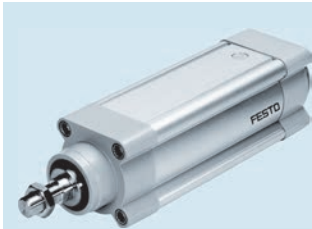


# 3 Electromechanical drives



- + Linear drives and slides
- + Semi-rotary drives
- + Electric handling modules
- + Direct drives
- + Accessories

## Highlights

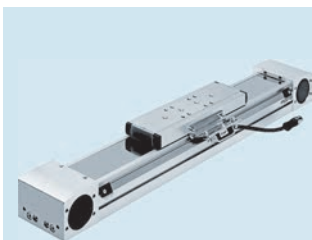


### ESBF

Electric cylinders

- + With ball screw or lead screw
- + Axial or parallel motor mounting

Page 369

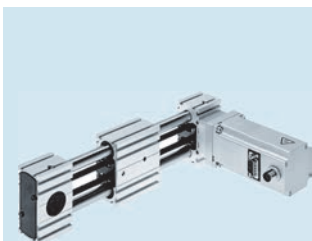


### ELGA

Toothed belt axis

- + Integrated plain bearing or roller bearing guide
- + For speeds of up to 10 m/s

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### ELGR

Toothed belt axis

- + Ready-to-install unit for quick and easy design
- + With plain or recirculating ball bearing guide

Page 461



### ERMO

Rotary drive

- + For simple rotary movements
- + With through-hole for attaching gripper solutions


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Software tool





3

<b>PositioningDrives</b>		Which electromechanical linear drive best meets your needs? Enter the data for your application, such as position values, effective loads and mounting position, and the software suggests a number of solutions.	This tool can be found <ul style="list-style-type: none"> <li>• either in the electronic catalogue by clicking on the blue button "Engineering"</li> <li>• or on the DVD under Engineering Tools.</li> </ul>
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Linear drives and slides

Type				
<b>Size</b>	16, 25, 40	32, 40, 50, 63, 80, 100	70, 80, 120, 185	125, 160, 220
<b>Max. feed force Fx</b>	50 ... 650 N	1000 ... 17000 N	300 ... 3000 N	300 ... 1300 N
<b>Repetition accuracy</b>	+/-0.02 mm	+/-0.01 mm, +/-0.015 mm, +/-0.05 mm	+/-0.02 mm	+/-0.02 mm
<b>Stroke</b>	1 ... 400 mm	100 ... 400 mm	50 ... 3000 mm	50 ... 2400 mm
<b>Description</b>	<ul style="list-style-type: none"> <li>• Linear drive with permanently attached motor</li> <li>• With ball screw</li> <li>• Optional: encoder, holding brake and female thread on the piston rod</li> <li>• Two different spindle pitches for high force or high speed</li> <li>• Suitable for simple applications in factory automation that in the past were mostly carried out using pneumatic solutions</li> <li>• Cost-optimised</li> <li>• New accessories: precision and backlash-free guidance</li> </ul>	<ul style="list-style-type: none"> <li>• With recirculating ball spindle (size 32 ... 100) or lead screw (size 32 ... 50) available as spindle drive</li> <li>• Optional: high corrosion protection, protection class IP65, suitable for use in the food industry, piston rod extension</li> <li>• Ball screw: Three spindle pitches make it possible to select the optimal force-speed ratio.</li> <li>• Ball screw: high rigidity and precision</li> <li>• Axial or parallel motor mounting</li> </ul>	<ul style="list-style-type: none"> <li>• Recirculating ball bearing guide for high loads and torques</li> <li>• Optionally with clamping unit, at one or both ends</li> <li>• Profile with optimised rigidity</li> <li>• Various spindle pitches</li> <li>• The spindle support enables maximum travel speed</li> <li>• Axial or parallel motor mounting</li> </ul>	<ul style="list-style-type: none"> <li>• With heavy-duty guide</li> <li>• With integrated ball screw</li> <li>• For maximum loads and torques, high feed forces and speeds and long service life</li> <li>• Precise, resilient DUO guide rail</li> </ul>
<b>→ Page/online</b>	<b>357</b>	<b>369</b>	<b>383</b>	<b>395</b>




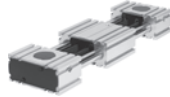
Linear drives and slides

Type				
<b>Size</b>	50, 70, 80, 120, 185	125, 160, 220	35, 45, 55, 75	10, 16
<b>Max. feed force Fx</b>	50 ... 2500 N	450 ... 1800 N	75 ... 450 N	
<b>Repetition accuracy</b>	+/-0.08 mm, +/-0.1 mm	+/-0.08 mm, +/-0.1 mm	+/-0.015 mm	+/-100.000 µm
<b>Stroke</b>	50 ... 8500 mm	50 ... 5000 mm	50 ... 300 mm	50 ... 150 mm
<b>Description</b>	<ul style="list-style-type: none"> <li>• Recirculating ball bearing guide for high loads and torques</li> <li>• Optionally with clamping unit, at one or both ends</li> <li>• Profile with optimised rigidity</li> </ul>	<ul style="list-style-type: none"> <li>• With heavy-duty guide</li> <li>• For high loads and torques, high feed forces</li> <li>• Precise, resilient DUO guide rail</li> <li>• Motor can be mounted on any one of 4 sides</li> </ul>	<ul style="list-style-type: none"> <li>• Very high rated slide loads, ideal for vertical applications such as press-fitting or joining</li> <li>• Reliable: the completely closed spindle stops dirt or stray small parts getting into the guide area</li> <li>• Flexible: motor can be attached laterally or axially, in this case turned by 4 x 90°</li> </ul>	<ul style="list-style-type: none"> <li>• Electromechanical linear axis with lead screw spindle</li> <li>• With DC servo motor</li> <li>• Easy actuation via I/O interface, PROFIBUS, CANopen, DeviceNet</li> <li>• Precise and rigid guide</li> </ul>
<b>→ Page/online</b>	<b>407</b>	<b>418</b>	<b>429</b>	<a href="#">site</a>





## Linear drives and slides

Type	 Electric slide EGSK	 Electric slide EGSP	 Spindle axis ELGA-BS-KF	 Toothed belt axis ELGA-TB-KF
<b>Size</b>	15, 20, 26, 33, 46	20, 26, 33, 46	70, 80, 120, 185	70, 80, 120, 150
<b>Max. feed force F<sub>x</sub></b>	19 ... 392 N	69 ... 466 N	300 ... 3000 N	350 ... 2000 N
<b>Repetition accuracy</b>	+/-0.003 +/-0.004 mm, +/-0.003 +/-0.01 mm, +/-0.01 mm	+/-0.003 +/-0.01 mm	+/-0.08 mm	+/-0.02 mm
<b>Stroke</b>	25 ... 840 mm	25 ... 840 mm	100 ... 3000 mm	50 ... 8500 mm
<b>Description</b>	<ul style="list-style-type: none"> <li>• Electromechanical linear axis with ball screw</li> <li>• Recirculating ball bearing guide and ball screw without caged ball bearings</li> <li>• Standardised mounting interfaces</li> <li>• Compact design</li> <li>• High rigidity</li> </ul>	<ul style="list-style-type: none"> <li>• Electromechanical linear axis with ball screw</li> <li>• Recirculating ball bearing guide with caged ball bearings</li> <li>• Size 33, 46: ball screw with caged ball bearings</li> <li>• Low-maintenance</li> <li>• Uniform operating behaviour with very low noise levels</li> <li>• Standardised mounting interfaces</li> <li>• Compact design</li> <li>• High rigidity</li> </ul>	<ul style="list-style-type: none"> <li>• Internal, precision recirculating ball bearing guide with high load capacity for high torque loads</li> <li>• Guide and toothed belt protected by cover band</li> <li>• Precision guide rail with high load capacity</li> <li>• For the highest requirements in terms of feed force and accuracy</li> <li>• Space-saving position sensing</li> <li>• Speeds up to 2 m/s with high acceleration up to 15 m/s<sup>2</sup></li> <li>• Flexible motor mounting</li> </ul>	<ul style="list-style-type: none"> <li>• Internal, precision recirculating ball bearing guide with high load capacity for high torque loads</li> <li>• Guide and toothed belt protected by cover band</li> <li>• Precision guide rail with high load capacity</li> <li>• High feed forces</li> <li>• Speeds up to 5 m/s with high acceleration up to 50 m/s<sup>2</sup></li> <li>• Flexible motor mounting</li> </ul>
<b>→ Page/online</b>	<a href="#">egsk</a>	<a href="#">egsp</a>	<a href="#">elga</a>	441


## Linear drives and slides

Type	 Toothed belt axis ELGA-TB-G	 Toothed belt axis ELGA-TB-RF	 Toothed belt axis ELGG	 Toothed belt axis ELGR
<b>Size</b>	70, 80, 120	70, 80, 120	35, 45, 55	35, 45, 55
<b>Max. feed force F<sub>x</sub></b>	350 ... 1300 N	350 ... 1300 N	50 ... 350 N	50 ... 350 N
<b>Repetition accuracy</b>	+/-0.08 mm	+/-0.08 mm	+/-0.1 mm	+/-0.1 mm
<b>Stroke</b>	50 ... 8500 mm	50 ... 7400 mm	50 ... 1200 mm	50 ... 1500 mm
<b>Description</b>	<ul style="list-style-type: none"> <li>• Integrated plain-bearing guide</li> <li>• For small and medium loads</li> <li>• Low guide backlash</li> <li>• Actuator for external guides</li> <li>• Speeds up to 5 m/s with high acceleration up to 50 m/s<sup>2</sup></li> <li>• Flexible motor mounting</li> <li>• Motor can be mounted on any one of 4 sides</li> </ul>	<ul style="list-style-type: none"> <li>• Integrated roller bearing guide</li> <li>• High speeds up to 10 m/s with high acceleration up to 50 m/s<sup>2</sup>, guide backlash = 0 mm</li> <li>• Very good operating performance under torque load</li> <li>• Heavy-duty alternative to the recirculating ball bearing guide</li> <li>• Actuator for external guides, especially with high speeds, motor assembly possible on 4 sides</li> </ul>	<ul style="list-style-type: none"> <li>• Toothed belt axis with two opposing slides</li> <li>• With low-cost plain bearing and precise ball bearing guide</li> <li>• Optional central support improves the rigidity</li> <li>• Motor can be mounted on any one of 4 sides</li> </ul>	<ul style="list-style-type: none"> <li>• Optimum price/performance ratio</li> <li>• Ready-to-install unit for quick and easy design</li> <li>• With plain or recirculating ball bearing guide</li> <li>• Motor can be mounted on any one of 4 sides</li> <li>• Also available as OMS product</li> </ul>
<b>→ Page/online</b>	441	441	<a href="#">elgg</a>	461



## Linear drives and slides

				
Type	Cantilever axis DGEA-ZR	Toothed belt axis DGE-ZR, DEG-ZR-KF	Linear drive DGE-ZR-RF	Spindle axis DGE-SP
Size	18, 25, 40	8, 12, 18, 25, 40, 63	25, 40, 63	18, 25, 40, 63
Max. feed force Fx	230 ... 1000 N	15 ... 1500 N	260... 1500 N	140 ... 1600 N
Repetition accuracy	+/-0.05 mm	+/-0.08 mm, +/-0.1 mm	+/-0.1 mm	+/-0.02 mm
Stroke	1 ... 1000 mm	1 ... 4500 mm	1 ... 5000 mm	100 ... 2000 mm
Description	<ul style="list-style-type: none"> <li>Toothed belt drive with recirculating ball bearing guide</li> <li>Dynamic cantilever operation</li> <li>Stationary drive head</li> </ul>	<ul style="list-style-type: none"> <li>Electromechanical axis with toothed belt DGE-ZR: without guide; DGE-ZR-KF: with recirculating ball bearing guide</li> <li>Optional protected version</li> </ul>	<ul style="list-style-type: none"> <li>Electromechanical axis with toothed belt and internal roller bearing guide</li> <li>High speeds possible</li> </ul>	<ul style="list-style-type: none"> <li>Without guide or with recirculating ball bearing guide</li> <li>Optional protected version</li> </ul>
→ Page/online	<a href="#">dgea</a>	<a href="#">dge-zr</a>	<a href="#">dge-zr</a>	<a href="#">dge-sp</a>


## Linear drives and slide units

	
Type	Positioning axis DMES
Size	18, 25, 40, 63
Max. feed force Fx	240 ... 3000 N
Repetition accuracy	+/-0.05 mm, +/-0.07 mm
Stroke	50 ... 1800 mm
Description	<ul style="list-style-type: none"> <li>Mechanical linear drive with lead screw spindle</li> <li>Without guide or with recirculating ball bearing guide</li> <li>High feed forces of up to 3000 N</li> </ul>
→ Page/online	<a href="#">dmes</a>





## Semi-rotary drives

		
Type	Rotary drive ERMO	Rotary module ERMB
Size	12, 16, 25, 32	20, 25, 32
Max. driving torque		0.7 ... 8.5 Nm
Max. input speed		900 ... 1350 rpm
Rotation angle	Infinite	Infinite
Description	<ul style="list-style-type: none"> <li>Electric rotary drive with stepper motor and integrated gear unit</li> <li>ServoLite closed-loop operation with encoder</li> <li>Heavy-duty bearing for high forces and torques</li> <li>Backlash-free pre-stressed rotating plate with very good axial eccentricity and concentricity properties</li> <li>Quick and accurate installation</li> <li>For simple rotary indexing table applications and as a rotary axis in multi-axis applications</li> </ul>	<ul style="list-style-type: none"> <li>Electromechanical rotary module with toothed belt</li> <li>Compact design</li> <li>Mounting interfaces on all sides</li> <li>Stable arrangement of the output shaft bearings</li> <li>Unlimited and flexible rotation angle</li> </ul>
→ Page/online	<a href="#">477</a>	<a href="#">491</a>

## Electric handling modules

	
<b>Type</b>	<b>Rotary/lifting module EHMB</b>
<b>Size</b>	20, 25, 32
<b>Max. driving torque</b>	0.7 ... 6.7 Nm
<b>Max. input speed</b>	900 ... 1350 rpm
<b>Rotation angle</b>	Infinite
<b>Description</b>	<ul style="list-style-type: none"> <li>• Complete module with combined and configurable rotary/lifting movement</li> <li>• Dynamic, flexible, economical thanks to the modular drive concept for the linear movement</li> <li>• Hollow axis with large internal diameter makes laying power supply lines easy, convenient and safe</li> </ul>
<b>→ Page/online</b>	<b>499</b>

## Direct drives


				
<b>Type</b>	<b>Short-stroke cylinder ADNE-LAS</b>	<b>Guided drive DFME-LAS</b>	<b>Electric cylinder DNCE-LAS</b>	<b>Linear drive ELGL-LAS</b>
<b>Size</b>	32, 40	32, 40	32, 40	30, 64, 120
<b>Max. feed force Fx</b>	8 ... 55 N	94 ... 202 N	93.7 ... 202 N	56 ... 475 N
<b>Repetition accuracy</b>	+/-0.01 mm	+/-0.015 mm	+0.02, +0.03 mm, +0.02 mm, +0.07 mm	+/-0.01 mm
<b>Working stroke</b>	15 ... 45 mm	100 ... 400 mm	100 ... 400 mm	1 ... 5750 mm
<b>Description</b>	<ul style="list-style-type: none"> <li>• Electric short-stroke cylinder with integrated linear motor</li> <li>• Highly dynamic movement between two end positions</li> <li>• Electronic end-position cushioning</li> <li>• Easy commissioning by teach function, Festo plug and work</li> <li>• Simple control via digital I/Os</li> </ul>	<ul style="list-style-type: none"> <li>• Consisting of freely positionable linear motor, integrated displacement encoder and reference switch</li> <li>• Recirculating ball bearing guide</li> <li>• Positioning with very high dynamic response for small loads</li> <li>• Easy actuation via I/O interface, PROFIBUS, CANopen including interpolated position mode, DeviceNet</li> </ul>	<ul style="list-style-type: none"> <li>• Consisting of freely positionable linear motor, integrated displacement encoder, reference switch and plain bearings</li> <li>• Linear motor axis with piston rod</li> <li>• Positioning with very high dynamic response for small loads</li> <li>• Easy actuation via I/O interface, PROFIBUS, CANopen including interpolated position mode, DeviceNet</li> </ul>	<ul style="list-style-type: none"> <li>• Electric linear drive with linear motor, air cushion bearing and displacement encoder</li> <li>• Air cushion bearing provides high precision, high linearity and wear-free characteristics</li> <li>• Actuation via motor controller CMMP-AS</li> </ul>
<b>→ Page/online</b>	<b>adne</b>	<b>dfme</b>	<b>dnce</b>	<b>elgl</b>

## Linear guides



				
<b>Type</b>	<b>Guide unit EAGF</b>	<b>Guide axis ELFA</b>	<b>Passive guide axis ELFR</b>	<b>Passive guide axis EGC-FA</b>
<b>Size</b>	16, 25, 32, 40, 50, 63, 80, 100	70, 80	35, 45, 55	70, 80, 120, 185
<b>Stroke</b>	1 ... 500mm	50... 7000 mm	50 ... 1500 mm	50 ... 8500 mm
<b>Guide</b>	Recirculating ball bearing guide	Roller bearing guide	Plain-bearing guide, recirculating ball bearing guide	Recirculating ball bearing guide
<b>Description</b>	<ul style="list-style-type: none"> <li>• For electric cylinder EPCO and ESBF</li> <li>• For absorption of high forces and torques from the process</li> <li>• High guide precision</li> </ul>	<ul style="list-style-type: none"> <li>• For drive axis ELGA</li> <li>• The passive guide axis is designed to support force and torque capacity in multi-axis applications</li> <li>• Higher torsional resistance</li> <li>• Reduced vibrations with dynamic loads</li> </ul>	<ul style="list-style-type: none"> <li>• Driveless guide unit with guide and freely movable slide</li> <li>• For supporting force and torque capacity in multi-axis applications</li> <li>• Higher torsional resistance</li> </ul>	<ul style="list-style-type: none"> <li>• Driveless guide unit with guide and freely movable slide</li> <li>• For supporting force and torque capacity in multi-axis applications</li> <li>• Higher torsional resistance</li> </ul>
<b>→ Page/online</b>	<b>eagf</b>	<b>elfa</b>	<b>elfr</b>	<b>egc</b>

## Linear guides

3

	
Type	Passive guide axis FDG-ZR-RF
Size	25, 40, 63
Stroke	1... 5000 mm
Guidance	Roller bearing guide
Description	<ul style="list-style-type: none"> <li>• Driveless linear guide unit with guide and freely movable slide</li> <li>• For supporting force and torque capacity in multi-axis applications</li> <li>• Higher torsional resistance</li> </ul>
→ Page/online	<a href="#">fdg</a>

## Accessories for electromechanical drives

		
Type	Bellows and gear coupling EAMC/EAMD	Connecting shaft KSK
Description	<ul style="list-style-type: none"> <li>• System product for positioning technology</li> <li>• For force-locked and backlash-free transmission of small and medium torques between electric motors and axes</li> </ul>	<ul style="list-style-type: none"> <li>• For synchronising toothed belt axes DGE and EGC</li> <li>• For torsion-resistant transmission of the necessary torque</li> <li>• For slip-free transmission of the feed speed</li> </ul>
→ Page/online	<a href="#">eamc</a>	<a href="#">ksk</a>

## Customised components – for your specific requirements

**Drives with customised designs**

Can't find the electromechanical drive you need in our catalogue?

We can offer you customised components that are tailored to your specific requirements – from minor product modifications to complete new product developments.

**Common product modifications:**

- Special strokes
- Design for special ambient conditions
- Design optimised for the fitting space
- Design with opposing carriages
- Design with absolute encoder

Many additional variants are possible. Ask your Festo sales engineer, who will be happy to help. Further information on customised components can be found on your local website at [www.festo.com](http://www.festo.com)





Overview/Configuration/Ordering  
→ [www.festo.com/catalogue/epco](http://www.festo.com/catalogue/epco)



Additional information/Support/User documentation  
→ [www.festo.com/sp/epco](http://www.festo.com/sp/epco)

Linear drives and slides

Electric cylinders with spindle drive

# EPCO



- + Linear drive with permanently mounted motor
- + With recirculating ball spindle
- + Optionally with female thread
- + Optionally with holding brake
- + Degree of protection IP40
- + Compact dimensions
- + Extensive mounting accessories for various installation situations
- + Suitable for simple applications in factory automation that in the past were mostly carried out using pneumatic solutions

# Electric cylinders EPCO, with spindle drive

3



- Electromechanical linear axis with piston rod and permanently attached motor
- Ball screw
- Easy commissioning and operation
- Activation by IO-Link
- Wide range of accessories for various installation situations
- Spare parts service
- ★ Quick ordering of basic designs → 362

→ [www.festo.com/catalogue/epco](http://www.festo.com/catalogue/epco)

## Product range overview

Type/version	Size	Stroke [mm]	Feed force [N]	Spindle pitch [mm/rev]	Product options											
					A	E	B	D	L	R	KF	C5	DIO	LK	N	P
<b>EPCO</b>																
Ball screw	16, 25, 40	50 ... 400	50 ... 650	3 ... 12.7	■	■	■	■	■	■	■	■	■	■	■	■

## Product options

- |                            |                    |                             |                                      |
|----------------------------|--------------------|-----------------------------|--------------------------------------|
| F Female piston rod thread | A Position sensing | D Cable outlet underneath   | C5 Motor controller CMMO             |
| ...E Piston rod extension  | ST Stepper motor   | L Cable outlet to the left  | DIO Digital activation I/O interface |
|                            | E With encoder     | R Cable outlet to the right | LK Activation IO-Link                |
|                            | B With brake       | KF Guide unit               | N Switching input/output NPN         |
|                            |                    |                             | P Switching input/output PNP         |

## Optimised Motion Series (OMS)

A package that makes positioning easier than ever before. The Optimised Motion Series is as easy to handle as a pneumatic cylinder, but with the functionality of an electric drive.



### Simple to select

- Easy sizing and selection using cycle time charts
- No specialist knowledge of electric drive technology required

### Ordering and logistics

- All the part components required with a single part number
- Motors mounted on electric cylinders

### Quick to configure

- Parameterisation and commissioning via web server/browser
- Parameterise up to 7 freely definable positions directly on the PC



For simple positioning tasks

Electric cylinder EPCO



Motor controller CMMO

→ 566

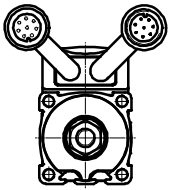


## Product options

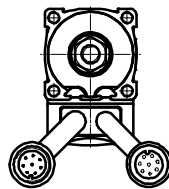
### Motor attachment variants

EPCO-16

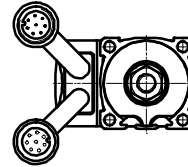
Standard



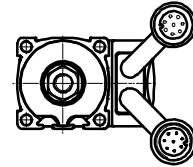
Underneath (feature D)



Left (feature L)

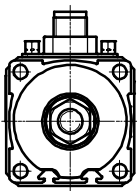


Right (feature R)

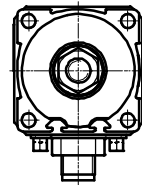


EPCO-25/-40

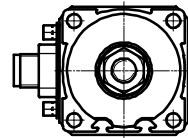
Standard



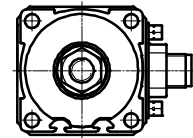
Underneath (feature D)



Left (feature L)



Right (feature R)



### Electric cylinder EPCO with guide unit EAGF-P1



The guide unit provides protection from torsion in the case of high torque loads. It offers high precision guiding for work-piece handling and other applications. The guide unit can optionally be ordered via the order reference.

Integrated mounting interfaces allow direct mounting for numerous multi-axis combinations, including connection to:

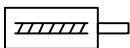
- Toothed belt axis ELGR
- Rotary drive ERMO
- Mini slide DGSL

#### Note

Technical data for the guide unit EAGF-P1

→ [www.festo.com/eagf-p1](http://www.festo.com/eagf-p1)

## Data sheet



3

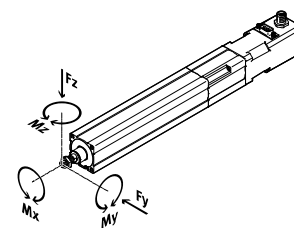


## Technical Data

Dimensions → 368

## Note

Engineering software  
PositioningDrives  
→ [www.festo.com](http://www.festo.com)



Technical Data		16		25		40	
Size		16		25		40	
Spindle design		3P	8P	3P	10P	5P	12.7P
Working stroke	[mm]	50 ... 200		50 ... 300		50 ... 400	
Spindle pitch <sup>1)</sup>	[mm/rev]	3	8	3	10	5	12.7
Spindle diameter	[mm]	8	8	10	10	12	12.7
Max. effective load <sup>2)</sup>							
Horizontal <sup>3)</sup>	[kg]	24	8	60	20	120	40
Vertical	[kg]	12	4	30	10	60	20
Max. feed force $F_x$	[N]	125	50	350	105	650	250
Max. speed	[mm/s]	125	300	150	500	180	460
Max. acceleration	[m/s <sup>2</sup> ]	10					
Reversing backlash <sup>4)</sup>	[mm]	≤ 0.1					
Repetition accuracy	[mm]	±0.02					

1) Nominal value varies due to component tolerances.

2) Payload as a function of speed and acceleration

3) Note max. lateral force.

4) In new condition.

Electrical data		16		25		40	
Size		16		25		40	
Motor							
Nominal voltage	[V DC]	24					
Nominal current	[A]	1.4		3		4.2	
Brake							
Nominal voltage	[V DC]	24 ±10%					
Rated output	[W]	8					
Holding torque	[Nm]	0.09		0.5		1.13	
Encoder							
Rotary position encoder		Incremental					
Rotary position encoder measuring principle		Opto-electrical					
Pulses/revolution	[1/rev]	500					
Interface		RS422, TTL, AB channel, zero index					
Operating voltage of encoder	[V DC]	5					

## Operating conditions

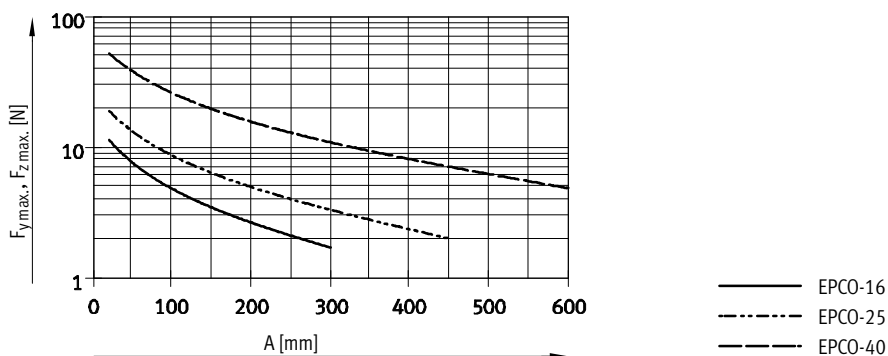
Ambient temperature <sup>5)</sup>	[°C]	0 ... +50	
Degree of protection		IP40	

5) Note operating range of proximity sensors and motors.

## Data sheet

Mass moment of inertia							
Size	16			25		40	
Spindle design	3P	8P	3P	10P	5P	12.7P	
J <sub>0</sub> with 0 mm stroke							
EPCO-...-ST	[kg mm <sup>2</sup> ]	2.28	2.29	9.33	9.40	33.25	33.75
EPCO-...-ST-B	[kg mm <sup>2</sup> ]	2.97	2.98	10.63	10.70	34.55	35.05
j <sub>S</sub> per meter stroke	[kg mm <sup>2</sup> /m]	2.53	2.65	4.87	5.78	11.66	16.70
j <sub>L</sub> per kg payload	[kg mm <sup>2</sup> /kg]	0.23	1.62	0.23	2.54	0.64	4.09

The mass moment of inertia  $J_A$  of the electric cylinder is calculated as follows:

$$J_A = J_0 + j_S \times \text{working stroke [m]} + j_L \times m_{\text{moving effective load [kg]}}$$
Maximum permissible lateral forces  $F_{y_{\max}}$  and  $F_{z_{\max}}$  on the piston rod as a function of projection A

## Note

Technical data for the guide unit  
EAGF-P1

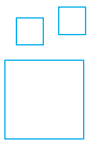
→ [www.festo.com/eagf-p1](http://www.festo.com/eagf-p1)

Size	16			25		40	
Spindle design	3P	8P	3P	10P	5P	12.7P	
$F_{x_{\max}}$ (static)	[N]	125	50	350	105	650	250
$M_{x_{\max}}$	[Nm]	0			0		
$M_{y_{\max}}, M_{z_{\max}}$	[Nm]	0.6			1.0		3.3

## Materials

Bearing cap	Smooth anodised wrought aluminium alloy
Cylinder barrel	Smooth anodised wrought aluminium alloy
Piston rod	High-alloy stainless steel
Spindle	Rolled steel
Spindle nut	Steel
Drive cover	Wrought aluminium alloy

## Ordering – Product options



Configurable  
product

This product and all its options can  
be ordered using the configurator.

The configurator can be found under  
Products on the DVD or

→ [www.festo.com/catalogue/...](http://www.festo.com/catalogue/...)

Enter the type code in the search field.

3

★ Quick ordering<sup>1)</sup>

EPCO-16		
Stroke [mm]	Part no.	Type
<b>Spindle pitch 3 mm/rev, with encoder</b>		
50	1476415	EPCO-16-50-3P-ST-E
100	1476417	EPCO-16-100-3P-ST-E
150	1476419	EPCO-16-150-3P-ST-E
200	1476421	EPCO-16-200-3P-ST-E
<b>Spindle pitch 8 mm/rev, with encoder</b>		
50	1476522	EPCO-16-50-8P-ST-E
100	1476524	EPCO-16-100-8P-ST-E
150	1476526	EPCO-16-150-8P-ST-E
200	1476528	EPCO-16-200-8P-ST-E

EPCO-25		
Stroke [mm]	Part no.	Type
<b>Spindle pitch 3 mm/rev, with encoder</b>		
50	1470698	EPCO-25-50-3P-ST-E
100	1470700	EPCO-25-100-3P-ST-E
150	1470702	EPCO-25-150-3P-ST-E
200	1470704	EPCO-25-200-3P-ST-E
300	1470706	EPCO-25-300-3P-ST-E
<b>Spindle pitch 10 mm/rev, with encoder</b>		
50	1470769	EPCO-25-50-10P-ST-E
100	1470771	EPCO-25-100-10P-ST-E
150	1470773	EPCO-25-150-10P-ST-E
200	1470775	EPCO-25-200-10P-ST-E
300	1470777	EPCO-25-300-10P-ST-E

EPCO-40		
Stroke [mm]	Part no.	Type
<b>Spindle pitch 5 mm/rev, with encoder</b>		
50	1472501	EPCO-40-50-5P-ST-E
100	1472503	EPCO-40-100-5P-ST-E
150	1472505	EPCO-40-150-5P-ST-E
200	1472507	EPCO-40-200-5P-ST-E
300	1472509	EPCO-40-300-5P-ST-E
<b>Spindle pitch 12.7 mm/rev, with encoder</b>		
50	1472617	EPCO-40-50-12.7P-ST-E
100	1472619	EPCO-40-100-12.7P-ST-E
150	1472621	EPCO-40-150-12.7P-ST-E
200	1472623	EPCO-40-200-12.7P-ST-E
300	1472625	EPCO-40-300-12.7P-ST-E

1) All products in this table are easy to select and quick to order.

## Order code

EPCO - - - - ST - - - + +	
<b>Type</b>	
EPCO	Electric cylinder
<b>Size</b>	
	<b>Stroke [mm]</b>
	<b>Spindle pitch [mm/rev]</b>
16	50, 75, 100, 125, 150, 175, 200 3P, 8P
25	50, 75, 100, 125, 150, 175, 200, 250, 300 3P, 10P
40	50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400 5P, 12.7P
<b>Position sensing</b>	
-	None
A	Via proximity sensor <span style="border: 1px solid black; padding: 0 2px;">1</span>
<b>Motor type</b>	
ST	Stepper motor
<b>Measuring unit</b>	
-	None
E	With encoder
<b>Brake</b>	
-	None
B	With brake
<b>Cable outlet direction</b>	
-	Top (standard)
D	Underneath
L	Left
R	Right
<b>Guide unit</b>	
-	None
KF	Recirculating ball bearing guide with two guide rods
<b>Connecting cable</b>	
-	None
1.5E	1.5 m, straight plug <span style="border: 1px solid black; padding: 0 2px;">2</span>
1.5EA	1.5 m, angled plug <span style="border: 1px solid black; padding: 0 2px;">2</span>
2.5E	2.5 m, straight plug <span style="border: 1px solid black; padding: 0 2px;">2</span>
2.5EA	2.5 m, angled plug <span style="border: 1px solid black; padding: 0 2px;">2</span>
5E	5 m, straight plug <span style="border: 1px solid black; padding: 0 2px;">2</span>
5EA	5 m, angled plug <span style="border: 1px solid black; padding: 0 2px;">2</span>
<b>Motor controller</b>	
-	None
C5	CMMO, 5A <span style="border: 1px solid black; padding: 0 2px;">2</span>
<b>Bus protocol / Activation</b>	
-	None
DIO	Digital I/O interface <span style="border: 1px solid black; padding: 0 2px;">3</span>
LK	IO-Link <span style="border: 1px solid black; padding: 0 2px;">3</span>
<b>Switching input/output</b>	
N	NPN <span style="border: 1px solid black; padding: 0 2px;">3</span> <span style="border: 1px solid black; padding: 0 2px;">4</span>
P	PNP <span style="border: 1px solid black; padding: 0 2px;">3</span>

1 Must be selected if encoder E is not selected    2 Only with encoder E selected

3 Only in combination with motor controller C5

4 Not with IO-Link LK

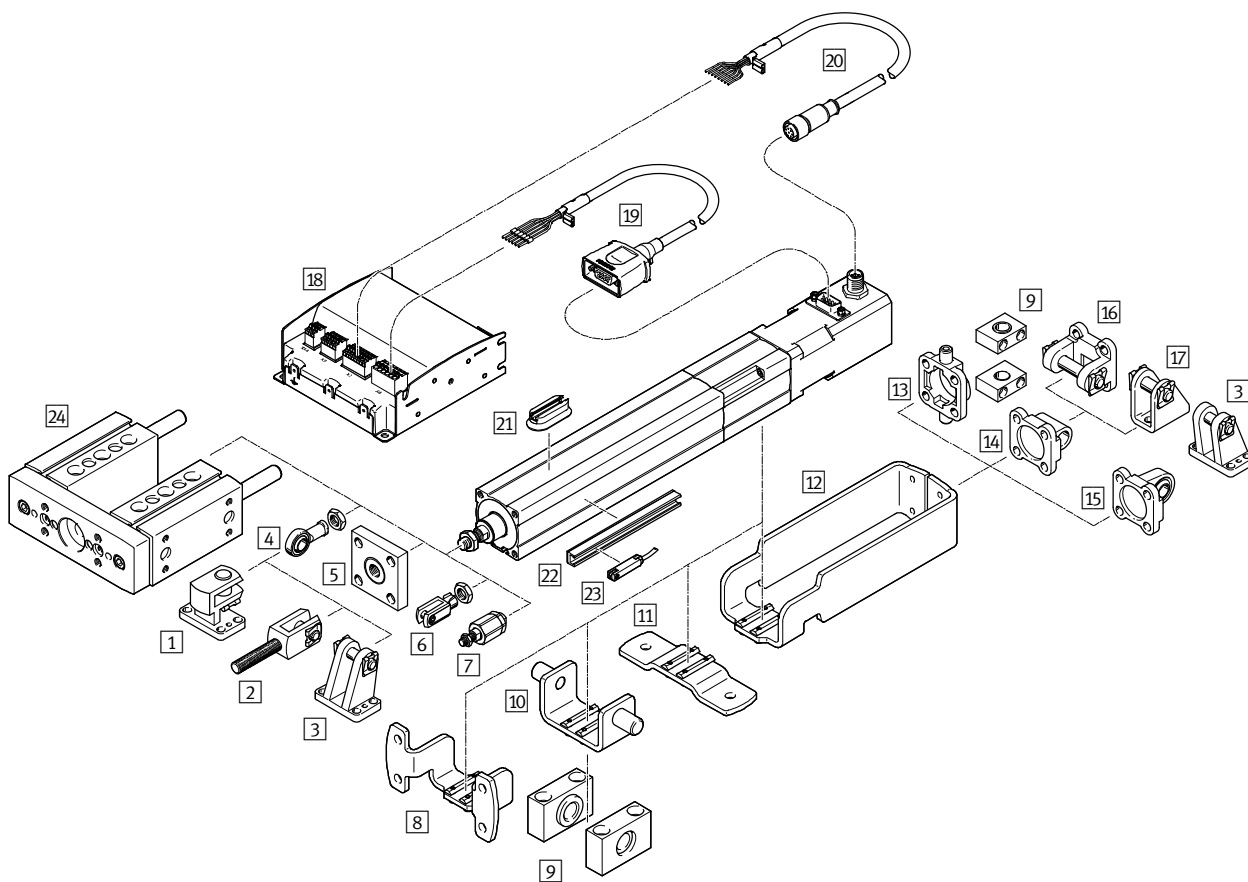
**Order example:** EPCO-25-50-10P-A-ST-EB-L+5EA+C5DION

Electric cylinder - size 25 - stroke 50 mm - spindle pitch 10 mm/rev. - with position sensing for proximity switch - stepper motor - with encoder - with brake - with outlet cable top left - without guide unit - interconnecting cable 5 m angled plug - with motor controller CMMO - with control digital I/O interface - with switch in-/output NPN

# Electric cylinders EPCO, with spindle drive

## Accessories

3



		For size			→ Page/online
		16	25	40	
1	Right-angle clevis foot LQG	-	-	■	365
2	Rod clevis SGA	-	-	■	365
3	Clevis foot LBG	-	-	■	365
4	Rod eye SGS	■	■	■	365
5	Coupling piece KSG	-	-	■	365
6	Rod clevis SG/CRSG	■	■	■	365
7	Self-aligning rod coupler FK	■	■	■	365
8	Flange mounting EAHH	■	■	■	365
9	Trunnion support LNZG	■	■	■	365
10	Swivel mounting EAHS	■	■	■	365
11	Foot mounting EAHF	■	■	■	365
12	Adapter kit EAHA	■	■	■	365
13	Trunnion flange ZNCF	-	-	■	365

		For size			→ Page/online
		16	25	40	
14	Swivel flange SNCL	■	■	■	365
15	Swivel flange SNCS	-	-	■	365
16	Swivel flange SNCB	-	-	■	365
17	Clevis foot LBN	■	■	■	365
18	Motor controller CMMO	■	■	■	566
19	Motor cable NEBM	■	■	■	367
20	Encoder cable NEBM	■	■	■	367
21	Mounting kit CRSMB	■	■	■	365
22	Sensor rail SAMH	■	■	■	365
23	Proximity sensor SME/SMT-8	■	■	■	366
24	Guide unit EAGF-P1	■	■	■	366





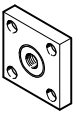


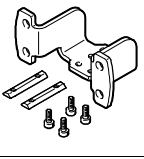
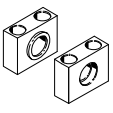
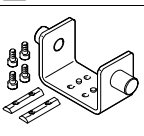
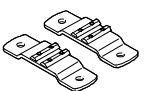
**Note**

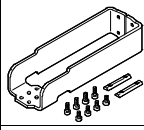
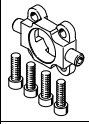
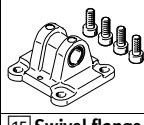

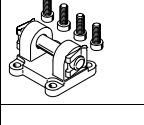
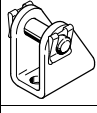
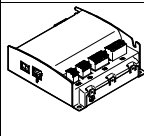

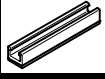
For applications involving high loads, the cylinder must not be mounted exclusively via the mounting thread on the front.

The mass of the motor can be amplified by the lever effect, which can result in the mounting thread being torn out.



## Accessories – Ordering data

	For size	Part no.	Type
<b>1</b>	<b>Right-angle clevis foot</b> <span style="float:right">Technical data online: → <a href="#">lqg</a></span>		
	40	31769	LQG-40
<b>2</b>	<b>Rod clevis</b> <span style="float:right">Technical data online: → <a href="#">sga</a></span>		
	40	32954	SGA-M10X1,25
<b>3</b>	<b>Clevis foot</b> <span style="float:right">Technical data online: → <a href="#">lbg</a></span>		
	40	31762	LBG-40
<b>4</b>	<b>Rod eye</b> <span style="float:right">Technical data online: → <a href="#">sgs</a></span>		
	16	★ 9254	SGS-M6
	25	★ 9255	SGS-M8
	40	★ 9261	SGS-M10X1,25
<b>5</b>	<b>Coupling piece</b> <span style="float:right">Technical data online: → <a href="#">ksg</a></span>		
	40	32963	KSG-M10X1,25
<b>6</b>	<b>Rod clevis</b> <span style="float:right">Technical data online: → <a href="#">sg</a></span>		
	16	★ 3110	SG-M6
	25	★ 3111	SG-M8
	40	★ 6144	SG-M10X1,25
<b>7</b>	<b>Self-aligning rod coupler</b> <span style="float:right">Technical data online: → <a href="#">fk</a></span>		
	16	★ 2061	FK-M6
	25	★ 2062	FK-M8
	40	★ 6140	FK-M10X1,25
<b>8</b>	<b>Flange mounting</b> <span style="float:right">Dimensions online: → <a href="#">epco</a></span>		
	16	★ 1434906	EAHH-P1-16
	25	★ 1434907	EAHH-P1-25
	40	★ 1434908	EAHH-P1-40
<b>9</b>	<b>Trunnion support</b> <span style="float:right">Technical data online: → <a href="#">lnzg</a></span>		
	16	★ 1434912	LNZG-16
	25	32959	LNZG-32
	40	32960	LNZG-40/50
<b>10</b>	<b>Swivel mounting</b> <span style="float:right">Dimensions online: → <a href="#">epco</a></span>		
	16	★ 1434909	EAHS-P1-16
	25	★ 1434910	EAHS-P1-25
	40	★ 1434911	EAHS-P1-40
<b>11</b>	<b>Foot mounting</b> <span style="float:right">Dimensions online: → <a href="#">epco</a></span>		
	16	★ 1434903	EAHF-P1-16
	25	★ 1434904	EAHF-P1-25
	40	★ 1434905	EAHF-P1-40

	For size	Part no.	Type
<b>12</b>	<b>Adapter kit</b> <span style="float:right">Dimensions online: → <a href="#">epco</a></span>		
	16	★ 1434900	EAHA-P1-16
	25	★ 1434901	EAHA-P1-25
	40	★ 1434902	EAHA-P1-40
<b>13</b>	<b>Trunnion flange</b> <span style="float:right">Dimensions online: → <a href="#">epco</a></span>		
	40	174412	ZNCF-40
<b>14</b>	<b>Swivel flange</b> <span style="float:right">Dimensions online: → <a href="#">epco</a></span>		
	16	537791	SNCL-16
	25	537793	SNCL-25
	40	★ 174405	SNCL-40
<b>15</b>	<b>Swivel flange</b> <span style="float:right">Dimensions online: → <a href="#">epco</a></span>		
	40	★ 174398	SNCS-40
<b>16</b>	<b>Swivel flange</b> <span style="float:right">Dimensions online: → <a href="#">epco</a></span>		
	40	★ 174391	SNCB-40
<b>17</b>	<b>Clevis foot</b> <span style="float:right">Technical data online: → <a href="#">lbn</a></span>		
	16	★ 6058	LBN-12/16
	25	★ 6059	LBN-20/25
	40	195861	LBN-40
<b>18</b>	<b>Motor controller</b> <span style="float:right">Technical data → 566</span>		
	With I/O interface		
	PNP	★ 1512316	CMMO-ST-C5-1-DIOP
	NPN	★ 1512317	CMMO-ST-C5-1-DION
	With IO-Link		
	PNP	1512320	CMMO-ST-C5-1-LKP
<b>21</b>	<b>Mounting kit for proximity sensor</b> <span style="float:right">Technical data online: → <a href="#">crsmb</a></span>		
	16, 25, 40	525565	CRSMB-8-32/100 <sup>1</sup>
<b>22</b>	<b>Sensor rail<sup>4)</sup> for proximity sensor</b> <span style="float:right">Technical data online: → <a href="#">samh</a></span>		
	16, 25, 40	1600093	SAMH-N8-SR-50 <sup>2</sup>
		1600118	SAMH-N8-SR-100 <sup>3</sup>

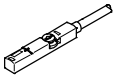
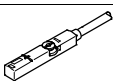
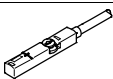

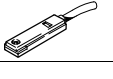
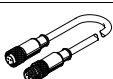
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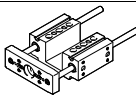
2) Length: 50 mm.

3) Length: 100 mm.

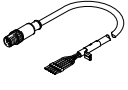
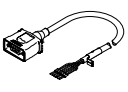
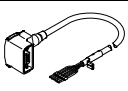
4) Size 25 can only be used with proximity sensor SMT-8 (magneto-resistive).

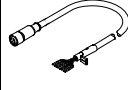
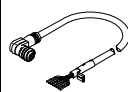
## Accessories – Ordering data

		Cable length [m]		Part no.	Type	
<b>23</b>	<b>Proximity sensor for T-slot, magneto-resistive – N/O contact</b>					<b>Technical data → 878</b>
	PNP, cable	2.5	★	574335	SMT-8M-A-PS-24V-E-2,5-OE	
	PNP, plug	0.3	★	574334	SMT-8M-A-PS-24V-E-0,3-M8D	
	PNP, plug	0.3	★	574337	SMT-8M-A-PS-24V-E-0,3-M12	
	NPN, cable	2.5	★	574338	SMT-8M-A-NS-24V-E-2,5-OE	
	NPN, plug	0.3	★	574339	SMT-8M-A-NS-24V-E-0,3-M8D	
<b>Magneto-resistive – N/C contact</b>						<b>Technical data → 878</b>
	PNP, cable	7.5	★	574340	SMT-8M-A-PO-24V-E-7,5-OE	
<b>23</b>	<b>Proximity sensor for T-slot, magnetic reed – N/O contact</b>					<b>Technical data → 873</b>
	Cable	2.5	★	543862	SME-8M-DS-24V-K-2,5-OE	
	Cable	5.0	★	543863	SME-8M-DS-24V-K-5,0-OE	
	Cable	2.5	★	543872	SME-8M-ZS-24V-K-2,5-OE	
	Plug	0.3	★	543861	SME-8M-DS-24V-K-0,3-M8D	
						<b>Technical data → 875</b>
	Cable	2.5		150855	SME-8-K-LED-24	
	Plug	0.3		150857	SME-8-S-LED-24	
<b>Magnetic reed – N/C contact</b>						<b>Technical data → 875</b>
	Cable	7.5		160251	SME-8-O-K-LED-24	
<b>Connecting cable</b>						
	–	0.5		175488	KM8-M8-GSGD-0,5	
	–	1.0		175489	KM8-M8-GSGD-1	
	–	2.5		165610	KM8-M8-GSGD-2,5	
	–	5.0		165611	KM8-M8-GSGD-5	

	For size	Stroke [mm]		Part no.	Type	
<b>24</b>	<b>Guide unit</b>					<b>Technical data online: → eagf</b>
	16	50		3192932	EAGF-P1-KF-16-50	
		100		3192934	EAGF-P1-KF-16-100	
		150		3192936	EAGF-P1-KF-16-150	
		200		3192938	EAGF-P1-KF-16-200	
		75, 125, 175		3192939	EAGF-P1-KF-16-	
	25	50		3192943	EAGF-P1-KF-25-50	
		100		3192945	EAGF-P1-KF-25-100	
		150		3192947	EAGF-P1-KF-25-150	
		200		3192949	EAGF-P1-KF-25-200	
		300		3192951	EAGF-P1-KF-25-300	
		75, 125, 175, 250		3192952	EAGF-P1-KF-25-	
	40	50		3192955	EAGF-P1-KF-40-50	
		100		3192957	EAGF-P1-KF-40-100	
		150		3192959	EAGF-P1-KF-40-150	
		200		3192961	EAGF-P1-KF-40-200	
		300		3192963	EAGF-P1-KF-40-300	
		75, 125, 175, 250, 350, 400		3192966	EAGF-P1-KF-40-	

Accessories – Ordering data

	Cable length [m]		Part no.	Type
<b>19 Motor cable<sup>1)</sup></b>				
<b>For EPCO-16</b>				
<b>Straight plug</b>				
	1.5	★	1449600	NEBM-M12G8-E-1.5-Q5-LE6
	2.5	★	1449601	NEBM-M12G8-E-2.5-Q5-LE6
	5.0	★	1449602	NEBM-M12G8-E-5-Q5-LE6
	7.0	★	1449603	NEBM-M12G8-E-7-Q5-LE6
	10.0	★	1449604	NEBM-M12G8-E-10-Q5-LE6
<b>For EPCO-25/-40</b>				
<b>Straight plug</b>				
	1.5	★	1450368	NEBM-S1G9-E-1.5-Q5-LE6
	2.5	★	1450369	NEBM-S1G9-E-2.5-Q5-LE6
	5.0	★	1450370	NEBM-S1G9-E-5-Q5-LE6
	7.0	★	1450371	NEBM-S1G9-E-7-Q5-LE6
	10.0	★	1450372	NEBM-S1G9-E-10-Q5-LE6
<b>Angled plug</b>				
	1.5	★	1450736	NEBM-S1W9-E-1.5-Q5-LE6
	2.5	★	1450737	NEBM-S1W9-E-2.5-Q5-LE6
	5.0	★	1450738	NEBM-S1W9-E-5-Q5-LE6
	7.0	★	1450739	NEBM-S1W9-E-7-Q5-LE6
	10.0	★	1450740	NEBM-S1W9-E-10-Q5-LE6

	Cable length [m]		Part no.	Type
<b>20 Encoder cable<sup>1)</sup></b>				
<b>For EPCO-16/-25/-40</b>				
<b>Straight plug</b>				
	1.5	★	1451586	NEBM-M12G8-E-1.5-LE8
	2.5	★	1451587	NEBM-M12G8-E-2.5-LE8
	5.0	★	1451588	NEBM-M12G8-E-5-LE8
	7.0	★	1451589	NEBM-M12G8-E-7-LE8
	10.0	★	1451590	NEBM-M12G8-E-10-LE8
<b>For EPCO-25/-40</b>				
<b>Angled plug</b>				
	1.5	★	1451674	NEBM-M12W8-E-1.5-LE8
	2.5	★	1451675	NEBM-M12W8-E-2.5-LE8
	5.0	★	1451676	NEBM-M12W8-E-5-LE8
	7.0	★	1451677	NEBM-M12W8-E-7-LE8
	10.0	★	1451678	NEBM-M12W8-E-10-LE8

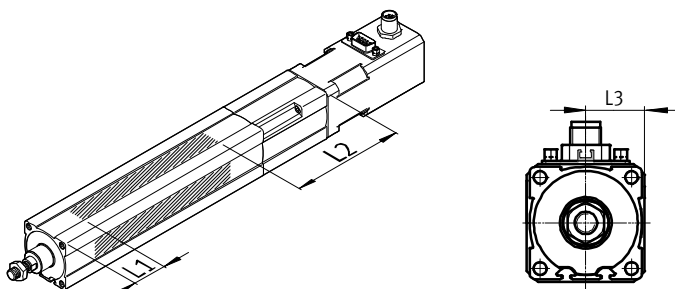
1) Other cable lengths on request.

Sensor mounting

The sensor mountings can only be attached within the highlighted area due to the asymmetry of the internal magnets.

The proximity sensors may not switch reliably if they are mounted outside of this area.

The overall length of the sensor rail SAMH corresponds to the length of the sensing range plus approx. 10 mm adjustment range on either side for the proximity sensors.

