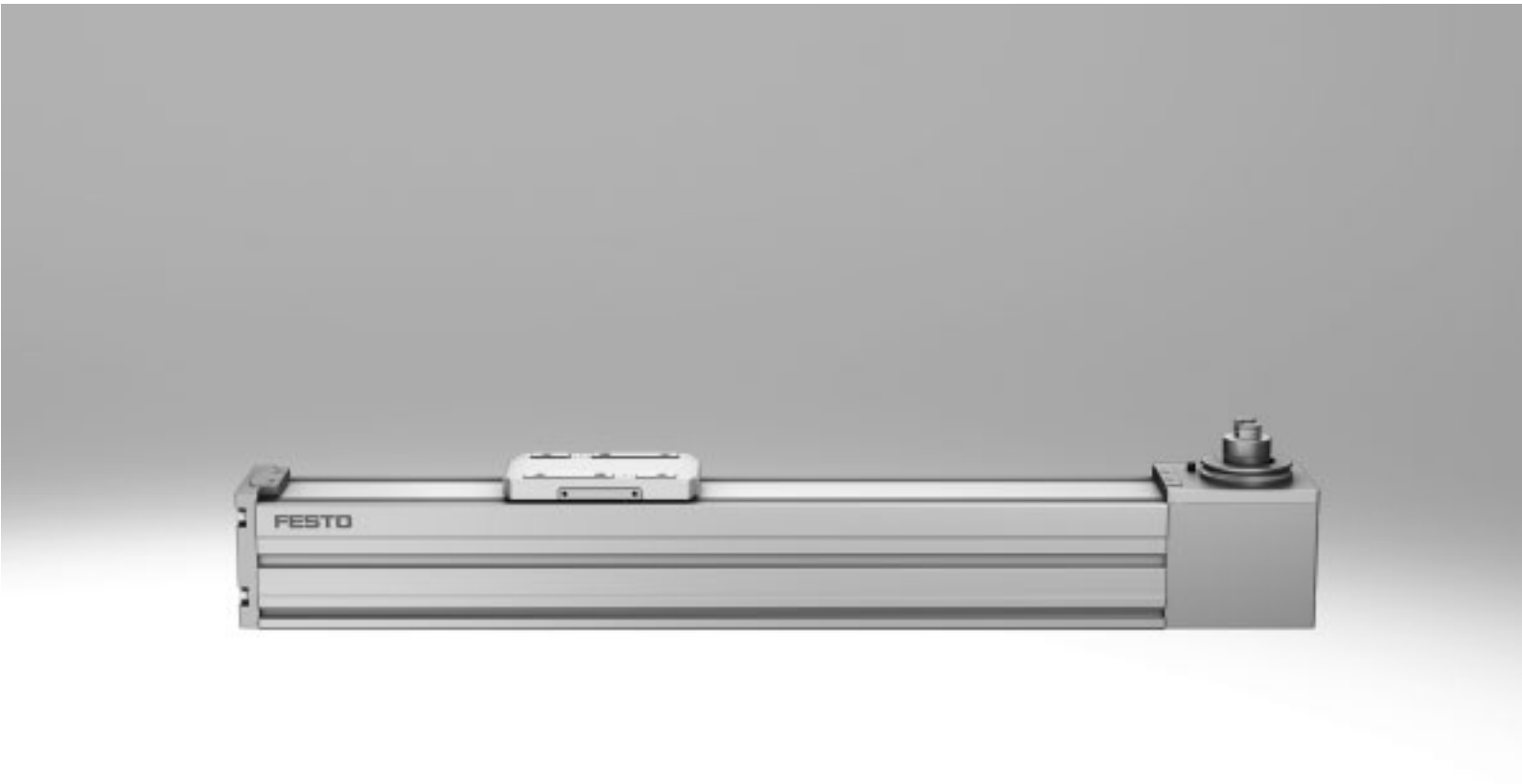
Toothed belt axes ELGC-TB-KF

FESTO



Electromechanical drives

Selection aid

FESTO

Overview of toothed belt and spindle axes

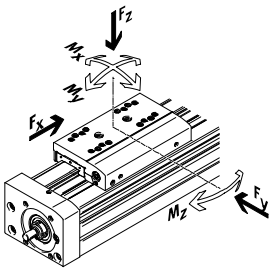
Toothed belt axes

- Speeds of up to 10 m/s
- Acceleration of up to 50 m/s^2
- Repetition accuracy of up to ±0.08 mm
- Strokes of up to 8500 mm (longer strokes on request)
- Flexible motor mounting

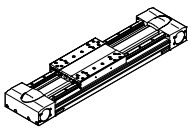
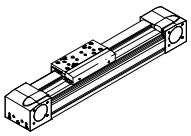
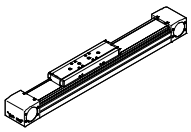
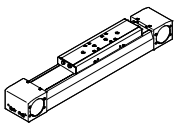
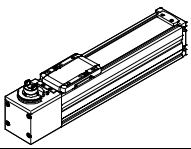
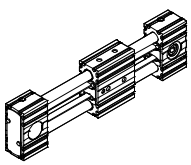
Spindle axes

- Speeds of up to 2 m/s
- Acceleration of up to 20 m/s^2
- Repetition accuracy of up to ±0.003 mm
- Strokes of up to 3000 mm

Coordinate system



Toothed belt axes

Type	F_x [N]	v [m/s]	Mx [Nm]	My [Nm]	Mz [Nm]	Features
Heavy-duty recirculating ball bearing guide						
EGC-HD-TB						
	450 1000 1800	3 5 5	140 300 900	275 500 1450	275 500 1450	• Flat drive unit with rigid, closed profile • Precision DUO guide rail with high load capacity • Ideal as a base axis for linear gantries and cantilever axes
Recirculating ball bearing guide						
EGC-TB-KF						
	50 100 350 800 2500	3 5 5 5 5	3.5 16 36 144 529	10 132 228 680 1820	10 132 228 680 1820	• Rigid, closed profile • Precision guide rail with high load capacity • Small drive pinions reduce required driving torque • Space-saving position sensing
ELGA-TB-KF						
	350 800 1300 2000	5 5 5 5	16 36 104 167	132 228 680 1150	132 228 680 1150	• Internal guide and toothed belt • Precision guide rail with high load capacity • Guide and toothed belt protected by cover band • High feed forces
ELGA-TB-KF-F1						
	260 600 1000	5 5 5	16 36 104	132 228 680	132 228 680	• Suitable for use in the food zone • “Clean Look”: smooth, easy to clean surfaces • Internal guide and toothed belt • Precision guide rail with high load capacity • Guide and toothed belt protected by cover band
ELGC-TB-KF						
	75 120 250	1.2 1.5 1.5	5.5 29.1 59.8	4.7 31.8 56.2	4.7 31.8 56.2	• Internal guide and toothed belt • Precision guide rail with high load capacity • Guide and toothed belt protected by cover band
ELGR-TB						
	50 100 350	3 3 3	2.5 5 15	20 40 124	20 40 124	• Cost-optimised rod guide • Ready-to-install unit • Ball bearings with high load capacity for dynamic operation

Electromechanical drives

Selection aid

Overview of toothed belt and spindle axes

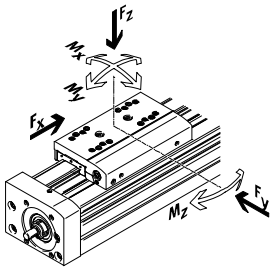
Toothed belt axes

- Speeds of up to 10 m/s
- Acceleration of up to 50 m/s^2
- Repetition accuracy of up to ±0.08 mm
- Strokes of up to 8500 mm (longer strokes on request)
- Flexible motor mounting

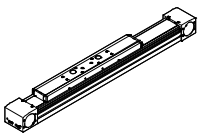
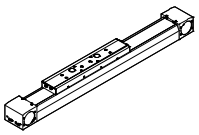
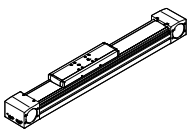
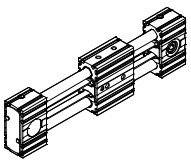
Spindle axes

- Speeds of up to 2 m/s
- Acceleration of up to 20 m/s^2
- Repetition accuracy of up to ±0.003 mm
- Strokes of up to 3000 mm

Coordinate system



Toothed belt axes

Type	F_x [N]	v [m/s]	Mx [Nm]	My [Nm]	Mz [Nm]	Features
Roller bearing guide						
ELGA-TB-RF						
	350 800 1300	10 10 10	11 30 100	40 180 640	40 180 640	• Heavy-duty roller bearing guide • Guide and toothed belt protected by cover band • Speeds of up to 10 m/s • Lower weight than axes with guide rails
ELGA-TB-RF-F1						
	260 600 1000	10 10 10	8.8 24 80	32 144 512	32 144 512	• Suitable for use in the food zone • “Clean Look”: smooth, easy to clean surfaces • Heavy-duty roller bearing guide • Guide and toothed belt protected by cover band • Lower weight than axes with guide rails
Plain-bearing guide						
ELGA-TB-G						
	350 800 1300	5 5 5	5 10 120	30 60 120	10 20 40	• Guide and toothed belt protected by cover band • For simple handling tasks • As a drive component for external guides • Insensitive to harsh operating conditions
ELGR-TB-GF						
	50 100 350	1 1 1	1 2.5 1	10 20 40	10 20 40	• Cost-optimised rod guide • Ready-to-install unit • Heavy-duty plain bearings for use in harsh operating conditions

Electromechanical drives

Selection aid

Overview of toothed belt and spindle axes

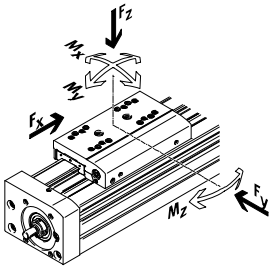
Toothed belt axes

- Speeds of up to 10 m/s
- Acceleration of up to 50 m/s^2
- Repetition accuracy of up to ±0.08 mm
- Strokes of up to 8500 mm (longer strokes on request)
- Flexible motor mounting

