



Superior Clamping and Gripping

Product data sheet

Linear table Alpha

Linear table

Flat. Loadable. Precise.

Linear table Alpha

Flat linear table with spindle drive and double-profiled rail guide

Field of application

Universal linear module with spindle drive for precise positioning at a high drive force.



Advantages – Your benefits

Adaptable drive motor for versatile approach and easy integration into existing control concepts

Double-profiled rail guide for very high force and moment loads

Extremely flat design for minimal interfering contours Integrated bellows cover for versatility and a long tool life Machined stop edge for precise alignment and fastening







Max. driving force 4000 .. 18000 N



Repeat accuracy ±0.03 mm



Max. speed 2 .. 2.5 m/s

Functional description

The slide is driven by a ball screw spindle and precisely guided by a double profiled rail guide. The bellows cover the spindle and the guidance. The servomotor is connected to the profile via the drive shaft.



① **Aluminum profile** Particularly suitable for table assembly

② Profiled rail guide

for maximum positioning accuracy and moment loads

- ③ **Spindle** Transforms the rotational movement into a linear movement
- Bellows cover
 in order to protect the guidance form dirt

SCHUNK

Linear table

Detailed functional description

Spindle axis with axially mounted motor



This illustration shows how to mount a motor axially to a spindle axis using an engine cone and a coupling.

- 1 Spindle axis
- 2 Motor bell

Oupling

Gervomotor

Spindle axis with right angular mounted motor

The motor can also be mounted at a right angle on a spindle axis using a bevel gear.



Spindle axis with parallel-mounted motor



In order to save space, the motor can be mounted parallel to the spindle axis using an angle belt drive.

1 Spindle axis

3 Servomotor

2 Angle belt drive

Ordering example

	Α	Ξ.	20-B-225	5	SSS	5	M	- 2	2505	-	1000	 1660 ·	1	FB	-	2EMS	- 0
Product series A = Alpha																	
Size (version)																	
Size (version)																	
Drive																	
S = Spindle																	
Guidance system																	
S = rail guide																	
Design version																	
S = standard																	
Drive type																	
M = single nut (ball screw)																	
MM = double nut (ball screw)																	
Drive version																	
Diameter and pitch (ball screw)																	
Traverse path																	
Overall length																	
Cover																	
FB = Bellow																	
Accessories																	
EMSEMB = mechanical limit switch (S = Siem	ens, B :	= B	alluff) attac	he	d												
E02/E010 = inductive limit switch opener wi	th 2 m/	10	m cable att	ac	hed												
ES2/ES10= inductive limit switch closer with	2 m/10) m	cable attac	he	d												
$NS = I - \Pi U T$																	
Customized design																	
0 = Standard																	

1 = customized (specification in plain text)

Additional accessories (separate item)

MGK = motor flange and coupling (according to dimension sheet) URT = angle belt drive (from dimension sheet)

General notes about the series

Drive: servomotors of different providers can be trouble-free adapted

Profile: Extruded aluminum profile

Slide: Aluminum slide with bellows

Scope of delivery: Assembly and operating manual with declaration of incorporation

Warranty: 24 months

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. **Max. stroke:** is the maximum permissible stroke. Acceleration and braking distances or possible overrun must be taken into consideration.

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

Acceleration and speed: The values specified are the maximum values of the units without loading. The actual accelerations and speeds for your application must be designed separately and can deviate from the maximum values.

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



Application example

Motorized X/Y table for palletizing small packaging units.

1 Linear table Alpha

SCHUNK offers more ...

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







Universal rotary module

Rotary module, electric



Inductive proximity switches



Universal gripper

Drive





Universal swivel head



Room gantry



Drive controller

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

Options and special information

Flexible in motor and controller selection: The electrical control is carried out via an adaptable servo drive using common standard controller like Bosch or Siemens.

Easy integration: The easy integration into the control system is ensured by the possibility of attaching a common servomotor.

Complete solutions: On request, SCHUNK can supply complete solutions including motor, gear, controller, and cables. **NEW: Version with food –compliant lubrication (H1G):** on request 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.

Linear table



Max. spindle speed



The diagram shows the maximum spindle speed depending on the overall length of the unit.

