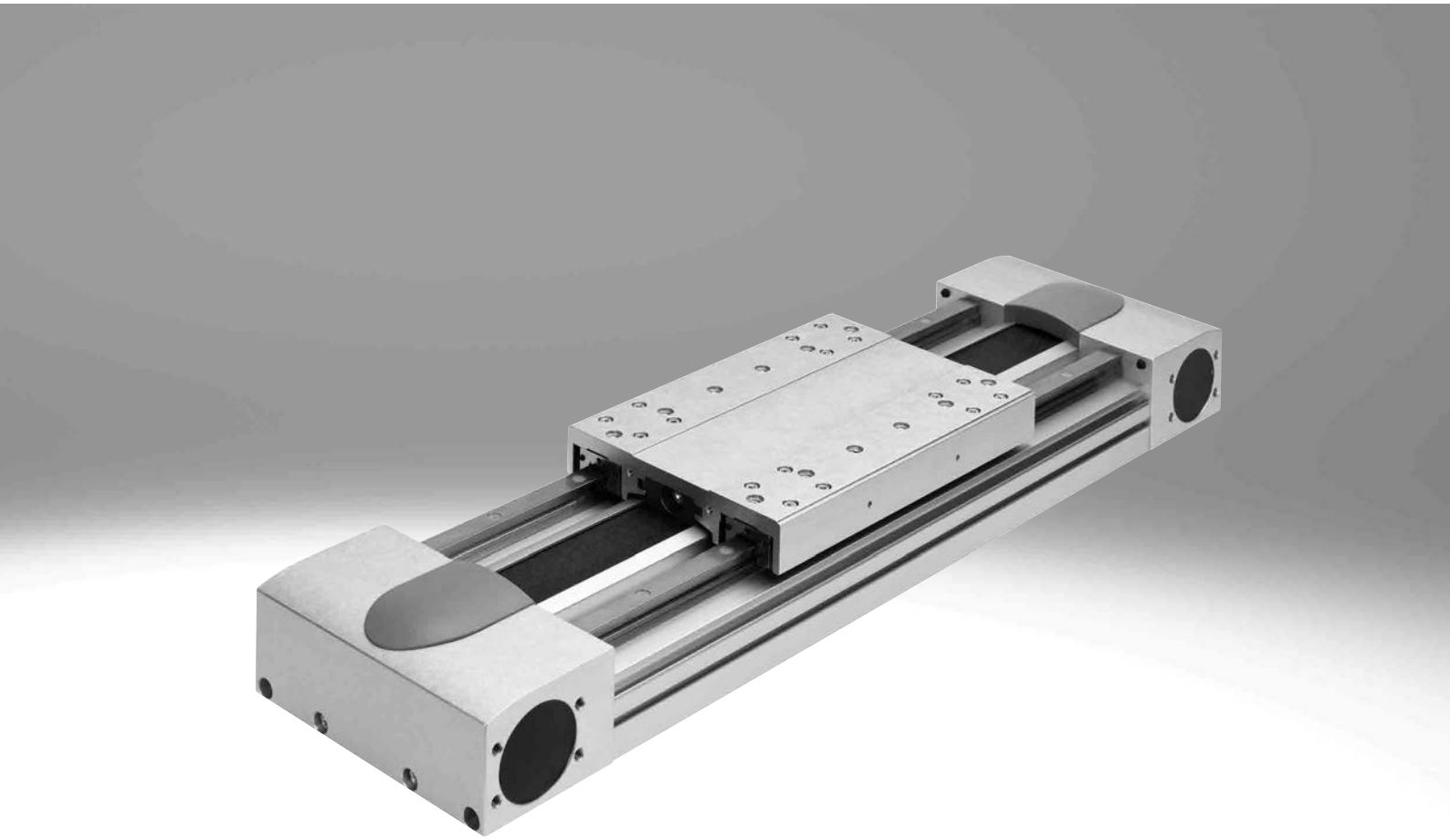
Toothed belt axes EGC-HD-TB, with heavy-duty guide



Selection aid

Overview of toothed belt and spindle axes

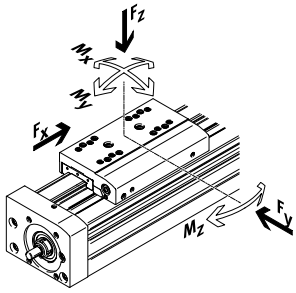
Toothed belt axes

- Speeds of up to 10 m/s
- Acceleration of up to 50 m/s²
- Repetition accuracy of up to ±0.08 mm
- Strokes of up to 8500 mm (longer strokes on request)
- Flexible motor mounting

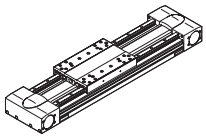
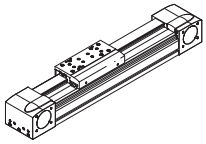
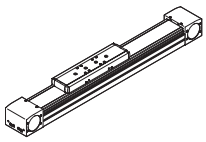
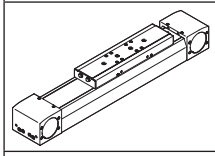
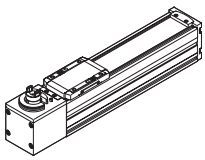
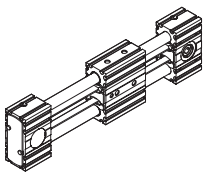
Spindle axes

- Velocities of up to 2 m/s
- Acceleration of up to 20 m/s²
- 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]	Characteristics
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 strip • 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 strip
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 strip
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 • Linear bushings with high load capacity for dynamic operation

Selection aid

Overview of toothed belt and spindle axes

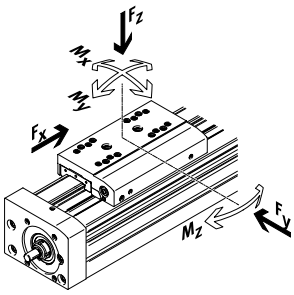
Toothed belt axes

- Speeds of up to 10 m/s
- Acceleration of up to 50 m/s²
- Repetition accuracy of up to ±0.08 mm
- Strokes of up to 8500 mm (longer strokes on request)
- Flexible motor mounting

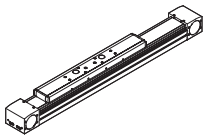
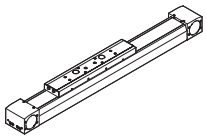
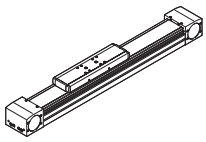
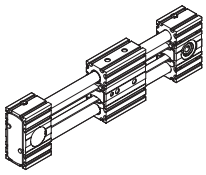
Spindle axes

- Velocities of up to 2 m/s
- Acceleration of up to 20 m/s²
- 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]	Characteristics
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 strip • 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 strip • 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 strip • For simple handling tasks • As a drive component for external guides • Insensitive to harsh ambient 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 environmental conditions

Selection aid

Overview of toothed belt and spindle axes

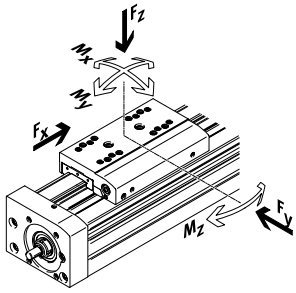
Toothed belt axes

- Speeds of up to 10 m/s
- Acceleration of up to 50 m/s²
- Repetition accuracy of up to ±0.08 mm
- Strokes of up to 8500 mm (longer strokes on request)
- Flexible motor mounting

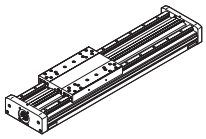
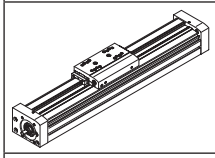
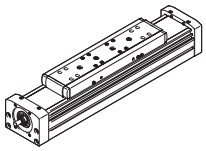
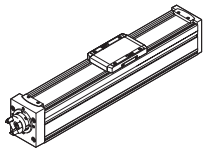
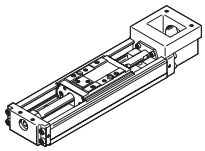
Spindle axes

- Velocities of up to 2 m/s
- Acceleration of up to 20 m/s²
- 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]	Characteristics
Heavy-duty recirculating ball bearing guide						
EGC-HD-BS						
	400 650 1500	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						
	400 650 1500 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						
	650 1600 3400 6400	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 drive • Precision guide rail with high load capacity • For the highest requirements in terms of feed force and accuracy • Guide and ball screw drive protected by cover strip • 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 drive • Guide and ball screw drive protected by cover strip • 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 precision, compactness and rigidity • Recirculating ball bearing guide and ball screw drive without caged ball bearings • Standard designs in stock

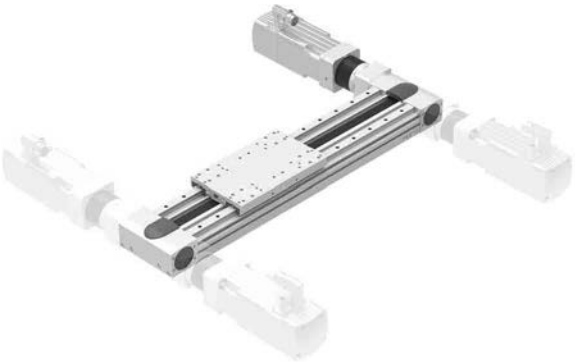
Key features

At a glance

- New heavy-duty design for:
  - Maximum loads and torques
  - High feed forces and velocities
  - Long service life
- Precision DUO guide rail with high load capacity
- Ideal as a base axis for linear gantries and cantilever axes
- Space-saving position sensing possible via proximity switch in the profile slot
- Toothed belt material can be selected from:
  - Chloroprene rubber for long service life
  - Coated PU with steel reinforcement cords for long service life and resilience to certain cooling lubricants
- Wide range of options for mounting on drives
- In addition to the technical data, the toothed belt axis impresses with its excellent price/performance ratio

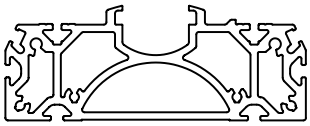
Flexible motor mounting

The motor position can be freely selected on 4 sides and can be changed at any time.

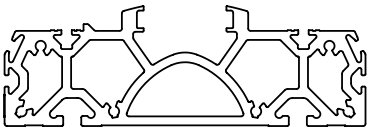


Flat unit with rigid, closed profile

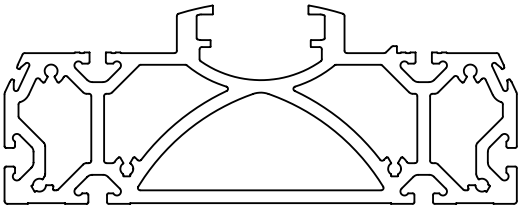
EGC-HD-125



EGC-HD-160

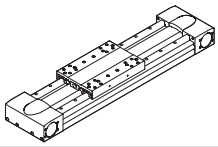


EGC-HD-220



Characteristic values of the axes

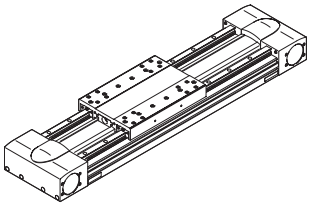
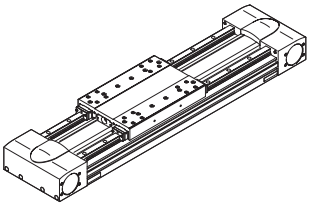
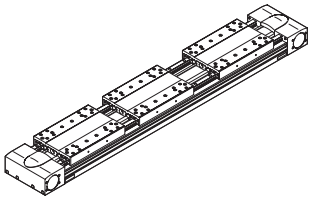
The specifications shown in the table are maximum values.
The precise values for each of the variants can be found in the relevant data sheet in the catalogue.