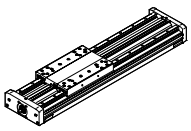
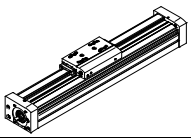
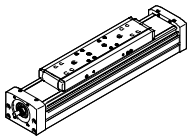
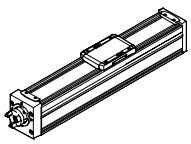
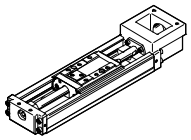
Spindle axes

- Speeds of up to 2 m/s
- Acceleration of up to 20 m/s^2
- Repetition accuracy of up to ±0.003 mm
- Strokes of up to 3000 mm

Coordinate system



Spindle axes

Type	F_x [N]	v [m/s]	Mx [Nm]	My [Nm]	Mz [Nm]	Features
Heavy-duty recirculating ball bearing guide						
EGC-HD-BS						
	300 600 1300	0.5 1.0 1.5	140 300 900	275 500 1450	275 500 1450	• Flat drive unit with rigid, closed profile • Precision DUO guide rail with high load capacity • Ideal as a base axis for linear gantries and cantilever axes
Recirculating ball bearing guide						
EGC-BS-KF						
	300 600 1300 3000	0.5 1.0 1.5 2.0	16 36 144 529	132 228 680 1820	132 228 680 1820	• Rigid, closed profile • Precision guide rail with high load capacity • For the highest requirements in terms of feed force and accuracy • Space-saving position sensing
ELGA-BS-KF						
	300 600 1300 3000	0.5 1.0 1.5 2.0	16 36 104 167	132 228 680 1150	132 228 680 1150	• Internal guide and ball screw • Precision guide rail with high load capacity • For the highest requirements in terms of feed force and accuracy • Guide and ball screw protected by cover band • Space-saving position sensing
ELGC-BS-KF						
	40 100 200 350	0.6 0.6 0.8 1.0	1.3 5.5 29.1 59.8	1.1 4.7 31.8 56.2	1.1 4.7 31.8 56.2	• Internal guide and ball screw • Guide and ball screw protected by cover band • Space-saving position sensing
EGSK						
	57 133 184 239 392	0.33 1.10 0.83 1.10 1.48	13 28.7 60 79.5 231	3.7 9.2 20.4 26 77.3	3.7 9.2 20.4 26 77.3	• Spindle axes with maximum accuracy, compactness and rigidity • Recirculating ball bearing guide and ball screw without caged ball bearings • Standard designs in stock

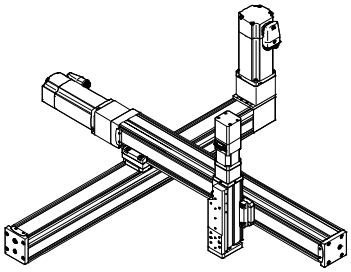
Toothed belt axes ELGC-TB-KF, with recirculating ball bearing guide

Features

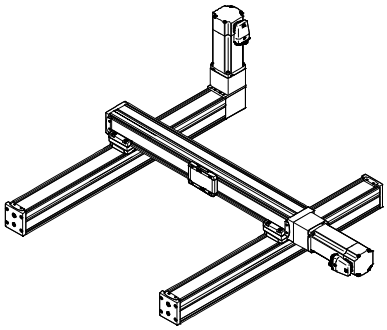
At a glance

- The toothed belt axes, spindle axes ELGC and mini slides EGSC form a scalable modular system for compact automation
- The common platform architecture provides an integrated range with matching interfaces. A wide variety of systems can be achieved without using any adapter plates
- High-performance drive and guide elements ensure long service life, load carrying ability and reliability
- The uniform, universal range of accessories reduces warehousing and design work
- Two position sensing functions can be selected:
  - With magneto-resistive proximity sensors SMT-8M (detection via integrated magnets)
  - With inductive proximity sensors SIES-8M (detection through switch lug EAPM)

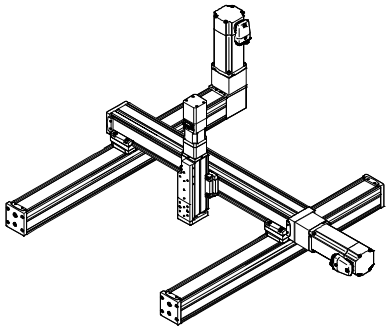
Cantilever system



Planar surface gantry



Three-dimensional gantry



Complete system comprising motor, motor controller and motor mounting kit

Motor

1

2

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

Note

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

Motor controller

1

2

1 Servo motor controller CMMP-AS
2 Stepper motor controller CMMO-ST

Motor mounting kit

Axial kit

Kit comprising:

- Motor flange
- Coupling housing
- Coupling
- Screws

New

Toothed belt axes ELGC-TB-KF, with recirculating ball bearing guide

Key features

Combination matrix between axis ELGC-TB, ELGC-BS, mini slide EGSC-BS and guide axis ELFC

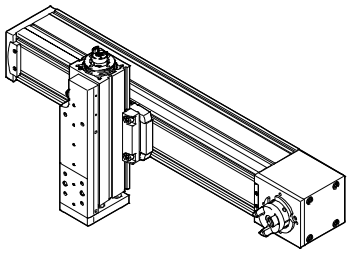
With profile mounting EAHF-L2-...-P-D...

- For axis/axis mounting without adapter plate
- Mounting option: base axis with next smallest assembly axis

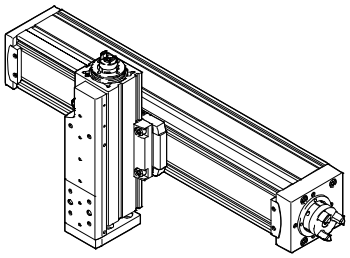
		Assembly axis ELGC-BS/-TB; ELFC; EGSC-BS			
	Size	25	32	45	60
Base axis	32	■	–	–	–
ELGC-BS/-TB; ELFC	45	–	■	–	–
	60	–	–	■	–
	80	–	–	–	■

Sample applications

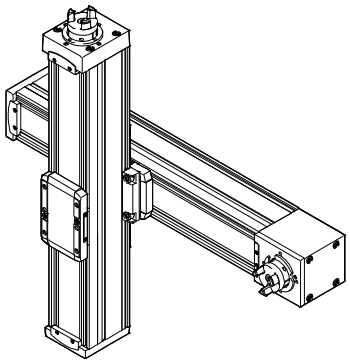
Toothed belt axis ELGC-TB – Mini slide EGSC-BS

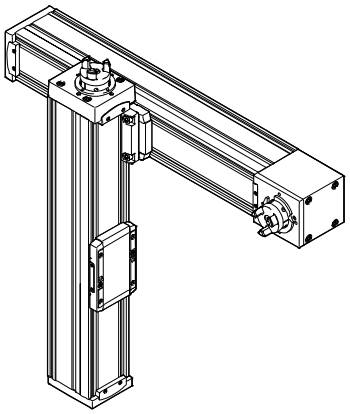


Spindle axis ELGC-BS – Mini slide EGSC-BS



Toothed belt axis ELGC-TB – Spindle axis ELGC-BS





Toothed belt axes ELGC-TB-KF, with recirculating ball bearing guide

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Key features

Combination matrix between axis ELGC-TB, ELGC-BS, mini slide EGSC-BS and guide axis ELFC

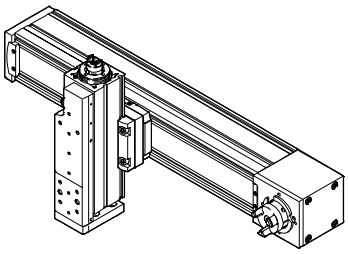
With adapter kit EHAA-D-L2

- For axis/axis mounting with adapter plate
- Mounting option: base axis with the same size or next smallest assembly axis
- When motors are assembled using parallel kits, interfering contours may occur. In this case, the adapter plate is required for height compensation (download CAD data ➔ www.festo.com)

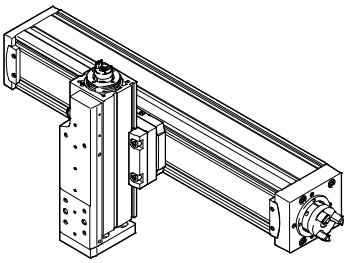
		Assembly axis ELGC-BS/-TB; ELFC; EGSC-BS				
	Size	25	32	45	60	80
Base axis ELGC-BS/-TB; ELFC	32	■		–	–	–
	45	–	■		–	–
	60	–	–	■		–
	80	–	–	–	■	

Sample applications

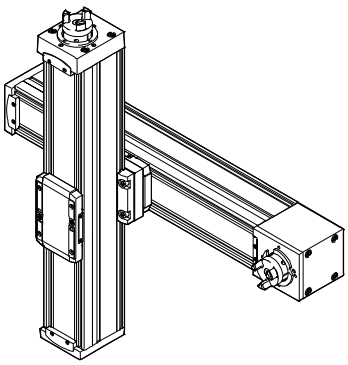
Toothed belt axis ELGC-TB – Mini slide EGSC-BS

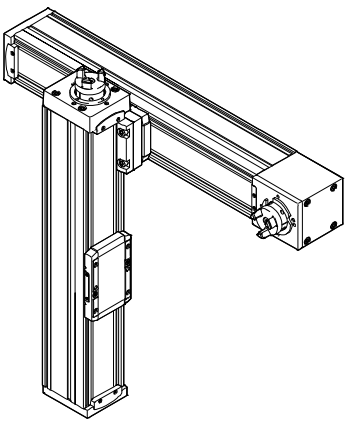


Spindle axis ELGC-BS – Mini slide EGSC-BS



Toothed belt axis ELGC-TB – Spindle axis ELGC-BS





New

Toothed belt axes ELGC-TB-KF, with recirculating ball bearing guide

Key features

Combination matrix between axis ELGC-TB, ELGC-BS, mini slide EGSC-BS and guide axis ELFC