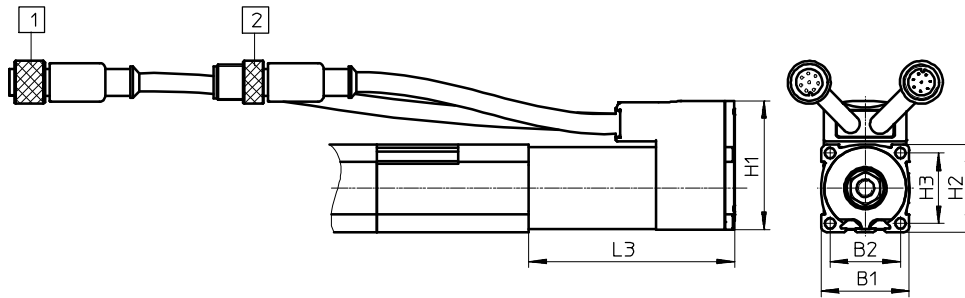


Size	L1	L2	L3
16	29	95	15
25	33	121	20
40	40	150	27.5

# Electric cylinders EPCO, with spindle drive

## Dimensions

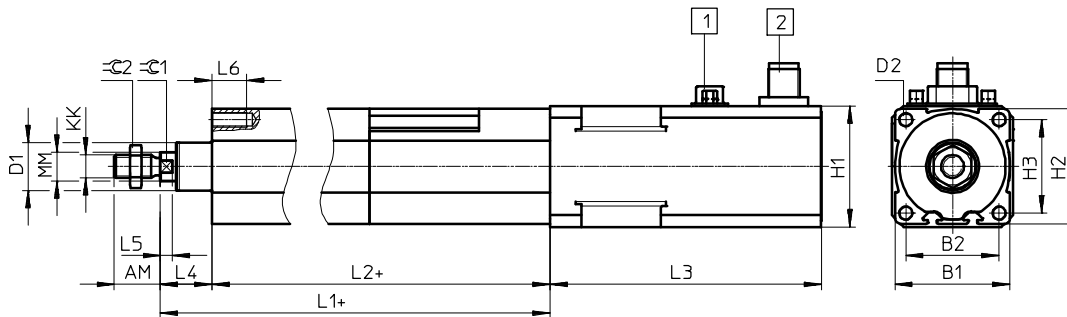
### EPCO-16



1 Motor connection:  
Round plug M12, 8-pin, socket  
cable length: 350 mm

2 Encoder connection:  
Round plug M12, 8-pin, pins  
cable length: 250 mm

### EPCO-25/-40



1 Motor connection:  
SUB-D plug, 9-pin, pins

2 Encoder connection: Round plug M12, 8-pin, pins + = plus stroke length

Size	AM	B1	B2	D1 ∅	D2 ∅	H1	H2	H3	KK	L1	L2
[mm]	-0.5			±0.05							±1
16	12	30	24	13.27	M4	44	30	24	M6	143	127
25	16	40	32.5	17.27	M5	42 <sup>+0,3</sup>	40	32.5	M 8	174.6	156.6
40	19	55	42	26.52	M6	56.4	55	42	M10x1.25	214.2	192.7

Size [mm]	L3				L4	L5	L6	MM	≡C1	≡C2
	EPCO-...	-E	-B	-EB						
16	70±1	70±1	96±1,5	96±1,5	16	3.7	10	8	7	10
25	66±1	94.4±1,2	114.4±1,3	127.4±1,3	18	4.2	12	10	9	13
40	73.5±0,8	102.5±1,1	123.5±1,1	138±1,1	21.5	4.7	14	12	10	17



Overview/Configuration/Ordering  
→ [www.festo.com/catalogue/esbf](http://www.festo.com/catalogue/esbf)



Additional information/Support/User documentation  
→ [www.festo.com/sp/esbf](http://www.festo.com/sp/esbf)

Linear drives and slides

Electric cylinders with spindle drive

ESBF



- + With spindle drive
- + Optionally with high corrosion protection
- + Optionally with degree of protection IP65
- + Optional suitability for use in the food zone
- + Optionally with piston rod extension
- + Comprehensive range of accessories

# Electric cylinders ESBF, with spindle drive

3



- Electromechanical linear axis with piston rod based on ISO 15552
- Ball screw, lead screw
- Axial or parallel (U-shaped) motor mounting
- Comprehensive range of accessories
- Spare parts service
- ★ Quick ordering of basic designs → 373

→ [www.festo.com/catalogue/esbf](http://www.festo.com/catalogue/esbf)

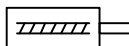
## Product range overview

Type/Version	Size	Stroke [mm]	Feed force [kN]	Spindle pitch [mm/rev]										
				2.5	3	4	5	10	15	16	20	25	32	40
<b>ESBF</b>														
BS – Ball screw	32	30 ... 800	1	–	–	–	■	■	–	–	–	–	–	–
	40	30 ... 800	3	–	–	–	■	■	–	■	–	–	–	–
	50	30 ... 1000	5	–	–	–	■	■	–	–	■	–	–	–
	63	30 ... 1200	7	–	–	–	■	■	–	–	–	■	–	–
	80	30 ... 1500	12	–	–	–	■	–	■	–	–	–	■	–
	100	30 ... 1500	17	–	–	–	■	–	–	–	■	–	–	■
LS - Lead screw	32	30 ... 800	1	■	–	–	–	–	–	–	–	–	–	–
	40	30 ... 800	3	–	■	–	–	–	–	–	–	–	–	–
	50	30 ... 1000	5	–	–	■	–	–	–	–	–	–	–	–

## Product options

- |   |                                 |    |                           |    |  |      |                      |
|---|---------------------------------|----|---------------------------|----|--|------|----------------------|
| F | Female thread on the piston rod | S1 | Degree of protection IP65 | F1 | Suitable for use in the food industry in accordance with extended information on materials | ...E | Piston rod extension |
|   |                                 | R3 | High corrosion protection |    |  |      |                      |

## Data sheet



Technical data – Ball screw										Dimensions → 381
Size		32			40			50		
Spindle pitch	[mm/rev]	5	10	5	10	16	5	10	20	
Working stroke	[mm]	30 ... 800			30 ... 800			30 ... 1000		
Spindle diameter	[mm]	25			32			40		
Max. force of the cylinder <sup>1)</sup>	[kN]	1	1	3	3	2.6	5	5	4.5	
Max. driving torque	[Nm]	1.1	2	3	5.6	7.7	4.8	9.2	16.3	
Max. radial force <sup>2)</sup>	[N]	115			130			300		
Max. speed	[m/s]	0.55	1.1	0.4	0.8	1.2	0.3	0.6	1.2	
Max. rotational speed	[rpm]	6600	6600	4800	4800	4500	3600	3600	3600	
Max. acceleration	[m/s <sup>2</sup> ]	5	15	5	15	25	5	15	25	
Max. angle of rotation at the piston rod	[°]	±0.25			±0.2			±0.15		
Reversing backlash <sup>3)</sup>	[mm]	< 0.03	< 0.04	< 0.03	< 0.03	< 0.04	< 0.03	< 0.03	< 0.04	
Repetition accuracy	[mm]	±0.01								
No-load driving torque <sup>4)</sup>	[Nm]	0.1			0.2			0.3		

Size		63			80			100		
Spindle pitch	[mm/rev]	5	10	25	5	15	32	5	20	40
Working stroke	[mm]	30 ... 1200			30 ... 1500			30 ... 1500		
Spindle diameter	[mm]	25			32			40		
Max. force of the cylinder <sup>1)</sup>	[kN]	7	7	6	12	12	10	17	17	14.5
Max. driving torque	[Nm]	7	13.1	26.5	11.9	33.7	56.6	16.9	63.7	102.6
Max. radial force <sup>2)</sup>	[N]	700			1100			1100		
Max. speed	[m/s]	0.27	0.53	1.35	0.21	0.62	1.34	0.16	0.67	1.34
Max. rotational speed	[rpm]	3250	3220	3260	2530	2515	2515	2010	2010	2010
Max. acceleration	[m/s <sup>2</sup> ]	5	15	25	5	15	25	5	15	25
Max. angle of rotation at the piston rod	[°]	±0.4			±0.5			±0.5		
Reversing backlash <sup>3)</sup>	[mm]	< 0.03	< 0.03	< 0.04	< 0.03	< 0.03	< 0.04	< 0.03	< 0.03	< 0.04
Repetition accuracy	[mm]	±0.015		±0.01						
No-load driving torque <sup>4)</sup>	[Nm]	0.3	0.3	0.4	0.9	1.1	1.3	1.3	1.1	1.5

1) The pressure force is dependent on the stroke and has an effect on the service life

2) At the drive shaft.

3) In new condition.

4) At a spindle speed of 200 rpm.

## Note

Engineering software

PositioningDrives

→ [www.festo.com](http://www.festo.com)

## Data sheet

Dimensions → 381

Technical data – Lead screw				
Size		32	40	50
Spindle pitch	[mm/rev]	2.5	3	4
Working stroke	[mm]	30 ... 800	30 ... 800	30 ... 1000
Spindle diameter	[mm]	12	16	20
Max. force of the cylinder <sup>1)</sup>	[kN]	0.6	1	1.6
Max. driving torque	[Nm]	1.1	2.4	4.8
Max. radial force <sup>2)</sup>	[N]	115	130	300
Max. speed	[m/s]	0.05	0.05	0.05
Max. rotational speed	[rpm]	1200	1000	750
Max. acceleration	[m/s <sup>2</sup> ]	2.5	2.5	2.5
Max. angle of rotation at the piston rod	[°]	±0.25	±0.2	±0.15
Reversing backlash <sup>3)</sup>	[mm]	< 0.1	< 0.1	< 0.1
Repetition accuracy	[mm]	±0.05		
No-load driving torque <sup>4)</sup>	[Nm]	0.1	0.2	0.3

1) Electric cylinder with lead screw can be operated with maximum force over the entire stroke range.

2) At the drive shaft.

3) In new condition.

4) At a spindle speed of 200 rpm.

Mass moment of inertia – Ball screw										
Size		32			40			50		
Spindle pitch	[mm/rev]	5	10	5	10	16	5	10	20	
$J_0$ with 0 mm stroke	[kg cm <sup>2</sup> ]	0.023	0.036	0.050	0.078	0.125	0.145	0.187	0.329	
$j_S$ per meter stroke	[kg cm <sup>2</sup> /m]	0.122	0.139	0.46	0.48	0.523	1.019	1.043	1.139	
$j_L$ per kg payload	[kg cm <sup>2</sup> /kg]	0.006	0.025	0.006	0.025	0.065	0.006	0.025	0.101	

Size		63			80			100		
Spindle pitch	[mm/rev]	5	10	25	5	15	32	5	20	40
$J_0$ with 0 mm stroke	[kg cm <sup>2</sup> ]	0.491	0.486	0.65	1.529	1.648	2.119	4.696	5.050	6.17
$j_S$ per meter stroke	[kg cm <sup>2</sup> /m]	2.832	2.859	3.053	7.699	7.815	8.277	18.978	19.31	20.372
$j_L$ per kg payload	[kg cm <sup>2</sup> /kg]	0.006	0.025	0.158	0.006	0.057	0.259	0.006	0.101	0.405

Mass moment of inertia – Lead screw				
Size		32	40	50
Spindle pitch	[mm/rev]	2.5	3	4
$J_0$ with 0 mm stroke	[kg cm <sup>2</sup> ]	0.016	0.045	0.141
$j_S$ per meter stroke	[kg cm <sup>2</sup> /m]	0.161	0.508	1.238
$j_L$ per kg payload	[kg cm <sup>2</sup> /kg]	0.002	0.002	0.004

The mass moment of inertia  $J_A$  of the electric cylinder is calculated as follows:

$$J_A = J_0 + j_S \times \text{working stroke [m]} + j_L \times m_{\text{moving effective load [kg]}}$$

Operating conditions		
Ambient temperature <sup>5)</sup>	[°C]	0 ... +60
Degree of protection		
ESBF...		IP40
ESBF...-S1		IP65

5) Note operating range of proximity sensors and motors.

Materials		
Size	32 ... 50	63 ... 100
Bearing cap	Coated wrought aluminium alloy	Coated gravity die-cast aluminium
Cylinder barrel	Smooth anodised wrought aluminium alloy	
Piston rod	High-alloy stainless steel	
Spindle	Rolled steel	
Spindle nut	Rolled steel	
Drive cover	Coated wrought aluminium alloy	Coated gravity die-cast aluminium



## Order code

Type	
ESBF	Electric cylinder
Drive system	
BS	Ball screw
LS	Lead screw
Size	
	Stroke [mm]
	Spindle pitch [mm/rev]
32	30 ... 800 2.5P, 5P, 10P <span style="border: 1px solid black; padding: 0 2px;">1</span>
40	30 ... 800 3P, 5P, 10P, 16P <span style="border: 1px solid black; padding: 0 2px;">2</span>
50	30 ... 1000 4P, 5P, 10P, 20P <span style="border: 1px solid black; padding: 0 2px;">3</span>
63	30 ... 1200 5P, 10P, 25P
80	30 ... 1500 5P, 15P, 32P
100	30 ... 1500 5P, 20P, 40P
Variant	
F	Female thread
S1	IP65 degree of protection
...E	Piston rod extension

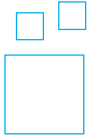
- 1 Linear drive 2.5 only in combination with lead screw LS    2 Linear drive 3 only in combination with lead screw LS    3 Linear drive 4 only in combination with lead screw LS

## Order example:

ESBF-BS-80-400-15P-F-S1

Electric cylinder - ball screw - size 80 - stroke 400 mm - spindle pitch 15 mm/rev. - with female thread - with degree of protection IP65 - without piston rod extension

## Ordering – Product options



**Configurable product**

**This product and all its options can be ordered using the configurator.**

The configurator can be found under Products on the DVD or  
[www.festo.com/catalogue/...](http://www.festo.com/catalogue/...)

Enter the type code in the search field.

★ Quick ordering<sup>1)</sup>

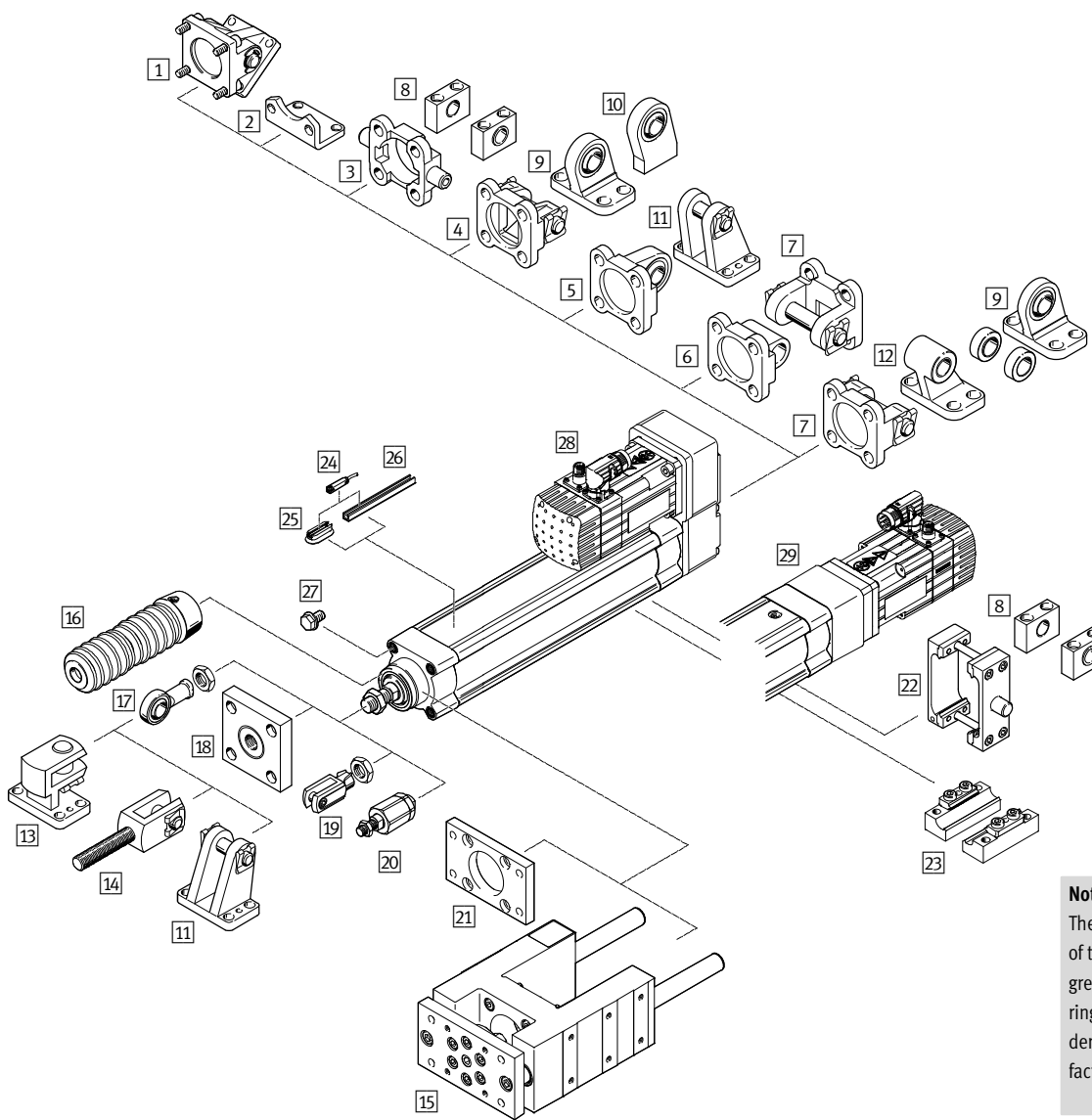
ESBF-63			ESBF-80			ESBF-100		
Stroke [mm]	Part no.	Type	Stroke [mm]	Part no.	Type	Stroke [mm]	Part no.	Type
<b>Spindle pitch 5 mm/rev</b>			<b>Spindle pitch 5 mm/rev</b>			<b>Spindle pitch 5 mm/rev</b>		
100	574093	ESBF-BS-63-100-5P	100	574104	ESBF-BS-80-100-5P	100	574115	ESBF-BS-100-100-5P
200	1347390	ESBF-BS-63-200-5P	200	1347391	ESBF-BS-80-200-5P	200	1347393	ESBF-BS-100-200-5P
300	574094	ESBF-BS-63-300-5P	300	574105	ESBF-BS-80-300-5P	300	574116	ESBF-BS-100-300-5P
400	574095	ESBF-BS-63-400-5P	400	574106	ESBF-BS-80-400-5P	400	574117	ESBF-BS-100-300-5P
<b>Spindle pitch 10 mm/rev</b>			<b>Spindle pitch 15 mm/rev</b>			<b>Spindle pitch 20 mm/rev</b>		
100	574096	ESBF-BS-63-100-10P	100	574107	ESBF-BS-80-100-15P	100	574118	ESBF-BS-100-100-20P
200	574097	ESBF-BS-63-200-10P	200	574108	ESBF-BS-80-200-15P	200	574119	ESBF-BS-100-200-20P
300	574098	ESBF-BS-63-300-10P	300	574109	ESBF-BS-80-300-15P	300	574120	ESBF-BS-100-300-20P
400	574099	ESBF-BS-63-400-10P	400	574110	ESBF-BS-80-400-15P	400	574121	ESBF-BS-100-400-20P
<b>Spindle pitch 25 mm/rev</b>			<b>Spindle pitch 32 mm/rev</b>			<b>Spindle pitch 40 mm/rev</b>		
100	574100	ESBF-BS-63-100-25P	100	574111	ESBF-BS-80-100-32P	100	574122	ESBF-BS-100-100-40P
200	574101	ESBF-BS-63-200-25P	200	574112	ESBF-BS-80-200-32P	200	574123	ESBF-BS-100-200-40P
300	574102	ESBF-BS-63-300-25P	300	574113	ESBF-BS-80-300-32P	300	574124	ESBF-BS-100-300-40P
400	574103	ESBF-BS-63-400-25P	400	574114	ESBF-BS-80-400-32P	400	574125	ESBF-BS-100-400-40P

1) All products in this table are easy to select and quick to order.

# Electric cylinders ESBF, with spindle drive

## Accessories

3



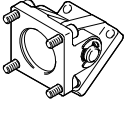
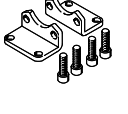
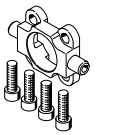
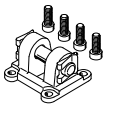
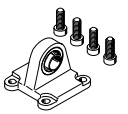
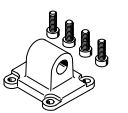
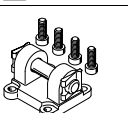
**Note**  
The maximum load carrying ability of the mounting parts must be greater than the maximum occurring load. The weight of the cylinder including the motor must be factored in.

		Suitable for high forces <sup>1)</sup>	→ Page/online
1	Swivel flange DAMS	■	375
2	Foot mounting HNC	-	375
	Foot mounting CRHNC	-	<a href="#">esbf</a>
3	Trunnion flange ZNCF	-	375
	Trunnion flange CRZNG	-	<a href="#">esbf</a>
4	Swivel flange SNC	-	375
5	Swivel flange SNCS	-	375
6	Swivel flange SNCL	-	375
7	Swivel flange SNCB	-	375
	Swivel flange SNCB...-R3	-	<a href="#">esbf</a>
8	Trunnion support LNZG	-	375
	Trunnion support CRLNZG	-	<a href="#">esbf</a>
9	Clevis foot LSN/LSNG	-	375
10	Clevis foot LSNSG	-	375
11	Clevis foot LBG	-	375
12	Clevis foot LNG	-	375
	Clevis foot CRLNG	-	<a href="#">esbf</a>
13	Right-angle clevis foot LQG	-	375
14	Rod clevis SGA	■	375
15	Guide unit EAGF	■	376

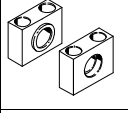
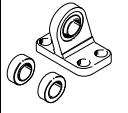



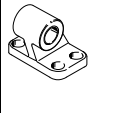
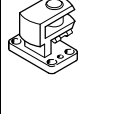

		Suitable for high forces <sup>1)</sup>	→ Page/online
16	Protective bellows kit EADB	■	<a href="#">esbf</a>
17	Rod eye SGS	■	376
	Rod eye CRSGS	■	<a href="#">esbf</a>
18	Coupling piece KSZ	-	376
19	Rod clevis SG	■	376
	Rod clevis CRSG	■	<a href="#">esbf</a>
20	Self-aligning rod coupler FK	-	376
	Self-aligning rod coupler CRFK	-	376
21	Flange mounting EAAH	■	376
22	Trunnion mounting kit DAMT	-	376
23	Profile mounting EAHF...-P	■	376
24	Proximity sensor SME/SMT-8 and connecting cable NEBU	■	377
25	Mounting kit CRSMB	■	376
26	Sensor rail SAMH	■	376
27	Plug screw DAMD-PS	■	376
28	Parallel kit EAMM-U	■	378
29	Axial kit EAMM-A	■	380

1) Shows which accessories can be used within the entire force range. For restricted force ranges see the relevant accessory part, from page 375.

## Accessories – Ordering data

	For size	1)	Part no.	Type
<b>1 Swivel flange</b> Dimensions online: → <a href="#">esbf</a>				
	40	3	2787470	DAMS-K-V1-40-V-R3
	50	5	2787651	DAMS-K-V1-50-V-R3
	63	7	★ 1555443	DAMS-K-V1-63-V-R3
	80	12	★ 1556588	DAMS-K-V1-80-V-R3
	100	17	★ 1560237	DAMS-K-V1-100-V-R3
<b>2 Foot mounting</b> Dimensions online: → <a href="#">esbf</a>				
	32	0,9	★ 174369	HNC-32
	40	1,5	★ 174370	HNC-40
	50	2,5	★ 174371	HNC-50
	63	4	★ 174372	HNC-63
	80	6	★ 174373	HNC-80
	100	9	174374	HNC-100
	<b>3 Trunnion flange</b> Dimensions online: → <a href="#">esbf</a>			
	32	0,9	174411	ZNCF-32
	40	1,5	174412	ZNCF-40
	50	2,5	174413	ZNCF-50
	63	4	174414	ZNCF-63
	80	6	174415	ZNCF-80
	100	9	174416	ZNCF-100
<b>4 Swivel flange</b> Technical data online: → <a href="#">snc</a>				
	32	0,9	★ 174383	SNC-32
	40	1,5	★ 174384	SNC-40
	50	2,5	★ 174385	SNC-50
	63	4	★ 174386	SNC-63
	80	6	★ 174387	SNC-80
	100	9	174388	SNC-100
<b>5 Swivel flange</b> Technical data online: → <a href="#">snCS</a>				
	32	1	★ 174397	SNCS-32
	40	1,5	★ 174398	SNCS-40
	50	2,5	★ 174399	SNCS-50
	63	4	★ 174400	SNCS-63
	80	6	★ 174401	SNCS-80
	100	9	174402	SNCS-100
<b>6 Swivel flange</b> Dimensions online: → <a href="#">snCL</a>				
	32	0,9	★ 174404	SNCL-32
	40	1,5	★ 174405	SNCL-40
	50	2,5	★ 174406	SNCL-50
	63	4	★ 174407	SNCL-63
	80	6	★ 174408	SNCL-80
	100	9	174409	SNCL-100
<b>7 Swivel flange</b> Dimensions online: → <a href="#">snCB</a>				
	32	1	★ 174390	SNCB-32
	40	1,5	★ 174391	SNCB-40
	50	2,5	★ 174392	SNCB-50
	63	4	★ 174393	SNCB-63
	80	6	★ 174394	SNCB-80
	100	9	174395	SNCB-100

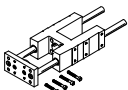
1) Max. load capacity.


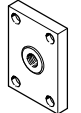


	For size	1)	Part no.	Type
<b>8 Trunnion support</b> Dimensions online: → <a href="#">lnzg</a>				
	32	0,9	32959	LNZG-32
	40, 50	2,5	32960	LNZG-40/50
	63, 80	6	32961	LNZG-63/80
	100	9	32962	LNZG-100/125
	<b>9 Clevis foot</b> Technical data online: → <a href="#">lsn</a>			
	32	0,9	5561	LSN-32
	40	1,5	5562	LSN-40
	50	2,5	5563	LSN-50
	63	4	5564	LSN-63
	80	6	5565	LSN-80
	100	9	5566	LSN-100
<b>9 Clevis foot</b> Technical data online: → <a href="#">lsng</a>				
	32	0,9	31740	LSNG-32
	40	1,5	31741	LSNG-40
	50	2,5	31742	LSNG-50
	63	4	31743	LSNG-63
	80	6	31744	LSNG-80
	100	9	31745	LSNG-100
<b>10 Clevis foot</b> Technical data online: → <a href="#">lsng</a>				
	32	0,9	31747	LSNSG-32
	40	1,5	31748	LSNSG-40
	50	2,5	31749	LSNSG-50
	63	4	31750	LSNSG-63
	80	6	31751	LSNSG-80
	100	9	31752	LSNSG-100
<b>11 Clevis foot</b> Technical data online: → <a href="#">lbg</a>				
	32	0,9	31761	LBG-32
	40	1,5	31762	LBG-40
	50	2,5	31763	LBG-50
	63	4	31764	LBG-63
	80	6	31765	LBG-80
	100	9	31766	LBG-100
<b>12 Clevis foot</b> Technical data online: → <a href="#">lng</a>				
	32	0,9	★ 33890	LNG-32
	40	1,5	★ 33891	LNG-40
	50	2,5	★ 33892	LNG-50
	63	4	★ 33893	LNG-63
	80	6	★ 33894	LNG-80
	100	9	33895	LNG-100
<b>13 Right-angle clevis foot</b> Technical data online: → <a href="#">lqg</a>				
	32	0,9	31768	LQG-32
	40	1,5	31769	LQG-40
	50	2,5	31770	LQG-50
	63	4	31771	LQG-63
	80	6	31772	LQG-80
	100	9	31773	LQG-100
<b>14 Rod clevis</b> Technical data online: → <a href="#">sga</a>				
	32	0,9	32954	SGA-M10x1,25
	40	1,5	10767	SGA-M12x1,25
	50, 63	4	10768	SGA-M16x1,5
	80, 100	9	10769	SGA-M20x1,5

1) Max. load capacity.



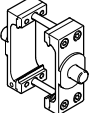
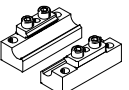



## Accessories – Ordering data

3

	Stroke [mm]	Part no.	Type
<b>15 Guide unit for fixed strokes, with recirculating ball bearing guide</b> <span style="float:right">Technical data online: → <a href="#">eagf</a></span>			
For size 32			
	100	2782679	EAGF-V2-KF-32-100
	200	2782818	EAGF-V2-KF-32-200
	320	2782885	EAGF-V2-KF-32-320
	400	2782923	EAGF-V2-KF-32-400
For size 40			
	100	2782939	EAGF-V2-KF-40-100
	200	2782976	EAGF-V2-KF-40-200
	320	2783047	EAGF-V2-KF-40-320
	400	2783080	EAGF-V2-KF-40-400
For size 50			
	100	2783639	EAGF-V2-KF-50-100
	200	2784152	EAGF-V2-KF-50-200
	320	2784164	EAGF-V2-KF-50-320
	400	2784184	EAGF-V2-KF-50-400
For size 63			
	100	1725842	EAGF-V2-KF-63-100
	200	1725843	EAGF-V2-KF-63-200
	320	1725844	EAGF-V2-KF-63-320
	400	1725845	EAGF-V2-KF-63-400
For size 80			
	100	1725846	EAGF-V2-KF-80-100
	200	1725847	EAGF-V2-KF-80-200
	320	1725848	EAGF-V2-KF-80-320
	400	1725849	EAGF-V2-KF-80-400
For size 100			
	100	1725850	EAGF-V2-KF-100-100
	200	1725851	EAGF-V2-KF-100-200
	320	1725852	EAGF-V2-KF-100-320
	400	1725853	EAGF-V2-KF-100-400

	For size	1) [kN]	Part no.	Type
<b>17 Rod eye</b> <span style="float:right">Technical data online: → <a href="#">sgs</a></span>				
	32	0.9	★ 9261	SGS-M10x1,25
	40	1.5	★ 9262	SGS-M12x1,25
	50, 63	4	★ 9263	SGS-M16x1,5
	80, 100	9	★ 9264	SGS-M20x1,5
<b>18 Coupling piece</b> <span style="float:right">Technical data online: → <a href="#">ksz</a></span>				
	32	0.9	36125	KSZ-M10x1,25
	40	1.5	36126	KSZ-M12x1,25
	50, 63	4	36127	KSZ-M16x1,5
	80, 100	9	36128	KSZ-M20x1,5
<b>19 Rod clevis</b> <span style="float:right">Technical data online: → <a href="#">sg</a></span>				
	32	0.9	★ 6144	SG-M10x1,25
	40	1.5	★ 6145	SG-M12x1,25
	50, 63	4	★ 6146	SG-M16x1,5
	80, 100	9	★ 6147	SG-M20x1,5

1) Max. load capacity.

	For size	1) [kN]	Part no.	Type
<b>20 Self-aligning rod coupler</b> <span style="float:right">Technical data online: → <a href="#">fk</a></span>				
	32	0.9	★ 6140	FK-M10x1,25
	40	1.5	★ 6141	FK-M12x1,25
	50, 63	4	★ 6142	FK-M16x1,5
	80, 100	9	★ 6143	FK-M20x1,5
<b>21 Flange mounting</b> <span style="float:right">Dimensions online: → <a href="#">esbf</a></span>				
	32	1	2827587	EAHH-V2-32-R1
	40	3	2827588	EAHH-V2-40-R1
	50	5	2827589	EAHH-V2-50-R1
	63	7	★ 1502305	EAHH-V2-63-R1
	80	12	★ 1502306	EAHH-V2-80-R1
	100	17	★ 1502307	EAHH-V2-100-R1
<b>22 Trunnion mounting kit</b> <span style="float:right">Dimensions online: → <a href="#">esbf</a></span>				
	32	0.9	★ 2213233	DAMT-V1-32-A
	40	1.5	★ 2214899	DAMT-V1-40-A
	50	2.5	★ 2214909	DAMT-V1-50-A
	63	4	★ 2214971	DAMT-V1-63-A
	80	6	★ 163529	DAMT-V1-80-A
	100	9	163530	DAMT-V1-100-A
<b>23 Profile mounting</b> <span style="float:right">Dimensions online: → <a href="#">esbf</a></span>				
	32, 40	-	2838839	EAHF-V2-32/40-P
	50, 63	-	★ 1547781	EAHF-V2-50/63-P
	80, 100	-	★ 1547780	EAHF-V2-80/100-P
<b>25 Mounting kit</b> <span style="float:right">Dimensions online: → <a href="#">esbf</a></span>				
	32 ... 100	-	525565	CRSMB-8-32/100
<b>26 Sensor rail<sup>2)</sup></b> <span style="float:right">Dimensions online: → <a href="#">esbf</a></span>				
	32 ... 100	-	1600093	SAMH-N8-SR-50 <sup>4)</sup>
	32 ... 100	-	1600118	SAMH-N8-SR-100 <sup>5)</sup>
<b>27 Blanking screw<sup>3)</sup></b> <span style="float:right">Dimensions online: → <a href="#">esbf</a></span>				
	32, 40	-	1355016	DAMD-PS-M6-12-R1
	50, 63	-	650121	DAMD-PS-M8-16-R1
	80, 100	-	1355026	DAMD-PS-M10-16-R1

1) Max. load capacity.

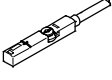
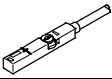
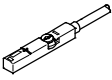
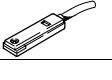
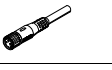

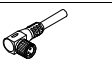
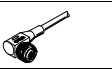
2) Length = 100 mm.

3) Packaging unit 4 pieces.

4) Length: 50 mm

5) Length: 100 mm

## Accessories – Ordering data

		Cable length [m]		Part no.	Type
<b>24 Proximity sensor for T-slot, magneto-resistive – N/O contact</b> <span style="float: right;">Technical data → 878</span>					
	PNP, cable	2.5	★	574335	SMT-8M-A-PS-24V-E-2,5-OE
	PNP, plug	0.3	★	574334	SMT-8M-A-PS-24V-E-0,3-M8D
	PNP, plug	0.3	★	574337	SMT-8M-A-PS-24V-E-0,3-M12
	NPN, cable	2.5	★	574338	SMT-8M-A-NS-24V-E-2,5-OE
	NPN, plug	0.3	★	574339	SMT-8M-A-NS-24V-E-0,3-M8D
<b>Magneto-resistive – N/C contact</b> <span style="float: right;">Technical data → 878</span>					
	PNP, cable	7.5	★	574340	SMT-8M-A-PO-24V-E-7,5-OE
<b>24 Proximity sensor for T-slot, magnetic reed – N/O contact</b> <span style="float: right;">Technical data → 873</span>					
	Cable	2.5	★	543862	SME-8M-DS-24V-K-2,5-OE
	Cable	5.0	★	543863	SME-8M-DS-24V-K-5,0-OE
	Cable	2.5	★	543872	SME-8M-ZS-24V-K-2,5-OE
	Plug	0.3	★	543861	SME-8M-DS-24V-K-0,3-M8D
<b>Magnetic reed – N/C contact</b> <span style="float: right;">Technical data → 875</span>					
	Cable	7.5		160251	SME-8-O-K-LED-24
<b>24 Connecting cable, straight socket</b> <span style="float: right;">Technical data → 1161</span>					
	–	2.5	★	541333	NEBU-M8G3-K-2.5-LE3
		5.0	★	541334	NEBU-M8G3-K-5-LE3
	–	2.5	★	541363	NEBU-M12G5-K-2.5-LE3
		5.0	★	541364	NEBU-M12G5-K-5-LE3
<b>Angled socket</b> <span style="float: right;">Technical data → 1161</span>					
	–	2.5	★	541338	NEBU-M8W3-K-2.5-LE3
		5.0	★	541341	NEBU-M8W3-K-5-LE3
	–	2.5		541367	NEBU-M12W5-K-2.5-LE3
		5.0		541370	NEBU-M12W5-K-5-LE3

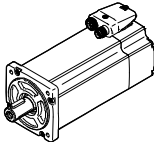
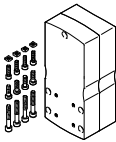
## Accessories – Ordering data

**Note**

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

When using parallel kits, the no-load driving torque of the respective kit must be taking into consideration.

3

Motor / Gear unit <sup>2)</sup>	Parallel kit
	
	<ul style="list-style-type: none"> <li>• Increased housing rigidity</li> <li>• More flexible motor mounting possible</li> <li>• Larger toothed belt bending radii for improved service life</li> <li>• Use in combination with third-party motors on request</li> </ul>
	Part no.    Type

29 Permissible axis/motor combination with parallel kit  
 Technical data online: → [eamm-u](http://eamm-u)

ESBF-32		
With servo motor		
EMME-AS-40-...	2153283	EAMM-U-50-D32-40P-78
	2154009	EAMM-U-50-D32-40P-78-S1 <sup>1)</sup>
EMMS-AS-40-...	1201591	EAMM-U-50-D32-40A-78
	1202302	EAMM-U-50-D32-40A-78-S1 <sup>1)</sup>
EMMS-AS-55-...	1210126	EAMM-U-60-D32-55A-91
	1210450	EAMM-U-60-D32-55A-91-S1 <sup>1)</sup>
EMME-AS-60-...	2619586	EAMM-U-70-D32-60P-96
	2619688	EAMM-U-70-D32-60P-96-S1 <sup>1)</sup>
EMMS-AS-70-...	2755565	EAMM-U-70-D32-70A-96
	2781711	EAMM-U-70-D32-70A-96-S1 <sup>1)</sup>
With stepper motor		
EMMS-ST-42-...	1201607	EAMM-U-50-D32-42A-78
	1202312	EAMM-U-50-D32-42A-78-S1 <sup>1)</sup>
EMMS-ST-57-...	1210419	EAMM-U-60-D32-57A-91
	1210453	EAMM-U-60-D32-57A-91-S1 <sup>1)</sup>
With gear unit		
EMGA-40-P-..., EMGC-40-P-...	1577358	EAMM-U-60-D32-40G-91
	1577346	EAMM-U-60-D32-40G-91-S1 <sup>1)</sup>
EMGA-60-P-...- SAS/SST <sup>3)</sup>	2748181	EAMM-U-70-D32-60G-96
	2778302	EAMM-U-70-D32-60G-96-S1 <sup>1)</sup>
EMGA-60-P-...-EAS, EMGC-60-P-... <sup>3)</sup>	2778393	EAMM-U-70-D32-60H-96
	2781450	EAMM-U-70-D32-60H-96-S1 <sup>1)</sup>

**Note**

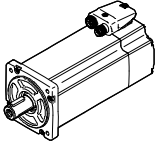
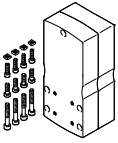
The clamping component EADT is required to adjust the toothed belt pretension with EAMM-U-110 and EAMM-U-145.

The motor and/or axis shaft can optionally be supported with a counter bearing EAMG.  
 More information → [eamm-u](http://eamm-u)

Motor / Gear unit <sup>2)</sup>	Parallel kit	
	Part no.	Type
ESBF-40		
With servo motor		
EMMS-AS-55-...	1210438	EAMM-U-60-D40-55A-91
	1210458	EAMM-U-60-D40-55A-91-S1 <sup>1)</sup>
EMME-AS-60-...	2617488	EAMM-U-70-D40-60P-96
	2546123	EAMM-U-70-D40-60P-96-S1 <sup>1)</sup>
EMMS-AS-70-...	2786204	EAMM-U-70-D40-70A-96
	2786316	EAMM-U-70-D40-70A-96-S1 <sup>1)</sup>
EMMS-AS-70-...	1212826	EAMM-U-86-D40-70A-102
	1212854	EAMM-U-86-D40-70A-102-S1 <sup>1)</sup>
EMME-AS-80-...	2802441	EAMM-U-86-D40-80P-102
	2802656	EAMM-U-86-D40-80P-102-S1 <sup>1)</sup>
With stepper motor		
EMMS-ST-57-...	1210442	EAMM-U-60-D40-57A-91
	1210462	EAMM-U-60-D40-57A-91-S1 <sup>1)</sup>
EMMS-ST-87-...	1215802	EAMM-U-86-D40-87A-102
	1215814	EAMM-U-86-D40-87A-102-S1 <sup>1)</sup>
With gear unit		
EMGA-40-P-..., EMGC-40-P-...	1577165	EAMM-U-60-D40-40G-91
	1435968	EAMM-U-60-D40-40G-91-S1 <sup>1)</sup>
EMGA-60-P-...- SAS/SST <sup>3)</sup>	2785471	EAMM-U-70-D40-60G-96
	2785542	EAMM-U-70-D40-60G-96-S1 <sup>1)</sup>
EMGA-60-P-...-EAS, EMGC-60-P-... <sup>3)</sup>	2786101	EAMM-U-70-D40-60H-96
	2786137	EAMM-U-70-D40-60H-96-S1 <sup>1)</sup>
EMGA-60-P-...- SAS/SST <sup>3)</sup>	1586445	EAMM-U-86-D40-60G-102
	1586429	EAMM-U-86-D40-60G-102-S1 <sup>1)</sup>
EMGA-60-P-...-EAS, EMGC-60-P-... <sup>3)</sup>	1586496	EAMM-U-86-D40-60H-102
	1586372	EAMM-U-86-D40-60H-102 <sup>1)</sup>
ESBF-50		
With servo motor		
EMMS-AS-70-...	2786899	EAMM-U-70-D50-70A-96
	2756078	EAMM-U-70-D50-70A-96-S1 <sup>1)</sup>
EMME-AS-80-...	2803053	EAMM-U-86-D50-80P-102
	2803073	EAMM-U-86-D50-80P-102-S1 <sup>1)</sup>
EMME-AS-100-...	2799424	EAMM-U-110-D50-100A-120
	2799488	EAMM-U-110-D50-100A-120-S1 <sup>1)</sup>
EMMS-AS-100-...	2799424	EAMM-U-110-D50-100A-120
	2799488	EAMM-U-110-D50-100A-120-S1 <sup>1)</sup>
With stepper motor		
EMMS-ST-87-...	2802708	EAMM-U-86-D50-87A-102
	2802742	EAMM-U-86-D50-87A-102-S1 <sup>1)</sup>
With gear unit		
EMGA-60-P-...- SAS/SST <sup>3)</sup>	2803125	EAMM-U-86-D50-60G-102
	2803197	EAMM-U-86-D50-60G-102-S1 <sup>1)</sup>
EMGA-60-P-...-EAS, EMGC-60-P-... <sup>3)</sup>	2803326	EAMM-U-86-D50-60H-102
	2803325	EAMM-U-86-D50-60H-102-S1 <sup>1)</sup>
EMGA-60-P-...- SAS/SST <sup>3)</sup>	2797368	EAMM-U-110-D50-60G-120
	2798665	EAMM-U-110-D50-60G-120-S1 <sup>1)</sup>
EMGA-60-P-...-EAS, EMGC-60-P-... <sup>3)</sup>	2798760	EAMM-U-110-D50-60H-120
	2799150	EAMM-U-110-D50-60H-120-S1 <sup>1)</sup>
EMGA-80-P-...	2799196	EAMM-U-110-D50-80G-120
	2799281	EAMM-U-110-D50-80G-120-S1 <sup>1)</sup>

1) With degree of protection IP65.  
 2) The input torque must not exceed the max. perm. transferable torque of the parallel kit.  
 3) Gear unit drive shaft Ø: EMGA-60-P-...-SAS/-SST11 mm; EMGA-60-P-...-EAS, EMGC-60-P14 mm.

## Accessories – Ordering data

Motor / Gear unit <sup>2)</sup>	Parallel kit	
		
	<ul style="list-style-type: none"> <li>• Increased housing rigidity</li> <li>• More flexible motor mounting possible</li> <li>• Larger toothed belt bending radii for improved service life</li> <li>• Use in combination with third-party motors on request</li> </ul>	
	Part no.	Type
<b>ESBF-63</b>		
<b>With servo motor</b>		
EMMS-AS-70-...	★ 1212477	EAMM-U-86-D60-70A-102
	1212835	EAMM-U-86-D60-70A-102-S1 <sup>1)</sup>
EMME-AS-80	★ 2155875	EAMM-U-86-D60-80P-102
	2156527	EAMM-U-86-D60-80P-102-S1 <sup>1)</sup>
EMME-AS-100-...	★ 1202436	EAMM-U-110-D60-100A-120
	1203112	EAMM-U-110-D60-100A-120-S1 <sup>1)</sup>
EMMS-AS-100-...	★ 1202436	EAMM-U-110-D60-100A-120
	1203112	EAMM-U-110-D60-100A-120-S1 <sup>1)</sup>
<b>With stepper motor</b>		
EMMS-ST-87-...	★ 1215784	EAMM-U-86-D60-87A-102
	1215810	EAMM-U-86-D60-87A-102-S1 <sup>1)</sup>
<b>With gear unit</b>		
EMGA-60-P-...-SAS/SST <sup>3)</sup>	★ 1586347	EAMM-U-86-D60-60G-102
	1437163	EAMM-U-86-D60-60G-102-S1 <sup>1)</sup>
EMGA-60-P-...-EAS, EMGC-60-P-... <sup>3)</sup>	★ 1586276	EAMM-U-86-D60-60H-102
	1530837	EAMM-U-86-D60-60H-102-S1 <sup>1)</sup>
EMGA-60-P-...-SAS/SST <sup>3)</sup>	★ 1543240	EAMM-U-110-D60-60G-120
	1436183	EAMM-U-110-D60-60G-120-S1 <sup>1)</sup>
EMGA-60-P-...-EAS, EMGC-60-P-... <sup>3)</sup>	★ 1542264	EAMM-U-110-D60-60H-120
	1530621	EAMM-U-110-D60-60H-120-S1 <sup>1)</sup>
EMGA-80-P-...	★ 1532949	EAMM-U-110-D60-80G-120
	1530875	EAMM-U-110-D60-80G-120-S1 <sup>1)</sup>

Motor / Gear unit <sup>2)</sup>	Parallel kit	
	Part no.	Type
<b>ESBF-80</b>		
<b>With servo motor</b>		
EMME-AS-100-...	★ 1465438	EAMM-U-110-D80-100A-120
	1433650	EAMM-U-110-D80-100A-120-S1 <sup>1)</sup>
EMMS-AS-100-...	★ 1465438	EAMM-U-110-D80-100A-120
	1433650	EAMM-U-110-D80-100A-120-S1 <sup>1)</sup>
EMMS-AS-140-...	★ 1465530	EAMM-U-145-D80-140A-188
	1433709	EAMM-U-145-D80-140A-188-S1 <sup>1)</sup>
<b>With gear unit</b>		
EMGA-80-P-...	1589614	EAMM-U-110-D80-80G-120
	1589706	EAMM-U-110-D80-80G-120-S1 <sup>1)</sup>
<b>ESBF-100</b>		
<b>With servo motor</b>		
EMMS-AS-140-...	★ 1465541	EAMM-U-145-D100-140A-188
	1433852	EAMM-U-145-D100-140A-188-S1 <sup>1)</sup>
<b>With gear unit</b>		
EMGA-120-P-...	2803620	EAMM-U-145-D100-120G-188
	2803622	EAMM-U-145-D100-120G-188-S1 <sup>1)</sup>

1) With degree of protection IP65.

2) The input torque must not exceed the max. perm. transferable torque of the parallel kit.

3) Gear unit drive shaft Ø: EMGA-60-P-...SAS/SST11 mm; EMGA-60-P-...EAS, EMGC-60-P14 mm.

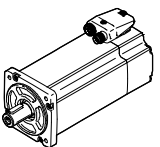
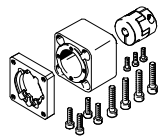
**Note**

The clamping component EADT is required to adjust the toothed belt pretension with EAMM-U-110 and EAMM-U-145.

The motor and/or axis shaft can optionally be supported with a counter bearing EAMG.  
More information → [eamm-u](#)

# Electric cylinders ESBF, with spindle drive

## Accessories – Ordering data

Motor / Gear unit <sup>2)</sup>	Axial kit	
		
	Part no.	Type
30 Permissible axis/motor combination with axial kit – Technical data online: → <a href="#">eamm-a</a>		
<b>ESBF-32</b>		
With servo motor		
EMME-AS-40-...	1976465	EAMM-A-D32-40P
	2207372	EAMM-A-D32-40P-S1 <sup>1)</sup>
EMMS-AS-40-...	543147	EAMM-A-D32-40A
	1322178	EAMM-A-D32-40A-S1 <sup>1)</sup>
EMMS-AS-55-...	550979	EAMM-A-D32-55A
	1322180	EAMM-A-D32-55A-S1 <sup>1)</sup>
EMME-AS-60-...	1956054	EAMM-A-D32-60P
	2234020	EAMM-A-D32-60P-S1 <sup>1)</sup>
With stepper motor		
EMMS-ST-42-...	543148	EAMM-A-D32-42A
	1322179	EAMM-A-D32-42A-S1 <sup>1)</sup>
EMMS-ST-57-...	550980	EAMM-A-D32-57A
	1322181	EAMM-A-D32-57A-S1 <sup>1)</sup>
<b>ESBF-40</b>		
With servo motor		
EMMS-AS-55-...	543153	EAMM-A-D40-55A
	1322182	EAMM-A-D40-55A-S1 <sup>1)</sup>
EMME-AS-60-...	1977000	EAMM-A-D40-60P
	2151519	EAMM-A-D40-60P-S1 <sup>1)</sup>
EMMS-AS-70-...	550981	EAMM-A-D40-70A
	1322185	EAMM-A-D40-70A-S1 <sup>1)</sup>
With servo motor and gear unit		
EMME-AS-40-...	560282	EAMM-A-D40-40G
EMGA-40-P-G...-EAS-40		
EMMS-AS-40-...	560282	EAMM-A-D40-40G
EMGA-40-P-G...-SAS-40		
With stepper motor		
EMMS-ST-57-...	543154	EAMM-A-D40-57A
	1322183	EAMM-A-D40-57A-S1 <sup>1)</sup>
EMMS-ST-87-...	550982	EAMM-A-D40-87A
	1322186	EAMM-A-D40-87A-S1 <sup>1)</sup>
With stepper motor and gear unit		
EMMS-ST-42-...	560282	EAMM-A-D40-40G
EMGA-40-P-G...-SST-42		
<b>ESBF-50</b>		
With servo motor		
EMMS-AS-70-...	2733783	EAMM-A-D50-70A
	2734287	EAMM-A-D50-70A-S1 <sup>1)</sup>
EMME-AS-80-...	2733785	EAMM-A-D50-80P
	2734289	EAMM-A-D50-80P-S1 <sup>1)</sup>
EMME-AS-100-...	2733784	EAMM-A-D50-100A
	2734288	EAMM-A-D50-100A-S1 <sup>1)</sup>
EMMS-AS-100-...	2733784	EAMM-A-D50-100A
	2734288	EAMM-A-D50-100A-S1 <sup>1)</sup>
With stepper motor		
EMMS-ST-87-...	2733781	EAMM-A-D50-87A
	2734286	EAMM-A-D50-87A-S1 <sup>1)</sup>

Motor / Gear unit <sup>2)</sup>	Axial kit	
	Part no.	Type
<b>ESBF-63</b>		
With servo motor		
EMMS-AS-70-...	★ 543161	EAMM-A-D60-70A
	2256699	EAMM-A-D60-70A-S1 <sup>1)</sup>
EMME-AS-80-...	★ 1977073	EAMM-A-D60-80P
	2218564	EAMM-A-D60-80P-S1 <sup>1)</sup>
EMME-AS-100-...	★ 550983	EAMM-A-D60-100A
	2256700	EAMM-A-D60-100A-S1 <sup>1)</sup>
EMMS-AS-100-...	★ 550983	EAMM-A-D60-100A
	2256700	EAMM-A-D60-100A-S1 <sup>1)</sup>
With servo motor and gear unit		
EMMS-AS-55-...	★ 560283	EAMM-A-D60-60G
EMGA-60-P-G...-SAS-55		
EMMS-AS-70-...	★ 560283	EAMM-A-D60-60G
EMGA-60-P-G...-SAS-70		
With stepper motor		
EMMS-ST-87-...	★ 543162	EAMM-A-D60-87A
	1322188	EAMM-A-D60-87A-S1 <sup>1)</sup>
With stepper motor and gear unit		
EMMS-ST-57-...	★ 560283	EAMM-A-D60-60G
EMGA-60-P-G...-SST-57		
<b>ESBF-80</b>		
With servo motor		
EMME-AS-100	★ 1589665	EAMM-A-D80-100A
	1600673	EAMM-A-D80-100A-S1 <sup>1)</sup>
EMMS-AS-100-...	★ 1589665	EAMM-A-D80-100A
	1600673	EAMM-A-D80-100A-S1 <sup>1)</sup>
EMMS-AS-140-...	★ 1588299	EAMM-A-D80-140A
	1600674	EAMM-A-D80-140A-S1 <sup>1)</sup>
<b>ESBF-100</b>		
With servo motor		
EMMS-AS-140-...	★ 1588349	EAMM-A-D100-140A
	1600675	EAMM-A-D100-140A-S1 <sup>1)</sup>

1) With degree of protection IP65  
 2) The input torque must not exceed the max. perm. transferable torque of the axial kit.

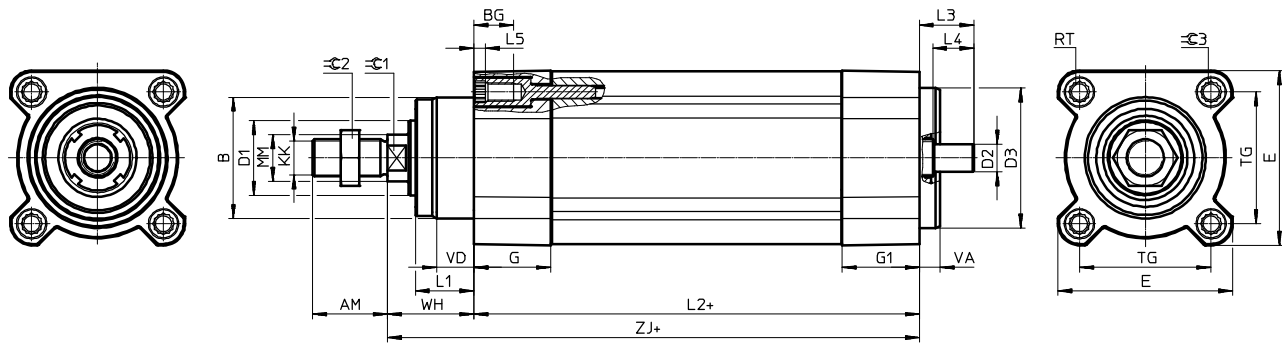
**Note**

The axial kit (without "S1" in the type code) can be retrofitted with a seal protection from IP40 to IP65. More information → [eamm-a](#)  
 set EADS-F to change the degree of

3



## Dimensions



+ = plus stroke length

Size	AM	B	BG	D1	D2	D3	E	G
	-0.5	∅ d11	min.	∅ H9	∅ H6	∅ f7		
32	22	34	16	20	6	32	45 <sup>+0,5</sup>	25.5 <sub>-0,1</sub>
40	24	39	16	24	8	40	54 <sup>+0,5</sup>	30 <sub>-0,1</sub>
50	32	45	17	28	12	50	64 <sup>+0,5</sup>	30 <sub>-0,1</sub>
63	32	52	17	32	12	60	75 <sup>+0,5/-0,1</sup>	33 <sup>±0,1</sup>
80	40	60	17	40	19	80	93 <sup>+0,5/-0,1</sup>	39 <sup>±0,1</sup>
100	40	70	17	50	24	100	110 <sup>+0,5/-0,1</sup>	39 <sup>±0,1</sup>

Size	G1	L1	L2	L3	L4	L5	KK	MM
					±0.2	max.		∅ -0.1
32	25.5 <sub>-0,1</sub>	12 <sup>+0,2</sup>	122.5 <sup>+0,2/-1,4</sup>	15.9 <sup>+0,8/-0,3</sup>	8	4	M10x1.25	14
40	30 <sub>-0,1</sub>	14 <sup>+0,2</sup>	144 <sup>+0,2/-1,4</sup>	18.4 <sup>+0,8/-0,3</sup>	14	4	M12x1.25	16
50	34 <sub>-0,1</sub>	20 <sup>+0,2</sup>	163 <sup>+0,2/-1,4</sup>	27 <sup>+0,8/-0,3</sup>	17	5	M16x1.5	20
63	33 <sup>±0,1</sup>	25 <sub>-0,5</sub>	171 <sup>+0,7/-1,2</sup>	23.5 <sup>±0,5</sup>	17	5	M16x1.5	20
80	39 <sup>±0,1</sup>	31 <sub>-0,5</sub>	204 <sup>+0,7/-1,2</sup>	33.5 <sup>±0,5</sup>	26	25.9	M20x1.5	25
100	39 <sup>±0,1</sup>	34 <sub>-0,5</sub>	224 <sup>+0,7/-1,2</sup>	39.5 <sup>±0,5</sup>	30	25.9	M20x1.5	25

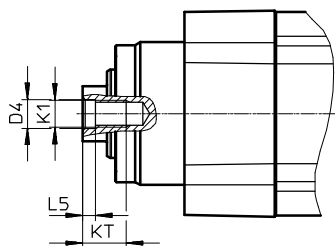
Size	RT	TG	VA	VD	WH	ZJ	∅C1	∅C2	∅C3
32	M6	32.5	7 <sub>-0,2</sub>	8 <sup>±0,1</sup>	25.5 <sup>+1,9/-0,8</sup>	148 <sup>+2,1/-1,1</sup>	10	17	6
40	M6	38	7 <sub>-0,2</sub>	9 <sup>±0,1</sup>	29.5 <sup>+1,9/-0,8</sup>	173.5 <sup>+2,1/-1,1</sup>	13	19	6
50	M 8	46.5	9 <sub>-0,2</sub>	11.5 <sup>±0,1</sup>	36.5 <sup>+1,9/-0,8</sup>	199.5 <sup>+2,1/-1,1</sup>	17	24	8
63	M 8	56.5 <sup>±0,5</sup>	9 <sup>±0,2</sup>	16 <sup>±0,2</sup>	37 <sup>+1,8/-1,7</sup>	208	17	24	8
80	M10	72 <sup>±0,5</sup>	10 <sup>±0,2</sup>	18 <sup>±0,2</sup>	46 <sup>+1,8/-1,7</sup>	250	22	30	6
100	M10	89 <sup>±0,5</sup>	10 <sup>±0,2</sup>	20 <sup>±0,2</sup>	51 <sup>+1,8/-1,7</sup>	275	22	30	6

# Electric cylinders ESBF, with spindle drive

## Dimensions

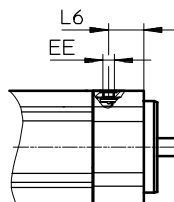
### Variants

#### F – Female thread

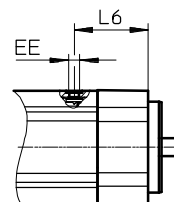


#### S1 – Degree of protection IP65

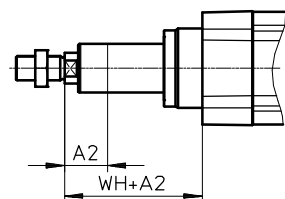
##### ESBF-32 ... 50



##### ESBF-63 ... 100



#### ...E – Piston rod extension



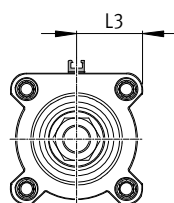
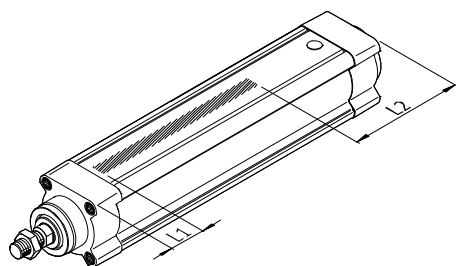
Size	A2	D4 ∅	EE	L5 ±0.2	L6	K1	KT min.	WH
32	200	6.4 <sup>+0,2</sup>	M7	2.6	19.5	M6	12	25.5 <sup>+1,9/-0.8</sup>
40	200	8.4 <sup>+0,2</sup>	M7	3.3	24	M 8	12	29.5 <sup>+1,9/-0.8</sup>
50	200	10.5 <sup>+0,2</sup>	M7	4.7	28	M10	16	36.5 <sup>+1,9/-0.8</sup>
63	200	10.5 <sup>+0,1</sup>	G <sup>1</sup> / <sub>8</sub>	4.7	48.5	M10	16	37 <sup>+1,8/-1.7</sup>
80	200	13 <sup>+0,1</sup>	G <sup>1</sup> / <sub>8</sub>	6.1	57.5	M12	20	46 <sup>+1,8/-1.7</sup>
100	200	13 <sup>+0,1</sup>	G <sup>1</sup> / <sub>8</sub>	6.1	68.5	M12	20	51 <sup>+1,8/-1.7</sup>

### Sensor mounting

The sensor mountings can only be attached within the highlighted area due to the asymmetry of the internal magnets.

