



Superior Clamping and Gripping



Product data sheet

Compact linear module ELB

ELB

Compact linear module

Precise. Reliable. Flexible. Compact linear module ELB

Short stroke linear direct drive with cross roller guidance

Field of application

for the use in clean environments. For a faster and precise movement or controlled press-in operation of workpieces in the high-speed assembly.



Advantages – Your benefits

Integrated motor and measuring system in the axis minimizes interfering contours and space requirements

Can be fitted with absolute stroke measuring system Less programming effort and time saving when commissioning and in operation

High dynamics for shorter cycle times therefore a high productivity is achieved

Almost no wear parts for a long service life

Pretensioned junction rollers That means absolutely scope-free

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

Optional pneumatic or electric holding brake as rod lock for process reliability during system downtime

Optionally certified safety devices according to SIL2/PLd with the HIPERFACE® and DRIVE-CliQ interfaces for applications with high standards in the area of machine safety



Sizes
Quantity: 1



Weight
2.08 .. 3.02 kg



Max. driving force
150 N



Stroke
50 .. 125 mm

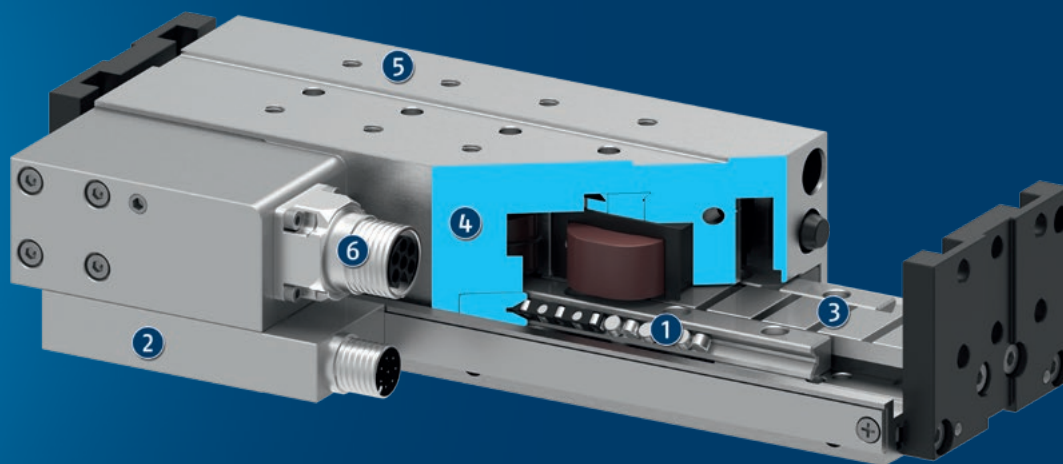


Repeat accuracy
±0.01 mm

Functional description

The electric drive consists of a primary part (motor coil) and a secondary part (permanent magnets). The phase and the amplitude of the applied electrical current are regulated in the controller. Depending on the application,

this sets the profile fitted with magnets in motion or moves the slides of the axis.



- ① **Cross roller guidance**
for maximum positioning accuracy and moment loads
- ② **Stroke measuring system**
non-contact and magnetic measurement system, incremental or absolut
- ③ **Integrated secondary parts**
with permanent magnets
- ④ **Base body**
made from aluminum with integrated primary part
- ⑤ **Mounting pattern**
Completely integrated in the module system
- ⑥ **Motor plug**
for comfortable connection of motor phases and temperature sensor

General notes about the series

Guidance: Cross roller guidance

Drive: Linear direct drive based on a 3-phase, electronically commutated and permanently excited AC synchronous linear motor

Stroke measuring system: Contactless, magnetic measuring system with incremental and absolute variants; with HIPERFACE®, 1Vss and DRIVE-CliQ interfaces.

Profile: Aluminum profile with pre-loaded junction roller guide that is free from play

Slide: Aluminum slide, primary part and measuring system reading head directly integrated

Scope of delivery: Safety information (product-specific instructions available online)

Drive controller: Bosch Rexroth IndraDrive and Siemens SINAMICS drive control units supported as standard; matching parameters supplied on DVD, other manufacturers available on request.

Warranty: 24 months

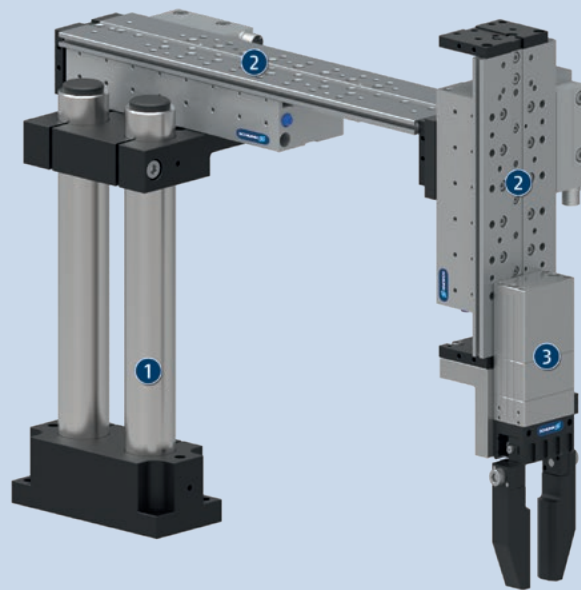
Service life characteristics: on request

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: Verifying the sizing of the selected unit is necessary, since otherwise overloading can result. Please contact us for assistance.

