Toothed belt axes ELGG

FESTO

New

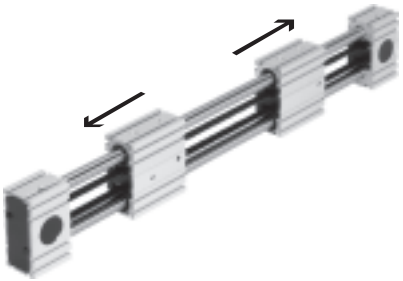
Toothed belt axes ELGG

Key features

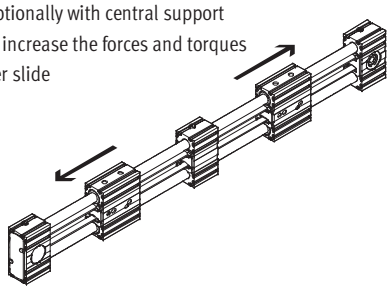
At a glance

- Toothed belt axis with two opposing slides
- Optimum price/performance ratio
- Ready-to-install unit for quick and easy design
- High reliability thanks to a tested service life of 2,500 km per slide
- Motor can be mounted on four sides using identical mounting accessories
- Complete kit for a simple and space-saving solution for end-position sensing
- Plain-bearing guide
  - For small loads
  - Restricted operating behaviour with torque load
  - Guide backlash = 0.05 mm (on delivery)
- Recirculating ball bearing guide
  - For medium loads
  - Very good operating behaviour with torque load
  - Backlash-free guide (preloaded guide elements)

Opposing movement, controlled via a motor



Optionally with central support to increase the forces and torques per slide

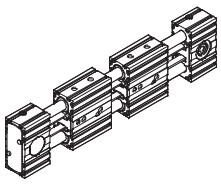


Application examples

- Suitable for sorting, separating and spreading
- For opening doors
- For gripping tasks with small loads
- Positioning and handling with low process forces
- Centring and aligning

Characteristic values of the axes

The specifications shown in the table are maximum values.
The precise values for each of the variants can be found in the relevant technical data.

Version	Size	Working stroke per slide [mm]	Speed [m/s]	Repetition accuracy [mm]	Feed force[1] [N]	Guide characteristics: Forces and torques Fy [N]	Fz [N]	Mx [Nm]	My [Nm]	Mz [Nm]
	35	50 ... 700	3	±0.1	50	50	50	2.5	20	20
	45	50 ... 900	3	±0.1	100	100	100	5	40	40
	55	50 ... 1,200	3	±0.1	350	300	300	15	124	124

1) Combined feed force of both slides

Note

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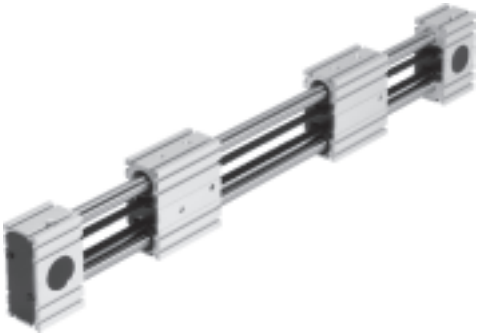
Toothed belt axes ELGG

Key features

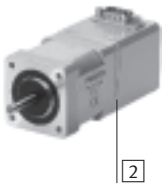
Complete system comprising toothed belt axis, motor, motor controller and motor mounting kit

Toothed belt axis with recirculating ball bearing guide or plain-bearing guide



Motor

➔ 18



1 Servo motor EMMS-AS
2 Stepper motor EMMS-ST

Note

A range of specially adapted complete solutions is available for the toothed belt axis ELGG and the motors.

Motor controller

Technical data ➔ Internet: motor controller

1 Servo motor controller CMMP-AS, CMMS-AS
2 Stepper motor controller CMMS-ST

Motor mounting kit

➔ 18

Axial kit

Kit comprising:

- Motor flange
- Coupling housing
- Coupling
- Screws
- Slot nuts

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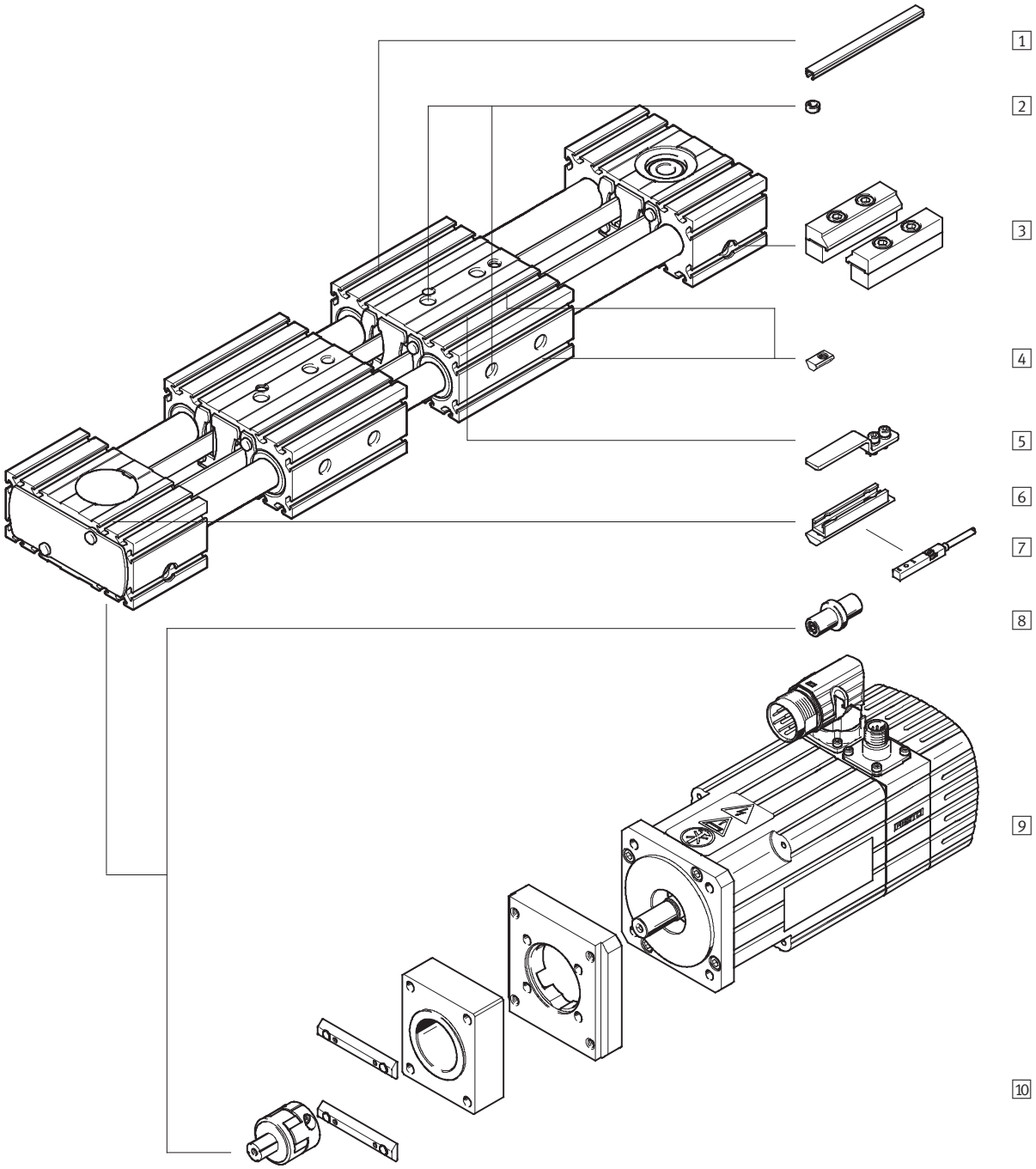
Peripherals overview



