



Superior Clamping and Gripping



Product Information

Compact linear module ELM

Flexible. Fast. Reliable.

Compact linear module ELM

Linear module with linear motor drive and profiled rail guide, integrated measuring system for position detection and temperature monitoring.

Field 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

Integrated motor in the axis for minimal interfering contours

Low oscillations and high holding force for the shortest positioning times and process stability

Almost no wear parts For long service life and reliability of the system

Different controllers Optionally with the interfaces: PROFINET, EthernetIP, EtherCAT, and many others

Option – Pneumatic weight compensation for compensation of weight and fast cycle times in a vertical installation position

Option – cooling using fans or compressed air for applications with an increased need for constant force



Sizes
Quantity: 2



Max. stroke
70 .. 260 mm



Max. driving force
60 .. 160 N



Repeat accuracy
±0.05 mm

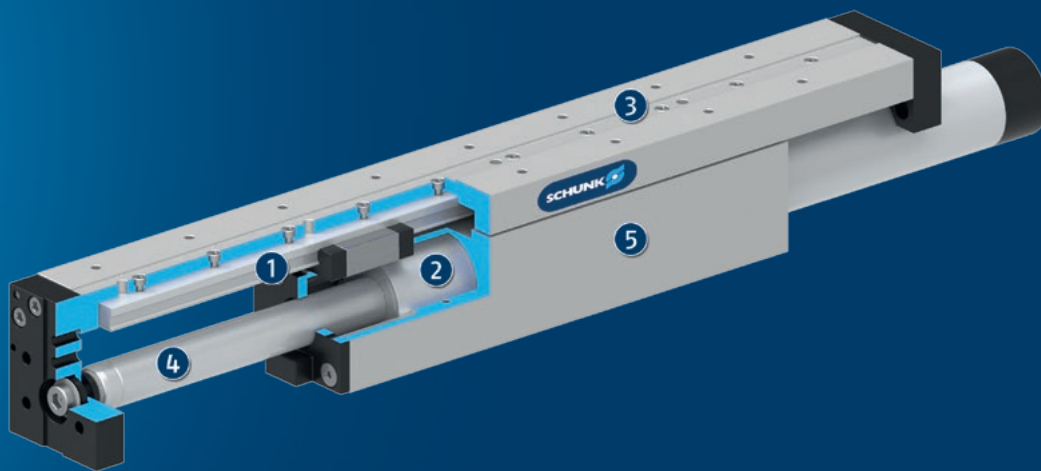


Max. speed
1.4 .. 1.5 m/s

Functional description

The electric drive consists of a primary part (motor coil) and a secondary part (permanent magnets). Inside the controller the phase and amplitude of the applied electric current are controlled. This sets the profile, which is fitted

with magnets, in motion.



- ① **Profiled rail guide**
for maximum positioning accuracy and moment loads
- ② **Drive**
Highly dynamic, wear-resistant linear motor drive

- ③ **Mounting pattern**
Completely integrated in the module system
- ④ **Runner**
with permanent magnets
- ⑤ **Base body**
for connection of further options such as fan cooling

General notes about the series

Housing material: Aluminum alloy, coated

Guidance: Profiled rail guide

Drive: Linear direct drive

Scope of delivery: Accessory pack with centering sleeves and assembly and operating manual with declaration of incorporation

Drive controller: LinMot® drive controllers are used by default.

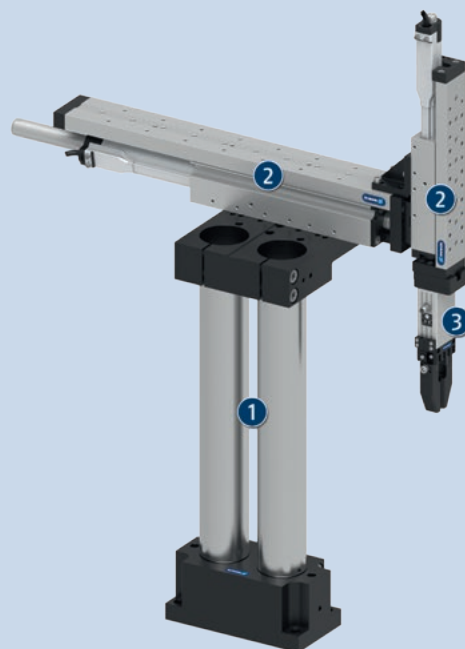
Warranty: 24 months

Safety notes: Caution: Magnetic field! This particularly applies for persons with implanted medical devices, such as pacemakers, hearing aids, etc.

Repeat accuracy: defined as the spread of the target position after 100 consecutive positioning cycles under constant conditions.

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.

Layout or control calculation: of the selected unit is absolutely necessary, since otherwise overloading can result. Please contact us for assistance.



Application example

Pick & place unit driven by linear motor for dynamic movements.

- ❶ Pillar assembly system
- ❷ Electric linear module ELM

- ❸ Electric 2-finger parallel gripper EGP

SCHUNK offers more ...