The proximity sensors may not switch reliably if they are mounted outside of this area.

The overall length of the sensor rail SAMH corresponds to the length of the sensing range plus approx. 10 mm adjustment range on either side for the proximity sensors.



Size	L1	L2	L3
32	26	48	22.3
40	30	65	26.5
50	30	84	31.5
63	33	99	37
80	39	132	46
100	39	151	54.5

Spindle axes with recirculating ball bearing  
guide

## EGC-BS-KF



Overview/Configuration/Ordering  
→ [www.festo.com/catalogue/egc-bs](http://www.festo.com/catalogue/egc-bs)

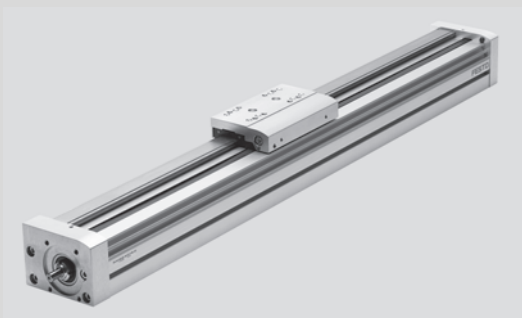


Additional information/Support/User documentation  
→ [www.festo.com/sp/egc-bs](http://www.festo.com/sp/egc-bs)



- + Recirculating ball bearing guide for high loads and torques
- + Optionally with clamping unit, at one or both ends
- + Profile with optimised rigidity
- + High dynamic response and minimum vibration
- + Various spindle pitches
- + Reference switch optional
- + Freely positionable

# Spindle axes EGC-BS-KF, with recirculating ball bearing guide



- High speeds and feed forces
- Recirculating ball bearing guide and rigid profile
- Large loads and torques
- Spare parts service

→ [www.festo.com/catalogue/egc-bs](http://www.festo.com/catalogue/egc-bs)

## Product range overview

Type/Version	Size	Stroke [mm]	Feed force [N]	Product options				→ Page/online
				S	ML	MR	GK	
<b>EGC-BS</b>								
KF – Recirculating ball bearing guide	70, 80, 120, 185	50 ... 3000	300 ... 3000	■	■	■	■	385
<b>EGC-FA</b>								
Passive guide axis	70, 80, 120, 185	50 ... 8500	–	–	–	–	■	<a href="#">egc-fa</a>

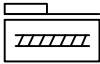
## Product options

S Spindle support	GQ Extended slide, protected	M1 Displacement encoder (resolution: 2.5 µm)	1HR Clamping unit, 1-channel, on right
ML Motor on left	KL Additional slide on left	M2 Displacement encoder (resolution: 10 µm)	2H Clamping unit, 2-channel
MR Motor on right	KR Additional slide on right	1HL Clamping unit, 1-channel, on left	PN Pneumatically actuated clamping unit
GK Standard slide	C Lubrication adapter		
GV Extended slide			
GP Standard slide, protected			

## At a glance

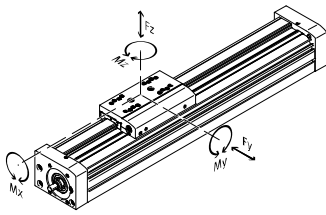
- |  |   |  |   |
|--|---|--|---|
| <p><b>Powerful</b></p> <ul style="list-style-type: none"> <li>• Generously sized profiles with an optimised cross section afford maximum rigidity and load capacity</li> <li>• Speed, acceleration and torque resistance set a new standard</li> </ul> | <p><b>Economical</b></p> <ul style="list-style-type: none"> <li>• In addition to its technical data, the spindle axis also offers an excellent price/performance ratio</li> <li>• Due to the EGC's high performance it is often possible to use a smaller size</li> </ul> | <p><b>Versatile</b></p> <ul style="list-style-type: none"> <li>• Different spindle pitches, numerous sizes and variants such as protected guides open up a broad range of applications</li> <li>• Space-saving position sensing with proximity sensor in the profile slot is possible</li> </ul> | <ul style="list-style-type: none"> <li>• Wide range of options for mounting on drives</li> <li>• Comprehensive range of mounting accessories for multi-axis combinations</li> <li>• Spindle support enables maximum travel speed with all stroke lengths</li> </ul> |
|--|---|--|---|

## Data sheet



## Technical data

Dimensions → 391



## Note

Engineering software  
PositioningDrives  
→ [www.festo.com](http://www.festo.com)

Size		70	80		120		185	
Spindle pitch	[mm/rev]	10	10	20	10	25	40	
Working stroke <sup>1)</sup>	[mm]	50 ... 1000	50 ... 2000		50 ... 2500		50 ... 3000	
Spindle diameter	[mm]	10	10	20	10	25	40	
Max. feed force $F_x$	[N]	300	600		1300		3000	
No-load torque	[Nm]	0.3	0.5	0.5	1.5	1.5	3.0	
at min. travel speed	[m/s]	0.05	0.1	0.1	0.2	0.2	0.2	
No-load torque	[Nm]	0.45	0.75	0.75	2.25	2.25	6.5	
at max. travel speed	[m/s]	0.5	0.5	1	0.6	1.5	2	
Max. radial force <sup>2)</sup>	[N]	220	250		500		4000	
Max. rotational speed <sup>3)</sup>	[rpm]	3000	3000		3600		3000	
Max. acceleration	[m/s <sup>2</sup> ]	15						
Repetition accuracy	[mm]	±0.02						
Max. permissible force $F_y$	[N]	1850	3050		6890		15200	
Max. permissible force $F_z$	[N]	1850	3050		6890		15200	
Max. permissible torque $M_x$	[Nm]	16	36		144		529	
Max. permissible torque $M_y$	[Nm]	51	97		380		1157	
Max. permissible torque $M_z$	[Nm]	51	97		380		1157	

- 1) Total stroke = working stroke + 2x stroke reserve.  
2) At the drive shaft.  
3) Rotational speed and speed are stroke-dependent.

## Operating conditions

Ambient temperature <sup>4)</sup>	[°C]	-10 ... +60
Degree of protection		IP40

4) Note operating range of proximity sensors.

## Mass moment of inertia

Size		70	80		120		185
Spindle pitch	[mm/rev]	10	10	20	10	25	40
$J_0$	[kg mm <sup>2</sup> ]	1.99	5.2	5.2	64.46	64.46	594
$J_S$ per metre stroke	[kg mm <sup>2</sup> /m]	14.2	34.6	34.6	275.6	275.6	1803.1
$J_L$ per kg effective load	[kg mm <sup>2</sup> /kg]	2.53	2.53	10.13	2.53	15.83	40.53
$J_W$ Slide	[kg mm <sup>2</sup> ]	1.04	1.86	7.46	6.09	38.06	348.87

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

$$J_A = J_0 + J_W + J_H \times \text{working stroke [m]} + J_L \times m_{\text{effective load [kg]}}$$

## Materials

End cap	Anodised wrought aluminium alloy
Moment compensator	Anodised wrought aluminium alloy
Profile	Anodised wrought aluminium alloy
Slide	Anodised wrought aluminium alloy
Spindle	Steel
Guide rail	Steel
Cover strip	PU

# Spindle axes EGC-BS-KF, with recirculating ball bearing guide

## Order code

3

		EGC	-		-		-	BS	-		-		-	KF	-		-		-	GK	-	DN	
<b>Type</b>																							
EGC		Electromechanical linear axis																					
<b>Size</b>																							
		<b>Stroke [mm]</b>																					
70	100, 200, 300, 400, 500, 600, 700, 800, 1000																		50 ... 1000				
80	100, 200, 300, 500, 600, 800, 1000, 1400, 1500, 1800, 2000																		50 ... 2000				
120	200, 300, 500, 600, 800, 1000, 1400, 1500, 2000, 2500																		50 ... 2500				
185	300, 500, 600, 1000, 1500, 2000, 2500, 3000																		50 ... 3000				
<b>Drive function</b>																							
BS		Ball screw																					
<b>Spindle pitch [mm/rev]</b>																							
10P	10																						1
20P	20																						2
25P	25																						3
40P	40																						4
<b>Spindle support</b>																							
-		None																					
S		With spindle support																					5
<b>Guide</b>																							
KF		Recirculating ball bearing guide																					
<b>Stroke reserve</b>																							
...H		0 ... 999 (0 = no stroke reserve)																			6		
<b>Motor attachment position</b>																							
ML		Left																					
MR		Right																					
<b>Slides</b>																							
GK		Standard slide																					
<b>Operating instructions</b>																							
DN		None																					

- 1 Only with size 70, 80, 120.
- 2 Only with size 80.
- 3 Only with size 120.
- 4 Only with size 185.

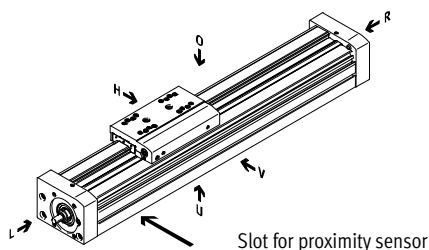
- 5 Only above stroke 705 mm with size 70, only above stroke 780 mm with size 80, only above stroke 883 mm with size 120, only above stroke 1,224 mm with size 185
- 6 The sum of the stroke length and 2x stroke reserve must not exceed the maximum working stroke.

### Order example:

EGC-70-500-BS-10P-KF-100H-ML-GK-DN

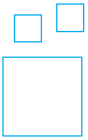
Electromechanical linear axis EGC - size 70 - stroke 500 mm - ball screw spindle - spindle pitch 10 mm/rev - without spindle support - recirculating ball bearing guide - stroke reserve 100 mm - motor attachment on left - standard slide - without operating instructions

### Ordering aid



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

## Ordering – Product options



Configurable  
product

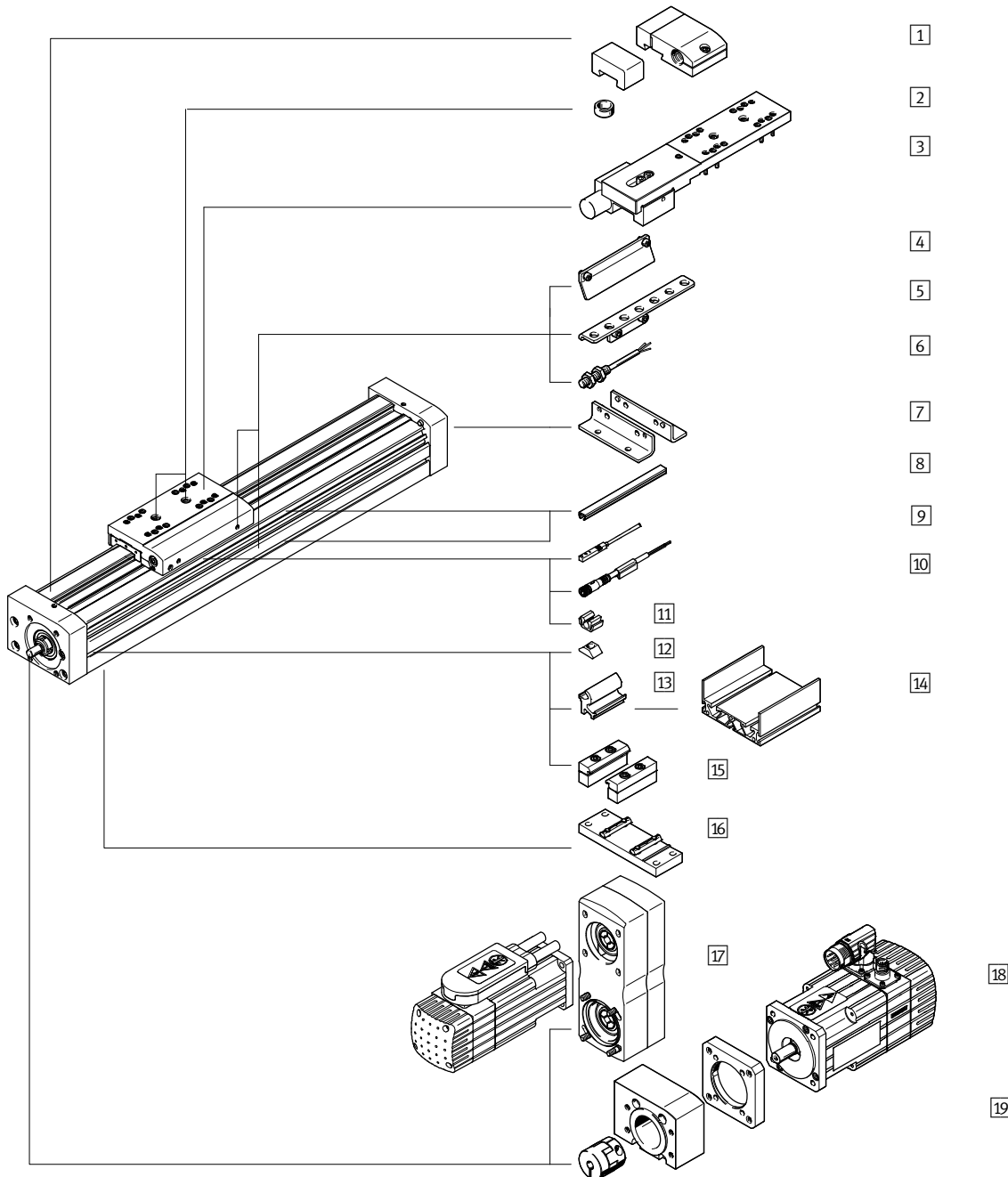
This product and all its options can  
be ordered using the configurator.

The configurator can be found under  
Products on the DVD or

→ [www.festo.com/catalogue/...](http://www.festo.com/catalogue/...)

Enter the type code in the search field.

## Accessories



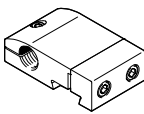
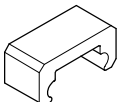


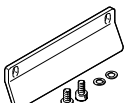
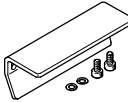
		→ Page/online
1	Emergency buffer NPE/shock absorber retainer KYE	388
2	Centring pin ZBS/centring sleeve ZBH	388
3	Clamping unit 1H...-PN, 2H-PN	<a href="#">egc-bs</a>
4	Switch lug SF-EGC	388
5	Sensor bracket HWS-EGC	388
6	Inductive proximity sensor SIEN	388
7	Foot mounting HPE	388
8	Slot cover ABP/ABP-S	388
9	Inductive proximity sensor SIES	388
10	Connecting cable NEBU	388

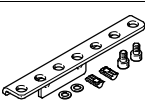

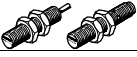
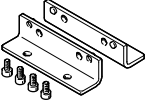
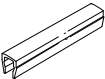
		→ Page/online
11	Clip SMBK	388
12	Slot nut NST	388
13	Adapter kit DHAM	<a href="#">egc-bs</a>
14	Support profile HMA	<a href="#">egc-bs</a>
15	Profile mounting MUE	388
16	Central support EAHF-L5	388
17	Parallel kit EAMM-U	389
18	Motor EMME/EMMS	390
19	Axial kit EAMM-A	390

# Spindle axes EGC-BS-KF, with recirculating ball bearing guide

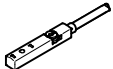
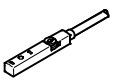
## Accessories – Ordering data




3


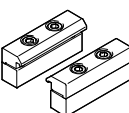
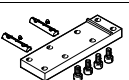
	For size	Part no.	Type
<b>1 Shock absorber retainer</b> Dimensions online: → <a href="#">egc-bs</a>			
	70	557584	KYE-70
	80	557585	KYE-80
	120	557586	KYE-120
	185	557587	KYE-185
<b>1 Emergency buffer</b>			
	70	562581	NPE-70
	80	562582	NPE-80
	120	562583	NPE-120
	185	562584	NPE-185
<b>2 Centring pin<sup>1)2)</sup></b> Technical data online: → <a href="#">zbs</a>			
	70	150928	ZBS-5
<b>2 Centring sleeve<sup>1)2)</sup></b> Technical data online: → <a href="#">zbh</a>			
	80, 120, 185	150927	ZBH-9
<b>4 Switch lug<sup>3)</sup></b> Dimensions online: → <a href="#">egc-bs</a>			
	70	558047	SF-EGC-1-70
	80	558048	SF-EGC-1-80
	120	558049	SF-EGC-1-120
	185	558051	SF-EGC-1-185
<b>4 Switch lug<sup>4)</sup></b> Dimensions online: → <a href="#">egc-bs</a>			
	70	558052	SF-EGC-2-70
	80	558053	SF-EGC-2-80
	120	558054	SF-EGC-2-120
	185	558056	SF-EGC-2-185

	For size	Part no.	Type
<b>5 Sensor bracket<sup>5)</sup></b> Dimensions online: → <a href="#">egc-bs</a>			
	70	558057	HWS-EGC-M5
	80	558057	HWS-EGC-M5
	120	570365	HWS-EGC-M8-B
	185	560517	HWS-EGC-M8-KURZ
<b>6 Inductive proximity sensor, N/O contact, M8</b> Technical data → 899			
	PNP, cable	★ 150386	SIEN-M8B-PS-K-L
	PNP, plug	★ 150387	SIEN-M8B-PS-S-L
<b>N/C contact, M8</b> Technical data → 899			
	PNP, cable	150390	SIEN-M8B-PO-K-L
	PNP, plug	150391	SIEN-M8B-PO-S-L
<b>7 Foot mounting</b> Dimensions online: → <a href="#">egc-bs</a>			
	70	558321	HPE-70
	80	558322	HPE-80
	120	558323	HPE-120
	185	558325	HPE-185
<b>8 Slot cover<sup>6)</sup></b>			
	For mounting slot		
	70, 80	151681	ABP-5
	120, 185	151682	ABP-8
	For sensor slot		
	70 ... 185	563360	ABP-5-S1

- 1) Packaging unit 10 pieces.
- 2) 2 centring pins/sleeves included in the scope of delivery of the axis.
- 3) For sensing via proximity sensor SIES-8M.
- 4) For sensing via proximity sensor SIEN-M8B or SIES-8M.
- 5) For proximity sensor SIEN-M8B.
- 6) Packaging unit 2x 0.5 m.

		Cable length [m]	Part no.	Type
<b>9 Proximity sensor for T-slot, inductive, N/O contact</b> Technical data → 905				
	PNP, cable	7.5	551386	SIES-8M-PS-24V-K-7,5-OE
	PNP, plug	0.3	551387	SIES-8M-PS-24V-K-0,3-M8D
	NPN, cable	7.5	551396	SIES-8M-NS-24V-K-7,5-OE
	NPN, plug	0.3	551397	SIES-8M-NS-24V-K-0,3-M8D
<b>N/C contact</b> Technical data → 905				
	PNP, cable	7.5	551391	SIES-8M-PO-24V-K-7,5-OE
	PNP, plug	0.3	551392	SIES-8M-PO-24V-K-0,3-M8D
	NPN, cable	7.5	551401	SIES-8M-NO-24V-K-7,5-OE
	NPN, plug	0.3	551402	SIES-8M-NO-24V-K-0,3-M8D

	For size	Part no.	Type
<b>10 Connecting cable, straight socket</b> Technical data → 1161			
	2.5 m	★ 541333	NEBU-M8G3-K-2.5-LE3
	5.0 m	★ 541334	NEBU-M8G3-K-5-LE3
<b>Angled socket</b> Technical data → 1161			
	2.5 m	★ 541338	NEBU-M8W3-K-2.5-LE3
	5.0 m	★ 541341	NEBU-M8W3-K-5-LE3
<b>11 Clip</b>			
	70 ... 185	534254	SMBK-8

	For size	Part no.	Type
<b>12 Slot nut</b> Dimensions online: → <a href="#">nst</a>			
	70, 80	150914	NST-5-M5
	120, 185	150915	NST-8-M6
<b>15 Profile mounting</b> Dimensions online: → <a href="#">egc-bs</a>			
	70	558043	MUE-70/80
	80	558043	MUE-70/80
	120	558044	MUE-120/185
	185	558044	MUE-120/185
<b>16 Central support</b> dimensionsonline: → <a href="#">egc-bs</a>			
	70	2349256	EAHF-L5-70-P
	80	3535188	EAHF-L5-80-P
	120	2410274	EAHF-L5-120-P

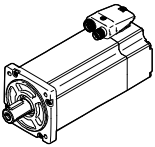



## Accessories – Ordering data

## Note

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

When using parallel kits, the no-load driving torque of the respective kit must be taking into consideration.

Motor / Gear unit <sup>2)</sup>	Parallel kit	
		
	<ul style="list-style-type: none"> <li>• Increased housing rigidity</li> <li>• More flexible motor mounting possible</li> <li>• Larger toothed belt bending radii for improved service life</li> <li>• Use in combination with third-party motors on request</li> </ul>	
	Part no.	Type
<b>[17]/[18] Permissible axis/motor combination with parallel kit –</b>		
Technical data online: → <a href="#">eamm-u</a>		
<b>EGC-70-...-BS</b>		
<b>With servo motor</b>		
EMME-AS-40-...	2155239	EAMM-U-50-S38-40P-78
EMMS-AS-40-...	1217708	EAMM-U-50-S38-40A-78
EMMS-AS-55-...	1218538	EAMM-U-60-S38-55A-91
<b>With stepper motor</b>		
EMMS-ST-42-...	1217945	EAMM-U-50-S38-42A-78
EMMS-ST-57-...	1218568	EAMM-U-60-S38-57A-91
<b>With gear unit</b>		
EMGA-40-P-...	2283732	EAMM-U-60-S38-40G-91
EMGC-40-P-...	2283732	EAMM-U-60-S38-40G-91
<b>EGC-80-...-BS</b>		
<b>With servo motor</b>		
EMMS-AS-55-...	1219370	EAMM-U-60-S48-55A-91 <sup>1)</sup>
EMME-AS-60-...	2629253	EAMM-U-70-S48-60P-96 <sup>1)</sup>
EMMS-AS-70-...	2787320	EAMM-U-70-S48-70A-96 <sup>1)</sup>
EMMS-AS-70-...	1217689	EAMM-U-86-S48-70A-102 <sup>1)</sup>
<b>With stepper motor</b>		
EMMS-ST-57-...	1219379	EAMM-U-60-S48-57A-91 <sup>1)</sup>
EMMS-ST-87-...	1217604	EAMM-U-86-S48-87A-177 <sup>1)</sup>
<b>With gear unit</b>		
EMGA-40-P-...	2283760	EAMM-U-60-S48-40G-91 <sup>1)</sup>
EMGC-40-P-...	2283760	EAMM-U-60-S48-40G-91 <sup>1)</sup>
EMGA-60-P-...-SAS/SST <sup>3)</sup>	2801627	EAMM-U-70-S48-60G-96 <sup>1)</sup>
EMGA-60-P-...-EAS, EMGC-60-P-... <sup>3)</sup>	2801715	EAMM-U-70-S48-60H-96 <sup>1)</sup>
EMGA-60-P-...-SAS/SST <sup>3)</sup>	1587251	EAMM-U-86-S48-60G-102 <sup>1)</sup>
EMGA-60-P-...-EAS, EMGC-60-P-... <sup>3)</sup>	1587338	EAMM-U-86-S48-60H-102 <sup>1)</sup>

Motor / Gear unit <sup>2)</sup>	Parallel kit	
	Part no.	Type
<b>EGC-120-...-BS</b>		
<b>With servo motor</b>		
EMMS-AS-70-...	1217543	EAMM-U-86-S62-70A-177 <sup>1)</sup>
EMME-AS-80-...	2157004	EAMM-U-86-S62-80P-177 <sup>1)</sup>
EMME-AS-100-...	1217381	EAMM-U-110-S62-100A-207 <sup>1)</sup>
EMMS-AS-100-...	1217381	EAMM-U-110-S62-100A-207 <sup>1)</sup>
EMMS-AS-140-...	1219440	EAMM-U-145-S62-140A-288 <sup>1)</sup>
<b>With stepper motor</b>		
EMMS-ST-87-...	1217373	EAMM-U-86-S62-87A-177 <sup>1)</sup>
<b>With gear unit</b>		
EMGA-60-P-...-SAS/SST <sup>3)</sup>	1587411	EAMM-U-86-S62-60G-177 <sup>1)</sup>
EMGA-60-P-...-EAS, EMGC-60-P-... <sup>3)</sup>	1587453	EAMM-U-86-S62-60H-177 <sup>1)</sup>
<b>EGC-185-...-BS</b>		
<b>With servo motor</b>		
EMME-AS-100-...	1220656	EAMM-U-110-S95-100A-207 <sup>1)</sup>
EMMS-AS-100-...	1220656	EAMM-U-110-S95-100A-207 <sup>1)</sup>
EMMS-AS-140-...	1220582	EAMM-U-145-S95-140A-288 <sup>1)</sup>
<b>With gear unit</b>		
EMGA-80-P-...	1589544	EAMM-U-110-S95-80G-207 <sup>1)</sup>

1) These parallel kits include a counter bearing EAMG for supporting the axis shaft. Additional information → online: [eamm-u](#)

2) The input torque must not exceed the max. perm. transferable torque of the parallel kit.

3) Gear unit drive shaft Ø: EMGA-60-P-...-SAS/SST11 mm; EMGA-60-P-...-EAS, EMGC-60-P14 mm.

## Note

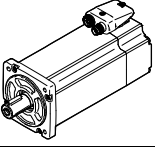
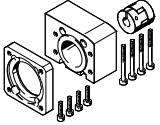
The clamping component EADT is required to adjust the toothed belt pre-tension with EAMM-U-110 and EAMM-U-145.

The motor and/or axis shaft can optionally be supported with a counter bearing EAMG.

More information → [eamm-u](#)

## Spindle axes EGC-BS-KF, with recirculating ball bearing guide

## Accessories – Ordering data

Motor <sup>1)</sup>	Axial kit	
		
	Part no.	Type
<b>18/19</b> Permissible axis/motor combination with axial kit – Technical data online: → <a href="#">eamm-a</a>		
<b>EGC-70-...-BS</b>		
With servo motor		
EMME-AS-40-...	2219044	EAMM-A-S38-40P
EMMS-AS-40-...	558162	EAMM-A-S38-40A
EMMS-AS-55-...	558163	EAMM-A-S38-55A
EMME-AS-60-...	2219110	EAMM-A-S38-60P
With stepper motor		
EMMS-ST-42-...	560685	EAMM-A-S38-42A
EMMS-ST-57-...	560686	EAMM-A-S38-57A
<b>EGC-80-...-BS</b>		
With servo motor		
EMMS-AS-55-...	558164	EAMM-A-S48-55A
EMME-AS-60-...	2220560	EAMM-A-S48-60P
EMMS-AS-70-...	558165	EAMM-A-S48-70A
With stepper motor		
EMMS-ST-57-...	560687	EAMM-A-S48-57A
EMMS-ST-87-...	560688	EAMM-A-S48-87A

Motor / Gear unit <sup>1)</sup>	Axial kit	
	Part no.	Type
<b>EGC-120-...-BS</b>		
With servo motor		
EMMS-AS-70-...	558166	EAMM-A-S62-70A
EMME-AS-80-...	2222582	EAMM-A-S62-80P
EMME-AS-100-...	558167	EAMM-A-S62-100A
EMMS-AS-100-...	558167	EAMM-A-S62-100A
EMMS-AS-140-...	558168	EAMM-A-S62-140A
With stepper motor		
EMMS-ST-87-...	560689	EAMM-A-S62-87A
<b>EGC-185-...-BS</b>		
With servo motor		
EMME-AS-100-...	558169	EAMM-A-S95-100A
EMMS-AS-100-...	558169	EAMM-A-S95-100A
EMMS-AS-140-...	558170	EAMM-A-S95-140A

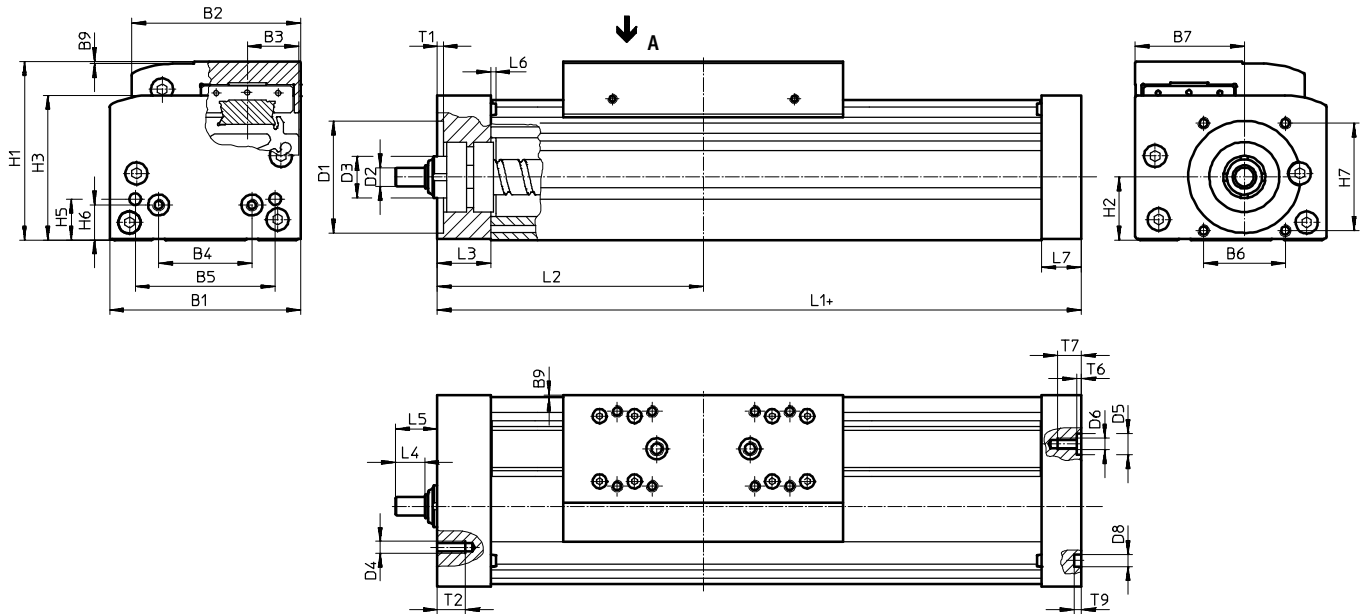
1) The input torque must not exceed the maximum permissible transferable torque of the axial kit.

## Spindle axes EGC-BS-KF, with recirculating ball bearing guide

FESTO

Download CAD data → [www.festo.com](http://www.festo.com)

## Dimensions



+ = plus stroke length + 2x stroke reserve

## Note

To avoid distortion in the slide, the bearing surfaces of the attachments must maintain a minimum flatness of 0.01 mm.

Size	Stroke	B1	B2	B3	B4	B5	B6	B7	B9	D1 ∅ H7	D2 ∅ H7	D3
70	50 ... 1000	69	58.6	16.5	30	45	29	39	1	38	6	≈G13
80	< 1477	82	72.6	22	40	60	35	46.75	1	48	8	∅18
	> 1477											
120	< 1704	120	107	33	80	40	64	78	1	62	12	∅28
	> 1704											
185	< 2361	186	169	53	120	80	80	114	1	95	25	∅44
	> 2361											

Size	Stroke	D4	D5 ∅ H7	D6	D8 ∅ H7	H1	H2	H3	H5	H6	H7	L1
70	50 ... 1000	M5	–	M5	5	64	22.5	50.5	13	13	36	168
80	< 1477	M5	9	M5	5	76.5	27	62	17.5	15	46	196
	> 1477											236
120	< 1704	M6	–	M8	9	111.5	42.5	89.5	22	22	54	309
	> 1704											369
185	< 2361	M8	–	M10	9	172.5	65.2	141.5	25	25	80	412
	> 2361											512

Size	Stroke	L2	L3	L4	L5	L6	L7	T1	T2	T6	T7	T9
70	50 ... 1000	86.5	21	8	14	1.8	16	2.5	12	–	10	3.1
80	< 1477	101	23	12.5	18	2	17	2.5	12	2.1	10	3.1
	> 1477	121										
120	< 1704	156	33	17.5	25.5	2	30	3	15	–	16	2.1
	> 1704	186										
185	< 2361	209	43	23	30.5	2	37	3	20	–	20	2.1
	> 2361	259										

# Spindle axes EGC-BS-KF, with recirculating ball bearing guide

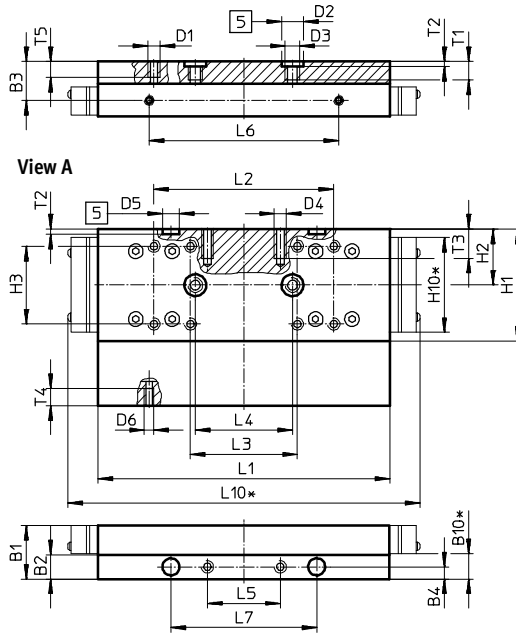
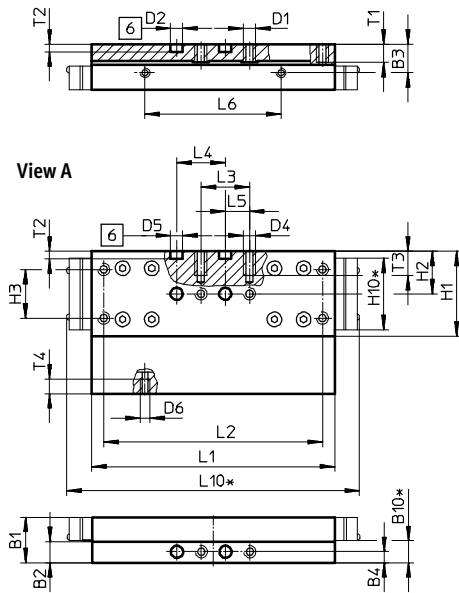
## Dimensions

GK – Standard slide

Size 70

Size 80

3



- 5 Hole for centring sleeve
- 6 Hole for centring pin
- \* Protected version

Size	B1	B2	B3	B4	B10*	D1	D2 ∅ H7	D3	D4	D5 ∅ H7
70	18.7	8.7	11.7	4.5	9	M5	5	–	M5	5
80	22	10	16	5	10.4	M5	9	M6	M5	7

Size	D6	H1	H2	H3	H10*	L1 ±0.1	L2	L3	L4 ±0.03
70	M4	35	17.5	20 ±0.1	29.4	100	90 ±0.1	20 ±0.1	20
80	M4	46	23	32 ±0.2	39	120	74 ±0.2	44 ±0.2	40

Size	L5	L6 ±0.1	L7 ±0.05	L10*	T1	T2 ±0.01	T3	T4	T5
70	10 ±0.1	56	–	121	7.5	3.1	10	6	–
80	30 ±0.1	78	60	145	8.6	2.1	12	7	7.5

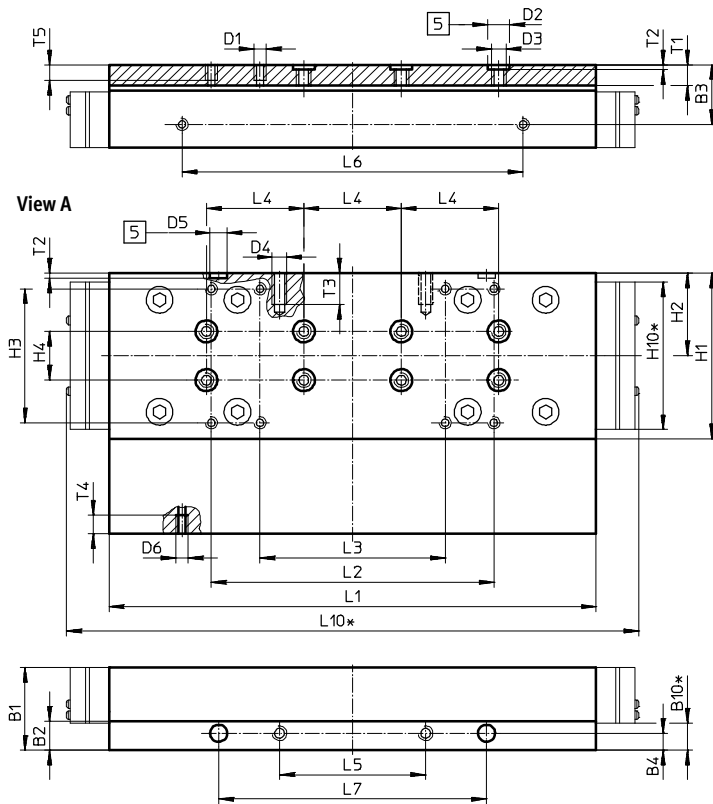
\* Protected version

# Spindle axes EGC-BS-KF, with recirculating ball bearing guide

## Dimensions

GK – Standard slide

Size 120



5 Hole for centring sleeve

\* Protected version

Size	B1	B2	B3	B4	B10*	D1	D2 ∅ H7	D3	D4	D5 ∅ H7
120	34	12	24.5	7	11.2	M5	9	M6	M6	7

Size	D6	H1	H2	H3	H4 ±0.03	H10*	L1 ±0.1	L2	L3	L4 ±0.03
120	M5	68	34	55 ±0.2	20	60.6	203.3	116 ±0.2	76 ±0.2	40

Size	L5	L6 ±0.1	L7 ±0.05	L10*	T1	T2 ±0.01	T3	T4	T5
120	60 ±0.1	140	110	235	8.6	2.1	13	7.5	7.5

\* Protected version

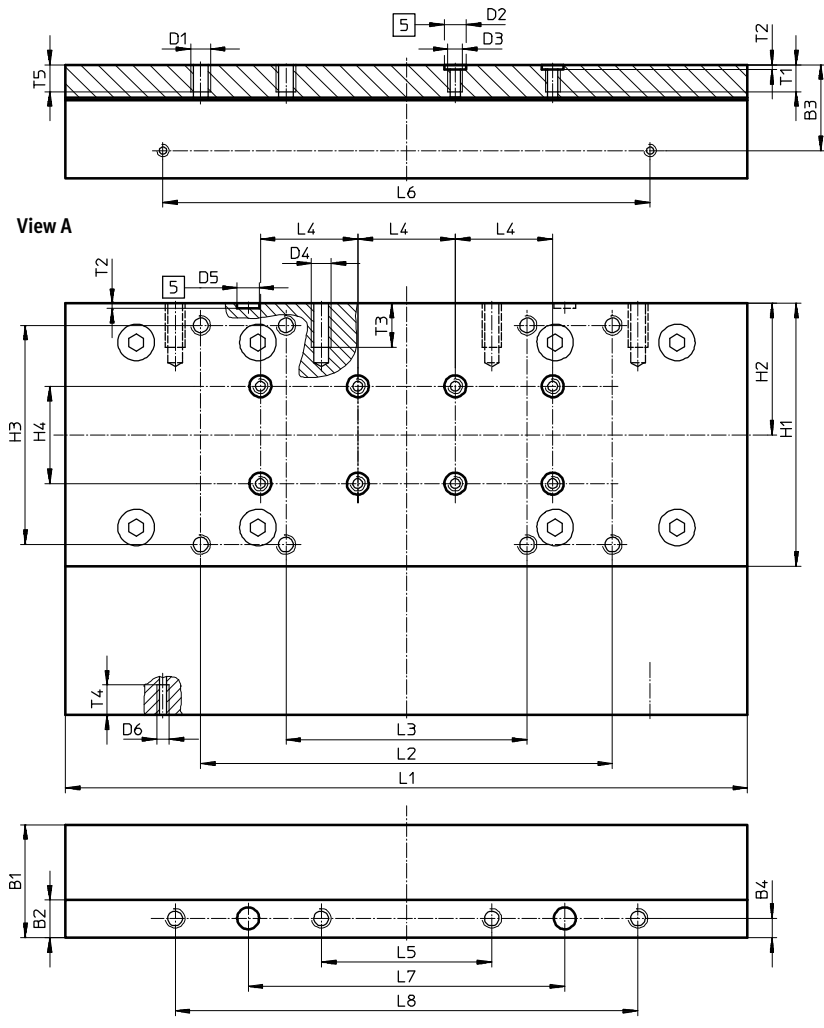
# Spindle axes EGC-BS-KF, with recirculating ball bearing guide

## Dimensions

GK – Standard slide

Size 185

3



5 Hole for centring sleeve

Size	B1	B2	B3	B4	D1	D2 ∅ H7	D3	D4	D5 ∅ H7
185	46.5	15.5	35.2	8	M 8	9	M6	M 8	9

Size	D6	H1	H2	H3	H4	L1	L2	L3	L4
185	M5	108	54	90 ±0.2	±0.03 40	±0.1 282.8	169 ±0.2	99 ±0.2	±0.03 40

Size	L5	L6	L7	L8	T1	T2	T3	T4	T5
185	70 ±0.2	±0.1 200	±0.05 130	±0.2 190	11	±0.01 2.1	18	12.3	12



Overview/Configuration/Ordering  
→ [www.festo.com/catalogue/egc-hd-bs](http://www.festo.com/catalogue/egc-hd-bs)



Additional information/Support/User documentation  
→ [www.festo.com/sp/egc-hd-bs](http://www.festo.com/sp/egc-hd-bs)

Linear drives and slides

Spindle axes with heavy-duty guide

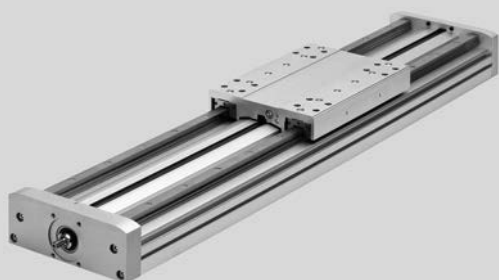
# EGC-HD-BS



- + With heavy-duty guide
- + With integrated ball screw
- + For maximum loads and torques
- + For high feed forces, speeds
- + For long service life
- + Precise and resilient double rail guide
- + Excellent price/performance ratio
- + Flexible motor mounting

# Spindle axes EGC-HD-BS, with heavy-duty guide

3



- High speeds and feed forces
- Recirculating ball bearing guide and rigid profile
- Maximum loads and torques
- Ideal as a basic axis for linear gantries and cantilever axes
- Spare parts service

→ [www.festo.com/catalogue/egc-hd-bs](http://www.festo.com/catalogue/egc-hd-bs)

## Product range overview

Type/Version	Size	Stroke [mm]	Feed force [N]	Product options	
				S	GK
<b>EGC-HD-BS</b>					
HD – Heavy-duty guide	125, 160, 220	50 ... 2400	300 ... 1300	■	■

## Product options

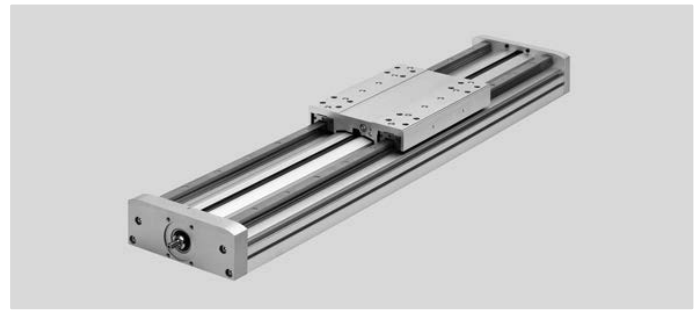
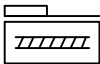
- |    |                           |    |                           |
|----|---------------------------|----|---------------------------|
| S  | Spindle support           | KL | Additional slide on left  |
| GK | Standard slide            | KR | Additional slide on right |
| GP | Standard slide, protected |    |                           |

## At a glance

- |  |  |  |  |
|--|--|--|--|
| <p><b>Powerful</b></p> <ul style="list-style-type: none"> <li>• New heavy-duty design for:                     <ul style="list-style-type: none"> <li>– Maximum loads and torques</li> <li>– High feed forces and speeds</li> <li>– Long service life</li> </ul> </li> </ul> | <p><b>Economical</b></p> <ul style="list-style-type: none"> <li>• In addition to its technical data, the spindle axis also offers an excellent price/performance ratio</li> <li>• Space-saving position sensing with proximity sensor in the profile slot is possible</li> </ul> | <p><b>Versatile</b></p> <ul style="list-style-type: none"> <li>• Precise, resilient DUO guide rail</li> <li>• Ideal as a basic axis for linear gantries and cantilever axes</li> <li>• The spindle axis with integrated ball screw combines high precision and flexible spindle pitches</li> </ul> | <ul style="list-style-type: none"> <li>• Wide range of options for mounting on drives</li> <li>• Spindle support enables maximum travel speed with all stroke lengths</li> </ul> |
|--|--|--|--|

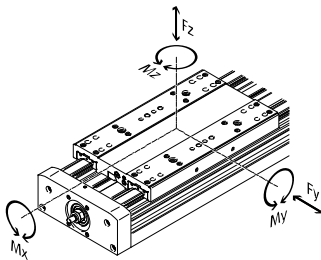


## Data sheet



## Technical data

Dimensions → 402



## Note

Engineering software  
PositioningDrives  
→ [www.festo.com](http://www.festo.com)

Size		125	160		220		
Spindle pitch	[mm/rev]	10	10	20	10	25	
Working stroke <sup>1)</sup>	[mm]	50 ... 900	50 ... 1900		50 ... 2400		
Spindle diameter	[mm]	10	15		25		
Max. feed force $F_x$	[N]	300	600		1300		
No-load torque	[Nm]	0.3	0.5	0.5	1.5	1.5	
at min. travel speed	[m/s]	0.05	0.1	0.1	0.2	0.2	
No-load torque	[Nm]	0.45	0.75	0.75	2.25	2.25	
at max. travel speed	[m/s]	0.5	0.5	1	0.6	1.5	
Max. radial force <sup>2)</sup>	[N]	220	250		500		
Max. rotational speed <sup>3)</sup>	[rpm]	3000	3000		3600		
Max. acceleration	[m/s <sup>2</sup> ]	15					
Repetition accuracy	[mm]	±0.02					
Max. permissible force $F_y$	[N]	3650	5600		13000		
Max. permissible force $F_z$	[N]	3650	5600		13000		
Max. permissible torque $M_x$	[Nm]	140	300		900		
Max. permissible torque $M_y$	[Nm]	275	500		1450		
Max. permissible torque $M_z$	[Nm]	275	500		1450		

- 1) Total stroke = working stroke + 2x stroke reserve.  
2) At the drive shaft.  
3) Rotational speed and speed are stroke-dependent.

## Operating conditions

Ambient temperature <sup>4)</sup>	[°C]	-10 ... +60
Degree of protection		IP40

4) Note operating range of proximity sensors.

## Mass moment of inertia

Size		125	160		220	
Spindle pitch		10	10	20	10	25
$J_0$	[kg mm <sup>2</sup> ]	6.06	13.94	29.74	106.78	184.26
$J_S$ per metre stroke	[kg mm <sup>2</sup> /m]	14.2	34.6	34.6	275.6	275.6
$J_L$ per kg effective load	[kg mm <sup>2</sup> /kg]	2.53	2.53	10.13	2.53	15.83

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

$$J_A = J_0 + J_S \times \text{working stroke [m]} + J_L \times m_{\text{effective load [kg]}}$$

## Materials

End cap	Anodised wrought aluminium alloy
Slide	Anodised wrought aluminium alloy
Guide rail	Coated and corrosion-resistant steel
Spindle	Steel
Cover strip	PU

# Spindle axes EGC-HD-BS, with heavy-duty guide

## Order code

3

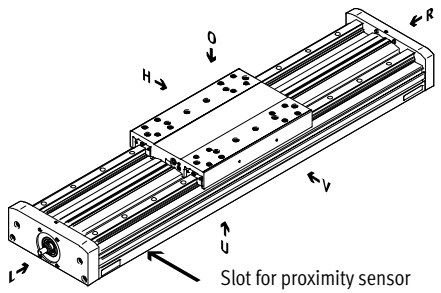
		EGC	-	HP	-		-		-	BS	-		-		-	GK	-	DN	
<b>Type</b>																			
EGC	Electromechanical linear axis																		
<b>Guide</b>																			
HD	Heavy-duty guide																		
<b>Size</b>																			
	<b>Stroke [mm]</b>																		
125	100, 200, 300, 400, 500, 600, 700, 900												50 ... 900						
160	100, 200, 400, 500, 700, 900, 1300, 1400, 1700, 1900												50 ... 1900						
220	100, 200, 400, 500, 700, 900, 1300, 1400, 1900, 2400												50 ... 2400						
<b>Drive function</b>																			
BS	Ball screw																		
<b>Spindle pitch [mm/rev]</b>																			
10P	10																		
20P	20																		
25P	25																		
<b>Spindle support</b>																			
S	With spindle support																		
<b>Stroke reserve</b>																			
...H	0 ... 999 (0 = no stroke reserve)																		
<b>Slides</b>																			
GK	Standard slide																		
<b>Bedienungsanleitung</b>																			
DN	Without																		

- 1 Only with size 160
- 2 Only with size 220
- 3 Only above stroke 605 mm with size 125, only above stroke 680 mm with size 160, only above stroke 783 mm with size 220
- 4 The sum of the stroke length and 2x stroke reserve must not exceed the maximum working stroke.

**Order example:**

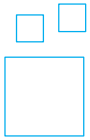
EGC-HD-160-500-BS-10P-20H-GK-DN  
 Electromechanical linear axis EGC - heavy-duty guide - size 160 - stroke 500 mm - ball screw spindle - spindle pitch 10 mm/rev - without spindle support - stroke reserve 20 mm - standard slide - without operating instructions

Ordering aid



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

## Ordering – Product options



Configurable  
product

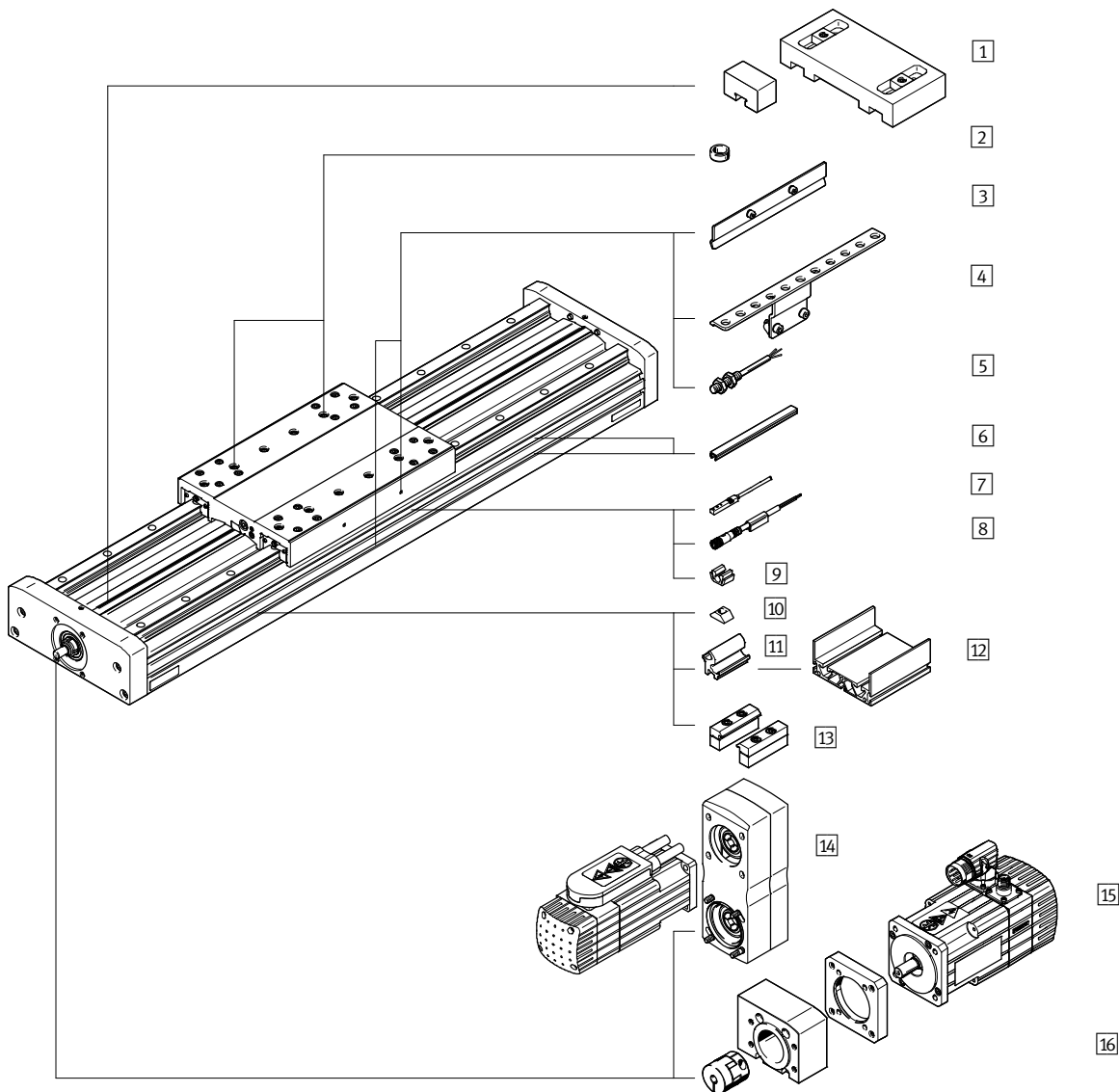
This product and all its options can  
be ordered using the configurator.

