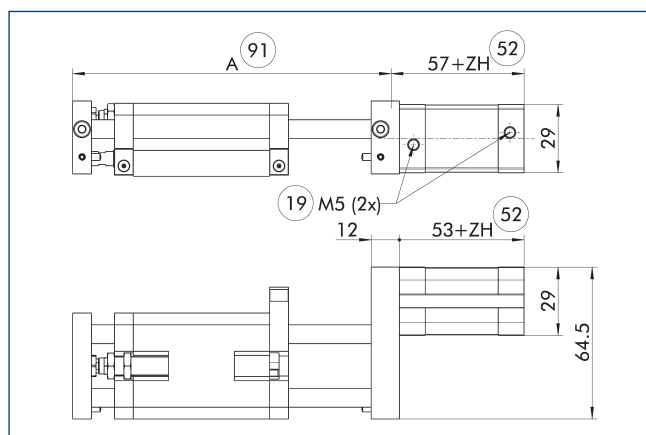


- 4 Grippers

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

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

Intermediate stop, ZZA on the piston side



① Air connection

② Intermediate stroke

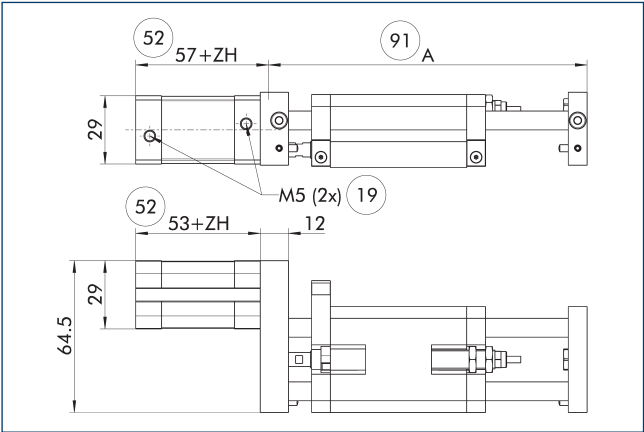
③ Overall length "A," the variant without intermediate stroke (see measurement chart of stroke variants)

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

Description	Holding force	With with 0mm stroke	Weight per mm stroke
	[N]	[kg]	[kg]
Intermediate stop			
ZZA 28	54	0.2	0.002

④ Sample order KLM 25-H059-ZZA028-H15

Intermediate stop, ZZA on the piston rod side



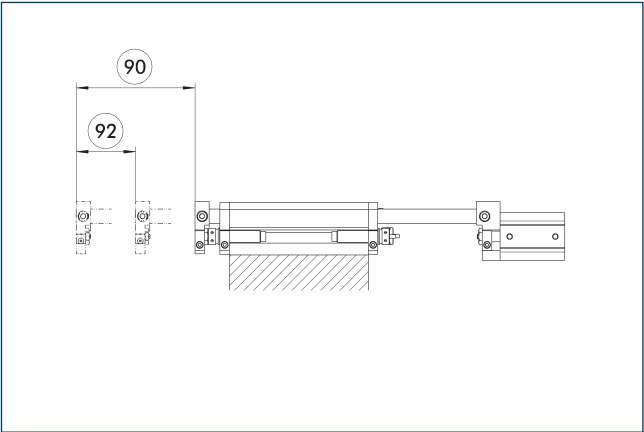
- 19 Air connection
- 52 Intermediate stroke
- 91 Overall length "A," the variant without intermediate stroke (see measurement chart of stroke variants)

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

Description	Holding force	With with 0mm stroke	Weight per mm stroke
	[N]	[kg]	[kg]
Intermediate stop			
ZZA 29	54	0.2	0.002

Sample order KLM 25-H059-ZZA029-H15

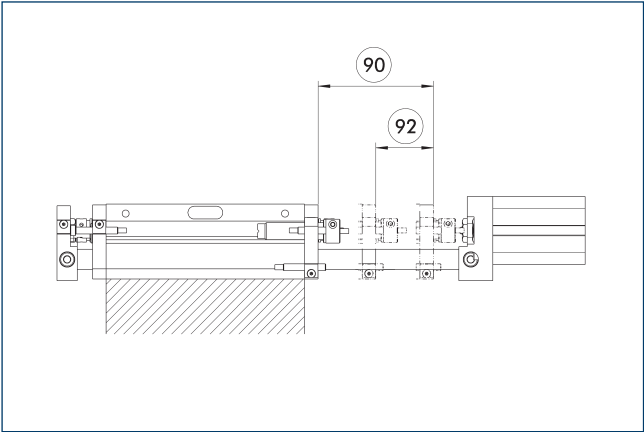
Design – variant 1



- 90 Nominal stroke
- 92 Intermediate stroke

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

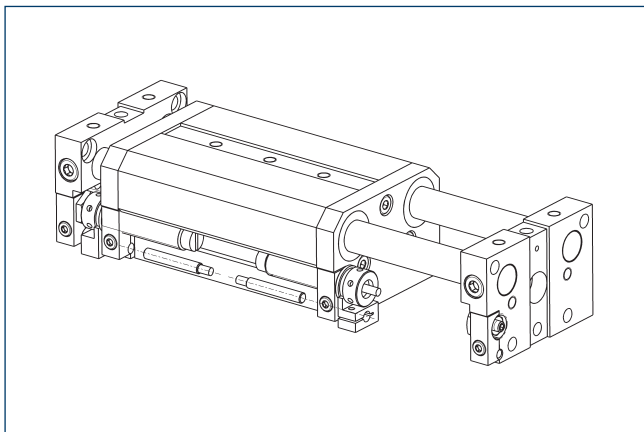
Design – variant 2



- 90 Nominal stroke
- 92 Intermediate stroke

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

Inductive proximity switches

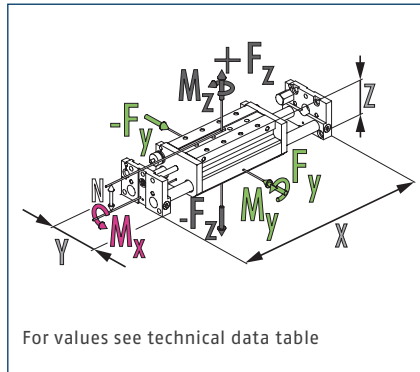


Directly mounted end position monitoring.

Description	ID	Often combined
Inductive proximity switch		
IN 40-S-M12	0301574	
IN 40-S-M8	0301474	●
INK 40-S	0301555	
Inductive proximity switch with lateral cable outlet		
IN 40-S-M12-SA	0301577	
IN 40-S-M8-SA	0301473	●
INK 40-S-SA	0301565	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BG12-L 3P-0500-PNP	30016369	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
KA BW12-L 3P-0300-PNP	0301503	
KA BW12-L 3P-0500-PNP	0301507	
Clip for connector/socket		
CLI-M12	0301464	
CLI-M8	0301463	
Cable extension		
KV BG12-SG12 3P-0030-PNP	0301999	
KV BG12-SG12 3P-0060-PNP	0301998	
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
KV BW12-SG12 3P-0030-PNP	0301595	
KV BW12-SG12 3P-0100-PNP	0301596	
KV BW12-SG12 3P-0200-PNP	0301597	
Sensor distributor		
V2-M12	0301776	●
V2-M8	0301775	●
V4-M8	0301746	
V8-M8	0301751	