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Peripherals overview

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Variants and accessories			
	Type	Brief description	➔ Page/Internet
1	Slot cover NC	• For protecting against ingress of dirt	21
2	Centring sleeve ZBH	• For centring loads and attachments on the slide • 4 centring sleeves included in the scope of delivery of the axis	21
3	Profile mounting MA	For mounting the axis on the bearing cap	20
4	Slot nut NM	For mounting attachments	21
5	Switching lug SA, SB	For sensing the slide position	20
6	Sensor bracket SA, SB	Adapter for mounting the inductive proximity sensors on the axis	20
7	Proximity sensor, T-slot SA, SB	• Inductive proximity sensor, for T-slot • 1 switching lug and 1 sensor bracket are included in the scope of delivery with the order code SA, SB	21
8	Drive shaft EA	• Can, if required, be used as an alternative interface • No drive shaft is required for the axis/motor combination ➔ 18	21
9	Motor EMMS	Motors specially matched to the axis, with or without brake	18
10	Axial kit EAMM	For axial motor mounting (comprising: coupling, coupling housing and motor flange)	18
–	Connecting cable NEBU	For proximity sensor (order code SA and SB)	21

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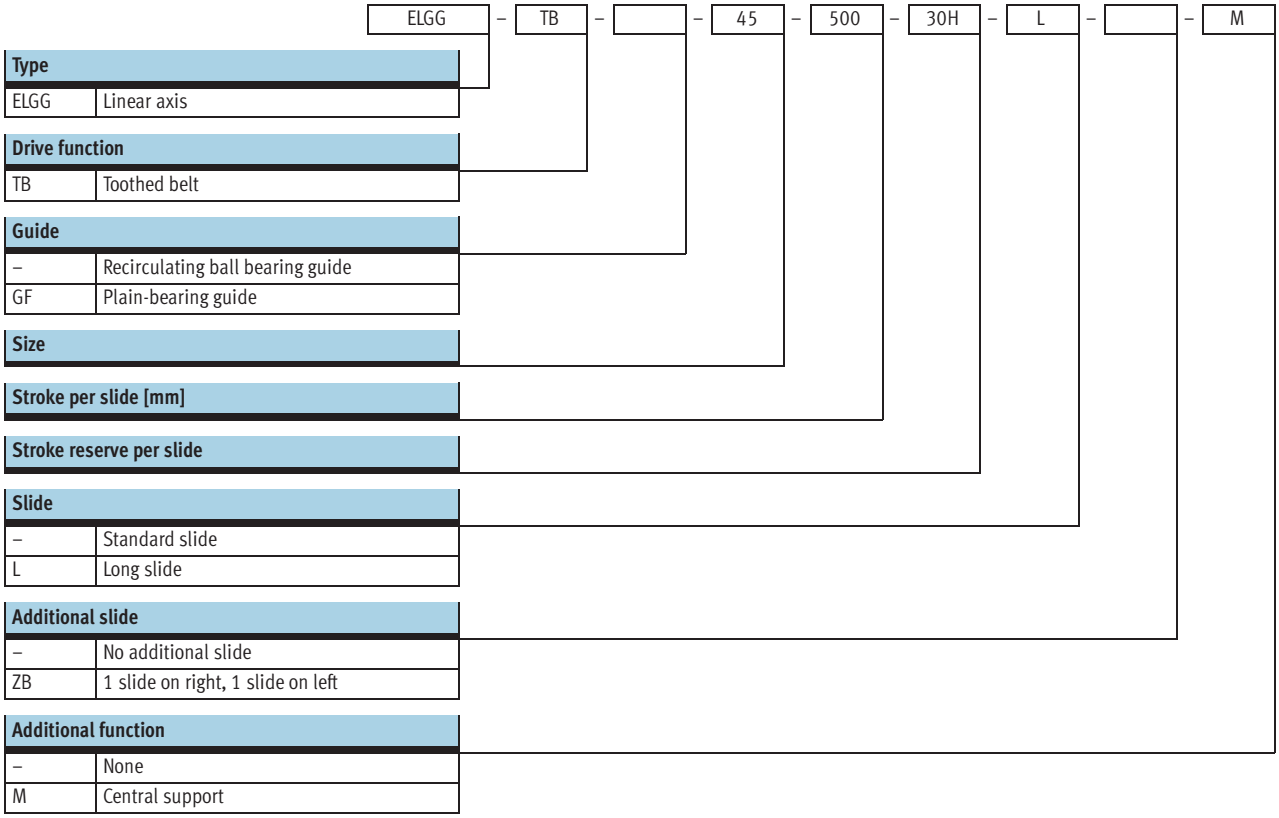
Type codes



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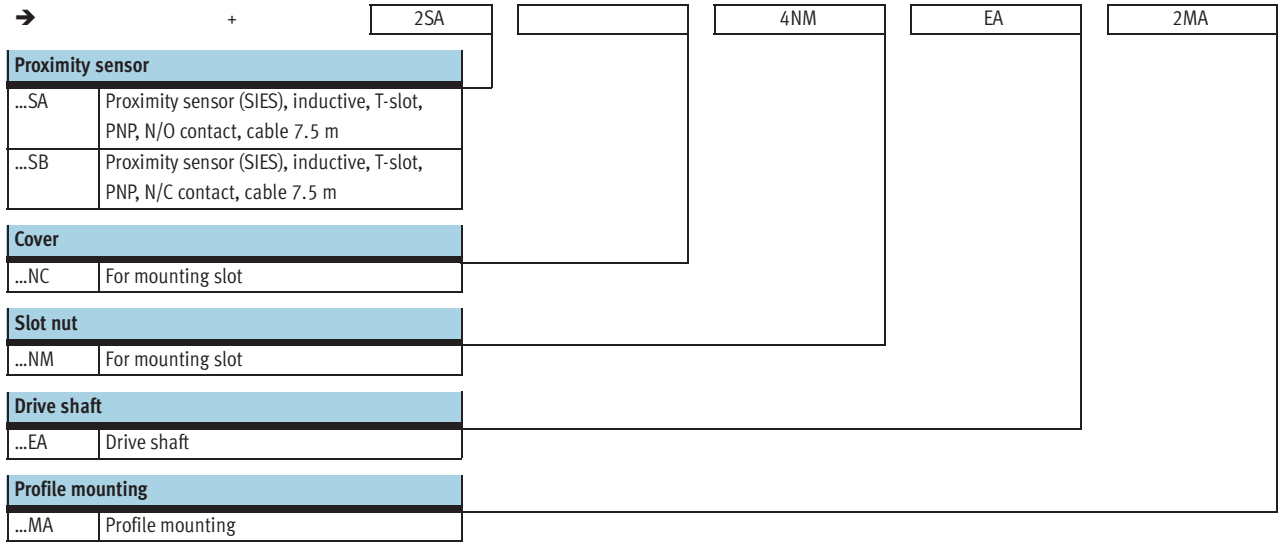
Type codes