Version	Size	Working stroke	Velocity	Repetition accuracy	Feed force	Guide characteristics				
						Forces and torques				
						Fy	Fz	Mx	My	Mz
		[mm]	[m/s]	[mm]	[N]	[N]	[N]	[Nm]	[Nm]	[Nm]
Recirculating ball bearing guide										
	125	50 … 3000	3	±0.08	450	3650	3650	140	275	275
	160	50 … 5000	5	±0.08	1000	5600	5600	300	500	500
	220	50 … 4750	5	±0.1	1800	13000	13000	900	1450	1450

Note
Engineering software
PositioningDrives
www.festo.com

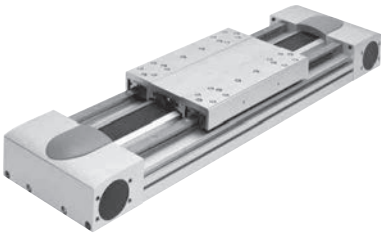
Characteristics

Slide variants

Standard slide	Standard slide, protected	With additional slide
		

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

Toothed belt axis with recirculating ball bearing guide



Motor → Page 24

Servo motor:
EMMT-AS, EMME-AS, EMMS-AS
Stepper motor:
EMMS-ST

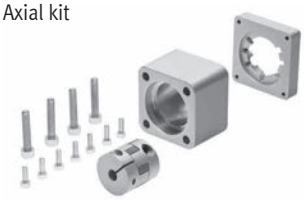
Note
A range of specially matched complete solutions is available for the spindle axis EGC and the motors.

Servo drive

Servo drive:
CMMT-AS
Servo drive for extra-low voltage:
CMMT-ST

Motor mounting kit → Page 24

Axial kit



Kit comprising:
- Motor flange
- Coupling housing
- Coupling
- Screws

Type codes

001	Series
EGC	Electric linear axis

002	Guide
HD	Heavy-duty guide

003	Size
125	125
160	160
220	220

004	Stroke
...	50 ... 5000

005	Drive system
TB	Toothed belt

006	Stroke reserve [mm]
...H	1 ... 999

007	Slide
GK	Standard slide
GP	Standard slide, protected

008	Additional slide left
	None
KL	Additional slide, standard, left

009	Additional slide, right
	None
KR	Additional slide standard, right

010	Toothed belt material
	Standard
PU1	Uncoated PU, FDA-compliant
PU2	Coated PU

011	Profile mounting
	None
...M	1 ... 50

012	Mounting slot cover, 2x, 500 mm [units]
	None
...B	1 ... 50

013	Cover, sensor slot [units]
	None
...S	1 ... 50

014	Slot nut for mounting slot [units]
	None
...Y	1 ... 99

015	Proximity sensor, inductive, slot 8, PNP, N/O contact, cable 7.5 m [units]
	None
...X	1 ... 6

016	Proximity sensor, inductive, slot 8, PNP, N/C contact, cable 7.5 m [units]
	None
...Z	1 ... 6

017	Emergency buffer with retaining bracket [units]
	None
...A	1 ... 2

018	Shock absorber with retaining bracket [units]
	None
...C	1 ... 2

019	Proximity sensor, inductive, M8, PNP, N/O contact, cable 2.5 m [units]
	None
...O	1 ... 99

020	Proximity sensor, inductive, M8, PNP, N/C contact, cable 2.5 m [units]
	None
...P	1 ... 99

021	Proximity sensor, inductive, M8, PNP, N/O contact, plug M8 [units]
	None
...W	1 ... 99

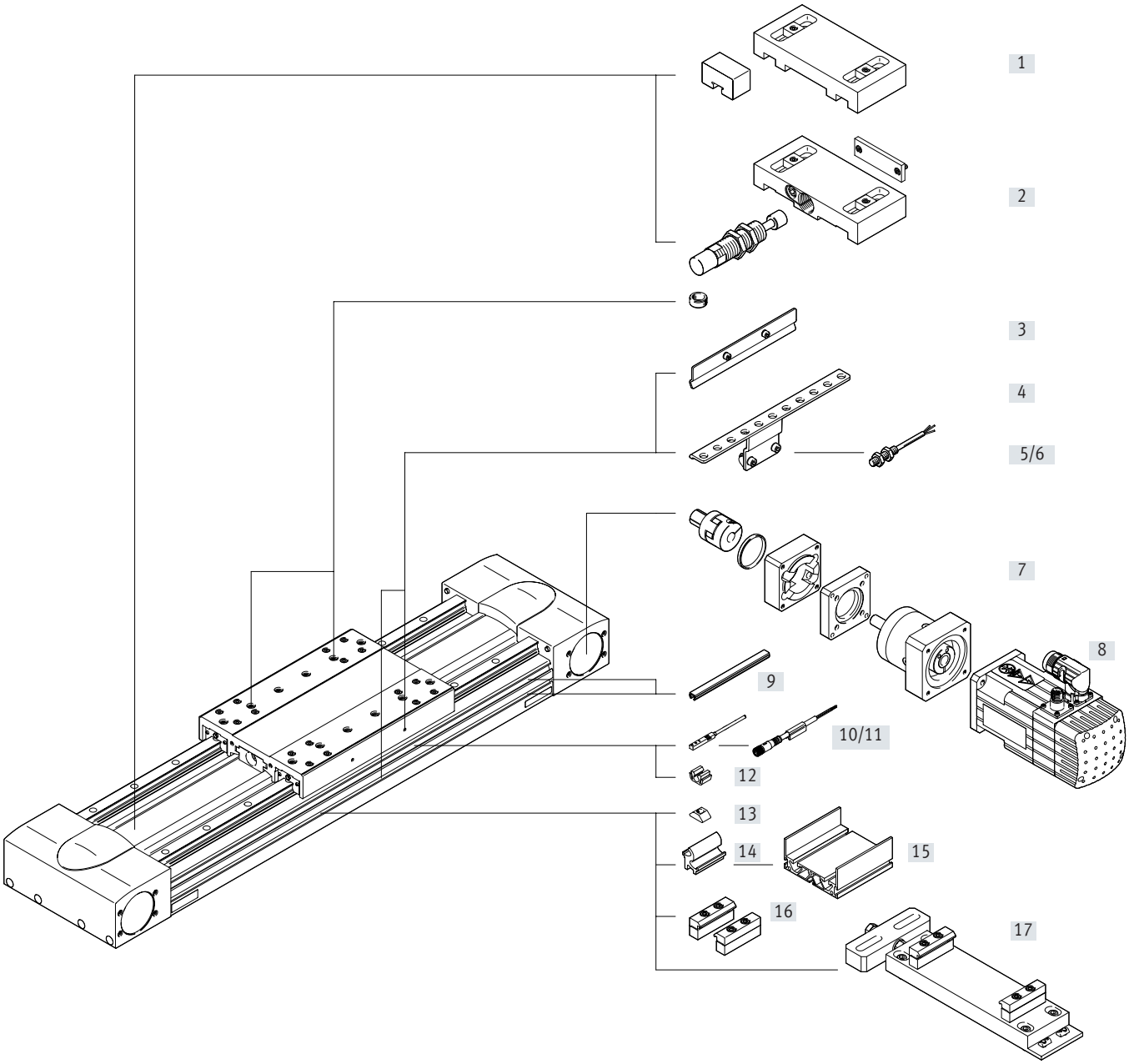
022	Proximity sensor, inductive, M8, PNP, N/C contact, plug M8 [units]
	None
...R	1 ... 99

023	Connecting cable, M8, 2.5 m [units]
	None
...V	1 ... 99

024	Cable clip [units]
...CL	10, 20, 30, 40, 50, 60, 70, 80, 90

025	Operating instructions
	With operating instructions
DN	Without operating instructions

Peripherals overview

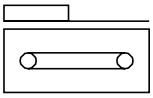


Peripherals overview

Variants and accessories

	Type/order code	Description	➔ Page/Internet
[1]	Emergency buffer with retaining bracket A	For avoiding damage at the end stop in the event of malfunction	31
[2]	Shock absorber with retaining bracket C	For avoiding damage at the end stop in the event of malfunction	31
[3]	Centring pin/sleeve ZBS, ZBH	• For centring loads and attachments on the slide • Included in the scope of delivery: – For size 125: 2x ZBS-5, 2x ZBH-9 – For size 160, 220: 2x ZBH-9	31
[4]	Switch lug X, Z, O, P, W, R	For sensing the slide position	29
[5]	Sensor bracket O, P, W, R	Adapter for mounting the inductive proximity switches (round design) on the axis	30
[6]	Proximity switch, M8 O, P, W, R	• Inductive proximity switch, round design • The order code O, P, W, R includes 1 switch lug and max. 2 sensor brackets in the scope of delivery	33
[7]	Axial kit EAMM	For axial motor mounting (comprises: coupling, coupling housing and motor flange)	24
[8]	Motor EMME, EMMS	Motors specially matched to the axis, with gear unit, with or without brake	24
[9]	Slot cover B, S	• For protection against contamination	31
[10]	Proximity switch, T-slot X, Z	• Inductive proximity switch, for T-slot • The order code X, Z includes 1 switch lug in the scope of delivery	32
[11]	Connecting cable V	For proximity switch (order code W and R)	33
[12]	Clip CL	For mounting the proximity switch cable in the slot	31
[13]	Slot nut Y	For mounting attachments	31
[14]	Adapter kit DHAM	For mounting the support profile on the axis	32
[15]	Support profile HMIA	For mounting and guiding an energy chain	32
[16]	Profile mounting M	For mounting the axis on the profile	27
[17]	Adjusting kit EADC-E16	For mounting the axis on a vertical surface. Once mounted, the axis can be aligned horizontally	28

Data sheet



Size
125 … 220

Stroke length
50 … 5000 mm

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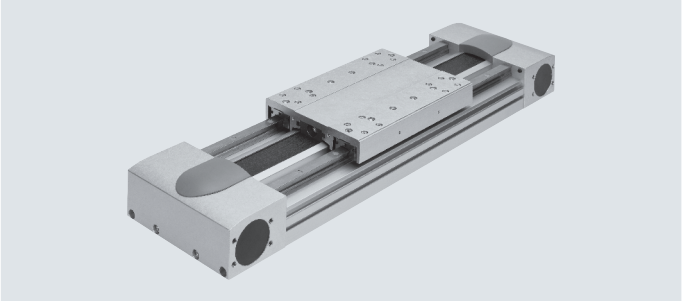