The configurator can be found under  
Products on the DVD or

→ [www.festo.com/catalogue/...](http://www.festo.com/catalogue/...)

Enter the type code in the search field.

## Accessories

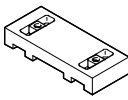



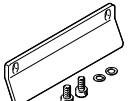
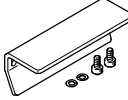


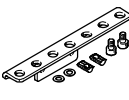

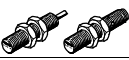
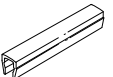
		→ Page/online
1	Emergency buffer NPE/retainer EAYH	400
2	Centring pin ZBS/centring sleeve ZBH	400
3	Switch lug SF-EGC	400
4	Sensor bracket HWS-EGC	400
5	Inductive proximity sensor SIEN	400
6	Slot cover ABP/ABP-S	400
7	Inductive proximity sensor SIES	400
8	Connecting cable NEBU	400

		→ Page/online
9	Clip SMBK	400
10	Slot nut NST	400
11	Adapter kit DAHM	<a href="#">egc-bs</a>
12	Support profile HMIA	<a href="#">egc-bs</a>
13	Profile mounting MUE	400
14	Parallel kit EAMM-U	401
15	Motor EMME/EMMS	401
16	Axial kit EAMM-A	401

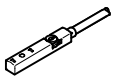
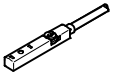
# Spindle axes EGC-HD-BS, with heavy-duty guide




## Accessories – Ordering data


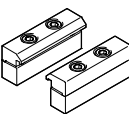
	For size	Part no.	Type
<b>1 Retainer EAYH</b>	Dimensions online: → <a href="#">egc-hd-bs</a>		
	125	1662803	EAYH-L2-125-N
	160	1669259	EAYH-L2-160-N
	220	1669260	EAYH-L2-220-N
<b>1 Emergency buffer</b>	Technical data online: → <a href="#">zbs</a>		
	125	1662475	NPE-125
	160	1672593	NPE-160
	220	1672598	NPE-220
<b>2 Centring pin<sup>1)2)</sup></b>	Technical data online: → <a href="#">zbs</a>		
	125	150928	ZBS-5
<b>2 Centring sleeve<sup>1)2)</sup></b>	Technical data online: → <a href="#">zbh</a>		
	125 ... 220	150927	ZBH-9
<b>3 Switch lug<sup>3)</sup></b>	Dimensions online: → <a href="#">egc-hd-bs</a>		
	125	570027	SF-EGC-HD-1-125
	160	1645872	SF-EGC-HD-1-160
	220	1645866	SF-EGC-HD-1-220
<b>3 Switch lug<sup>4)</sup></b>	Dimensions online: → <a href="#">egc-hd-bs</a>		
	125	570030	SF-EGC-HD-2-125
	160	1645865	SF-EGC-HD-2-160
	220	1645868	SF-EGC-HD-2-220

	For size	Part no.	Type
<b>4 Sensor bracket<sup>5)</sup></b>	Dimensions online: → <a href="#">egc-hd-bs</a>		
	125	558057	HWS-EGC-M5
	160	558057	HWS-EGC-M5
	220	570365	HWS-EGC-M8-B
<b>5 Inductive proximity sensor, N/O contact, M8</b>	Technical data → 899		
	PNP, cable	★ 150386	SIEN-M8B-PS-K-L
	PNP, plug	★ 150387	SIEN-M8B-PS-S-L
<b>N/C contact, M8</b>	Technical data → 899		
	PNP, cable	150390	SIEN-M8B-PO-K-L
	PNP, plug	150391	SIEN-M8B-PO-S-L
<b>6 Slot cover<sup>6)</sup></b>	Technical data → 899		
	For mounting slot		
	125, 160 <sup>7)</sup>	151681	ABP-5
	160 <sup>8)</sup> , 220	151682	ABP-8
	For sensor slot		
	125 ... 220	563360	ABP-5-S1

- 1) Packaging unit 10 pieces.
- 2) 2 centring pins/sleeves included in the scope of delivery of the axis.
- 3) For sensing via proximity sensor SIES-8M.
- 4) For sensing via proximity sensor SIEN-M8B or SIES-8M.
- 5) For proximity sensor SIEN-M8B.
- 6) Packaging unit 2x 0.5 m.
- 7) For mounting slot at side.
- 8) For mounting slot underneath.

	Cable length [m]	Part no.	Type
<b>7 Proximity sensor for T-slot, inductive, N/O contact</b>	Technical data → 905		
	PNP, cable	7.5	551386 SIES-8M-PS-24V-K-7,5-OE
	PNP, plug	0.3	551387 SIES-8M-PS-24V-K-0,3-M8D
	NPN, cable	7.5	551396 SIES-8M-NS-24V-K-7,5-OE
	NPN, plug	0.3	551397 SIES-8M-NS-24V-K-0,3-M8D
<b>N/C contact</b>	Technical data → 905		
	PNP, cable	7.5	551391 SIES-8M-PO-24V-K-7,5-OE
	PNP, plug	0.3	551392 SIES-8M-PO-24V-K-0,3-M8D
	NPN, cable	7.5	551401 SIES-8M-NO-24V-K-7,5-OE
	NPN, plug	0.3	551402 SIES-8M-NO-24V-K-0,3-M8D

	For size	Part no.	Type
<b>8 Connecting cable, straight socket</b>	Technical data → 1161		
	2.5 m	★ 541333	NEBU-M8G3-K-2.5-LE3
	5.0 m	★ 541334	NEBU-M8G3-K-5-LE3
<b>Angled socket</b>	Technical data → 1161		
	2.5 m	★ 541338	NEBU-M8W3-K-2.5-LE3
	5.0 m	★ 541341	NEBU-M8W3-K-5-LE3
<b>9 Clip</b>	Technical data → 1161		
	125 ... 220	534254	SMBK-8

	For size	Part no.	Type
<b>10 Slot nut</b>	Technical data online: → <a href="#">nst</a>		
	125, 160 <sup>9)</sup>	150914	NST-5-M5
	160 <sup>10)</sup> , 220	150915	NST-8-M6
<b>13 Profile mounting</b>	Dimensions online: → <a href="#">egc-hd-bs</a>		
	125	558043	MUE-70/80
	160	558043	MUE-70/80
	220	558044	MUE-120/185

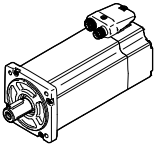
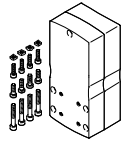
- 9) For mounting slot at side.
- 10) For mounting slot underneath.

## Accessories – Ordering data

## Note

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

When using parallel kits, the no-load driving torque of the respective kit must be taking into consideration.

Motor/Gear unit <sup>2)</sup>	Parallel kit	
		
	Part no.	Type
<b>[14]/[15] Permissible axis/motor combination with parallel kit –</b>		
Technical data online: → <a href="#">eamm-u</a>		
<b>EGC-HD-125</b>		
<b>With servo motor</b>		
EMME-AS-40-...	2155239	EAMM-U-50-S38-40P-78
EMMS-AS-40-...	1217708	EAMM-U-50-S38-40A-78
EMMS-AS-55-...	1218538	EAMM-U-60-S38-55A-91
<b>With stepper motor</b>		
EMMS-ST-42-...	1217945	EAMM-U-50-S38-42A-78
EMMS-ST-57-...	1218568	EAMM-U-60-S38-57A-91
<b>With gear unit</b>		
EMGA-40-P-...	2283732	EAMM-U-60-S38-40G-91
EMGC-40-P-...	2283732	EAMM-U-60-S38-40G-91
<b>EGC-HD-160</b>		
<b>With servo motor</b>		
EMMS-AS-55-...	1219370	EAMM-U-60-S48-55A-91 <sup>1</sup>
EMME-AS-60-...	2629253	EAMM-U-70-S48-60P-96 <sup>1</sup>
EMMS-AS-70-...	2787320	EAMM-U-70-S48-70A-96 <sup>1</sup>
EMMS-AS-70-...	1217689	EAMM-U-86-S48-70A-102 <sup>1</sup>
<b>With stepper motor</b>		
EMMS-ST-57-...	1219379	EAMM-U-60-S48-57A-91 <sup>1</sup>
EMMS-ST-87-...	1217604	EAMM-U-86-S48-87A-177 <sup>1</sup>
<b>With gear unit</b>		
EMGA-40-P-...	2283760	EAMM-U-60-S48-40G-91 <sup>1</sup>
EMGC-40-P-...	2283760	EAMM-U-60-S48-40G-91 <sup>1</sup>
EMGA-60-P-...-SAS/SST <sup>3</sup>	2801627	EAMM-U-70-S48-60G-96 <sup>1</sup>
EMGA-60-P-...-EAS, EMGC-60-P-... <sup>3)</sup>	2801715	EAMM-U-70-S48-60H-96 <sup>1</sup>
EMGA-60-P-...-SAS/SST <sup>3</sup>	1587251	EAMM-U-86-S48-60G-102 <sup>1</sup>
EMGA-60-P-...-EAS, EMGC-60-P-... <sup>3)</sup>	1587338	EAMM-U-86-S48-60H-102 <sup>1</sup>
<b>EGC-HD-220</b>		
<b>With servo motor</b>		
EMMS-AS-70-...	1217543	EAMM-U-86-S62-70A-177 <sup>1</sup>
EMME-AS-80-...	2157004	EAMM-U-86-S62-80P-177 <sup>1</sup>
EMME-AS-100-...	1217381	EAMM-U-110-S62-100A-207 <sup>1</sup>
EMMS-AS-100-...	1217381	EAMM-U-110-S62-100A-207 <sup>1</sup>
EMMS-AS-140-...	1219440	EAMM-U-145-S62-140A-288 <sup>1</sup>

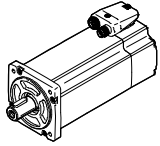
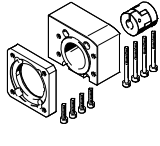
Motor/gear unit <sup>2)</sup>	Parallel kit	
	Part no.	Type
<b>With stepper motor</b>		
EMMS-ST-87-...	1217373	EAMM-U-86-S62-87A-177 <sup>1</sup>
<b>With gear unit</b>		
EMGA-60-P-...-SAS/SST <sup>3</sup>	1587411	EAMM-U-86-S62-60G-177 <sup>1</sup>
EMGA-60-P-...-EAS, EMGC-60-P-... <sup>3)</sup>	1587453	EAMM-U-86-S62-60H-177 <sup>1</sup>

- 1) These parallel kits include a counter bearing EAMG for supporting the axis shaft. Additional information → online: [eamm-u](#)
- 2) The input torque must not exceed the max. perm. transferable torque of the parallel kit.
- 3) Gear unit drive shaft Ø: EMGA-60-P-...-SAS/-SST11 mm; EMGA-60-P-...-EAS, EMGC-60-P-14 mm.

## Note

The clamping component EADT is required to adjust the toothed belt pre-tension with EAMM-U-110 and EAMM-U-145.

The motor and/or axis shaft can optionally be supported with a counter bearing EAMG. More information → [eamm-u](#)

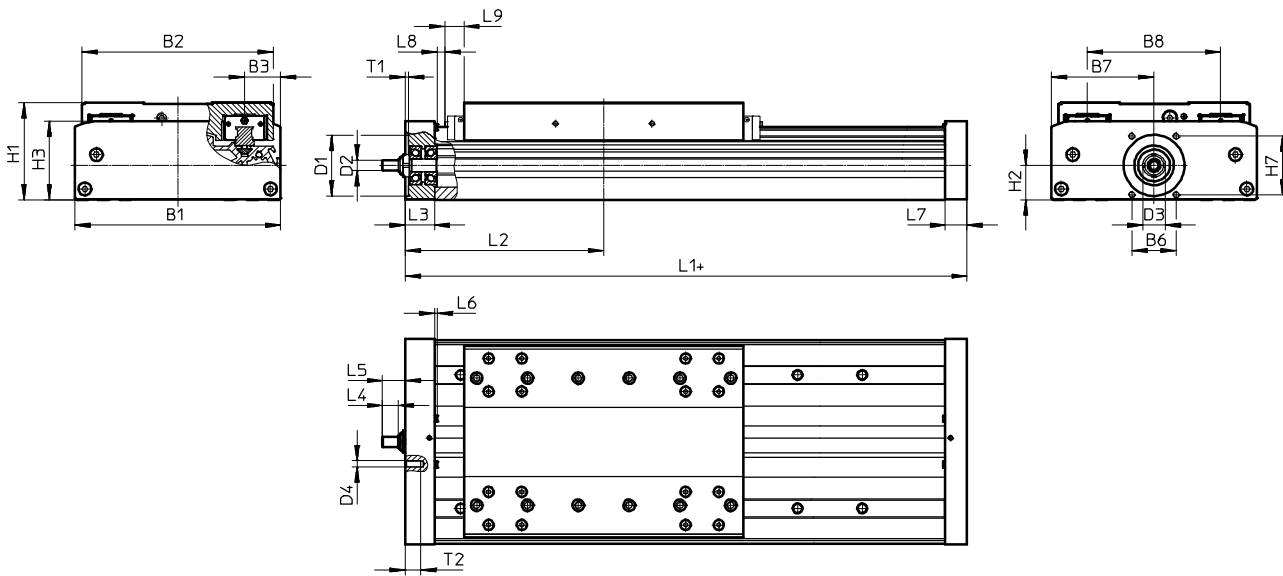
Motor <sup>4)</sup>	Axial kit	
		
	Part no.	Type
<b>[15]/[16] Permissible axis/motor combination with axial kit –</b>		
Technical data online: → <a href="#">eamm-a</a>		
<b>EGC-HD-125</b>		
<b>With servo motor</b>		
EMME-AS-40-...	2219044	EAMM-A-S38-40P
EMMS-AS-40-...	558162	EAMM-A-S38-40A
EMMS-AS-55-...	558163	EAMM-A-S38-55A
EMME-AS-60-...	2219110	EAMM-A-S38-60P
<b>With stepper motor</b>		
EMMS-ST-42-...	560685	EAMM-A-S38-42A
EMMS-ST-57-...	560686	EAMM-A-S38-57A
<b>EGC-HD-160</b>		
<b>With servo motor</b>		
EMMS-AS-55-...	558164	EAMM-A-S48-55A
EMME-AS-60-...	2220560	EAMM-A-S48-60P
EMMS-AS-70-...	558165	EAMM-A-S48-70A
<b>With stepper motor</b>		
EMMS-ST-57-...	560687	EAMM-A-S48-57A
EMMS-ST-87-...	560688	EAMM-A-S48-87A
<b>EGC-HD-220</b>		
<b>With servo motor</b>		
EMMS-AS-70-...	558166	EAMM-A-S62-70A
EMME-AS-80-...	2222582	EAMM-A-S62-80P
EMME-AS-100-...	558167	EAMM-A-S62-100A
EMMS-AS-100-...	558167	EAMM-A-S62-100A
EMMS-AS-140-...	558168	EAMM-A-S62-140A
<b>With stepper motor</b>		
EMMS-ST-87-...	560689	EAMM-A-S62-87A

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

# Spindle axes EGC-HD-BS, with heavy-duty guide

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



+ = plus stroke length + 2 x stroke reserve

Size	B1	B2	B3	B6	B7	B8	D1 ∅ H7	D2 ∅ H6
125	124	120	21	29	62	80	38	6
160	162	150.7	27.5	35	81	105	48	8
220	224	204.2	40	64	112	140	62	12

Size	D3	D4	H1	H2	H3	H7	L3	L4
125	15	M5	64	22.5	50.5	36	21	8
160	18	M5	76.5	27	62	46	23	12.5
220	28	M6	111.5	42.5	89.5	54	33	17.5

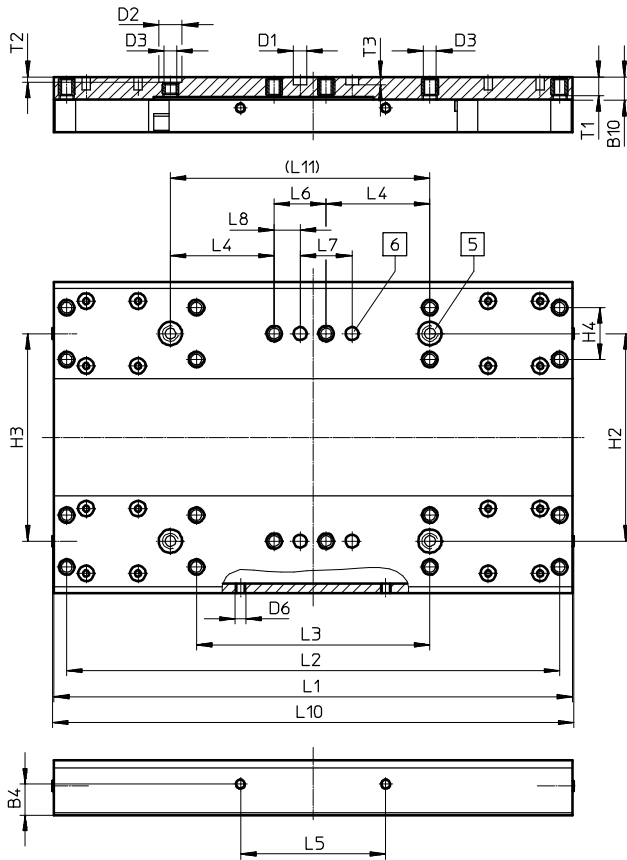
Size	L5	L6	L7	L8	L9	T1	T2
125	14	1.8	16	2	–	2.5	12
160	18	2	17	0.55	14.9	2.5	12
220	25.5	2	30	2	18	3	15

Size	Stroke	L1	L2 Min.
125	≤900	268	136.5
160	<1377	296	151.3
	≥1377	336	171
220	<1604	409	206
	≥1604	469	236

Dimensions

GK – Standard slide

Size 125



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

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

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

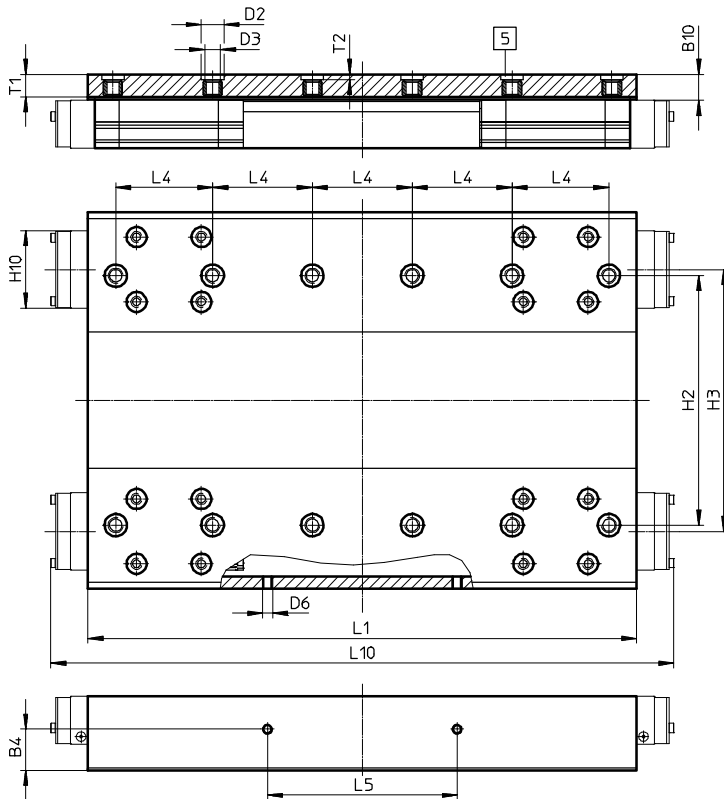
# Spindle axes EGC-HD-BS, with heavy-duty guide

## Dimensions

GK – Standard slide

Size 160

3



5 Hole for centring sleeve ZBH

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

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

\* Protected version

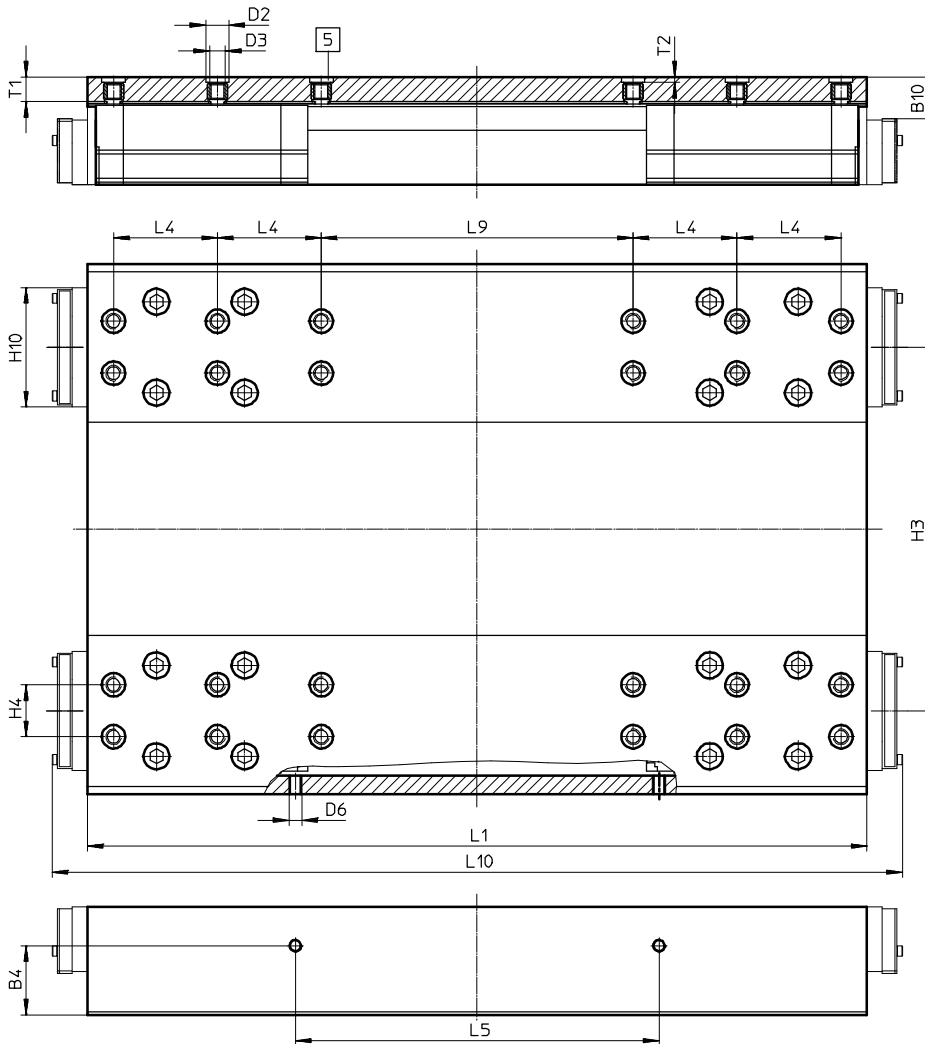


Dimensions

GK – Standard slide

Size 220

3



5 Hole for centring sleeve ZBH

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

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

\* Protected version





Overview/Configuration/Ordering  
→ [www.festo.com/catalogue/egc-tb](http://www.festo.com/catalogue/egc-tb)



Additional information/Support/User documentation  
→ [www.festo.com/sp/egc-tb](http://www.festo.com/sp/egc-tb)

Linear drives and slides  
Toothed belt axes with  
recirculating ball bearing guide

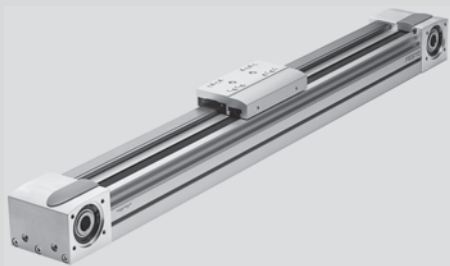
# EGC-TB-KF



- + Recirculating ball bearing guide for high loads and torques
- + Optionally with clamping unit, at one or both ends
- + Profile with optimised rigidity
- + High dynamic response and minimum vibration
- + Small toothed disc diameter
- + Reference switch optional
- + Freely positionable

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

3



- High speeds and feed forces
- Recirculating ball bearing guide and rigid profile
- Large loads and torques
- Free choice of motor mounting
- Spare parts service

→ [www.festo.com/catalogue/egc-tb](http://www.festo.com/catalogue/egc-tb)

## Product range overview

Type/Version	Size	Stroke [mm]	Feed force [N]	Product options GK	→ Page/online
<b>EGC-TB</b>					
KF – Recirculating ball bearing guide	50, 70, 80, 120, 185	50 ... 8500	50 ... 2500	■	409
<b>EGC-FA</b>					
Passive guide axis	70, 80, 120, 185	50 ... 8500	–	■	<a href="#">egc-fa</a>

## Product options

GK Standard slide	KL Additional slide on left	M2 Displacement encoder (resolution: 10 µm)	1HR Clamping unit, 1-channel, on right
GV Extended slide	KR Additional slide on right	1HL Clamping unit, 1-channel, on left	2H Clamping unit, 2-channel
GP Standard slide, protected	C Lubrication adapter	M1 Displacement encoder (resolution: 2.5 µm)	PN Pneumatically actuated clamping unit
GQ Extended slide, protected			

## At a glance

### Powerful

- Generously sized profiles with an optimised cross section afford maximum rigidity and load capacity
- Speed, acceleration and torque resistance set a new standard

### Economical

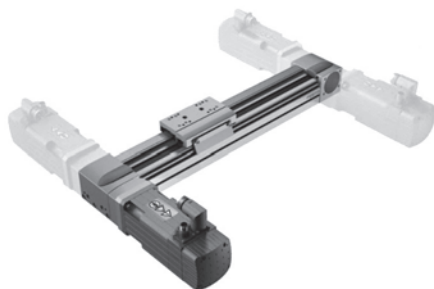
- In addition to the technical data, the toothed belt axis impresses with its excellent price/performance ratio
- Due to the EGC's high performance it is often possible to use a smaller size

### Versatile

- Numerous sizes and variants such as protected guides open up a broad range of applications
- Space-saving position sensing with proximity sensor in the profile slot is possible
- Wide range of options for mounting on drives
- Comprehensive range of mounting accessories for multi-axis combinations

### Flexible motor mounting

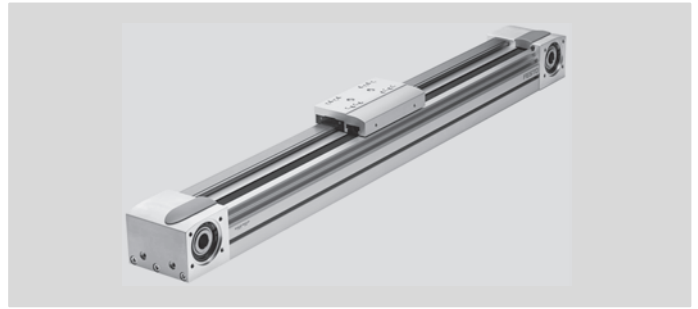
The motor position can be freely selected on 4 sides and can be changed at any time.



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

FESTO

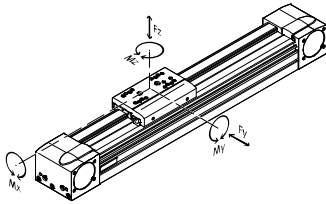
## Data sheet



3

## Technical data

Dimensions → 415



## Note

Engineering software  
PositioningDrives  
→ [www.festo.com](http://www.festo.com)

Size		50	70	80	120	185
Working stroke <sup>1)</sup>	[mm]	50 ... 1900	50 ... 5000	50 ... 8500	50 ... 8500	50 ... 8500
Max. feed force $F_x$	[N]	50	100	350	800	2500
Max. no-load torque <sup>2)</sup>	[Nm]	0.072	0.18	0.4	1.4	4.05
Max. no-load resistance to shifting <sup>1)</sup>	[N]	8	14.5	28	70	110
Max. driving torque	[Nm]	0.46	1.24	5	16	93
Max. speed	[m/s]	3	5			
Max. acceleration	[m/s <sup>2</sup> ]	50				
Repetition accuracy	[mm]	±0.08				±0.1
Max. permissible force $F_y$	[N]	650	1850	3050	6890	15200
Max. permissible force $F_z$	[N]	650	1850	3050	6890	15200
Max. permissible torque $M_x$	[Nm]	3.5	16	36	144	529
Max. permissible torque $M_y$	[Nm]	10	51	97	380	1157
Max. permissible torque $M_z$	[Nm]	10	51	97	380	1157

1) Total stroke = working stroke + 2x stroke reserve.

2) At 0.2 m/s, with variant GK.

## Operating conditions

Ambient temperature <sup>3)</sup>	[°C]	-10 ... +60
Degree of protection		IP40

3) Note operating range of proximity sensors.

## Toothed belt

Size		50	70	80	120	185
Spacing	[mm]	2	3	3	5	8
Expansion <sup>4)</sup>	[%]	0.094	0.08	0.24	0.13	0.29
Width	[mm]	10	15	19.3	30.3	50.5
Effective diameter	[mm]	18.46	24.83	28.65	39.79	73.85
Feed constant	[mm/rev]	58	78	90	125	232

4) At max. feed force.

## Mass moment of inertia

Size		50	70	80	120	185
$J_0$	[kg mm <sup>2</sup> ]	16.94	83.34	205.9	1241	17976
$J_S$ per metre stroke	[kg mm <sup>2</sup> /m]	2.6	10.6	18.8	93	760
$J_L$ per kg effective load	[kg mm <sup>2</sup> /kg]	85	154	205	396	1363.5

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

$$J_A = J_0 + J_S \times \text{working stroke [m]} + J_L \times m_{\text{effective load [kg]}}$$

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

## Data sheet

Materials	
End cap	Anodised wrought aluminium alloy
Profile	Anodised wrought aluminium alloy
Guide rail	Steel
Pulleys	High-alloy stainless steel
Slide	Anodised wrought aluminium alloy
Toothed belt seals	Polychloroprene with glass cord and nylon coating

## Order code

		EGC	-		-		-	TB	-	KF	-		GK	DN
<b>Type</b>														
EGC	Electromechanical linear axis													
<b>Size</b>														
	<b>Stroke [mm]</b>													
50	50 ... 1900													
70	50 ... 5000													
80	50 ... 8500													
120	50 ... 8500													
185	50 ... 8500													
<b>Drive function</b>														
TB	Toothed belt													
<b>Guide</b>														
KF	Recirculating ball bearing guide													
<b>Stroke reserve</b>														
...H	0 ... 999 (0 = no stroke reserve)	1												
<b>Slides</b>														
GK	Standard slide													
<b>Operating instructions</b>														
DN	Without													

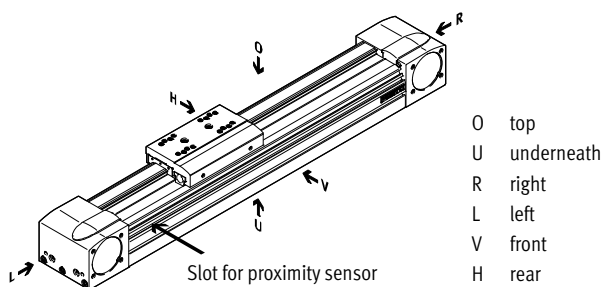
1 The sum of the stroke length and 2x stroke reserve must not exceed the maximum working stroke

### Order example:

EGC-70-500-TB-KF-100H-GK-DN

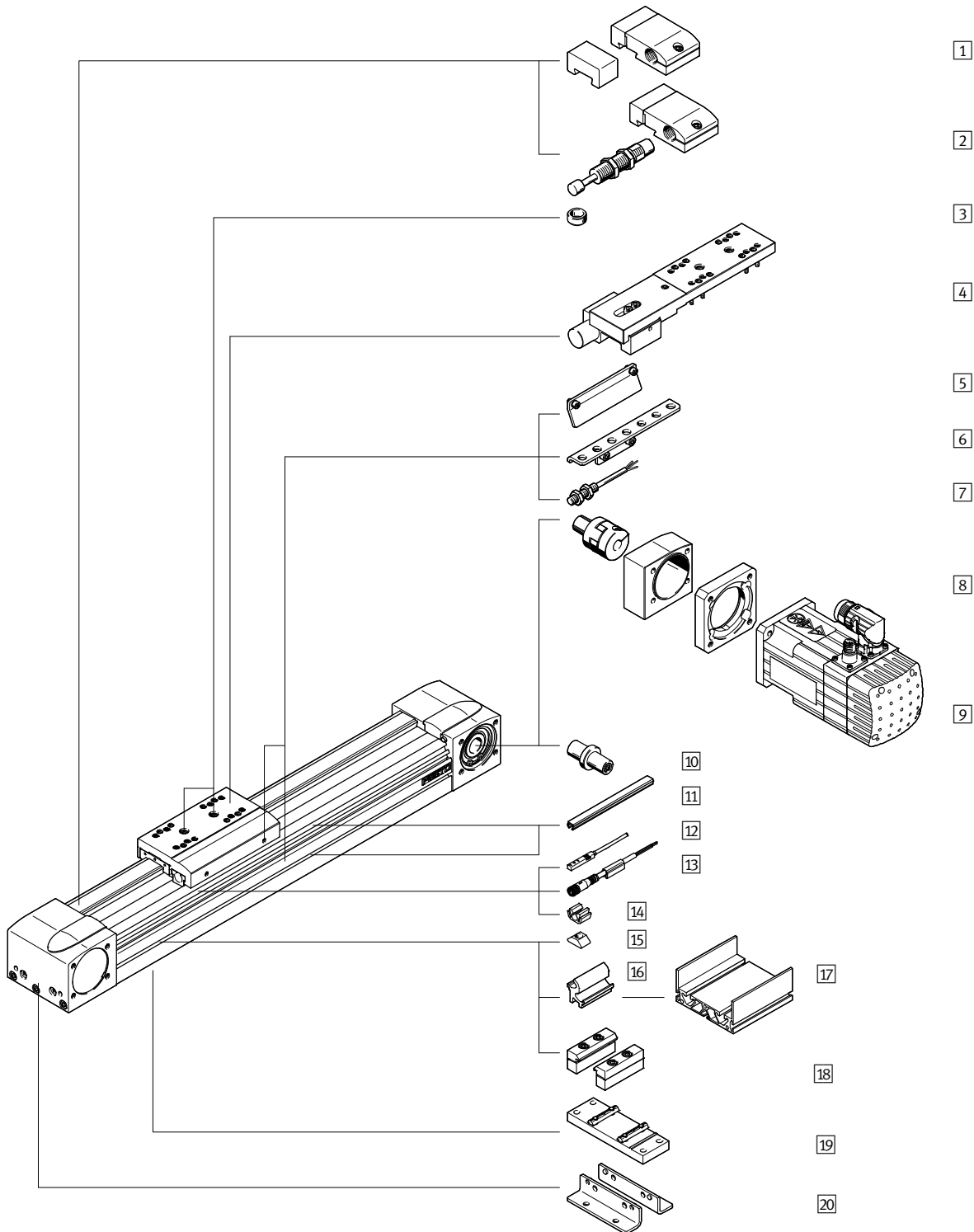
Electromechanical linear axis EGC - size 70 - stroke 500 mm - toothed belt drive - recirculating ball bearing guide - stroke reserve 100 mm - standard slide - without operating instructions

### Ordering aid



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

## Accessories



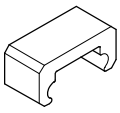
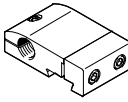
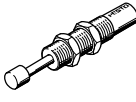


		→ Page/online
1	Emergency buffer NPE/shock absorber retainer KYE	412
2	Shock absorber YSRW/shock absorber retainer KYE	412
3	Centring pin ZBS/centring sleeve ZBH	412
4	Clamping unit 1H...-PN, 2H-PN	<a href="#">egc-tb</a>
5	Switch lug SF-EGC	412
6	Sensor bracket HWS-EGC	412
7	Inductive proximity sensor SIEN	412
8	Axial kit EAMM-A	413
9	Motor EMME/EMMS	413
10	Drive shaft EAMB	414

		→ Page/online
11	Slot cover ABP/ABP-S	414
12	Inductive proximity sensor SIES	414
13	Connecting cable NEBU	414
14	Clip SMBK	414
15	Slot nut NST	414
16	Adapter kit DHAM	<a href="#">egc-tb</a>
17	Support profile HMA	<a href="#">egc-tb</a>
18	Profile mounting MUE	414
19	Central support EAHF-L5	414
20	Foot mounting HPE	414

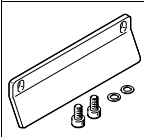
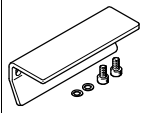
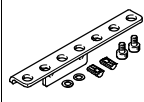


# Toothed belt axes EGC-TB-KF, with recirculating ball bearing guide

## Accessories – Ordering data

3

	For size	Part no.	Type
<b>1 Emergency buffer</b>			
	50	564897	NPE-50
	70	562581	NPE-70
	80	562582	NPE-80
	120	562583	NPE-120
	185	562584	NPE-185
<b>1 Shock absorber retainer</b> <span style="float:right">Dimensions online: → <a href="#">egc-tb</a></span>			
	50	557583	KYE-50
	70	557584	KYE-70
	80	557585	KYE-80
	120	557586	KYE-120
	185	557587	KYE-185
<b>2 Shock absorber</b> <span style="float:right">Technical data online: → <a href="#">ysrw</a></span>			
	50	191192	YSRW-5-8
	70	191194	YSRW-8-14
	80	191196	YSRW-12-20
	120	191197	YSRW-16-26
	185	191198	YSRW-20-34
<b>3 Centring pin<sup>1)2)</sup></b> <span style="float:right">Technical data online: → <a href="#">zbs</a></span>			
	50, 70	150928	ZBS-5
<b>3 Centring sleeve<sup>1)2)</sup></b> <span style="float:right">Technical data online: → <a href="#">zbh</a></span>			
	80, 120, 185	150927	ZBH-9

- 1) Packaging unit 10 pieces.
- 2) 2 centring pins/sleeves included in the scope of delivery of the axis.
- 3) For sensing via proximity sensor SIES-8M.
- 4) For sensing via proximity sensor SIEN-M8B or SIES-8M.
- 5) For proximity sensor SIEN-M8B.

	For size	Part no.	Type
<b>5 Switch lug<sup>3)</sup></b> <span style="float:right">Dimensions online: → <a href="#">egc-tb</a></span>			
	50	558046	SF-EGC-1-50
	70	558047	SF-EGC-1-70
	80	558048	SF-EGC-1-80
	120	558049	SF-EGC-1-120
	185	558051	SF-EGC-1-185
<b>5 Switch lug<sup>4)</sup></b> <span style="float:right">Dimensions online: → <a href="#">egc-tb</a></span>			
	70	558052	SF-EGC-2-70
	80	558353	SF-EGC-2-80
	120	558054	SF-EGC-2-120
	185	558056	SF-EGC-2-185
<b>6 Sensor bracket<sup>5)</sup></b> <span style="float:right">Dimensions online: → <a href="#">egc-tb</a></span>			
	70	558057	HWS-EGC-M5
	80	558057	HWS-EGC-M5
	120	570365	HWS-EGC-M8-B
	185	560517	HWS-EGC-M8-KURZ
<b>7 Inductive proximity sensor, N/O contact, M8</b> <span style="float:right">Technical data → 899</span>			
	PNP, cable	★ 150386	SIEN-M8B-PS-K-L
	PNP, plug	★ 150387	SIEN-M8B-PS-S-L
<b>N/C contact, M8</b> <span style="float:right">Technical data → 899</span>			
	PNP, cable	150390	SIEN-M8B-PO-K-L
	PNP, plug	150391	SIEN-M8B-PO-S-L



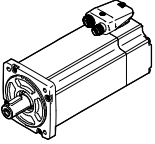
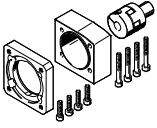
## Toothed belt axes EGC-TB-KF, with recirculating ball bearing guide

FESTO

## Accessories – Ordering data

## Note


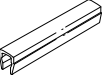
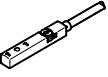
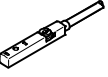




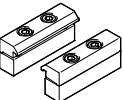
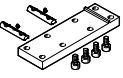
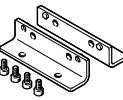
Depending on the combination of motor and drive, it may not be possible to reach the maximum feed force of the drive.

Motor / Gear unit <sup>1)</sup>	Axial kit	
		
	Part no.	Type
8/9 Permissible axis/motor combination with axial kit – Technical data online: → <a href="#">eamm-a</a>		
<b>EGC-50</b>		
With servo motor		
EMMS-AS-55-...	557975	EAMM-A-L27-55A
With servo motor and gear unit		
EMME-AS-40-... EMGA-40-P-G...-EAS-40	557974	EAMM-A-L27-40G
EMMS-AS-40-... EMGA-40-P-G...-SAS-40	557974	EAMM-A-L27-40G
With stepper motor		
EMMS-ST-57-...	560678	EAMM-A-L27-57A
With stepper motor and gear unit		
EMMS-ST-42-... EMGA-40-P-G...-SST-42	557974	EAMM-A-L27-40G
<b>EGC-70</b>		
With servo motor		
EMME-AS-60-... EMMS-AS-70-...	2037246 557979	EAMM-A-L38-60P EAMM-A-L38-70A
With servo motor and gear unit		
EMMS-AS-55-... EMGA-60-P-G...-SAS-55	557978	EAMM-A-L38-60G
EMMS-AS-70-... EMGA-60-P-G...-SAS-70	557978	EAMM-A-L38-60G
With stepper motor		
EMMS-ST-57-... EMMS-ST-87-...	560679 560680	EAMM-A-L38-57A EAMM-A-L38-87A
With stepper motor and gear unit		
EMMS-ST-57-... EMGA-60-P-G...-SST-57	557978	EAMM-A-L38-60G

Motor / Gear unit <sup>1)</sup>	Axial kit	
	Part no.	Type
<b>EGC-80</b>		
With servo motor		
EMMS-AS-70-... EMME-AS-80-... EMMS-AS-100-...	557982 2042616 557984	EAMM-A-L48-70A EAMM-A-L48-80P EAMM-A-L48-100A
With servo motor and gear unit		
EMMS-AS-55-... EMGA-60-P-G...-SAS-55	557983	EAMM-A-L48-60G
EMMS-AS-70-... EMGA-60-P-G...-SAS-70	557983	EAMM-A-L48-60G
With stepper motor		
EMMS-ST-87-...	560683	EAMM-A-L48-87A
With stepper motor and gear unit		
EMMS-ST-57-... EMGA-60-P-G...-SST-57	557983	EAMM-A-L48-60G
<b>EGC-120</b>		
With servo motor		
EMME-AS-100-... EMMS-AS-100-... EMMS-AS-140-...	557988 557988 557990	EAMM-A-L62-100A EAMM-A-L62-100A EAMM-A-L62-140A
With servo motor and gear unit		
EMMS-AS-70-... EMGA-80-P-G...-SAS-70	557989	EAMM-A-L62-80G
EMME-AS-80-... EMGA-80-P-G...-EAS-80	557989	EAMM-A-L62-80G
EMME-AS-100-... EMGA-80-P-G...-SAS-100	557989	EAMM-A-L62-80G
EMMS-AS-100-... EMGA-80-P-G...-SAS-100	557989	EAMM-A-L62-80G
With stepper motor and gear unit		
EMMS-ST-87-... EMGA-80-P-G...-SST-87	557989	EAMM-A-L62-80G
<b>EGC-185</b>		
With servo motor		
EMMS-AS-140-... EMMS-AS-190-...	557994 1378474	EAMM-A-L95-140A EAMM-A-L95-190A
With servo motor and gear unit		
EMME-AS-100-... EMGA-120-P-G...-SAS-100	557995	EAMM-A-L95-120G
EMMS-AS-100-... EMGA-120-P-G...-SAS-100	557995	EAMM-A-L95-120G
EMMS-AS-140-... EMGA-120-P-G...-SAS-140	557995	EAMM-A-L95-120G

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

## Accessories – Ordering data

	For size	Part no.	Type
<b>10 Drive shaft</b>			
	50	558034	EAMB-16-7-8X15-8X10
	70	558035	EAMB-18-9-8X16-10X12
	80	558036	EAMB-24-6-15X21-16X20
	120	558037	EAMB-34-6-25X26-23X27
	185	558038	EAMB-44-7-35X30-32X32
<b>11 Slot cover<sup>1)</sup></b>			
	For mounting slot		
	70, 80	151681	ABP-5
	120, 185	151682	ABP-8
	For sensor slot		
50 ... 185	563360	ABP-5-S1	
<b>12 Proximity sensor for T-slot, inductive, N/O contact</b> <span style="float: right;">Technical data → 905</span>			
	PNP, cable	7.5	551386 SIES-8M-PS-24V-K-7,5-OE
	PNP, plug	0.3	551387 SIES-8M-PS-24V-K-0,3-M8D
	NPN, cable	7.5	551396 SIES-8M-NS-24V-K-7,5-OE
	NPN, plug	0.3	551397 SIES-8M-NS-24V-K-0,3-M8D
<b>N/C contact</b> <span style="float: right;">Technical data → 905</span>			
	PNP, cable	7.5	551391 SIES-8M-PO-24V-K-7,5-OE
	PNP, plug	0.3	551392 SIES-8M-PO-24V-K-0,3-M8D
	NPN, cable	7.5	551401 SIES-8M-NO-24V-K-7,5-OE
	NPN, plug	0.3	551402 SIES-8M-NO-24V-K-0,3-M8D
<b>13 Connecting cable, straight socket</b> <span style="float: right;">Technical data → 1161</span>			
	–	2.5	★ 541333 NEBU-M8G3-K-2.5-LE3
	–	5.0	★ 551334 NEBU-M8G3-K-5-LE3
<b>Angled socket</b> <span style="float: right;">Technical data → 1161</span>			
	–	2.5	★ 541338 NEBU-M8W3-K-2.5-LE3
	–	5.0	★ 511341 NEBU-M8W3-K-5-LE3
<b>14 Clip</b>			
	50 ... 185	534254	SMBK-8
<b>15 Slot nut</b> <span style="float: right;">Technical data online: → nst</span>			
	50	558045	NST-3-M3
	70, 80	150914	NST-5-M5
	120, 185	150915	NST-8-M6
<b>18 Profile mounting</b> <span style="float: right;">Dimensions online: → egc-tb</span>			
	50	558042	MUE-50
	70	558043	MUE-70/80
	80	558043	MUE-70/80
	120	558044	MUE-120/185
	185	558044	MUE-120/185
<b>19 Central support</b> <span style="float: right;">Dimensions online: → egc-tb</span>			
	70	2349256	EAHF-L5-70-P
	80	3535188	EAHF-L5-80-P
	120	2410274	EAHF-L5-120-P
<b>20 Foot mounting</b> <span style="float: right;">Dimensions online: → egc-tb</span>			
	50	558320	HPE-50
	70	558321	HPE-70
	80	558322	HPE-80
	120	558323	HPE-120
	185	558325	HPE-185

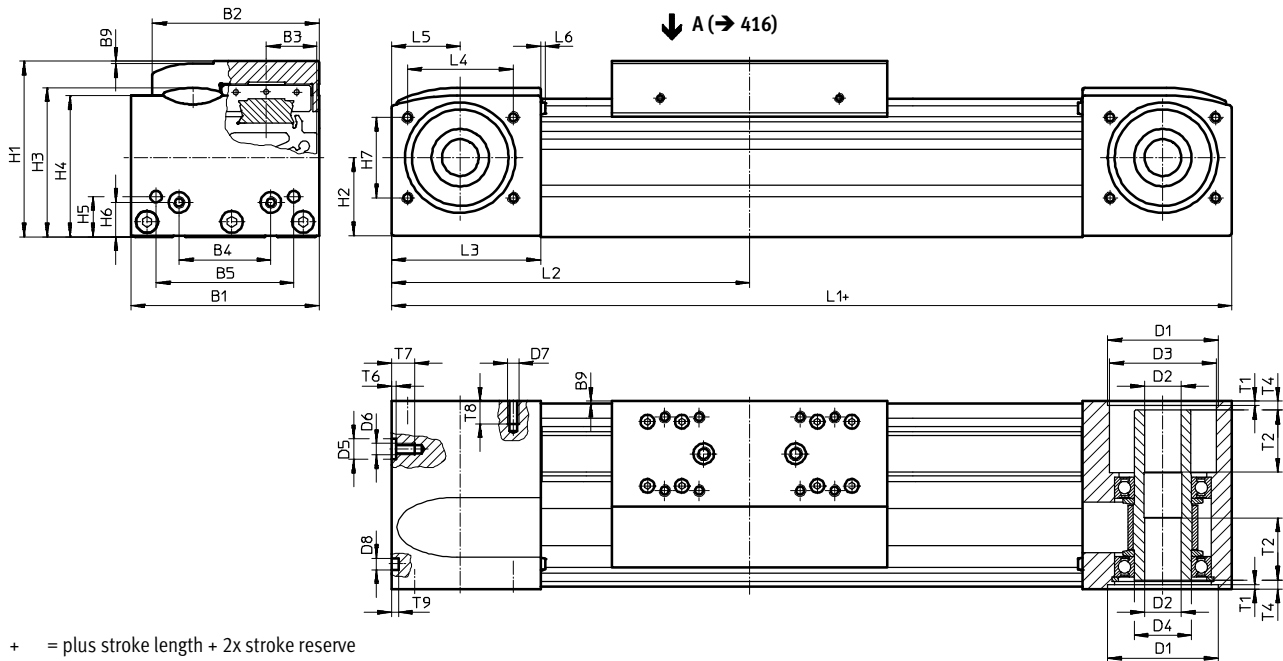
1) Packaging unit 2x 0.5 m.

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

FESTO

Download CAD data → [www.festo.com](http://www.festo.com)

## Dimensions



## Note

To avoid distortion in the slide, the bearing surfaces of the attachments must maintain a minimum flatness of 0.01 mm.