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Technical data

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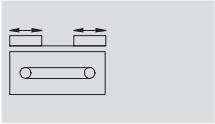
Function



Size
35 ... 55

Stroke length
50 ... 1,200 mm

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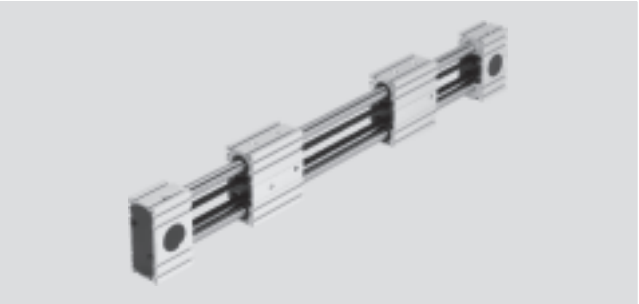

General technical data				
Size		35	45	55
Design		Electromechanical linear axis with toothed belt		
Guide		Recirculating ball bearing guide		
		Plain-bearing guide		
Mounting position		Any		
Working stroke per slide	[mm]	50 ... 700	50 ... 900	50 ... 1,200
Max. feed force F_x [1]	[N]	50	100	350
Max. no-load torque [2]	[Nm]	0.18	0.3	0.5
Max. driving torque	[Nm]	0.46	1.24	5
Max. no-load resistance to shifting	[N]	10.8	16.1	27.9
Max. speed				
Recirculating ball bearing guide	[m/s]	3		
Plain-bearing guide	[m/s]	1		
Max. acceleration [3]	[m/s²]	50		
Repetition accuracy	[mm]	±0.1		

1) Combined feed force of both slides
2) Measured at a speed of 0.2 m/s
3) The max. acceleration is dependent on the moving load, the driving torque and the max. feed force

Operating and environmental conditions		
Ambient temperature		
Recirculating ball bearing guide	[°C]	–10 ... +50
Plain-bearing guide	[°C]	0 ... +40
Protection class		IP20
Duty cycle	[%]	100

Weight [kg]			
Size	35	45	55
Recirculating ball bearing guide			
Basic weight with 0 mm stroke [1]			
Standard slide	1.9	4.2	7.2
Long slide	2.6	6.0	10.3
Additional weight per 1,000 mm stroke	4.9	10.0	15.6
Moving load	0.8	1.7	2.9
Slide			
Standard slide	0.8	1.7	2.9
Long slide	1.3	3.0	5.2
Additional slide	0.6	1.5	2.6
Central support	0.2	0.5	0.7

1) Incl. 2 slides, without central support

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Technical data

Weight [kg]			
Size	35	45	55
Plain-bearing guide			
Basic weight with 0 mm stroke[1)]			
Standard slide	1.9	4.3	7.2
Long slide	2.7	6.2	10.8
Additional weight per 1,000 mm stroke	4.9	10.0	15.6
Moving load	0.8	1.7	3.0
Slide			
Standard slide	0.8	1.7	3.0
Long slide	1.5	3.2	5.6
Additional slide	0.6	1.5	2.6
Central support	0.2	0.5	0.7

1) Incl. 2 slides, without central support

Toothed belt				
Size		35	45	55
Pitch	[mm]	2	3	3
Expansion	[%]	0.094	0.08	0.21
Width	[mm]	10	15	19.3
Effective diameter	[mm]	18.46	24.83	28.65
Feed constant	[mm/rev.]	58	78	90

Mass moment of inertia				
Size		35	45	55
J_O				
Standard slide	[kg mm^2]	76.12	289.55	656.98
Long slide	[kg mm^2]	128.6	522.01	1,212.78
J_S per metre stroke	[kg mm^2/m]	0.26	1.1	1.9
J_L per kg effective load	[kg mm^2/kg]	85	154	205
J_W Additional slide	[kg mm^2]	55	224	533

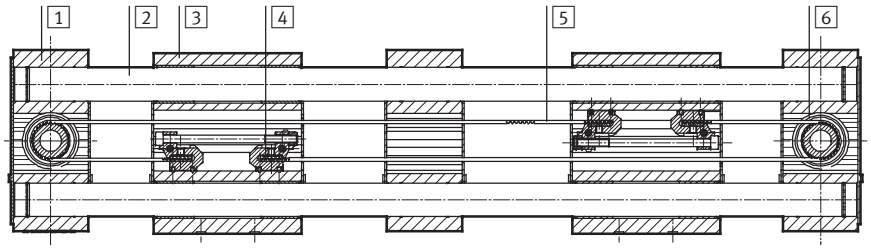
The mass moment of inertia J_A of the entire axis is calculated as follows:

$J_A = J_O + K \times J_W + J_S \times \text{working stroke [m]} + J_L \times m_{\text{effective load}}$ [kg]

K = Number of additional slides

Materials

Sectional view



Axis		
1	Bearing cap, profile	Anodised wrought aluminium alloy
2	Guide rods	Steel
3	Slide, profile	Anodised wrought aluminium alloy
4	Toothed belt clamping component	Beryllium bronze
5	Toothed belt	Polychloroprene with glass cord and nylon coating
6	Pulley	High-alloy stainless steel
	Note on materials	RoHS-compliant
		Contains PWIS (paint-wetting impairment substances)

Toothed belt axes ELGG

Technical data

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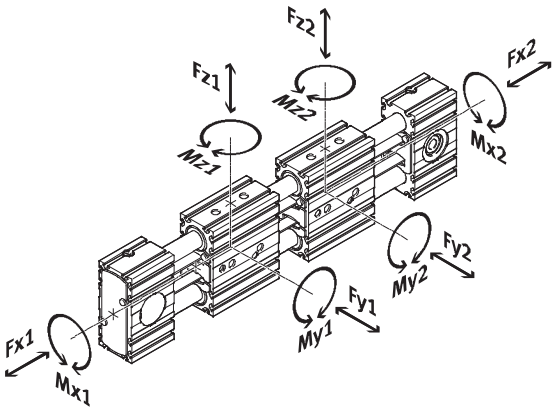
Characteristic load values

The indicated forces and torques refer to the centre of the guide. These values must not be exceeded during dynamic operation. Special attention must be paid to the cushioning phase.