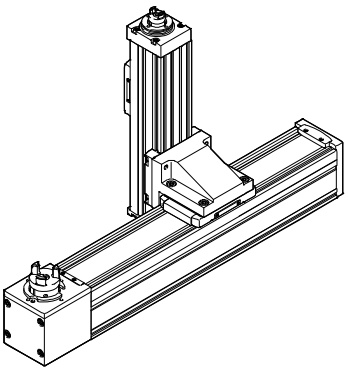
With angle kit EHAA-D-L2-...-AP

- For mounting the next smallest vertical axes (assembly axes) on base axes with mounting position “slide at top”

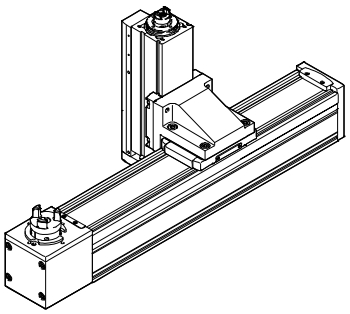
		Assembly axis ELGC-BS/-TB; ELFC; EGSC-BS			
	Size	25	32	45	60
Base axis	32	■	–	–	–
ELGC-BS/-TB; ELFC	45	–	■	–	–
	60	–	–	■	–
	80	–	–	–	■

Sample applications

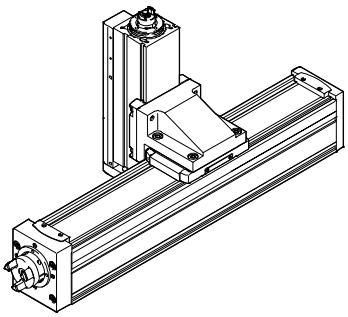
Toothed belt axis ELGC-TB – Spindle axis ELGC-BS



Toothed belt axis ELGC-TB – Mini slide EGSC-BS



Spindle axis ELGC-BS – Mini slide EGSC-BS



Toothed belt axes ELGC-TB-KF, with recirculating ball bearing guide

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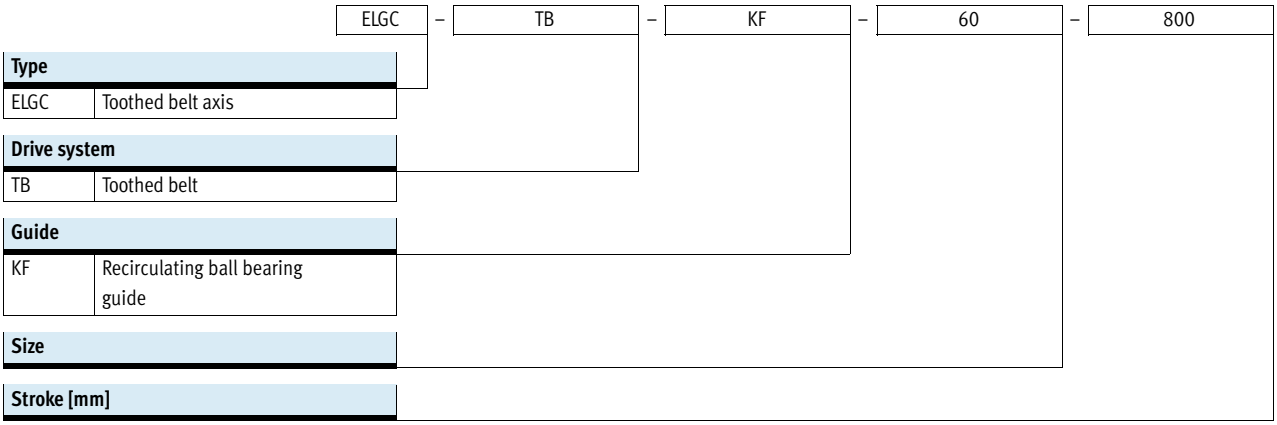
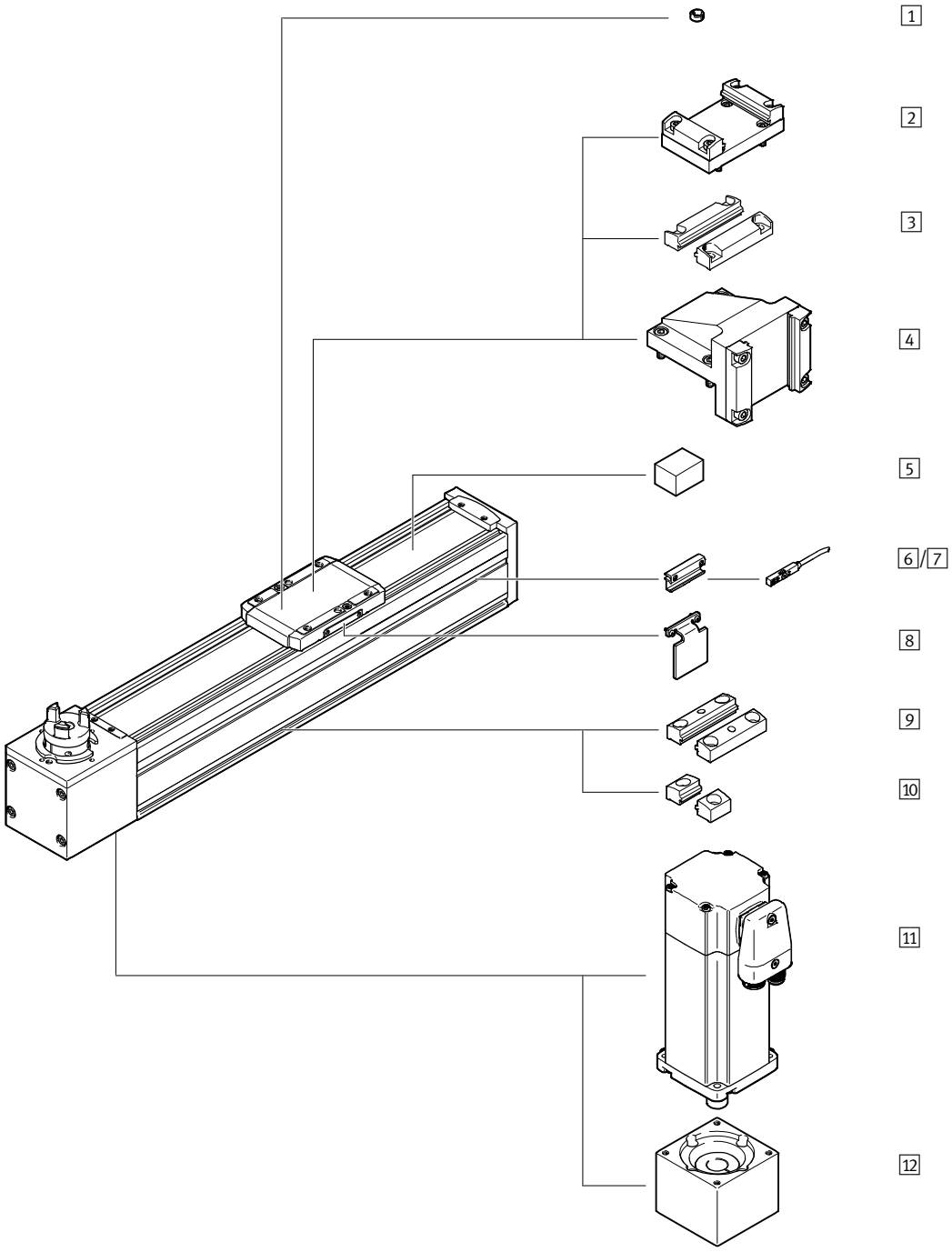
Type codes



Toothed belt axes ELGC-TB-KF, with recirculating ball bearing guide

Peripherals overview



Toothed belt axes ELGC-TB-KF, with recirculating ball bearing guide

Peripherals overview

Accessories

	Type	Description	➔ Page/Internet
1	Centring pin/sleeve ZBS/ZBH	For centring loads and attachments on the slide	30
2	Adapter kit EHAA-D-L2	• For axis/axis mounting with adapter plate • Mounting option: the same size or the next smallest assembly axis (➔ page 7) • When motors are assembled using parallel kits, interfering contours may occur. In this case, the adapter plate is required for height compensation (download CAD data ➔ www.festo.com)	27
3	Profile mounting EAHF-L2-...-P-D...	• For axis/axis mounting without adapter plate • Mounting option: base axis with the next smallest assembly axis (➔ page 6)	26
4	Angle kit EHAA-D-L2-...-AP	For mounting the next smallest vertical axes (assembly axes) on base axes with mounting position “slide at top” (➔ page 8)	28
5	Clamping element EADT-S-L5-32	Tool for retensioning the cover band	30
6	Sensor bracket EAPM-L2-SH	For mounting the proximity sensors on the axis. The proximity sensors can only be mounted using the sensor bracket	29
7	Proximity sensor SIES-8M	Magnetic proximity sensor, for T-slot	30
	Proximity sensor SMT-8M	Magnetic proximity sensor, for T-slot	30
8	Switch lug EAPM-L2-...-SLS	For sensing the slide position in conjunction with inductive proximity sensors SIES-8M	29
9	Profile mounting EAHF-L2-...-P	For mounting the axis on the side of the profile. The profile mounting can be fixed in place on the mounting surface using the drill hole in the centre	25
10	Profile mounting EAHF-L2-...-P-S	For mounting the axis on the side of the profile	24
11	Motor EMME-AS, EMMS-ST	Motors specially matched to the axis	23
12	Axial kit EAMM-A	For axial motor mounting	23

New

Toothed belt axes ELGC-TB-KF, with recirculating ball bearing guide

Technical data

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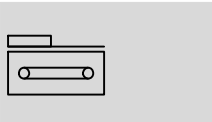
Function



Size
45 ... 80

Stroke length
200 ... 2000 mm

www.festo.com

General technical data				
Size		45	60	80
Design		Electromechanical axis with toothed belt		
Guide		Recirculating ball bearing guide		
Mounting position		Any		
Working stroke	[mm]	200, 300, 500, 600, 800, 1000, 1200, 1500	200, 300, 500, 600, 800, 1000, 1200, 1500, 1800, 2000	200, 300, 500, 600, 800, 1000, 1200, 1500, 1800, 2000
Max. feed force F_x	[N]	75	120	250
Max. no-load torque[1)]	[Nm]	0.075	0.194	0.413
Max. no-load resistance to shifting[1)]	[N]	7.8	15.6	24.7
Max. driving torque	[Nm]	0.716	1.49	4.178
Max. speed	[m/s]	1.2	1.5	1.5
Max. acceleration	[m/s^2]	15		
Repetition accuracy	[mm]	±0.1		
Position sensing		Magneto-resistive, inductive		