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



Gripper for small components



Rotation unit



Rotary gripper module



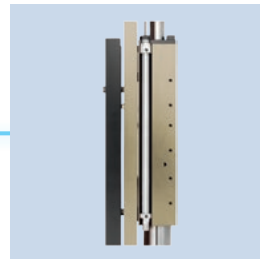
Pillar assembly system



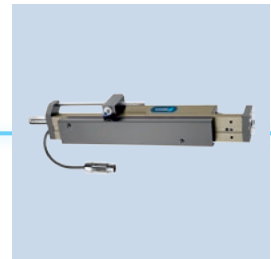
Safety damper



Fan cooling



Weight compensation



Rod lock



Power supply unit



Drive controller

① For more information on these products can be found on the following product pages or at schunk.com. Please contact us: SCHUNK technical hotline +49-7133-103-2696

Options and special information

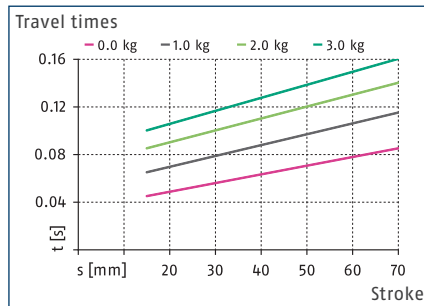
The modular principle: As standard, this module can be combined with numerous components from the modular system. We would be happy to assist you.

Rod lock version: The fall protection version allows the linear axis to be locked in the end position. This is used e.g. for position retention (with activated lock) when shutting down the system.

Fan cooling: The dynamics, and thus the performance, of the axis can be increased when using the cooling system. 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.

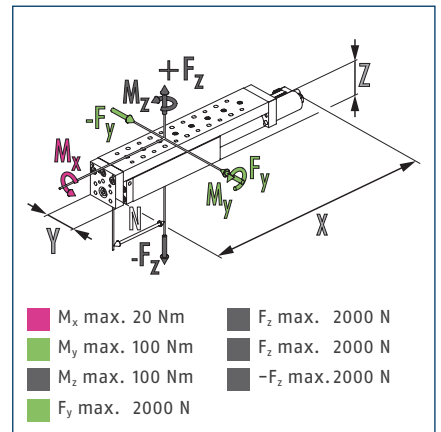


Travel times



① The diagram is valid for horizontal installation and with sufficient rest periods. Verifying the sizing of the selected unit is absolutely necessary, since otherwise overloading can result. We will be happy to help you design other applications.

Dimensions and maximum loads



① The indicated forces and moments are maximum values for individual loading. If several forces and/or moments are applied at the same time, the maximum permitted individual values will be lower.

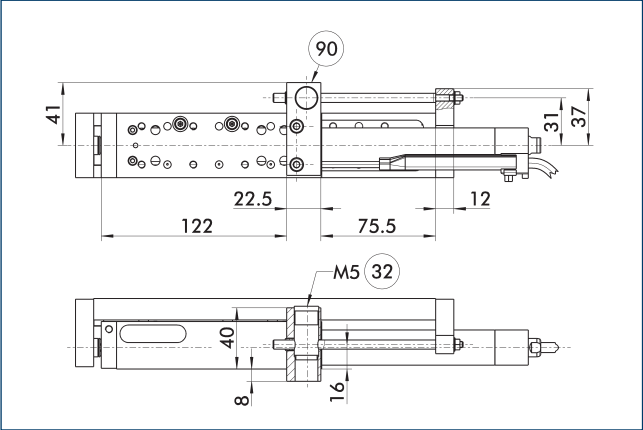
Technical data

Description		ELM 23-H070	ELM 23-H070-HP
ID		0314365	0314380
Drive concept		Linear direct drive	Linear direct drive
Max. stroke	[mm]	70	70
Max. driving force	[N]	60	137
Nominal force	[N]	31	48
Max. useful load (horizontal)	[kg]	3	3
Repeat accuracy	[mm]	±0.05	±0.05
Max. speed	[m/s]	1.5	1.5
Max. acceleration	[m/s ²]	40	40
Max. current	[A]	2.8	11
Nominal current	[A]	1.4	3.8
Min./max. ambient temperature	[°C]	10/40	10/40
Weight	[kg]	1.5	1.5
Overall length	[mm]	306	306
Clearance N (for moment load)	[mm]	70.5	70.5
Dimensions X x Y x Z	[mm]	298 x 42 x 46	298 x 42 x 46
Options and their characteristics			
Rod lock version		ELM 23-H070-ASP	ELM 23-H070-HP-ASP
ID		0314366	0314381
Weight	[kg]	1.61	1.61
Clamping actuation		pneumatic	pneumatic
Static holding force	[N]	180	180
Max. axial play of the clamping	[mm]	0.2	0.2

① All the forces specified in the technical data table assume that the axis is being used with a cooling system, such as a fan.