Payload: is the weight of the total weight which is attached to the cantilever arm. Please consider that service life will shorten if the maximum payload is exceeded. SCHUNK cannot assume any warranty for this.



Application example

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

- ① Pillar assembly system
- ② Electric linear module ELB

- ③ Electric 2-finger parallel gripper EGP

SCHUNK offers more ...

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



Gripper for small components



Rotation unit



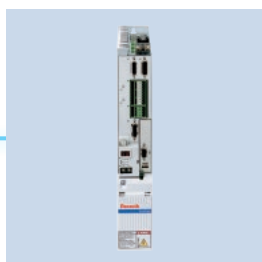
Rotary gripper module



Pillar assembly system



Power and encoder cables



Drive controller



Inductive proximity switch



Holding brake

① For more information on these products can be found on the following product pages or at schunk.com.

Options and special information

Modular transducer system: The linear module (similar to illustration) is available with four different stroke measuring systems. The incremental stroke measuring system has a 1Vss interface. The absolute path measuring systems are optionally available with the interfaces: HIPERFACE®, SSI or DRIVE-CLiQ.

Pneumatic holding brake: On option, the linear module is available with a holding brake. This holding brake is pneumatically actuated. Its function is activated in a non-ventilated state. The holding brake is used to maintain the position of the linear axis in a currentless condition.

Load compensation: As an option, the linear module can be supplied with a load compensation device attached parallel to the motor. A MagSpring® is used for this purpose. The magnetic spring compensates for a part of the weight forces during vertical movements of the linear motor. This can lead to greater dynamic response in certain cases of application.

Electric piston rod brakes: On option, the axis can be fitted with an electrical holding brake. This prevents an unintentional sinking of vertically installed axes in the event of a power failure. The holding brake is also suitable for applications in the field of machine safety. Please feel free to contact us.

Certified encoder system: The encoder systems with the HIPERFACE® (optional) and DRIVE-CLiQ interfaces are certified according to SIL2/PLd. This means that even demanding applications with high requirements in the area of machine safety can be implemented. Please contact us for further information.

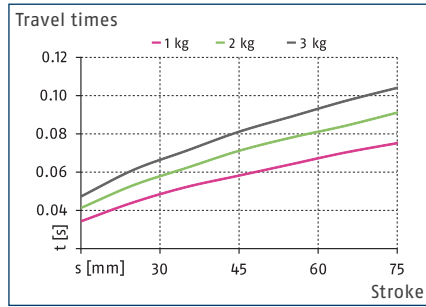
NEW: Version with food –compliant lubrication (H1G): as a solution for an easy entry into medical technology, lab automation, pharmaceutical and food industry. The requirements of EN 1672-2:2020 are not fully met.

ELB 70

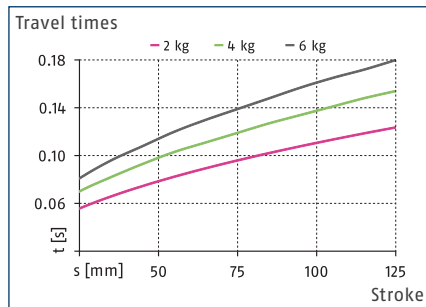
Compact linear module



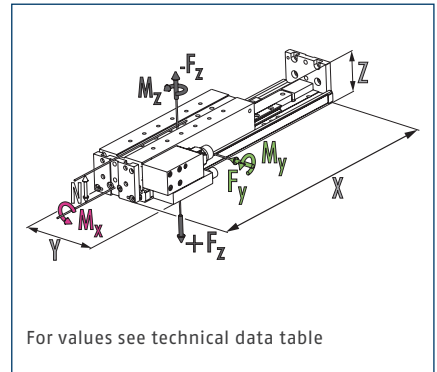
Travel times for 50/75 mm stroke*



Travel times for 125 mm stroke*



Dimensions and maximum loads



① The indicated torques and forces are maximum values for static load in order to achieve the maximum lifespan of the product. Depending on use, increased loads are possible; please contact us to find out more!