General technical data				
Size		125	160	220
Design		Electromechanical axis with toothed belt		
Guide		Recirculating ball bearing guide		
Mounting position		Any		
Working stroke	[mm]	50 … 3000	50 … 5000	50 … 4750
Max. feed force F_x	[N]	450	1000	1800
Max. no-load torque[1]	[Nm]	1.1	2.1	4.1
Max. no-load resistance to shifting[1]	[N]	67.75	105.5	123.8
Max. driving torque	[Nm]	7.2	20	59.58
Max. speed				
EGC-…-GK	[m/s]	3	5	
EGC-…-GP	[m/s]	–	3	
Max. acceleration	[m/s²]	40	50	
Repetition accuracy	[mm]	±0.08		±0.1

1) At 0.2 m/s

Operating and environmental conditions		
Ambient temperature	[°C]	–10 … +60
Degree of protection		IP40
Duty cycle	[%]	100

Weights [g]			
Size	125	160	220
Basic weight with 0 mm stroke[1]	4720	9050	25510
Additional weight per 10 mm stroke	73	107	210
Slide			
EGC-…-GK	1218	2571	6317
EGC-…-GP	–	2643	6417
Additional slide			
EGC-…-GK	1026	2022	5498
EGC-…-GP	–	2134	5598

1) Incl. slide

Data sheet

Toothed belt				
Size		125	160	220
Pitch	[mm]	3	5	8
Width	[mm]	30.3	40.0	50.5
Elongation[1)]				
EGC-...	[%]	0.178	0.161	0.173
EGC-...-PU2	[%]	0.085	0.094	0.068
Effective diameter	[mm]	32.47	39.79	66.21
Feed constant	[mm/rev]	102	125	208

1) At max. feed force

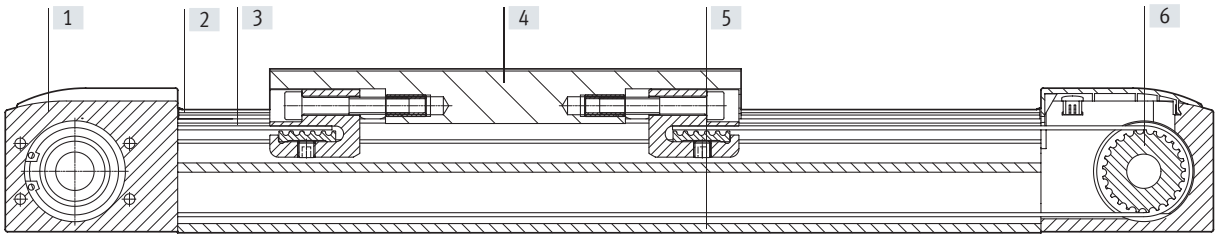
Mass moment of inertia				
Size		125	160	220
J_O	[kg cm²]	4.639	14.49	108.99
J_H per metre stroke	[kg cm²/m]	0.38	1.267	6.269
J_L per kg payload	[kg cm²/kg]	2.635	3.96	10.96
J_W Additional slide	[kg cm²]	3.3	11.734	80.66

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

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

Materials

Sectional view

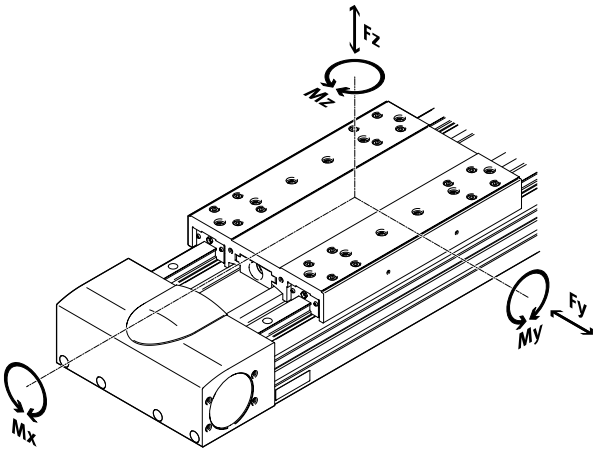


Axis		
[1]	Drive cover	Anodised wrought aluminium alloy
[2]	Guide rail	Coated and corrosion-resistant steel
[3]	Toothed belt	
	EGC-...	Polychloroprene with glass cord and nylon coating
	EGC-...-PU2	Polyurethane with steel cord and nylon covering
[4]	Slide	Anodised wrought aluminium alloy
[5]	Profile	Anodised wrought aluminium alloy
[6]	Toothed belt pulley	High-alloy stainless steel
	Note on materials	RoHS-compliant
		Contains paint-wetting impairment substances

Data sheet

Characteristic load values

The indicated forces and torques refer to the slide surface. 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 deceleration phase.



Max. permissible forces and torques for a service life of 5000 km

Size		125	160	220
$Fy_{max.}$	[N]	3650	5600	13000
$Fz_{max.}$	[N]	3650	5600	13000
$Mx_{max.}$	[Nm]	140	300	900
$My_{max.}$	[Nm]	275	500	1450
$Mz_{max.}$	[Nm]	275	500	1450

Note

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

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:

$$f_v = \frac{|F_{y1}|}{F_{y2}} + \frac{|F_{z1}|}{F_{z2}} + \frac{|M_{x1}|}{M_{x2}} + \frac{|M_{y1}|}{M_{y2}} + \frac{|M_{z1}|}{M_{z2}} \leq 1$$

F_1/M_1 = dynamic value
F_2/M_2 = maximum value

Data sheet

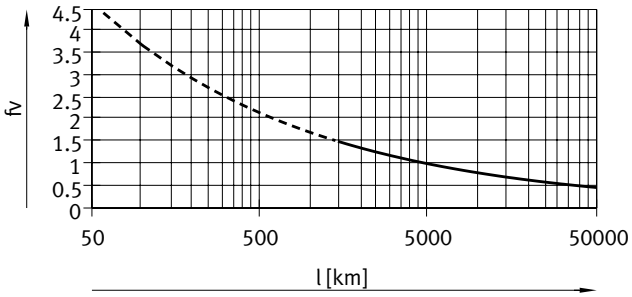
Calculating the service life

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 1.5.

Load comparison factor f_v as a function of service life

Example:
A user wants to move an X kg load. Using the formula (→ page 12) 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.



Note

Engineering software
PositioningDrives
www.festo.com

The engineering software can be used to calculate the guide workload for a service life of 5000 km.

f_v > 1.5 are only theoretical comparison values for the recirculating ball bearing guide.

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

The characteristic load values of bearing 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 according to ISO or 50 km according 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 bearing guides to ISO/JIS.

To make it easier to compare the guide capacity of linear axes EGC with bearing 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.

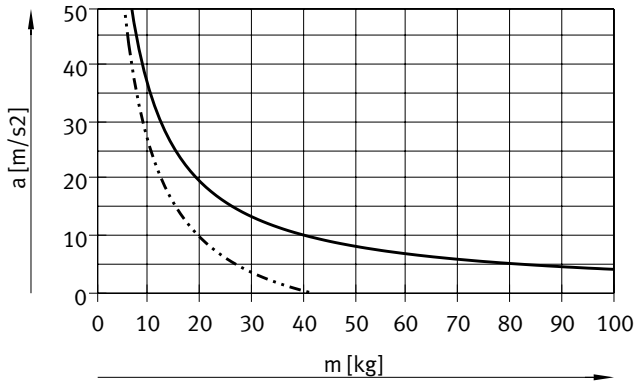
Max. permissible forces and torques for a theoretical service life of 100 km (from a guide perspective only)

Size		125	160	220
$Fy_{max.}$	[N]	13447	20631	47892
$Fz_{max.}$	[N]	13447	20631	47892
$Mx_{max.}$	[Nm]	516	1105	3316
$My_{max.}$	[Nm]	1013	1842	5342
$Mz_{max.}$	[Nm]	1013	1842	5342