- ⑦③ Fit for centering pins
- ⑨⑦ Cable exit with 20 cm cables and M17 plug connectors

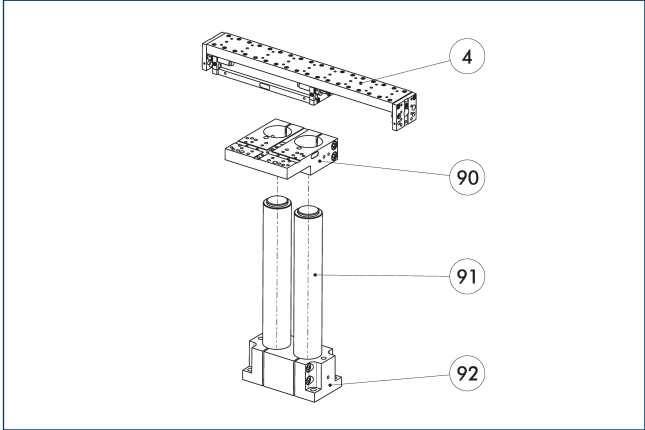
Rod lock



- 32 Pneumatic connection for holding brake
- 90 ASPE 23

The rod lock prevents weights from falling in the event of energy loss, such as emergency stop scenarios.

Attachment to a pillar assembly system

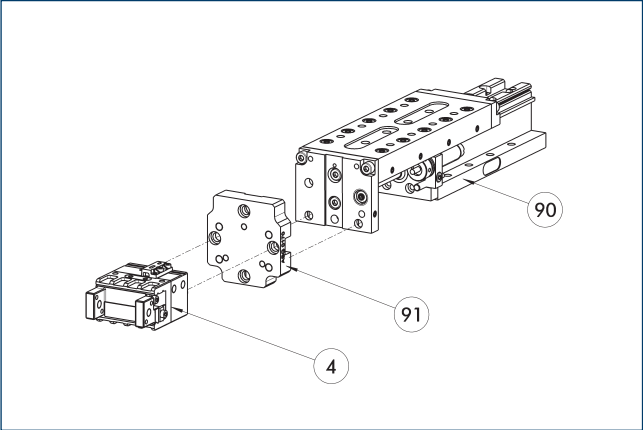


- 4 Linear unit
- 90 Double mounting plate, APDH
- 91 Pillars, hard-chromium plated, ground
- 92 Double socket SOD

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 35	0313894	35	Aluminum
APDV 35	0313896	35	Aluminum
APEH 35	0313893	35	Aluminum
APEV 35	0313895	35	Aluminum

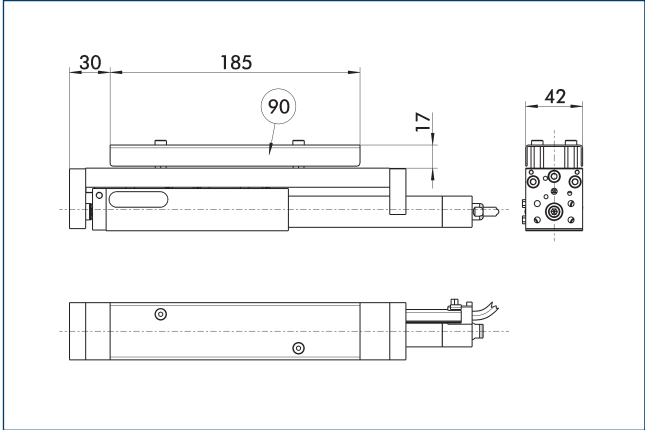
Modular Assembly Automation



- 4 Grippers
- 90 CLM/KLM/LM/ELP/ELM/ELS/HLM linear modules
- 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".

Cover

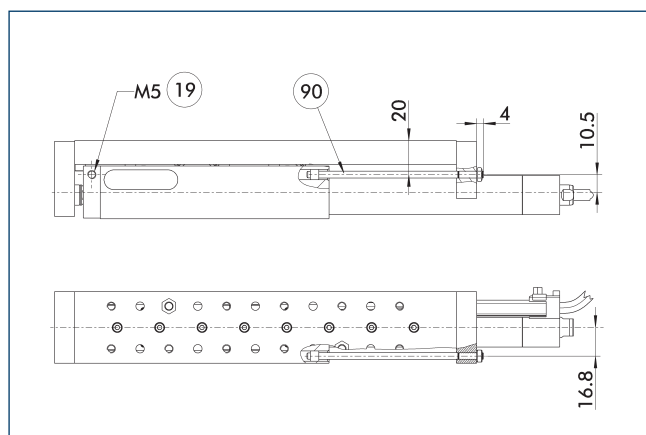


- 90 MA 23

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

Description	ID	
Cover		
MA 23-70	0314238	

Weight compensation



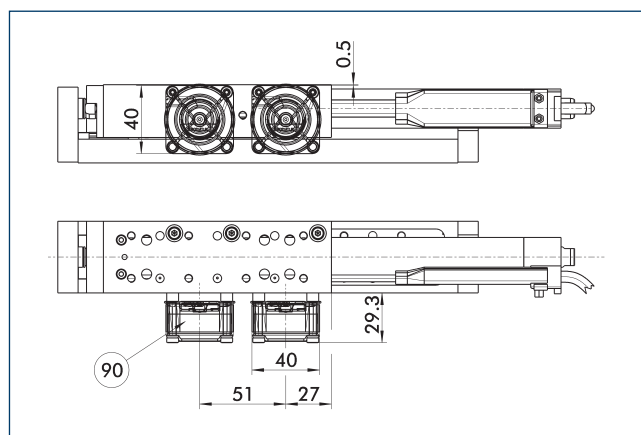
19 Air connection

90 GA 23

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.