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

Dimensions and maximum loads



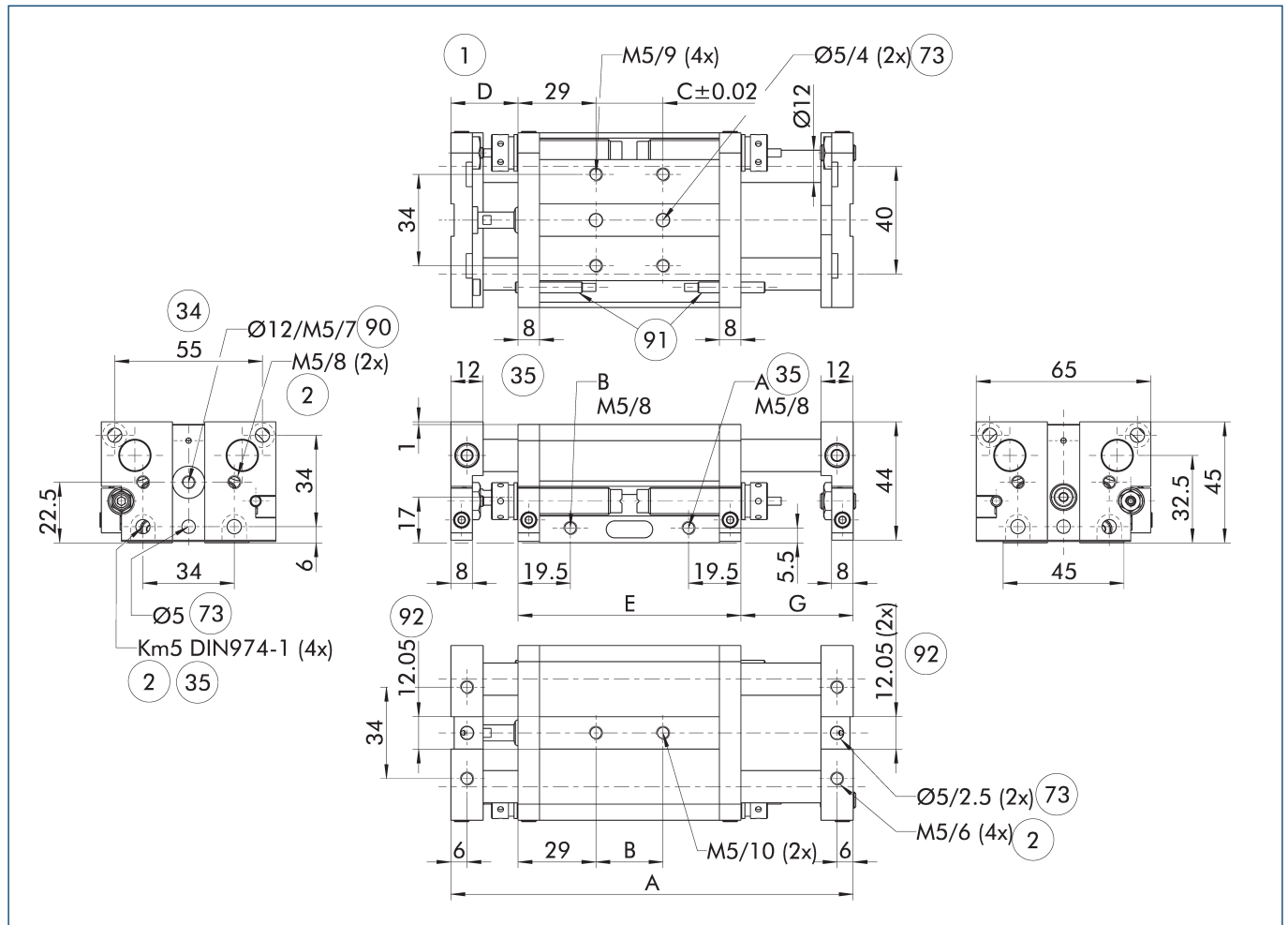
- ① The indicated forces and moments are maximum values for single load. If more than one force and/or torque occurs simultaneously, the case of application can be calculated by using the Toolbox. The force F_y can only be calculated by using the Toolbox.

Technical data

Description		KLM 50-H013	KLM 50-H025	KLM 50-H038	KLM 50-H050	KLM 50-H063	KLM 50-H075
ID		0314013	0314014	0314015	0314016	0314017	0314018
Stroke	[mm]	13	25	38	50	63	75
extend force	[N]	120	120	120	120	120	120
retracted force	[N]	103	103	103	103	103	103
Repeat accuracy	[mm]	0.02	0.02	0.02	0.02	0.02	0.02
Piston diameter	[mm]	16	16	16	16	16	16
Bar diameter	[mm]	6	6	6	6	6	6
Min./nom./max. operating pressure	[bar]	3/6/8	3/6/8	3/6/8	3/6/8	3/6/8	3/6/8
Cylinder volume/10 mm per double stroke	[cm ³]	2	2	2	2	2	2
Overall length	[mm]	150	150	200	200	250	250
IP protection class		40	40	40	40	40	40
Min./max. ambient temperature	[°C]	5/60	5/60	5/60	5/60	5/60	5/60
Cleanroom class ISO 14644-1:1999		6	6	6	6	6	6
Weight	[kg]	1.3	1.3	1.5	1.5	1.7	1.7
Drive concept		Piston rod cylinders	Piston rod cylinders	Piston rod cylinders	Piston rod cylinders	Piston rod cylinders	Piston rod cylinders
Dimensions X x Y x Z	[mm]	150 x 65 x 45	150 x 65 x 45	200 x 65 x 45	200 x 65 x 45	250 x 65 x 45	250 x 65 x 45
Clearance N (for moment load)	[mm]	32.5	32.5	32.5	32.5	32.5	32.5
Moments Mx max./My max./Mz max.	[Nm]	11.4/23/23	11.4/23/23	9.2/30.5/30.5	9.2/30.5/30.5	6.5/29/29	6.5/29/29
Forces Fz max.	[N]	569	569	461	461	324	324
Options and their characteristics							
Dustproof version		KLM 50-H013-SD	KLM 50-H025-SD	KLM 50-H038-SD	KLM 50-H050-SD	KLM 50-H063-SD	KLM 50-H075-SD
ID		0314640	0314641	0314642	0314643	0314644	0314645
IP protection class		50	50	50	50	50	50
Rod lock version			KLM 50-H025-ASP	KLM 50-H038-ASP	KLM 50-H050-ASP	KLM 50-H063-ASP	KLM 50-H075-ASP
ID			0314414	0314415	0314416	0314417	0314418
Stroke loss of nominal stroke (on the rod side)	[mm]		10	10	10	10	10
Weight	[kg]		1.34	1.54	1.54	1.74	1.74
Static holding force	[N]		180	180	180	180	180
Max. axial play of the clamping	[mm]		0.2	0.2	0.2	0.2	0.2
Min. release pressure	[bar]		3	3	3	3	3

Description		KLM 50-H088	KLM 50-H100	KLM 50-H113	KLM 50-H125
ID		0314019	0314020	0314021	0314022
Stroke	[mm]	88	100	113	125
extend force	[N]	120	120	120	120
retracted force	[N]	103	103	103	103
Repeat accuracy	[mm]	0.02	0.02	0.02	0.02
Piston diameter	[mm]	16	16	16	16
Bar diameter	[mm]	6	6	6	6
Min./nom./max. operating pressure	[bar]	3/6/8	3/6/8	3/6/8	3/6/8
Cylinder volume/10 mm per double stroke	[cm ³]	2	2	2	2
Overall length	[mm]	300	300	350	350
IP protection class		40	40	40	40
Min./max. ambient temperature	[°C]	5/60	5/60	5/60	5/60
Cleanroom class ISO 14644-1:1999		6	6	6	6
Weight	[kg]	1.9	1.9	2.1	2.1
Drive concept		Piston rod cylinders	Piston rod cylinders	Piston rod cylinders	Piston rod cylinders
Dimensions X x Y x Z	[mm]	300 x 65 x 45	300 x 65 x 45	350 x 65 x 45	350 x 65 x 45
Clearance N (for moment load)	[mm]	32.5	32.5	32.5	32.5
Moments Mx max./My max./Mz max.	[Nm]	4.5/26.5/26.5	4.5/26.5/26.5	3.2/23.5/23.5	3.2/23.5/23.5
ForcesFz max.	[N]	224	224	164	164
Options and their characteristics					
Dustproof version		KLM 50-H088-SD	KLM 50-H100-SD	KLM 50-H113-SD	KLM 50-H125-SD
ID		0314646	0314647	0314648	0314649
IP protection class		50	50	50	50
Rod lock version		KLM 50-H088-ASP	KLM 50-H100-ASP	KLM 50-H113-ASP	KLM 50-H125-ASP
ID		0314419	0314420	0314421	0314422
Stroke loss of nominal stroke (on the rod side)	[mm]	10	10	10	10
Weight	[kg]	1.94	1.94	2.14	2.14
Static holding force	[N]	180	180	180	180
Max. axial play of the clamping	[mm]	0.2	0.2	0.2	0.2
Min. release pressure	[bar]	3	3	3	3

Main view



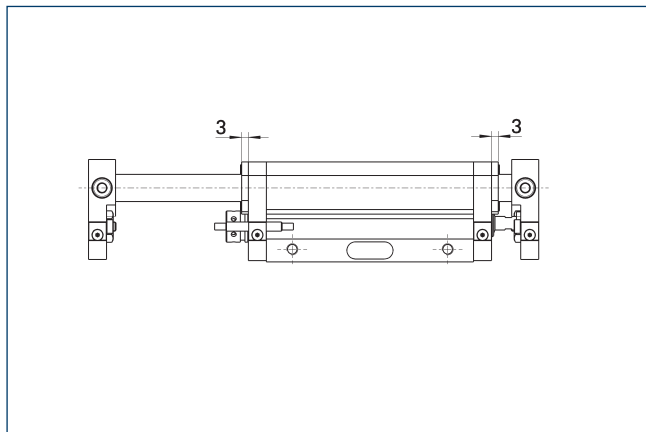
The linear module can be fastened either to the base body or the face plates. The structure can also optionally be fastened to either the face plates or the base body. This view shows the mounting of the module to the base body and the mounting of the structure to the face plates.