Without central support

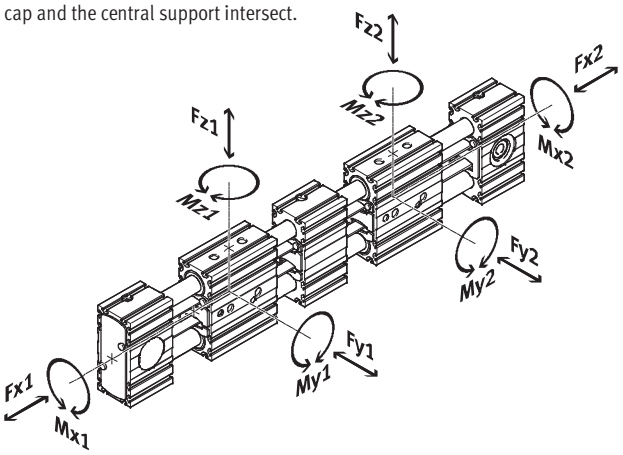
The point of application of force is the point where the centre of the guide and the centre point between the two bearing caps intersect.



If the axis is subjected to more than two of the indicated forces and torques simultaneously, the following equation must be satisfied in addition to the indicated maximum loads:

With central support

The point of application of force is the point where the centre of the guide and the centre point between the bearing cap and the central support intersect.



Without central support

Calculating the load comparison factor:

$$f_v = \frac{|F_{y1,dyn} + F_{y2,dyn}|}{Fy_{max.}} + \frac{|F_{z1,dyn} + F_{z2,dyn}|}{Fz_{max.}} + \frac{|M_{x1,dyn} + M_{x2,dyn}|}{Mx_{max.}} + \frac{|M_{y1,dyn} + M_{y2,dyn}|}{My_{max.}} + \frac{|M_{z1,dyn} + M_{z2,dyn}|}{Mz_{max.}} \leq 1$$

With central support

Calculating the load comparison factor:

$$f_v = \frac{|F_{y1,dyn}|}{Fy_{max.}} + \frac{|F_{z1,dyn}|}{Fz_{max.}} + \frac{|M_{x1,dyn}|}{Mx_{max.}} + \frac{|M_{y1,dyn}|}{My_{max.}} + \frac{|M_{z1,dyn}|}{Mz_{max.}} \leq 1$$

$$f_v = \frac{|F_{y2,dyn}|}{Fy_{max.}} + \frac{|F_{z2,dyn}|}{Fz_{max.}} + \frac{|M_{x2,dyn}|}{Mx_{max.}} + \frac{|M_{y2,dyn}|}{My_{max.}} + \frac{|M_{z2,dyn}|}{Mz_{max.}} \leq 1$$

Permissible forces and torques for a service life of 2,500 km per slide

Guide		Plain-bearing guide			Recirculating ball bearing guide		
Size		35	45	55	35	45	55
$Fy_{max.}$, Fz_{max}	[N]	50	100	300	50	100	300
Standard slide							
$Mx_{max.}$	[Nm]	1	2.5	5	2.5	5	15
$My_{max.}$	[Nm]	4	8	16	8	16	48
$Mz_{max.}$	[Nm]	4	8	16	8	16	48
Long slide							
$Mx_{max.}$	[Nm]	1	2.5	5	2.5	5	15
$My_{max.}$	[Nm]	10	20	40	20	40	124
$Mz_{max.}$	[Nm]	10	20	40	20	40	124

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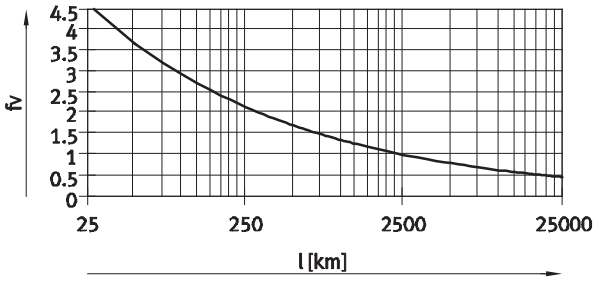
Service life

The service life of the guide depends on the load. To provide a rough indication of the service life of the guide, the graph below plots the load comparison factor f_v against the service life. These values are only theoretical. Consultation with your local contact person at Festo is mandatory for load comparison factors f_v greater than 1.5.

Load comparison factor f_v as a function of service life



Example:
A user wants to move an X kg load. Using the formula ➔ 10 gives a value of 1.5 for the load comparison factor f_v. According to the graph, the guide would have a service life of approx. 750 km. Reducing the acceleration reduces the Mz and My values. A load comparison factor of 1 now gives a service life of 2,500 km.

Note

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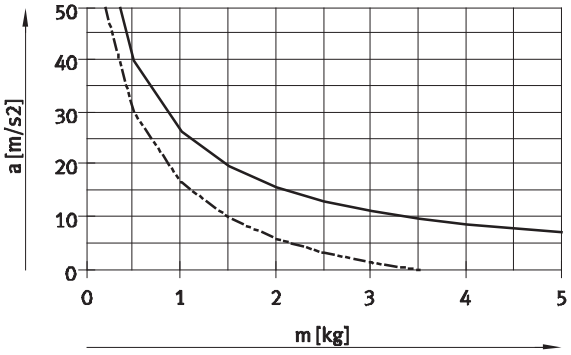
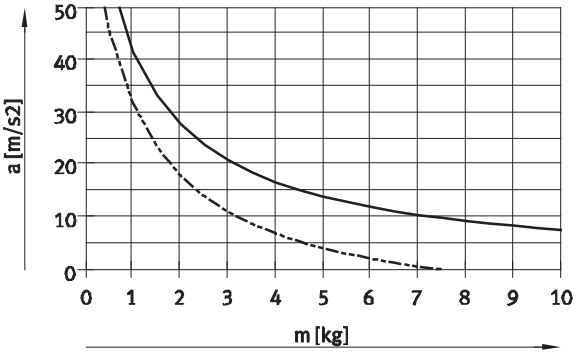
Maximum acceleration a as a function of applied load m

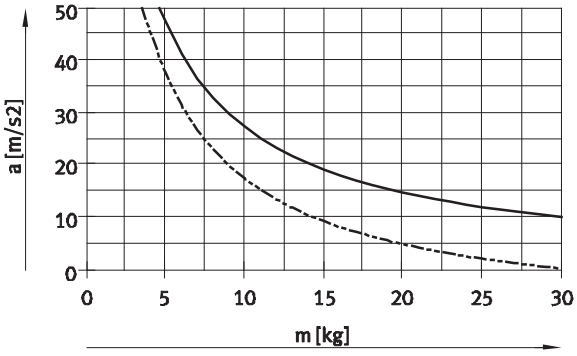
ELGG-35



ELGG-45



ELGG-55



Horizontal
Vertical

Note

For the plain-bearing guide (GF) it is recommended to reduce the acceleration to minimise overswings and increase positioning accuracy.