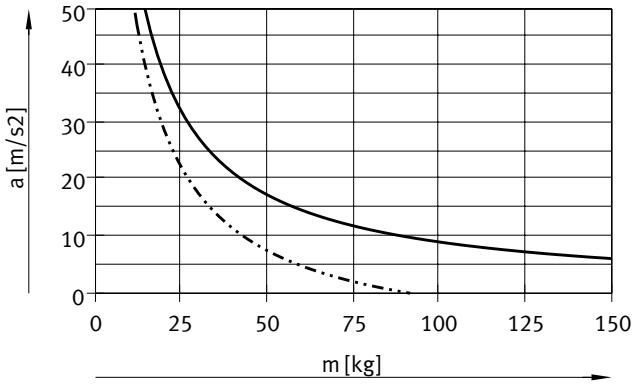
Data sheet

Max. acceleration a as a function of payload m

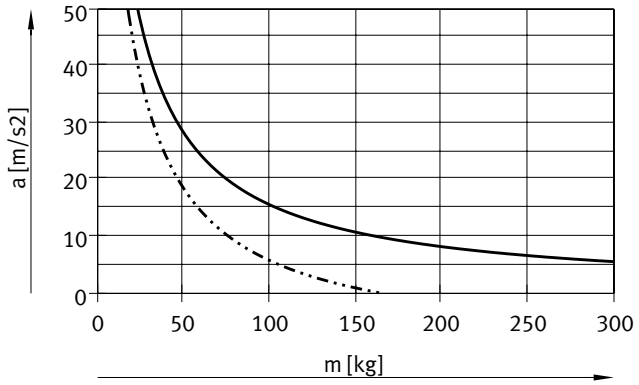
Size 125



Size 160

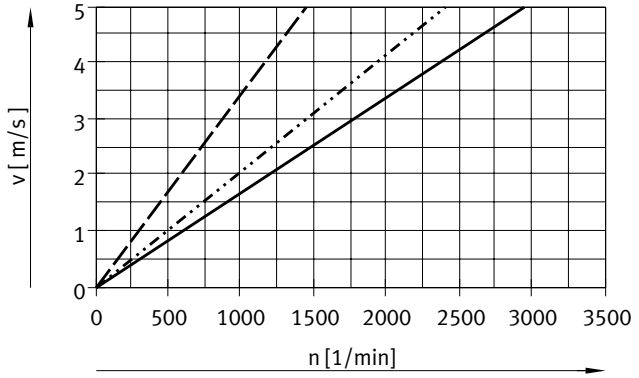


Size 220



Horizontal installed length
Vertical installed length

Speed v as a function of rotational speed n

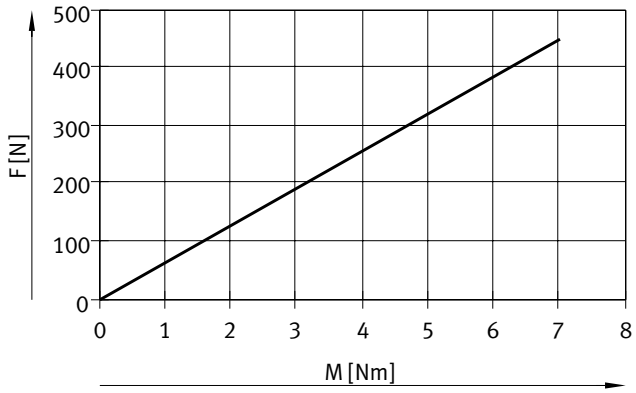


EGC-HD-125
EGC-HD-160
EGC-HD-220

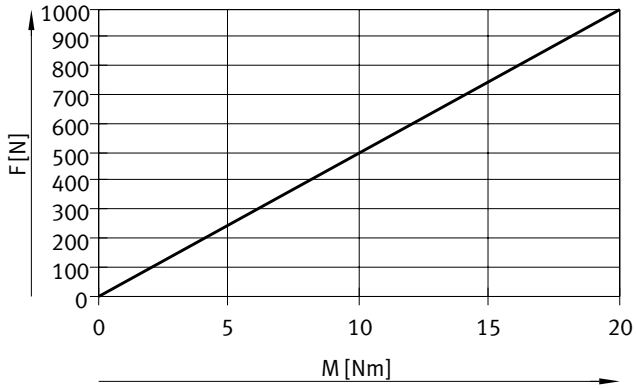
Data sheet

Theoretical feed force F as a function of input torque M

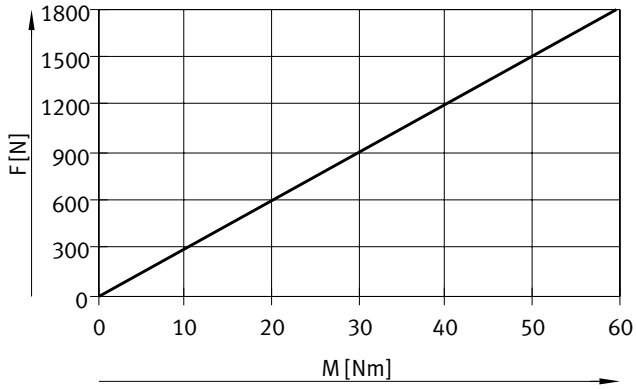
Size 125



Size 160



Size 220



Stroke reserve

Stroke length

The selected stroke corresponds in principle to the required working stroke. The variants GK do not have a long-term lubrication unit on the guide. These variants therefore have an additional safety distance between the drive cover and slide that is not designated as part of the working stroke.

Stroke reserve

It is possible to define a safety distance (similar to that for GK) between the drive cover and slide for the variants GP using the “stroke reserve” characteristic in the modular product system. With the variants GK, the stroke reserve and safety distance are added for each end position.

- The stroke reserve length can be freely selected
- The sum of the stroke length and 2x stroke reserve must not exceed the maximum working stroke

Example:
Type:
EGC-HD-125-500-TB-20H-...
Working stroke = 500 mm
2x stroke reserve = 40 mm

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

Size	125	160	220
L = safety distance with GK (per end position) [mm]	12.5	15.5	20

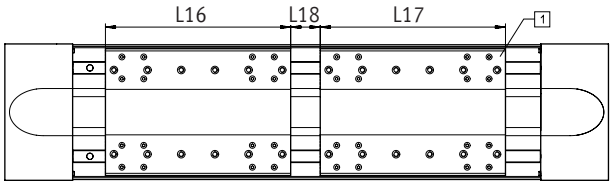
Data sheet

Working stroke reduction

With standard slide GK/GP with additional slide KL/KR

- With a toothed belt axis with additional slide [1], the working stroke is reduced by the length of the additional slide L17 and the distance between both slides L18
- If the variant GP is ordered, the additional slide is also protected

L16 = Slide length
L17 = Additional slide length
L18 = Distance between both slides



Example:
Type: EGC-HD-220-1000-TB-...-GP-KR
L18 = 100 mm

Working stroke = 1000 mm – 328 mm – 100 mm = 572 mm

Dimensions – Additional slide						
Size		125	160		220	
Variant		GK	GK	GP	GK	GP
Length L17	[mm]	202	220	250	302	328

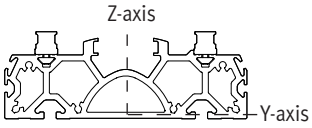
Working stroke reduction per side

With integrated emergency buffer NPE / shock absorber YSRW with shock absorber retainer EAYH-L2

- With a toothed belt axis, the working stroke is reduced by the total dimension of the emergency buffer/ shock absorber and shock absorber retainer.

Size		125	160	220
With emergency buffer	[mm]	65	93	98
With shock absorber	[mm]	66	94	99

2nd moments of area

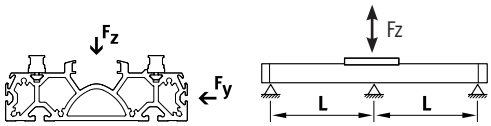


Size		125	160	220
Iy	[mm^4]	6.89x10^5	12.9x10^5	55.8x10^5
Iz	[mm^4]	40.9x10^5	98.9x10^5	351x10^5

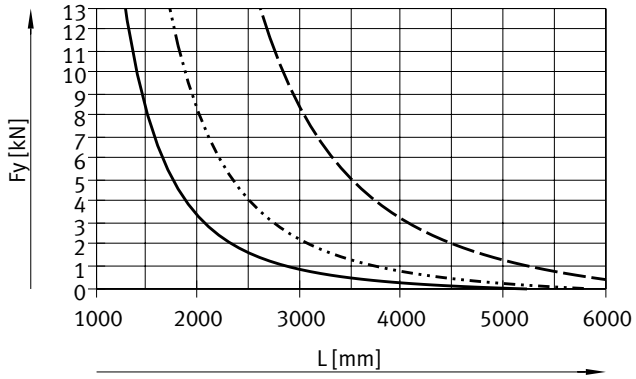
Data sheet

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

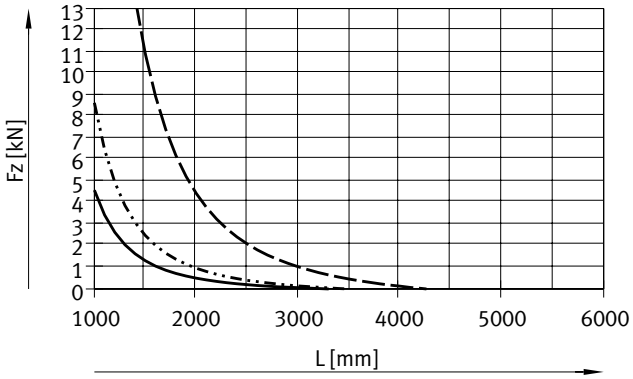
In order to limit deflection in the case of large strokes, the axis may need to be supported.
The following graphs can be used to determine the maximum permissible support span l as a function of force F acting on the axis. The deflection is f = 0.5 mm.



Force Fy



Force Fz



EGC-HD-125-TB
EGC-HD-160-TB
EGC-HD-220-TB

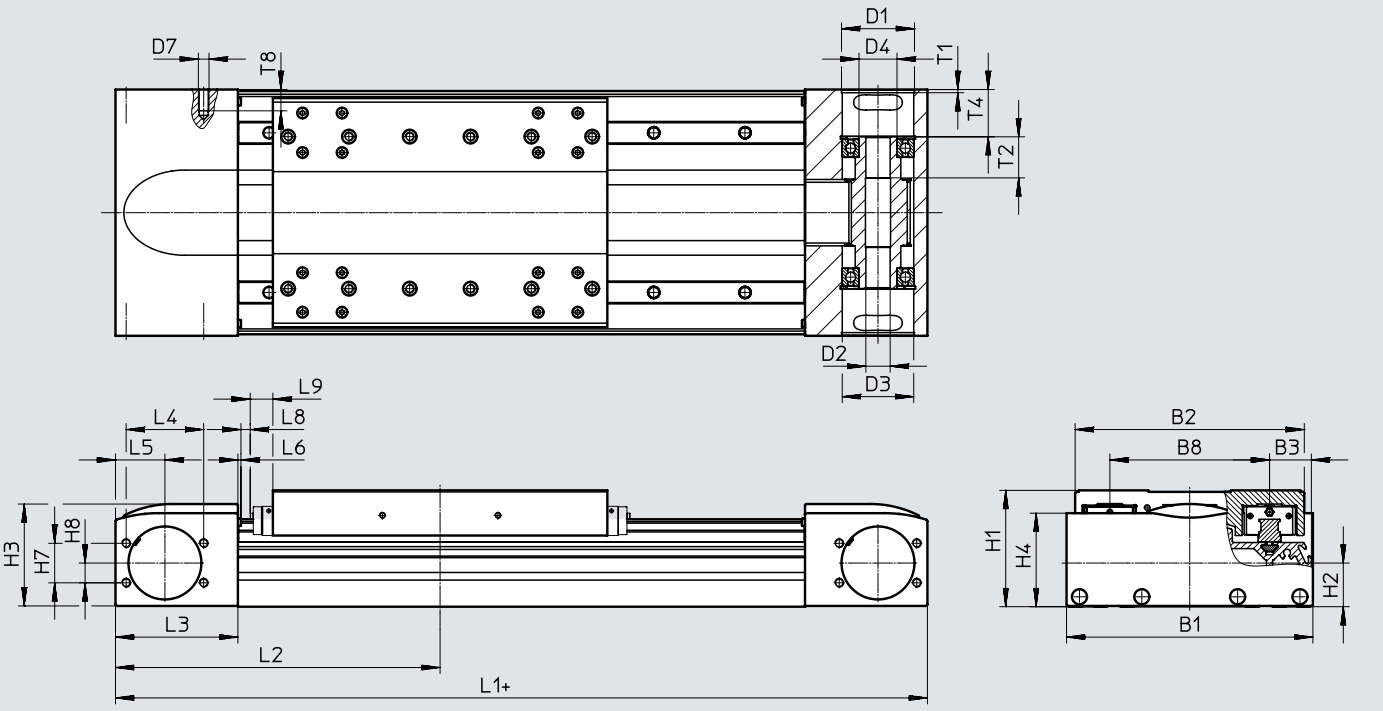
Recommended deflection limits

Adherence to the following deflection limits is recommended so as not to impair the functionality 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)
125 … 220	0.05% of the axis length, max. 0.5 mm	0.1% of the axis length

Data sheet

Dimensions Download CAD data ➔ www.festo.com



\+ = plus stroke length + 2x stroke reserve

L9 With GP: dimension for long-term lubrication unit ➔ Page 15

Size	B1	B2	B3	B8	D1 ⌀ H7	D2 ⌀ H7	D3 ⌀	D4 ⌀	D7
125	124	120	21	80	43	16	42	25	M6
160	162	150.7	27.5	105	48	16	47	25	M6
220	224	204.2	40	140	80	23	75	45	M8

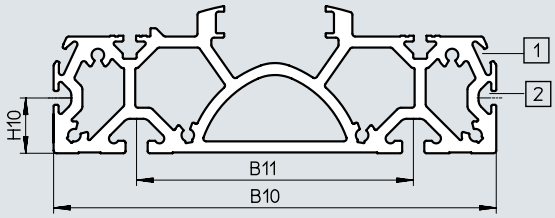
Size	H1	H2	H3	H4	H7	H8	L1	L2 min.	L3
125	64	26.1	55.8	50.8	24	12	346	173	57.5
160	76.5	28.7	67.5	61.5	26	13	417	208.5	80.5
220	111.5	45.2	98	91.1	59	27	576	288	115