Size	B1	B2	B3	B4	B5	B9	D1	D2	D3	D4	D5	D6
							H7 <td>∅ <td>∅ <td>∅ <td>∅ <td>H7</td> </td></td></td></td>	∅ <td>∅ <td>∅ <td>∅ <td>H7</td> </td></td></td>	∅ <td>∅ <td>∅ <td>H7</td> </td></td>	∅ <td>∅ <td>H7</td> </td>	∅ <td>H7</td>	H7
50	48	39	11.5	20	35	1	27	8	20	15	-	M4
70	69	58.6	16.5	30	45	1	38	10	28	20	-	M5
80	82	72.6	22	40	60	1	48	16	46.5	25	9	M5
120	120	107	33	80	40	1	62	23	59	35	-	M 8
185	186	169	53	120	80	1	95	32	90	60	-	M10

Size	D7	D8	H1	H2	H3	H4	H5	H6	H7	L1	L2
		∅									
		H7									
50	M3	5	42.5	16.5	37.6	35.5	10.5	10.5	18	155	77.5
70	M5	5	64	28	53.7	50.8	13	13	29	246	123
80	M5	5	76.5	34.5	65	61.5	17.5	15	35	286	143
120	M6	9	111.5	51.6	95.9	91.1	22	22	54	446	223
185	M 8	9	172.5	80.5	152.6	143	25	25	80	612	306

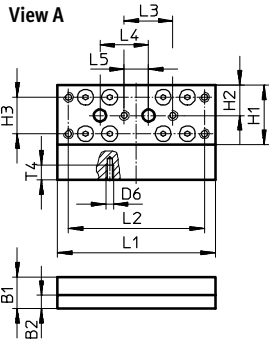
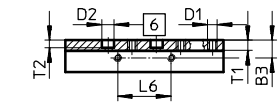
Size	L3	L4	L5	L6	L8	L9	T1	T2	T4	T6	T7	T8	T9
50	40	26	20	1.8	3	-	1.5	-	5.9	-	7	8	3.1
70	57.5	36	27.5	1.8	3	10.5	2.1	18	7.15	-	10	12	3.1
80	65	46	30	2	3	13	2.1	27	4	2.1	10	10	3.1
120	100	64	50	2	3	18	3.1	29.5	4	-	16	14	2.1
185	140	80	70	2	3	21	2.8	34.5	4	-	20	17	2.1

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

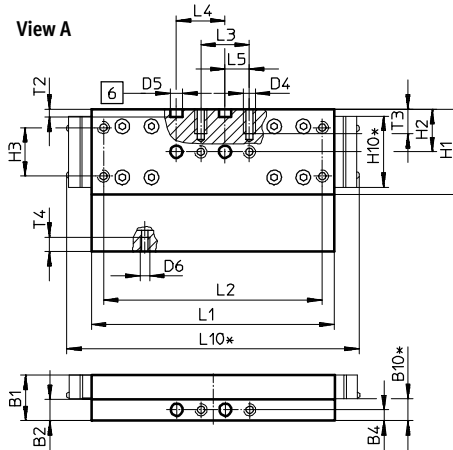
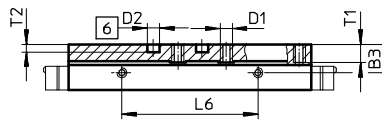
## Dimensions

### GK – Standard slide

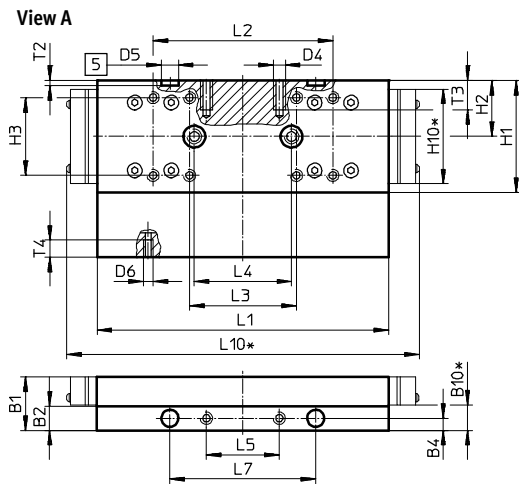
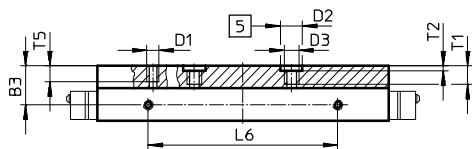
#### Size 50



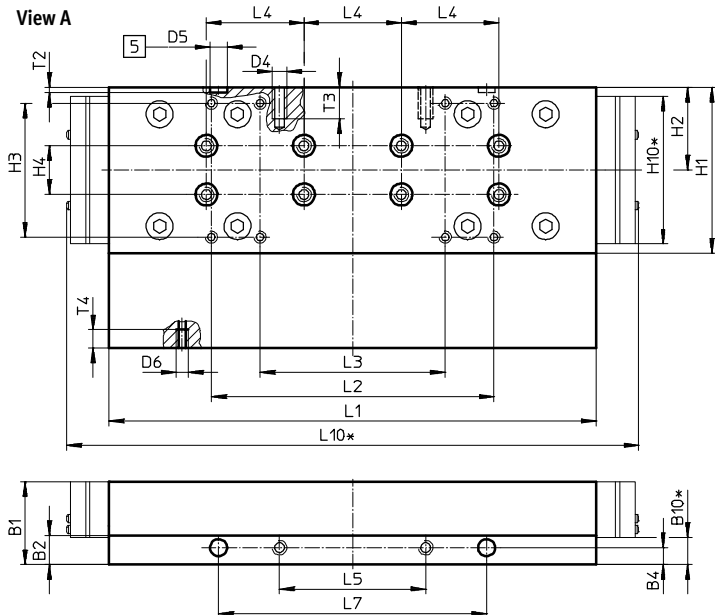
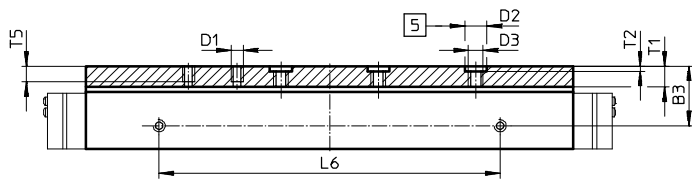
#### Size 70



#### Size 80



#### Size 120



- 5 Hole for centring sleeve
- 6 Hole for centring pin
- \* Protected version

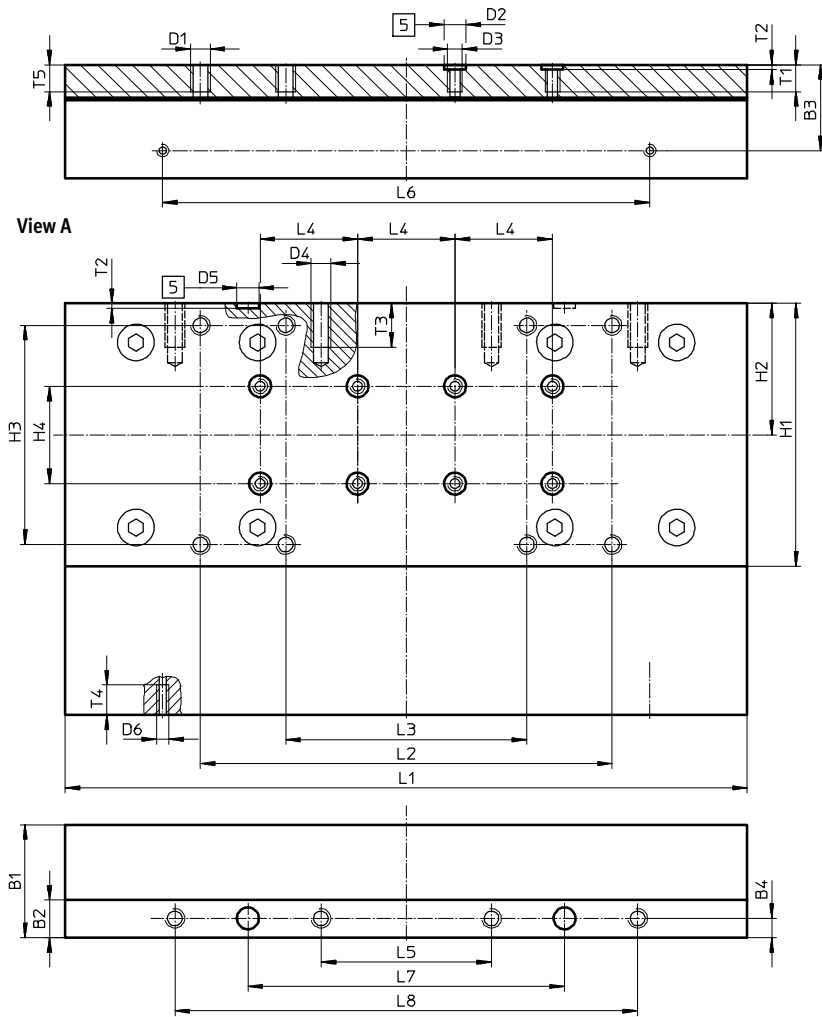
3

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

## Dimensions

GK – Standard slide

Size 185



5 Hole for centring sleeve

Size	B1	B2	B3	B4	B10*	D1	D2 ∅ H7	D3	D4	D5 ∅ H7	D6	H1	H2	H3	H4 ±0.03
50	13	5.5	7.2	–	–	M4	5	–	–	–	M3	24.5	12.5	15 ±0.1	–
70	18.7	8.7	11.7	4.5	9	M5	5	–	M5	5	M4	35	17.5	20 ±0.1	–
80	22	10	16	5	10.4	M5	9	M6	M5	7	M4	46	23	32 ±0.2	–
120	34	12	24.5	7	11.2	M5	9	M6	M6	7	M5	68	34	55 ±0.2	20
185	46.5	15.5	35.2	8	–	M 8	9	M6	M 8	9	M5	108	54	90 ±0.2	40

Size	H10*	L1 ±0.1	L2	L3	L4 ±0.03	L5	L6 ±0.1	L7 ±0.05	L8 ±0.2	L10*	T1	T2 ±0.01	T3	T4	T5
50	–	65	56 ±0.1	20 ±0.1	20	10 ±0.1	22	–	–	–	4.2	3.1	–	6	–
70	29.4	100	90 ±0.1	20 ±0.1	20	10 ±0.1	56	–	–	121	7.5	3.1	10	6	–
80	39	120	74 ±0.2	44 ±0.2	40	30 ±0.1	78	60	–	145	8.6	2.1	12	7	7.5
120	60.6	203.3	116 ±0.2	76 ±0.2	40	60 ±0.1	140	110	–	235	8.6	2.1	13	7.5	7.5
185	–	282.8	169 ±0.2	99 ±0.2	40	70 ±0.2	200	130	190	–	11	2.1	18	12.3	12

\* Protected version



Overview/Configuration/Ordering  
→ [www.festo.com/catalogue/egc-hd-tb](http://www.festo.com/catalogue/egc-hd-tb)

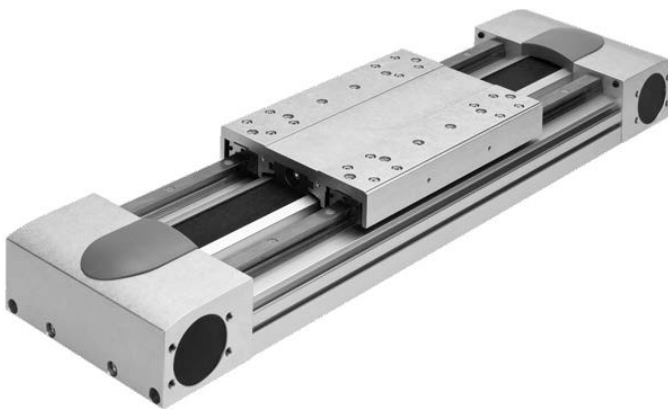


Additional information/Support/User documentation  
→ [www.festo.com/sp/egc-hd-tb](http://www.festo.com/sp/egc-hd-tb)

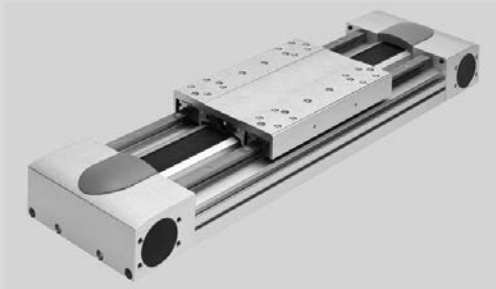
Linear drives and slides

Toothed belt axes with heavy-duty guide

# EGC-HD-TB



- + With heavy-duty guide
- + For maximum loads and torques
- + For high feed forces, speeds
- + For long service life
- + Precise and resilient double rail guide
- + Excellent price/performance ratio
- + Flexible motor mounting



- High speeds and feed forces
- Recirculating ball bearing guide and rigid profile
- Maximum loads and torques
- Ideal as a basic axis for linear gantries and cantilever axes
- Spare parts service

→ [www.festo.com/catalogue/egc-hd-tb](http://www.festo.com/catalogue/egc-hd-tb)

## Product range overview

Type/version	Size	Stroke [mm]	Feed force [N]	Product options GK
<b>EGC-HD-TB</b>				
HD – Heavy-duty guide	125, 160, 220	50 ... 5000	450 ... 1800	■

## Product options

GK	Standard slide	KL	Additional slide on left
GP	Standard slide, protected	KR	Additional slide on right

## At a glance

### Powerful

- New heavy-duty design for:
  - Maximum loads and torques
  - High feed forces and speeds
  - Long service life

### Economical

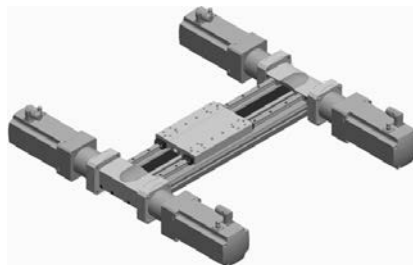
- In addition to the technical data, the toothed belt axis impresses with its excellent price/performance ratio
- Space-saving position sensing with proximity sensor in the profile slot is possible

### Versatile

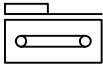
- Precise, resilient DUO guide rail
- Ideal as a basic axis for linear gantries and cantilever axes
- Wide range of options for mounting on drives

### Flexible motor mounting

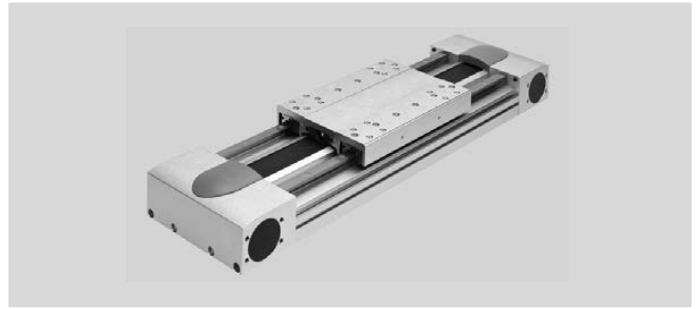
The motor position can be freely selected on 4 sides and can be changed at any time.



## Data sheet

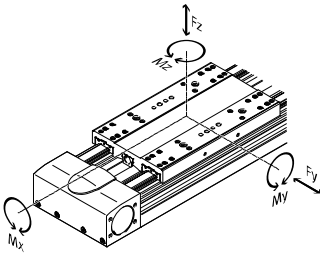


3



## Technical data

Dimensions → 425



## Note

Engineering software  
PositioningDrives  
→ [www.festo.com](http://www.festo.com)

Size		125	160	220
Working stroke <sup>1)</sup>	[mm]	50 ... 3000	50 ... 5000	50 ... 4750
Max. feed force $F_x$	[N]	450	1000	1800
No-load torque <sup>2)</sup>	[Nm]	1.1	2.1	4.1
Max. no-load resistance to shifting <sup>2)</sup>	[N]	30.79	105.5	123.8
Max. driving torque	[Nm]	7.2	20	59.58
Max. speed	[m/s]	3	5	
Max. acceleration	[m/s <sup>2</sup> ]	40	50	
Repetition accuracy	[mm]	±0.08		±0.1
Max. permissible force $F_y$	[N]	3650	5600	13000
Max. permissible force $F_z$	[N]	3650	5600	13000
Max. permissible torque $M_x$	[Nm]	140	300	900
Max. permissible torque $M_y$	[Nm]	275	500	1450
Max. permissible torque $M_z$	[Nm]	275	500	1450

1) Total stroke = working stroke + 2x stroke reserve.

2) At 0.2 m/s.

## Operating conditions

Ambient temperature <sup>3)</sup>	[°C]	-10 ... +60
Degree of protection		IP40

3) Note operating range of proximity sensors.

## Toothed belt

Size		125	160	220
Pitch	[mm]	3	5	8
Width	[mm]	30.3	40.0	50.5
Expansion <sup>4)</sup>	[%]	0.31	0.23	0.29
Effective diameter	[mm]	32.47	39.79	66.21
Feed constant	[mm/rev]	102	125	208

4) At max. feed force.

## Mass moment of inertia

Size		125	160	220
$J_0$	[kg cm <sup>2</sup> ]	4.639	14.49	108.99
$J_S$ per metre stroke	[kg cm <sup>2</sup> /m]	0.38	1.267	6.269
$J_L$ per kg effective load	[kg cm <sup>2</sup> /kg]	2.635	3.96	10.96

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

$$J_A = J_0 + J_S \times \text{working stroke [m]} + J_L \times m_{\text{effective load [kg]}}$$

## Materials

End cap	Anodised wrought aluminium alloy
Slide	Anodised wrought aluminium alloy
Guide rail	Coated and corrosion-resistant steel
Pulleys	High-alloy stainless steel
Toothed belt	Polychloroprene with glass cord and nylon coating



## Order code

		EGC	-	HP	-		-		-	TB	-		-	GK	-	DN
<b>Type</b>																
EGC	Electromechanical linear axis															
<b>Guide</b>																
HD	Heavy-duty guide															
<b>Size</b>																
	<b>Stroke [mm]</b>															
125	50 ... 3000															
160	50 ... 5000															
220	50 ... 4750															
<b>Drive function</b>																
TB	Toothed belt															
<b>Stroke reserve</b>																
...H	0 ... 999 (0 = no stroke reserve)														1	
<b>Slides</b>																
GK	Standard slide															
<b>Operating instructions</b>																
DN	Without															

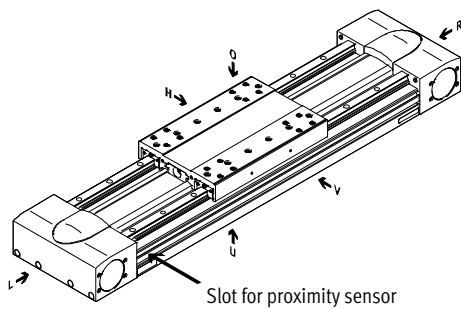
1 The sum of the stroke length and 2x stroke reserve must not exceed the maximum working stroke

**Order example:**

EGC-HD-160-500-TB-20H-GK-DN

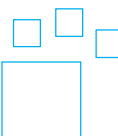
Electromechanical linear axis EGC - heavy-duty guide - size 160 - stroke 500 mm - toothed belt - stroke reserve 20 mm - standard slide - without operating instructions

## Ordering aid



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

## Ordering – Product options



**Configurable product**

**This product and all its options can be ordered using the configurator.**

The configurator can be found under Products on the DVD or

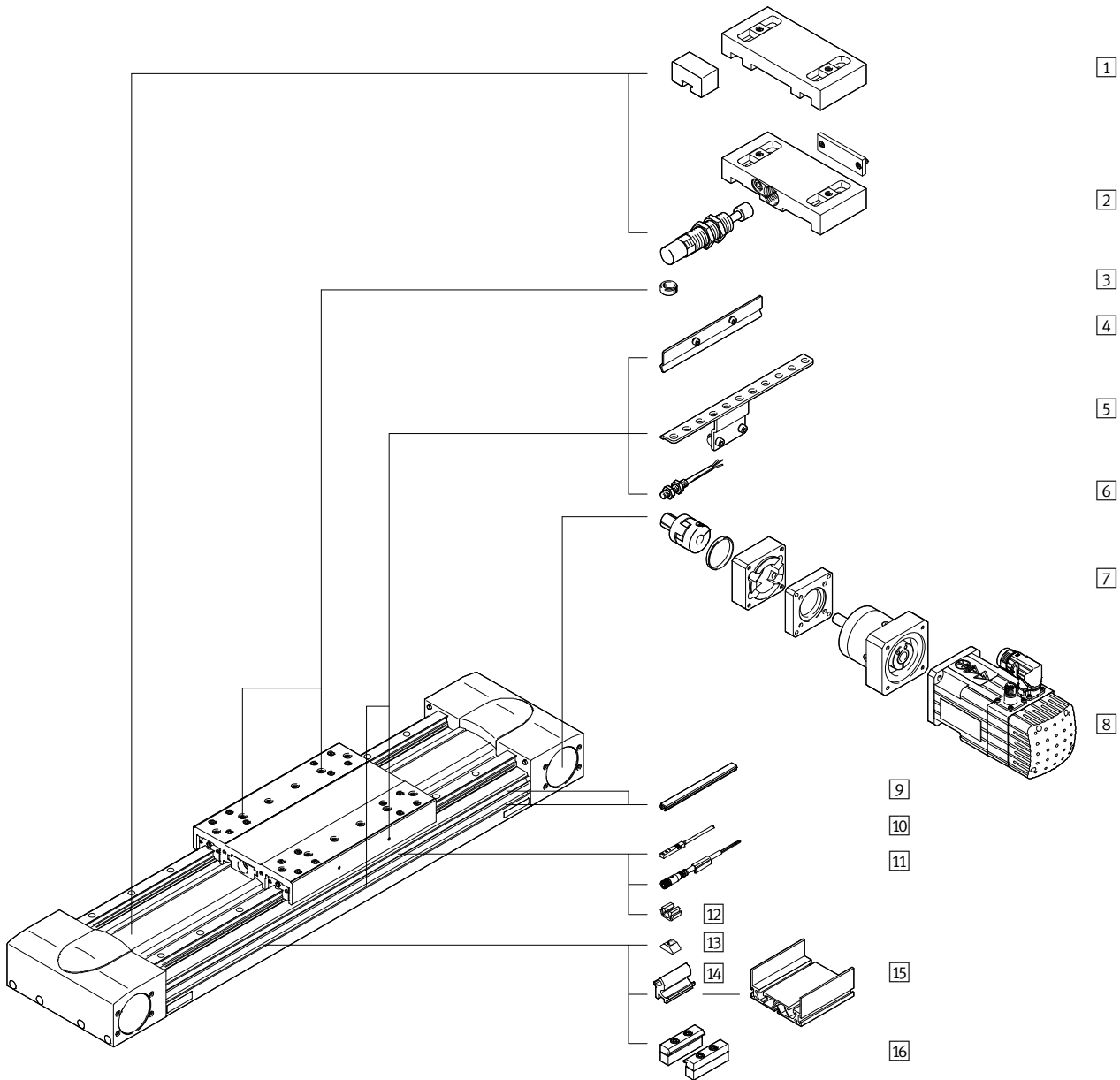
→ [www.festo.com/catalogue/...](http://www.festo.com/catalogue/...)

Enter the type code in the search field.

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

## Accessories

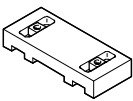

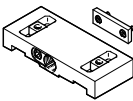
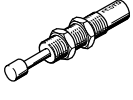


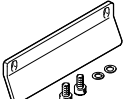
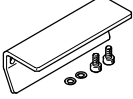
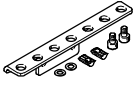


3



		→ Page/online
1	Emergency buffer NPE/retainer EAYH	423
2	Shock absorber YSRW/shock absorber retainer EAYH	423
3	Centring pin ZBS/centring sleeve ZBH	423
4	Switch lug SF-EGC	423
5	Sensor bracket HWS-EGC	423
6	Inductive proximity sensor SIEN	423
7	Axial kit EAMM-A	423
8	Motor EMME/EMMS	423

		→ Page/online
9	Slot cover ABP/ABP-S	424
10	Inductive proximity sensor SIES	424
11	Connecting cable NEBU	424
12	Clip SMBK	424
13	Slot nut NST	424
14	Adapter kit DHAM	<a href="#">egc-hd-tb</a>
15	Support profile HMIA	<a href="#">egc-hd-tb</a>
16	Profile mounting MUE	424

## Accessories – Ordering data

	For size	Part no.	Type
<b>1 Retainer EAYH</b> Dimensions online: → <a href="#">egc-hd-tb</a>			
	125	1662803	EAYH-L2-125-N
	160	1669259	EAYH-L2-160-N
	220	1669260	EAYH-L2-220-N
<b>1 Emergency buffer</b>			
	125	1662475	NPE-125
	160	1672593	NPE-160
	220	1672598	NPE-220
<b>2 Shock absorber retainer EAYH</b> Dimensions online: → <a href="#">egc-hd-tb</a>			
	125	1653251	EAYH-L2-125
	160	1653250	EAYH-L2-160
	220	1653253	EAYH-L2-220
<b>2 Shock absorber YSRW</b> Technical data online: → <a href="#">egc-hd-tb</a>			
	125	191196	YSRW-12-20
	160	191197	YSRW-16-26
	220	191198	YSRW-20-34
<b>3 Centring pin<sup>1)2)</sup></b> Technical data online: → <a href="#">zbs</a>			
	125	150928	ZBS-5
<b>3 Centring sleeve<sup>1)2)</sup></b> Technical data online: → <a href="#">zbh</a>			
	125 ... 220	150927	ZBH-9
<b>4 Switch lug<sup>3)</sup></b> Dimensions online: → <a href="#">egc-hd-tb</a>			
	125	570027	SF-EGC-HD-1-125
	160	1645872	SF-EGC-HD-1-160
	220	1645866	SF-EGC-HD-1-220
<b>4 Switch lug<sup>4)</sup></b> Dimensions online: → <a href="#">egc-hd-tb</a>			
	125	570030	SF-EGC-HD-2-125
	160	1645865	SF-EGC-HD-2-160
	220	1645868	SF-EGC-HD-2-220
<b>5 Sensor bracket<sup>5)</sup></b> Dimensions online: → <a href="#">egc-hd-tb</a>			
	125	558057	HWS-EGC-M5
	160	558057	HWS-EGC-M5
	220	570365	HWS-EGC-M8-B
<b>6 Inductive proximity sensor, N/O contact, M8</b> Technical data → <a href="#">899</a>			
	PNP, cable	★ 150386	SIEN-M8B-PS-K-L
	PNP, plug	★ 150387	SIEN-M8B-PS-S-L
<b>N/C contact, M8</b> Technical data → <a href="#">899</a>			
	PNP, cable	150390	SIEN-M8B-PO-K-L
	PNP, plug	150391	SIEN-M8B-PO-S-L

1) Packaging unit 10 pieces.

2) 2 centring pins/sleeves included in the scope of delivery of the axis.

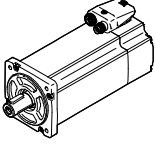
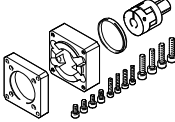
3) For sensing via proximity sensor SIES-8M.

4) For sensing via proximity sensor SIEN-M8B or SIES-8M.

5) For proximity sensor SIEN-M8B.

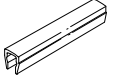
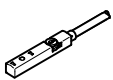
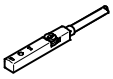




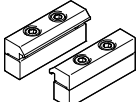
## Note

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

Motor / Gear unit <sup>6)</sup>	Axial kit	
		
	Part no.	Type
<b>7/8 Permissible axis/motor combination with axial kit –</b> Technical data online: → <a href="#">eamm-a</a>		
<b>EGC-HD-125</b>		
With servo motor and gear unit		
EMMS-AS-55-...	1190076	EAMM-A-M43-60G
EMGA-60-P-G...-SAS-55		
EMMS-AS-70-...	1190076	EAMM-A-M43-60G
EMGA-60-P-G...-SAS-70		
With stepper motor and gear unit		
EMMS-ST-57-...	1190076	EAMM-A-M43-60G
EMGA-60-P-G...-SST-57		
<b>EGC-HD-160</b>		
With servo motor and gear unit		
EMMS-AS-70-...	1190421	EAMM-A-M48-80G
EMGA-80-P-G...-SAS-70		
EMME-AS-80-...	1190421	EAMM-A-M48-80G
EMGA-80-P-G...-EAS-80		
EMME-AS-100-...	1190421	EAMM-A-M48-80G
EMGA-80-P-G...-SAS-100		
EMMS-AS-100-...	1190421	EAMM-A-M48-80G
EMGA-80-P-G...-SAS-100		
With stepper motor and gear unit		
EMMS-ST-87-...	1190421	EAMM-A-M80-120G
EMGA-80-P-G...-SST-87		
<b>EGC-HD-220</b>		
With servo motor and gear unit		
EMMS-AS-100-...	1190774	EAMM-A-M80-120G
EMGA-120-P-G...-SAS-100		
EMMS-AS-140-...	1190774	EAMM-A-M80-120G
EMGA-120-P-G...-SAS-140		

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

## Accessories – Ordering data

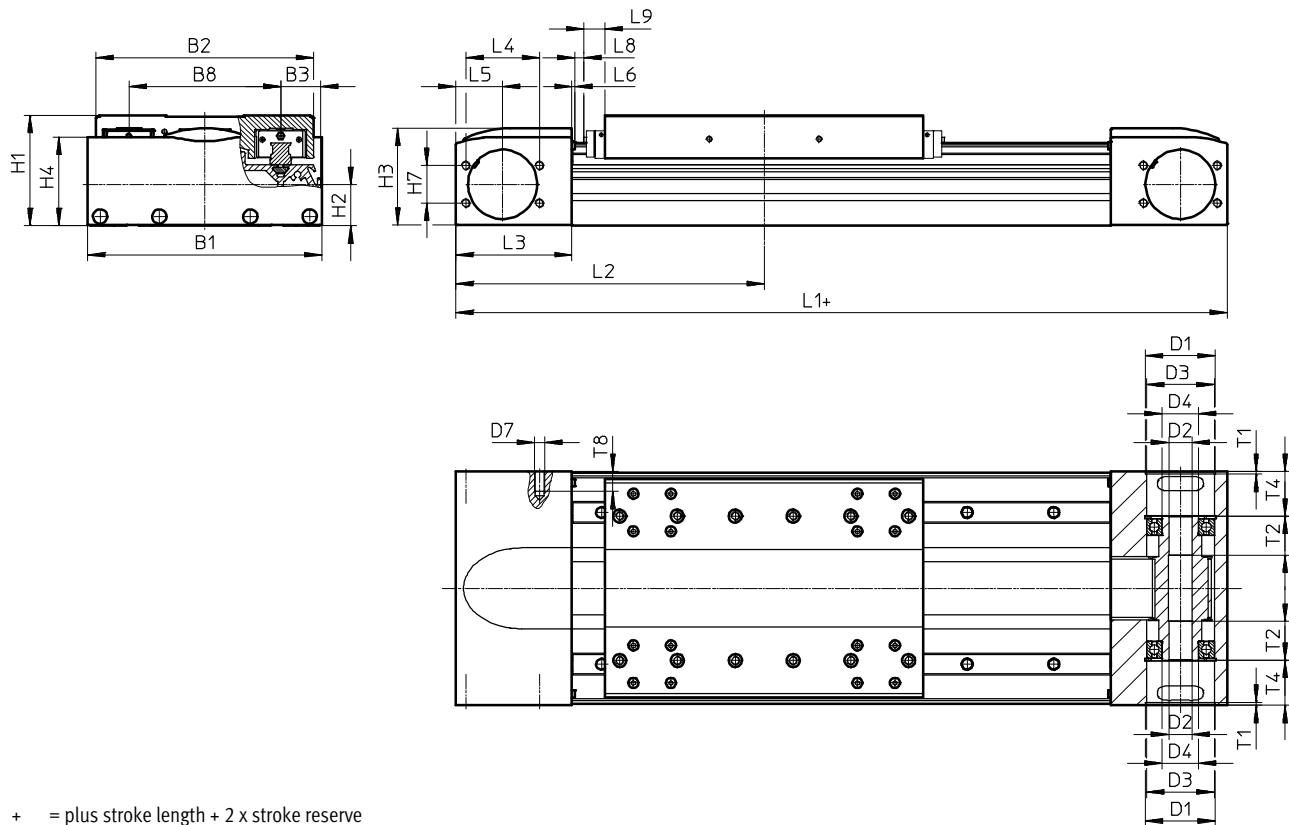
	For size	Cable length [m]	Part no.	Type	
<b>9 Slot cover<sup>1)</sup></b>					
	For mounting slot				
	125, 160 <sup>2)</sup>	–	151681	ABP-5	
	160 <sup>3)</sup> , 220	–	151682	ABP-8	
	For sensor slot				
	125 ... 220	–	563360	ABP-5-S1	
<b>10 Proximity sensor for T-slot, inductive, N/O contact</b> <span style="float: right;">Technical data → 905</span>					
	PNP, cable	7.5	551386	SIES-8M-PS-24V-K-7,5-OE	
	PNP, plug	0.3	551387	SIES-8M-PS-24V-K-0,3-M8D	
	NPN, cable	7.5	551396	SIES-8M-NS-24V-K-7,5-OE	
	NPN, plug	0.3	551397	SIES-8M-NS-24V-K-0,3-M8D	
<b>N/C contact</b> <span style="float: right;">Technical data → 905</span>					
	PNP, cable	7.5	551391	SIES-8M-PO-24V-K-7,5-OE	
	PNP, plug	0.3	551392	SIES-8M-PO-24V-K-0,3-M8D	
	NPN, cable	7.5	551401	SIES-8M-NO-24V-K-7,5-OE	
	NPN, plug	0.3	551402	SIES-8M-NO-24V-K-0,3-M8D	
<b>11 Connecting cable, straight socket</b> <span style="float: right;">Technical data → 1161</span>					
	–	2.5	★	541333	NEBU-M8G3-K-2.5-LE3
	–	5.0	★	541334	NEBU-M8G3-K-5-LE3
<b>Angled socket</b> <span style="float: right;">Technical data → 1161</span>					
	–	2.5	★	541338	NEBU-M8W3-K-2.5-LE3
	–	5.0	★	541341	NEBU-M8W3-K-5-LE3
<b>12 Clip</b>					
	125 ... 220	–	534254	SMBK-8	
<b>13 Slot nut</b> <span style="float: right;">Technical data online: → <a href="#">nst</a></span>					
	125, 160 <sup>2)</sup>	–	150914	NST-5-M5	
	160 <sup>3)</sup> , 220	–	150915	NST-8-M6	
<b>16 Profile mounting</b> <span style="float: right;">Dimensions online: → <a href="#">egc-hd-tb</a></span>					
	125	–	558043	MUE-70/80	
	160	–	558043	MUE-70/80	
	220	–	558044	MUE-120/185	

1) Packaging unit 2x 0.5 m.

2) For mounting slot at side.

3) For mounting slot underneath.

## Dimensions



+ = plus stroke length + 2 x stroke reserve

Size	B1	B2	B3	B8	D1	D2	D3	D4	D7
					∅	∅	∅	∅	
					H7	H7			
125	124	120	21	80	43	16	42	25	M6
160	162	156	27.5	105	48	16	47	25	M6
220	224	216	40	140	80	23	75	45	M8

Size	H1	H2	H3	H4	H7	L1	L2	L3	L4
							min.		
125	64	26.1	55.8	50.8	24	346	173	57.5	46
160	76.5	28.7	67.5	61.5	26	417	208.5	80.5	51
220	111.5	45.2	98	91.1	59	576	288	115	76

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

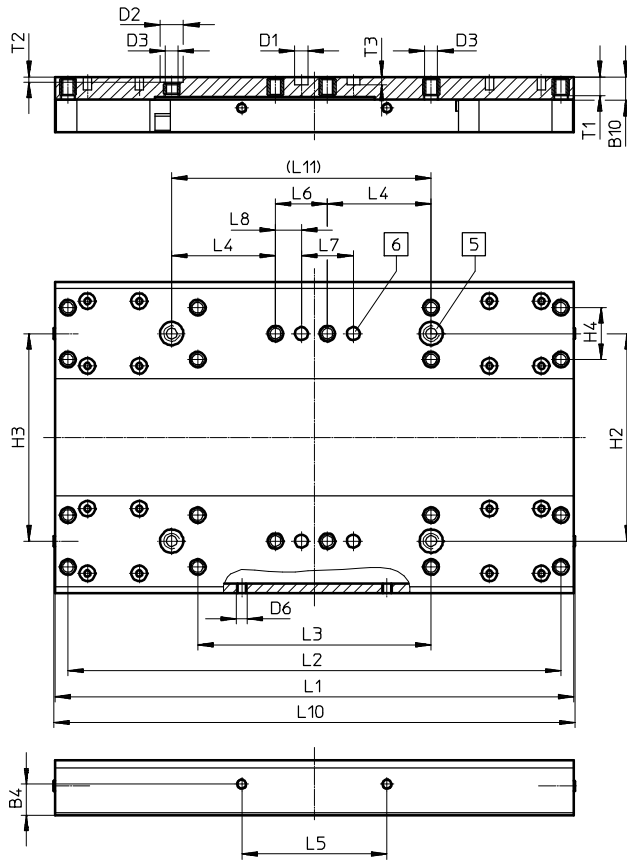
# Toothed belt axes EGC-HD-TB, with heavy-duty guide

## Dimensions

GK – Standard slide

Size 125

3



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

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

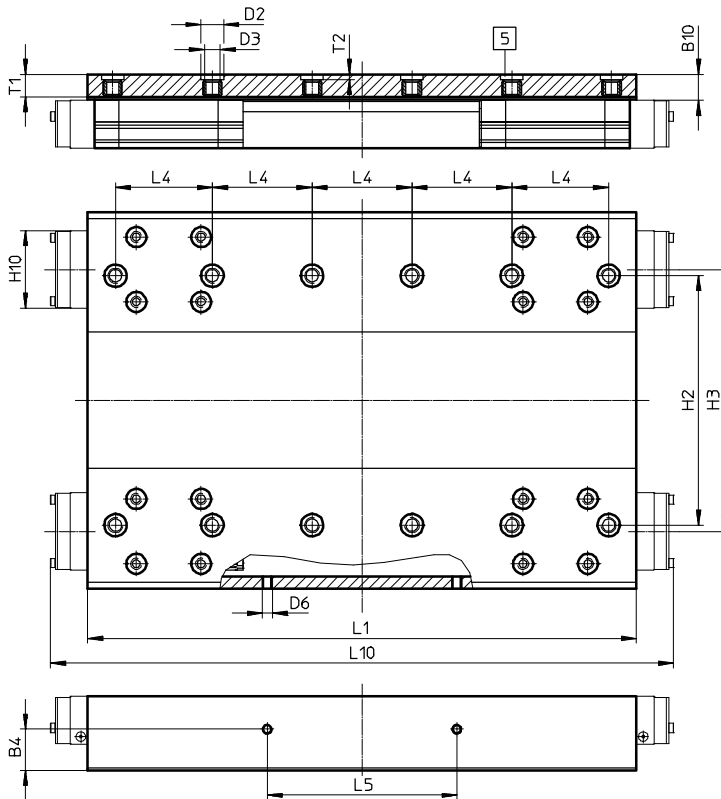
Size	L4	L5	L6	L7	L8	L10	L11	T1	T2	T3
	±0.1	±0.2	±0.1	±0.03	±0.1		±0.03		+0.1	+0.1
125	40	56	20	20	10	202	100	7.8	2.1	3.1

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

## Dimensions

GK – Standard slide

Size 160



5 Hole for centring sleeve ZBH

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

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

\* Protected version

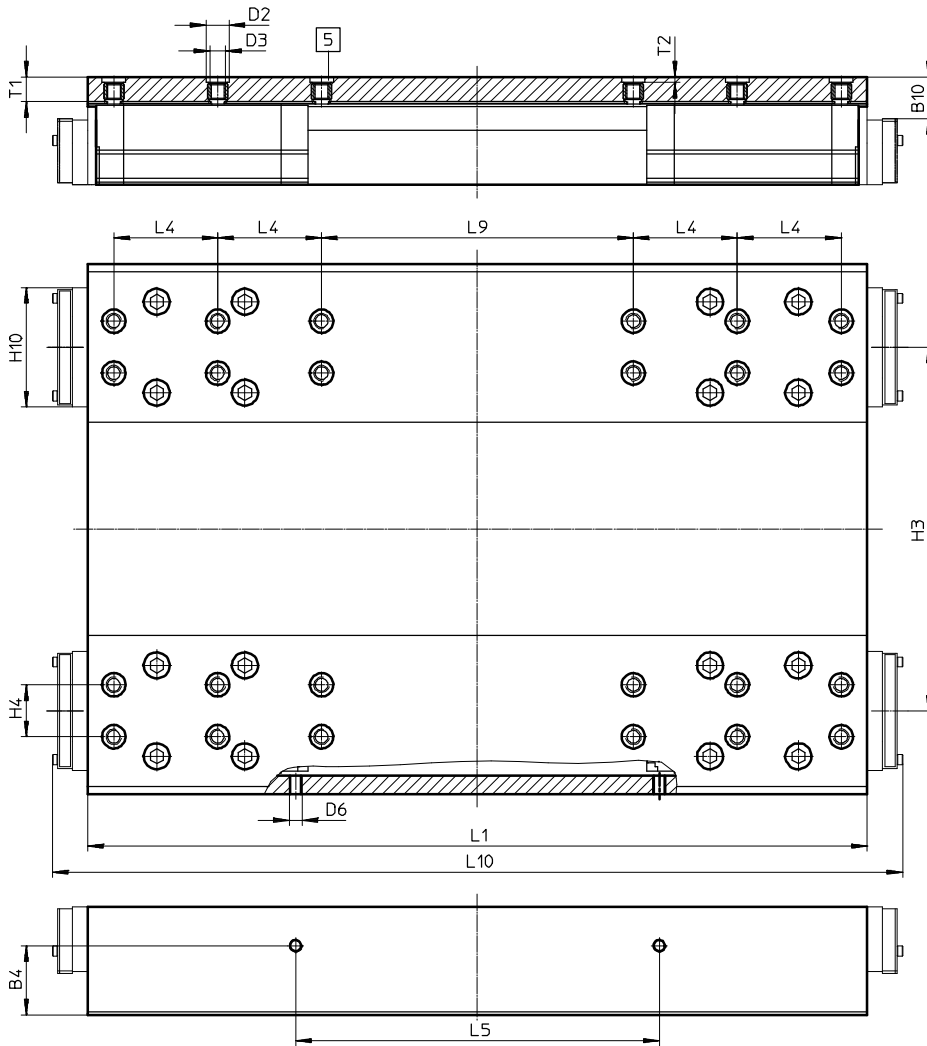
# Toothed belt axes EGC-HD-TB, with heavy-duty guide

## Dimensions

GK – Standard slide

Size 220

3



5 Hole for centring sleeve ZBH

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

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

\* Protected version





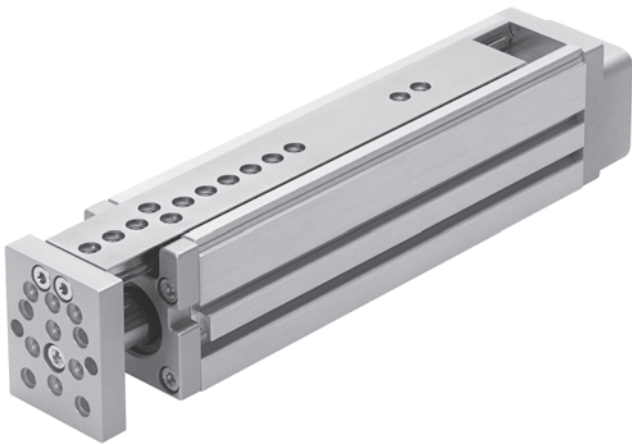
Overview/Configuration/Ordering  
→ [www.festo.com/catalogue/egsl](http://www.festo.com/catalogue/egsl)



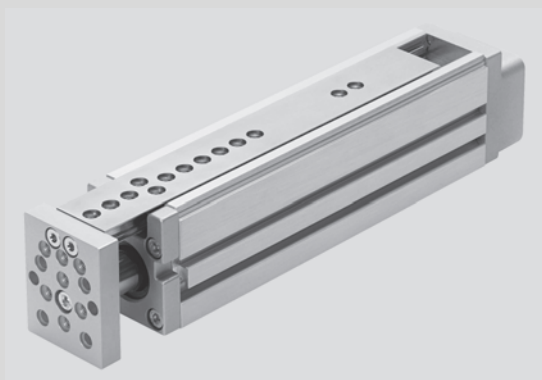
Additional information/Support/User documentation  
→ [www.festo.com/sp/egsl](http://www.festo.com/sp/egsl)

Linear drives and slides  
Mini slides, electric

# EGSL



- + Very high rated slide loads, ideal for vertical applications such as press-fitting or joining
- + Reliable: the completely closed spindle stops dirt or stray small parts getting into the guide area
- + Flexible: motor can be attached laterally or axially, in this case turned by 4 x 90°
- + Matching software tools in the FCT software package from Festo



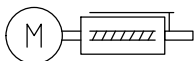
- For vertical applications with variable positioning
- Slides can withstand very high rated loads, ideal for applications such as press-fitting or joining
- Enclosed spindle prevents the ingress of dirt or stray small parts in the guide area
- Motor can be mounted laterally or axially

→ [www.festo.com/catalogue/egsl](http://www.festo.com/catalogue/egsl)

### Product range overview

Type/Version	Size	Stroke [mm]	Feed force [N]	Speed [m/s]
<b>EGSL</b>				
Electric	35, 45, 55, 75	50 ... 300	75 ... 450	0.5 ... 1.3

### Data sheet



Technical data	Dimensions → 436									
	Size	35		45		55		75		
Spindle pitch	[mm/rev]	8	3	10	5	12.7	10	20		
Working stroke	[mm]	50	100, 200		100, 200, 250		100, 200, 300			
Guide value for effective load										
Horizontal	[kg]	2	6		10		14			
Vertical	[kg]	2	6		10		14			
Continuous feed force $F_x$	[N]	50	100		200		300			
Max. feed force $F_x$	[N]	75	150		300		450			
Max. no-load driving torque	[Nm]	0.015	0.055	0.050	0.10	0.135	0.265	0.165		
Max. driving torque <sup>1)</sup>	[Nm]	0.2	0.45	0.51	0.9	1.25	3.25	3.25		
Max. radial force <sup>2)</sup>	[N]	20	120		260		300			
Max. speed	[m/s]	0.5	0.3	1.0	0.4	1.0	0.65	1.3		
Nominal acceleration	[m/s <sup>2</sup> ]	15								
Max. acceleration <sup>3)</sup>	[m/s <sup>2</sup> ]	25								
Repetition accuracy	[mm]	±0.015								
Max. reversing backlash <sup>4)</sup>	[μm]	≤50								

1) Friction and torque due to acceleration of the rotating load taken into consideration.

2) At the drive shaft.

3) The max. acceleration is dependent on the moving load, the driving torque and the max. feed force.

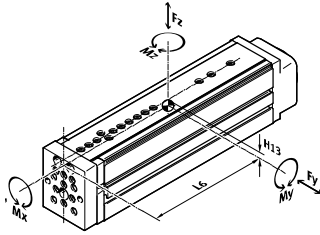
4) In new condition.

#### Note

All values are based on a room temperature of 20 °C.

## Data sheet

## Permissible forces and torques/geometric characteristics



## Note

Engineering software  
PositioningDrives  
→ [www.festo.com](http://www.festo.com)

Size	Stroke [mm]	F <sub>y</sub> max [N]	F <sub>z</sub> max [N]	M <sub>x</sub> max [Nm]	M <sub>y</sub> max, M <sub>z</sub> max [Nm]	H13 [mm]	L6 [mm]
<b>35</b>							
	50	512	512	6.2	6.0	4.2	106
<b>45</b>							
	100	631	631	18.6	16.3	6.4	162
	200	291	291	14.3	12.3	6.4	262
<b>55</b>							
	100	1047	1047	33.1	31	6.4	180
	200	490	490	24.2	22.6	6.4	280
	250	563	563	27.0	33.3	6.4	344
<b>75</b>							
	100	1539	1539	67.4	47.1	7.6	187
	200	714	714	48.5	33.8	7.6	287
	300	555	555	46.4	36.5	7.6	389

## Operating conditions

Size	35	45	55	75
Ambient temperature	[°C] 0 ... +60			
Degree of protection	IP40			

## Materials

Yoke plate	Anodised wrought aluminium alloy
Guide rail	Rolled steel
Housing	Anodised wrought aluminium alloy
Spindle	Rolled steel
Spindle nut	Rolled steel
End cap	Painted cast aluminium

## Order code

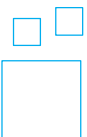
EGSL		-		BS		-		-		-	
<b>Type</b>											
EGSL	Mini slide										
<b>Drive function</b>											
BS	Ball screw										
<b>Size</b>											
	<b>Stroke [mm]</b>										
	<b>Spindle pitch [mm/rev]</b>										
35	50	8P									
45	100, 200	3P, 10P									
55	100, 200, 250	5P, 12.7P									
75	100, 200, 300	10P, 20P									

## Order example:

EGSL-BS-45-200-10P

Mini slide EGSL - ball screw spindle - size 45 - stroke 200 mm - spindle pitch 10 mm/rev

## Ordering – Product options



Configurable  
product

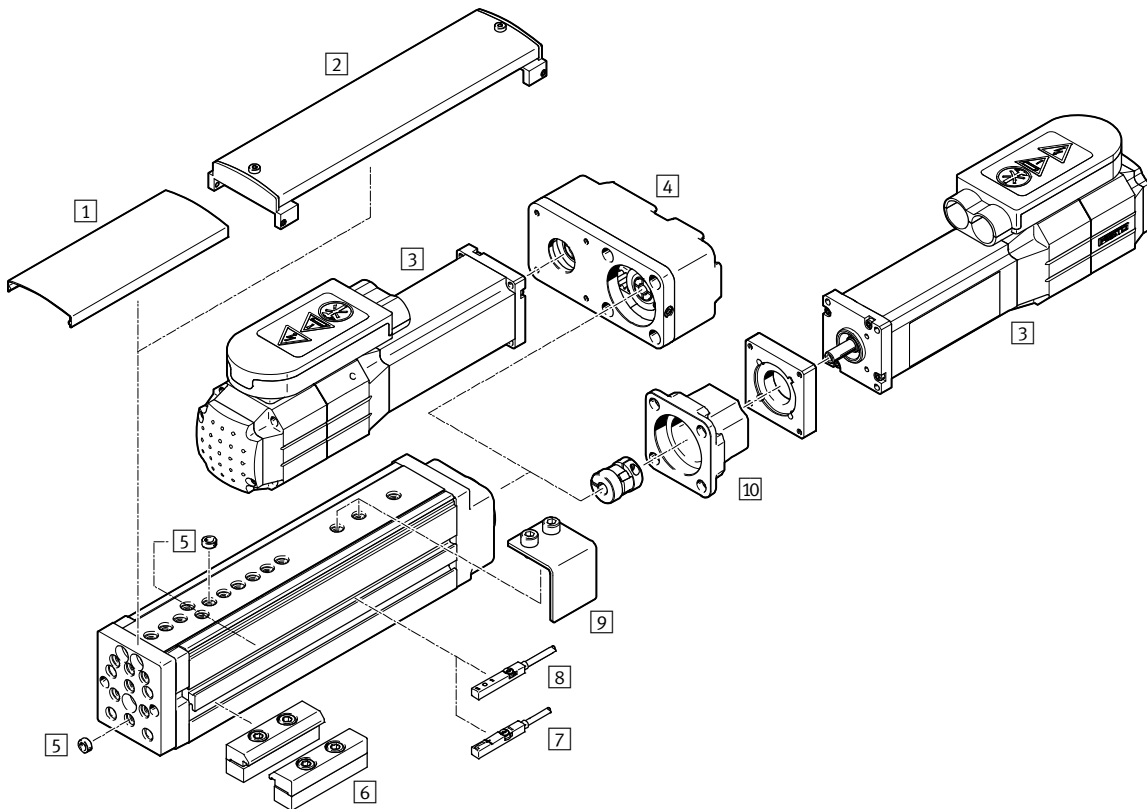
This product and all its options can  
be ordered using the configurator.

The configurator can be found under  
Products on the DVD or  
→ [www.festo.com/catalogue/...](http://www.festo.com/catalogue/...)

Enter the type code in the search field.

## Accessories

3



		→ Page/online
1	Cover EASC	432
2	Cover EASC...-F	432
3	Motor EMME/EMMS	433
4	Parallel kit EAMM-U	433
5	Centring sleeve ZBH	435
6	Profile mounting EAHF, MUE	435

		→ Page/online
7	Proximity sensor SIES	435
8	Proximity sensor SMT-8...-B	435
9	Switch lug EAPM	435
10	Axial kit EAMM-A	433
-	Connecting cable NEBU	435
-	Connector sleeve ZBV	435

## Accessories – Ordering data

	For size	Length [mm]	Part no.	Type
<b>1 Cover for use without switch lug</b>				
Dimensions online: → <a href="#">egsl</a>				
	35	50	570819	EASC-G1-35-50
		500 <sup>1)</sup>	570874	EASC-G1-35-500
	45	100	570822	EASC-G1-45-100
		200	570823	EASC-G1-45-200
		500 <sup>1)</sup>	570875	EASC-G1-45-500
	55	100	570824	EASC-G1-55-100
		200	570825	EASC-G1-55-200
		250	570826	EASC-G1-55-250
		500 <sup>1)</sup>	570876	EASC-G1-55-500
	75	100	570827	EASC-G1-75-100
		200	570828	EASC-G1-75-200
		300	570829	EASC-G1-75-300
500 <sup>1)</sup>		570877	EASC-G1-75-500	

	For size	Length [mm]	Part no.	Type
<b>2 Cover for use with switch lug</b>				
Dimensions online: → <a href="#">egsl</a>				
	35	50	570830	EASC-G1-35-50-F
		100	570833	EASC-G1-45-100-F
	45	200	570834	EASC-G1-45-200-F
		100	570835	EASC-G1-55-100-F
	55	200	570836	EASC-G1-55-200-F
		250	570837	EASC-G1-55-250-F
		100	570838	EASC-G1-75-100-F
	75	200	570839	EASC-G1-75-200-F
		300	570840	EASC-G1-75-300-F

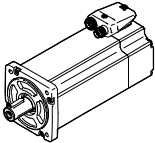
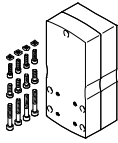
1) The cover can be shortened by the customer as required.

## Accessories – Ordering data

## Note

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

When using parallel kits, the no-load driving torque of the respective kit must be taking into consideration.

Motor / Gear unit <sup>1)</sup>	Parallel kit	
		
	<ul style="list-style-type: none"> <li>• Increased housing rigidity</li> <li>• More flexible motor mounting possible</li> <li>• Optionally with degree of protection IP65</li> <li>• Use in combination with third-party motors on request</li> </ul>	
	Part no.	Type
<span style="border: 1px solid black; padding: 2px;">3/4</span> Permissible axis/motor combination with parallel kit – Technical data online: → <a href="#">eamm-u</a>		
<b>EGSL-45</b>		
<b>With servo motor</b>		
EMME-AS-40-...	2153283	EAMM-U-50-D32-40P-78
EMMS-AS-40-...	1201591	EAMM-U-50-D32-40A-78
EMMS-AS-55-...	1210126	EAMM-U-60-D32-55A-91
EMME-AS-60-...	2619586	EAMM-U-70-D32-60P-96
<b>With stepper motor</b>		
EMMS-ST-42-...	1201607	EAMM-U-50-D32-42A-78
EMMS-ST-57-...	1210419	EAMM-U-60-D32-57A-91
<b>With motor unit</b>		
MTR-DCI-32S-...	1570862	EAMM-U-50-D32-32B-78
MTR-DCI-42S-...	1577393	EAMM-U-60-D32-42B/C-91
<b>With gear unit</b>		
EMGA-40-P-...	1577358	EAMM-U-60-D32-40G-91
EMGC-40-P-...		
EMGA-60-P-...-SAS/SST <sup>2)</sup>	2748181	EAMM-U-70-D32-60G-96
EMGA-60-P-...-EAS, EMGC-60-P-... <sup>2)</sup>	2778393	EAMM-U-70-D32-60H-96

Motor / Gear unit <sup>1)</sup>	Parallel kit	
	Part no.	Type
<b>EGSL-55</b>		
<b>With servo motor</b>		
EMMS-AS-55-...	1210438	EAMM-U-60-D40-55A-91
EMME-AS-60-...	2617488	EAMM-U-70-D40-60P-96
EMMS-AS-70-...	2786204	EAMM-U-70-D40-70A-96
EMMS-AS-70-...	1212826	EAMM-U-86-D40-70A-102
<b>With stepper motor</b>		
EMMS-ST-57-...	1210442	EAMM-U-60-D40-57A-91
EMMS-ST-87-...	1215802	EAMM-U-86-D40-87A-102
<b>With motor unit</b>		
MTR-DCI-42S-...	1570950	EAMM-U-60-D40-42B/C-91
MTR-DCI-52S-...	2786802	EAMM-U-70-D40-52B/C-96
MTR-DCI-52S-...	1537046	EAMM-U-86-D40-52B/C-102
<b>With gear unit</b>		
EMGA-40-P-...	1577165	EAMM-U-60-D40-40G-91
EMGC-40-P-...		
EMGA-60-P-...-SAS/SST <sup>2)</sup>	2785471	EAMM-U-70-D40-60G-96
EMGA-60-P-...-EAS, EMGC-60-P-... <sup>2)</sup>	2786101	EAMM-U-70-D40-60H-96
EMGA-60-P-...-SAS/SST <sup>2)</sup>	1586445	EAMM-U-86-D40-60G-102
EMGA-60-P-...-EAS, EMGC-60-P-... <sup>2)</sup>	1586496	EAMM-U-86-D40-60H-102
<b>EGSL-75</b>		
<b>With servo motor</b>		
EMMS-AS-70-...	★ 1212477	EAMM-U-86-D60-70A-102
EMME-AS-80-...	★ 2155875	EAMM-U-86-D60-80P-102
<b>With stepper motor</b>		
EMMS-ST-87-...	★ 1215784	EAMM-U-86-D60-87A-102
<b>With motor unit</b>		
MTR-DCI-52S-...	1537000	EAMM-U-86-D60-52B/C-102
MTR-DCI-62S-...	1536988	EAMM-U-110-D60-62B-120
<b>With gear unit</b>		
EMGA-60-P-...-SAS/SST <sup>2)</sup>	★ 1586347	EAMM-U-86-D60-60G-102
EMGA-60-P-...-EAS, EMGC-60-P-... <sup>2)</sup>	★ 1586276	EAMM-U-86-D60-60H-102
EMGA-60-P-...-SAS/SST <sup>2)</sup>	★ 1543240	EAMM-U-110-D60-60G-120
EMGA-60-P-...-EAS, EMGC-60-P-... <sup>2)</sup>	★ 1542264	EAMM-U-110-D60-60H-120
EMGA-80-P-...	★ 1532949	EAMM-U-110-D60-80G-120

- 1) The input torque must not exceed the maximum permissible transferable torque of the parallel kit.  
 2) Gear unit drive shaft Ø: EMGA-60-P-...-SAS/-SST11 mm; EMGA-60-P-...-EAS, EMGC-60-P14 mm.