1) At 0.2 m/s

Operating and environmental conditions		
Ambient temperature[1)]	[°C]	0 ... +50
Degree of protection		IP40
Duty cycle	[%]	100
Maintenance interval		Life-time lubrication

1) Note operating range of proximity sensors

Weight [g]				
Size		45	60	80
Basic weight with 0 mm stroke[1)]		760	1775	3500
Additional weight per 10 mm stroke		23	43	73
Moving load		169	482	901

1) Including slide

Toothed belt				
Size		45	60	80
Pitch	[mm]	2	3	3
Expansion[1)]	[%]	0.187	0.124	0.200
Effective diameter	[mm]	19.1	24.83	33.42
Feed constant	[mm/rev.]	60	78	105

1) At max. feed force

Toothed belt axes ELGC-TB-KF, with recirculating ball bearing guide

Technical data

Mass moment of inertia				
Size		45	60	80
J_O	[kg mm^2]	18.62	88.04	291.2
J_H per metre stroke	[kg mm^2/m]	2.81	8.51	19.27
J_L per kg payload	[kg mm^2/kg]	91.19	154.11	279.3

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

$J_A = J_O + J_H \times \text{working stroke [m]} + J_L \times m_{payload}$ [kg]

Homing

Homing can be carried out in two ways:

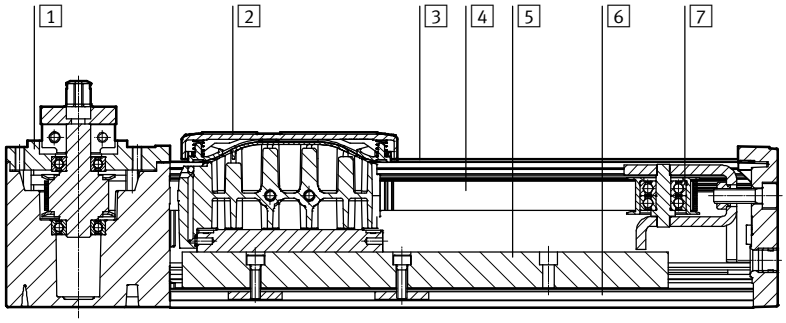
- Against a fixed stop
- Using a reference switch

The following values must be observed:

Size		45	60	80
Max. impact energy	[J]	0.5×10^{-3}	1×10^{-3}	2×10^{-3}
At max. homing speed	[m/s]	0.01		

Materials

Sectional view



Axis		
1	Drive cover	Painted die-cast aluminium
2	Slide	Die cast aluminium
3	Cover strip	High-alloy stainless steel
4	Toothed belt	Polychloroprene with glass cord and nylon coating
5	Guide	Steel
6	Profile	Anodised wrought aluminium alloy
7	Guide pulley	Aluminium
	Note on materials	RoHS compliant
		Contains paint-wetting impairment substances

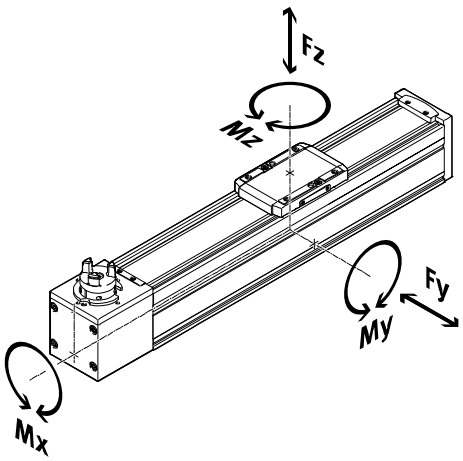
Toothed belt axes ELGC-TB-KF, with recirculating ball bearing guide

Technical data

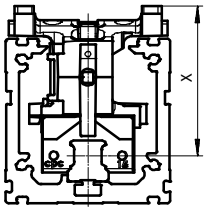
FESTO

Characteristic load values

The indicated forces and torques refer to the centre of the guide. The point of application of force is the point where the centre of the guide and the longitudinal centre of the slide intersect. These values must not be exceeded during dynamic operation. Special attention must be paid to the cushioning phase.



Distance from the slide surface to the centre of the guide



Max. permissible forces and torques on the slide (strength limits)				
Size		45	60	80
$Fy_{max.}$	[N]	300	600	900
$Fz_{max.}$	[N]	600	1800	2700
$Mx_{max.}$	[Nm]	5.5	29.1	59.8
$My_{max.}$	[Nm]	4.7	31.8	56.2
$Mz_{max.}$	[Nm]	4.7	31.8	56.2

Distance from the slide surface to the centre of the guide				
Size		45	60	80
Dimension x	[mm]	42.8	54.6	72.5

Max. permissible forces and torques for the bearing calculation, for a service life of 5000 km or 5 x 10^6 cycles				
Size		45	60	80
$Fy_{max.}$	[N]	880	3641	5543
Fz_{max}	[N]	880	3641	5543
$Mx_{max.}$	[Nm]	5.5	29.1	59.8
$My_{max.}$	[Nm]	4.7	31.8	56.2
$Mz_{max.}$	[Nm]	4.7	31.8	56.2

Note

For a guide system to have a service life of 5000 km, the load comparison factor must have a value of $fv \leq 1$, based on the maximum permissible forces and torques for a service life of 5000 km.

This formula can be used to calculate a guide value.
The engineering software “PositioningDrives”
is available for more precise calculations ➔ www.festo.com

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

Calculating the load comparison factor:

$$f_v = \frac{|F_{y,dyn}|}{F_{y,max}} + \frac{|F_{z,dyn}|}{F_{z,max}} + \frac{|M_{x,dyn}|}{M_{x,max}} + \frac{|M_{y,dyn}|}{M_{y,max}} + \frac{|M_{z,dyn}|}{M_{z,max}} \leq 1$$

Toothed belt axes ELGC-TB-KF, with recirculating ball bearing guide

Technical data

FESTO

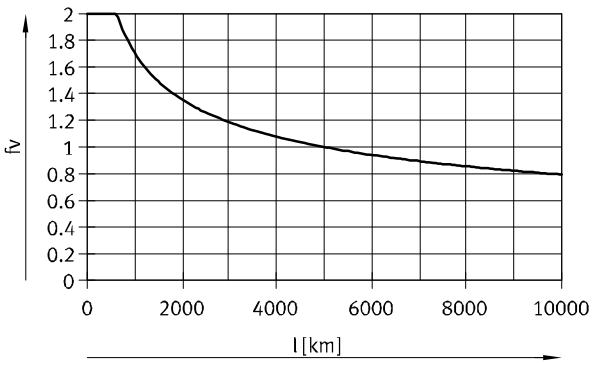
Calculating the service life

The service life of the guide depends on the load. To be able to make a statement as to the service life of the guide, the graph below plots the load comparison factor fv against the service life.

These values are only theoretical. You must consult your local Festo contact for a load comparison factor fv greater than 1.

Load comparison factor f_v as a function of service life l

Example:
A user wants to move an x kg load. Using the formula (➔ page 14) 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. 1500 km. Reducing the acceleration reduces the Mz and My values. A load comparison factor f_v of 1 now gives a service life of 5000 km.



Comparison of the characteristic load values for 5000 km with dynamic forces and torques of recirculating ball bearing guides

The characteristic load values of roller guides are standardised to ISO and JIS using dynamic and static forces and torques. These forces and torques are based on an expected service life of the guide system of 100 km to ISO or 50 km to JIS. As the characteristic load values are dependent on the service life, the maximum permissible forces and torques for a 5000 km service life cannot be compared with the dynamic forces and torques of roller guides to ISO/JIS.

To make it easier to compare the guide capacity of linear axes ELGC with roller guides, the table below lists the theoretically permissible forces and torques for a calculated service life of 100 km. This corresponds to the dynamic forces and torques to ISO.
These 100 km values have been calculated mathematically and are only to be used for comparing with dynamic forces and torques to ISO. The drives must not be loaded with these characteristic values as this could damage the axes.

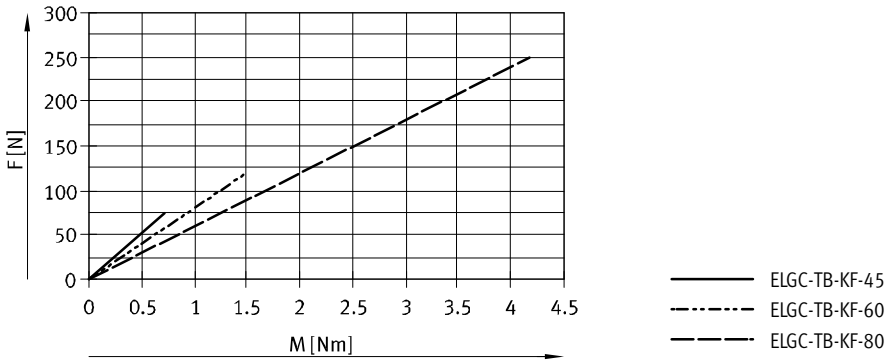
Max. permissible forces and torques for a theoretical service life of 100 km (from a guide perspective only)				
Size		45	60	80
$Fy_{max.}$	[N]	3240	13400	20400
Fz_{max}	[N]	3240	13400	20400
$Mx_{max.}$	[Nm]	20	107	220
$My_{max.}$	[Nm]	17	117	207
$Mz_{max.}$	[Nm]	17	117	207

Toothed belt axes ELGC-TB-KF, with recirculating ball bearing guide

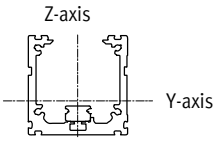
Technical data

FESTO

Feed force F as a function of input torque M



2nd moment of area



Size		45	60	80
Iy	[mm^4]	140x10^3	441x10^3	1.37x10^6
Iz	[mm^4]	170x10^3	542x10^3	1.66x10^6