Size	L4	L5	L6	L8	L9	T1	T2	T4	T8
125	46	27.5	1.8	2	–	2.1	27	23.65	13
160	51	32.5	2	0.55	14.9	3.1	27	31.1	14
220	76	50	2	2	18	3.1	29.5	47.5	16

Data sheet

Dimensions Download CAD data ➔ www.festo.com

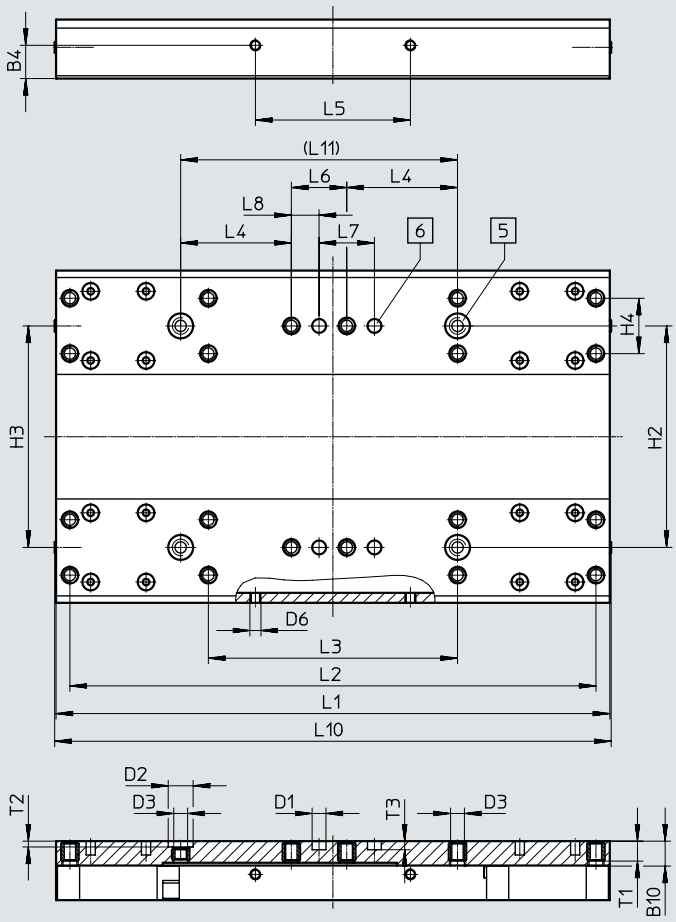
Profile



[1] Sensor slot for proximity switch
[2] Mounting slot for slot nut

Size	B10	B11	H10
125	122	80	20
160	160	100	20
220	220	140	20

GK – Standard slide
Size 125



[5] Drill hole for centring sleeve ZBH
[6] Drill hole for centring pin ZBS

Size	B4 ±0.1	B10	D1 ø H7	D2 ø H7	D3	D6	H2 ±0.03	H3 ±0.05	H4 ±0.1	L1 ±0.1	L2 ±0.2	L3 ±0.1
125	12	9	5	9	M5	M4	80	80	20	200	190	90

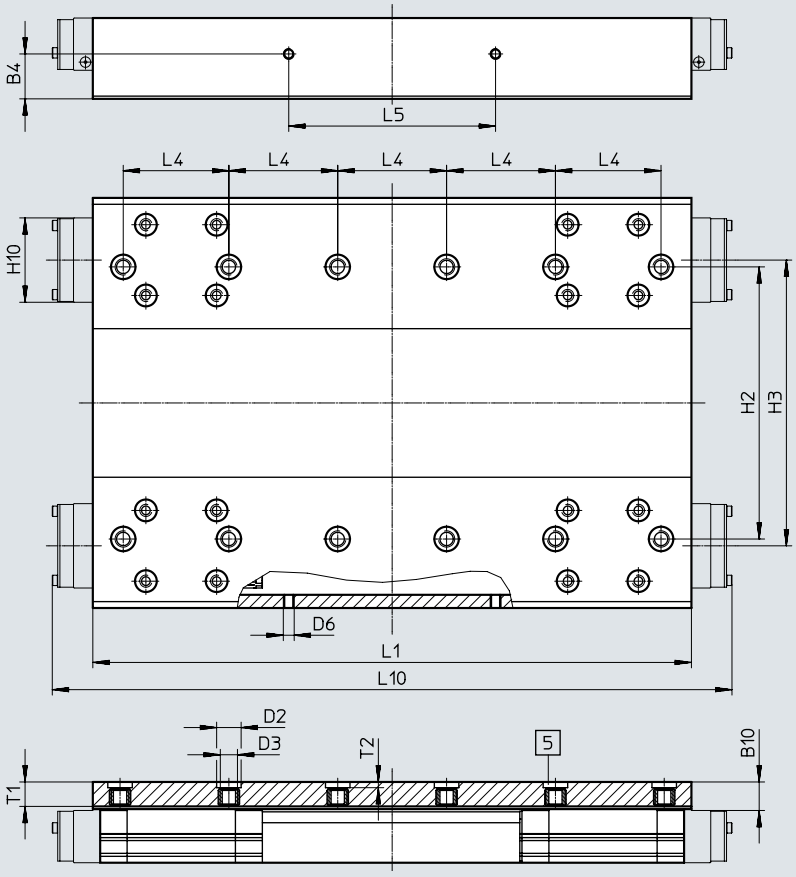
Size	L4 ±0.1	L5 ±0.2	L6 ±0.1	L7 ±0.03	L8 ±0.1	L10	L11 ±0.03	T1	T2 +0.1	T3 +0.1
125	40	56	20	20	10	202	100	7.8	2.1	3.1

Data sheet

Dimensions Download CAD data ➔ www.festo.com

GK – Standard slide / GP – Standard slide, protected

Size 160



[5] Drill hole for centring sleeve ZBH

Size	B4	B10*	D2	D3	D6	H2	H3
			⌀				
	±0.1		H7			±0.03	±0.05
160	16.5	10.5	9	M6	M4	100	105

Size	H10*	L1	L4	L5	L10*	T1	T2
		±0.1	±0.03	±0.1			+0.1
160	31	220	40	76	250	9	2.1

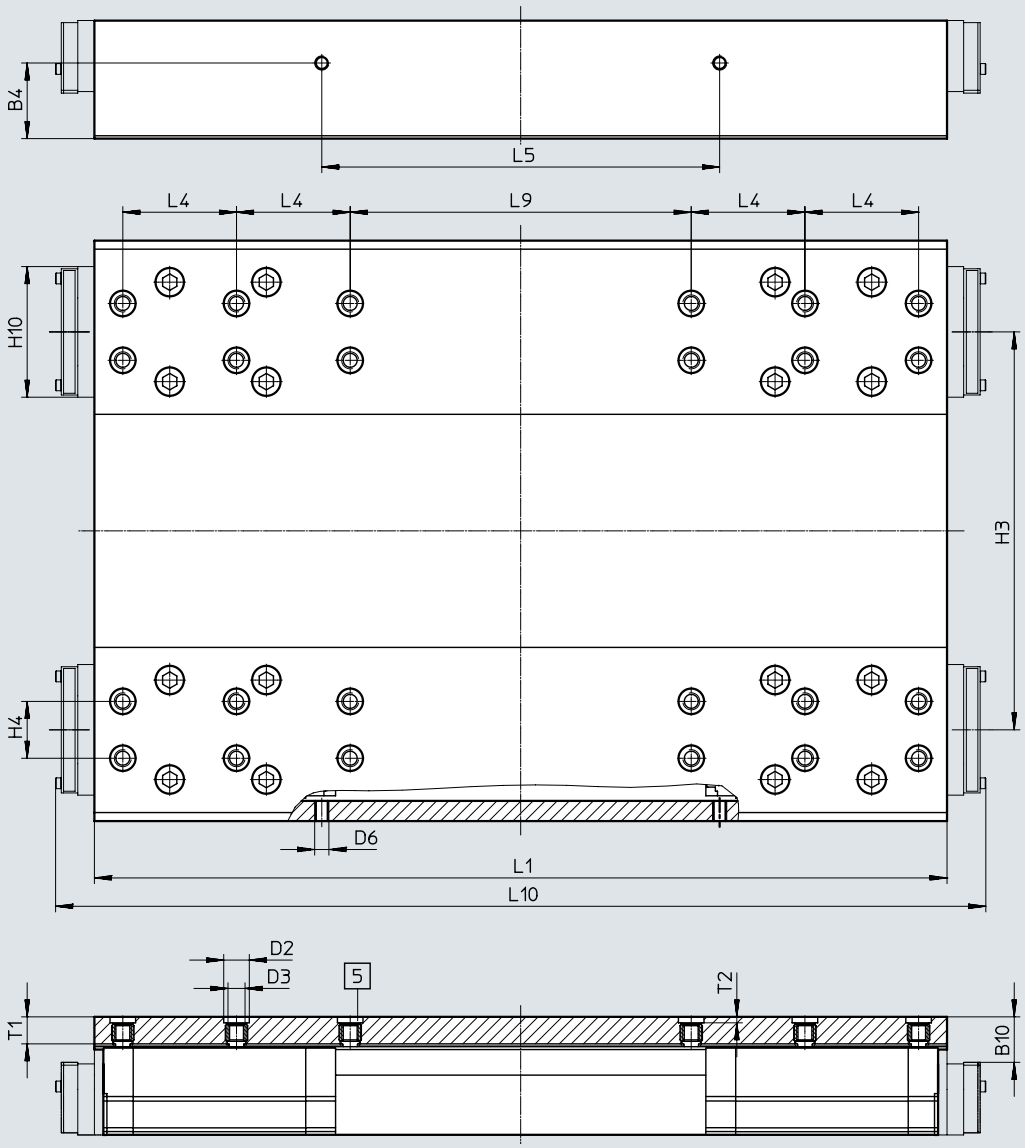
* Protected version

Data sheet

Dimensions Download CAD data ➔ www.festo.com

GK – Standard slide / GP – Standard slide, protected

Size 220



[5] Drill hole for centring sleeve ZBH

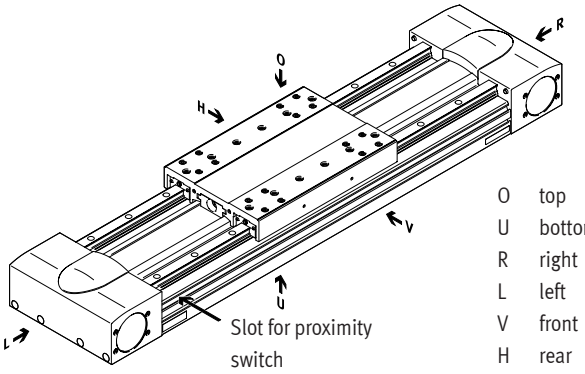
Size	B4 ±0.1	B10*	D2 ø H7	D3	D6	H3 ±0.05	H4 ±0.03	H10*
220	26.6	16	9	M6	M5	140	20	45.95