## Note

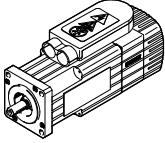
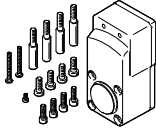
The clamping component EADT is required to adjust the toothed belt pretension with EAMM-U-110.

The motor and/or axis shaft can optionally be supported with a counter bearing EAMG.

More information → [eamm-u](#)

# Mini slides EGSL, electric

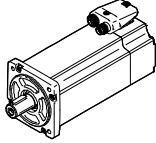
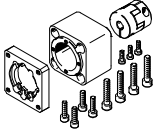
## Accessories – Ordering data

Motor / Gear unit <sup>1)</sup>	Parallel kit	
		
	• Space-saving gravity die-cast housing	
	Part no.	Type
<b>3/4</b> Permissible axis/motor combination with parallel kit – Technical data online: → <a href="#">eamm-u</a>		
<b>EGSL-45</b>		
With servo motor		
EMMS-AS-40-...	543150	EAMM-U-D32-40A
<b>EGSL-55</b>		
With servo motor		
EMMS-AS-55-...	543157	EAMM-U-D40-55A
<b>EGSL-75</b>		
With servo motor		
EMMS-AS-70-...	543165	EAMM-U-D60-70A

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


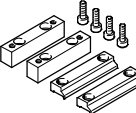
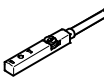
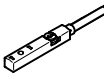
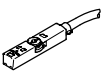


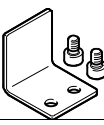

**Note**

The motor can only be mounted on the side and underneath when using these kits.

Motor / Gear unit <sup>2)</sup>	Axial kit	
		
	Part no.	Type
<b>3/10</b> Permissible axis/motor combination with axial kit – Technical data online: → <a href="#">eamm-a</a>		
<b>EGSL-35</b>		
With servo motor		
EMME-AS-40-...	1981953	EAMM-A-D19-40P
EMMS-AS-40-...	1199152	EAMM-A-D19-40A
With stepper motor		
EMMS-ST-28-...	1081659	EAMM-A-D19-28A
EMMS-ST-42-...	1087642	EAMM-A-D19-42A
<b>EGSL-45</b>		
With servo motor		
EMME-AS-40-...	1976465	EAMM-A-D32-40P
EMMS-AS-40-...	543147	EAMM-A-D32-40A
EMMS-AS-55-...	550979	EAMM-A-D32-55A
EMME-AS-60-...	1956054	EAMM-A-D32-60P
With stepper motor		
EMMS-ST-42-...	543148	EAMM-A-D32-42A
EMMS-ST-57-...	550980	EAMM-A-D32-57A
<b>EGSL-55</b>		
With servo motor		
EMMS-AS-55-...	543153	EAMM-A-D40-55A
EMME-AS-60-...	1977000	EAMM-A-D40-60P
EMMS-AS-70-...	550981	EAMM-A-D40-70A
With servo motor and gear unit		
EMME-AS-40-...	560282	EAMM-A-D40-40G
EMGA-40-P-G...-EAS-40		
EMMS-AS-40-...	560282	EAMM-A-D40-40G
EMGA-40-P-G...-SAS-40		
With stepper motor		
EMMS-ST-57-...	543154	EAMM-A-D40-57A
EMMS-ST-87-...	550982	EAMM-A-D40-87A
With stepper motor and gear unit		
EMMS-ST-42-...	560282	EAMM-A-D40-40G
EMGA-40-P-G...-SST-42		
<b>EGSL-75</b>		
With servo motor		
EMMS-AS-70-...	★ 543161	EAMM-A-D60-70A
EMME-AS-80-...	★ 1977073	EAMM-A-D60-80P
EMME-AS-100-...	★ 550983	EAMM-A-D60-100A
EMMS-AS-100-...	★ 550983	EAMM-A-D60-100A
With servo motor and gear unit		
EMMS-AS-55-...	★ 560283	EAMM-A-D60-60G
EMGA-60-P-G...-SAS-55		
EMMS-AS-70-...	★ 560283	EAMM-A-D60-60G
EMGA-60-P-G...-SAS-70		
With stepper motor		
EMMS-ST-87-...	★ 543162	EAMM-A-D60-87A
With stepper motor and gear unit		
EMMS-ST-57-...	★ 560283	EAMM-A-D60-60G
EMGA-60-P-G...-SST-57		

2) The input torque must not exceed the max. perm. transferable torque of the axial kit.

## Accessories – Ordering data

	For size	Cable length [m]	Part no.	Type
<b>5 Centring sleeve<sup>1)</sup></b>				
	35, 45, 55	–	186717	ZBH-7
	75	–	150927	ZBH-9
<b>6 Profile mounting</b> <span style="float: right;">Dimensions online: <a href="#">→ egsl</a></span>				
	35	–	1170211	EAHF-G1-35-P
	45	–	1168859	EAHF-G1-45-P
	55	–	558043	MUE-70/80
	75	–	558043	MUE-70/80
<b>7 Proximity sensor for T-slot, inductive, N/O contact</b> <span style="float: right;">Technical data <a href="#">→ 905</a></span>				
	PNP, cable	7.5	551386	SIES-8M-PS-24V-K-7,5-OE
	PNP, plug	0.3	551387	SIES-8M-PS-24V-K-0,3-M8D
	NPN, cable	7.5	551396	SIES-8M-NS-24V-K-7,5-OE
	NPN, plug	0.3	551397	SIES-8M-NS-24V-K-0,3-M8D
<b>N/C contact</b> <span style="float: right;">Technical data <a href="#">→ 905</a></span>				
	PNP, cable	7.5	551391	SIES-8M-PO-24V-K-7,5-OE
	PNP, plug	0.3	551392	SIES-8M-PO-24V-K-0,3-M8D
	NPN, cable	7.5	551401	SIES-8M-NO-24V-K-7,5-OE
	NPN, plug	0.3	551402	SIES-8M-NO-24V-K-0,3-M8D
<b>8 Proximity sensor for T-slot, magneto-resistive – N/O contact</b> <span style="float: right;">Technical data <a href="#">→ 878</a></span>				
	PNP, cable	2.5	★ 574335	SMT-8M-A-PS-24V-E-2,5-OE
	PNP, plug	0.3	★ 574334	SMT-8M-A-PS-24V-E-0,3-M8D
<b>Connecting cable, straight socket</b> <span style="float: right;">Technical data <a href="#">→ 1161</a></span>				
	–	2.5	★ 541333	NEBU-M8G3-K-2.5-LE3
	–	5.0	★ 541334	NEBU-M8G3-K-5-LE3
<b>Angled socket</b> <span style="float: right;">Technical data <a href="#">→ 1161</a></span>				
	–	2.5	★ 541338	NEBU-M8W3-K-2.5-LE3
	–	5.0	★ 541341	NEBU-M8W3-K-5-LE3
<b>9 Switch lug</b> <span style="float: right;">Dimensions online: <a href="#">→ egsl</a></span>				
	35	–	1235029	EAPM-G1-35-SLS
	45	–	1235033	EAPM-G1-45-SLS
	55	–	1235035	EAPM-G1-55-SLS
	75	–	1235036	EAPM-G1-75-SLS
<b>Connector sleeve<sup>2)</sup></b>				
	45, 55	–	548803	ZBV-M5-7
	75	–	548804	ZBV-M6-9

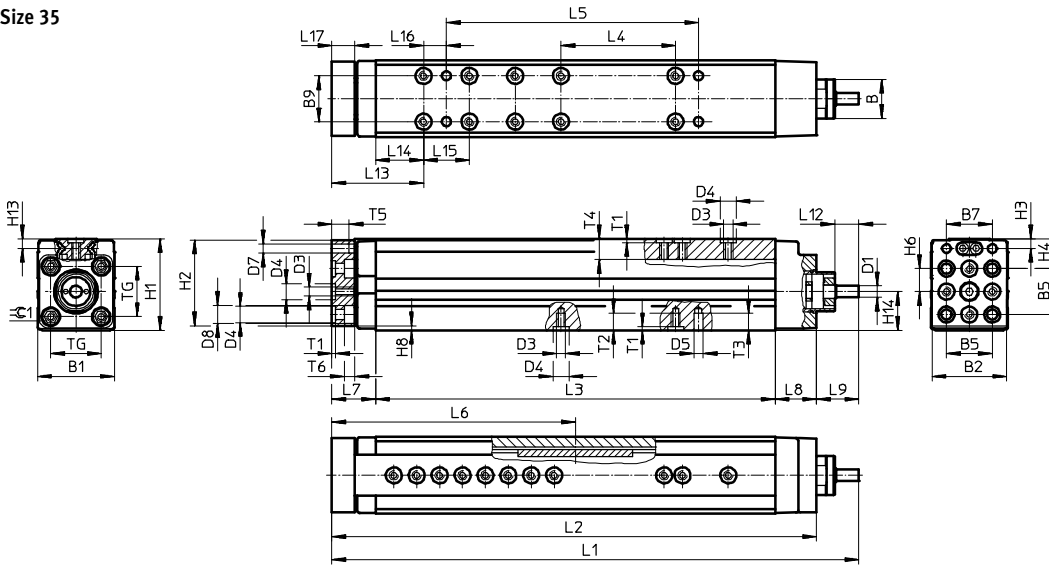
1) Packaging unit 10 pieces.

2) Packaging unit 3 pieces.

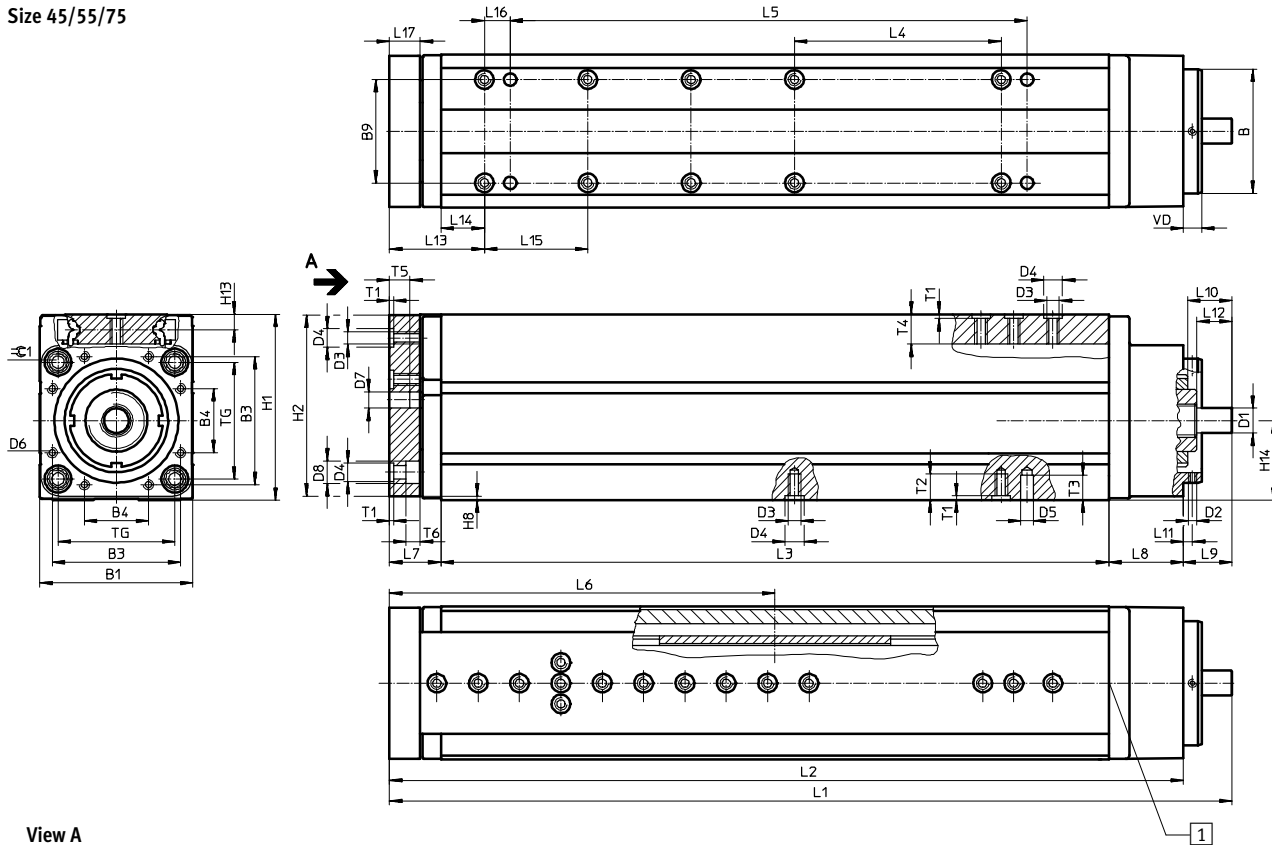
# Mini slides EGSL, electric

## Dimensions

Size 35

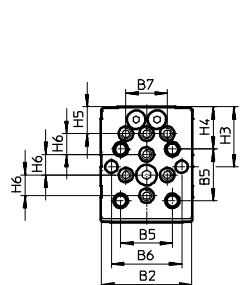


Size 45/55/75

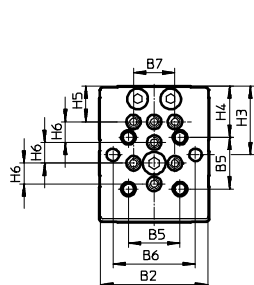


View A

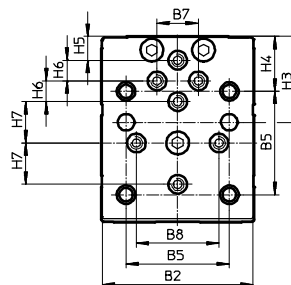
Size 45



Size 55



Size 75



1 Rubber buffer integrated in the slide. Can be removed when homing to fixed stop.



## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

Size	B ∅ g7	B1	B2	B3	B4	B5	B6	B7	B8	B9 ±0.5
35	19	33.5	33	–	–	20	–	20	–	20
45	32	44.5	43.5	32	19	25	34	20	–	25
55	40	53	52	42	20	25	40	20	–	25
75	60	74	73	62	31	50	–	20	40	50

Size	D1 ∅	D2	D3	D4 ∅ H7	D5 ∅ H7	D6	D7 ∅	D8 ∅	H1	H2
35	5	–	M4	7	4	–	4	8	40	37.5
45	6	M3	M5	7	6	M3	6	10	56	43.5
55	8	M3	M5	7	6	M4	6	10	66	63.5
75	12	M4	M6	9	6	M5	8	11	90	87.5

Size	H3	H4	H5	H6	H7	H8	H13	H14	L7	
									2) ±1	3) ±1
35	4.2	13	–	10	–	2	4.2	17+0,09/-0,07	21	19
45	29	20.5	13	10	–	2	6.4	23±0,08	22	20
55	33.3	24.8	17.3	10	–	2	6.4	28.7±0,08	27	25
75	41.5	26.5	11.5	10	20	2	7.6	38.5±0,08	27	25

Size	L8	L9 ±1	L10	L11	L12 ±0.2	L13		L14 <sup>1)</sup>	L15 <sup>1)</sup>	L16 ±0.1
						2)	3)			
35	18	18.5	–	–	10.5	42	40	21	20	10
45	26	16	16.9	3.5	8	43	41	21	25	12.5
55	30	18.5	14.9	3.5	14	48	46	21	25	12.5
75	36	23.6	21.5	4.5	17	48	46	21	50	12.5

Size	L17	T1 ±0.1	T2	T3	T4	T5	T6	TG	VD	≈±1
35	10	1.6	7.6	7.5	9	7.5	4.6	22	–	5
45	10	1.6	8.1	7.5	12.4	7.5	5.7	32.5	7	6
55	15	1.6	8.6	8.5	12.4	10	8.7	38	7	6
75	15	2.1	12.6	12	14.5	10	6.8	56.5	9	8

Size	Stroke [mm]	L1		L2		L3 –0.2	L4 <sup>1)</sup>	L5 <sup>1)</sup> ±0.05	L6	
		2) ±1.5	3) ±1.5	2) ±1	3) ±1				2)	3)
		35	50	182	180				163.5	161.5
45	100	248	246	232	230	184	75	125	114	112
	200	348	346	332	330	284	100	175	164	162
55	100	284.5	282.5	266	264	209	100	150	132	130
	200	384.5	382.5	366	364	309	100	175	182	180
	250	463.5	461.5	445	443	388	100	175	221	219
75	100	309.6	307.6	286	284	223	–	150	139	137
	200	409.6	407.6	386	384	323	100	250	189	187
	300	514.6	512.6	491	489	428	150	350	241	239

1) Tolerance for centring hole ±0.02 mm.  
Tolerance for thread ±0.1 mm.

2) With rubber buffer.

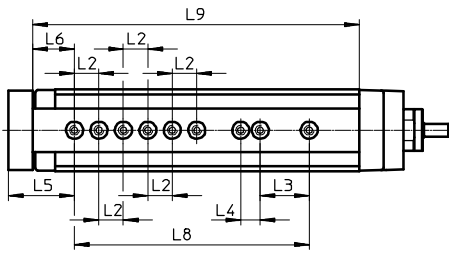
3) Without rubber buffer; when homing to fixed stop.

# Mini slides EGSL, electric

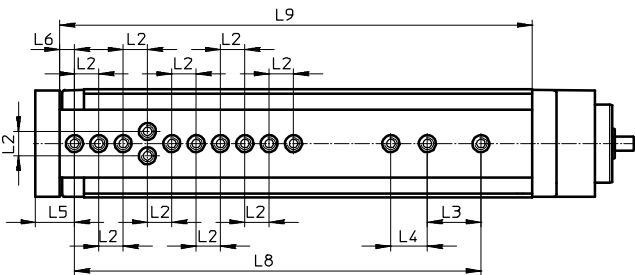
## Dimensions

### Hole pattern for mounting threads and centring holes

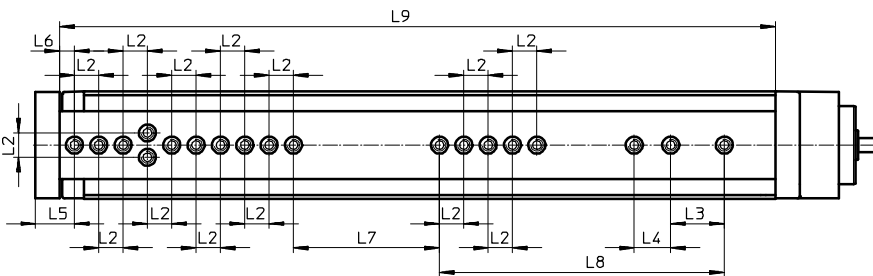
EGSL-35-50



EGSL-45-100



EGSL-45-200



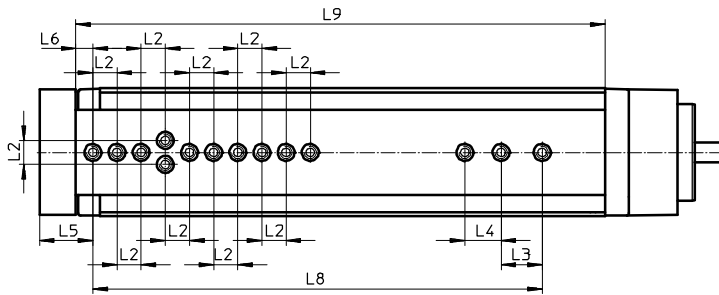
Size	Stroke [mm]	L2 <sup>1)</sup>	L3 <sup>1)</sup>	L4 <sup>1)</sup>	L5	L6	L7 <sup>1)</sup>	L8 <sup>1)</sup>	L9
35	50	10	20	8	27	17	–	96	133.5
45	100	10	22	15	16	6	–	167	194
	200						60	117	294

1) Tolerance for centring hole ±0.02 mm.  
Tolerance for thread ±0.1 mm.

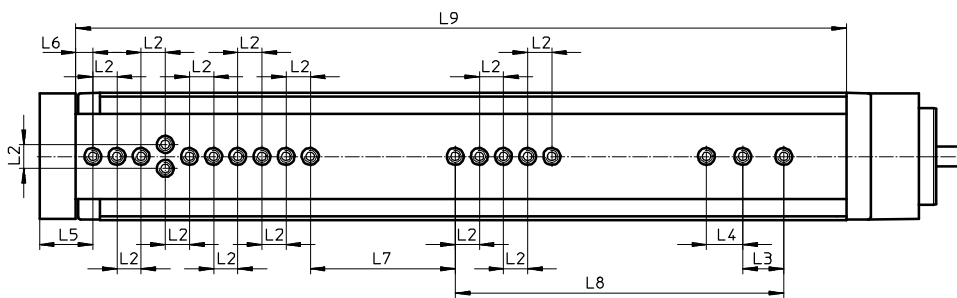
Dimensions

Hole pattern for mounting threads and centring holes

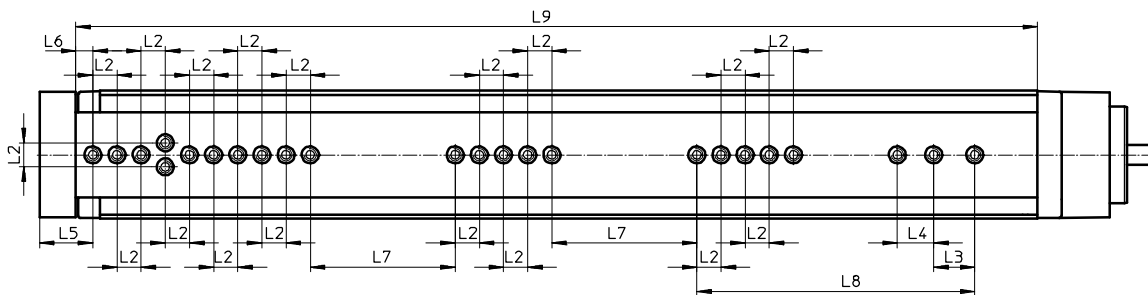
EGSL-55-100



EGSL-55-200



EGSL-55-250



Size	Stroke [mm]	L2 <sup>1)</sup>	L3 <sup>1)</sup>	L4 <sup>1)</sup>	L5	L6	L7 <sup>1)</sup>	L8 <sup>1)</sup>	L9
55	100	10	17	15	22	7	-	186	219
	200						60	136	319
	250						60	115	398

1) Tolerance for centring hole ±0.02 mm.  
Tolerance for thread ±0.1 mm.

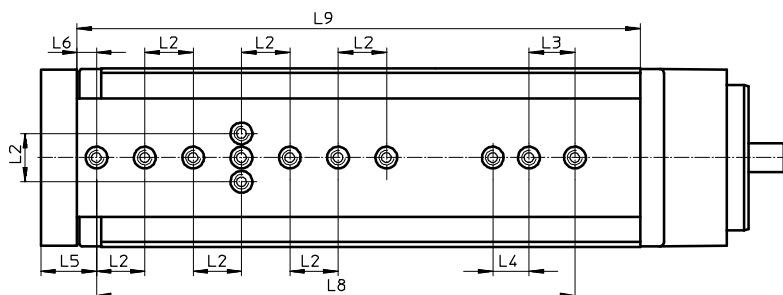
# Mini slides EGSL, electric

## Dimensions

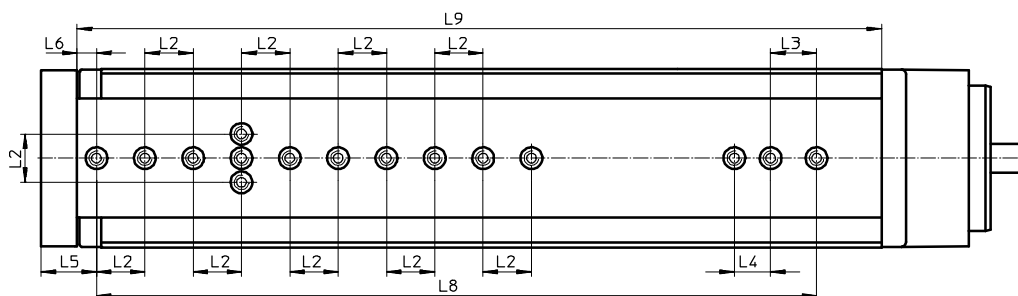
### Hole pattern for mounting threads and centring holes

EGSL-75-100

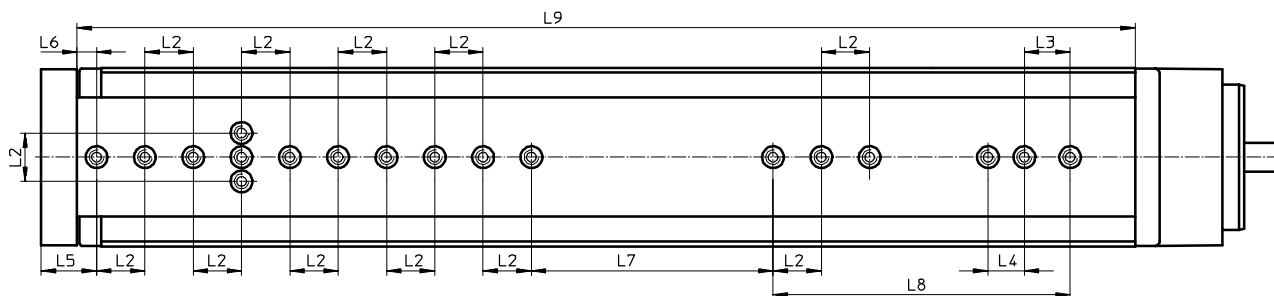
3



EGSL-75-200



EGSL-75-300



Size	Stroke [mm]	L2 <sup>1)</sup>	L3 <sup>1)</sup>	L4 <sup>1)</sup>	L5	L6	L7 <sup>1)</sup>	L8 <sup>1)</sup>	L9
75	100	20	19	15	23	8	-	198	233
	200						-	298	333
	300						100	123	438

1) Tolerance for centring hole ±0.02 mm.  
Tolerance for thread ±0.1 mm.



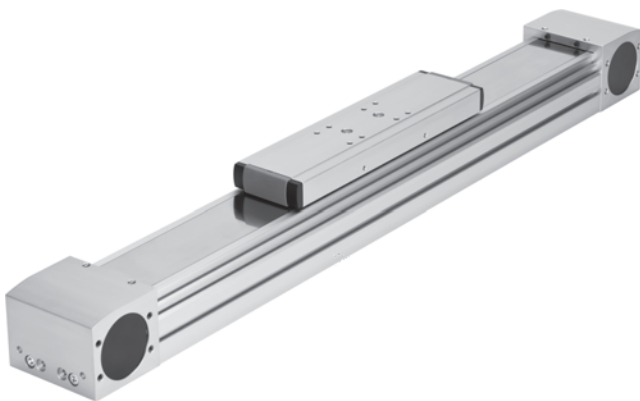
Overview/Configuration/Ordering  
→ [www.festo.com/catalogue/elga](http://www.festo.com/catalogue/elga)



Additional information/Support/User documentation  
→ [www.festo.com/sp/elga](http://www.festo.com/sp/elga)

Linear drives and slides  
Toothed belt axes

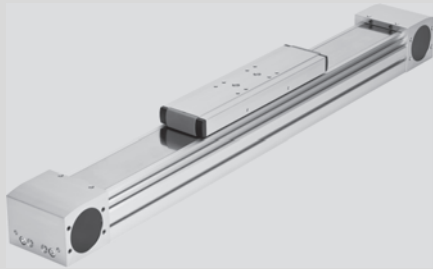
# ELGA-TB



- + ELGA-TB-G: integrated plain-bearing guide for low and medium loads at speeds up to 5 m/s and accelerations up to 50 m/s<sup>2</sup>
- + ELGA-TB-RF: integrated roller bearing guide for high loads and torque loads at speeds up to 10 m/s and accelerations up to 50 m/s<sup>2</sup>
- + Low guide backlash
- + Actuator for external guides
- + Flexible motor mounting

# Toothed belt axes ELGA-TB

3



- Toothed belt axis with high feed forces
- Flexible motor mounting
- Spare parts service

→ [www.festo.com/catalogue/elga](http://www.festo.com/catalogue/elga)

## Product range overview

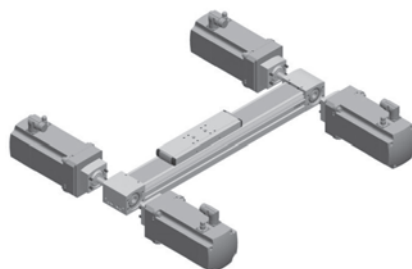
Type/Version	Size	Stroke [mm]	Feed force $F_x$ [N]	Product options										→ Page/on-line
				S	L	PO	ZL	ZR	M1	M2	B	F	DN	
<b>ELGA-TB</b>														
KF – Recirculating ball bearing guide	70, 80, 120, 150	50 ... 8500	350 ... 2000	–	–	–	■	■	■	■	■	■	■	443
RF – Roller bearing guide	70, 80, 120	50 ... 7400	350 ... 1300	■	■	■	–	–	–	–	–	–	■	446
G – Plain-bearing guide	70, 80, 120	50 ... 8500	350 ... 1300	–	–	■	–	–	–	–	–	–	–	449
RF-F1 – Roller bearing guide, suitable for use in the food industry	70, 80, 120	50 ... 7400	260 ... 1000	■	■	■	–	–	–	–	–	–	■	<a href="#">elga</a>
<b>ELFA-RF</b>														
Guide axis	70, 80	50 ... 7000	–	■	■	■	–	–	–	–	–	–	■	<a href="#">elfa</a>

## Product options

- |                        |   |                                   |
|------------------------|---|-----------------------------------|
| – Standard slide       | ZL 1 additional slide on left                           | B Displacement encoder at rear    |
| S Short slide          | ZR 1 additional slide on right                          | F Displacement encoder at front   |
| L Long slide           | M1 Displacement encoder, incremental, resolution 2.5 µm | – With operating instructions     |
| – With strip cover     | M2 Displacement encoder, incremental, resolution 10 µm  | DN Without operating instructions |
| PO Without strip cover |   |                                   |

## Flexible motor mounting

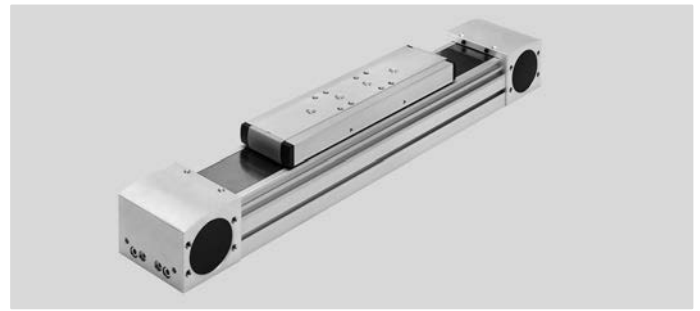
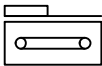
The motor position can be freely selected on 4 sides and can be changed at any time.



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

FESTO

## Technical data



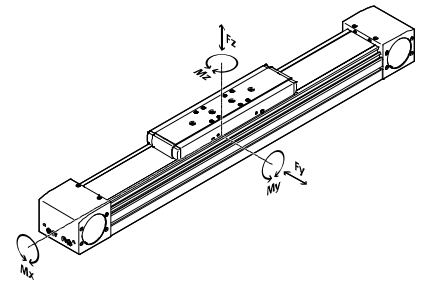
3

## Technical data

## Note

Engineering software  
PositioningDrives  
→ [www.festo.com](http://www.festo.com)

Dimensions → 454



Size		70	80	120	150
Working stroke	[mm]	50 ... 5000	50 ... 8500	50 ... 8500	50 ... 7000
Max. feed force $F_x$	[N]	350	800	1300	2000
Max. no-load torque <sup>1)</sup>	[Nm]	0.6	1	2.8	4
Max. driving torque	[Nm]	5.02	15.92	34.1	73.85
Max. no-load resistance to shifting <sup>1)</sup>	[N]	41.9	50.3	76.2	108.3
Max. speed	[m/s]	5			
Max. acceleration	[m/s <sup>2</sup> ]	50			
Repetition accuracy	[mm]	±0.08			
Max. permissible force $F_y$	[N]	1500	2500	5500	11000
Max. permissible force $F_z$	[N]	1850	3050	6890	11000
Max. permissible torque $M_x$	[Nm]	16	36	104	167
Max. permissible torque $M_y$	[Nm]	132	228	680	1150
Max. permissible torque $M_z$	[Nm]	132	228	680	1150

1) At 0.2 m/s

## Operating conditions

Ambient temperature	[°C]	-10 ... +60
Degree of protection		IP40

## Toothed belt

Size		70	80	120	150
Pitch	[mm]	3	5	5	8
Expansion <sup>2)</sup>	[%]	0.21	0.17	0.21	0.27
Effective diameter	[mm]	28.65	39.79	52.52	73.85
Feed constant	[mm/rev]	90	125	165	232

2) At max. feed force

## Mass moment of inertia

Size		70	80	120	150
$J_0$	[kg mm <sup>2</sup> ]	243	982	4099	15426
$J_S$ per metre stroke	[kg mm <sup>2</sup> /m]	19	93	215	586
$J_L$ per kg effective load	[kg mm <sup>2</sup> /kg]	186	761	2891	9869

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

$$J_A = J_0 + J_S \times \text{working stroke [m]} + J_L \times m_{\text{effective load [kg]}}$$

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

## Technical data

Materials	
Piston Ø	70 ... 80   120 ... 150
Drive cover	Anodised wrought aluminium alloy
Cover band	Stainless steel strip
Toothed belt	Polychloroprene with glass cord and nylon coating
Guide rail	Stainless steel   Tempered steel, corrotec coated
Slide	Anodised wrought aluminium alloy
Pulleys	High-alloy stainless steel

## Order code

Type	
ELGA	Linear axis
Drive function	
TB	Toothed belt
Guidance	
KF	Recirculating ball bearing guide
Size	
	Stroke [mm]
70	1 ... 5000
80	1 ... 8500
120	1 ... 8500
150	1 ... 7000
Stroke reserve	
...H	0 ... 999 (0 = no stroke reserve) <sup>1</sup>
Operating instructions	
-	With
DN	Without

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

## Order example:

ELGA-TB-KF-80-1300-200H-DN

Linear axis ELGA toothed belt - recirculating ball bearing guide - size 80 - stroke 1300 mm - stroke reserve 200 mm - without operating instructions

## Ordering – Product options

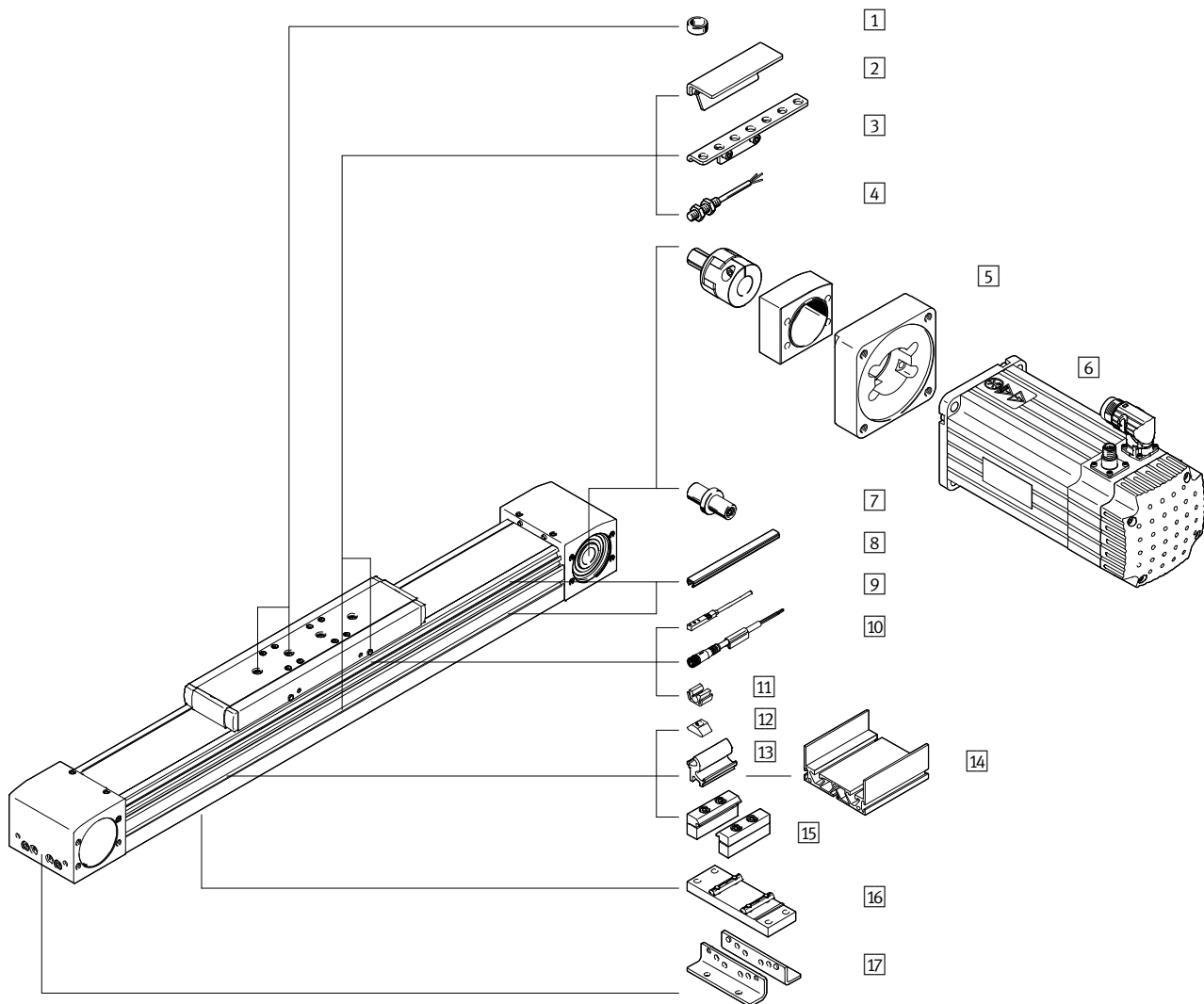
	<p><b>Configurable product</b></p>	<p><b>This product and all its options can be ordered using the configurator.</b></p>	<p>The configurator can be found under Products on the DVD or  <a href="http://www.festo.com/catalogue/...">→ www.festo.com/catalogue/...</a></p>	<p>Enter the type code in the search field.</p>
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## Toothed belt axes ELGA-TB-KF, with recirculating ball bearing guide

FESTO

## Accessories



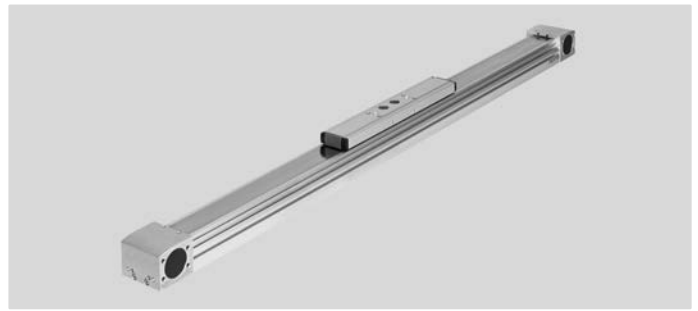
		→ Page/online
1	Centring pin ZBS/Centring sleeve ZBH	452
2	Switch lug SF	452
3	Sensor bracket HWS	452
4	Inductive proximity sensor M8 SIEN	452
5	Axial kit EAMM	452
6	Motor EMME/EMMS	452
7	Drive shaft EAMB	453
8	Slot cover ABP/ABP-S	453
9	Inductive proximity sensor T-slot SIES	453

		→ Page/online
10	Connecting cable NEBU	453
11	Clip SMBK	453
12	Slot nut NST	453
13	Adapter kit DHAM	<a href="#">elga</a>
14	Support profile HMIA	<a href="#">elga</a>
15	Profile mounting MUE	453
16	Central support EAHF	453
17	Foot mounting HPE	453

## Technical data



3

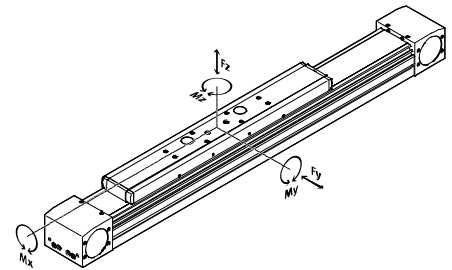


## Technical data

Dimensions → 457

## Note

Engineering software  
PositioningDrives  
→ [www.festo.com](http://www.festo.com)



Size		70	80	120
Working stroke	[mm]	50 ... 7000	50 ... 7000	50 ... 7400
Max. feed force $F_x$	[N]	350	800	1300
Max. no-load torque <sup>1)</sup>	[Nm]	0.66	1.35	3
Max. driving torque	[Nm]	5	15.9	34.1
Max. no-load resistance to shifting <sup>1)</sup>	[N]	35	50	114
Max. speed	[m/s]	10		
Max. acceleration	[m/s <sup>2</sup> ]	50		
Repetition accuracy	[mm]	±0.08		
Max. permissible force $F_y$	[N]	500	800	2000
Max. permissible force $F_z$	[N]	500	800	2000
Max. permissible torque $M_x$	[Nm]	11	30	100
Max. permissible torque $M_y$	[Nm]	20	90	320
Max. permissible torque $M_z$	[Nm]	20	90	320

1) At 0.2 m/s

## Operating conditions

Ambient temperature	[°C]	-10 ... +60
Degree of protection		IP40

## Toothed belt

Size		70	80	120
Pitch	[mm]	3	5	5
Expansion <sup>2)</sup>	[%]	0.31	0.19	0.23
Effective diameter	[mm]	28.65	39.79	52.52
Feed constant	[mm/rev]	90	125	165

2) At max. feed force

## Mass moment of inertia

Size		70	80	120
$J_0$	[kg mm <sup>2</sup> ]	232	1044	4935
$J_S$ per metre stroke	[kg mm <sup>2</sup> /m]	19	97	221
$J_L$ per kg effective load	[kg mm <sup>2</sup> /kg]	205	396	690

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

$$J_A = J_0 + J_S \times \text{working stroke [m]} + J_L \times m_{\text{effective load [kg]}}$$

## Technical data

Materials	
Drive cover	Anodised wrought aluminium alloy
Cover band	Stainless steel strip
Toothed belt	Polychloroprene with glass cord and nylon coating
Slide	Anodised wrought aluminium alloy
Track roller	Hardened rolled steel
Guide rod	Hardened tempered steel
Wiper ring	Oil-impregnated felt
Profile	Anodised wrought aluminium alloy
Toothed belt pulley	High-alloy stainless steel

## Order code

Type	
ELGA	Linear axis

Drive function	
TB	Toothed belt

Guide	
RF	Roller bearing guide

Size	
	Stroke [mm]
70	50 ... 7000
80	50 ... 7000
120	50 ... 7400

Stroke reserve	
...H	0 ... 999 (0 = no stroke reserve) <span style="border: 1px solid black; padding: 0 2px;">1</span>

Protection against particles	
-	Standard
P0	Without strip cover

Bedienungsanleitung	
-	With
DN	Without

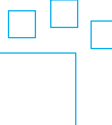
1 The sum of the stroke length and 2x stroke reserve must be at least 50 mm and must not exceed the maximum stroke length.

## Order example:

ELGA-TB-RF-80-1300-200H-DN

Linear axis ELGA - toothed belt - roller bearing guide - size 80 - stroke 1300 mm - stroke reserve 200 mm - standard - without operating instructions

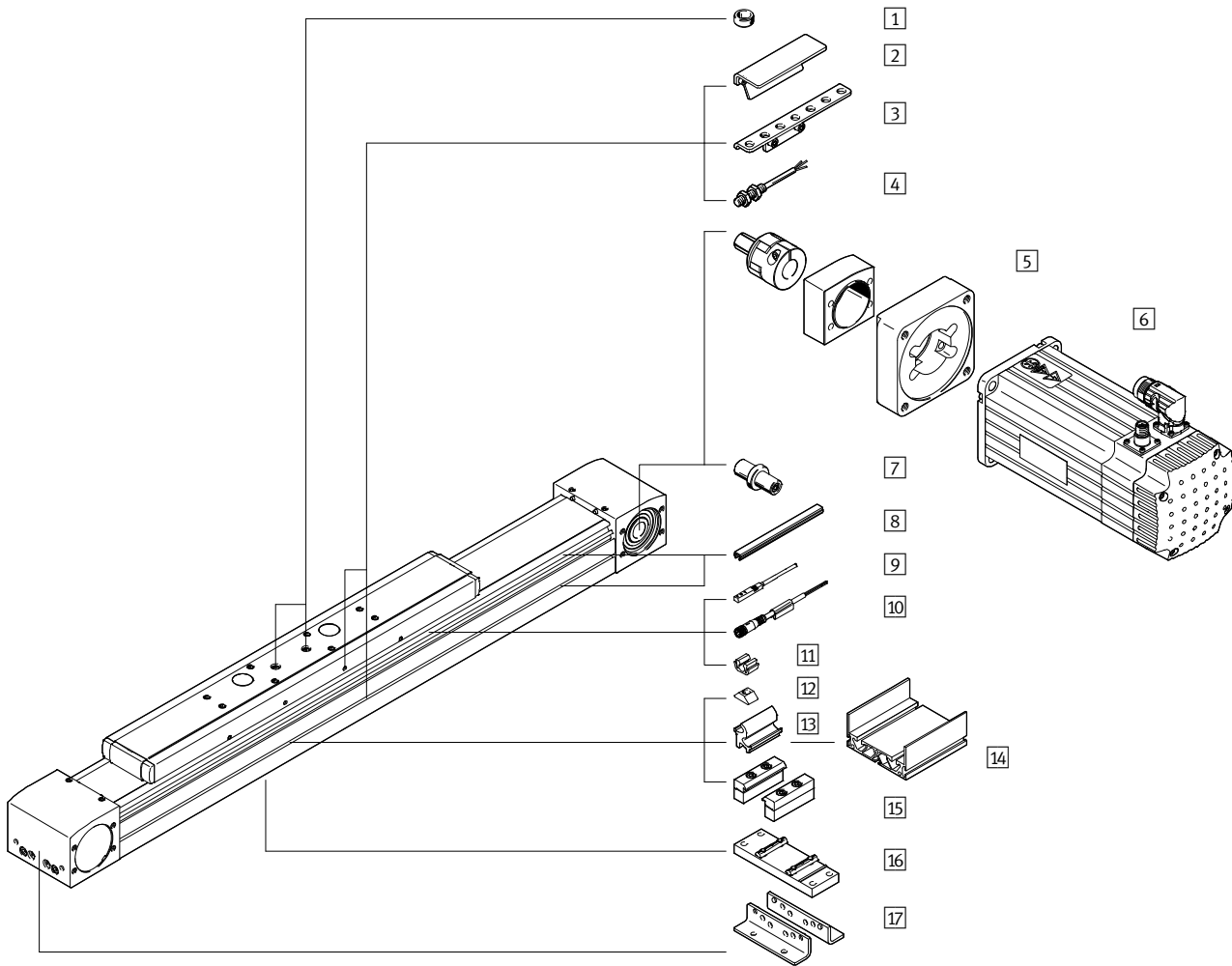
## Ordering – Product options

	<b>Configurable product</b>	<b>This product and all its options can be ordered using the configurator.</b>	The configurator can be found under Products on the DVD or <a href="http://www.festo.com/catalogue/...">→ www.festo.com/catalogue/...</a>	Enter the type code in the search field.
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# Toothed belt axes ELGA-TB-RF, with roller bearing guide

## Accessories

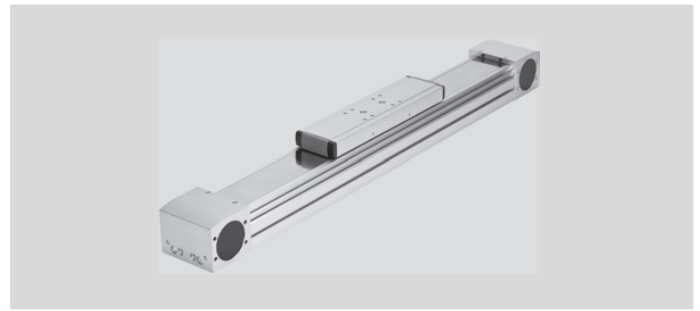
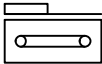
3



		→ Page/online
1	Centring pin ZBS/Centring sleeve ZBH	452
2	Switch lug SF	452
3	Sensor bracket HWS	452
4	Inductive proximity sensor M8 SIEN	452
5	Axial kit EAMM	452
6	Motor EMME/EMMS	452
7	Drive shaft EAMB	453
8	Slot cover ABP/ABP-S	453
9	Inductive proximity sensor T-slot SIES	453

		→ Page/online
10	Connecting cable NEBU	453
11	Clip SMBK	453
12	Slot nut NST	453
13	Adapter kit DHAM	<a href="#">elga</a>
14	Support profile HMIA	<a href="#">elga</a>
15	Profile mounting MUE	453
16	Central support EAHF	453
17	Foot mounting HPE	453

## Technical data

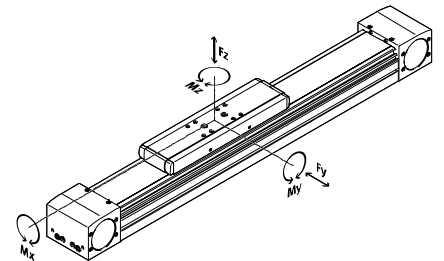


## Technical data

## Note

Engineering software  
PositioningDrives  
→ [www.festo.com](http://www.festo.com)

Dimensions → 459



Size		70	80	120
Working stroke	[mm]	50 ... 8500	50 ... 8500	50 ... 8500
Max. feed force $F_x$	[N]	350	800	1300
Max. no-load torque <sup>1)</sup>	[Nm]	0.5	1	3
Max. driving torque	[Nm]	5	15.9	34.2
Max. no-load resistance to shifting <sup>1)</sup>	[N]	35	50	114
Max. speed	[m/s]	5		
Max. acceleration	[m/s <sup>2</sup> ]	50		
Repetition accuracy	[mm]	±0.08		
Max. permissible force $F_y$	[N]	80	200	380
Max. permissible force $F_z$	[N]	400	800	1600
Max. permissible torque $M_x$	[Nm]	5	10	20
Max. permissible torque $M_y$	[Nm]	30	60	120
Max. permissible torque $M_z$	[Nm]	10	20	40

1) At 0.2 m/s

## Operating conditions

Ambient temperature	[°C]	-10 ... +60
Degree of protection		IP40

## Toothed belt

Size		70	80	120
Pitch	[mm]	3	5	5
Expansion <sup>2)</sup>	[%]	0.31	0.19	0.23
Effective diameter	[mm]	28.65	39.79	52.52
Feed constant	[mm/rev]	90	125	165

2) At max. feed force

## Mass moment of inertia

Size		70	80	120
$J_0$	[kg mm <sup>2</sup> ]	175	666	3201
$J_S$ per metre stroke	[kg mm <sup>2</sup> /m]	19	93	215
$J_L$ per kg effective load	[kg mm <sup>2</sup> /kg]	205	396	690

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

$$J_A = J_0 + J_S \times \text{working stroke [m]} + J_L \times m_{\text{effective load [kg]}}$$

## Toothed belt axes ELGA-TB-G, with plain-bearing guide

## Technical data

Materials	
Drive cover	Anodised wrought aluminium alloy
Cover band	Stainless steel strip
Toothed belt	Polychloroprene with glass cord and nylon coating
Slide	Anodised wrought aluminium alloy
Slide elements	Polyacetal
Profile with integrated guide	Anodised wrought aluminium alloy
Toothed belt pulley	High-alloy stainless steel

## Order code

Type	
ELGA	Linear axis

Drive function	
TB	Toothed belt

Guide	
G	Plain-bearing guide

Size	
	Stroke [mm]
70	1 ... 8500
80	1 ... 8500
120	1 ... 8500

Stroke reserve	
...H	0 ... 999 (0 = no stroke reserve) <sup>1</sup>

Protection against particles	
-	Standard
PO	Without strip cover

Operating instructions	
-	With
DN	Without

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

## Order example:

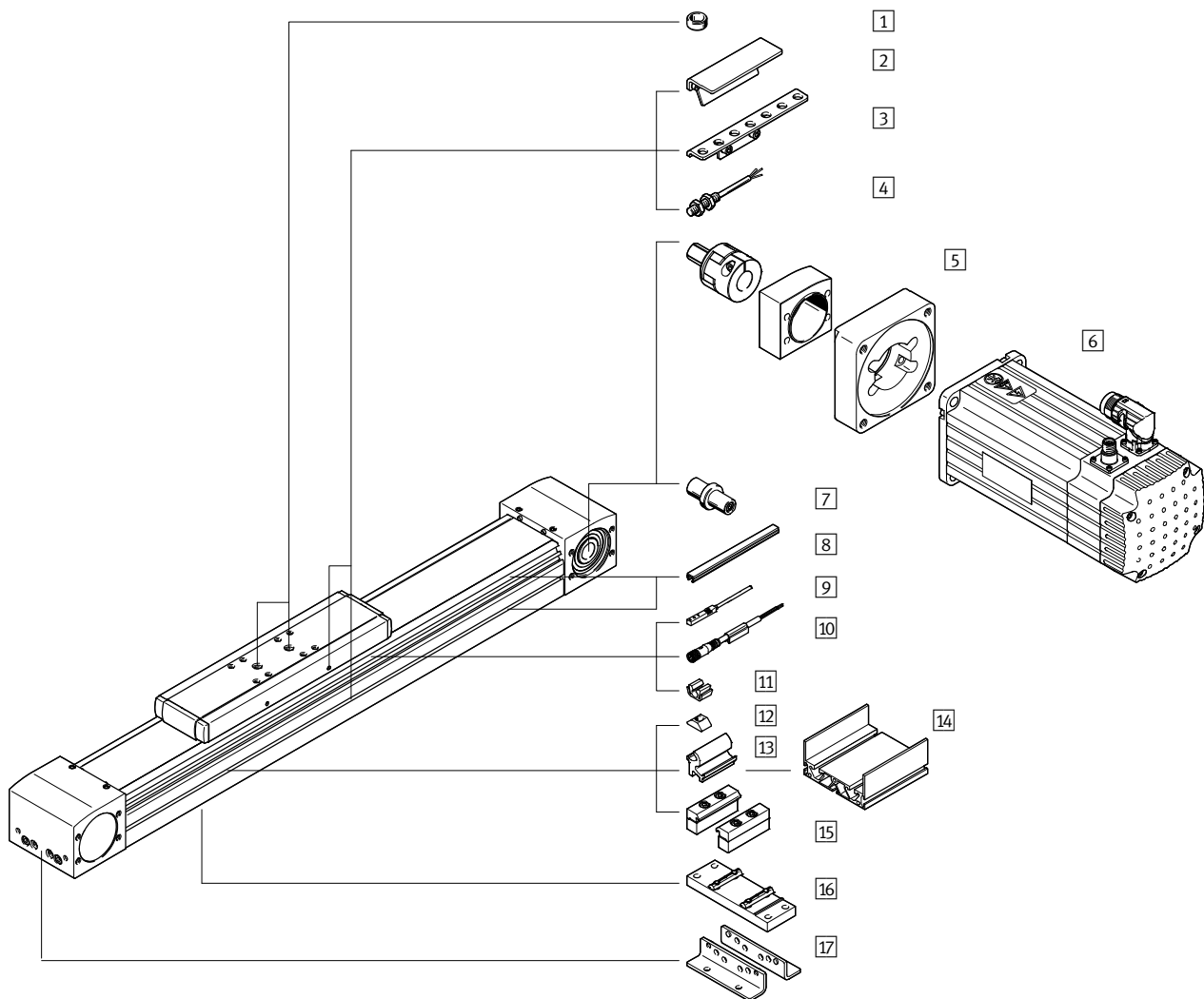
ELGA-TB-G-80-1300-200H-DN

Linear axis ELGA - toothed belt - plain-bearing guide - size 80 - stroke 1300 mm - stroke reserve 200 mm - standard - without operating instructions

## Ordering – Product options

	<p><b>Configurable product</b></p>	<p><b>This product and all its options can be ordered using the configurator.</b></p>	<p>The configurator can be found under Products on the DVD or  <a href="http://www.festo.com/catalogue/...">→ www.festo.com/catalogue/...</a></p>	<p>Enter the type code in the search field.</p>
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## Accessories


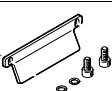

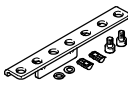




		→ Page/online
1	Centring pin ZBS/Centring sleeve ZBH	452
2	Switch lug SF	452
3	Sensor bracket HWS	452
4	Inductive proximity sensor M8 SIEN	452
5	Axial kit EAMM	452
6	Motor EMME/EMMS	452
7	Drive shaft EAMB	453
8	Slot cover ABP/ABP-S	453
9	Inductive proximity sensor T-slot SIES	453

		→ Page/online
10	Connecting cable NEBU	453
11	Clip SMBK	453
12	Slot nut NST	453
13	Adapter kit DHAM	<a href="#">elga</a>
14	Support profile HMIA	<a href="#">elga</a>
15	Profile mounting MUE	453
16	Central support EAHF	453
17	Foot mounting HPE	453

# Toothed belt axes ELGA-TB

## Accessories – Ordering data

	For size	Part no.	Type	
<b>1 Centring pin/sleeve<sup>1)2)</sup></b> <span style="float:right">Technical data online: → <a href="#">zbh</a></span>				
	For ELGA-TB-KF			
	70	150928	ZBS-5	
	70, 80, 120, 150	150927	ZBH-9	
	For ELGA-TB-RF			
	70, 80, 120	150927	ZBH-9	
	For ELGA-TB-G			
	70	150928	ZBS-5	
	80, 120	150927	ZBH-9	
<b>2 Switch lug for sensing with proximity sensor SIES</b> <span style="float:right">Dimensions online: → <a href="#">elga</a></span>				
	70	558047	SF-EGC-1-70	
	80	558048	SF-EGC-1-80	
	120	558049	SF-EGC-1-120	
	150	558051	SF-EGC-1-185	
<b>2 Switch lug for sensing with proximity sensor SIEN</b> <span style="float:right">Dimensions online: → <a href="#">elga</a></span>				
	70	558052	SF-EGC-2-70	
	80	558053	SF-EGC-2-80	
	120	558054	SF-EGC-2-120	
	150	558056	SF-EGC-2-185	
<b>3 Sensor bracket</b> <span style="float:right">Dimensions online: → <a href="#">elga</a></span>				
	70	558057	HWS-EGC-M5	
	80	558057	HWS-EGC-M5	
	120	570365	HWS-EGC-M8-B	
	150	560517	HWS-EGC-M8:KURZ	
<b>4 Inductive proximity sensor</b> <span style="float:right">Technical data → <a href="#">899</a></span>				
<b>N/O contact, M8</b>				
	PNP, cable	★	150386	SIEN-M8B-PS-K-L
	PNP, plug	★	150387	SIEN-M8B-PS-S-L
<b>N/C contact, M8</b> <span style="float:right">Technical data → <a href="#">899</a></span>				
	PNP, cable		150390	SIEN-M8B-PO-K-L
	PNP, plug		150391	SIEN-M8B-PO-S-L

1) Packaging unit 10 pieces.