- A Main connection - linear unit extended
- B Main connection - linear unit retracted
- ① Connection linear unit
- ② Attachment connection
- ③④ On both sides

- ③⑤ Back side
- ⑦③ Fit for centering pins
- ⑨⑩ Through-holes in the face plate and thread in the base body (only single sided)
- ⑨① Inductive proximity switch
- ⑨② Fit for centering strip LMZL

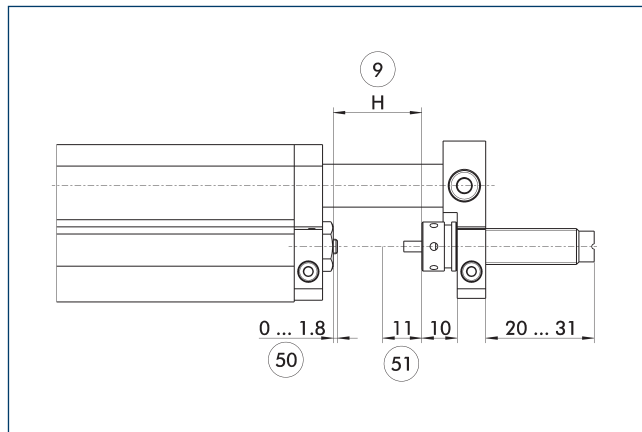
Description	ID	A	B	Quantity B	C	Quantity C	D	E	G
		[mm]	[mm]		[mm]		[mm]	[mm]	[mm]
KLM 50-H013	0314013	150	25	1	25	1	21	83	46
KLM 50-H025	0314014	150	25	1	25	1	21	83	46
KLM 50-H038	0314015	200	25	2	25	2	21	108	71
KLM 50-H050	0314016	200	25	2	25	2	21	108	71
KLM 50-H063	0314017	250	25	3	25	3	21	133	96
KLM 50-H075	0314018	250	25	3	25	3	21	133	96
KLM 50-H088	0314019	300	25	4	25	4	21	158	121
KLM 50-H100	0314020	300	25	4	25	4	21	158	121
KLM 50-H113	0314021	350	25	5	25	5	21	183	146
KLM 50-H125	0314022	350	25	5	25	5	21	183	146

Dustproof version



The "dustproof" option increases the degree of protection against penetrating substances.

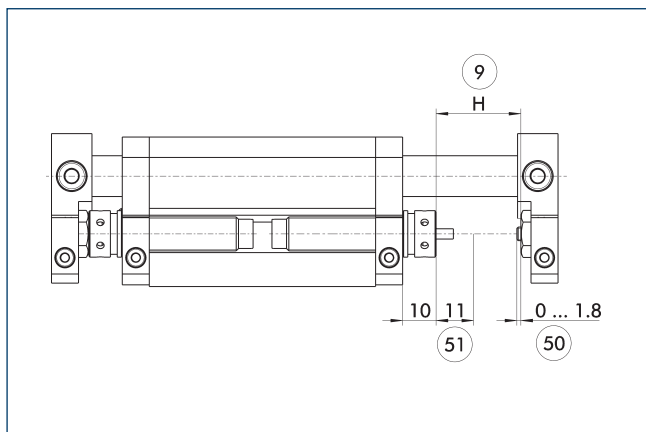
Fine adjustment



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

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

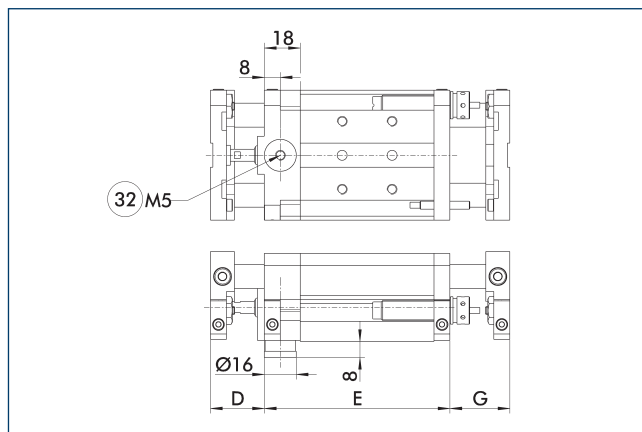
Fine adjustment



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

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

Rod lock

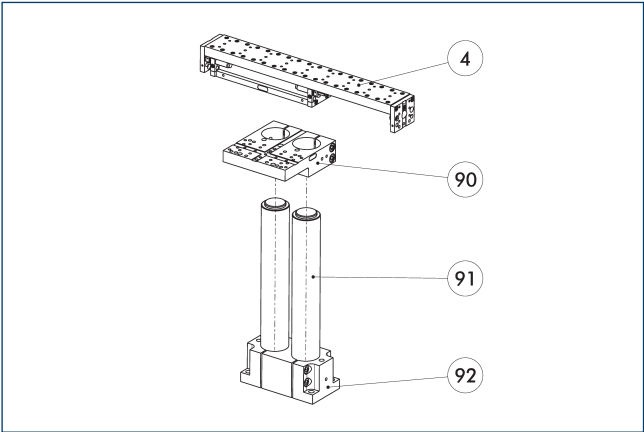


- ③② Pneumatic connection for holding brake

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

Description	D	E	G
	[mm]	[mm]	[mm]
KLM 50-H025-ASP	21	93	36
KLM 50-H038-ASP	21	118	61
KLM 50-H050-ASP	21	118	61
KLM 50-H063-ASP	21	143	86
KLM 50-H075-ASP	21	143	86
KLM 50-H088-ASP	21	168	111
KLM 50-H100-ASP	21	168	111
KLM 50-H113-ASP	21	193	136
KLM 50-H125-ASP	21	193	136

Attachment to a pillar assembly system

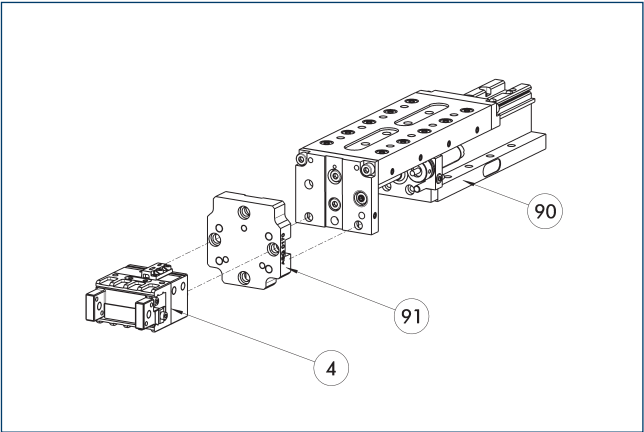


- ④ Linear unit
- ⑨① Pillars, hard-chromium plated, ground
- ⑨② Double socket SOD
- ⑨② Double socket SOD

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

Description	ID	pillar diameter	Material
		[mm]	
Pillar assembly system mounting plate			
APDH 85	0313414	55	Aluminum
APDV 35	0313896	35	Aluminum
APDV 85	0313416	55	Aluminum
APEH 35	0313893	35	Aluminum
APEH 85	0313413	55	Aluminum
APEV 35	0313895	35	Aluminum
APEV 85	0313415	55	Aluminum

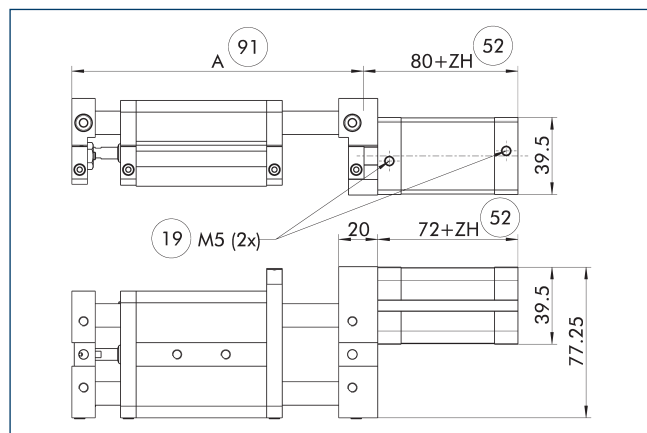
Modular Assembly Automation



- ④ Grippers
- ⑨① ASG adapter plate
- ⑨② Linear module CLM/KLM/LM/ELP/ELM/ELS/HLM
- ⑨② Linear module CLM/KLM/LM/ELP/ELM/ELS/HLM

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

Intermediate stop, ZZA on the piston side



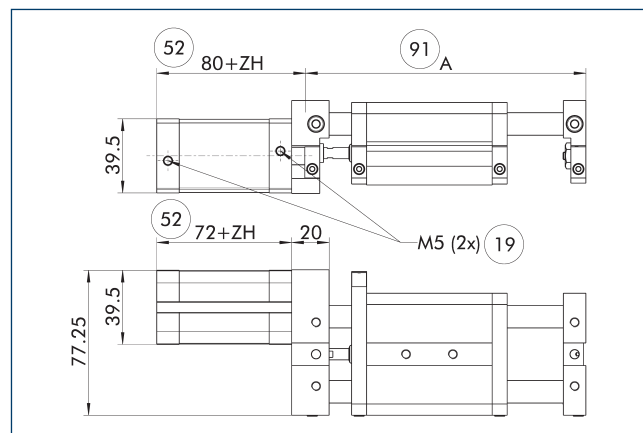
- ①⑨ Air connection
- ⑤② Intermediate stroke
- ⑨① Overall length "A," the variant without intermediate stroke (see measurement chart of stroke variants)

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

Description	Holding force	With with 0mm stroke	Weight per mm stroke
	[N]	[kg]	[kg]
Intermediate stop			
ZZA 55	175	0.35	0.003