Description	ID	
Weight compensation		
GA 23-70	0314235	

Fan cooling

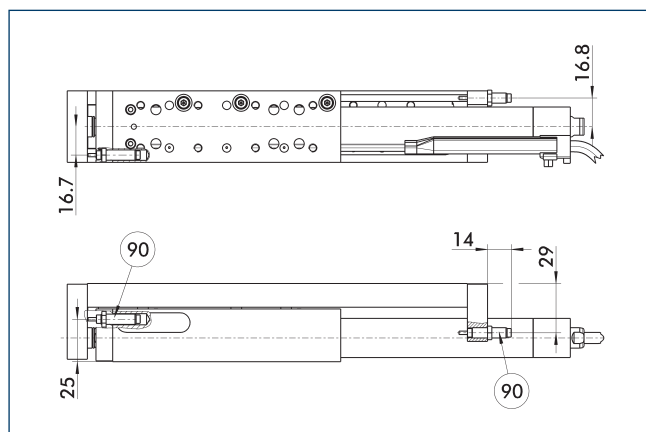


90 MK 23

The dynamics, and thus the performance, of the axis can be increased when using the cooling system. 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.

Description	ID	
Fan cooling		
MK 23	0314241	

Safety damper

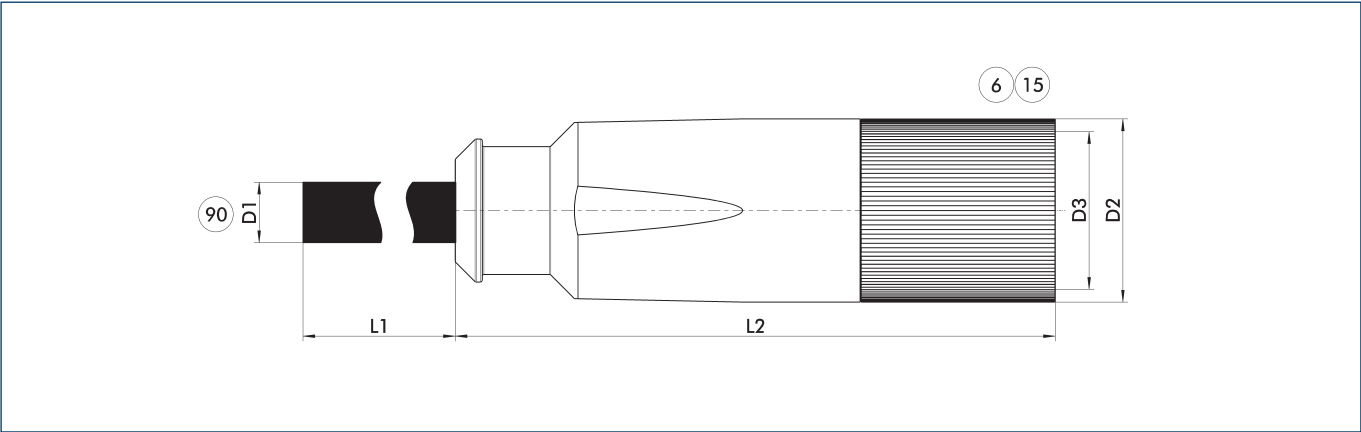


90 SD 23

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

Description	ID	
Safety damper		
SD 23	0314262	

Power cable



Connection cables such as power cables and encoder cables are specifically designed for connecting SCHUNK products with drive control units. We will gladly help you to select the right connection cables.

⑥ Connection module side

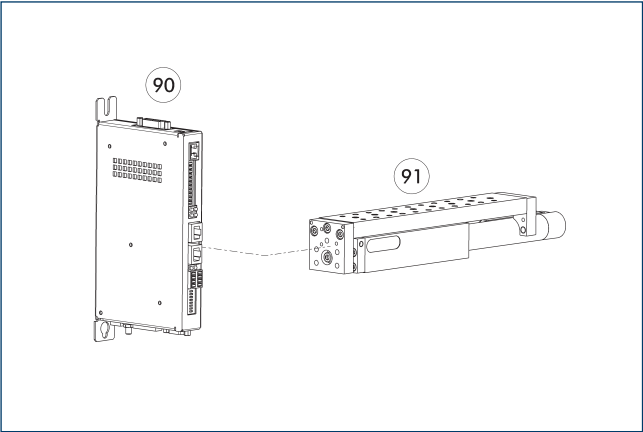
①⑤ Socket

⑨⑩ Prefabricated to connect to the higher-level components

Description	ID	L1	D1	L2	D2	D3
		[m]	[mm]	[mm]	[mm]	
Motor cable for ELM and C1250 controller						
KS05-Y/R-4	0314911	4	10.8	52	21	M17
KS05-Y/R-6	0314912	6	10.8	52	21	M17
KS05-Y/R-8	0314913	8	10.8	52	21	M17

ⓘ Please observe the min. bending radius for cable track-compatible cables or the max. torsion angle for torsion-compatible cables. These are generally 10 times the cable diameter or +/- 180°/m.