ELB without pneumatic brake technical data

Description		ELB 70-H050-H-N-N-N	ELB 70-H075-H-N-N-N	ELB 70-H125-H-N-N-N	ELB 70-H050-H-N-L-N	ELB 70-H075-H-N-L-N	ELB 70-H125-H-N-L-N
ID		0315400	0315420	0315440	0315403	0315423	0315443
Drive concept		Linear direct drive	Linear direct drive	Linear direct drive	Linear direct drive	Linear direct drive	Linear direct drive
Stroke	[mm]	50	75	125	50	75	125
Max. driving force	[N]	150	150	150	150	150	150
Nominal force	[N]	40	40	40	40	40	40
Max. payload (horizontal)	[kg]	6	6	6	6	6	6
Repeat accuracy	[mm]	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01
Max. speed	[m/s]	4	4	4	4	4	4
Max. acceleration	[m/s²]	100	100	100	100	100	100
Max. current	[A]	10	10	10	10	10	10
Max. standstill current	[A]	2.6	2.6	2.6	2.6	2.6	2.6
Min./max. ambient temperature	[°C]	10/40	10/40	10/40	10/40	10/40	10/40
Weight	[kg]	2.08	2.17	2.72	2.38	2.47	3.02
Clearance N (for moment load)	[mm]	34.1	34.1	34.1	34.1	34.1	34.1
Stroke measuring system interface		HIPERFACE®	HIPERFACE®	HIPERFACE®	HIPERFACE®	HIPERFACE®	HIPERFACE®
Load compensation implementation					MagSpring®	MagSpring®	MagSpring®
Load compensation constant force	[N]				22	22	22
Dimensions X x Y x Z	[mm]	225 x 103.2 x 46.5	250 x 103.2 x 46.5	350 x 103.2 x 46.5	230.3 x 129.7 x 46.5	255.3 x 129.7 x 46.5	355.3 x 129.7 x 46.5
Moments Mx max./My max./Mz max.	[Nm]	79/54/27	79/54/27	101/68/34	79/54/27	79/54/27	101/68/34
Forces Fy max./Fz max./-Fz max.	[N]	1210/1210/1210	1210/1210/1210	1480/1480/1480	1210/1210/1210	1210/1210/1210	1480/1480/1480
Options and their characteristics							
HIPERFACE (SIL2/PLd)		1409339	1409362	1409369	1409341	1409364	1409371
HIPERFACE (SIL2/PLd)/H1 grease version		1488198	1488277	1488279	1488290	1488292	1488295
Sin/Cos 1Vss		0315404	0315424	0315444	0315407	0315427	0315447
Sin/Cos 1Vss/H1 grease version		1488354	1488356	1488365	1488385	1488391	1488508
SSI		0315408	0315428	0315448	0315411	0315431	0315451
DRIVE-CliQ (SIL2/PLd)		0315412	0315432	0315452	0315415	0315435	0315455
DRIVE-CliQ (SIL2/PLd)/H1 grease version		1488312	1488315	1488318	1488332	1488337	1488338

* *The diagrams are 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.