① Sample order KLM 50-H100-ZZA055-H30

Intermediate stop, ZZA on the piston rod side



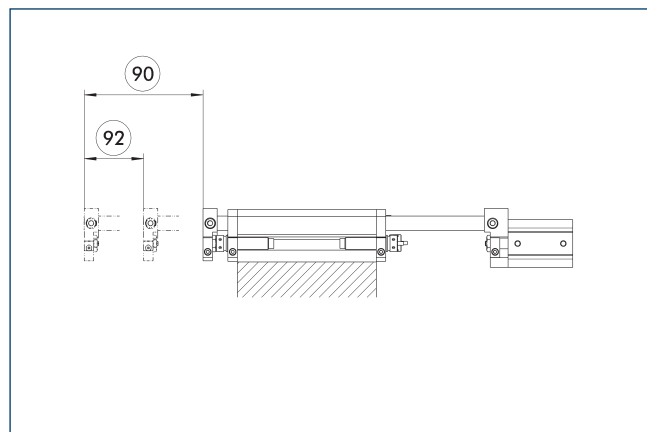
- ①⑨ Air connection
- ⑤② Intermediate stroke
- ⑨① Overall length "A," the variant without intermediate stroke (see measurement chart of stroke variants)

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

Description	Holding force	With with 0mm stroke	Weight per mm stroke
	[N]	[kg]	[kg]
Intermediate stop			
ZZA 56	175	0.35	0.003

① Sample order KLM 50-H100-ZZA056-H30

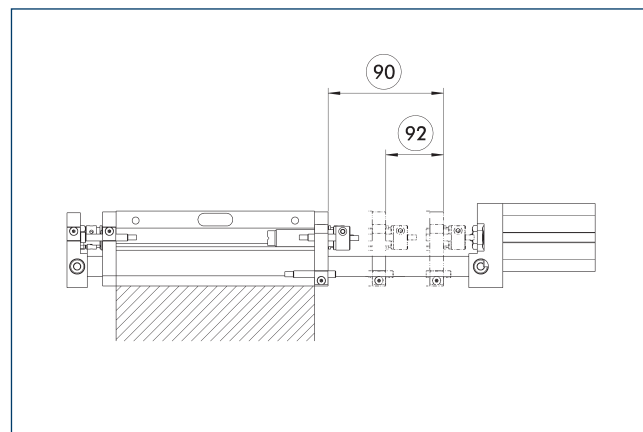
Design – variant 1



- ⑨① Nominal stroke
- ⑨② Intermediate stroke

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

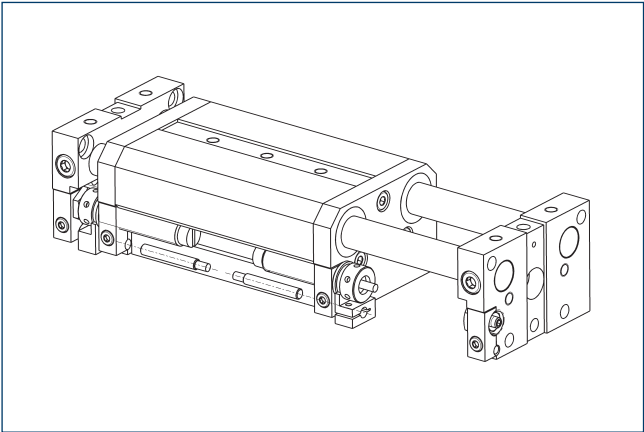
Design – variant 2



- ⑨① Nominal stroke
- ⑨② Intermediate stroke

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

Inductive proximity switches

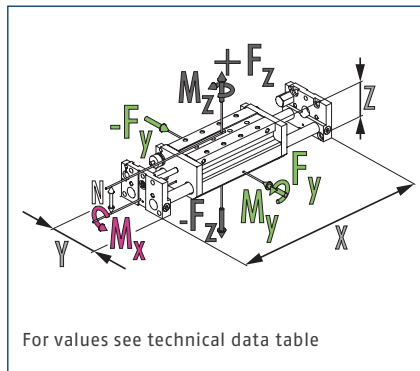


Directly mounted end position monitoring.

Description	ID	Often combined
Inductive proximity switch		
IN 40-S-M12	0301574	
IN 40-S-M8	0301474	●
INK 40-S	0301555	
Inductive proximity switch with lateral cable outlet		
IN 40-S-M12-SA	0301577	
IN 40-S-M8-SA	0301473	●
INK 40-S-SA	0301565	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BG12-L 3P-0500-PNP	30016369	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
KA BW12-L 3P-0300-PNP	0301503	
KA BW12-L 3P-0500-PNP	0301507	
Clip for connector/socket		
CLI-M12	0301464	
CLI-M8	0301463	
Cable extension		
KV BG12-SG12 3P-0030-PNP	0301999	
KV BG12-SG12 3P-0060-PNP	0301998	
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
KV BW12-SG12 3P-0030-PNP	0301595	
KV BW12-SG12 3P-0100-PNP	0301596	
KV BW12-SG12 3P-0200-PNP	0301597	
Sensor distributor		
V2-M12	0301776	●
V2-M8	0301775	●
V4-M8	0301746	
V8-M8	0301751	

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

Dimensions and maximum loads



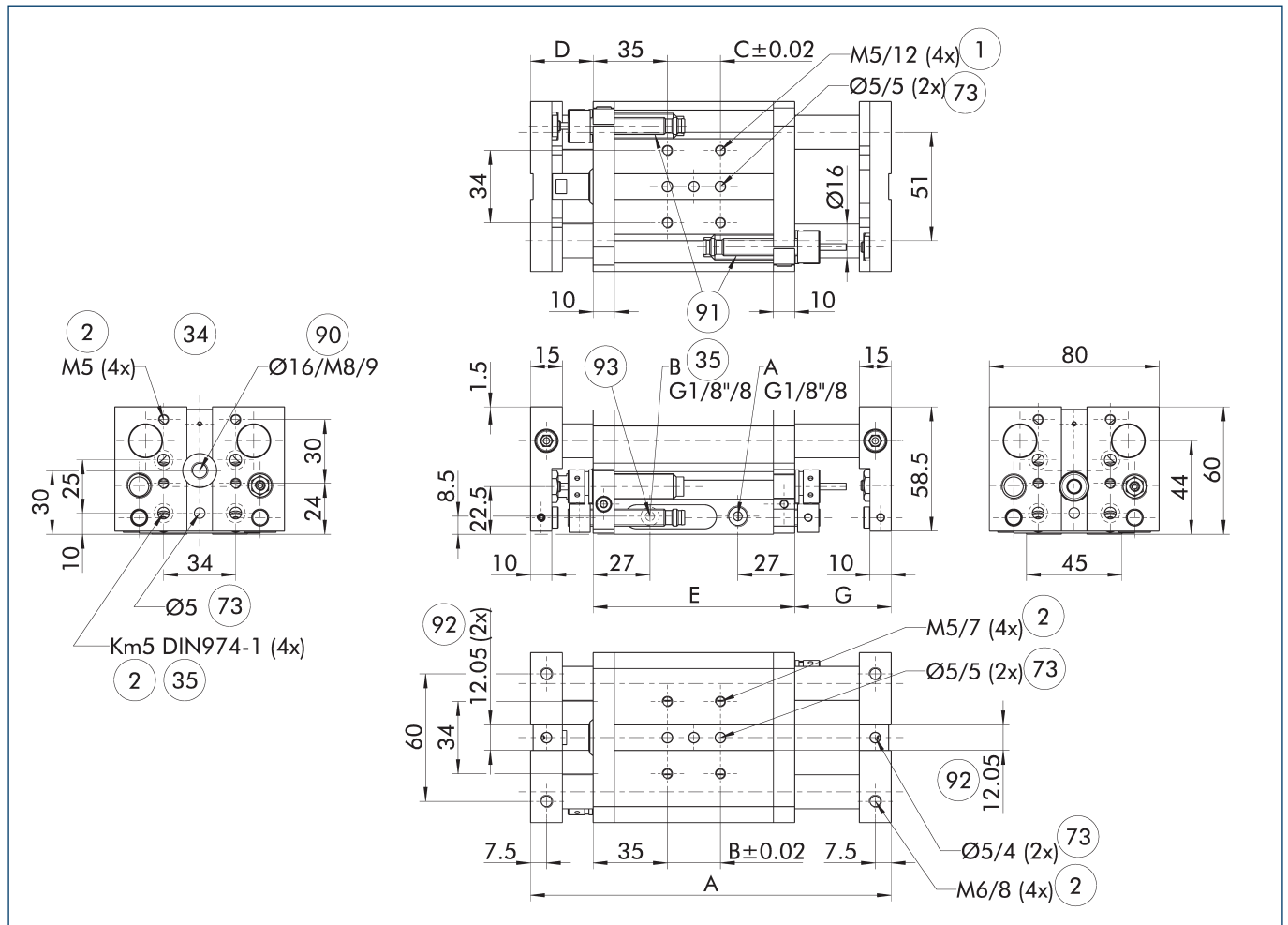
- ① The indicated forces and moments are maximum values for single load. If more than one force and/or torque occurs simultaneously, the case of application can be calculated by using the Toolbox. The force F_y can only be calculated by using the Toolbox.