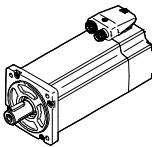
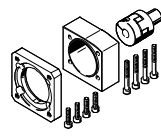
2) 2 centring sleeves included in the scope of delivery of the axis.

### Note

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

### 5/6 Permissible axis/motor combination with axial kit –

Technical data online: → [eamm-a](#)





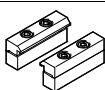
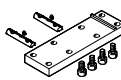
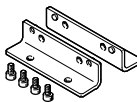
Motor / Gear unit <sup>3)</sup>	Axial kit	
	Part no.	Type
		
<b>ELGA-TB-...-70</b>		
With servo motor		
EMMS-AS-70-...	1202331	EAMM-A-N38-70A
With servo motor and gear unit		
EMMS-AS-55-...	1202253	EAMM-A-N38-60G
EMGA-60-P-G...-SAS-55		
EMMS-AS-70-...	1202253	EAMM-A-N38-60G
EMGA-60-P-G...-SAS-70		
With stepper motor		
EMMS-ST-87-...	3324111	EAMM-A-N38-87A
With stepper motor and gear unit		
EMMS-ST-57-...	1202253	EAMM-A-N38-60G
EMGA-60-P-G...-SST-57		
<b>ELGA-TB-...-80</b>		
With servo motor		
EMMS-AS-100-...	1201894	EAMM-A-N48-100A
With servo motor and gear unit		
EMMS-AS-70-...	1258793	EAMM-A-N48-80G
EMGA-80-P-G...-SAS-70		
EMME-AS-80-...	1258793	EAMM-A-N48-80G
EMGA-80-P-G...-EAS-80		
EMME-AS-100-...	1258793	EAMM-A-N48-80G
EMGA-80-P-G...-SAS-100		
EMMS-AS-100-...	1258793	EAMM-A-N48-80G
EMGA-80-P-G...-SAS-100		
With stepper motor and gear unit		
EMMS-ST-57-...	1972527	EAMM-A-N48-60G
EMGA-60-P-G...-SST-57		
EMMS-ST-87-...	1258793	EAMM-A-N48-80G
EMGA-80-P-G...-SST-87		

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

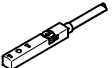
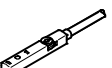




## Accessories – Ordering data

Motor / Gear unit <sup>1)</sup>	Axial kit	
	Part no.	Type
<b>ELGA-TB-...-120</b>		
With servo motor		
EMMS-AS-140-...	1201691	EAMM-A-N80-140A
With servo motor and gear unit		
EMMS-AS-70-...	2372096	EAMM-A-N80-80G
EMGA-80-P-G...-SAS-70		
EMME-AS-80-...	2372096	EAMM-A-N80-80G
EMGA-80-P-G...-EAS-80		
EMME-AS-100-...	2372096	EAMM-A-N80-80G
EMGA-80-P-G...-SAS-100		
EMMS-AS-100-...	2372096	EAMM-A-N80-80G
EMGA-80-P-G...-SAS-100		
EMME-AS-100-...	1201695	EAMM-A-N80-120G
EMGA-120-P-G...-SAS-100		
EMMS-AS-100-...	1201695	EAMM-A-N80-120G
EMGA-120-P-G...-SAS-100		
EMMS-AS-140-...	1201695	EAMM-A-N80-120G
EMGA-120-P-G...-SAS-140		
With stepper motor and gear unit		
EMMS-ST-87-...	2372096	EAMM-A-N80-80G
EMGA-80-P-G...-SST-87		
<b>ELGA-TB-...-150</b>		
With servo motor		
EMMS-AS-140-...	3657226	EAMM-A-L95-140A-G2
EMMS-AS-190-...	3659562	EAMM-A-L95-190A-G2
With servo motor and gear unit		
EMME-AS-80-...	3660191	EAMM-A-L95-80G-G2
EMGA-80-P-G...-EAS-80		
EMME-AS-100-...	3660191	EAMM-A-L95-80G-G2
EMGA-80-P-G...-SAS-100		
EMMS-AS-100-...	3660191	EAMM-A-L95-80G-G2
EMGA-80-P-G...-SAS-100		
EMME-AS-100-...	3659941	EAMM-A-L95-120G-G2
EMGA-120-P-G...-SAS-100		
EMMS-AS-100-...	3659941	EAMM-A-L95-120G-G2
EMGA-120-P-G...-SAS-100		
EMMS-AS-140-...	3659941	EAMM-A-L95-120G-G2
EMGA-120-P-G...-SAS-140		
With stepper motor and gear unit		
EMMS-ST-87-...	3660191	EAMM-A-L95-80G-G2
EMGA-80-P-G...-SST-87		

	For size	Part no.	Type
<b>7 Drive shaft</b>			
	70	1344642	EAMB-24-9-15X21-16X20
	80	558036	EAMB-24-6-15X21-16X20
	120	558037	EAMB-34-6-25X26-23X27
	150	558038	EAMB-44-7-35X30-32X32
<b>8 Slot cover<sup>2)</sup></b>			
	For mounting slot		
	70, 80	151681	ABP-5
	120, 150	151682	ABP-8
	For sensor slot		
	70 ... 150	563360	ABP-5-S1
<b>11 Clip</b>			
	70 ... 150	534254	SMBK-8
<b>12 Slot nut</b>			
	70, 80	150914	NST-5-M5
	120, 150	150915	NST-8-M6
<b>15 Profile mounting</b>			Dimensions online: → <a href="#">elga</a>
	70	558043	MUE-70/80
	80	558043	MUE-70/80
	120	558044	MUE-120/185
	150	558044	MUE-120/185
<b>16 Central support</b>			Dimensions online: → <a href="#">elga</a>
	70	2349256	EAHF-L5-70-P
	80	3535188	EAHF-L5-80-P
	120	2410274	EAHF-L5-120-P
	150	3535189	EAHF-L5-150-P
<b>17 Foot mounting</b>			Dimensions online: → <a href="#">elga</a>
	70	558321	HPE-70
	80	558322	HPE-80
	120	558323	HPE-120
	150	3002636	HPE-150

- 1) The input torque must not exceed the maximum permissible transferable torque of the axial kit.  
2) Packaging unit 2x Q5 m.

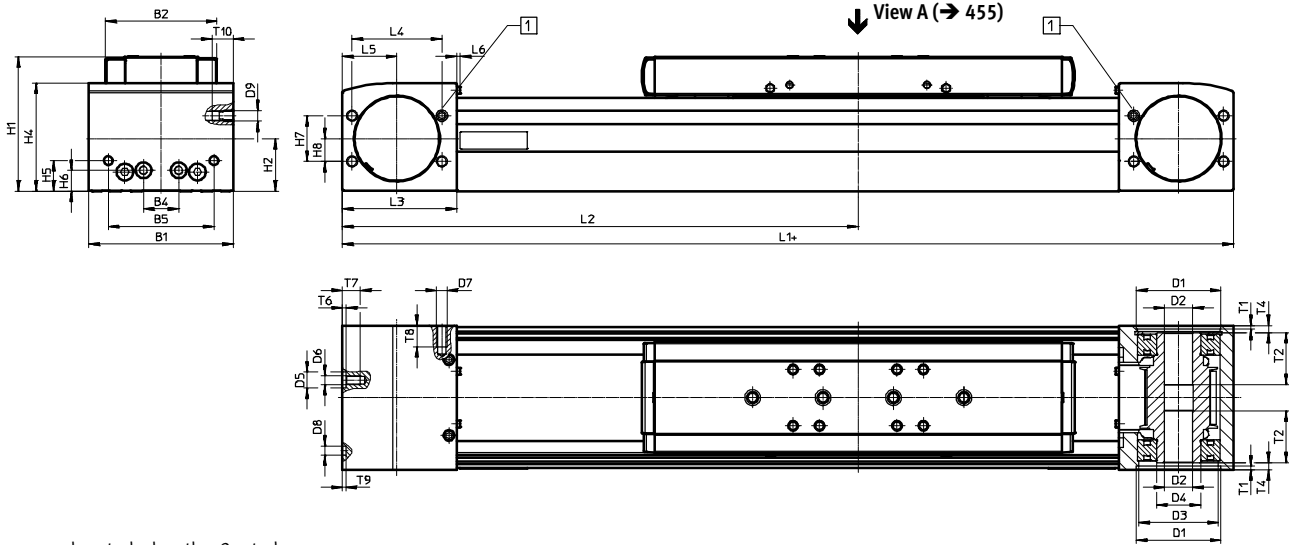
	Cable length [m]	Part no.	Type
<b>9 Proximity sensor for T-slot, inductive, N/O contact</b>			Technical data → 905
	PNP, cable	7.5	551386 SIES-8M-PS-24V-K-7,5-OE
	PNP, plug	0.3	551387 SIES-8M-PS-24V-K-0,3-M8D
	NPN, cable	7.5	551396 SIES-8M-NS-24V-K-7,5-OE
	NPN, plug	0.3	551397 SIES-8M-NS-24V-K-0,3-M8D
<b>N/C contact</b>			Technical data → 905
	PNP, cable	7.5	551391 SIES-8M-PO-24V-K-7,5-OE
	PNP, plug	0.3	551392 SIES-8M-PO-24V-K-0,3-M8D
	NPN, cable	7.5	551401 SIES-8M-NO-24V-K-7,5-OE
	NPN, plug	0.3	551402 SIES-8M-NO-24V-K-0,3-M8D
<b>10 Connecting cable, straight socket</b>			Technical data → 1161
	-	2.5	★ 541333 NEBU-M8G3-K-2.5-LE3
	-	5.0	★ 541334 NEBU-M8G3-K-5-LE3
<b>Angled socket</b>			Technical data → 1161
	-	2.5	★ 541338 NEBU-M8W3-K-2.5-LE3
	-	5.0	★ 541341 NEBU-M8W3-K-5-LE3

# Toothed belt axes ELGA-TB-KF, recirculating ball bearing guide

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

3



+ = plus stroke length + 2x stroke reserve

1 Sealing air connection

Size	B1	B2	B4	B5	D1 ∅ H7	D2 ∅ H7	D3 ∅	D4 ∅	D5 ∅ H7	D6	D7
70	69	48.2	30	45	38	16	34	25	–	M5	M6
80	82	63.2	20	60	48	16	45	25	9	M5	M6
120	120	95	80	40	80	23	72	45	–	M 8	M 8
150	154	125	115	80	95	32	90	60	–	M 8	M 8

Size	D8 ∅ H7	H1	H2	H4	H5	H6	H7	H8	L1	L2 Min.	L3
70	5	64	26.5	50.8	13	13	24	12	346	178	57.5
80	5	76.5	30	61.5	17.5	12	26	13	386	193	65
120	9	111.5	45	91	22	22	59	32	546	273	100
150	9	141.5	58.6	121	26.5	26.5	80	40	712	356	140

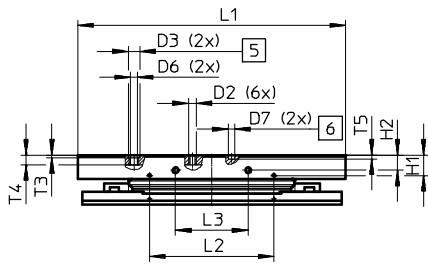
Size	L4	L5	L6	T1	T2	T4	T6	T7	T8	T9	T10
70	42	27.5	2	2.1	18	7.15	–	10	12	3.1	12
80	51	31	1.9	2.1	29.5	4	2.1	10.1	12	2	12
120	76	50	2	3.1	29.5	4	–	16	16	2.1	16
150	80	70	2	2.8	32	4	–	18	17	2.1	17

# Toothed belt axes ELGA-TB-KF, recirculating ball bearing guide

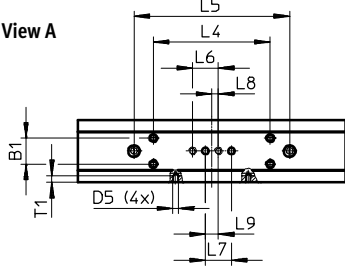
## Dimensions

### Slide

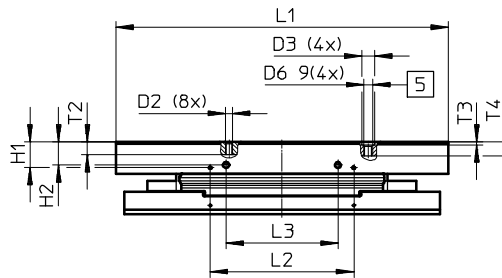
#### Size 70



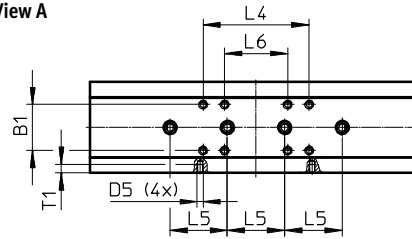
#### View A



#### Size 80



#### View A



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

Size	B1	D2	D3 ∅	D5	D6	D7 ∅	H1	H2	L1	L2	L3
	±0.1		H7			H7	±0.1	±0.1	±0.1	±0.1	±0.1
70	20	M5	9	M4	M6	5	15.7	11.7	206.4	96	56
80	32	M5	9	M4	M6	–	17.9	16	231.4	100	78

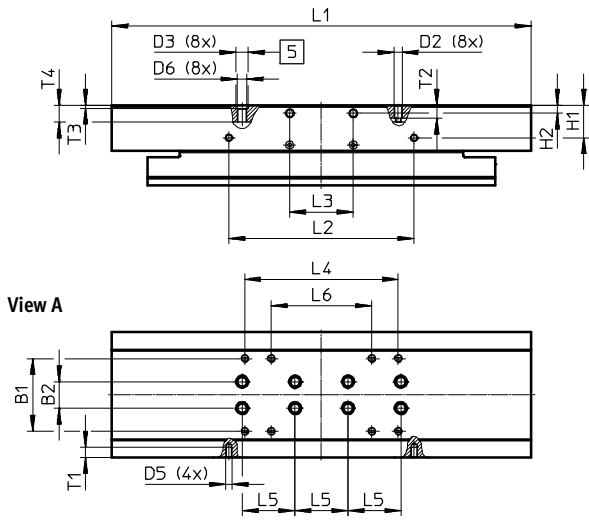
Size	L4	L5	L6	L7	L8	L9	T1	T2	T3	T4	T5
	±0.1		±0.1	±0.03		±0.1			+0.1		+0.1
70	90	120	20	20	5	10	5.1	–	2.1	7.5	3.1
80	74	44±0.03	44	40	–	–	6	9	2.1	9.7 <sub>-0.2</sub>	–

# Toothed belt axes ELGA-TB-KF, recirculating ball bearing guide

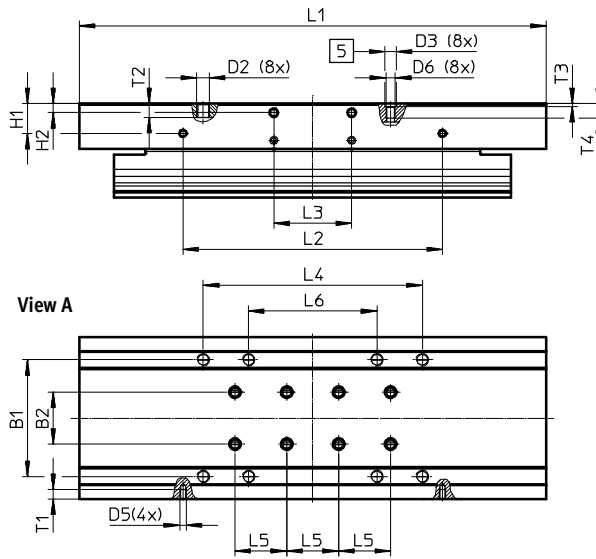
## Dimensions

### Slide

#### Size 120



#### Size 150



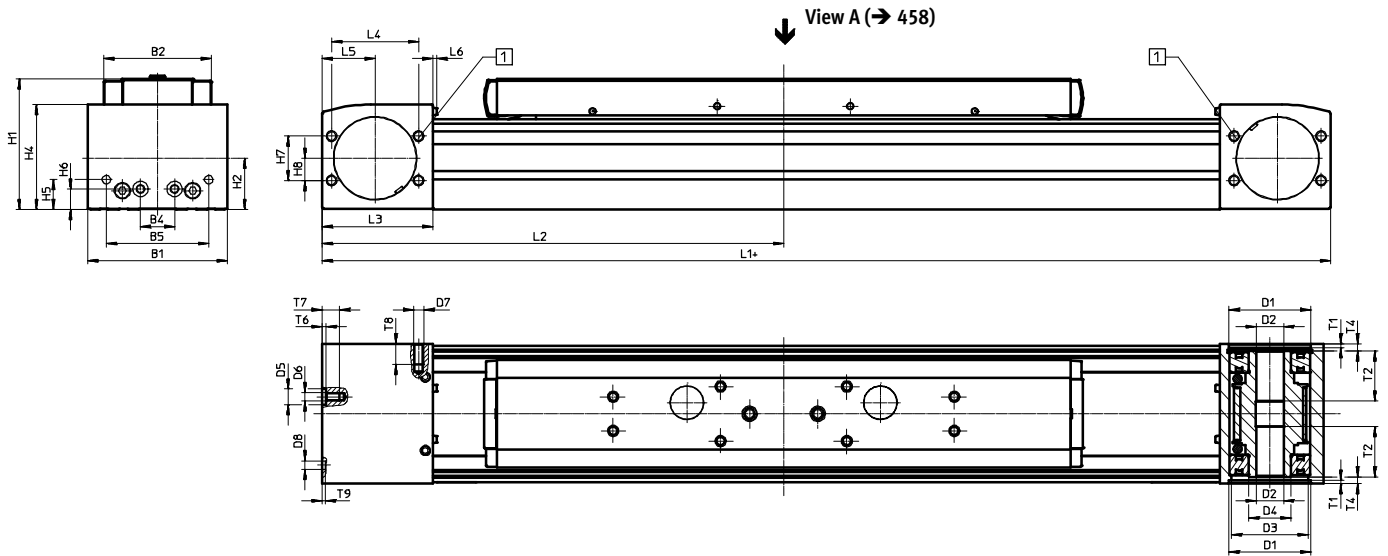
5 Hole for centring sleeve ZBH

Size	B1	B2	D2	D3 ∅ H7	D5	D6	H1	H2	L1
	±0.1	±0.03					±0.1		±0.1
120	55	20	M5	9	M5	M6	24.5	6	316.6
150	90	40	M 8	9	M5	M6	23	7±0.1	360

Size	L2	L3	L4	L5	L6	T1	T2	T3	T4
	±0.1	±0.1	±0.1	±0.03	±0.1				+0.1
120	140	48	116	40	76	8	9.7	2.1	12.6 <sub>-0.3</sub>
150	200	60	169	40	99	7.5	10.7	2.1	11

# Toothed belt axes ELGA-TB-RF, roller bearing guide

## Dimensions



+ = plus stroke length + 2 x stroke reserve

1 Sealing air connection

Size	B1	B2	B4	B5	D1 ∅ H7	D2 ∅ H7	D3 ∅	D4 ∅	D5 ∅ H7	D6	D7
70	69	48.2	30	45	38	16	34	25	-	M5	M6
80	82	63.2	20	60	48	16	45	25	9	M5	M6
120	120	95	80	40	80	23	72	45	-	M 8	M 8

Size	D8 ∅ H7	D12	H1	H2	H4	H5	H6	H7	H8	L3
70	5	M4	64	26.5	50.8	13	13	24	12	57.5
80	5	M4	76.5	30	61.5	17.5	12	26	13	65
120	9	M5	111.5	45	91	22	22	59	32	100

Size	L4	L5	L6	T1	T2	T4	T6	T7	T8	T9
70	42	27.5	2.3	2.1	18	7.15	-	10	12	3.1
80	51	31	2.3	2.1	29.5	4	2.1	10.1	12	2
120	76	50	2.5	3.1	29.5	4	-	16	16	2.1

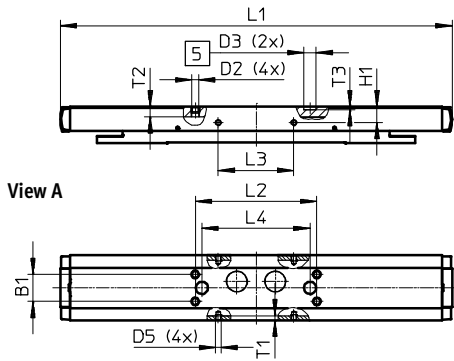
Size	L1			L2		
	ELGA-...-S	ELGA-...	ELGA-...-L	ELGA-...-S Min.	ELGA-... Min.	ELGA-...-L Min.
70	342	420	520	171	210	260
80	496	580	720	248	290	360
120	673	775	1 005	336.5	387.5	502.5

# Toothed belt axes ELGA-TB-RF, roller bearing guide

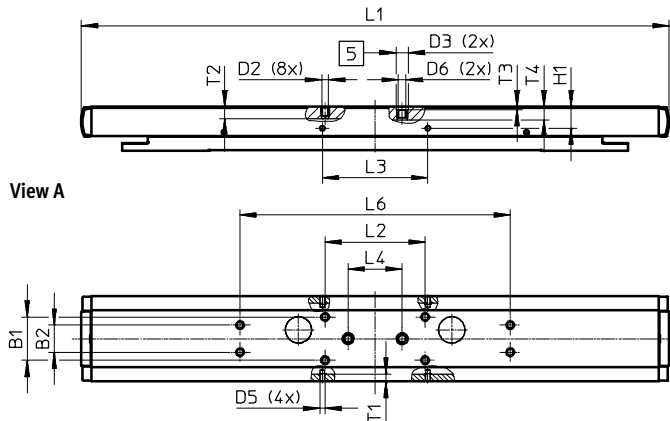
## Dimensions

### Standard slide

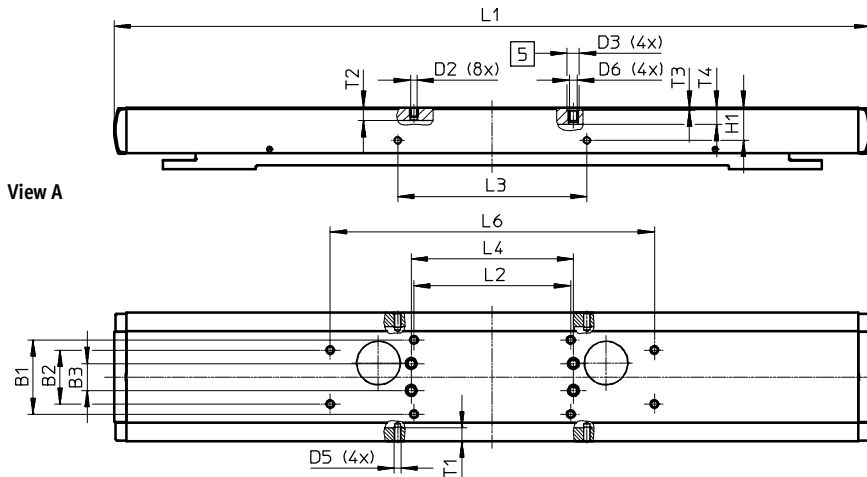
#### Size 70



#### Size 80



#### Size 120

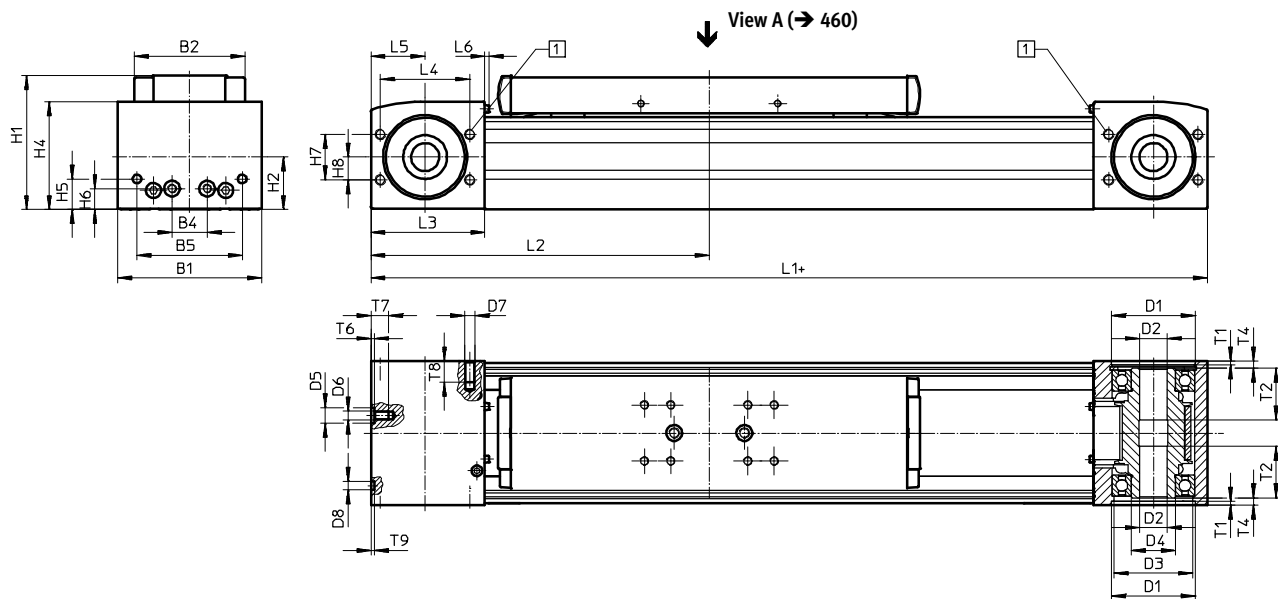


5 Hole for centring sleeve

Size	B1	B2	B3	D2	D3	D5	D6	H1
	±0.1	±0.1	±0.1		∅ H7			±0.1
70	20	-	-	M5	9	M4	-	11.7
80	32	20	-	M5	9	M4	M6	16
120	55	40	20	M5	9	M5	M6	24.5

Size	L1	L2	L3	L4	L6	T1	T2	T3	T4
		±0.2	±0.1	±0.03	±0.2				
70	290	90	56	80	-	3.5	7.5	2.1	-
80	435	74	78	40	200	5.1	9	2.1	9.7
120	560	116	140	120	240	10	10	2.1	12.8

## Dimensions



+ = plus stroke length + 2 x stroke reserve

1 Sealing air connection

Size	B1	B2	B4	B5	D1 ∅ H7	D2 ∅ H7	D3 ∅	D4 ∅	D5 ∅ H7	D6	D7
70	69	48.2	30	45	38	16	34	25	–	M5	M6
80	82	63.2	20	60	48	16	45	25	9	M5	M6
120	120	95	80	40	80	23	72	45	–	M 8	M 8

Size	D8 ∅ H7	H1	H2	H4	H5	H6	H7	H8	L1	L2 Min.	L3
70	5	64	26.5	50.8	13	13	24	12	346	173	57.5
80	5	76.5	30	61.5	17.5	12	26	13	386	193	65
120	9	111.5	45	91	22	22	59	32	546	273	100

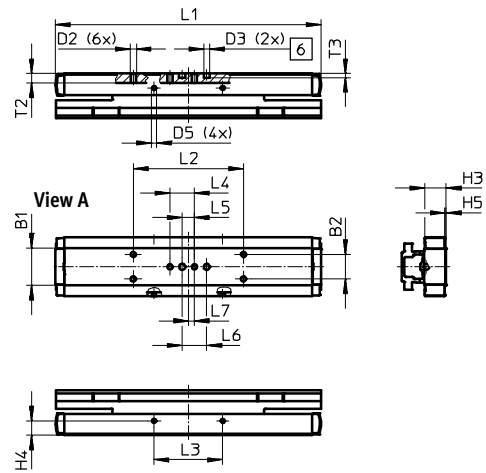
Size	L4	L5	L6	T1	T2	T4	T6	T7	T8	T9
70	42	27.5	2.3	2.1	18	7.15	–	10	12	3.1
80	51	31	2.3	2.1	29.5	4	2.1	10	12	2
120	76	50	2.5	3.1	29.5	4	–	16	16	2.1

# Toothed belt axes ELGA-TB-G, plain-bearing guide

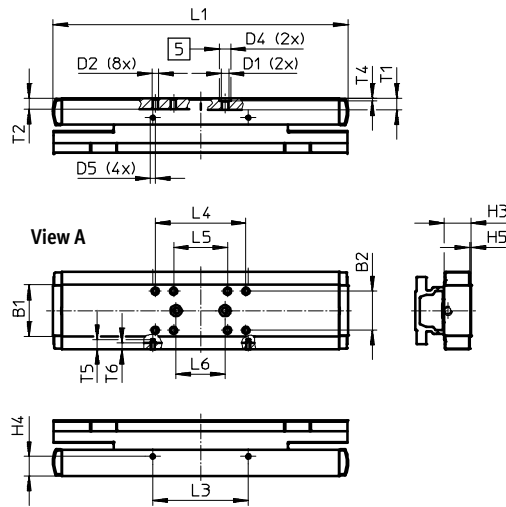
## Dimensions

### Slide

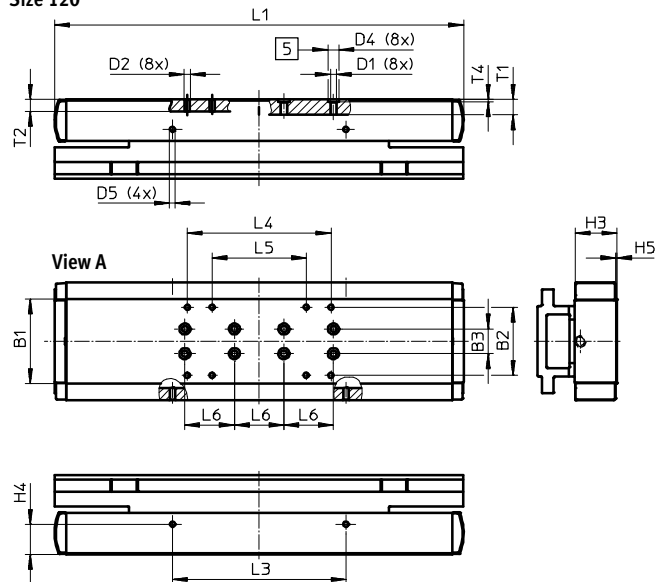
#### Size 70



#### Size 80



#### Size 120



- 5 Hole for centring sleeve
- 6 Hole for centring pin

Size	B1	B2	B3	D1	D2	D3 ∅	D4 ∅	D5
70	30	20±0,1	-	-	M5	5 <sup>H7</sup>	-	M4
80	42	32±0,2	-	M6	M5	-	9 <sup>H7</sup>	M4
120	68	55±0,2	20±0,03	M6	M5	-	9 <sup>H7</sup>	M5

Size	H3	H4	H5	L1	L2	L3	L4	L5
		±0,1			±0,1	±0,1		
70	17.7	11.7	1	216.6	90	56	20±0,1	10±0,1
80	22.2	16	1	240.6	-	78	74±0,2	44±0,2
120	33.8	24.5	1	330.4	-	140	116±0,2	76±0,2

Size	L6	L7	T1	T2	T3	T4	T5	T6
	±0,03				+0,1	+0,1		
70	20	5	-	7.5	3.1	-	-	-
80	40	-	9.7	9	-	2.1	8	6
120	40	-	12.8	10	-	2.1	-	-



Linear drives and slides  
Toothed belt axes

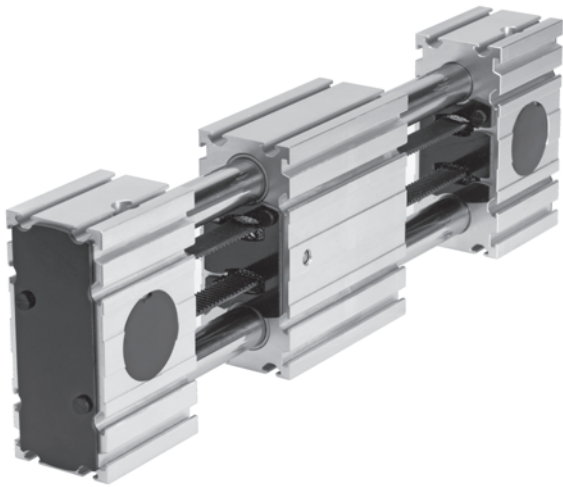
# ELGR



Overview/Configuration/Ordering  
→ [www.festo.com/catalogue/elgr](http://www.festo.com/catalogue/elgr)



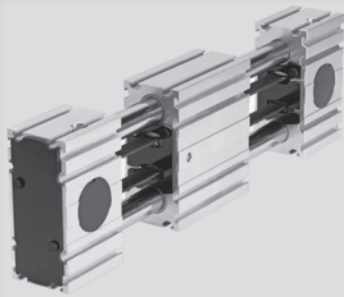
Additional information/Support/User documentation  
→ [www.festo.com/sp/elgr](http://www.festo.com/sp/elgr)



- + Optimum price/performance ratio
- + Ready-to-install unit for quick and easy design
- + High reliability thanks to tested service life of 5000 km
- + Motor can be mounted on any one of 4 sides
- + With plain or recirculating ball bearing guide
- + Kit for easy and space-saving end-position sensing
- + Quick commissioning following easy sizing using the PositioningDrives software as well as predefined parameter sets in the parameterisation software FCT

# Toothed belt axes ELGR

3



- Ready-to-install unit for quick and easy design
- Motor can be mounted on any of four sides – for every installation situation
- Highly reliable
- Kit for easy and space-saving position sensing
- Spare parts service

→ [www.festo.com/catalogue/elgr](http://www.festo.com/catalogue/elgr)

## Product range overview

Type/Version	Size	Stroke [mm]	Feed force [N]	Product options											
				ST	E	B	AT	AD	AL	AR	FR	FL	RL	RR	
<b>ELGR</b>															
Recirculating ball bearing guide	35, 45, 55	50 ... 1500	50 ... 350	-	-	-	-	-	-	-	-	-	-	-	-
GF – Plain-bearing guide	35, 45, 55	50 ... 1500	50 ... 350	-	-	-	-	-	-	-	-	-	-	-	-
<b>ELGR for Optimised Motion Series (OMS)</b>															
Recirculating ball bearing guide	35, 45, 55	50 ... 1500	50 ... 350	■	■	■	■	■	■	■	■	■	■	■	■
<b>ELFR</b>															
Passive guide axis	35, 45, 55	50 ... 1500	-	-	-	-	-	-	-	-	-	-	-	-	-

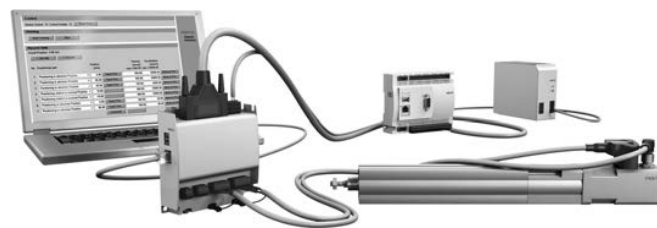
## Product options

- |                                      |                  |                                   |  |
|--------------------------------------|------------------|-----------------------------------|--|
| L Long slide                         | ST Stepper motor | AT Cable outlet on top (standard) | FR Motor position front right (standard) |
| ZR 1 slide on right                  | E With encoder   | AD Cable outlet underneath        | FL Motor position front left             |
| ZL 1 slide on left                   | B With brake     | AL Cable outlet to the left       | RL Motor position rear left              |
| ZB 1 slide on right, 1 slide on left |                  | AR Cable outlet to the right      | RR Motor position rear right             |

## Optimised Motion Series (OMS)

A package that makes positioning easier than ever before.

The Optimised Motion Series is as easy to handle as a pneumatic cylinder, but with the functionality of an electric drive.



### Simple to select

- Easy sizing and selection using cycle time charts
- No specialist knowledge of electric drive technology required

### Ordering and logistics

- All the part components required with a single part number
- Motors preassembled on the axis mechanism

### Quick to configure

- Parameterisation and commissioning via web server/browser
- Parameterise up to 7 freely definable positions directly on the PC



For simple positioning tasks

Toothed belt axis ELGR

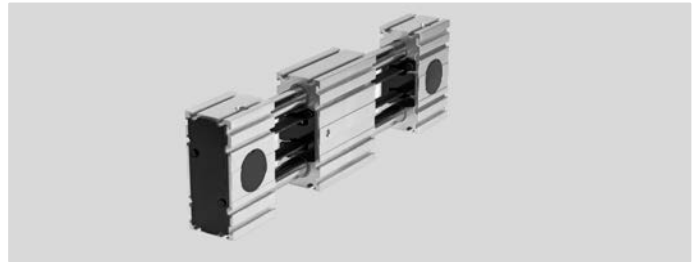


Motor controller CMMO

→ 566

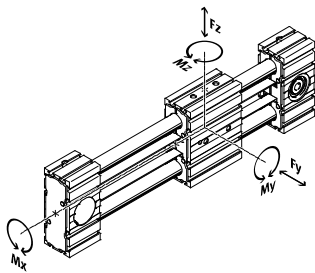


## Data sheet



## Technical data

Dimensions → 474



## Note

Engineering software  
PositioningDrives  
→ [www.festo.com](http://www.festo.com)

Guidance	Recirculating ball bearing guide			Plain-bearing guide			
	Size	35	45	55	35	45	55
Working stroke <sup>1)</sup>	[mm]	50 ... 800	50 ... 1000	50 ... 1500	50 ... 800	50 ... 1000	50 ... 1500
Max. feed force $F_x$	[N]	50	100	350	50	100	350
Max. no-load torque	[Nm]	0.1	0.2	0.4	0.1	0.2	0.4
Max. driving torque	[Nm]	0.46	1.24	5	0.46	1.24	5
Max. no-load resistance to shifting	[N]	10.8	16.1	27.9	10.8	16.1	27.9
Max. speed	[m/s]	3			1		
Max. acceleration <sup>2)</sup>	[m/s <sup>2</sup> ]	50			50		
Repetition accuracy	[mm]	±0.1			±0.1		
Max. permissible force $F_y$	[N]	50	100	300	50	100	300
Max. permissible force $F_z$	[N]	50	100	300	50	100	300
Max. permissible torque $M_x$	[Nm]	2.5	5	15	1	2.5	5
Max. permissible torque $M_y$	[Nm]	8	16	48	4	8	16
Max. permissible torque $M_z$	[Nm]	8	16	48	4	8	16

1) Total stroke = working stroke + 2x stroke reserve.

2) The max. acceleration is dependent on the moving load, the driving torque and the max. feed force.

## Operating conditions

Ambient temperature		
Recirculating ball bearing guide	[°C]	-10 ... +50
Plain-bearing guide	[°C]	0 ... +40
Degree of protection		IP20

## Toothed belt

Size		35	45	55
Pitch	[mm]	2	3	3
Expansion <sup>1)</sup>	[%]	0.094	0.08	0.21
Width	[mm]	10	15	19.3
Effective diameter	[mm]	18.46	24.83	28.65
Feed constant	[mm/rev]	58	78	90

1) At max. feed force

## Mass moment of inertia

Size		35	45	55
$J_0$ Standard slide	[kg mm <sup>2</sup> ]	40.26	155.13	360.48
$J_S$ per metre stroke	[kg mm <sup>2</sup> /m]	0.26	1.06	1.88
$J_L$ per kg effective load	[kg mm <sup>2</sup> /kg]	85.19	154.13	205.21

The mass moment of inertia  $J_A$  of the entire axis is calculated as follows:  $J_A = J_0 + J_S \times \text{working stroke [m]} + J_L \times m_{\text{effective load [kg]}}$

## Materials

Drive cover	Anodised wrought aluminium alloy
Profile	Anodised wrought aluminium alloy
Slide	Anodised wrought aluminium alloy
Pulleys	High-alloy stainless steel
Toothed belt clamping component	Beryllium bronze
Toothed belt	Polychloroprene with glass cord and nylon coating

# Toothed belt axes ELGR

## Order code

3

		ELGR	-	TB	-		-		-		-		-	
<b>Type</b>														
ELGR	Linear axis													
<b>Drive function</b>														
TB	Toothed belt													
<b>Guidance</b>														
-	Recirculating ball bearing guide													
GF	Plain-bearing guide													
<b>Size</b>														
	<b>Stroke [mm]</b>													
35	50 ... 800													
45	50 ... 1000													
55	50 ... 1500													
<b>Stroke reserve</b>														
...H	0 ... 999 (0 = no stroke reserve)												<input type="text" value="1"/>	
<b>Operating instructions</b>														
-	With operating instructions													
DN	Without operating instructions													

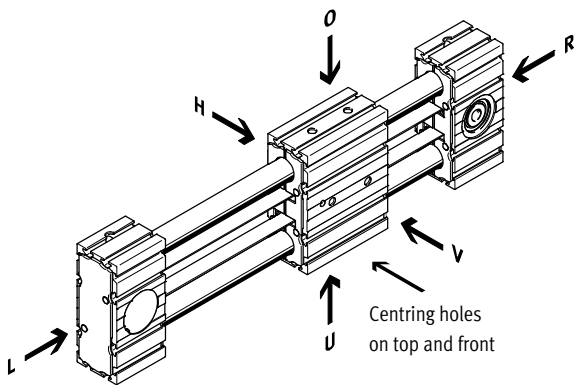
1 The sum of the nominal stroke and 2x stroke reserve must be at least 50 mm and must not exceed the maximum stroke length.

### Order example:

ELGR-TB-GF-45-600-100H-DN

Linear axis ELGR - toothed belt drive - plain-bearing guide - size 45 - stroke 600 mm - stroke reserve 100 mm without operating instructions

### Ordering aid

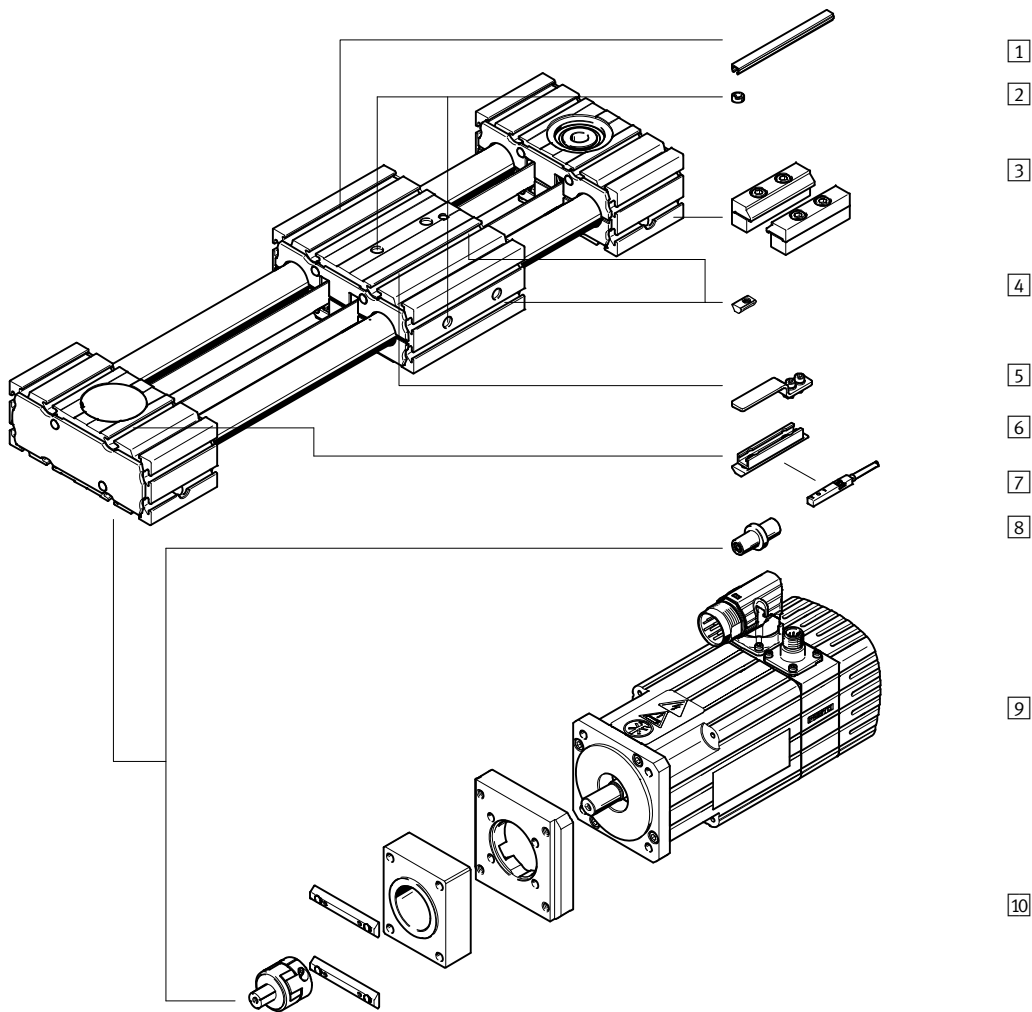


O top      L left  
 U underneath      V front  
 R right      H rear

## Ordering – Product options

	<b>Configurable product</b>	<b>This product and all its options can be ordered using the configurator.</b>	The configurator can be found under Products on the DVD or → <a href="http://www.festo.com/catalogue/...">www.festo.com/catalogue/...</a>	Enter the type code in the search field.
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## Accessories



1

2

3

4

5

6

7

8

9

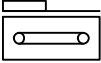
10

		→ Page/online
1	Slot cover ABP	471
2	Centring sleeve ZBH	471
3	Profile mounting MUE	471
4	Slot nut NST	471
5	Switch lug EAPM	471
6	Sensor bracket EAPM	471

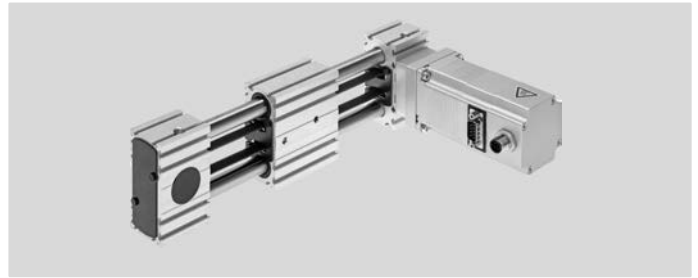
		→ Page/online
7	Inductive proximity sensor SIES	472
8	Drive shaft EAMB	472
9	Motor EMME/EMMS	472
10	Axial kit EAMM	472
-	Connecting cable NEBU	471

## Toothed belt axes ELGR, for Optimised Motion Series (OMS)

## Data sheet

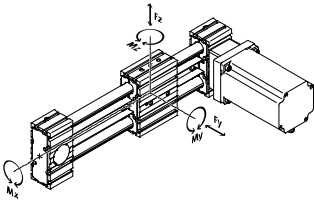


3



## Technical data

Dimensions → 474



## Note

Engineering software  
PositioningDrives  
→ [www.festo.com](http://www.festo.com)

Guide	Recirculating ball bearing guide			
	Size	35	45	55
Standard stroke	[mm]	50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 650, 700, 750, 800	50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 650, 700, 750, 800, 900, 1000	50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 650, 700, 750, 800, 900, 1000, 1100, 1200, 1300, 1400, 1500
Max. feed force $F_x$	[N]	50	100	350
Max. driving torque	[Nm]	0.46	1.24	5
Max. speed	[m/s]	1.1	1.1	5
Max. acceleration <sup>1)</sup>	[m/s <sup>2</sup> ]	15		
Repetition accuracy	[mm]	±0.1		
Max. permissible force $F_y$	[N]	28	50	68
Max. permissible force $F_z$	[N]	28	50	68
Max. permissible torque $M_x$	[Nm]	2.5	5	15
Max. permissible torque $M_y$	[Nm]	8	16	48
Max. permissible torque $M_z$	[Nm]	8	16	48

1) The max. acceleration is dependent on the moving load, the driving torque and the max. feed force.