Size	L1 ±0.1	L4 ±0.03	L5 ±0.1	L9 ±0.03	L10*	T1	T2 +0.1
220	302	40	140	120	328	9.5	2.1

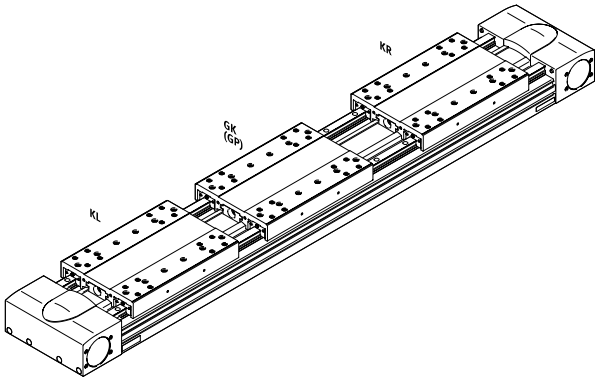
* Protected version

Ordering data – Modular product system

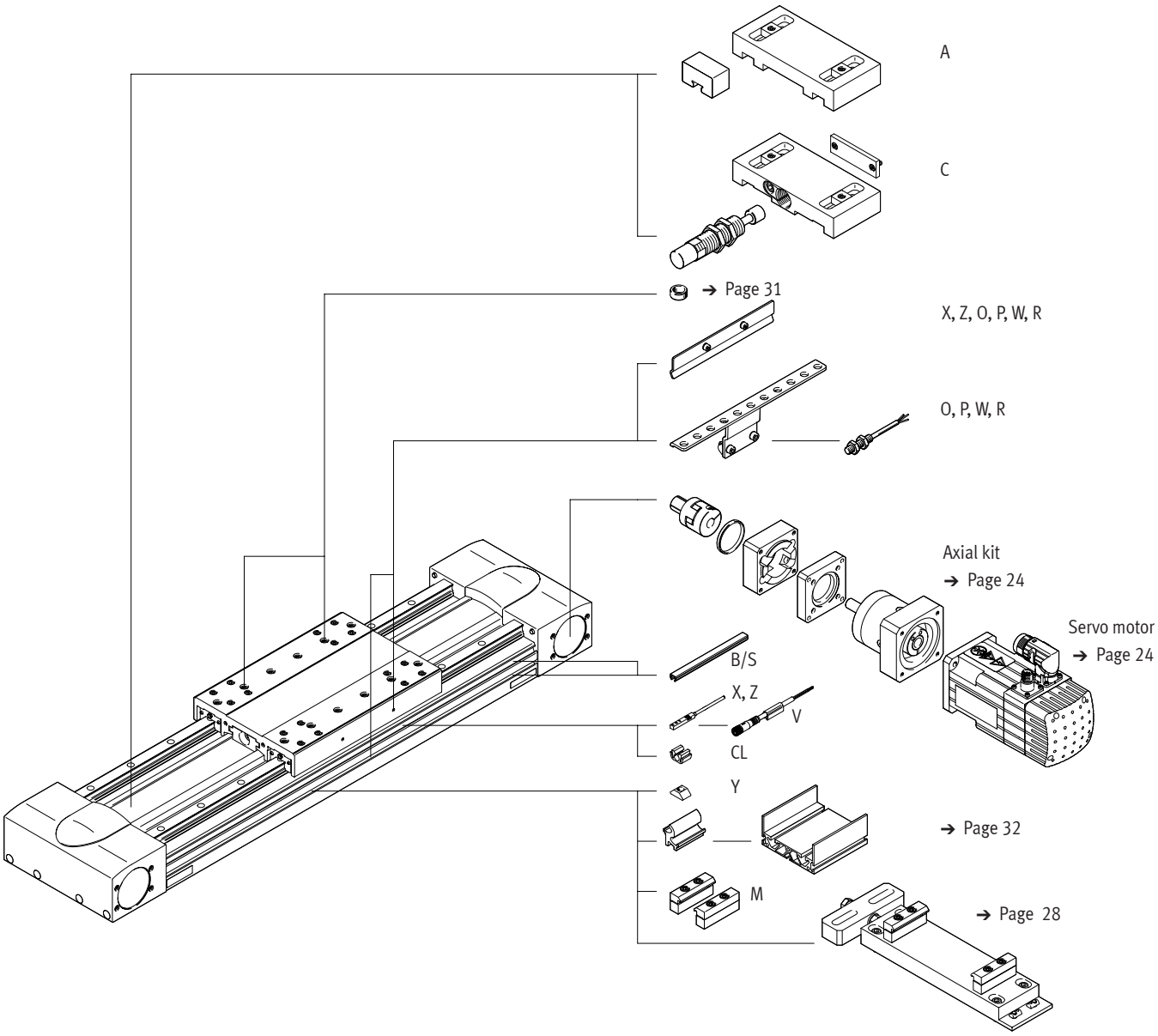
Orientation guide



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



Accessories



Ordering data – Modular product system

Ordering table

Size		125	160	220	Conditions	Code	Enter code
Module no.		**556823**	**556824**	**556825**			
Design		Linear axis				**EGC**	EGC
Guide		Heavy-duty guide				**-HD**	-HD
Size		125	160	220		**-...**	-...
Stroke length	[mm]	50 ... 3000	50 ... 5000	50 ... 4750	[1]	**-...**	-...
Function		Toothed belt				**-TB**	-TB
Stroke reserve	[mm]	0 ... 999 (0 = no stroke reserve)			[1]	**-...H**	
Slide		Standard slide				**-GK**	
		–	Standard slide, protected			**-GP**	
Additional slide	Left	Additional slide, standard, left			[2]	**-KL**	
	Right	Additional slide, standard, right			[2]	**-KR**	
Material of toothed belt		Chloroprene rubber					
		Coated PU				**-PU2**	
Accessories		Accessories enclosed separately				**ZUB-**	ZUB-
Profile mounting		1 ... 50				**...M**	
Slot cover	Mounting slot	1 ... 50 (1 = 2 units, 500 mm long)			[4]	**...B**	
	Sensor slot	1 ... 50 (1 = 2 units, 500 mm long)				**...S**	
Slot nut for mounting slot		1 ... 99			[4]	**...Y**	
Proximity switch (SIES) inductive, slot type 8, PNP, incl. switch lug	N/O contact, 7.5 m cable	1 ... 6				**...X**	
	N/C contact, 7.5 m cable	1 ... 6				**...Z**	
Emergency buffer with retaining bracket		1 ... 2			[3]	**...A**	
Shock absorber with retaining bracket		1 ... 2			[3]	**...C**	
Proximity switch (SIEN) inductive, M8, PNP, incl. switch lug with sensor bracket	N/O contact, 2.5 m cable	1 ... 99				**...O**	
	N/C contact, 2.5 m cable	1 ... 99				**...P**	
	N/O contact, M8 plug	1 ... 99				**...W**	
	N/C contact, M8 plug	1 ... 99				**...R**	
Connecting cable, M8, 3-wire, 2.5 m		1 ... 99				**...V**	
Cable clip		10, 20, 30, 40, 50, 60, 70, 80, 90				**...CL**	
Operating instructions		Express waiver – no operating instructions to be included as already available (operating instructions in PDF format are available free of charge on our website at http:\\www.festo.com)				**-DN**	

[1] -... The sum of nominal stroke and 2x stroke reserve must not exceed the maximum stroke length.

[2] KL, KR If the protected slide variant (GP) is selected, the additional slide (KL, KR) is also protected.

[3] ... A, ... C Cannot be combined with slide GP.

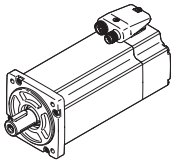
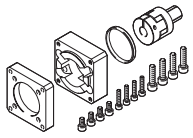
[4] B, Y Scope of delivery with size 160 for both slot sizes (→ Page 31).

Accessories

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

Data sheets → Internet: eamm-a

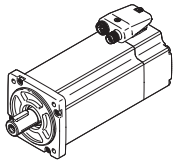
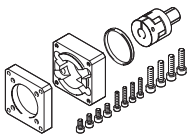
Motor/gear unit[1]	Axial kit	
		
Type	Part no.	Type
EGC-HD-125		
With servo motor and gear unit		
EMMS-AS-55-... EMGA-60-P-G...-SAS-55	**1190076**	**EAMM-A-M43-60G**
EMMT-AS-60-..., EMME-AS-60-... EMGA-60-P-G...-EAS-60	**1456612**	**EAMM-A-M43-60H**
EMMS-AS-70-... EMGA-60-P-G...-SAS-70	**1190076**	**EAMM-A-M43-60G**
With stepper motor and gear unit		
EMMS-ST-57-... EMGA-60-P-G...-SST-57	**1190076**	**EAMM-A-M43-60G**
With integrated drive and gear unit		
EMCA-EC-67-... EMGC-60-...	**1456612**	**EAMM-A-M43-60H**

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

Accessories

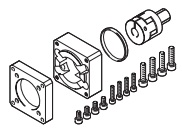
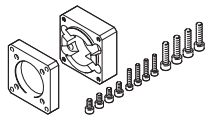
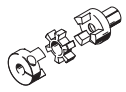
Permissible axis/motor combinations with axial kit

Data sheets → Internet: eamm-a

Motor/gear unit[1]	Axial kit	
		
Type	Part no.	Type
EGC-HD-160		
With servo motor and gear unit		
EMMT-AS-60-..., EMME-AS-60-... EMGA-60-P-G...-EAS-60	**1456614**	**EAMM-A-M48-60H**
EMMS-AS-70-... EMGA-80-P-G...-SAS-70	**1190421**	**EAMM-A-M48-80G**
EMMT-AS-80-..., EMME-AS-80-... EMGA-80-P-G...-EAS-80	**1190421**	**EAMM-A-M48-80G**
EMMT-AS-100-..., EMME-AS-100-..., EMMS-AS-100-... EMGA-80-P-G...-SAS-100	**1190421**	**EAMM-A-M48-80G**
With stepper motor and gear unit		
EMMS-ST-87-... EMGA-80-P-G...-SST-87	**1190421**	**EAMM-A-M48-80G**
With integrated drive and gear unit		
EMCA-EC-67-... EMGC-60-...	**1456614**	**EAMM-A-M48-60H**
EGC-HD-220		
With servo motor and gear unit		
EMMT-AS-100-..., EMME-AS-100-..., EMMS-AS-100-... EMGA-120-P-G...-SAS-100	**1190774**	**EAMM-A-M80-120G**
EMMS-AS-140-... EMGA-120-P-G...-SAS-140	**1190774**	**EAMM-A-M80-120G**