Technical data

Description		KLM 100-H025	KLM 100-H050	KLM 100-H075	KLM 100-H100	KLM 100-H125	KLM 100-H150
ID		0314023	0314024	0314025	0314026	0314027	0314028
Stroke	[mm]	25	50	75	100	125	150
extend force	[N]	294	294	294	294	294	294
retracted force	[N]	226	226	226	226	226	226
Repeat accuracy	[mm]	0.03	0.03	0.03	0.03	0.03	0.03
Piston diameter	[mm]	25	25	25	25	25	25
Bar diameter	[mm]	12	12	12	12	12	12
Min./nom./max. operating pressure	[bar]	3/6/8	3/6/8	3/6/8	3/6/8	3/6/8	3/6/8
Cylinder volume/10 mm per double stroke	[cm ³]	4.9	4.9	4.9	4.9	4.9	4.9
Overall length	[mm]	170	270	270	370	370	470
IP protection class		40	40	40	40	40	40
Min./max. ambient temperature	[°C]	5/60	5/60	5/60	5/60	5/60	5/60
Cleanroom class ISO 14644-1:1999		6	6	6	6	6	6
Weight	[kg]	2.3	3	3	3.7	3.7	4.4
Drive concept		Piston rod cylinders	Piston rod cylinders	Piston rod cylinders	Piston rod cylinders	Piston rod cylinders	Piston rod cylinders
Dimensions X x Y x Z	[mm]	170 x 80 x 60	270 x 80 x 60	270 x 80 x 60	370 x 80 x 60	370 x 80 x 60	470 x 80 x 60
Clearance N (for moment load)	[mm]	44	44	44	44	44	44
Moments Mx max./My max./Mz max.	[Nm]	25.5/32.5/32.5	13.5/57.5/57.5	13.5/57.5/57.5	11.5/58.5/58.5	11.5/58.5/58.5	7.3/52/52
Forces Fz max.	[N]	999	529	592	449	449	284
Options and their characteristics							
Dustproof version		KLM 100-H025-SD	KLM 100-H050-SD	KLM 100-H075-SD	KLM 100-H100-SD	KLM 100-H125-SD	KLM 100-H150-SD
ID		0314790	0314791	0314792	0314793	0314794	0314795
IP protection class		50	50	50	50	50	50
Rod lock version			KLM 100-H050-ASP	KLM 100-H075-ASP	KLM 100-H100-ASP	KLM 100-H125-ASP	KLM 100-H150-ASP
ID			0314424	0314425	0314426	0314427	0314428
Stroke loss of nominal stroke (on the rod side)	[mm]		12	12	12	12	12
Weight	[kg]		3.08	3.08	3.78	3.78	4.48
Static holding force	[N]		600	600	600	600	600
Max. axial play of the clamping	[mm]		0.3	0.3	0.3	0.3	0.3
Min. release pressure	[bar]		3	3	3	3	3

Description		KLM 100-H175	KLM 100-H200	KLM 100-H225
ID		0314029	0314030	0314031
Stroke	[mm]	175	200	225
extend force	[N]	294	294	294
retracted force	[N]	226	226	226
Repeat accuracy	[mm]	0.03	0.03	0.03
Piston diameter	[mm]	25	25	25
Bar diameter	[mm]	12	12	12
Min./nom./max. operating pressure	[bar]	3/6/8	3/6/8	3/6/8
Cylinder volume/10 mm per double stroke	[cm³]	4.9	4.9	4.9
Overall length	[mm]	470	570	570
IP protection class		40	40	40
Min./max. ambient temperature	[°C]	5/60	5/60	5/60
Cleanroom class ISO 14644-1:1999		6	6	6
Weight	[kg]	4.4	5.1	5.1
Drive concept		Piston rod cylinders	Piston rod cylinders	Piston rod cylinders
Dimensions X x Y x Z	[mm]	470 x 80 x 60	570 x 80 x 60	570 x 80 x 60
Clearance N (for moment load)	[mm]	44	44	44
Moments Mx max./My max./Mz max.	[Nm]	7.3/52/52	5/44.5/44.5	5/44.5/44.5
ForcesFz max.	[N]	284	194	194
Options and their characteristics				
Dustproof version		KLM 100-H175-SD	KLM 100-H200-SD	KLM 100-H225-SD
ID		0314796	0314797	0314798
IP protection class		50	50	50
Rod lock version		KLM 100-H175-ASP	KLM 100-H200-ASP	KLM 100-H225-ASP
ID		0314429	0314430	0314431
Stroke loss of nominal stroke (on the rod side)	[mm]	12	12	12
Weight	[kg]	4.48	5.18	5.18
Static holding force	[N]	600	600	600
Max. axial play of the clamping	[mm]	0.3	0.3	0.3
Min. release pressure	[bar]	3	3	3

Main view

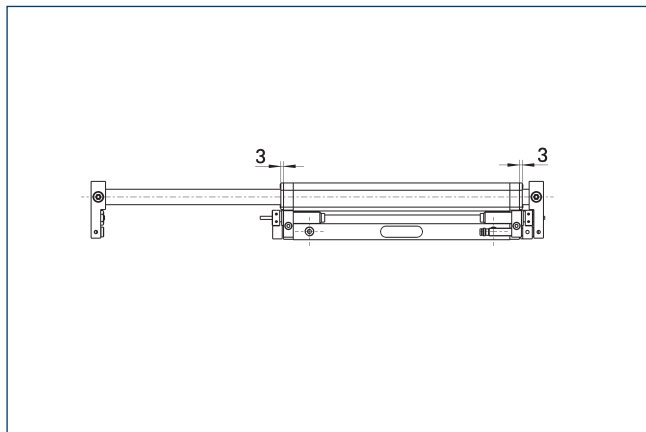


The linear module can be fastened either to the base body or the face plates. The structure can also optionally be fastened to either the face plates or the base body. This view shows the mounting of the module to the base body and the mounting of the structure to the face plates.

- A Main connection - linear unit extended
- B Main connection - linear unit retracted
- ① Connection linear unit
- ② Attachment connection
- ③ On both sides
- ④ Back side
- ⑦ Fit for centering pins
- ⑩ Through-holes in the face plate and thread in the base body (only single sided)
- ⑪ Inductive proximity switch
- ⑫ Fit for centering strip LMZL
- ⑬ Air connection "B" only for stroke 025 at the rear

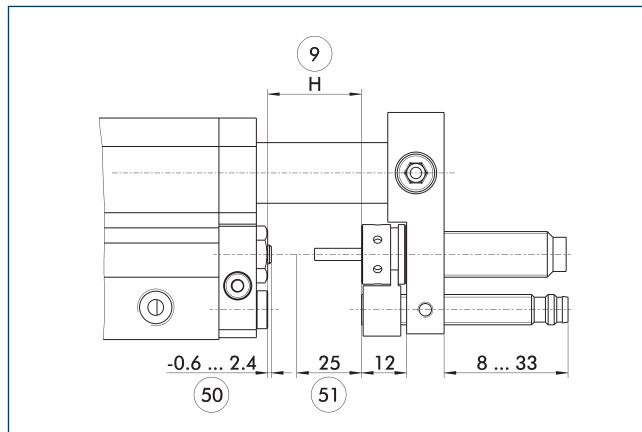
Description	ID	A	B	Quantity B	C	Quantity C	D	E	G
		[mm]	[mm]		[mm]		[mm]	[mm]	[mm]
KLM 100-H025	0314023	170	25	1	25	1	25	95	50
KLM 100-H050	0314024	270	25	3	25	3	25	145	100
KLM 100-H075	0314025	270	25	3	25	3	25	145	100
KLM 100-H100	0314026	370	25	5	25	5	25	195	150
KLM 100-H125	0314027	370	25	5	25	5	25	195	150
KLM 100-H150	0314028	470	25	7	25	7	25	245	200
KLM 100-H175	0314029	470	25	7	25	7	25	245	200
KLM 100-H200	0314030	570	25	9	25	9	25	295	250
KLM 100-H225	0314031	570	25	9	25	9	25	295	250

Dustproof version



The "dustproof" option increases the degree of protection against penetrating substances.