Dimensions and maximum loads



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		A 15-B-155
Max. stroke H	[mm]	971
Max. driving force	[N]	4000
Repeat accuracy	[mm]	±0.03
Max. total length	[mm]	1500
Max. speed	[m/s]	2.5
Max. acceleration	[m/s ²]	20
Min./max. ambient temperature	[°C]	0/80
Dead weight of base including slide	[kg]	7.8
Additional mass per 100 mm stroke	[kg]	0.95
Weight of slide	[kg]	2.8
Dead weight of slide, long	[kg]	4.1
Guidance system		Rail guide
Number of rails		2
Size of rails		15
Drive concept		Spindle drive
Idle torque	[Nm]	0.35
Moment of inertia	[kgm ²]	0.000084
Spindle diameter	[mm]	20
Spindle pitch	[mm]	5/10/20/50
Max. spindle speed	[1/min]	3000

Please note that the long slide plates reduce the maximum stroke H.
 Please note that the moment of inertia for spindle axes refers to one meter.

Linear table

Main view



The drawing shows the unit in standard design, without considering any dimensions of the options described below.

- Number of folds = nominal stroke H/22 [rounded-up to whole number];
 F = (number of folds x 3) 2
- \bigcirc Connection linear unit
- 2 Attachment connection
- 6 Drive connection
- (9) Nominal stroke
- $\fbox{15} Lubricant connection$
- (20) With long slide plate
- (34) On both sides
- **73** Fit for centering pins
- **78** Fit for centering
- 90 Bellow block length
 - (91) Passage for internal mounting holes for short strokes

Linear table

Side definition



(14) Limit switch standard position

This drawing indicates the definition for the sides. This serves as the basis for all attachments.

(90) _{NS4} (90) _{NS4.1} 6 18 _ 6 -M8 4 90 RM4 -M8 20 90 NS10 ____6__ ⊕ 91_{NS11} -M5 20 1 12 _3.5 0 ÷. M6 _M4

90 T-nut at the bottom side

(91) Side T-nut

The unit can be fixed in place using T-nuts. The exact mounting position is indicated on the adjacent attachment illustration.

Description	ID	
T-nut		
NS 10-M6-6	0331422	
NS 11-M4	0331429	
NS 4.1-M8-6	0331430	
NS 4-M8-6	0331407	
RM4-M5	0331426	

Mounting



90 T-nut at the bottom side

(92) Stop edge for alignment of axis

(91) Side T-nut

(32) Stop edge for diginient o

The profile can be secured using T-nuts.

Angle belt drive



The angle belt drive makes it possible to achieve various drive solutions in confined spaces. SCHUNK offers the suitable angle gear for your drive.

Description	G	H	L	J	К
	[mm]	[mm]	[mm]	[mm]	[mm]
A 15-B-155	238	120	46	52	102

() Possible transmission ratios: i = 1 : 1, i = 2 : 1 and i = 3 : 1

Fastening elements

Linear table

Motor flange schematic diagram



journal (92) Clutch length

Different drive solutions can be attached to our axes. SCHUNK offers you the right motor flange and coupling for your drive.

Limit and reference switch



(17) Cable outlet

(91) Mechanical limit switches

(90) Inductive limit and reference

switches

Generally two EO-02 switches are used as limit switches and one ES-02 is used as reference switch.

Description	ID	Often combined					
Inductive limit switch							
E0-02	0331410	•					
E0-10	0331412						
ES-02	0331411	•					
ES-10	0331413						
Mechanical limit swit	ch						
EMB	0331415	•					
EMS	0331414						

 The positions and dimensions of limit switches, switching lugs, and mounting components may vary depending on the application and the selected limit switches. Please contact us for assistance.



Bawar Bawar

Max. spindle speed



The diagram shows the maximum spindle speed depending on the overall length of the unit.

Dimensions and maximum loads



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		A 20-B-225
Max. stroke H	[mm]	1387
Max. driving force	[N]	6000
Repeat accuracy	[mm]	±0.03
Max. total length	[mm]	2000
Max. speed	[m/s]	2.5
Max. acceleration	[m/s²]	20
Min./max. ambient temperature	[°C]	0/80
Dead weight of base including slide	[kg]	17.6
Additional mass per 100 mm stroke	[kg]	2.7
Weight of slide	[kg]	6.2
Dead weight of slide, long	[kg]	9
Guidance system		Rail guide
Number of rails		2
Size of rails		20
Drive concept		Spindle drive
Idle torque	[Nm]	1.2
Moment of inertia	[kgm²]	0.000225
Spindle diameter	[mm]	25
Spindle pitch	[mm]	5/10/25/50
Max. spindle speed	[1/min]	3000

Please note that the long slide plates reduce the maximum stroke H.
 Please note that the moment of inertia for spindle axes refers to one meter.

Linear table





The drawing shows the unit in standard design, without considering any dimensions of the options described below.