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

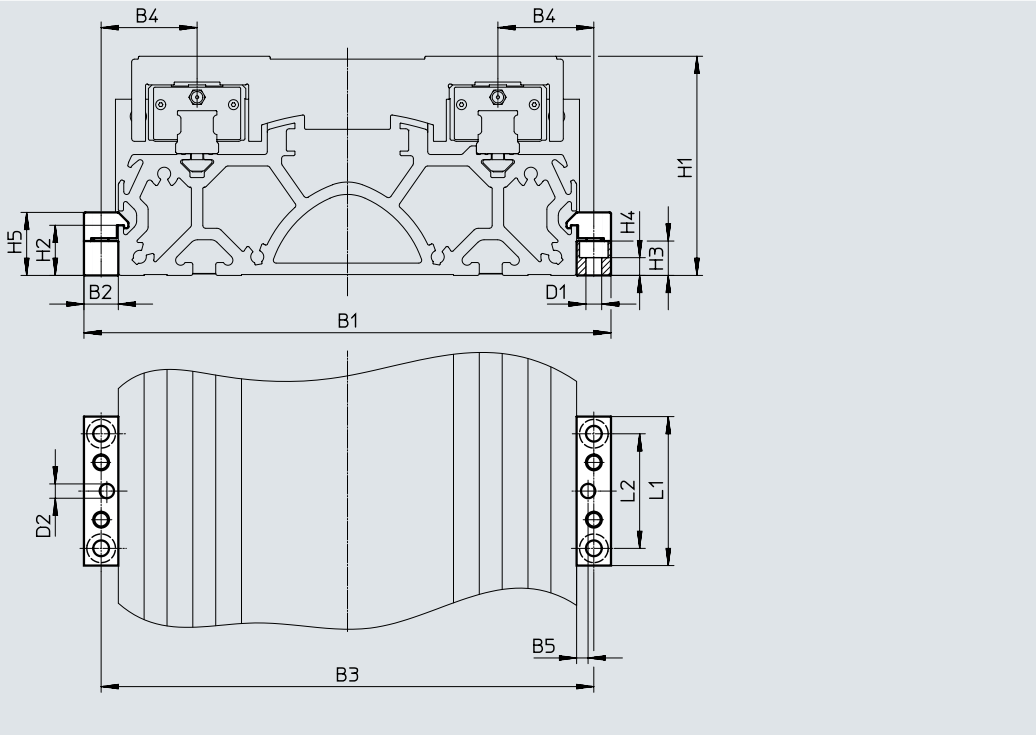
Accessories

Permissible axis/motor combinations with axial kit			
Axial kit	Comprising:		
	Motor flange	Coupling	Centring ring
			
Part no. Type	Part no. Type	Part no. Type	Part no. Type
EGC-HD-125			
1190076 **EAMM-A-M4360G**	**1597579** **EAMF-A-43D-60G/H**	**558001** **EAMD-32-32-11-16X20**	**575962** **EAML-43-4-43**
1456612 **EAMM-A-M43-60H**	**1597579** **EAMF-A-43D-60G/H**	**1377840** **EAMD-32-32-14-16X20**	**575962** **EAML-43-4-43**
EGC-HD-160			
1456614 **EAMM-A-M48-60H**	**1460111** **EAMF-A-48C-60G/H**	**3420022** **EAMD-42-40-14-16X25-U**	**558031** **EAML-48-4-48**
1190421 **EAMM-A-M48-80G**	**1190375** **EAMF-A-48C-80G**	**1781043** **EAMD-42-40-20-16X25-U**	**558031** **EAML-48-4-48**
EGC-HD-220			
1190774 **EAMM-A-M80-120G**	**1190702** **EAMF-A-80A-120G**	**1781045** **EAMD-56-46-25-23X27-U**	**1209006** **EAML-80-6-80**

Accessories

Profile mounting MUE
(order code M)

Material:
Anodised aluminium
RoHS-compliant



Dimensions and ordering data

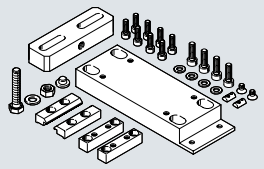
For size	B1	B2	B3	B4	B5	D1 ⌀	D2 ⌀ H7	H1	H2
125	146	12	134	27	4	5.5	5	64	17.5
160	184	12	172	33.5	4	5.5	5	76.5	17.5
220	258	19	239	49.5	4	9	5	111.5	16

For size	H3	H4	H5	L1	L2	Weight [g]	Part no.	Type
125	12	6.2	22	52	40	80	**558043**	**MUE-7 0/80**
160	12	6.2	22	52	40	80	**558043**	**MUE-7 0/80**
220	14	5.5	29.5	90	40	290	**558044**	**MUE-12 0/185**

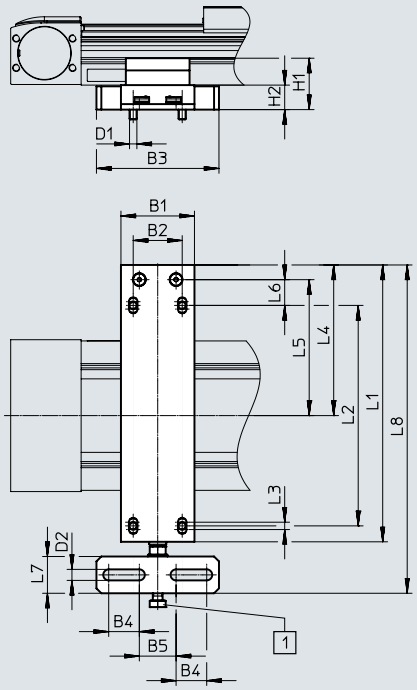
Accessories

Adjusting kit EADC-E16

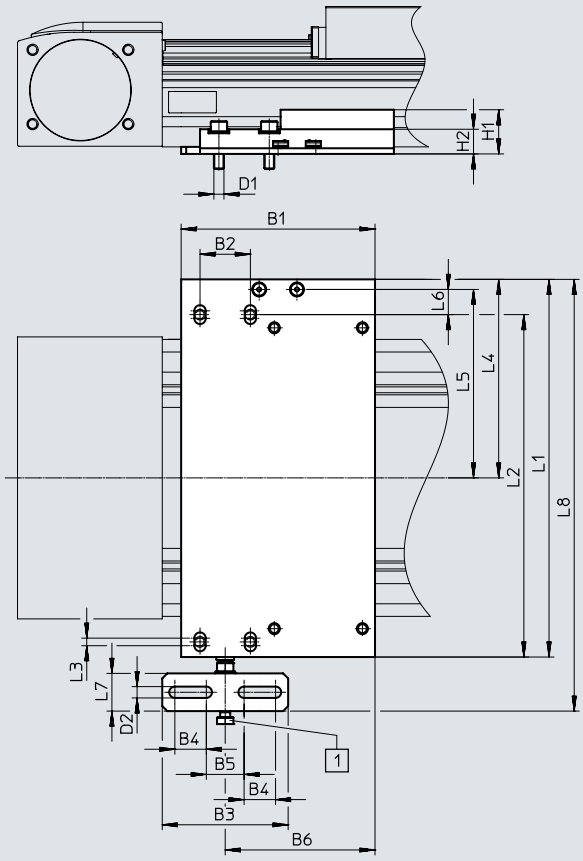
Material:
Wrought aluminium alloy
RoHS-compliant



Size 125, 160



Size 220



[1] M8 screw

Dimensions and ordering data

For size	B1	B2	B3	B4	B5	B6	D1	D2	H1	H2	L1	L2
125	60	40	100	25	30	–	M6	9	42	20	226	180
160	60	40	100	25	30	–	M6	9	44	22	266	220
220	154	40	100	25	30	119	M8	9	35.1	19.6	300	260

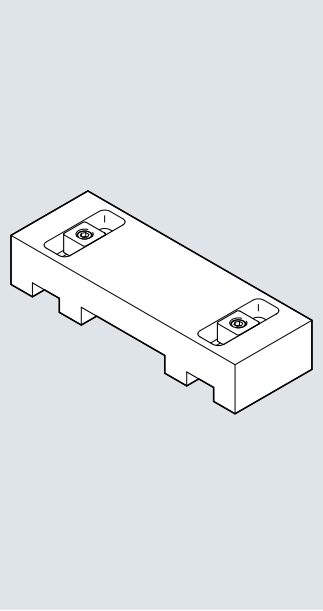
For size	L3	L4	L5	L6	L7	L8	Weight [g]	Part no.	Type
125	6	123	111	21	30	308	974	**8047580**	**EADC-E16-125-E14**
160	6	143	131	21	30	343	1189	**8047581**	**EADC-E16-160-E14**
220	6	157.7	149.7	20	30	343	1500	**8047582**	**EADC-E16-220-E14**

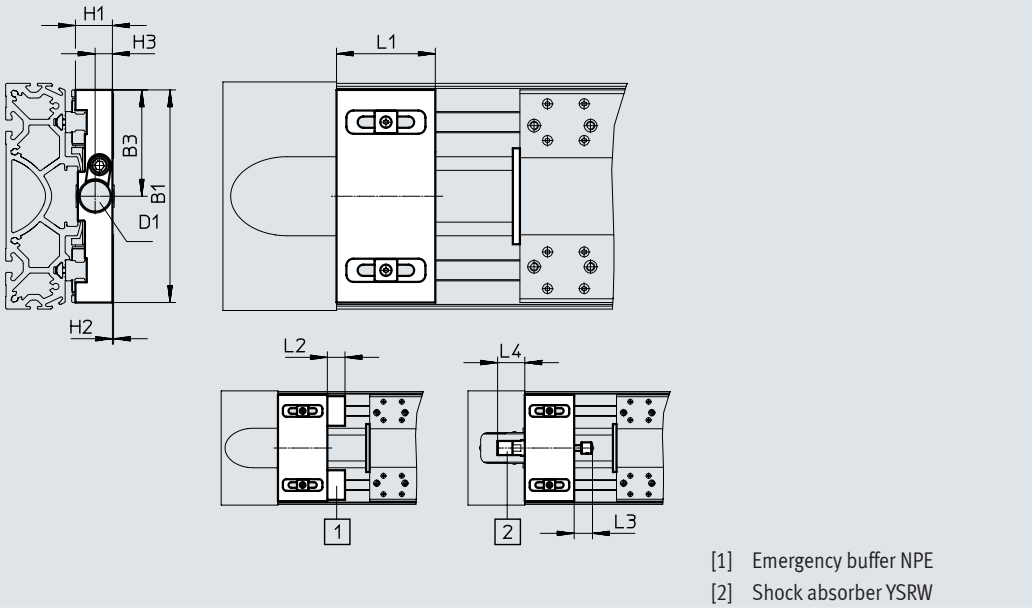
Accessories

Shock absorber retainer, retaining bracket EAYH
Emergency buffer NPE ➔ Page 31
Shock absorber YSRW ➔ Page 31
(order code A or C)

Material:
Anodised aluminium
RoHS-compliant

Cannot be used in combination with the variants GP.