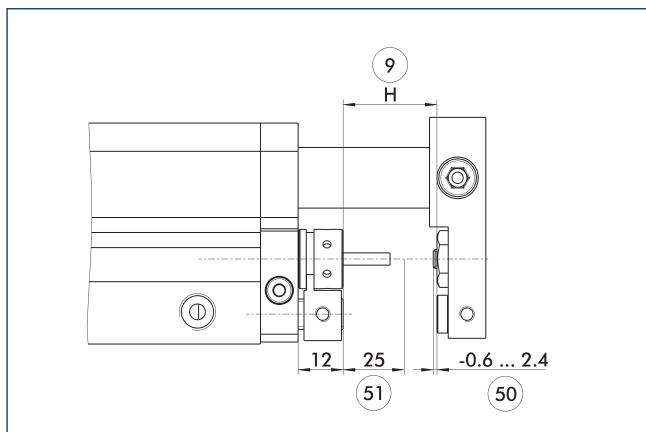
Fine adjustment



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

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

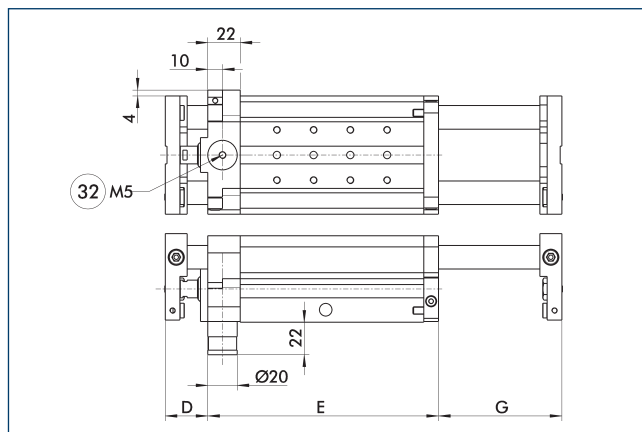
Fine adjustment



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

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

Rod lock

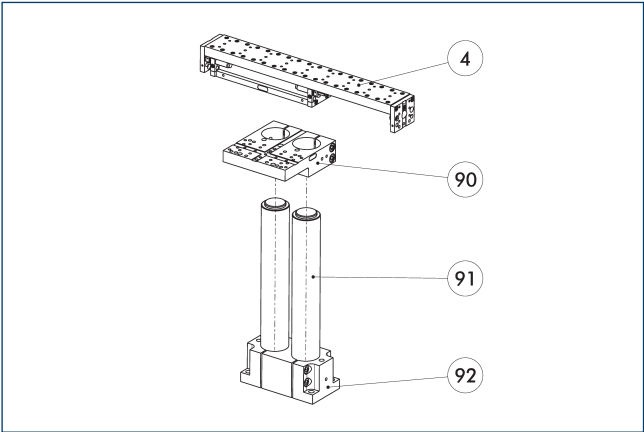


- ③② Pneumatic connection for holding brake

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

Description	D	E	G
	[mm]	[mm]	[mm]
KLM 100-H050-ASP	25	157	88
KLM 100-H075-ASP	25	157	88
KLM 100-H100-ASP	25	207	138
KLM 100-H125-ASP	25	207	138
KLM 100-H150-ASP	25	257	198
KLM 100-H175-ASP	25	257	198
KLM 100-H200-ASP	25	307	238
KLM 100-H225-ASP	25	307	238

Attachment to a pillar assembly system

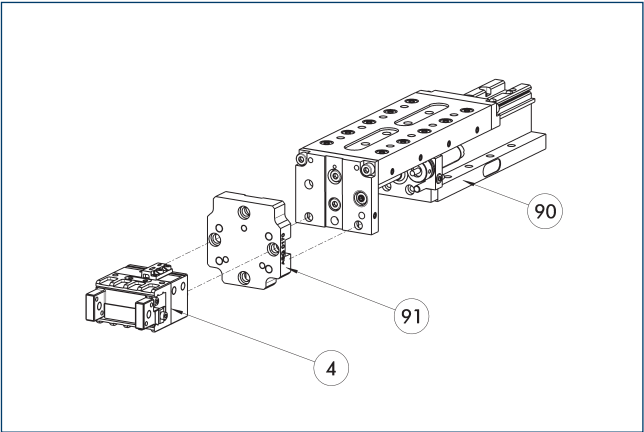


- ④ Linear unit
- ⑨① Pillars, hard-chromium plated, ground
- ⑨② Double socket SOD
- ⑨② Double socket SOD

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

Description	ID	pillar diameter	Material
		[mm]	
Pillar assembly system mounting plate			
APDH 85	0313414	55	Aluminum
APDV 35	0313896	35	Aluminum
APDV 85	0313416	55	Aluminum
APEH 35	0313893	35	Aluminum
APEH 85	0313413	55	Aluminum
APEV 35	0313895	35	Aluminum
APEV 85	0313415	55	Aluminum

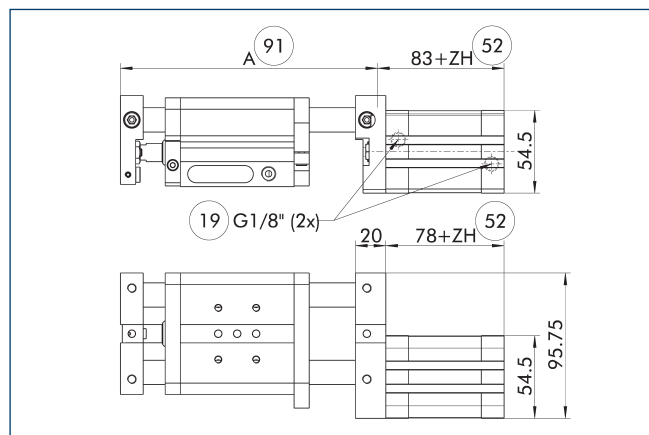
Modular Assembly Automation



- ④ Grippers
- ⑨① ASG adapter plate
- ⑨② Double socket SOD
- ⑨② Double socket SOD

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

Intermediate stop, ZZA on the piston side



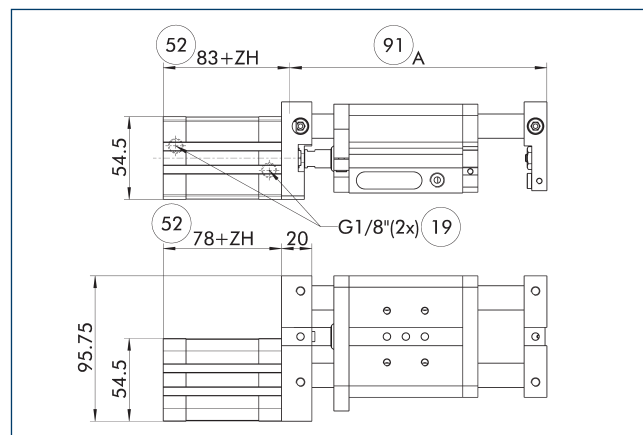
- 19 Air connection
52 Intermediate stroke
91 Overall length "A," the variant without intermediate stroke (see measurement chart of stroke variants)

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

Description	Holding force	With with 0mm stroke	Weight per mm stroke
	[N]	[kg]	[kg]
Intermediate stop			
ZZA105	460	0.75	0.006

① Sample order KLM 100-H100-ZZA105-H30

Intermediate stop, ZZA on the piston rod side



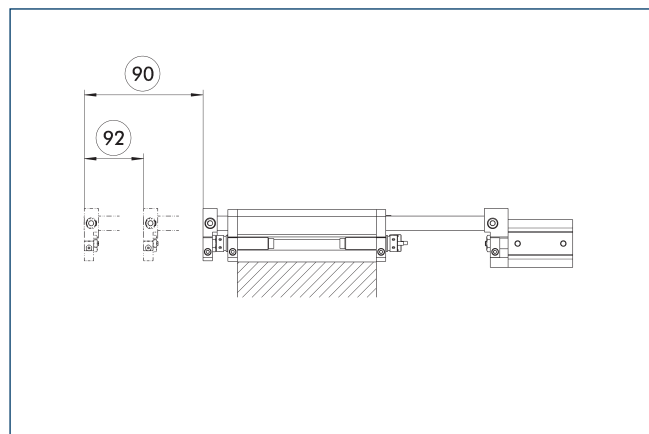
- 19 Air connection
52 Intermediate stroke
91 Overall length "A," the variant without intermediate stroke (see measurement chart of stroke variants)

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

Description	Holding force	With with 0mm stroke	Weight per mm stroke
	[N]	[kg]	[kg]
Intermediate stop			
ZZA 106	460	0.75	0.006

① Sample order KLM 100-H100-ZZA106-H30

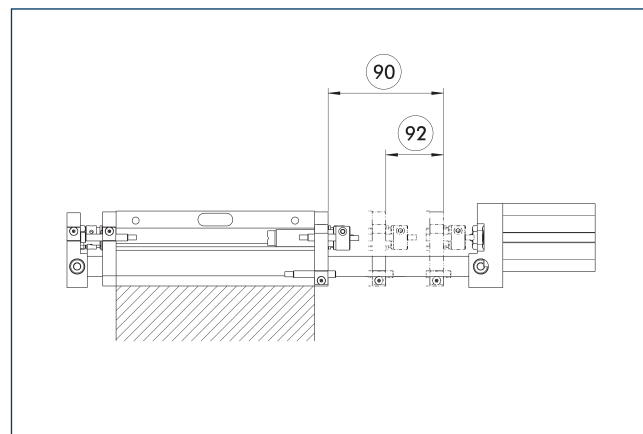
Design – variant 1



- 90 Nominal stroke
92 Intermediate stroke

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

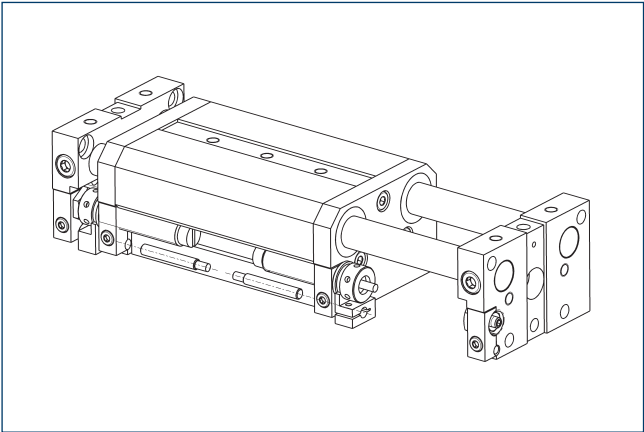
Design – variant 2



- 90 Nominal stroke
92 Intermediate stroke

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

Inductive proximity switches

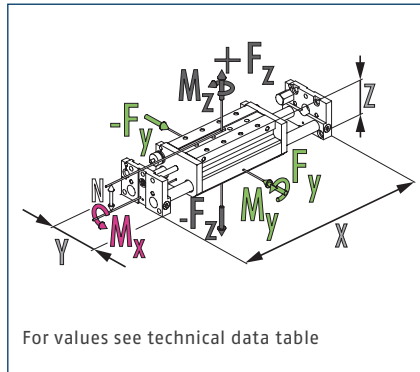


Directly mounted end position monitoring.