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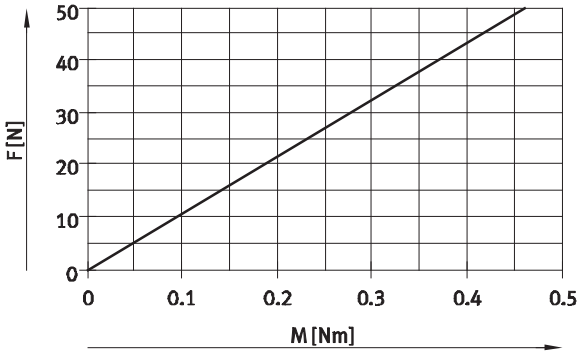
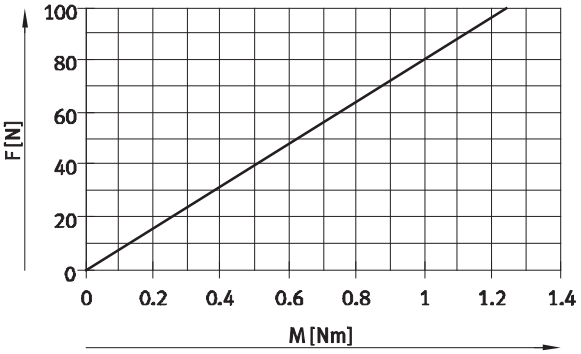
Feed force F_x as a function of input torque M

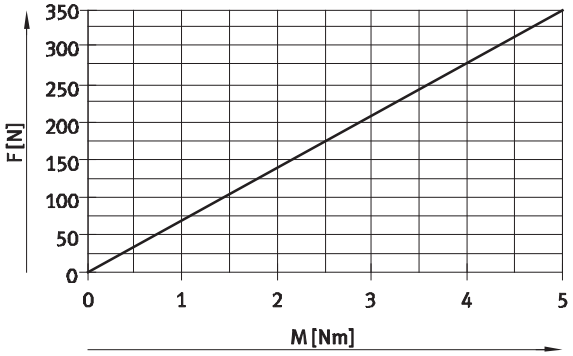
ELGG-35



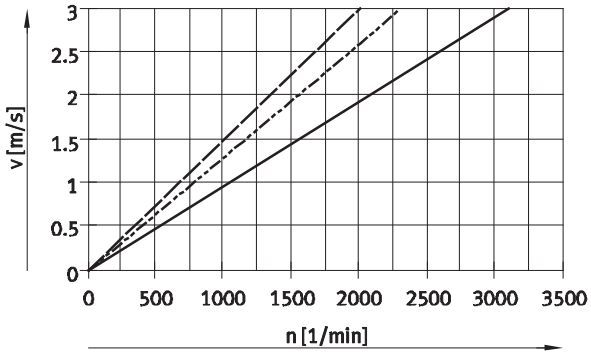
ELGG-45



ELGG-55

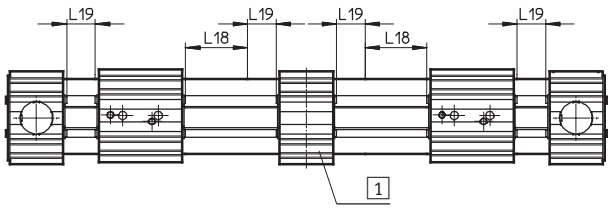


Speed v as a function of rotational speed n



ELGG-35
ELGG-45
ELGG-55

Stroke reserve



L18 = Nominal stroke
L19 = Stroke reserve
1 Central support

- The stroke reserve is a safety distance available on both sides of the slide in addition to the nominal stroke
- The sum of the nominal stroke and 2x stroke reserve must not exceed the maximum working stroke per slide
- The stroke reserve length can be freely selected
- The stroke reserve is defined via the “stroke reserve” attribute in the modular product system

Example:

Type ELGG-TB-45-500-20H-...

Nominal stroke	= 500 mm
2x stroke reserve	= 40 mm
Working stroke per slide	= 540 mm

(540 mm = 500 mm + 2x 20 mm)

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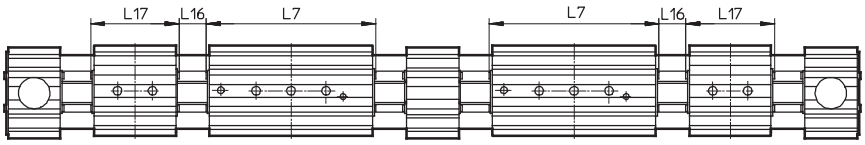
Working stroke reduction

With standard slide or long slide L with additional slide ZB



L7 = Slide length
L16 = Distance between both slides
L17 = Additional slide length

- With a toothed belt axis with additional slide, the working stroke is reduced by the length of the additional slide and the distance between both slides
- If the variant long slide L is ordered, the additional slide is not extended

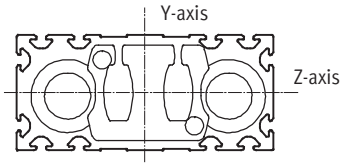
Example:

Type ELGG-TB-35-500-...-ZR
Working stroke = 500 mm
L16 = 10 mm
L7 = 146 mm
L17 = 76 mm

Working stroke per slide with additional slide = 414 mm
(500 mm – 10 mm – 76 mm)

Dimensions – Additional slide				
Size		35	45	55
Length L17	[mm]	76	96	116
Distance between the slides L16	[mm]	≥ 0		

2nd moment of area



Size		35	45	55
Iy	[mm^4]	3.77x10^3	1.57x10^4	3.83x10^4
Iz	[mm^4]	1.89x10^5	8.08x10^5	1.85x10^6

Recommended deflection limits

It is recommended to adhere to a maximum deflection of 0.5 mm so as not to impair the functionality of the axes.

Greater deformation can result in increased friction, greater wear and reduced service life.

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Technical data

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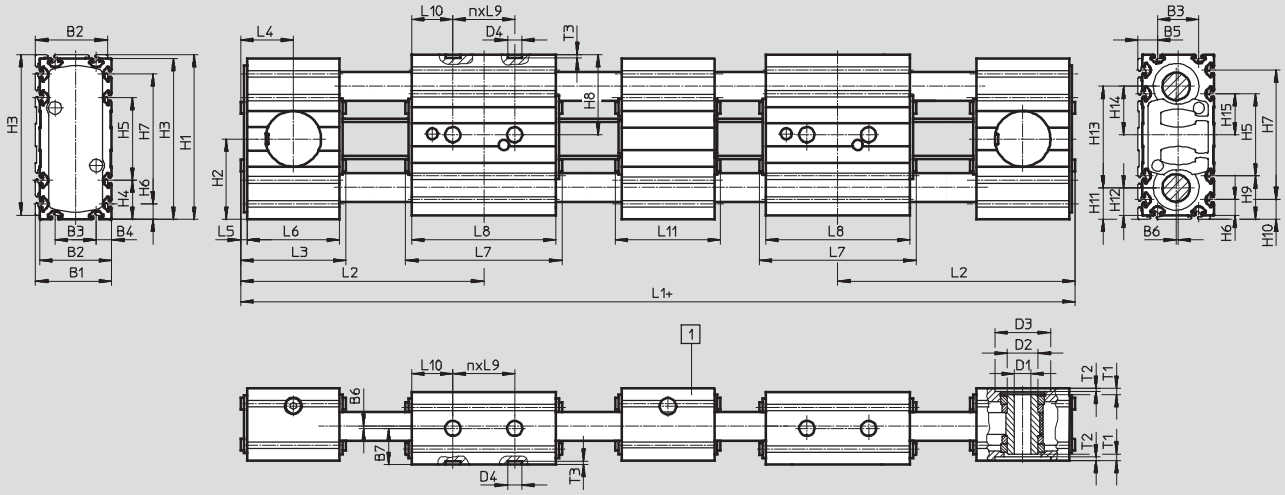
Dimensions Download CAD data ➔ **www.festo.com**