ELB with pneumatic brake technical data

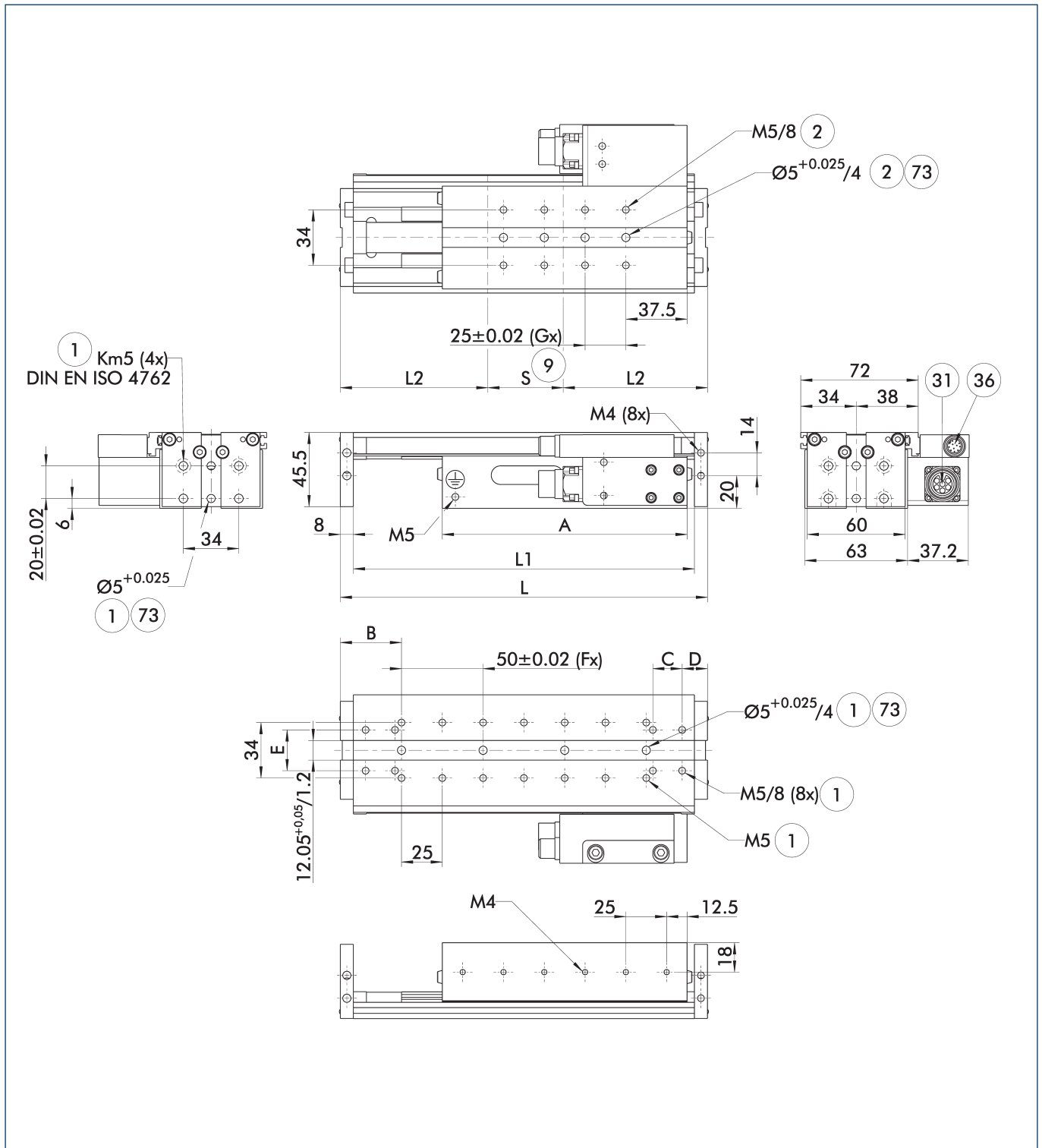
Description		ELB 70-H050-H-B-N-N	ELB 70-H075-H-B-N-N	ELB 70-H125-H-B-N-N
ID		0315401	0315421	0315441
Drive concept		Linear direct drive	Linear direct drive	Linear direct drive
Stroke	[mm]	50	75	125
Max. driving force	[N]	150	150	150
Nominal force	[N]	40	40	40
Max. payload (horizontal)	[kg]	6	6	6
Repeat accuracy	[mm]	±0.01	±0.01	±0.01
Max. speed	[m/s]	4	4	4
Max. acceleration	[m/s ²]	100	100	100
Max. current	[A]	10	10	10
Max. standstill current	[A]	2.6	2.6	2.6
Min./max. ambient temperature	[°C]	10/40	10/40	10/40
Weight	[kg]	2.36	2.46	2.96
Clearance N (for moment load)	[mm]	34.1	34.1	34.1
Stroke measuring system interface		HIPERFACE®	HIPERFACE®	HIPERFACE®
Actuation holding brake		pneumatic	pneumatic	pneumatic
Static holding force break	[N]	350	350	350
Axial play, brake	[mm]	0.3	0.3	0.3
Dimensions X x Y x Z	[mm]	230.3 x 127.7 x 62	255.3 x 127.7 x 62	355.3 x 127.7 x 62
Moments Mx max./My max./Mz max.	[Nm]	79/54/27	79/54/27	101/68/34
Forces Fy max./Fz max./-Fz max.	[N]	1210/1210/1210	1210/1210/1210	1480/1480/1480
Options and their characteristics				
HIPERFACE (SIL2/PLd)		1409340	1409363	1409370
HIPERFACE (SIL2/PLd)/H1 grease version		1488304	1488309	1488311
Sin/Cos 1Vss		0315405	0315425	0315445
Sin/Cos 1Vss/H1 grease version		1488520	1488521	1488522
SSI		0315409	0315429	0315449
DRIVE-CliQ (SIL2/PLd)		0315413	0315433	0315453
DRIVE-CliQ (SIL2/PLd)/H1 grease version		1488342	1488350	1488351

* *The diagrams are 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.

ELB 70

Compact linear module

Main view

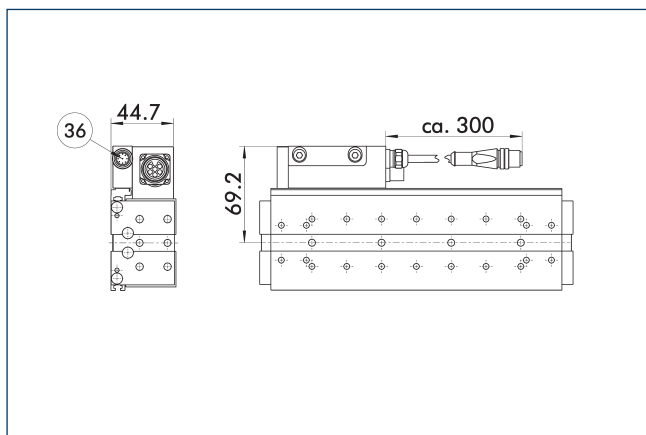


The linear module can be fastened either to the base body or the slide. The structure can also optionally be fastened to either the slide or the base body. This view shows the mounting of the module to the base body and the mounting of the structure to the slide.