Description	ID	Often combined
Inductive proximity switch		
NI 30-KT	0313429	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
Cable extension		
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●

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

Dimensions and maximum loads



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

Technical data

Description		KLM 300-H050	KLM 300-H100	KLM 300-H150	KLM 300-H200	KLM 300-H250	KLM 300-H300
ID		0314550	0314554	0314558	0314562	0314566	0314570
Stroke	[mm]	50	100	150	200	250	300
extend force	[N]	753	753	753	753	753	753
retracted force	[N]	633	633	633	633	633	633
Repeat accuracy	[mm]	0.03	0.03	0.03	0.03	0.03	0.03
Piston diameter	[mm]	40	40	40	40	40	40
Bar diameter	[mm]	16	16	16	16	16	16
Min./nom./max. operating pressure	[bar]	3/6/8	3/6/8	3/6/8	3/6/8	3/6/8	3/6/8
Cylinder volume/10 mm per double stroke	[cm³]	12.57	12.57	12.57	12.57	12.57	12.57
Overall length	[mm]	324	324	524	524	724	724
IP protection class		40	40	40	40	40	40
Min./max. ambient temperature	[°C]	5/60	5/60	5/60	5/60	5/60	5/60
Cleanroom class ISO 14644-1:1999		6	6	6	6	6	6
Weight	[kg]	6.9	6.8	9.8	9.7	12.7	12.6
Drive concept		Piston rod cylinders	Piston rod cylinders	Piston rod cylinders	Piston rod cylinders	Piston rod cylinders	Piston rod cylinders
Dimensions X x Y x Z	[mm]	324 x 105 x 85	324 x 105 x 85	524 x 105 x 85	524 x 105 x 85	724 x 105 x 85	724 x 105 x 85
Clearance N (for moment load)	[mm]	61	61	61	61	61	61
Moments Mx max./My max./Mz max.	[Nm]	90/200/200	90/200/200	72/350/350	72/350/350	54/415/415	54/415/415
Forces Fz max.	[N]	3120	3120	2490	2490	1870	1870
Options and their characteristics							
Dustproof version		KLM 300-H050-SD	KLM 300-H100-SD	KLM 300-H150-SD	KLM 300-H200-SD	KLM 300-H250-SD	KLM 300-H300-SD
ID		0314552	0314556	0314560	0314564	0314568	0314572
IP protection class		50	50	50	50	50	50
Rod lock version		KLM 300-H050-ASP	KLM 300-H100-ASP	KLM 300-H150-ASP	KLM 300-H200-ASP	KLM 300-H250-ASP	KLM 300-H300-ASP
ID		0314551	0314555	0314559	0314563	0314567	0314571
Stroke loss of nominal stroke (on the rod side)	[mm]	22	22	22	22	22	22
Weight	[kg]	7.4	7.3	10.3	10.2	13.2	13.1
Static holding force	[N]	1000	1000	1000	1000	1000	1000
Max. axial play of the clamping	[mm]	0.25	0.25	0.25	0.25	0.25	0.25
Min. release pressure	[bar]	3	3	3	3	3	3

Technical drawing of the 3000 series hydraulic cylinder, showing four views: front, side, end, and detail. The drawing includes dimensions and part numbers for various components.

Front View (Top): Shows the cylinder body with dimensions 10, 10, 60, 35, 60, 58, and 25. Part numbers include 91, M8/14.5 (4x), C±0.02, M6/13 (6x) 1, and Ø5/4 (3x) 73.

Side View (Middle): Shows the cylinder body with dimensions 22, 10.5, 12, 22.5, 22.5, 12, 82, and 105. Part numbers include B, G1/4"/10, A, G1/4"/10, and 73.

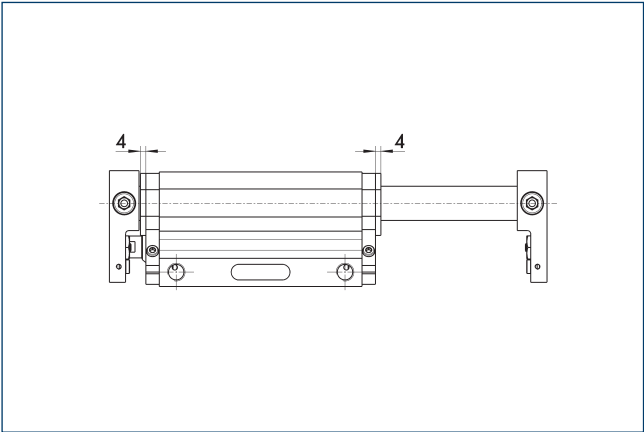
End View (Right): Shows the cylinder body with dimensions 74, 61, and 85. Part numbers include 2, 34, 90, M8/14 (4x), Ø20/M8/9, Ø5 (2x) 73, Ø5.3 (2x) 2, Km5 DIN 974-1 (4x), 2, 35, 73, Ø5/4 (2x), B±0.02, 11, 12.05 (2x) 92, Ø5/5 (2x) 73, M8/11 (4x) 2, and M6/8 (4x) 2.

Detail View (Bottom Left): Shows a detailed view of the cylinder body with dimensions 40, 40.5, 59, 24, 50, 15, 90, and 12.05. Part numbers include 2, 34, 90, M8/14 (4x), Ø20/M8/9, Ø5 (2x) 73, Ø5.3 (2x) 2, Km5 DIN 974-1 (4x), 2, 35, 73, Ø5/4 (2x), B±0.02, 11, 12.05 (2x) 92, Ø5/5 (2x) 73, M8/11 (4x) 2, and M6/8 (4x) 2.

A	Main connection – linear unit extended	35	Back side
		73	Fit for centering pins
B	Main connection – linear unit retracted	90	Through-holes in the face plate and thread in the base body (only single sided)
1	Connection linear unit		
2	Attachment connection	91	Inductive proximity switch
34	On both sides	92	Fit for centering strip LMZL

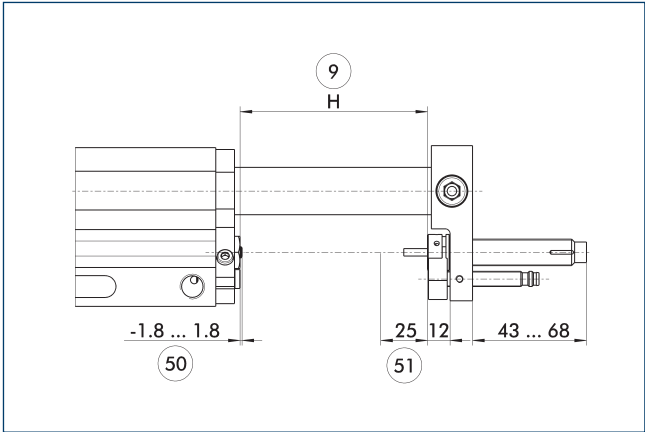
Description	ID	A	B	Quantity B	C	Quantity C	D	E	G
		[mm]	[mm]		[mm]		[mm]	[mm]	[mm]
KLM 300-H050	0314550	324	50	1	25	4	27	170	127
KLM 300-H100	0314554	324	50	1	25	4	27	170	127
KLM 300-H150	0314558	524	50	3	25	8	27	270	227
KLM 300-H200	0314562	524	50	3	25	8	27	270	227
KLM 300-H250	0314566	724	50	5	25	12	27	370	327
KLM 300-H300	0314570	724	50	5	25	12	27	370	327

Dustproof version



The "dustproof" option increases the degree of protection against penetrating substances.

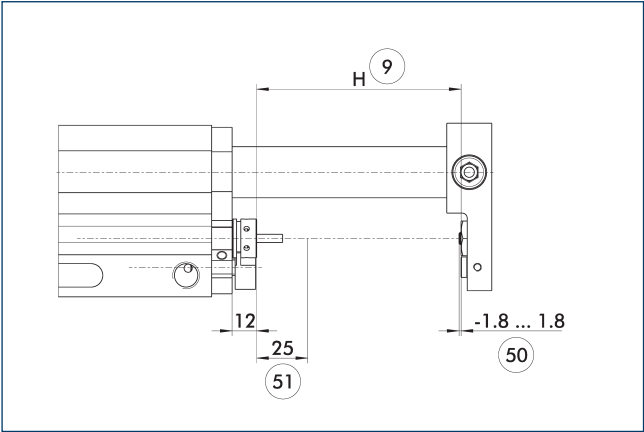
Fine adjustment



- 9 Nominal stroke
- 50 Damping stroke adjustment range
- 51 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.