Note

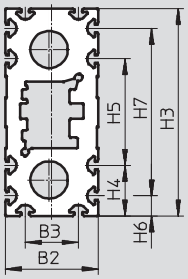
With the size 35 and stroke > 350 mm,
size 45 and stroke > 450 mm,
size 55 and stroke > 700 mm,
the toothed belt axis is always supplied with
central support M.

\+ Plus 2x stroke + 4x stroke reserve + L11

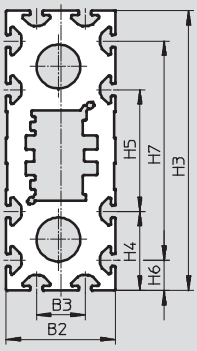
1 Central support

Profile

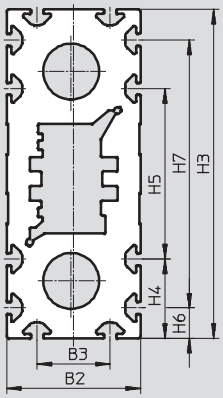
ELGG-35



ELGG-45



ELGG-55



Toothed belt axes ELGG

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Size	B1	B2	B3	B4	B5	B6	B7	D1 ∅ H7	D2 ∅	D3 ∅ H7	D4 ∅ H7	H1	H2	H3
ELGG-35	37	35	20	7.5	9.5	1	17.5	8	15	27	7	80	39	78
ELGG-35-L														
ELGG-45	47	45	20	12.5	14.5		22.5	10	20	38		117	57.5	115
ELGG-45-L														
ELGG-55	57	55	30	12.5	14.5		27.5	16	25	48		137	67.5	135
ELGG-55-L														

Size	H4	H5	H6	H7	H8	H9	H10	H11	H12	H13	H14	H15	L1	L2
ELGG-35	19	40	7.5	63	39	21	9.5	15.5	13.5	49	23.5	20	259	89
ELGG-35-L													399	124
ELGG-45	32.5	50	12.5	90	57.5	34.5	14.5	23	21	71	34.5	25	317	108
ELGG-45-L													497	153
ELGG-55	32.5	70	12.5	110	67.5	34.5	14.5	25.5	23.5	86	42	35	361	120
ELGG-55-L													581	175

Size	L3	L4	L5	L6	L7	L8	L9	L10	L11	n	T1	T2	T3 +0.1
ELGG-35	51	25.5	3	45	76	70	30	20	51	1	3.1	1.6	1.6
ELGG-35-L					146	140		40		2			
ELGG-45	60	30		54	96	90	40	25	60	1	3	1.7	
ELGG-45-L					186	180		50		2			
ELGG-55	62	31		56	116	110	40	35	62	1	4.5	2	
ELGG-55-L					226	220		70		2			