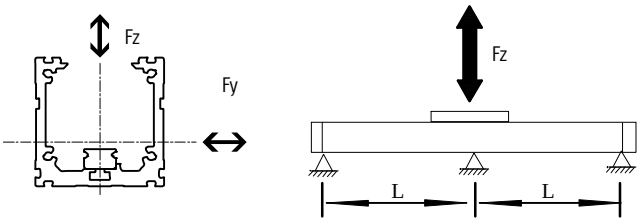
Toothed belt axes ELGC-TB-KF, with recirculating ball bearing guide

Technical data

FESTO

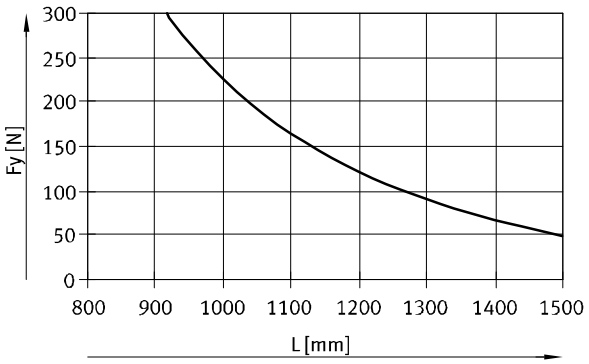
Maximum permissible support spacing L (without profile mounting) as a function of force F

In order to limit deflection in the case of large strokes, the axis may need to be supported.
The following graphs can be used to determine the maximum permissible support spacing l as a function of force F acting on the axis.
The deflection is f = 0.5 mm.

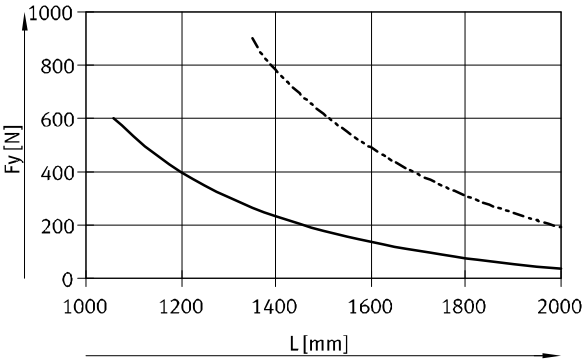


Force F_y

Size 45

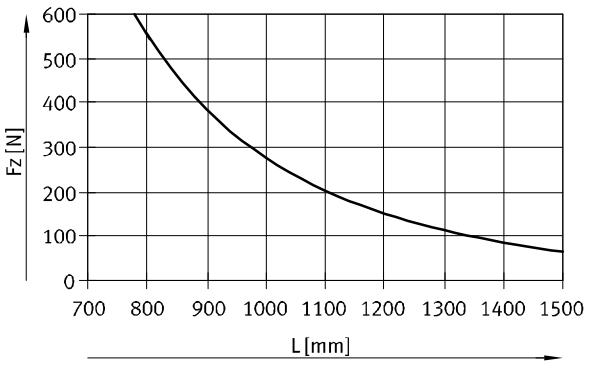


Size 60/80

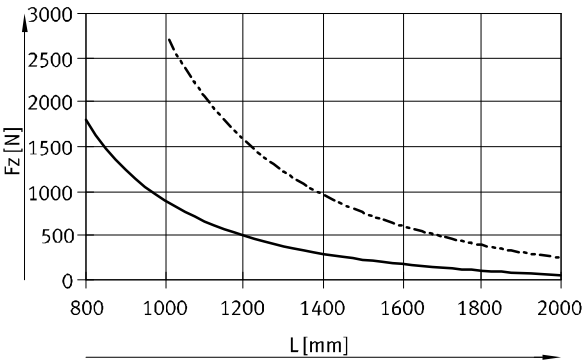


Force F_z

Size 45



Size 60/80



ELGC-TB-KF-45

ELGC-TB-KF-60

ELGC-TB-KF-80

Recommended deflection limits

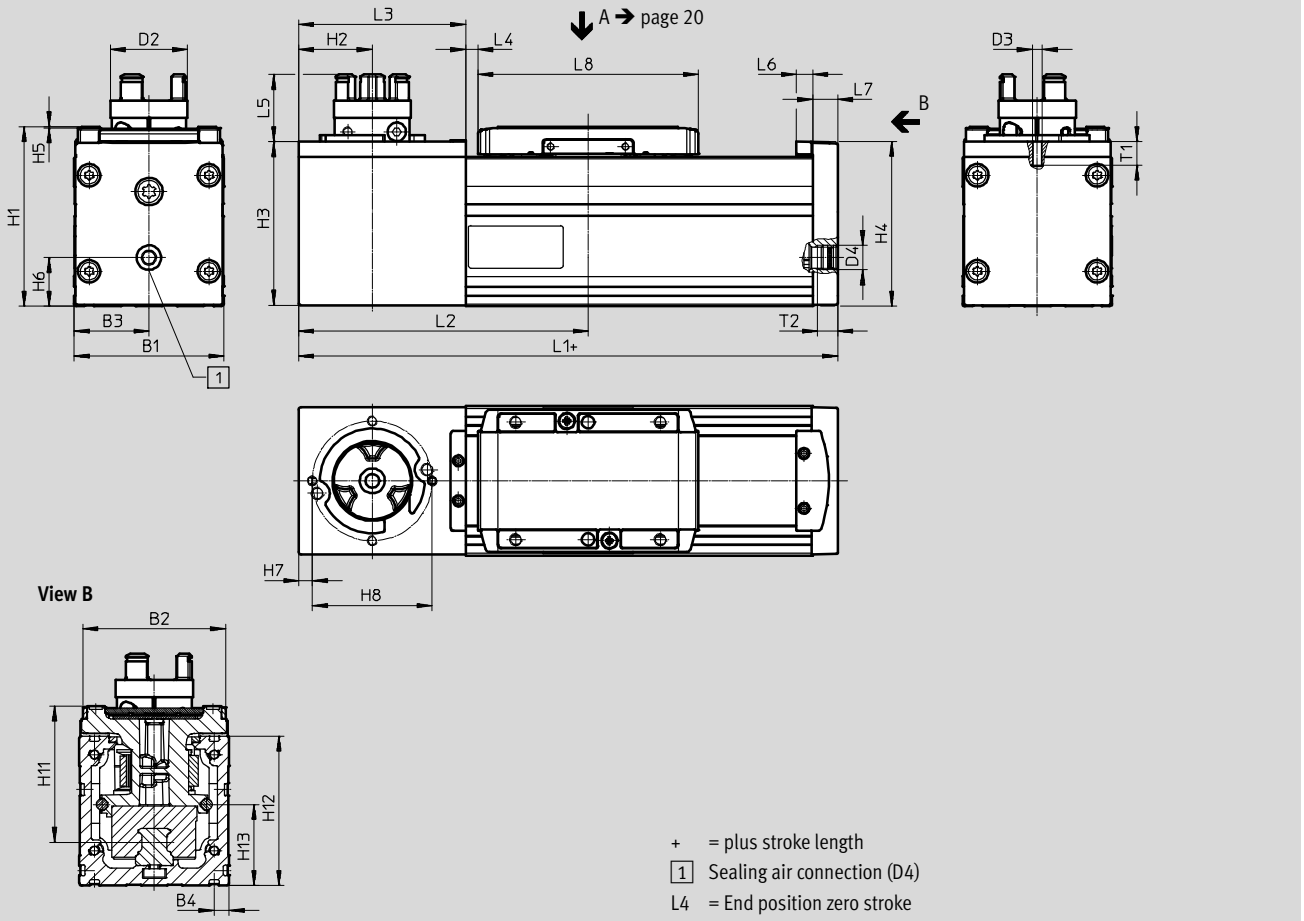
Adherence to the following deflection limits is recommended so as not to impair the functional performance of the axes. Greater deformation can result in increased friction, greater wear and reduced service life.

Size	Dynamic deflection (moving load)	Static deflection (stationary load)
45 ... 80	0.05% of the axis length, max. 0.5 mm	0.1% of the axis length

Toothed belt axes ELGC-TB-KF, with recirculating ball bearing guide

Technical data

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



Size	B1	B2	B3	B4	D2 ∅	D3	D4	H1	H2
45	45	42.6	22.5	6.1	16.5	–	G1/8	54	22
60	60	57.1	30	6.1	31	M4	G1/8	72	29.5
80	80	77.1	40	6.1	31	M6	G1/8	96	39.5

Size	H3	H4	H5	H6	H7	H8	H11	H12	H13
45	49	49.6	0.5	12.5	–	–	42.8	45	18.5
60	65.5	66.1	0.5	19.5	5.5	48	54.6	60	32.5
80	85.5	88.1	0.5	20	7	65	72.5	80	41.5

Size	L1	L2 Min.	L3	L4[1] Min.	L5	L6	L7	L8	T1	T2
45	165	90	52	4.25	19.9	6.5	7	67.5	–	8
60	216	116	67	4.75	26.9	6.5	10	88.5	9.5	8
80	260	145	87	5	25.9	6.5	12	106	12.5	8

1) Includes a stroke reserve of approx. 3 mm

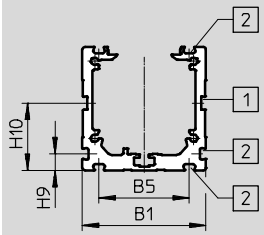
Toothed belt axes ELGC-TB-KF, with recirculating ball bearing guide

Technical data

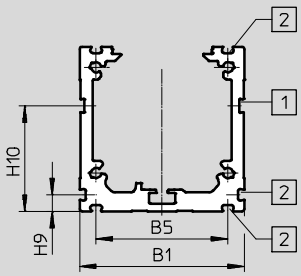
Dimensions Download CAD data ➔ **www.festo.com**