- ① Connection linear unit
- ② Attachment connection
- ⑨ Nominal stroke
- ③① Motor plug
- ③⑥ Connection plug for the stroke measuring system
- ⑦③ Fit for centering pins

Description	ID	A	B	Quantity F	C	Quantity G	D	E	L	L1	L2
		[mm]	[mm]		[mm]		[mm]	[mm]	[mm]	[mm]	[mm]
ELB 70-H050-I-N-N-N	0315404	150	37.5	3	18	3	15.5	25	225	209	87.5
ELB 70-H075-I-N-N-N	0315424	150	25	4		3			250	234	87.5
ELB 70-H125-I-N-N-N	0315444	200	25	6		5			350	334	112.5

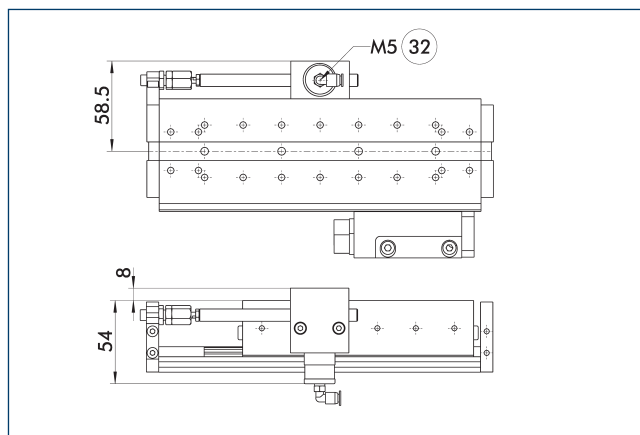
Absolute encoder with HIPERFACE® interface



36 Connection plug for the stroke measuring system

The absolute measuring system with HIPERFACE® interface has a 30 cm long cable outlet and a molded-on M12 connector.

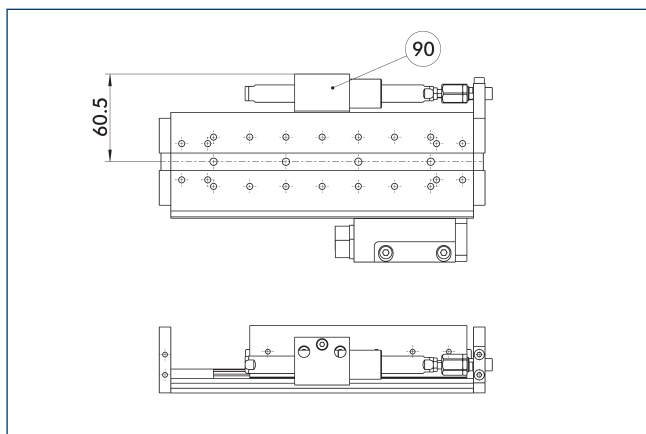
Pneumatic holding brake



32 Pneumatic connection for holding brake

The holding brake holds the slide in a particular position even without energy supply. The holding brake is pneumatically actuated.

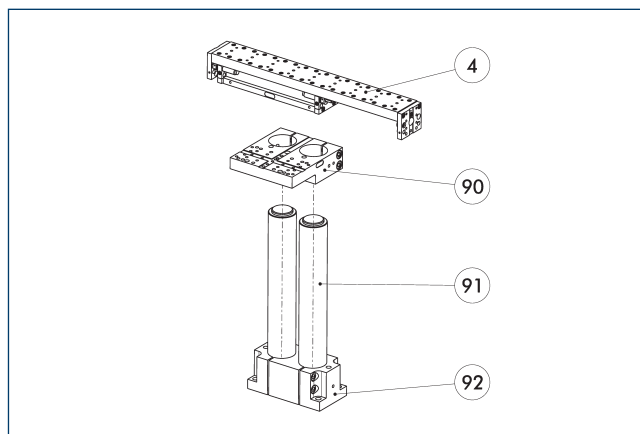
Load compensation via MagSpring®



90 MagSpring®

With its constant force over the complete stroke, the MagSpring® is the perfect load compensation. It ideally supports the linear motor in vertical applications.