LinMot C1250 controller



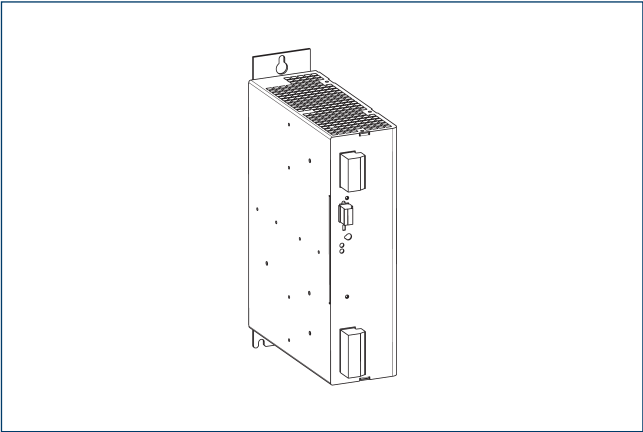
⑨⑩ C1250 drive controller

⑨① Electric ELM linear module

The controller is absolutely essential for operating the ELM linear module. We will be happy to help you select one.

Description	ID	Maximum current	Communication type
		[A]	
Controller			
C1250-EC-XC	0314920	25	EtherCAT
C1250-IP-XC	0314921	25	EtherNet/IP
C1250-PN-XC	0314922	25	PROFINET
Connector package for LinMot controller			
DC01-C1X00-0S/X1/X4	0314904		

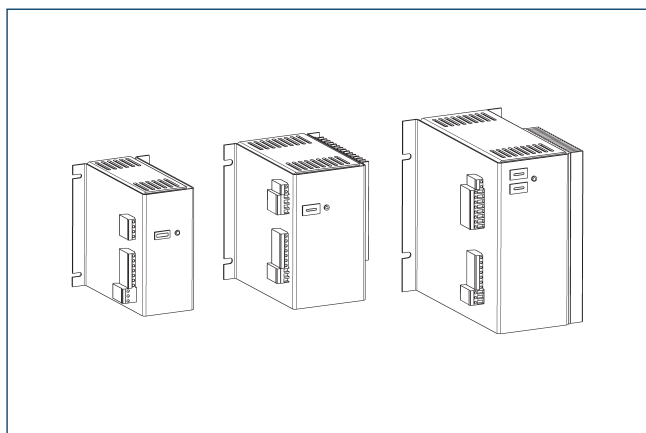
S01-72 switching power supply unit



The power pack with an output voltage of 72 V is adjusted to the power supply of the LinMot controller. We gladly support you in choosing the right unit.

Description	ID	Power
		[W]
Power supply unit		
S01-72/1000	0314960	1000

T01-72 transformer power supply unit

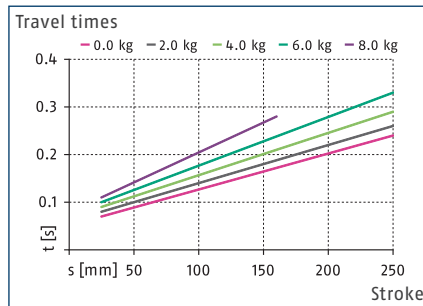


The power supply unit is matched to the power supply of the LinMot controller. The power supply unit with an output voltage of 72 V is available in different performance classes. We will be happy to help you select one.

Description	ID	Power
		[W]
Power supply unit		
T01-72/1500-Multi	0314364	1500
T01-72/420-Multi	0314549	420
T01-72/900-Multi	0314344	900

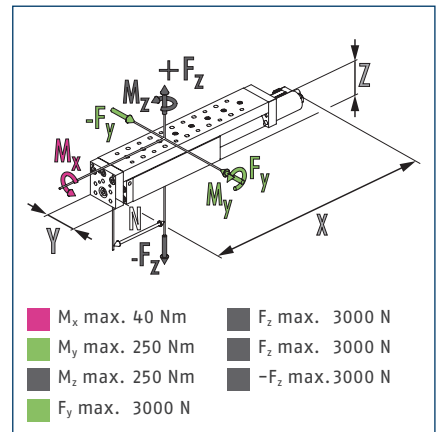


Travel times



① The diagram is valid for horizontal installation and with sufficient rest periods. Verifying the sizing of the selected unit is absolutely necessary, since otherwise overloading can result. We will be happy to help you design other applications.

Dimensions and maximum loads



① The indicated forces and moments are maximum values for individual loading. If several forces and/or moments are applied at the same time, the maximum permitted individual values will be lower.