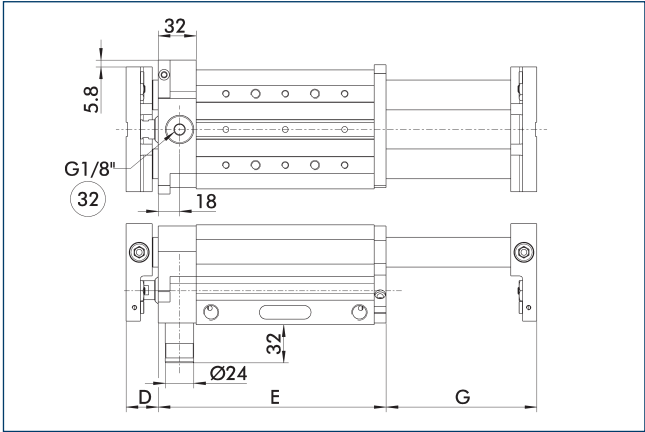
Fine adjustment



- 9 Nominal stroke
- 50 Damping stroke adjustment range
- 51 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.

Rod lock

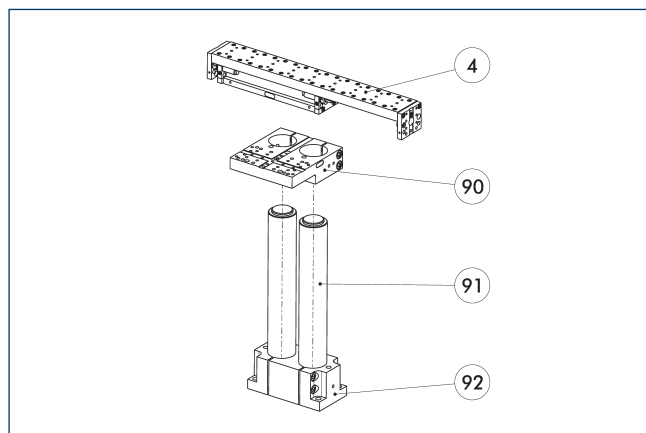


- 32 Pneumatic connection for holding brake

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

Description	D	E	G
	[mm]	[mm]	[mm]
KLM 300-H050-ASP	27	192	105
KLM 300-H100-ASP	27	192	105
KLM 300-H150-ASP	27	292	205
KLM 300-H200-ASP	27	292	205
KLM 300-H250-ASP	27	392	305
KLM 300-H300-ASP	27	392	305

Attachment to a pillar assembly system

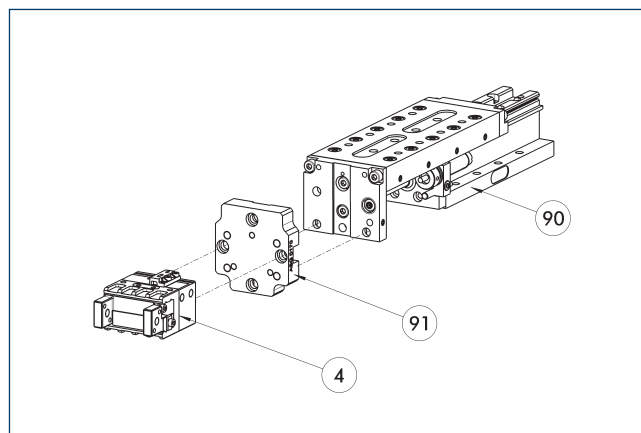


- ④ Linear unit
- ⑨① Pillars, hard-chromium plated, ground
- ⑨② Double mounting plate, APDH
- ⑨② Double socket SOD

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

Description	ID	pillar diameter [mm]	Material
Pillar assembly system mounting plate			
APDH 85	0313414	55	Aluminum
APDV 85	0313416	55	Aluminum
APEH 85	0313413	55	Aluminum
APDV 85	0313415	55	Aluminum

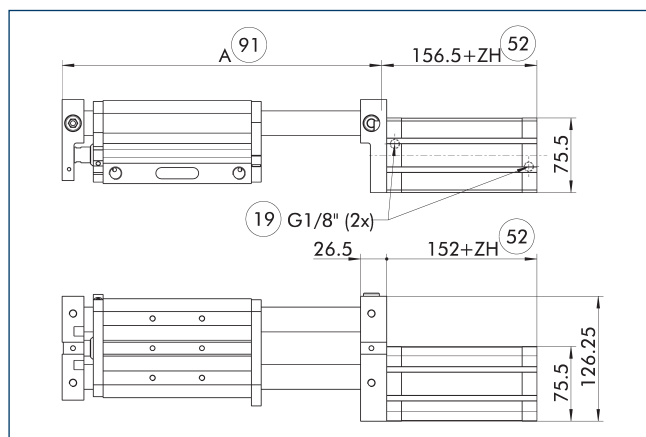
Modular Assembly Automation



- ④ Grippers
- ⑨① ASG adapter plate
- ⑨② Linear module CLM/KLM/LM/ELP/ELM/ELS/HLM

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

Intermediate stop, ZZA on the piston side

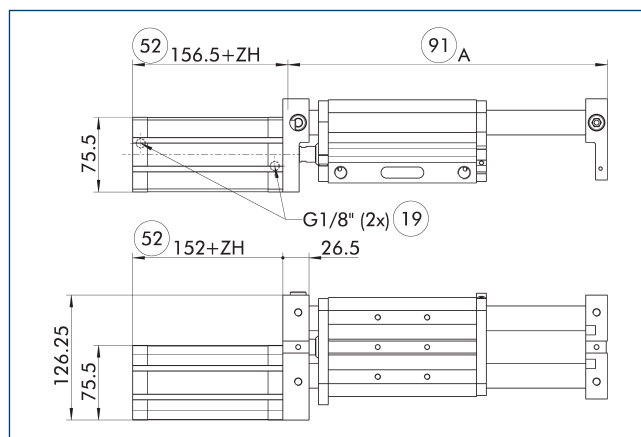


- ①⑨ Air connection
- ⑤② Intermediate stroke
- ⑨① Overall length "A," the variant without intermediate stroke (see measurement chart of stroke variants)

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

Description	Holding force [N]	With with 0mm stroke [kg]	Weight per mm stroke [kg]
Intermediate stop			
ZZA 305	1117	2.1	0.011

Intermediate stop, ZZA on the piston rod side



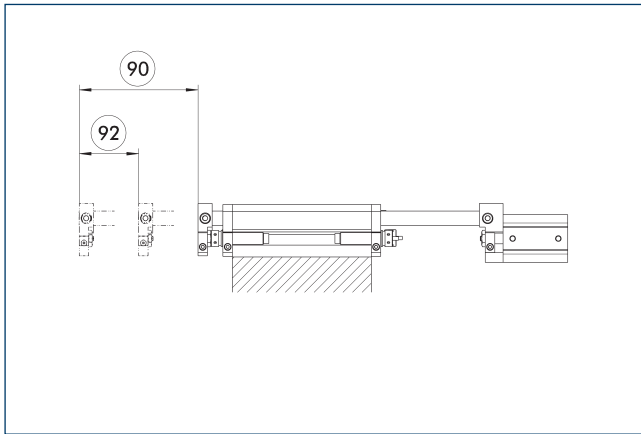
- ①⑨ Air connection
- ⑤② Intermediate stroke
- ⑨① Overall length "A," the variant without intermediate stroke (see measurement chart of stroke variants)

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

Description	Holding force [N]	With with 0mm stroke [kg]	Weight per mm stroke [kg]
Intermediate stop			
ZZA 306	1117	2.1	0.011

① Sample order KLM 300-H100-ZZA306-H100

Design – variant 1

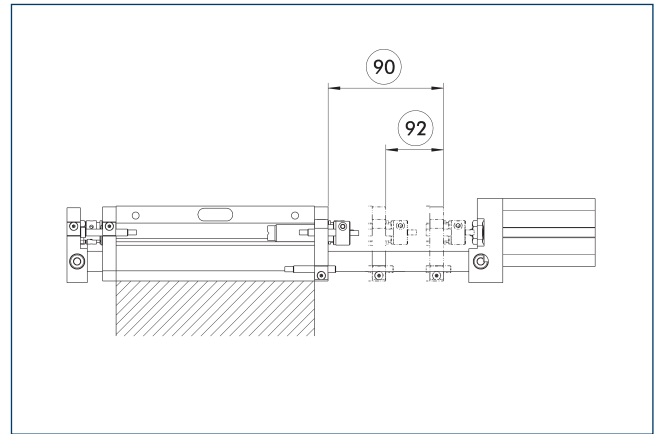


90 Nominal stroke

92 Intermediate stroke

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

Design – variant 2

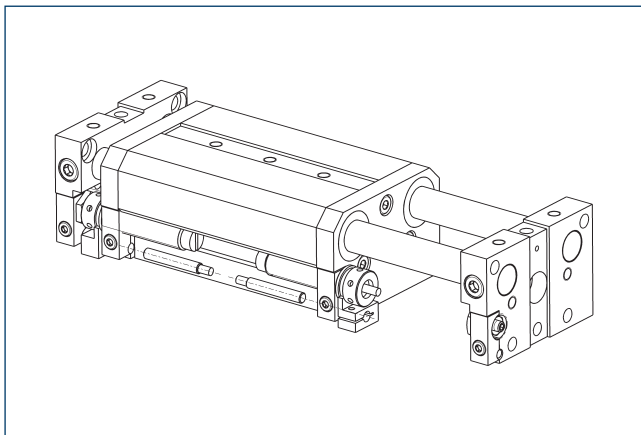


90 Nominal stroke

92 Intermediate stroke

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

Inductive proximity switches



Directly mounted end position monitoring.

Description	ID	Often combined
Inductive proximity switch		
NI 30-KT	0313429	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
Cable extension		
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●

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



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