- ① Number of folds = nominal stroke H/32 [rounded-up to whole number]; F = (number of folds x 3) - 2
- 1 Connection linear unit
- 2 Attachment connection
- 6 Drive connection
- (9) Nominal stroke
- $\underbrace{15}_{-}$ Lubricant connection
- $\textcircled{\textbf{20}}$ With long slide plate
- (34) On both sides
- **73** Fit for centering pins
- 78 Fit for centering
- 90 Bellow block length
- (91) Passage for internal mounting holes for short strokes

Linear table

Side definition



(14) Limit switch standard position

This drawing indicates the definition for the sides. This serves as the basis for all attachments.

Fastening elements



(90) T-nut at the bottom side

(91) Side T-nut

The unit can be fixed in place using T-nuts. The exact mounting position is indicated on the adjacent attachment illustration.

Description	ID	
T-nut		
NS 11-M4	0331429	
NS 15-M8	0331433	
RM6-M6	0331427	

Mounting



(90) T-nut at the bottom side

(92) Stop edge for alignment of axis

(91) Side T-nut

The profile can be secured using T-nuts.



The angle belt drive makes it possible to achieve various drive solutions in confined spaces. SCHUNK offers the suitable angle gear for your drive.

Description	G	H	L	J	К
	[mm]	[mm]	[mm]	[mm]	[mm]
A 20-B-225	328	190	64	80	142

() Possible transmission ratios: i = 1 : 1, i = 2 : 1 and i = 3 : 1

Linear table

Motor flange schematic diagram



(92) Clutch length

Different drive solutions can be attached to our axes. SCHUNK offers you the right motor flange and coupling for your drive.

Limit and reference switch



(90) Inductive limit and reference (91) Mechanical limit switches switches

Generally two EO-02 switches are used as limit switches and one ES-02 is used as reference switch.

Description	ID	Often combined
Inductive limit switch	ı	
E0-02	0331410	•
E0-10	0331412	
ES-02	0331411	•
ES-10	0331413	
Mechanical limit swit	ch	
EMB	0331415	•
EMS	0331414	

 $\ensuremath{\textcircled{}}$ The positions and dimensions of limit switches, switching lugs, and mounting components may vary depending on the application and the selected limit switches. Please contact us for assistance.



Max. spindle speed



The diagram shows the maximum spindle speed depending on the overall length of the unit.

Dimensions and maximum loads



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		A 30-B-325
Max. stroke H	[mm]	2224
Max. driving force	[N]	12000
Repeat accuracy	[mm]	±0.03
Max. total length	[mm]	3000
Max. speed	[m/s]	2
Max. acceleration	[m/s ²]	20
Min./max. ambient temperature	[°C]	0/80
Dead weight of base including slide	[kg]	37
Additional mass per 100 mm stroke	[kg]	3.8
Weight of slide	[kg]	13.4
Dead weight of slide, long	[kg]	18.8
Guidance system		Rail guide
Number of rails		2
Size of rails		30
Drive concept		Spindle drive
Idle torque	[Nm]	1.6
Moment of inertia	[kgm ²]	0.000639
Spindle diameter	[mm]	32
Spindle pitch	[mm]	5/10/20/40
Max. spindle speed	[1/min]	3000

Please note that the long slide plates reduce the maximum stroke H.
 Please note that the moment of inertia for spindle axes refers to one meter.

Linear table

Main view



The drawing shows the unit in standard design, without considering any dimensions of the options described below.

- ① Number of folds = nominal stroke H/42 [rounded-up to whole number]; F = (number of folds x 3) - 2
- (1) Connection linear unit
- (2) Attachment connection
- 6 Drive connection
- (9) Nominal stroke
- $\fbox{15} Lubricant connection$
- (20) With long slide plate
- (34) On both sides
- **73** Fit for centering pins
- 78 Fit for centering
- 90 Bellow block length
- (91) Passage for internal mounting holes for short strokes

Linear table

Side definition



(14) Limit switch standard position

This drawing indicates the definition for the sides. This serves as the basis for all attachments.

Fastening elements



(90) T-nut at the bottom side

(91) Side T-nut

The unit can be fixed in place using T-nuts. The exact mounting position is indicated on the adjacent attachment illustration.

Description	ID	
T-nut		
NS 11-M4	0331429	
NS 24-M10	1516296	
NS 6-M10	0331409	
RM6-M6	0331427	

Mounting



(90) T-nut at the bottom side

(92) Stop edge for alignment of axis

(91) Side T-nut

Angle belt drive

The profile can be secured using T-nuts.