Technical data

Description		ELM 37-H160	ELM 37-H260
ID		0314367	0314371
Drive concept		Linear direct drive	Linear direct drive
Max. stroke	[mm]	160	260
Max. driving force	[N]	160	160
Nominal force	[N]	100	100
Max. useful load (horizontal)	[kg]	8	6
Repeat accuracy	[mm]	±0.05	±0.05
Max. speed	[m/s]	1.4	1.4
Max. acceleration	[m/s ²]	35	35
Max. current	[A]	5	5
Nominal current	[A]	2.4	2.4
Min./max. ambient temperature	[°C]	10/40	10/40
Weight	[kg]	4.95	5.5
Overall length	[mm]	520	620
Clearance N (for moment load)	[mm]	124	124
Dimensions X x Y x Z	[mm]	620 x 56 x 68	620 x 56 x 68
Options and their characteristics			
Rod lock version		ELM 37-H160-ASP	ELM 37-H260-ASP
ID		0314369	0314373
Weight	[kg]	5.25	5.83
Clamping actuation		pneumatic	pneumatic
Static holding force	[N]	350	350
Max. axial play of the clamping	[mm]	0.25	0.25

① All the forces specified in the technical data table assume that the axis is being used with a cooling system, such as a fan.

Technical drawing of a cable assembly, showing three views: top, side, and bottom.

Top View:

- Overall length: 417 ... 577
- Mounting dimensions: 31.5, 25±0.02 (8x), 34, 15, 18, 23.5, 22 ... 182, 249, 89 ... 249, 15.
- Fasteners: Ø5/3 (9x) 73, M5/10 (18x) 1, 90.

Side View:

- Overall length: 417 ... 577
- Mounting dimensions: 15, 18, 23.5, 22 ... 182, 249, 89 ... 249, 15.

Bottom View:

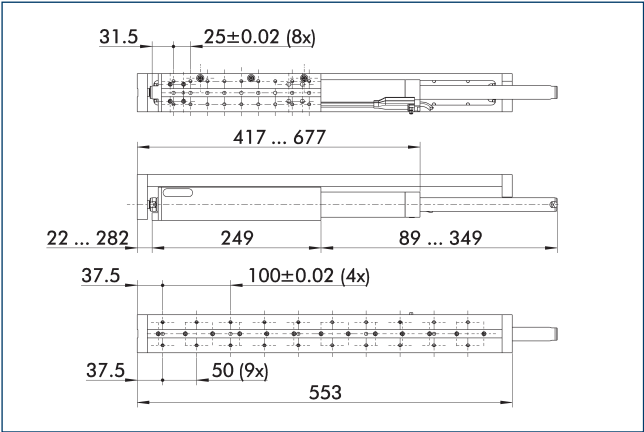
- Overall length: 453
- Mounting dimensions: 37.5, 100±0.02 (3x), 34, 12.05±0.03/1.2, 37.5, 50 (7x).
- Fasteners: Ø5/5 (4x) 73, M5/9 (16x) 2.

Detail View (Right):

- Dimensions: 56, 9.5, 40.5, 34, 17.5, 20, 68.
- Fasteners: 73 Ø5 (2x), Km5 DIN974-1 (4x) 2, 35.

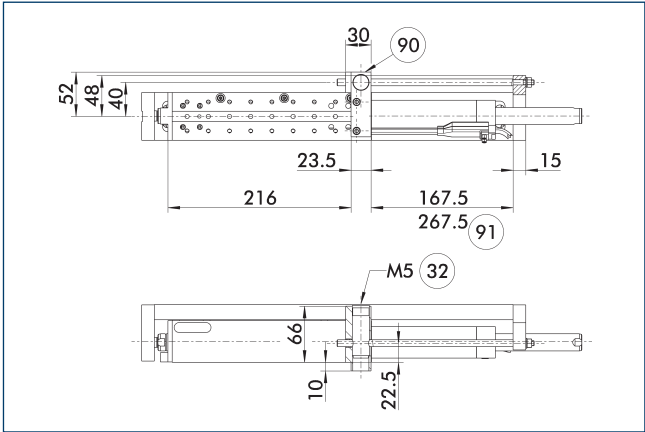
- ① Connection linear unit
- ② Attachment connection
- ③⑤ Back side
- ⑦③ Fit for centering pins
- ⑨⑩ Cable exit with 20 cm cables and M17 plug connectors

Variant ELM 37-H260



The drawing shows changes in dimensions of the version with a different stroke compared to the version shown in the main view.

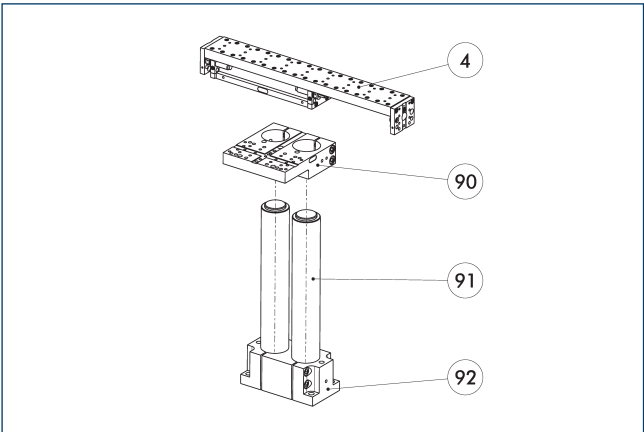
Rod lock



- 32 Pneumatic connection for holding brake
- 90 ASPE 37
- 91 At a stroke of 260 mm

The rod lock prevents weights from falling in the event of energy loss, such as emergency stop scenarios.