Attachment to a pillar assembly system

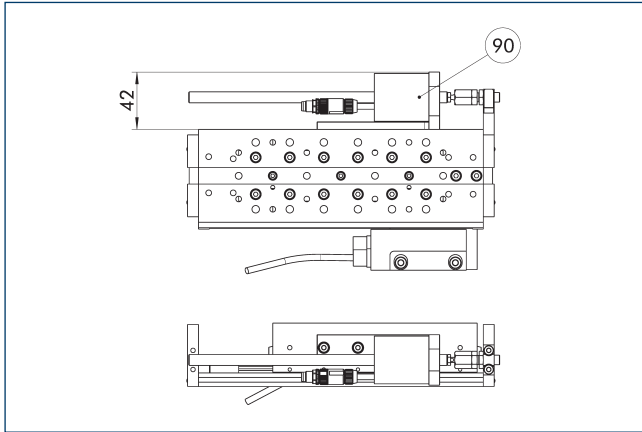


- 4 Linear unit
- 90 Double mounting plate, APDH
- 91 Pillars, hard-chromium plated, ground
- 92 Double socket S0D

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

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

Electric piston rod brakes



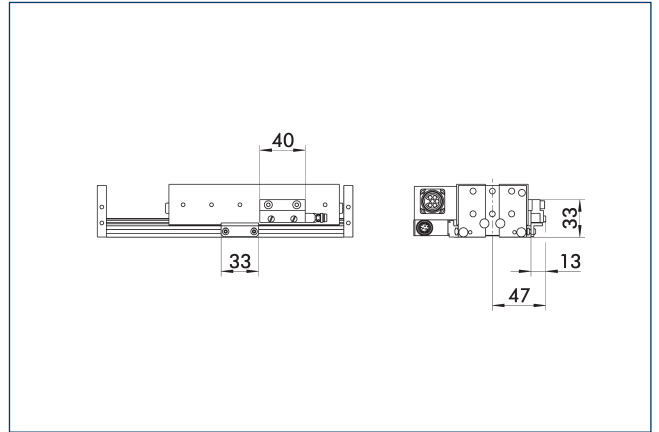
90 ROBA® linear stop

The ROBA® linear stop is an electric holding brake that prevents gravity loaded axes from unintentionally dropping or falling. The holding brake is also suitable for applications in the field of machine safety. Please feel free to contact us.

Description	ID	
Mounting kit for ROBA® linear stop		
AS-ELB070-H050/H075-HB-10	1396368	
AS-ELB070-H125-HB-10	1396369	
ROBA® linear stop		
ROBA®-linearstop-10	1339906	
Voltage supply/signals connection cable - drag chain and torsion resistant, M8 socket, straight		
KA GLN0804-10-00200-A	1310371	
KA GLN0804-10-00500-A	1310375	
KA GLN0804-10-01000-A	1310379	
Fast switching module		
ROBA®-brake-checker	1339913	

① When using an electric(al) piston rod brake, per linear unit a ROBA® linear stop, a mounting kit for a ROBA® linear stop, and a fast switching module for activation are required. The electric piston rod brake cannot be combined with the pneumatic holding brake or the MagSpring load balance.

Attachment kit for NI 41 proximity switch

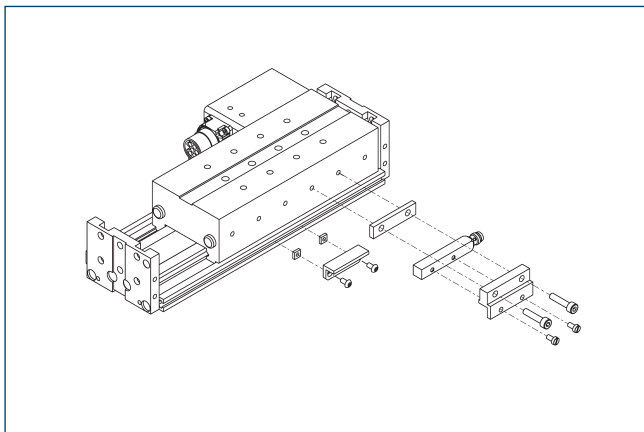


The attachment kit is used to mount the optional NI 41 proximity switches on the linear module, and is available as an optional accessory.

Description	ID	
Attachment kit for proximity switch		
AS-ELB 70	0315490	

① One attachment kit is required for each proximity switch.

Limit and reference switch



The limit and reference switches are not mandatory for operating of the linear module.