К (4) F 0 91 0 9 D (90) C Ŧ G 6 (4) Linear unit (90) Attachment direction of angle belt drive (6) Drive connection (91) Dependent on transmission ratio and toothed belt design.

The angle belt drive makes it possible to achieve various drive solutions in confined spaces. SCHUNK offers the suitable angle gear for your drive.

Description	G	H	L	J	К
	[mm]	[mm]	[mm]	[mm]	[mm]
A 30-B-325	328	190	64	80	142

() Possible transmission ratios: i = 1 : 1, i = 2 : 1 and i = 3 : 1

Linear table

Motor flange schematic diagram



journal (92) Clutch length

Different drive solutions can be attached to our axes. SCHUNK offers you the right motor flange and coupling for your drive.

Limit and reference switch



(90) Inductive limit and reference (91) Mechanical limit switches switches

Generally two EO-02 switches are used as limit switches and one ES-02 is used as reference switch.

Description	ID	Often combined		
Inductive limit switch				
E0-02	0331410	•		
E0-10	0331412			
ES-02	0331411	•		
ES-10	0331413			
Mechanical limit switch				
ЕМВ	0331415	•		
EMS	0331414			

 $\ensuremath{\textcircled{}}$ The positions and dimensions of limit switches, switching lugs, and mounting components may vary depending on the application and the selected limit switches. Please contact us for assistance.



Max. spindle speed



The diagram shows the maximum spindle speed depending on the overall length of the unit.

Dimensions and maximum loads



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		A 35-B-455
Max. stroke H	[mm]	2170
Max. driving force	[N]	18000
Repeat accuracy	[mm]	±0.03
Max. total length	[mm]	3000
Max. speed	[m/s]	2
Max. acceleration	[m/s²]	20
Min./max. ambient temperature	[°C]	0/80
Dead weight of base including slide	[kg]	65.2
Additional mass per 100 mm stroke	[kg]	5.2
Weight of slide	[kg]	26.2
Dead weight of slide, long	[kg]	33.8
Guidance system		Rail guide
Number of rails		2
Size of rails		35L
Drive concept		Spindle drive
Idle torque	[Nm]	2.5
Moment of inertia	[kgm²]	0.00134
Spindle diameter	[mm]	40
Spindle pitch	[mm]	5/10/20/40
Max. spindle speed	[1/min]	3000

Please note that the long slide plates reduce the maximum stroke H.
 Please note that the moment of inertia for spindle axes refers to one meter.

Linear table

Main view



The drawing shows the unit in standard design, without considering any dimensions of the options described below.

- () Number of folds = nominal stroke H/52 [rounded-up whole number]; F = (number of folds x 3) 2
- 1 Connection linear unit
- (2) Attachment connection
- 6 Drive connection
- (9) Nominal stroke
- $\fbox{15} Lubricant connection$
- 20 With long slide plate
- (34) On both sides
- **73** Fit for centering pins
- 78 Fit for centering
- 90 Bellow block length
 - (91) Passage for internal mounting holes for short strokes

Linear table

Side definition



(14) Limit switch standard position

This drawing indicates the definition for the sides. This serves as the basis for all attachments.

Fastening elements



(90) T-nut at the bottom side

(91) Side T-nut

The unit can be fixed in place using T-nuts. The exact mounting position is indicated on the adjacent attachment illustration.

Description	ID	
T-nut		
NS 24-M10	1516296	
NS 3-M6	0331406	
NS 6-M10	0331409	
RM6-M6	0331427	

Mounting



(90) T-nut at the bottom side

(92) Stop edge for alignment of axis

(91) Side T-nut

Angle belt drive

The profile can be secured using T-nuts.



The angle belt drive makes it possible to achieve various drive solutions in confined spaces. SCHUNK offers the suitable angle gear for your drive.

Description	G	Н	I.	J	К
	[mm]	[mm]	[mm]	[mm]	[mm]
A 35-B-455	328	190	64	80	142

() Possible transmission ratios: i = 1 : 1, i = 2 : 1 and i = 3 : 1

Linear table

Motor flange schematic diagram



journal (92) Clutch length

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Limit and reference switch



(90) Inductive limit and reference (91) Mechanical limit switches switches

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Description	ID	Often combined		
Inductive limit switch				
E0-02	0331410	•		
E0-10	0331412			
ES-02	0331411	•		
ES-10	0331413			
Mechanical limit switch				
ЕМВ	0331415	•		
EMS	0331414			

 $\ensuremath{\textcircled{}}$ The positions and dimensions of limit switches, switching lugs, and mounting components may vary depending on the application and the selected limit switches. Please contact us for assistance.



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