Profile

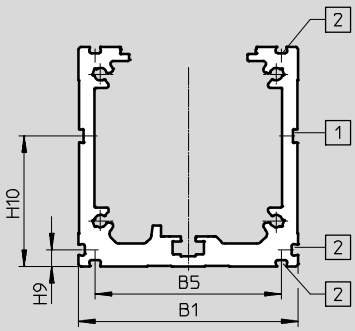
Size 45



Size 60



Size 80



[1] Slot for sensor bracket
[2] Mounting slot

Size	B1	B5	H9	H10
45	45	32.9	6.1	24.5
60	60	47.9	6.1	38.5
80	80	67.9	6.1	47.5

Toothed belt axes ELGC-TB-KF, with recirculating ball bearing guide

Technical data

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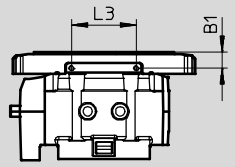
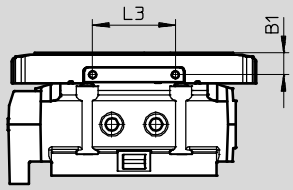
Dimensions Download CAD data ➔ **www.festo.com**

Slide

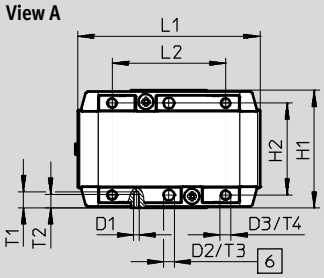
Size 45



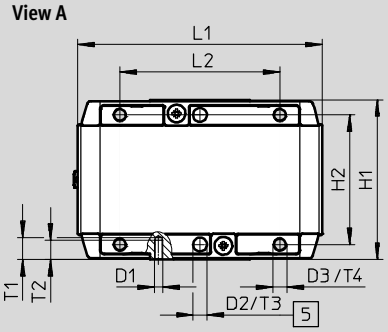
Size 60



View A



View A



5 Hole for centring sleeve ZBH
6 Hole for centring pin ZBS

Size	B1 ±0.1	D1	D2 ∅ H8	D3	H1 ±0.1	H2 ±0.1 for D2 ±0.03
45	6	M2	4	M4	43.5	34
60	8	M3	5	M5	58	47

Size	L1	L2 ±0.1	L3 ±0.1	T1	T2	T3 +0.1	T4[1)]
45	67.5	42	24	6	5	3.1	6 ... 7.5
60	88.5	58	30	9	7	1.3	8.5 ... 10

1) Recommended screw-in depth

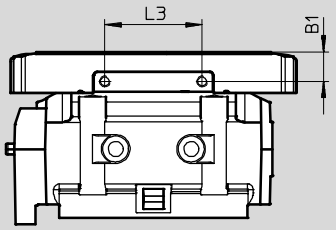
Toothed belt axes ELGC-TB-KF, with recirculating ball bearing guide

Technical data

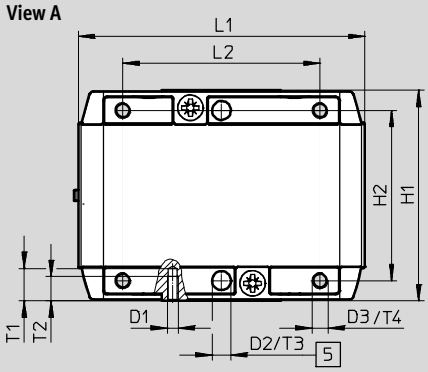
Dimensions Download CAD data ➔ **www.festo.com**

Slide

Size 80



View A



5 Hole for centring sleeve ZBH

Size	B1 ±0.1	D1	D2 ∅ H8	D3	H1 ±0.1	H2 ±0.1 for D2 ±0.03
80	11	M4	7	M6	78	63

Size	L1	L2 ±0.1	L3 ±0.1	T1	T2	T3 +0.1	T4[1)]
80	106	73	36	12	9	1.6	11 … 14

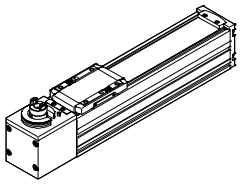
1) Recommended screw-in depth

New

Toothed belt axes ELGC-TB-KF, with recirculating ball bearing guide

Technical data

Ordering data

	Size	Stroke [mm]	Part No.	Type
	45	200	**8062768**	**ELGC-TB-KF-45-200**
		300	**8062769**	**ELGC-TB-KF-45-300**
		500	**8062770**	**ELGC-TB-KF-45-500**
		600	**8062771**	**ELGC-TB-KF-45-600**
		800	**8062772**	**ELGC-TB-KF-45-800**
		1000	**8062773**	**ELGC-TB-KF-45-1000**
		1200	**8062774**	**ELGC-TB-KF-45-1200**
		1500	**8062775**	**ELGC-TB-KF-45-1500**
	60	200	**8062776**	**ELGC-TB-KF-60-200**
		300	**8062777**	**ELGC-TB-KF-60-300**
		500	**8062778**	**ELGC-TB-KF-60-500**
		600	**8062779**	**ELGC-TB-KF-60-600**
		800	**8062780**	**ELGC-TB-KF-60-800**
		1000	**8062781**	**ELGC-TB-KF-60-1000**
		1200	**8062782**	**ELGC-TB-KF-60-1200**
		1500	**8062783**	**ELGC-TB-KF-60-1500**
		1800	**8062784**	**ELGC-TB-KF-60-1800**
		2000	**8062785**	**ELGC-TB-KF-60-2000**
	80	200	**8062786**	**ELGC-TB-KF-80-200**
		300	**8062787**	**ELGC-TB-KF-80-300**
		500	**8062788**	**ELGC-TB-KF-80-500**
		600	**8062789**	**ELGC-TB-KF-80-600**
		800	**8062790**	**ELGC-TB-KF-80-800**
		1000	**8062791**	**ELGC-TB-KF-80-1000**
		1200	**8062792**	**ELGC-TB-KF-80-1200**
		1500	**8062793**	**ELGC-TB-KF-80-1500**
		1800	**8062794**	**ELGC-TB-KF-80-1800**
		2000	**8062795**	**ELGC-TB-KF-80-2000**

Toothed belt axes ELGC-TB-KF, with recirculating ball bearing guide

Accessories

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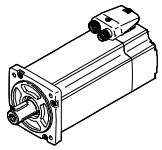
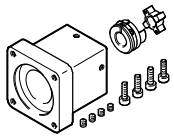
Note

Depending on the combination of motor and drive, it may not be possible to reach the maximum feed force of the drive.

Permissible axis/motor combinations with axial kit Technical data ➔ Internet: eamm-a

Motor[1]	Axial kit	
		
Type	Part No.	Type
ELGC-TB-KF-45		
With servo motor		
EMME-AS-40-...	**4595742**	**EAMM-A-V32-40P**
EMME-AS-60-...	**4608750**	**EAMM-A-V32-60P**
With stepper motor		
EMMS-ST-42-...	**4281142**	**EAMM-A-V32-42A**
EMMS-ST-57-...	**4597016**	**EAMM-A-V32-57A**
ELGC-TB-KF-60		
With servo motor		
EMME-AS-60-...	**4133487**	**EAMM-A-T42-60P**
EMME-AS-80-...	**4623788**	**EAMM-A-T42-80P**
With stepper motor		
EMMS-ST-57-...	**4327034**	**EAMM-A-T42-57A**
EMMS-ST-87-...	**4610008**	**EAMM-A-T42-87A**
ELGC-TB-KF-80		
With servo motor		
EMME-AS-60-...	**4824833**	**EAMM-A-T46-60P**
EMME-AS-80-...	**4624170**	**EAMM-A-T46-80P**
EMME-AS-100-...	**4624227**	**EAMM-A-T46-100A**
EMMS-AS-100-...	**4624227**	**EAMM-A-T46-100A**
With stepper motor		
EMMS-ST-87-...	**4048771**	**EAMM-A-T46-87A**

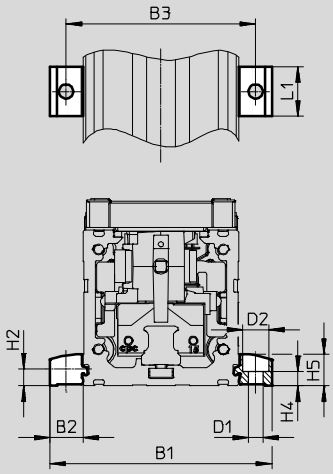
1) The input torque must not exceed the maximum permissible transferable torque of the axial kit.

Toothed belt axes ELGC-TB-KF, with recirculating ball bearing guide

Accessories

Profile mounting EAHF-L2-...-P-S
Material:
Anodised wrought aluminium alloy
RoHS compliant

- For mounting the axis on the side of the profile



Dimensions and ordering data

For size	B1	B2	B3	D1 ∅ H13	D2 ∅ H13	H2
45	70.6	12.8	58	5.5	10	6.1
60	85.6	12.8	73	5.5	10	6.1
80	105.6	12.8	93	5.5	10	6.1

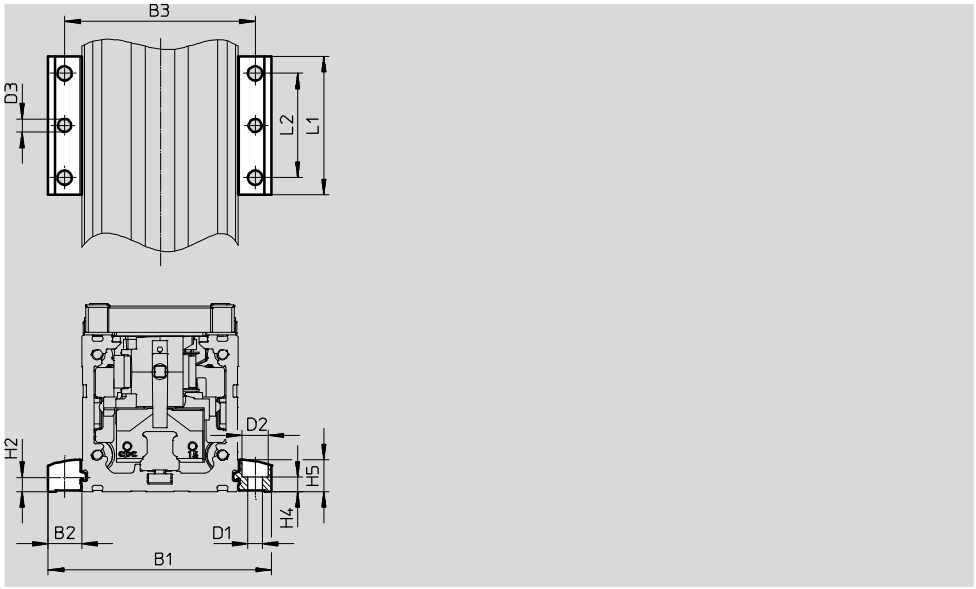
For size	H4 ±0.1	H5	L1	Weight [g]	Part No.	Type
45	5.5	12.2	19	6	**5184133**	**EAHF-L2-45-P-S**
60	5.5	12.2	19	6	**5184133**	**EAHF-L2-45-P-S**
80	5.5	12.2	19	6	**5184133**	**EAHF-L2-45-P-S**

Toothed belt axes ELGC-TB-KF, with recirculating ball bearing guide

Accessories

Profile mounting EAHF-L2-...-P
Material:
Anodised wrought aluminium alloy
RoHS compliant

- For mounting the axis on the side of the profile.
  The profile mounting can be fixed in place on the mounting surface using the drill hole in the centre.