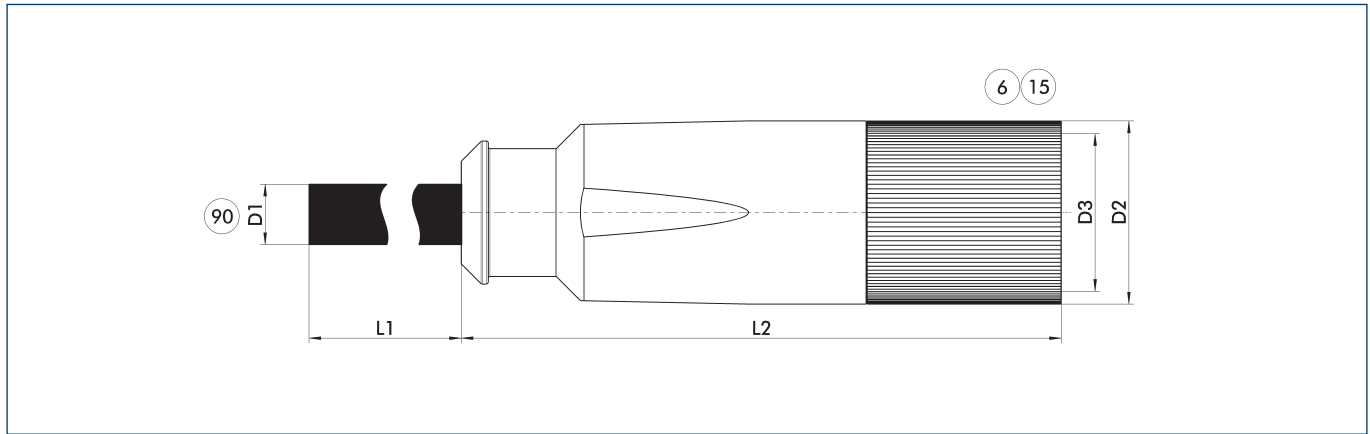
Description	ID	
Attachment kit for proximity switch		
AS-ELB 70	0315490	
Inductive proximity switch		
NI 41-0	0315495	
NI 41-S	0319456	

① One attachment kit is required for each proximity switch.

ELB 70

Compact linear module

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.

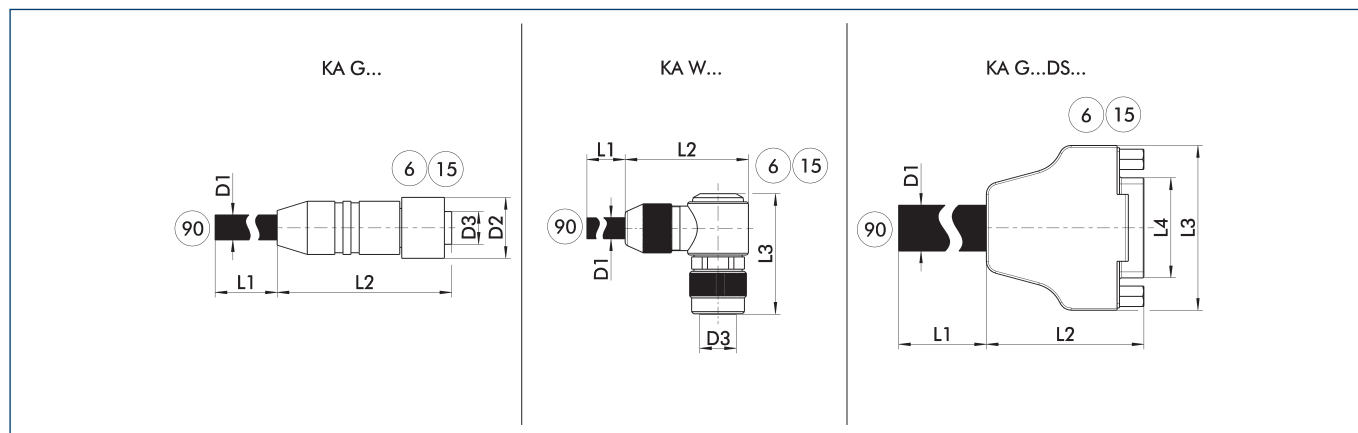
⑥ Connection module side
⑮ Socket

⑨⑩ Prefabricated to connect to the higher-level components

Description	ID	L1 [m]	D1 [mm]	L2 [mm]	D2 [mm]	D3
Power cable for BOSCH Rexroth IndraDrive A/B – cable track-compatible						
KA GLT1706-LK-00500-W	0349560	5	8.5	71	21.2	M17
KA GLT1706-LK-01000-W	0349561	10	8.5	71	21.2	M17
KA GLT1706-LK-01500-W	0349562	15	8.5	71	21.2	M17
KA GLT1706-LK-02000-W	0349563	20	8.5	71	21.2	M17
Power cable for BOSCH Rexroth IndraDrive Cs – cable track-compatible						
KA GLT1706-LK-00500-1	0349104	5	8.5	71	21.2	M17
KA GLT1706-LK-01000-1	0349105	10	8.5	71	21.2	M17
KA GLT1706-LK-01500-1	0349106	15	8.5	71	21.2	M17
KA GLT1706-LK-02000-1	0349107	20	8.5	71	21.2	M17
Power cable for Siemens SINAMICS with DRIVE-CLiQ – cable track compatible						
LDH/ELB – DQ 05m	1327974	5	8.5	71	21.2	M17
LDH/ELB – DQ 10m	1327975	10	8.5	71	21.2	M17
LDH/ELB – DQ 15m	1325023	15	8.5	71	21.2	M17
LDH/ELB – DQ 20m	1327976	20	8.5	71	21.2	M17
Power cable for SIEMENS SINAMICS – cable track compatible						
KA GGT1706-LK-00100-6	0349129	1	8.5	71	21.2	M17
KA GGT1706-LK-00200-6	0349130	2	8.5	71	21.2	M17
KA GGT1706-LK-00300-6	0349131	3	8.5	71	21.2	M17

⑩ 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.