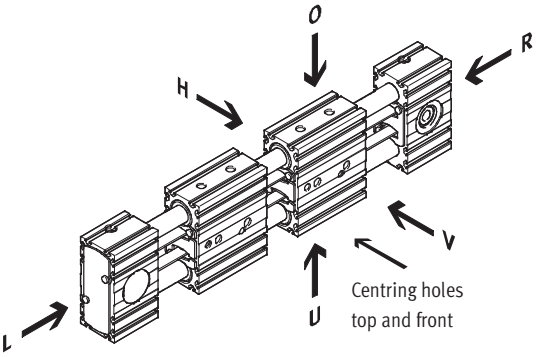
Toothed belt axes ELGG

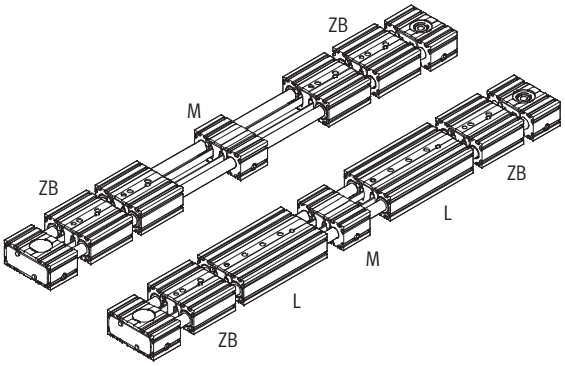
Ordering data – Modular products

FESTO

Order code

Axis

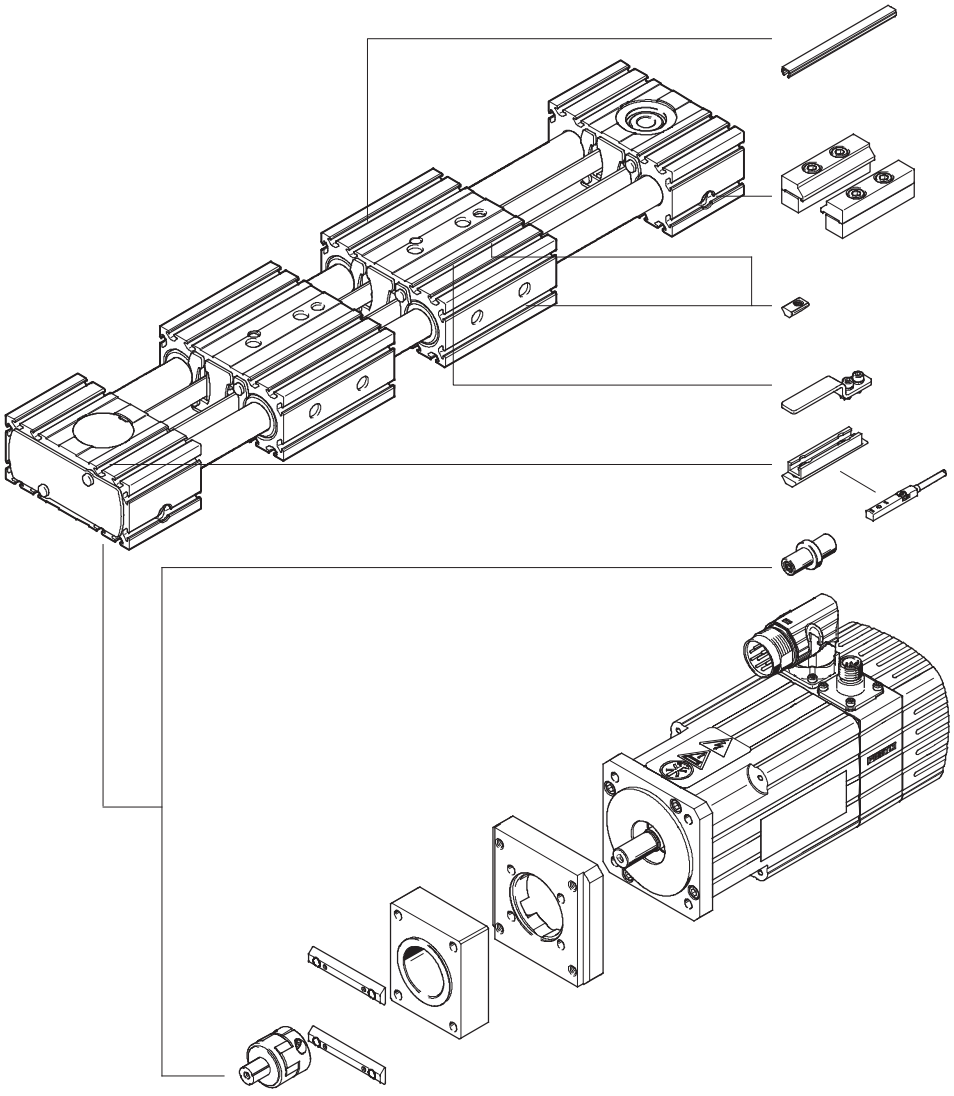




O	top	L	left
U	underneath	V	front
R	right	H	rear

L	Long slide
ZB	Additional slide
M	Central support

Accessories



NC

MA

NM

SA, SB

SA, SB

EA

Servo motor EMMS-AS
Stepper motor EMMS-ST
➔ 18

Axial kit
➔ 18

Toothed belt axes ELGG

FESTO

Ordering data – Modular products

Ordering table

	Size		35	45	55	Condi-tions	Code		Enter code
M	Module no.		**571058**	**571059**	**571060**				
	Design		Linear axis				**ELGG**		ELGG
	Function		Toothed belt				**-TB**		-TB
O	Guide		Recirculating ball bearing guide						
			Plain-bearing guide				**-GF**		
M	Size	[mm]	35	45	55		**-...**		-...
	Stroke length per slide	[mm]	1 ... 700	1 ... 900	1 ... 1,200		**-...**		-...
	Stroke reserve per slide		0 ... 999 (0 = no stroke reserve)			1	**-...H**		
O	Slide design		Standard slide						
			Long slide				**-L**		
	Additional slide		No additional slide						
			1 slide on right, 1 slide on left			2	**-ZB**		
	Additional function		None						
			Central support			3	**-M**		
	Accessories		Accessories enclosed separately				**+**		+
	Proximity sensor (SIES), inductive, T-slot, PNP, incl. switching lug	N/O contact, cable 7.5 m	1 ... 6				**...SA**		
		N/C contact, cable 7.5 m	1 ... 6				**...SB**		
	Mounting slot cover		–	1 ... 50 (1 = 2 units, 500 mm)			**...NC**		
	Slot nut for mounting slot		1 ... 99				**...NM**		
	Drive shaft		1 ... 4				**...EA**		
	Profile mounting		1 ... 2				**...MA**		

1 The sum of the nominal stroke and 2x stroke reserve must be at least 50 mm and must not exceed the maximum stroke length.

2 **ZB** Working stroke reduction ➔ 13

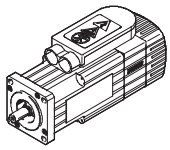
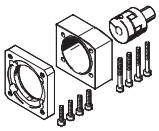
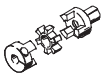
3 **M** With the size 35 and stroke > 350 mm, size 45 and stroke > 450 mm, size 55 and stroke > 700 mm, the toothed belt axis is always supplied with central support M.

Transfer order code

	ELGG	–	TB	–		–		–		–		–		–		+	

Toothed belt axes ELGG

Accessories

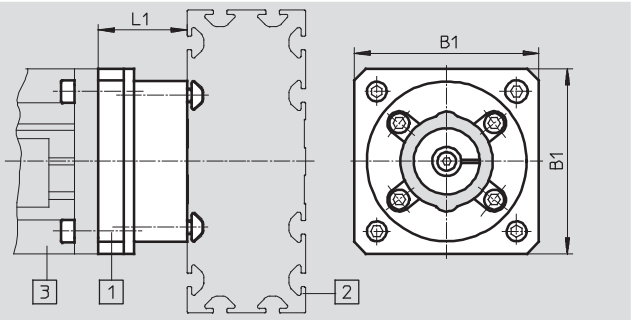
Permissible axis/motor combinations with axial kit – Without gear unit				
Motor	Axial kit	Axial kit consisting of:		
		Motor flange	Coupling	Coupling housing
				
Type	Part No. Type	Part No. Type	Part No. Type	Part No. Type
ELGG-35				
With servo motor				
EMMS-AS-55-S-...	**1133400** **EAMM-A-R27-55A**	**558176** **EAMF-A-38A-55A**	**557999** **EAMD-19-15-9-8X10**	**1133397** **EAMK-A-R27-38A**
With stepper motor				
EMMS-ST-57-S-... **EMMS-ST-57-M-...**	**1133403** **EAMM-A-R27-57A**	**560692** **EAMF-A-38A-57A**	**561292** **EAMD-16-15-6.35-8X10**	**1133397** **EAMK-A-R27-38A**
ELGG-45				
With servo motor				
EMMS-AS-70-S-... **EMMS-AS-70-M-...**	**1133401** **EAMM-A-R38-70A**	**558018** **EAMF-A-38A-70A**	**558000** **EAMD-25-22-11-10X12**	**1133398** **EAMK-A-R38-38A**
With stepper motor				
EMMS-ST-87-S-... **EMMS-ST-87-M-...**	**1133404** **EAMM-A-R38-87A**	**560693** **EAMF-A-38A-87A**	**558000** **EAMD-25-22-11-10X12**	**1133398** **EAMK-A-R38-38A**
ELGG-55				
With servo motor				
EMMS-AS-100-S-...	**1133402** **EAMM-A-R48-100A**	**558020** **EAMF-A-48A-100A**	**558002** **EAMD-42-40-19-16X25**	**1133399** **EAMK-A-R48-48A**
With stepper motor				
EMMS-ST-87-S-... **EMMS-ST-87-M-...** **EMMS-ST-87-L-...**	**1133405** **EAMM-A-R48-87A**	**560695** **EAMF-A-48A-87A**	**558001** **EAMD-32-32-11-16X20**	**1133399** **EAMK-A-R48-48A**

Toothed belt axes ELGG

FESTO

Accessories

Axial kit EAMM-A-...
Materials:
Coupling housing, coupling hubs, motor flange: Aluminium
Screws: Galvanised steel