Dimensions and ordering data

For size	B1	B2	B3	D1 ∅ H13	D2 ∅ H13	D3 ∅	H2
45	70.6	12.8	58	5.5	10	5	6.1
60	85.6	12.8	73	5.5	10	5	6.1
80	105.6	12.8	93	5.5	10	5	6.1

For size	H4 ±0.1	H5	L1	L2	Weight [g]	Part No.	Type
45	5.5	12.2	53	40	35	**4835728**	**EAHF-L2-45-P**
60	5.5	12.2	53	40	35	**4835728**	**EAHF-L2-45-P**
80	5.5	12.2	53	40	35	**4835728**	**EAHF-L2-45-P**

Toothed belt axes ELGC-TB-KF, with recirculating ball bearing guide

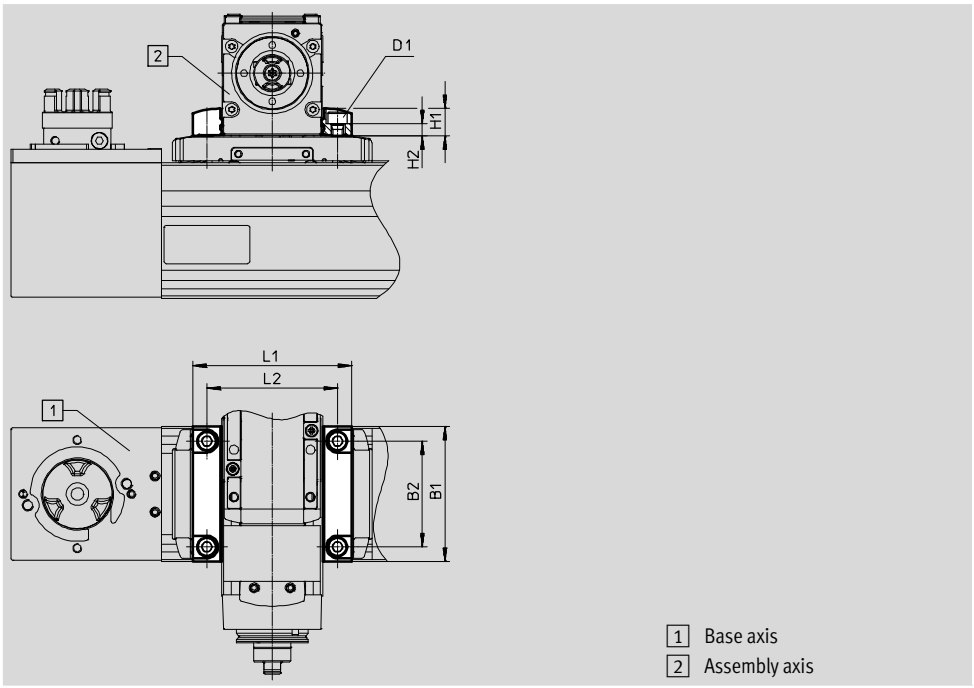
Accessories

Profile mounting EAHF-L2-...-P-D...
Material:
Anodised wrought aluminium alloy
RoHS compliant

- For axis/axis mounting without adapter plate
- Mounting option: base axis with the next smallest assembly axis (➔ page 6)

Combination matrix

		2 Assembly axis ELGC-BS/-TB; ELFC; EGSC-BS		
	Size	32	45	60
1 Base axis ELGC-BS/-TB, ELFC	45	4759748	–	–
	60	–	4759739	–
	80	–	–	4759726



Dimensions and ordering data

For combination (size)	B1	B2	D1	H1
45/32	45	34	M4	9
60/45	60	47	M5	12.2
80/60	78	63	M6	12.2

For combination (size)	H2 ±0.1	L1	L2	Weight [g]	Part No.	Type
45/32	3.7	51.4	42	24	**4759748**	**EAHF-L2-25-P-D2**
60/45	5.5	70.6	58	56	**4759739**	**EAHF-L2-45-P-D3**
80/60	4.5	85.6	73	77	**4759726**	**EAHF-L2-45-P-D4**

Toothed belt axes ELGC-TB-KF, with recirculating ball bearing guide

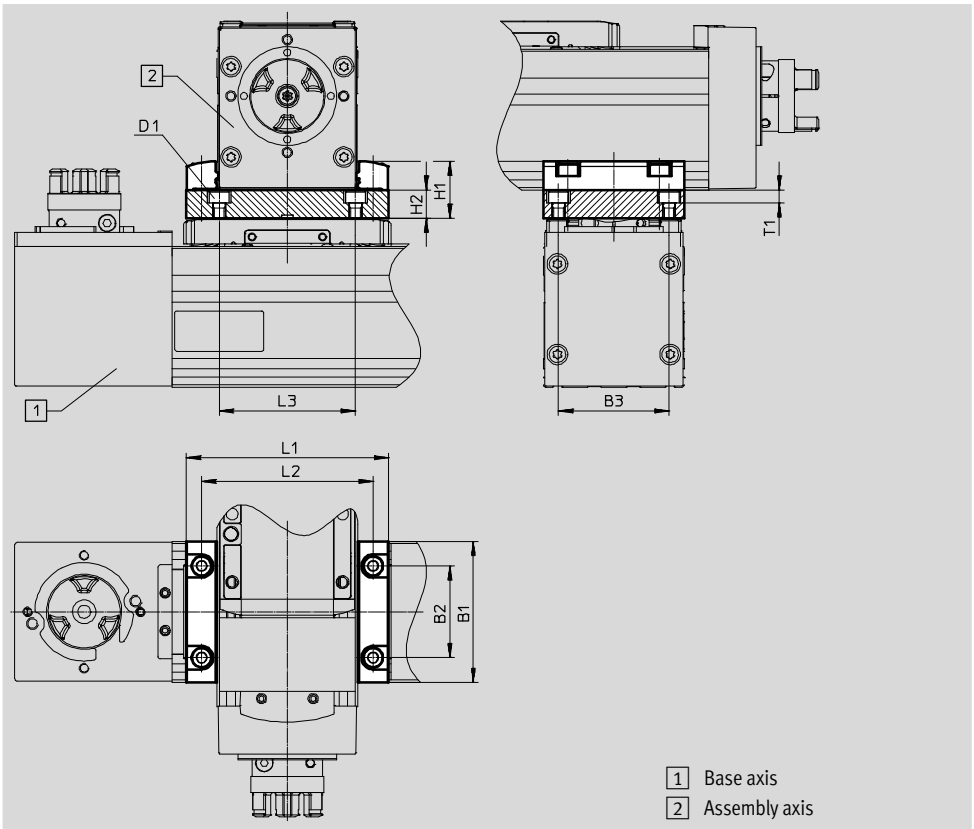
Accessories

Adapter kit EHAA-D-L2
Material:
Anodised wrought aluminium alloy
RoHS compliant

- For axis/axis mounting with adapter plate
- Mounting option: base axis with the same size or the next smallest assembly axis (➔ page 7)
- When motors are assembled using parallel kits, interfering contours may occur. In this case, the adapter plate is required for height compensation (download CAD data ➔ www.festo.com)

Combination matrix

		2 Assembly axis ELGC-BS/-TB; ELFC; EGSC-BS			
	Size	32	45	60	80
1 Base axis ELGC-BS/-TB; ELFC	45	8066714		–	–
	60	–	8066715		–
	80	–	–	8066716	



Dimensions and ordering data

For combination (size)	B1	B3 ±0.05	D1	H1	H2	L1	L2	L3	T1	Weight [g]	Part No.	Type
45/32	45	34	M4	19	10	51.4	42	42	5.4	136	**8066714**	**EHAA-D-L2-45-L2-45**
60/45	60	47	M5	24.2	12	70.6	58	58	5.4	205	**8066715**	**EHAA-D-L2-60-L2-60**
80/60	78	63	M6	24.2	12	85.6	73	73	6.4	315	**8066716**	**EHAA-D-L2-80-L2-80**

For combination (size)	B1	B2	B3 ±0.05	D1	H1	H2	L1	L2	L3	T1	Weight [g]	Part No.	Type
45/45	45	32	34	M4	22.2	10	71	58	42	5.4	136	**8066714**	**EHAA-D-L2-45-L2-45**
60/60	60	39	47	M5	24.2	12	86	73	58	5.4	205	**8066715**	**EHAA-D-L2-60-L2-60**
80/80	78	63	63	M6	24.2	12	106	93	73	6.4	315	**8066716**	**EHAA-D-L2-80-L2-80**