Attachment to a pillar assembly system

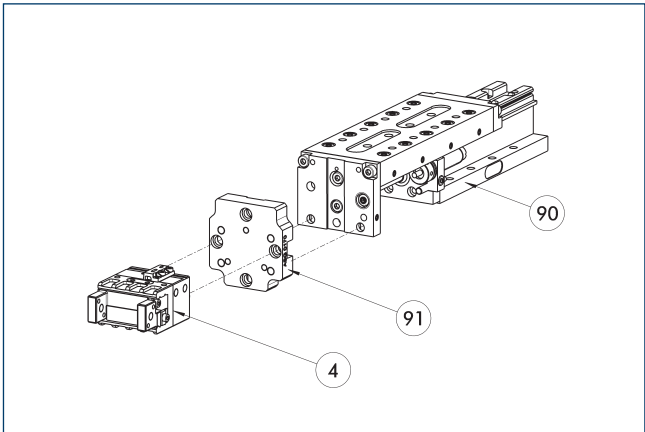


- 4 Linear unit
- 90 Double mounting plate, APDH
- 91 Pillars, hard-chromium plated, ground
- 92 Double socket SOD

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 [mm]	Material
Pillar assembly system mounting plate			
APDH 35	0313894	35	Aluminum
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

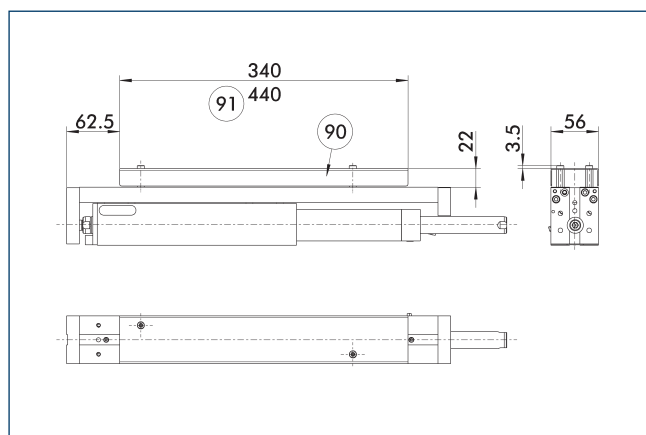
Modular Assembly Automation



- 4 Grippers
- 90 CLM/KLM/LM/ELP/ELM/ELS/HLM linear modules
- 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".

Cover



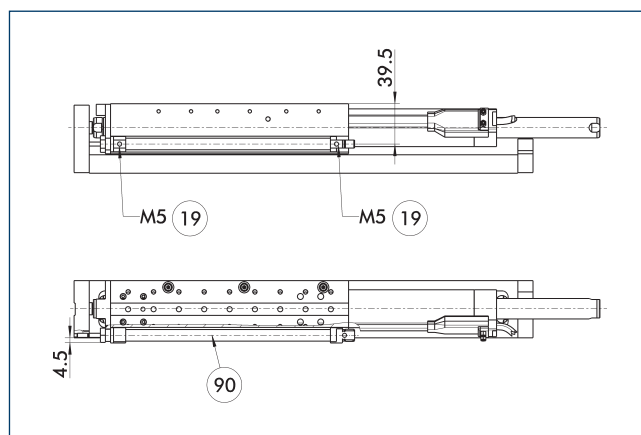
90 MA 37

91 At a stroke of 260 mm

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

Description	ID	
Cover		
MA 37-160	0314239	
MA 37-260	0314240	

Weight compensation



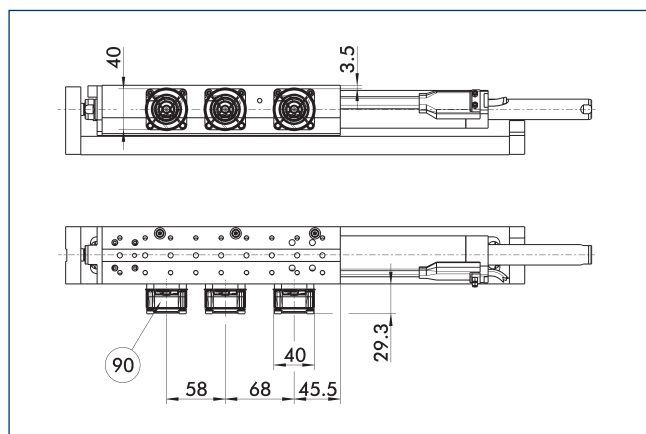
19 Air connection

90 GA 37

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.