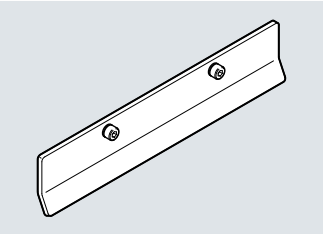


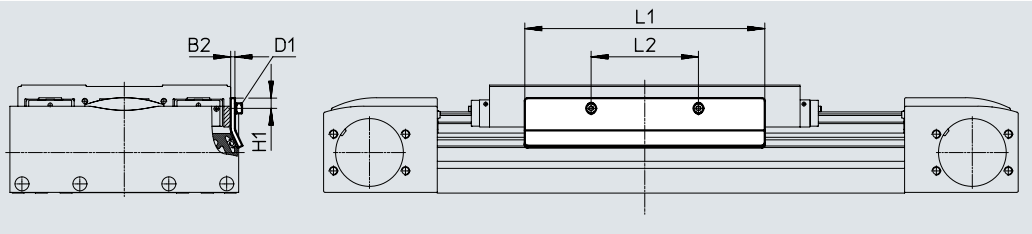
Dimensions and ordering data

For size	B1	B3	D1	H1	H2	H3	L1	L2	L3	L4 min.	Weight [g]	Part no.	Type
Shock absorber retainer													
125	120	60	M16x1	19.8	0.4	9.7	50	–	20	36	286	**1653251**	**EAYH-L2-125**
160	150.7	75.3	M22x1.5	26.2	0.8	12.3	70	–	26	38.5	622	**1653250**	**EAYH-L2-160**
220	204	102	M26x1.5	38.7	0.1	15	70	–	34	63.5	1218	**1653253**	**EAYH-L2-220**
Retaining bracket for emergency buffer													
125	120	–	–	19.8	0.4	–	50	17	–	–	260	**1662803**	**EAYH-L2-125-N**
160	150.7	–	–	26.2	0.8	–	70	25	–	–	617	**1669259**	**EAYH-L2-160-N**
220	204	–	–	38.7	0.1	–	70	30	–	–	1195	**1669260**	**EAYH-L2-220-N**

Switch lug SF-EGC-HD-1
For sensing via proximity switch
SIES-8M
(order code X or Z)

Material:
Galvanised steel
RoHS-compliant





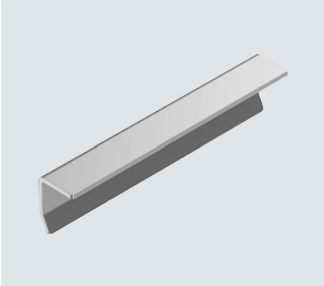
Dimensions and ordering data

For size	B2	D1	H1	L1	L2	Weight [g]	Part no.	Type
125	2	M4x8	7.8	150	56	70	**570027**	**SF-EGC-HD-1-125**
160	3	M4x8	7.3	170	76	160	**1645872**	**SF-EGC-HD-1-160**
220	3	M5x10	11.5	250	140	310	**1645866**	**SF-EGC-HD-1-220**

Accessories

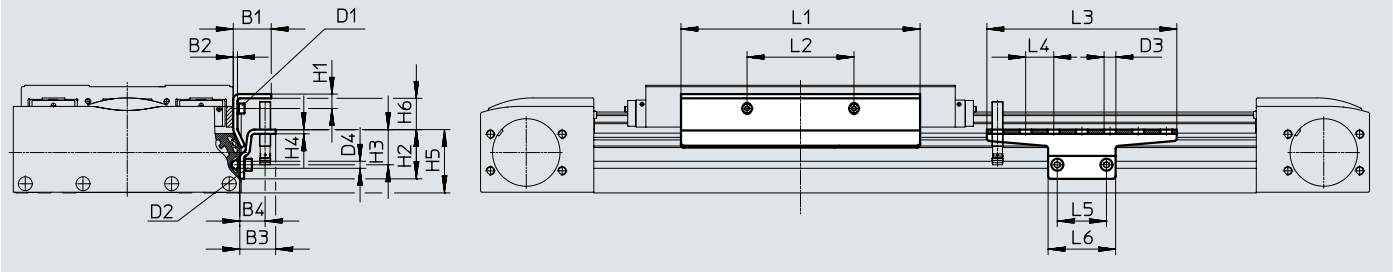
Switch lug SF-EGC-HD-2
For sensing via proximity switch
SIEN-M8B (order code O, P, W or R) or
SIES-8M
(order code X or Z)

Material:
Galvanised steel
RoHS-compliant



Sensor bracket HWS-EGC
For proximity switch SIEN-M8B
(order code O, P, W or R)

Material:
Galvanised steel
RoHS-compliant



Dimensions and ordering data

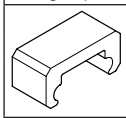
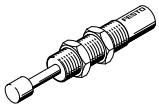
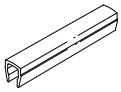
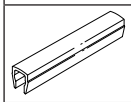
For size	B1	B2	B3	B4	D1	D2	D3 ⌀	D4 ⌀	H1	H2
125	24	2	25.5	18	M4x8	M5x8	8.4	5.2	9	35
160	27	3	25.5	18	M4x8	M5x8	8.4	5.2	10.3	35
220	31	3	25.5	18	M5x10	M5x14	8.4	5.2	11.5	65

For size	H3	H4	H5	H6	L1	L2	L3	L4	L5	L6
125	25	3	45	14	150	56	135	20	35	48
160	25	3	45	22.2	170	76	135	20	35	48
220	55	3	75	18.4	250	140	215	20	35	48

For size	Weight [g]	Part no.	Type
	Switch lug		
125	122	**570030**	**SF-EGC-HD-2-125**
160	261	**1645865**	**SF-EGC-HD-2-160**
220	430	**1645868**	**SF-EGC-HD-2-220**

For size	Weight [g]	Part no.	Type
	Sensor bracket		
125	110	**558057**	**HWS-EGC-M5**
160	110	**558057**	**HWS-EGC-M5**
220	217	**570365**	**HWS-EGC-M8-B**

Accessories

Ordering data	For size	Description	Order code	Part no.	Type	PE[1]
Emergency buffer NPE						
	125	For use in combination with retaining bracket EAYH	A	**1662475**	**NPE-125**	1
	160			**1672593**	**NPE-160**	
	220			**1672598**	**NPE-220**	
Shock absorber YSRW				Data sheets → Internet: ysrw		
	125	For use in combination with shock absorber retainer EAYH	C	**191196**	**YSRW-12-20**	1
	160			**191197**	**YSRW-16-26**	
	220			**191198**	**YSRW-20-34**	
Slot nut NST						
	125, 160[2]	For mounting slot	Y	**150914**	**NST-5-M5**	1
				8047843	**NST-5-M5-10**	10
				8047878	**NST-5-M5-50**	50
	160[3], 220	For mounting slot	Y	**150915**	**NST-8-M6**	1
				8047868	**NST-8-M6-10**	10
				8047869	**NST-8-M6-50**	50
Centring pin/sleeve ZBS/ZBH						
	125	For slide	–	**150928**	**ZBS-5**	10
	125, 160, 220			**150927**	**ZBH-9**	
Slot cover ABP						
	125, 160[2]	For mounting slot Every 0.5 m	B	**151681**	**ABP-5**	2
	160[3], 220			**151682**	**ABP-8**	
Slot cover ABP-S						
	125, 160, 220	For sensor slot Every 0.5 m	S	**563360**	**ABP-5-S1**	2
Clip SMBK						
	125, 160, 220	For sensor slot, for attaching the proximity switch cables	CL	**534254**	**SMBK-8**	10

1) Packaging unit
2) For mounting slot at the side
3) For mounting slot underneath

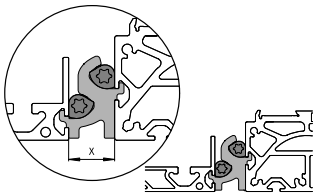
Accessories

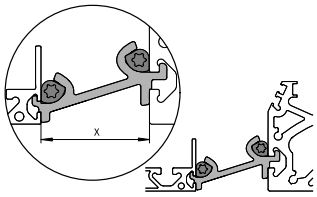
Mounting options between axis and support profile

Depending on the adapter kit, the spacing between the axis and the support profile is:
x = 20 mm or 50 mm

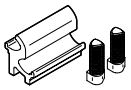
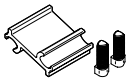
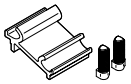
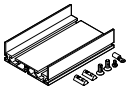
The support profile must be mounted using at least 2 adapter kits. For longer strokes, an adapter kit must be used every 500 mm.

Example





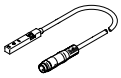
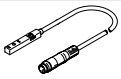
Ordering data

	For size	Description	Part no.	Type	PE[1)]
Adapter kit DHAM					
	160	• For mounting the support profile on the axis • Spacing between axis and profile is 20 mm	**562241**	**DHAM-ME-N1-CL**	1
	220		**562242**	**DHAM-ME-N2-CL**	
	125, 160	• For mounting the support profile on the axis • Spacing between axis and profile is 50 mm	**574560**	**DHAM-ME-N1-50-CL**	
	220		**574561**	**DHAM-ME-N2-50-CL**	
Support profile HMIA					
	70 … 120	• For guiding an energy chain	**539379**	**HMIA-E07-**	1

1) Packaging unit

Ordering data – Proximity switches for T-slot, inductive

Data sheets → Internet: sies

	Type of mounting	Electrical connection	Switching output	Cable length [m]	Order code	Part no.	Type
N/O contact							
	Insertable in the slot from above, flush with the cylinder profile	Cable, 3-wire	PNP	7.5	X	**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 the slot from above, flush with the cylinder profile	Cable, 3-wire	PNP	7.5	Z	**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**

Accessories

Ordering data – Proximity switches M8 (round design), inductive

Data sheets → Internet: sien

	Electrical connection	LED	Switching output	Cable length [m]	Order code	Part no.	Type
N/O contact							
	Cable, 3-wire	■	PNP	2.5	O	**150386**	**SIEN-M8B-PS-K-L**
			NPN	2.5	–	**150384**	**SIEN-M8B-NS-K-L**
	Plug M8x1, 3-pin	■	PNP	–	W	**150387**	**SIEN-M8B-PS-S-L**
			NPN	–	–	**150385**	**SIEN-M8B-NS-S-L**
N/C contact							
	Cable, 3-wire	■	PNP	2.5	P	**150390**	**SIEN-M8B-PO-K-L**
			NPN	2.5	–	**150388**	**SIEN-M8B-NO-K-L**
	Plug M8x1, 3-pin	■	PNP	–	R	**150391**	**SIEN-M8B-PO-S-L**
			NPN	–	–	**150389**	**SIEN-M8B-NO-S-L**

Ordering data – Connecting cables

Data sheets → 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	**159420**	**SIM-M8-3GD-2.5-PU**
			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**

Festo - Your Partner in Automation

1 Festo Inc.

5300 Explorer Drive
Mississauga, ON L4W 5G4
Canada

Festo Customer Interaction Center
Tel: 1 877 463 3786
Fax: 1 877 393 3786
Email: customer.service.ca@festo.com

2 Festo Pneumatic

Av. Ceylán 3,
Col. Tequesquináhuac
54020 Tlalnepantla,
Estado de México

Multinational Contact Center
01 800 337 8669

ventas.mexico@festo.com

3 Festo Corporation

1377 Motor Parkway
Suite 310
Islandia, NY 11749

4 Regional Service Center

7777 Columbia Road
Mason, OH 45040

Festo Customer Interaction Center
1 800 993 3786
1 800 963 3786
customer.service.us@festo.com

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