Encoder cable



KA G... encoder cable with straight plug
 KA W... encoder cable with angled plug
 KA G...DS... Sub D encoder cable

⑥ Connection module side
 ⑮ Socket
 ⑨⑩ Prefabricated for connection to the drive controller

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.

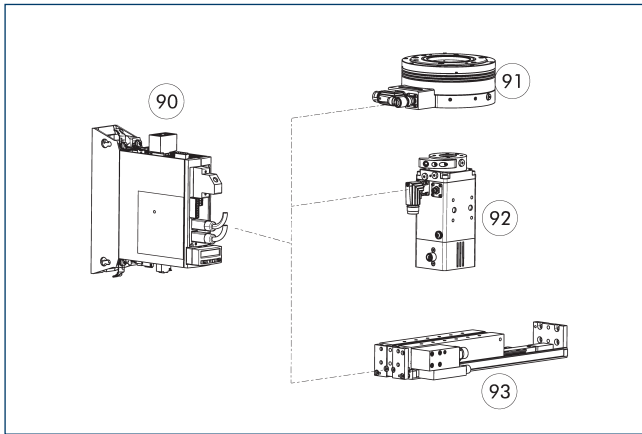
Description	ID	L1	D1	L2	D2	D3
		[m]	[mm]	[mm]	[mm]	
Encoder cable for BOSCH IndraDrive A/B/Cs and HIPERFACE® encoder interface – drag chain compatible						
KA GWN1208-GK-00500-K	0349125	5	6	50	14.9	M12
KA GWN1208-GK-01000-K	0349126	10	6	50	14.9	M12
KA GWN1208-GK-01500-K	0349127	15	6	50	14.9	M12
KA GWN1208-GK-02000-K	0349128	20	6	50	14.9	M12
Sensor cable for BOSCH Rexroth IndraDrive A/B (CSx01) and 1Vss encoder interface – drag chain suitable						
KA GWN1208-GK-00500-R	0349138	5	7.3	50	14.65	M12
KA GWN1208-GK-01000-R	0349139	10	7.3	50	14.65	M12
KA GWN1208-GK-01500-R	0349140	15	7.3	50	14.65	M12
KA GWN1208-GK-02000-R	0349141	20	7.3	50	14.65	M12
Sensor cable for BOSCH Rexroth IndraDrive A/B (Cxx02)/IndraDrive Cs and 1Vss encoder interface – drag chain suitable						
KA GWN1208-GK-00500-T	0349146	5	7.3	50	14.65	M12
KA GWN1208-GK-01000-T	0349147	10	7.3	50	14.65	M12
KA GWN1208-GK-01500-T	0349148	15	7.3	50	14.65	M12
KA GWN1208-GK-02000-T	0349149	20	7.3	50	14.65	M12
Sensor cable for SIEMENS Sinamics and encoder interface 1Vss – drag chain suitable						
KA GGN1208-GK-00100-U	0349597	1	7.3	50	14.65	M12
KA GGN1208-GK-00200-U	0349598	2	7.3	50	14.65	M12
KA GGN1208-GK-00300-U	0349599	3	7.3	50	14.65	M12
Sensor cable for SIEMENS Sinamics and encoder interface SSI – drag chain suitable						
KA GGN1210-GK-00100-Q	0349135	1	6	46	14.65	M12
KA GGN1210-GK-00200-Q	0349136	2	6	46	14.65	M12
KA GGN1210-GK-00300-Q	0349137	3	6	46	14.65	M12
Sensor cable for Siemens SINAMICS and encoder interface DRIVE-CLiQ – cable track compatible						
ELB/SLD – DQ 05m	1327967	5	6	50	14.9	M12
ELB/SLD – DQ 10m	1327968	10	6	50	14.9	M12
ELB/SLD – DQ 15m	1327969	15	6	50	14.9	M12
ELB/SLD – DQ 20m	1327970	20	6	50	14.9	M12

ⓘ 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.

ELB 70

Compact linear module

Bosch Rexroth IndraDrive Cs controller



- 90 Controller 92 ERD Rotary unit
91 Rotary module ERS/ERT, electric 93 Compact linear module ELB

The controller can be used to operate the rotary modules ERS, ERT and ERD as well as for SCHUNK linear motor axes. It is available with the PROFIBUS or Multi-Ethernet (Sercos III, PROFINET, EtherCAT, EtherNet/IP) communication interfaces.

Description	Nominal current [A]	Maximum current [A]	Note
Controller			
HCS01.1E-W0008	2.7	8	

① We will be happy to help you select the right controller. Please contact us for assistance.



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