Toothed belt axes ELGC-TB-KF, with recirculating ball bearing guide

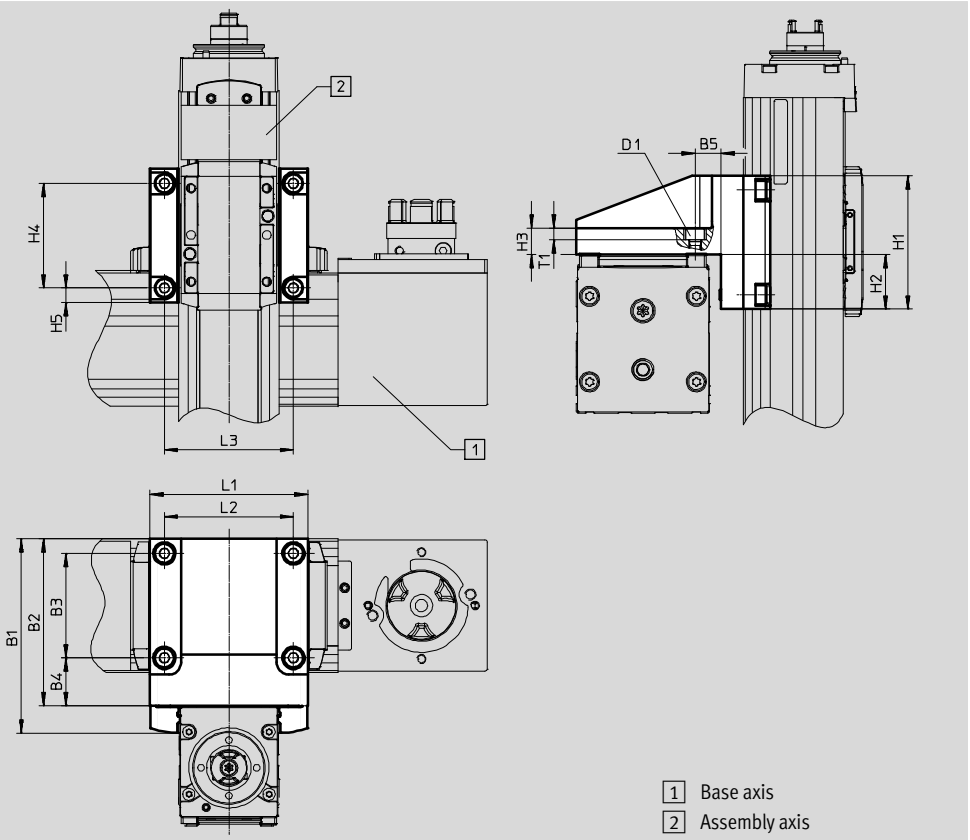
Accessories

Angle kit EHAA-D-L2-...-AP
Materials:
Anodised wrought aluminium alloy
RoHS compliant

- For mounting the next smallest vertical axes (assembly axes) on base axes with mounting position "slide at top" (➔ page 8)

Combination matrix

	Size	2 Assembly axis ELGC-BS/-TB; ELFC; EGSC-BS		
		32	45	60
1 Base axis ELGC-BS/-TB; ELFC	45	8066718	–	–
	60	–	8066719	–
	80	–	–	8066720



Dimensions and ordering data

For combination (size)	B1	B2	B3	B4	B5	D1	H1	H2	H3	H4
45/32	69	60	34	20.5	11.5	M4	45	17.5	10	34
60/45	87.2	75	47	21.5	21.5	M5	60	24.5	12	47
80/60	107.2	95	63	23.5	23.5	M6	78	33.5	12	63

For combination (size)	H5	L1	L2	L3	T1	Weight [g]	Part No.	Type
45/32	5.5	52	42	42	5.4	222	**8066718**	**EHAA-D-L2-45-L2-32-AP**
60/45	6.5	71	58	58	5.4	433	**8066719**	**EHAA-D-L2-60-L2-45-AP**
80/60	7.5	86	73	73	6.4	768	**8066720**	**EHAA-D-L2-80-L2-60-AP**

Toothed belt axes ELGC-TB-KF, with recirculating ball bearing guide

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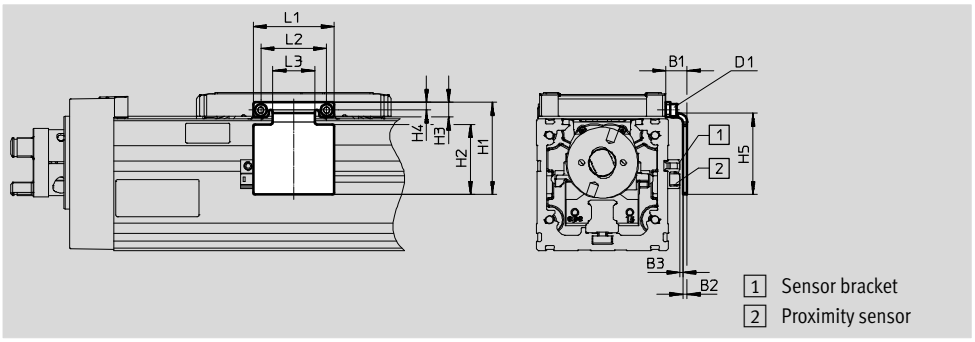
Accessories

Switch lug EAPM-L2-SLS
For sensing using inductive proximity sensors SIES-8M

Materials:
Galvanised steel
RoHS-compliant



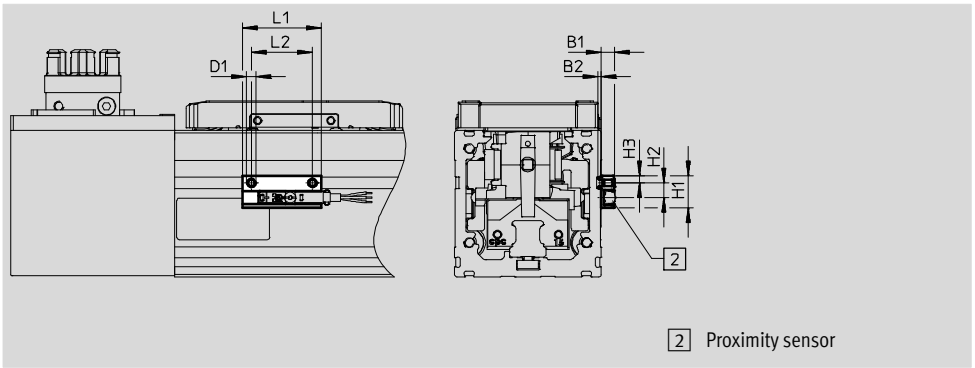
Dimensions and ordering data

For size	B1	B2	B3	D1	H1	H2	H3	H4
45	9.4	2	1.2±0.31	M2	37	28	5.5	3.3
60	9.7	2	1.3±0.31	M3	37	32	6.6	3.5
80	9.5	2	1.1±0.32	M4	53.5	42	8.3	4.5

For size	H5	L1	L2	L3	Weight [g]	Part No.	Type
45	33	30	24	14	18	**8067260**	**EAPM-L2-45-SLS**
60	37	42	30	19	27	**8067261**	**EAPM-L2-60-SLS**
80	47	44.6	36	23.4	42	**8067262**	**EAPM-L2-80-SLS**

Sensor bracket EAPM-L2-SH

Materials:
Anodised wrought aluminium alloy
RoHS compliant



Dimensions and ordering data

For size	B1	B2	D1	H1	H2
45, 60, 80	5.5	1.3	M4	13.4	6

For size	H3	L1	L2	Weight [g]	Part No.	Type
45, 60, 80	3	32	25	4	**4759852**	**EAPM-L2-SH**

Toothed belt axes ELGC-TB-KF, with recirculating ball bearing guide

FESTO

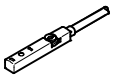
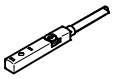
Accessories

Ordering data

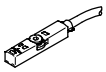
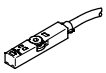
	For size	Description	Part No.	Type	PU[1]
Centring pin ZBS/centring sleeve ZBH					
	45	For slide	**562959**	**ZBS-4**	10
	60		**189652**	**ZBH-5**	
	80		**186717**	**ZBH-7**	
Clamping element EADT					
	45	Tool for retensioning the cover band	**8065818**	**EADT-S-L5-32**	1
	60, 80		**8058451**	**EADT-S-L5-70**	

1) Packaging unit quantity

Ordering data – Proximity sensors for T-slot, inductive Technical data ➔ Internet: sies

	Type of mounting	Switching output	Electrical connection	Cable length [m]	Part No.	Type
N/O contact						
	Inserted in the slot from above, flush with the cylinder profile	PNP	Cable, 3-wire	7.5	**551386**	**SIES-8M-PS-24V-K-7,5-OE**
			Plug connector M8x1, 3-pin	0.3	**551387**	**SIES-8M-PS-24V-K-0,3-M8D**
		NPN	Cable, 3-wire	7.5	**551396**	**SIES-8M-NS-24V-K-7,5-OE**
			Plug connector M8x1, 3-pin	0.3	**551397**	**SIES-8M-NS-24V-K-0,3-M8D**
N/C contact						
	Inserted in the slot from above, flush with the cylinder profile	PNP	Cable, 3-wire	7.5	**551391**	**SIES-8M-PO-24V-K-7,5-OE**
			Plug connector M8x1, 3-pin	0.3	**551392**	**SIES-8M-PO-24V-K-0,3-M8D**
		NPN	Cable, 3-wire	7.5	**551401**	**SIES-8M-NO-24V-K-7,5-OE**
			Plug connector M8x1, 3-pin	0.3	**551402**	**SIES-8M-NO-24V-K-0,3-M8D**

Ordering data – Proximity sensors for T-slot, magneto-resistive Technical data ➔ Internet: smt

	Type of mounting	Switching output	Electrical connection	Cable length [m]	Part No.	Type
N/O contact						
	Inserted in the slot from above, flush with the cylinder profile, short design	PNP	Cable, 3-wire	2.5	**574335**	**SMT-8M-A-PS-24V-E-2,5-OE**
			Plug connector M8x1, 3-pin	0.3	**574334**	**SMT-8M-A-PS-24V-E-0,3-M8D**
N/C						
	Inserted in the slot from above, flush with the cylinder profile, short design	PNP	Cable, 3-wire	7.5	**574340**	**SMT-8M-A-PO-24V-E-7,5-OE**

Ordering data – Connecting cables Technical data ➔ Internet: nebu

	Electrical connection, left	Electrical connection, right	Cable length [m]	Part No.	Type
	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**