Main picture:
1 Axial kit
2 Toothed belt axis
3 Motor

General technical data							
EAMM-A-...		R27-		R38-		R48-	
		55A	57A	70A	87A	87A	100A
Transferable torque	[Nm]	2	1.6	4.4	4.4	12.5	17
Mass moment of inertia	[kgmm^2]	0.445	0.355	3.2	3.2	14.5	39
Max. rotational speed	[rpm]	10,000	10,000	8,000	8,000	8,000	6,000
Mounting position		Any					

Operating and environmental conditions		
Ambient temperature	[°C]	–10 ... +60
Storage temperature	[°C]	–25 ... +60
Protection class[1)]		IP40
Relative air humidity	[%]	0 ... 95

1) Only in combination with attached motor and axis

Dimensions and ordering data					
Type	B1	L1	Weight [g]	Part No.	Type
EAMM-A-R27-55A	55	26	170	**1133400**	**EAMM-A-R27-55A**
EAMM-A-R27-57A	56	26	170	**1133403**	**EAMM-A-R27-57A**
EAMM-A-R38-70A	70	33.75	350	**1133401**	**EAMM-A-R38-70A**
EAMM-A-R38-87A	85.8	38	530	**1133404**	**EAMM-A-R38-87A**
EAMM-A-R48-87A	85.8	44	590	**1133405**	**EAMM-A-R48-87A**
EAMM-A-R48-100A	100.5	59	970	**1133402**	**EAMM-A-R48-100A**

Toothed belt axes ELGG

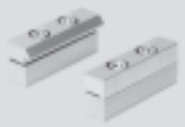
FESTO

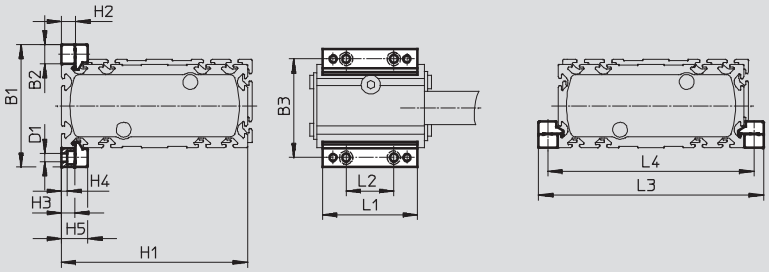
Accessories

Profile mounting MUE
(order code: MA)

Material:
Anodised aluminium
RoHS-compliant

Note
The central support can also be mounted with the profile mounting.





Dimensions and ordering data

For size	B1	B2	B3	D1 ∅	H1	H2	H3	H4
35	51	8	43	3.4	78	6	5.5	2.3
45	69	12	57	5.5	115	10	9	3.2
55	79	12	67	5.5	135	10	9	3.2

For size	H5	L1	L2	L3	L4	Weight [g]	Part No.	Type
35	11	40	20	94	86	20	**558042**	**MUE-50**
45	17.5	52	40	139	127	32	**562238**	**MUE-45**
55	17.5	52	40	159	147	32	**562238**	**MUE-45**

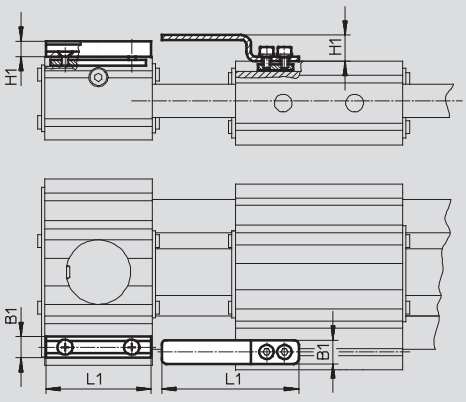
Sensor bracket EAPM-...-SHS, switching lug EAPM-...-SLS
(order code SA/SB)

Materials:
Switching lug: Galvanised steel
Sensor bracket: Anodised wrought aluminium alloy
RoHS-compliant

Note
The sensor bracket can also be mounted on the central support.

EAPM-L4-SHS

EAPM-L4-SLS



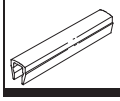
Dimensions and ordering data

For size	B1	H1	L1	Weight [g]	Part No.	Type
Sensor bracket						
35, 45, 55	9	6.5	44	20	**567537**	**EAPM-L4-SHS**
Switching lug						
35, 45, 55	10	11	57.5	15	**567538**	**EAPM-L4-SLS**

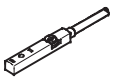
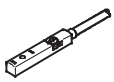
Toothed belt axes ELGG

Accessories

FESTO

Ordering data	For size	Comment	Order code	Part No.	Type	PU[1]
Drive shaft EAMB						
	35	Alternative interface	EA	**558034**	**EAMB-16-7-8X15-8X10**	1
	45			**558035**	**EAMB-18-9-8X16-10X12**	
	55			**558036**	**EAMB-24-6-15X21-16X20**	
Slot nut NST						
	35	For mounting slot	NM	**558045**	**NST-3-M3**	1
	45, 55			**150914**	**NST-5-M5**	
Centring sleeve ZBH[2]						
	35, 45, 55	For slide	–	**186717**	**ZBH-7**	10
Slot cover ABP						
	45, 55	For mounting slot every 0.5 m	NC	**151681**	**ABP-5**	2

1) Packaging unit
2) 4 centring sleeves included in the scope of delivery of the axis

Ordering data – Proximity sensors for T-slot, inductive	Type of mounting	Electrical connection	Switching output	Cable length [m]	Order code	Part No.	Type
							Technical data ➔ Internet: sies
N/O contact							
	Insertable in slot from above, flush with cylinder profile	Cable, 3-wire	PNP	7.5	SA	**551386**	**SIES-8M-PS-24V-K-7,5-OE**
		Plug M8x1, 3-pin		0.3	–	**551387**	**SIES-8M-PS-24V-K-0,3-M8D**
		Cable, 3-wire	NPN	7.5	–	**551396**	**SIES-8M-NS-24V-K-7,5-OE**
		Plug M8x1, 3-pin		0.3	–	**551397**	**SIES-8M-NS-24V-K-0,3-M8D**
N/C contact							
	Insertable in slot from above, flush with cylinder profile	Cable, 3-wire	PNP	7.5	SB	**551391**	**SIES-8M-PO-24V-K-7,5-OE**
		Plug M8x1, 3-pin		0.3	–	**551392**	**SIES-8M-PO-24V-K-0,3-M8D**
		Cable, 3-wire	NPN	7.5	–	**551401**	**SIES-8M-NO-24V-K-7,5-OE**
		Plug M8x1, 3-pin		0.3	–	**551402**	**SIES-8M-NO-24V-K-0,3-M8D**

Ordering data – Connecting cables	Electrical connection, left	Electrical connection, right	Cable length [m]	Part No.	Type
					Technical data ➔ Internet: nebu
	Straight socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	**541333**	**NEBU-M8G3-K-2.5-LE3**
			5	**541334**	**NEBU-M8G3-K-5-LE3**
	Angled socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	**541338**	**NEBU-M8W3-K-2.5-LE3**
			5	**541341**	**NEBU-M8W3-K-5-LE3**