Description	ID	
Weight compensation		
GA 37-160	0314236	
GA 37-260	0314237	

Fan cooling

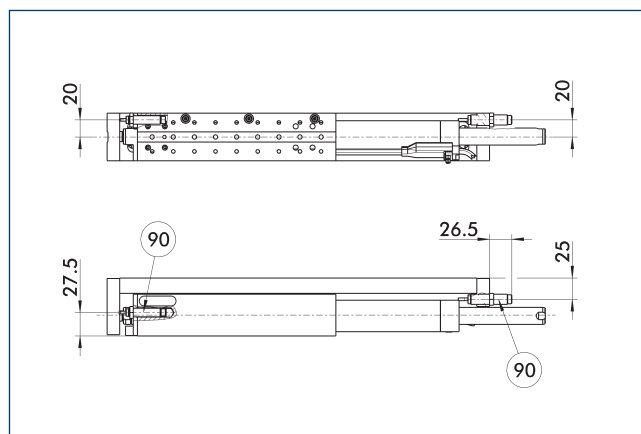


90 MK 37

The dynamics, and thus the performance, of the axis can be increased when using the cooling system. 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.

Description	ID	
Fan cooling		
MK 37	0314242	

Safety damper



90 SD 37

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

Description	ID	
Safety damper		
SD 37	0314263	

Technical drawing of a nozzle assembly. The main view shows a side profile with dimensions: $L1$ (length of the first section), $L2$ (length of the second section), $D1$ (diameter of the first section), $D2$ (diameter of the second section), and $D3$ (diameter of the third section). A detail view of the tip shows a 6mm diameter and a 15mm length. The tip angle is 90 degrees.

⑨ Prefabricated to connect to the higher-level components

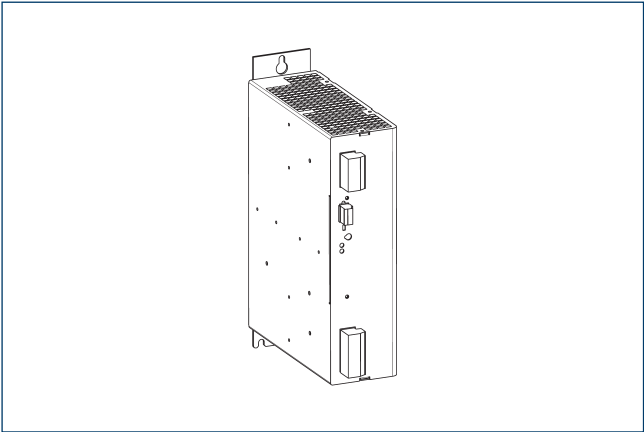
① Please observe the min. bending radius for cable track-compatible cables or the max. torsion angle for torsion-compatible cables. These are generally 10 times the cable diameter or +/- 180°/m.

Diagram illustrating the connection of the antenna cable (91) to the back of the device (90).

The controller is absolutely essential for operating the ELM linear module. We will be happy to help you select one.

Description	ID	Maximum current	Communication type
		[A]	
Controller			
C1250-EC-XC	0314920	25	EtherCAT
C1250-IP-XC	0314921	25	EtherNet/IP
C1250-PN-XC	0314922	25	PROFINET
Connector package for LinMot controller			
DC01-C1X00-0S/X1/X4	0314904		

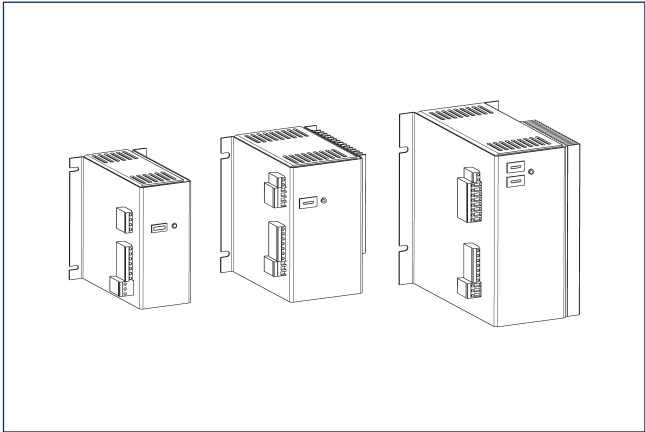
S01-72 switching power supply unit



The power pack with an output voltage of 72 V is adjusted to the power supply of the LinMot controller. We gladly support you in choosing the right unit.

Description	ID	Power
		[W]
Power supply unit		
S01-72/1000	0314960	1000

T01-72 transformer power supply unit



The power supply unit is matched to the power supply of the LinMot controller. The power supply unit with an output voltage of 72 V is available in different performance classes. We will be happy to help you select one.

Description	ID	Power
		[W]
Power supply unit		
T01-72/1500-Multi	0314364	1500
T01-72/420-Multi	0314549	420
T01-72/900-Multi	0314344	900

SCHUNK GmbH & Co. KG
Spann- und Greiftechnik

Bahnhofstr. 106 - 134
D-74348 Lauffen/Neckar
Tel. +49-7133-103-2599
Fax +49-7133-103-2239
info@de.schunk.com
schunk.com

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