## Operating conditions

Ambient temperature	[°C]	-10 ... +50
Degree of protection		IP20

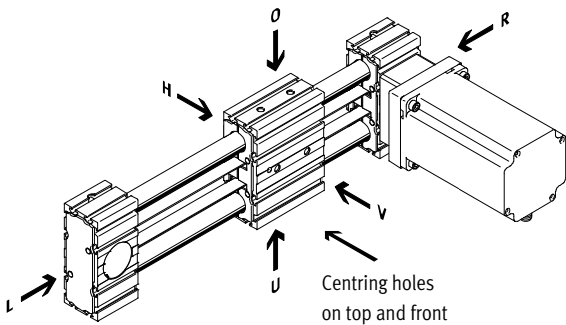
## Materials

Drive cover	Anodised wrought aluminium alloy
Profile	Anodised wrought aluminium alloy
Slide	Anodised wrought aluminium alloy
Pulleys	High-alloy stainless steel
Toothed belt clamping component	Beryllium bronze
Toothed belt	Polychloroprene with glass cord and nylon coating

# Toothed belt axes ELGR, for Optimised Motion Series (OMS)

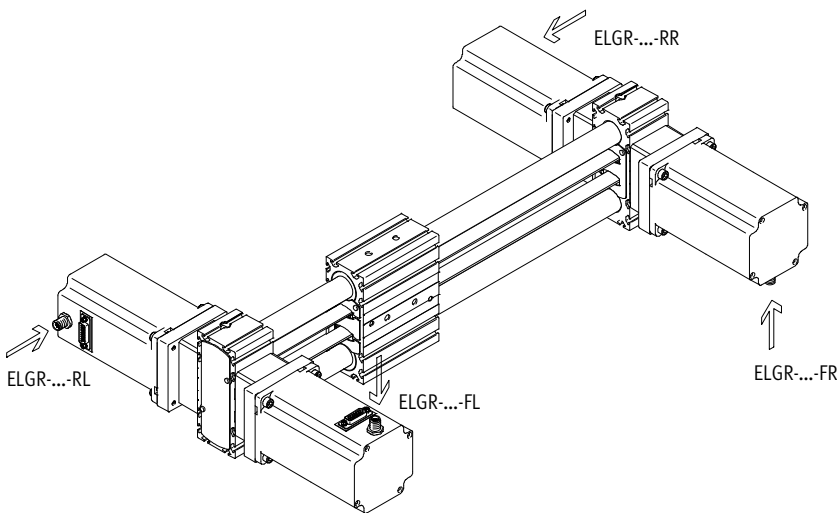
## Order code

Ordering aid

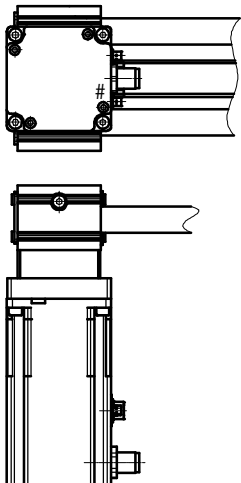


O top      L left  
 U underneath    V front  
 R right      H rear

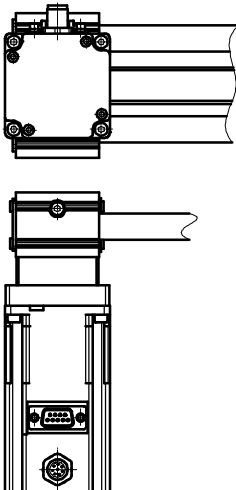
Motor attachment variants



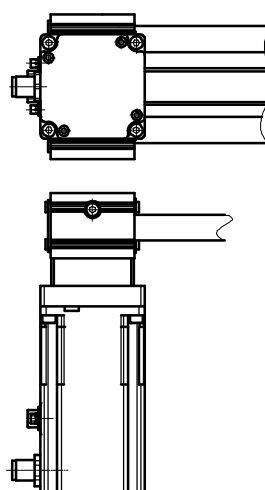
ELGR...-AR – right



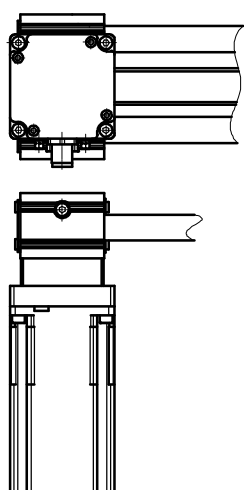
ELGR...-AT – top



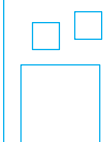
ELGR...-AL – left



ELGR...-AD – underneath



## Ordering – Product options



Configurable product

This product and all its options can be ordered using the configurator.

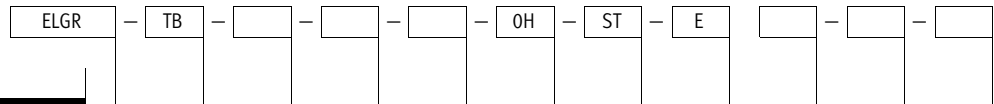
The configurator can be found under Products on the DVD or  
 → [www.festo.com/catalogue/...](http://www.festo.com/catalogue/...)

Enter the type code in the search field.

# Toothed belt axes ELGR, for Optimised Motion Series (OMS)

## Order code

3



Type	
ELGR	Linear axis

Drive function	
TB	Toothed belt

Guide	
-	Recirculating ball bearing guide

Size	
	Stroke [mm]
35	50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 650, 700, 750, 800
45	50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 650, 700, 750, 800, 900, 1000
55	50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 650, 700, 750, 800, 900, 1000, 1100, 1200, 1300, 1400, 1500

Stroke reserve	
OH	0 mm

Motor type	
ST	Stepper motor

Measuring unit	
E	Encoder

Brake	
-	None
B	With brake

Cable outlet direction	
AT	Top (standard)
AD	Underneath
AL	Left
AR	Right

Motor position	
FR	Front right (standard)
FL	Front left
AL	Rear left
AR	Rear right

### Order example:

ELGR-TB-45-500-OH-ST-E-AT-FR+2MA+2.5E+C5DION+DN

Linear axis ELGR- toothed belt drive - size 45 - stroke 500 mm - stroke reserve 0 mm - with stepper motor - with encoder - without brake - outlet cable on top - motor position front right - without cover - without slot nut - with 2 pair profile mounting - interconnecting cable 2.5 m - controller CMMO - digital I/O interface - switch in-/output NPN - without operating instructions



## Order code

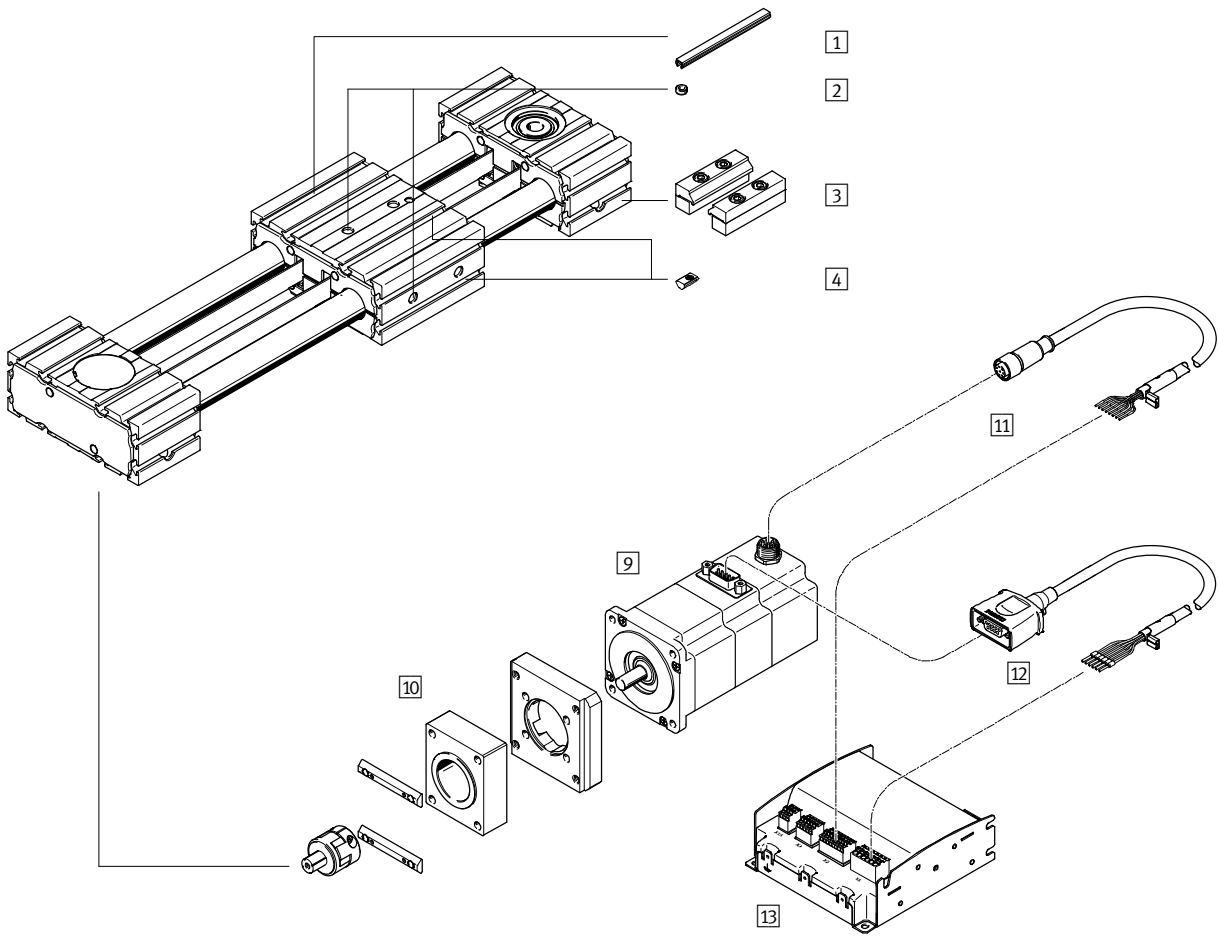
+				+		+	C5			+	DN
<b>Cover</b>											
...NC	For mounting slot										
<b>Slot nut</b>											
...NM	For mounting slot										
<b>Profile mounting</b>											
...MA	Profile mounting										
<b>Connecting cable to motor controller</b>											
1.5E	1.5 m, straight plug										
2.5E	2.5 m, straight plug										
5E	5 m, straight plug										
7E	7 m, straight plug										
10E	10 m, straight plug										
<b>Controller type</b>											
C5	CMMO, 5 A										
<b>Bus protocol / Activation</b>											
DIO	Digital I/O interface										
LK	IO-Link										
<b>Switching input/output</b>											
N	NPN <span style="border: 1px solid black; padding: 0 2px;">1</span>										
P	PNP										
<b>Operating instructions</b>											
-	With operating instructions										
DN	Without operating instructions										

1 Not with bus protocol LK.

# Toothed belt axes ELGR, for Optimised Motion Series (OMS)

## Accessories

3




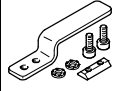
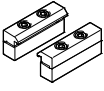



		→ Page/online
1	Slot cover ABP	471
2	Centring sleeve ZBH	471
3	Profile mounting MUE	471
4	Slot nut NST	471
9	Motor EMMS-ST	472

		→ Page/online
10	Axial kit EAMM	472
11	Motor cable NEBM	472
12	Encoder cable NEBM	472
13	Motor controller CMMO	472

**Note**  
 The associated axial kit (→ 472) is automatically included in the scope of delivery.  
 Motor and axial kit are installed on delivery.

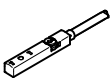
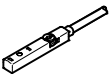



## Accessories – Ordering data

	For size	Part no.	Type		For size	Part no.	Type
<b>1 Slot cover<sup>1)</sup></b>				<b>4 Slot nut</b>			
	45, 55	<b>151681</b>	<b>ABP-5</b>		35	<b>558045</b>	<b>NST-3-M3</b>
					45, 55	<b>150914</b>	<b>NST-5-M5</b>
<b>2 Centring sleeve<sup>2)3)</sup></b>				<b>5 Switch lug</b>			
	35, 45, 55	<b>186717</b>	<b>ZBH-7</b>		35, 45, 55	<b>567538</b>	<b>EAPM-L4-SLS</b>
<b>3 Profile mounting</b>				<b>6 Sensor bracket</b>			
	35	<b>558042</b>	<b>MUE-50</b>		35, 45, 55	<b>567537</b>	<b>EAPM-L4-SHS</b>
	45, 55	<b>562238</b>	<b>MUE-45</b>				

1) Packaging unit 2x 0.5 m.

2) Packaging unit 10 piece.

3) 2 centring sleeves included in the scope of delivery of the axis.

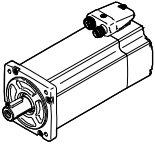
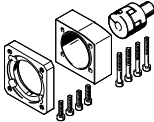
	For size	Cable length [m]	Part no.	Type	
<b>7 Proximity sensor for T-slot, inductive, N/O contact</b>					<b>Technical data → 905</b>
	PNP, cable	7.5	<b>551386</b>	<b>SIES-8M-PS-24V-K-7,5-OE</b>	
	PNP, plug	0.3	<b>551387</b>	<b>SIES-8M-PS-24V-K-0,3-M8D</b>	
	NPN, cable	7.5	<b>551396</b>	<b>SIES-8M-NS-24V-K-7,5-OE</b>	
	NPN, plug	0.3	<b>551397</b>	<b>SIES-8M-NS-24V-K-0,3-M8D</b>	
<b>N/C contact</b>					<b>Technical data → 905</b>
	PNP, cable	7.5	<b>551391</b>	<b>SIES-8M-PO-24V-K-7,5-OE</b>	
	PNP, plug	0.3	<b>551392</b>	<b>SIES-8M-PO-24V-K-0,3-M8D</b>	
	NPN, cable	7.5	<b>551401</b>	<b>SIES-8M-NO-24V-K-7,5-OE</b>	
	NPN, plug	0.3	<b>551402</b>	<b>SIES-8M-NO-24V-K-0,3-M8D</b>	
<b>8 Drive shaft</b>					
	35	–	<b>558034</b>	<b>EAMB-16-7-8X15-8X10</b>	
	45	–	<b>558035</b>	<b>EAMB-18-9-8X16-10X12</b>	
	55	–	<b>558036</b>	<b>EAMB-24-6-15X21-16X20</b>	
<b>Connecting cable, straight socket</b>					<b>Technical data → 1161</b>
	–	2.5	★ <b>541333</b>	<b>NEBU-M8G3-K-2.5-LE3</b>	
	–	5.0	★ <b>541334</b>	<b>NEBU-M8G3-K-5-LE3</b>	
<b>Angled socket</b>					<b>Technical data → 1161</b>
	–	2.5	★ <b>541338</b>	<b>NEBU-M8W3-K-2.5-LE3</b>	
	–	5.0	★ <b>541341</b>	<b>NEBU-M8W3-K-5-LE3</b>	

# Toothed belt axes ELGR

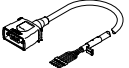
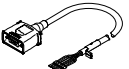

## Accessories – Ordering data

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

3

Motor/gear unit <sup>1)</sup>	Axial kit	
		
	Part no.	Type
<b>9/10 Permissible axis/motor combination with axial kit –</b> Technical data online: → <a href="#">eamm-a</a>		
<b>ELGR-35</b>		
With servo motor		
EMMS-AS-55-...	1133400	EAMM-A-R27-55A
With stepper motor		
EMMS-ST-57-... <sup>2)</sup>	1133403	EAMM-A-R27-57A
<b>ELGR-45</b>		
With servo motor		
EMME-AS-60-...	2224996	EAMM-A-R38-60P
EMMS-AS-70-...	1133401	EAMM-A-R38-70A
With stepper motor		
EMMS-ST-57-...	1578138	EAMM-A-R38-57A
EMMS-ST-87-... <sup>2)</sup>	1133404	EAMM-A-R38-87A
<b>ELGR-55</b>		
With servo motor		
EMMS-AS-70-...	1578139	EAMM-A-R48-70A
EMME-AS-80-...	2225090	EAMM-A-R48-80P
EMME-AS-100-...	1133402	EAMM-A-R48-100A
EMMS-AS-100-...	1133402	EAMM-A-R48-100A
With stepper motor		
EMMS-ST-87-... <sup>2)</sup>	1133405	EAMM-A-R48-87A

1) The input torque must not exceed the maximum permissible transferable torque of the axial kit.  
2) Motors used in combination with Optimised Motion Series (OMS)

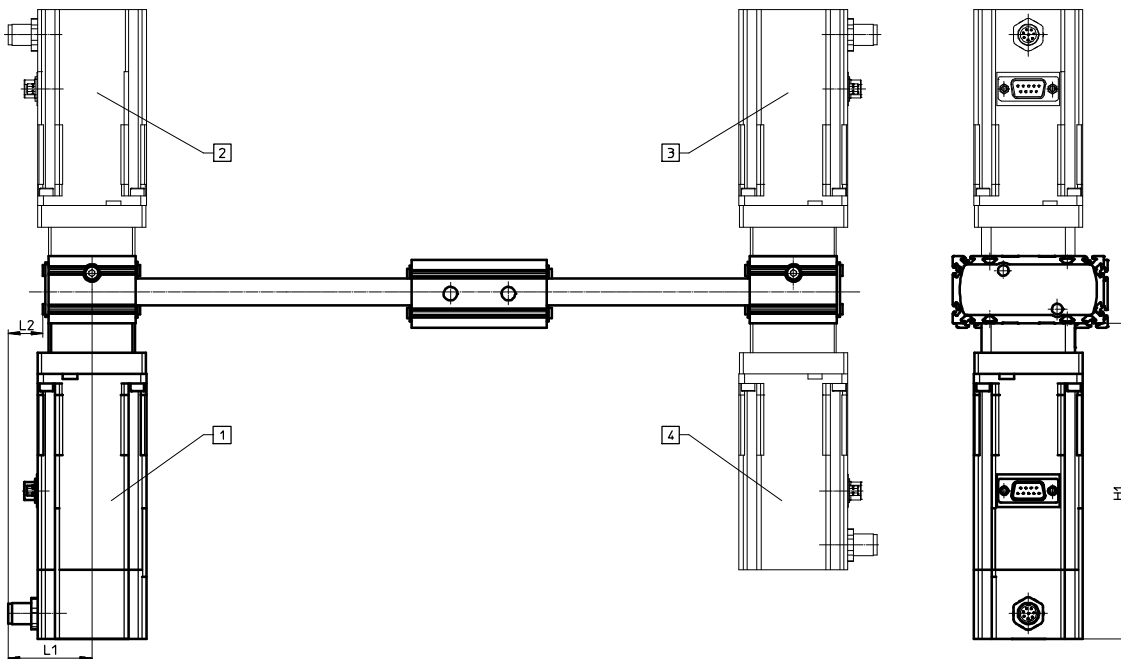
	Cable length [m]		Part no.	Type
<b>11 Motor cable<sup>3)</sup></b>				
For ELGR-35				
Straight plug				
	1.5	★	1450368	NEBM-S1G9-E-1.5-Q5-LE6
	2.5	★	1450369	NEBM-S1G9-E-2.5-Q5-LE6
	5.0	★	1450370	NEBM-S1G9-E-5-Q5-LE6
	7.0	★	1450371	NEBM-S1G9-E-7-Q5-LE6
	10.0	★	1450372	NEBM-S1G9-E-10-Q5-LE6
For ELGR-45/-55				
Straight plug				
	1.5	★	1450834	NEBM-S1G15-E-1.5-Q7-LE6
	2.5	★	1450835	NEBM-S1G15-E-2.5-Q7-LE6
	5.0	★	1450836	NEBM-S1G15-E-5-Q7-LE6
	7.0	★	1450837	NEBM-S1G15-E-7-Q7-LE6
	10.0	★	1450838	NEBM-S1G15-E-10-Q7-LE6
<b>12 Encoder cable<sup>1)</sup></b>				
For ELGR-35/-45/-55				
Straight plug				
	1.5	★	1451586	NEBM-M12G8-E-1.5-LE8
	2.5	★	1451587	NEBM-M12G8-E-2.5-LE8
	5.0	★	1451588	NEBM-M12G8-E-5-LE8
	7.0	★	1451589	NEBM-M12G8-E-7-LE8
	10.0	★	1451590	NEBM-M12G8-E-10-LE8

3) Other cable lengths on request.

	Description		Part no.	Type
<b>13 Motor controller</b>				
Technical data online: → <a href="#">cmmo-st</a>				
	With I/O interface			
	Switching input/output PNP	★	1512316	CMMO-ST-C5-1-DIOP
	Switching input/output NPN	★	1512317	CMMO-ST-C5-1-DION
	With IO-Link			
	Switching input/output PNP		1512320	CMMO-ST-C5-1-LKP

## Dimensions

## Motor attachment variants



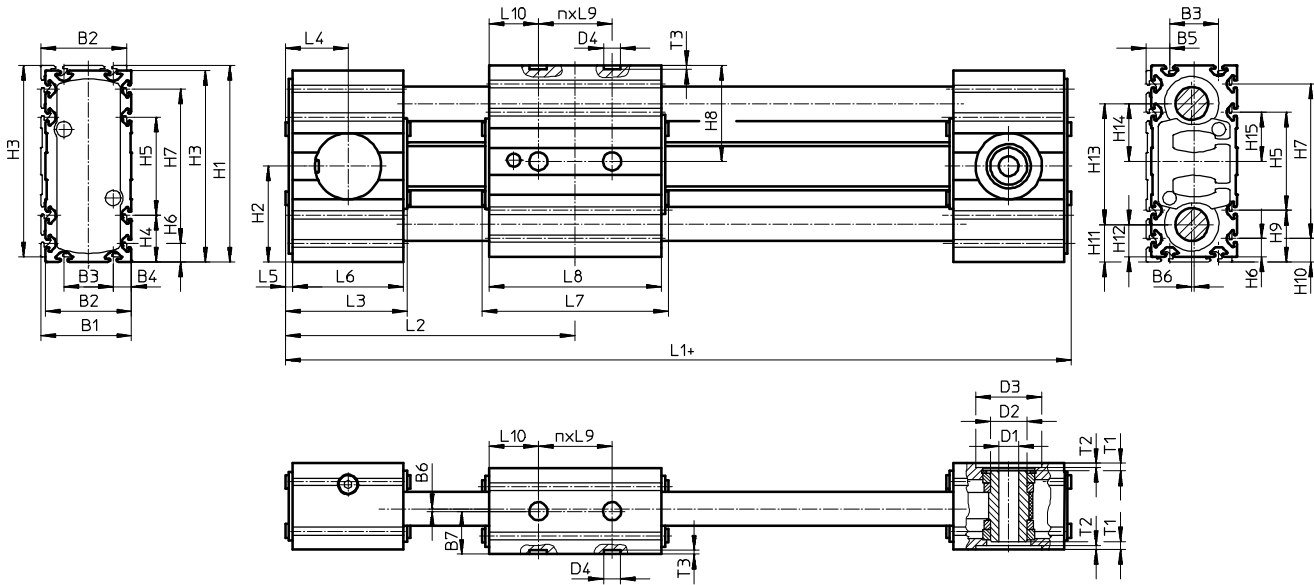
- 1 ELGR...-FL (motor at front left)
- 2 ELGR...-RL (motor at rear left)
- 3 ELGR...-RR (motor at rear right)
- 4 ELGR...-FR (motor at front right)

Size	H1		L1		L2	
	ELGR...	-B	ELGR...	-B	ELGR...	-B
ELGR-35	127.5	163	43.2	44	17.7	18
ELGR-45	152.4	192.5	58	58	28	28
ELGR-55	190	230	58	58	27	27

# Toothed belt axes ELGR, for Optimised Motion Series (OMS)

## Dimensions

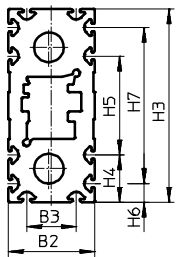
3



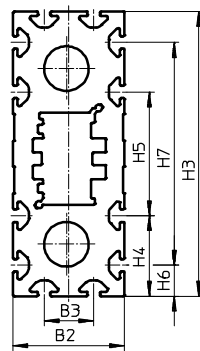
+ plus stroke + 2x stroke reserve

### Profile

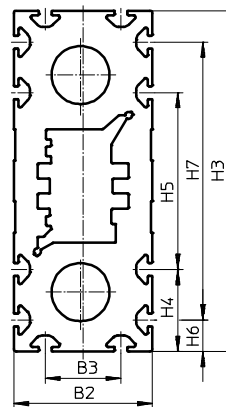
ELGR-35



ELGR-45



ELGR-55



## Toothed belt axes ELGR, for Optimised Motion Series (OMS)

FESTO

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

Size	B1	B2	B3	B4	B5	B6	B7	D1 ∅ H7	D2 ∅	D3 ∅ H7
ELGR-35	37	35	20	7.5	9.5	1	17.5	8	15	27
ELGR-45	47	45	20	12.5	14.5		22.5	10	20	38
ELGR-55	57	55	30	12.5	14.5		27.5	16	25	48

Type	D4 ∅ H7	H1	H2	H3	H4	H5	H6	H7	H8	H9
ELGR-35	7	80	39	78	19	40	7.5	63	39	21
ELGR-45		117	57.5	115	32.5	50	12.5	90	57.5	34.5
ELGR-55		137	67.5	135	32.5	70	12.5	110	67.5	34.5

Type	H10	H11	H12	H13	H14	H15	L1	L2	L3	L4
ELGR-35	9.5	15.5	13.5	49	23.5	20	178	89	51	25.5
ELGR-45	14.5	23	21	71	34.5	25	219	108	60	30
ELGR-55	14.5	25.5	23.5	86	42	35	243	120	62	31

Type	L5	L6	L7	L8	L9	L10	n	T1	T2	T3
ELGR-35	3	45	76	70	30	20	1	3.1	1.6	+0.1 1.6
ELGR-45		54	96	90	40	25	1	3	1.7	
ELGR-55		56	116	110	40	35	1	4.5	2	

3







Overview/Configuration/Ordering  
→ [www.festo.com/catalogue/ermo](http://www.festo.com/catalogue/ermo)



Additional information/Support/User documentation  
→ [www.festo.com/sp/ermo](http://www.festo.com/sp/ermo)

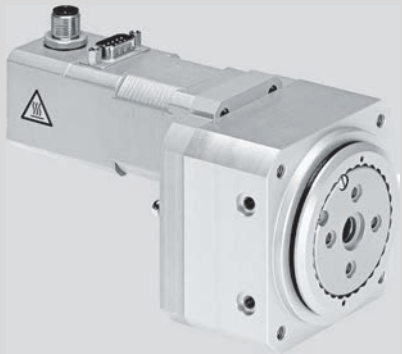
Swivel modules  
Rotary modules

# ERMO



- + With stepper motor and integrated gear unit
- + ServoLite – closed-loop operation with encoder
- + Heavy-duty bearing for high forces and torques
- + Backlash-free pre-stressed rotating plate with very good axial eccentricity and concentricity properties
- + Optional holding brake
- + Hollow shaft for energy throughfeed for attachments
- + Quick and accurate installation

3



- Electric rotary drive with stepper motor and integrated gear unit
- ServoLite – closed-loop operation with encoder
- Heavy-duty bearing for high forces and torques
- Backlash-free pre-stressed rotating plate with very good axial eccentricity and concentricity properties
- Optional holding brake
- Hollow shaft for energy throughfeed for attachments
- Quick and accurate installation

→ [www.festo.com/catalogue/ermo](http://www.festo.com/catalogue/ermo)

## Product range overview

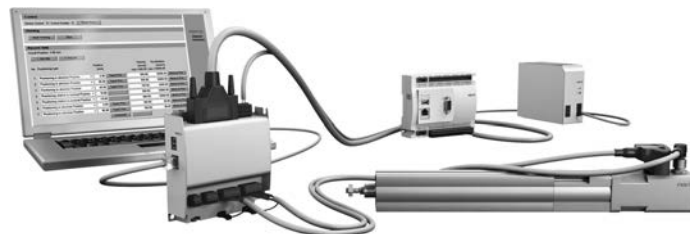
Type/Version	Size	Product options										
		ST	E	B	L	R	C5	DIO	LK	N	P	
<b>ERMO</b>												
Rotary drive	12	■	■	–	■	■	■	■	■	■	■	■
	16, 20, 32	■	■	■	■	■	■	■	■	■	■	■

## Product options

- |                  |                             |                                      |                              |
|------------------|-----------------------------|--------------------------------------|------------------------------|
| ST Stepper motor | L Cable outlet to the left  | DIO Digital activation I/O interface | N Switching input/output NPN |
| E with encoder   | R Cable outlet to the right | LK Activation IO-Link                | P Switching input/output PNP |
| B with brake     | C5 Motor controller CMMO    |                                      |                              |

## Optimised Motion Series (OMS)

A package that makes positioning easier than ever before. The Optimised Motion Series is as easy to handle as a pneumatic cylinder, but with the functionality of an electric drive.



### Easy selection

- Easy sizing and selection using cycle time charts
- No specialist knowledge of electric drive technology required

### Ordering and logistics

- All the part components required with a single part number
- Motors mounted on rotary drive

### Quick to configure

- Parameterisation and commissioning via web server/browser
- Parameterise up to 7 freely definable positions directly on the PC



For simple positioning tasks

Rotary drive



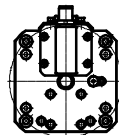
Motor controller

→ 566

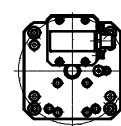


Motor mounting variants

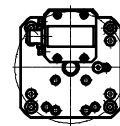
Top (standard)



Left (feature L)



Right (feature R)



## Data sheet



3

Technical data		12	16	25	32
Size		12	16	25	32
Rotation angle		Infinite			
Repetition accuracy <sup>1)</sup>	[°]	±0.05	±0.05	±0.05	±0.1
Torsional backlash <sup>1)</sup>	[°]	0.2			
Gear ratio		9:1	9:1	9:1	7:1
Step angle with full step	[°]	1.8 ±5%			
Nominal torque	[Nm]	0.15	0.8	2.5	5
Nominal rotary speed	[rpm]	100	100	66	50
Max. speed	[rpm]	200	200	150	100
Permissible mass moment of inertia	[kgm <sup>2</sup> x10 <sup>-4</sup> ]	3	13	65	164
Mass moment of inertia Jo	[kgm <sup>2</sup> x10 <sup>-4</sup> ]	0.0079	0.0383	0.114	0.39

1) Without payload in new condition

Electrical data		12	16	25	40
Size		12	16	25	40
Motor					
Nominal operating voltage	[V DC]	24			
Nominal current	[A]	0.8	1.4	3	4.2
Duty cycle	[%]	100			
Brake					
Nominal voltage	[V DC]	–	24	24	24
Rated output	[W]	–	8	8	8
Holding torque	[Nm]	–	1	2.5	2.5
Mass moment of inertia	[kgm <sup>2</sup> x10 <sup>-4</sup> ]	–	0.69	1.3	1.3
Encoder					
Rotary position encoder		Incremental			
Rotary position encoder measuring principle		opto-electrical			
Pulses/revolution	[1/rev]	500			
Interface		RS422, TTL, AB channel + zero index			
Operating voltage	[V DC]	5			

Operating conditions		
Ambient temperature <sup>2)</sup>	[°C]	0 ... +50
Degree of protection		IP40

2) Note range of application of proximity sensors and motors.

# Rotary drives ERMO, electric

## Data sheet

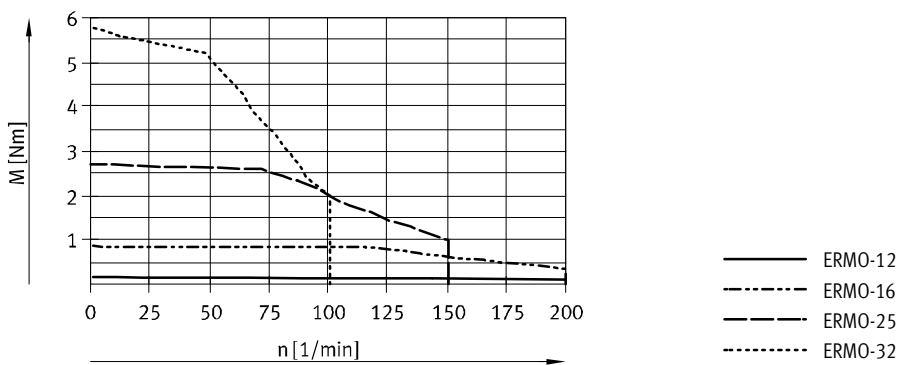
### Max. permissible axial and radial force $F_x/F_z$ <sup>1)</sup>

#### Static forces

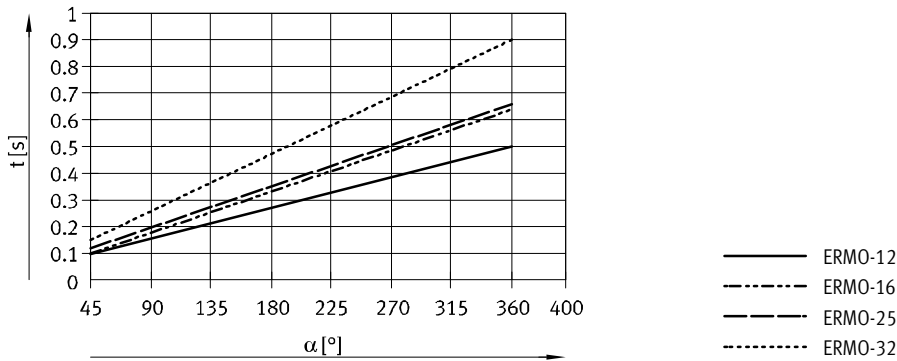
Size		12	16	25	32
<b>Static</b>					
Axial force $F_x$	[N]	500	600	700	800
Radial force $F_z$	[N]	500	750	1200	2000
<b>Dynamic</b>					
Axial force $F_x$	[N]	180	290	350	450
Radial force $F_z$	[N]	200	300	450	550

1) The forces depend on the lever arm.

### Torque M as a function of speed n



### Positioning time t as a function of angle of rotation $\alpha$



### Materials

Housing	Anodised wrought aluminium alloy
Clamping ring	Anodised wrought aluminium alloy
Rotating plate	Anodised wrought aluminium alloy
Ball bearing	Rolled steel
Sealing ring	NBR

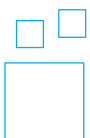
## Order code

		ERMO	-		-	ST	-		-		+		+			
<b>Type</b>		ERMO														
		Rotary drive														
<b>Size</b>																
		12, 16, 25, 32														
<b>Motor type</b>		ST														
		Stepper motor														
<b>Measuring unit</b>																
		-	Without													
		E	With encoder													
<b>Brake</b>																
		-	Without													
		B	With brake <sup>[1]</sup>													
<b>Cable outlet direction</b>																
		-	Top (standard)													
		L	Left													
		R	Right													
<b>Connecting cable to motor controller</b>																
		-	Without													
		1.5E	1.5 m, straight plug													
		2.5E	2.5 m, straight plug													
		5E	5 m, straight plug													
		7E	7 m, straight plug													
		10E	10 m, straight plug													
		1.5EA	1.5 m, angled plug <sup>[2]</sup>													
		2.5EA	2.5 m, angled plug <sup>[2]</sup>													
		5EA	5 m, angled plug <sup>[2]</sup>													
		7EA	7 m, angled plug <sup>[2]</sup>													
		10EA	10 m, angled plug <sup>[2]</sup>													
<b>Controller type</b>																
		-	Without													
		C5	CMMO, 5A													
<b>Bus protocol / Activation</b>																
		-	Without													
		DIO	Digital I/O interface <sup>[3]</sup>													
		LK	IO-Link <sup>[3]</sup>													
<b>Switching input/output</b>																
		-	Without													
		N	NPN <sup>[3]</sup> <sup>[4]</sup>													
		P	PNP <sup>[3]</sup>													

<sup>[1]</sup> Not with size 12<sup>[2]</sup> Not with size 12 and 16.<sup>[3]</sup> Only in combination with motor controller C5<sup>[4]</sup> Not with IO-Link LK**Order example:** ERMO-25-ST-EB-L+5EA+C5DION

Rotary drive - size 25 - stepper motor with encoder - with brake - with outlet cable left - interconnecting cable 5 m, angled plug - with motor controller CMMO - with control digital I/O interface - with switch in-/output NPN

## Ordering – Product options



Configurable product

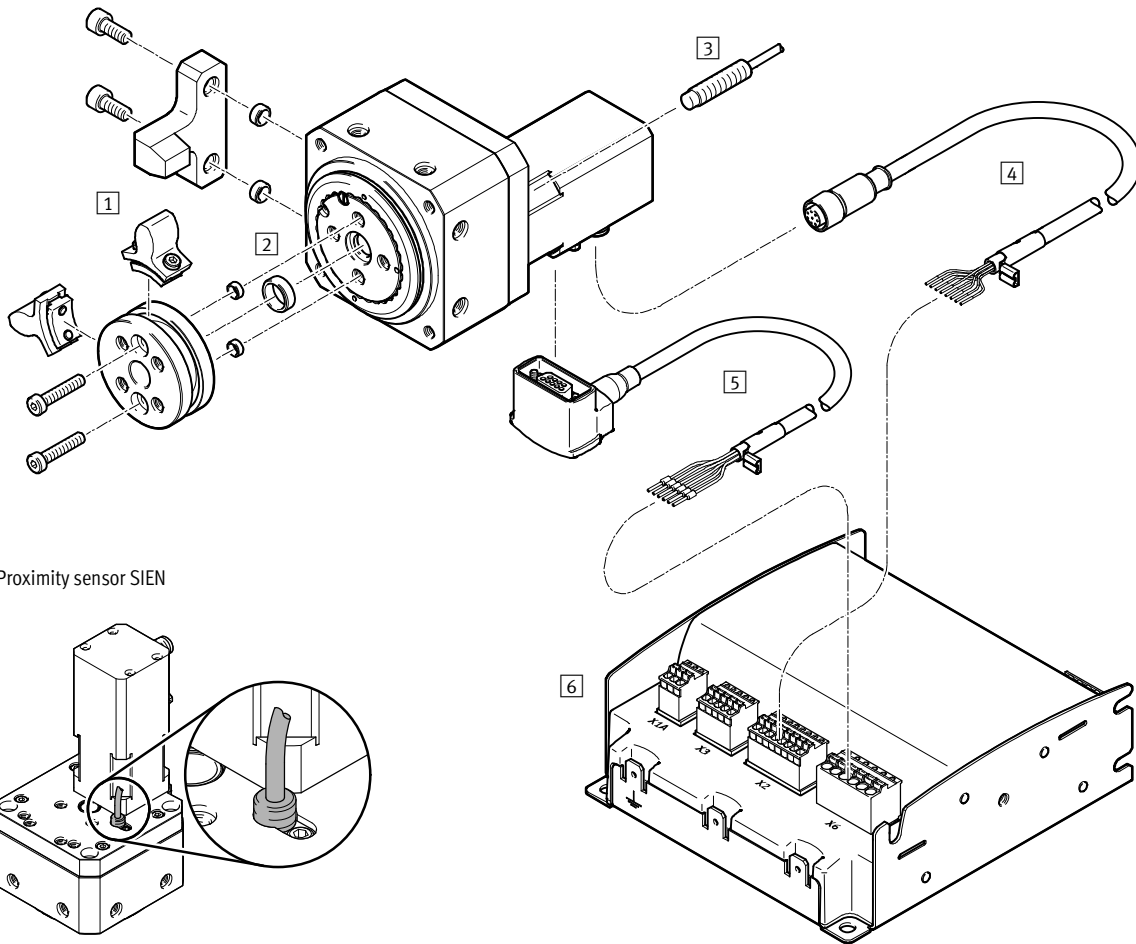
This product and all its options can be ordered using the configurator.

The configurator can be found under Products on the DVD or  
→ [www.festo.com/catalogue/...](http://www.festo.com/catalogue/...)

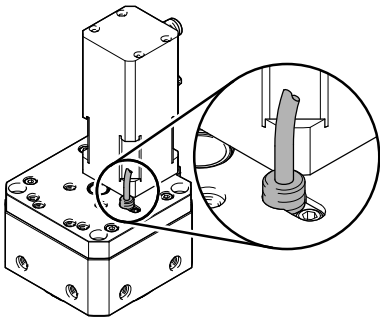
Enter the type code in the search field.

Accessories

3



Proximity sensor SIEN



		→ Page/online
1	Stop kit EADP	482
2	Centring sleeve ZBH	482
3	Proximity sensor SIEN	483

		→ Page/online
4	Encoder cable NEBM	483
5	Motor cable NEBM	483
6	Motor controller CMMO	483



Accessories – Ordering data



	For size	Part no.	Type
	Data sheets online: → <a href="#">eadp</a>		
	12	3044562	EADP-ES-R3-12
	16	2715501	EADP-ES-R3-16
	25	2721599	EADP-ES-R3-25
	32	2735411	EADP-ES-R3-32

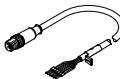
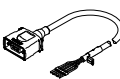
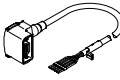
	For size	Part no.	Type
	Data sheets online: → <a href="#">zbh</a>		
	12, 16	186717	ZBH-7 <sup>1</sup>
	25	150927	ZBH-9 <sup>1</sup>
	32	189653	ZBH-12 <sup>1</sup>
	12 ... 32	186717	ZBH-7 <sup>2</sup>
	12, 16	189653	ZBH-12 <sup>3</sup>
	25	191409	ZBH-15 <sup>3</sup>
	32	150901	SLZZ-25/16 <sup>3</sup>



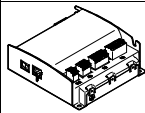
- 1) For centring the drive for lateral mounting
- 2) For centring attachments on the rotating plate
- 3) For centring attachments in the middle of the rotating plate
- 4) Packaging unit 10 pieces
- 5) Packaging unit 1 piece

**Accessories – Ordering data**

	For size	Function	Cable length [m]	Part no.	Type
<b>3 Proximity sensor M5/M8 (round design) inductive – N/C contact</b> <span style="float:right">Data sheets → 899</span>					
	12	PNP, cable	2.5	150374	SIEN-M5B-PO-K-L
		PNP, plug connector	–	150375	SIEN-M5B-PO-S-L
<b>N/C contact</b> <span style="float:right">Data sheets → 899</span>					
	16 ... 32	PNP, cable	2.5	150390	SIEN-M8B-PO-K-L
		PNP, plug connector	–	150391	SIEN-M8B-PO-K-L

	Cable length [m]	Part no.	Type
<b>Connecting cable, straight socket</b> <span style="float:right">Data sheets → 1161</span>			
	2.5	159420	SIM-M8-3GD-2,5-PU
	2.5	★ 541333	NEBU-M8G3-K-2.5-LE3
	5.0	★ 541334	NEBU-M8G3-K-5-LE3
<b>Angled socket</b> <span style="float:right">Data sheets → 1161</span>			
	2.5	★ 541338	NEBU-M8W3-K-2.5-LE3
	5.0	★ 541341	NEBU-M8W3-K-5-LE3

	Cable length [m]	Part no.	Type
<b>4 Motor cable<sup>1)</sup></b>			
<b>For ERMO-12, 16</b>			
<b>Straight plug</b>			
	1.5	★ 1449600	NEBM-M12G8-E-1.5-Q5-LE6
	2.5	★ 1449601	NEBM-M12G8-E-2.5-Q5-LE6
	5.0	★ 1449602	NEBM-M12G8-E-5-Q5-LE6
	7.0	★ 1449603	NEBM-M12G8-E-7-Q5-LE6
	10.0	★ 1449604	NEBM-M12G8-E-10-Q5-LE6
<b>For ERMO-25, 32</b>			
<b>Straight plug</b>			
	1.5	★ 1450368	NEBM-S1G9-E-1.5-Q5-LE6
	2.5	★ 1450369	NEBM-S1G9-E-2.5-Q5-LE6
	5.0	★ 1450370	NEBM-S1G9-E-5-Q5-LE6
	7.0	★ 1450371	NEBM-S1G9-E-7-Q5-LE6
	10.0	★ 1450372	NEBM-S1G9-E-10-Q5-LE6
<b>Angled plug connector</b>			
	1.5	★ 1450736	NEBM-S1W9-E-1.5-Q5-LE6
	2.5	★ 1450737	NEBM-S1W9-E-2.5-Q5-LE6
	5.0	★ 1450738	NEBM-S1W9-E-5-Q5-LE6
	7.0	★ 1450739	NEBM-S1W9-E-7-Q5-LE6
	10.0	★ 1450740	NEBM-S1W9-E-10-Q5-LE6

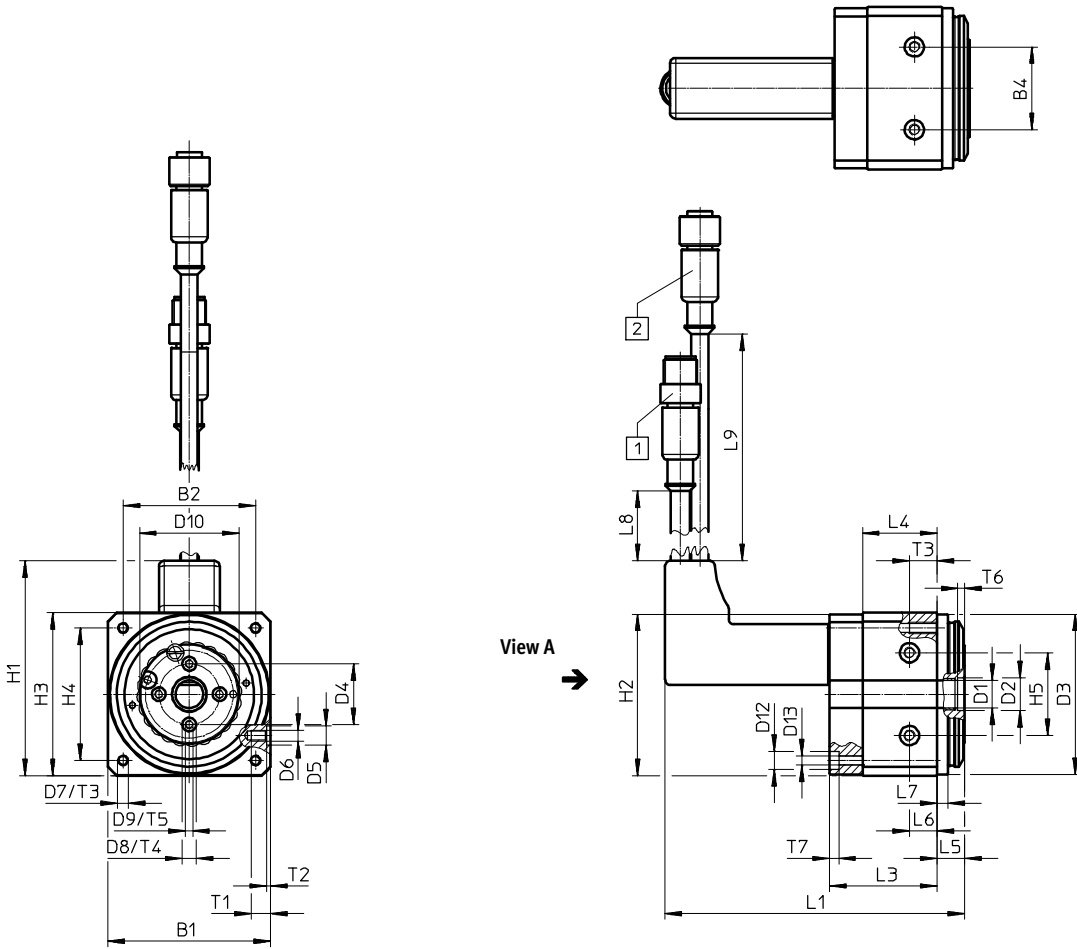
	Cable length [m]	Part no.	Type
<b>5 Encoder cable<sup>1)</sup></b>			
<b>For ERMO-12, 16, 25, 32</b>			
<b>Straight plug</b>			
	1.5	★ 1451586	NEBM-M12G8-E-1.5-LE8
	2.5	★ 1451587	NEBM-M12G8-E-2.5-LE8
	5.0	★ 1451588	NEBM-M12G8-E-5-LE8
	7.0	★ 1451589	NEBM-M12G8-E-7-LE8
	10.0	★ 1451590	NEBM-M12G8-E-10-LE8
<b>For ERMO-25, 32</b>			
<b>Angled plug connector</b>			
	1.5	★ 1451674	NEBM-M12W8-E-1.5-LE8
	2.5	★ 1451675	NEBM-M12W8-E-2.5-LE8
	5.0	★ 1451676	NEBM-M12W8-E-5-LE8
	7.0	★ 1451677	NEBM-M12W8-E-7-LE8
	10.0	★ 1451678	NEBM-M12W8-E-10-LE8
	Function	Part no.	Type
<b>6 Motor controller</b> <span style="float:right">Data sheets → 566</span>			
	With I/O interface		
	PNP	★ 1512316	CMMO-ST-C5-1-DIOP
	NPN	★ 1512317	CMMO-ST-C5-1-DION
	With IO-Link		
PNP	1512320	CMMO-ST-C5-1-LKP	

1) Other cable lengths on request.

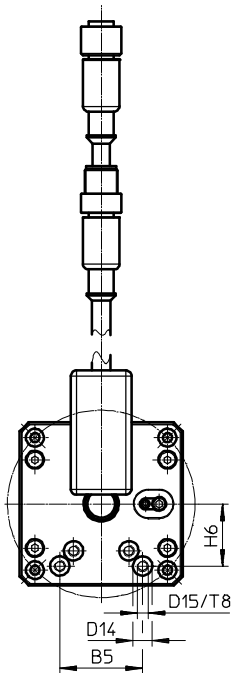
**Dimensions**

**ERMO-12**

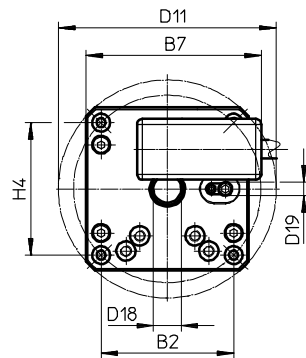
3



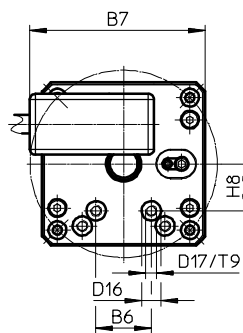
View A



ERMO-...-L



ERMO-...-R



- 1 Encoder cable
- 2 Motor cable



## Dimensions

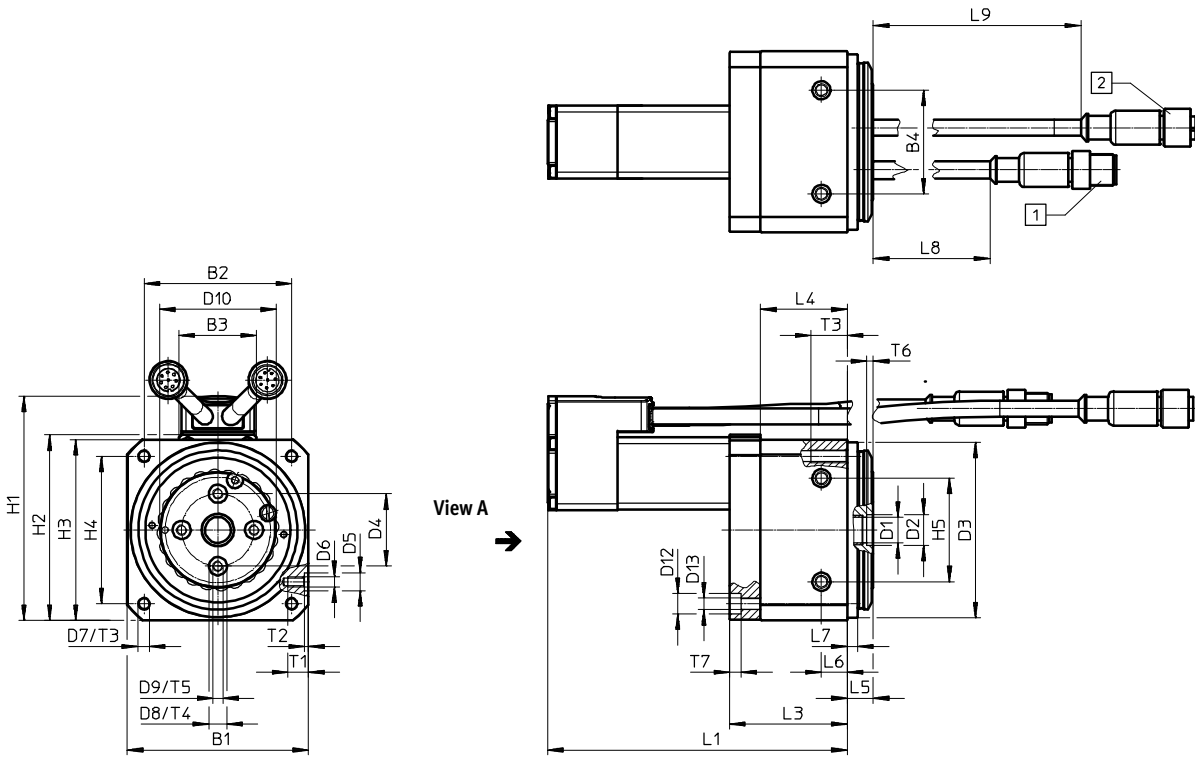
Download CAD data → [www.festo.com](http://www.festo.com)

Size	B1	B2	B4	B5	B6	B7	D1	D2	D3	D4
	±0.3		±0.03	±0.02	±0.02		∅	∅ H8	∅ f8	∅ ±0.02
12	59	48	30	30	20	46	10	12	58	22
Size	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14
	∅ H7			∅ H7		∅	∅ ±0.5	∅	∅	∅ H7
12	7	M4	M4	5	M3	36	79	6.5	3.4	7
Size	D15	D16	D17	D18	D19	H1	H2	H3	H4	H5
		∅ H7		max.				±0.3		±0.03
12	M4	7	M4	7	M5x0.5	80	58.5	59	48	30
Size	H6	H8	L1	L3	L4	L5	L6	L7	L8	L9
			±1.5	±0.6		±0.2	±0.1	±0.1		
12	22.5	17	100	39	27	10	10	4	300	300
Size	T1	T2	T3	T4	T5	T6	T7	T8	T9	
		+0.1		+0.1		+0.1				
12	7	1.5	10	1.2	7	2.5	3.4	1.5	1.5	

**Dimensions**

**ERMO-16**

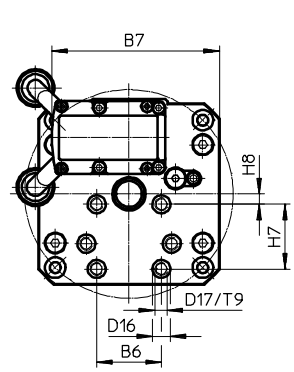
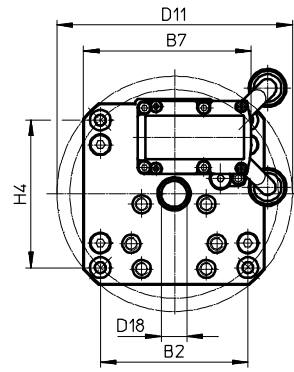
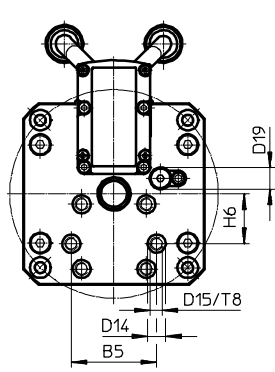
3



View A

ERMO...-L

ERMO...-R



- 1 Encoder cable
- 2 Motor cable

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

Size	B1 ±0.3	B2	B3	B4 ±0.03	B5 ±0.02	B6 ±0.02	B7	D1 ∅	D2 ∅ H8	D3 ∅ f8
16	70	57	30	40	33	25	65	10	12	68

Size	D4 ∅ ±0.02	D5 ∅ H7	D6	D7	D8 ∅ H7	D9	D10 ∅	D11 ∅ ±0.5	D12 ∅	D13 ∅
16	28	7	M5	M5	7	M4	45	91	8	4.6

Size	D14 ∅ H7	D15	D16 ∅ H7	D17	D18 max.	D19	H1	H2	H3 ±0.3	H4
16	7	M5	7	M5	–	M8x1	87	71.8	70	57

Size	H5 ±0.03	H6	H7 ±0.02	H8	L1 ±1.5	L3 ±0.6	L4	L5 ±0.2	L6 ±0.1	L7 ±0.1
16	40	19.3	25	4	116/142 <sup>1)</sup>	45.5	33.5	10	10	4

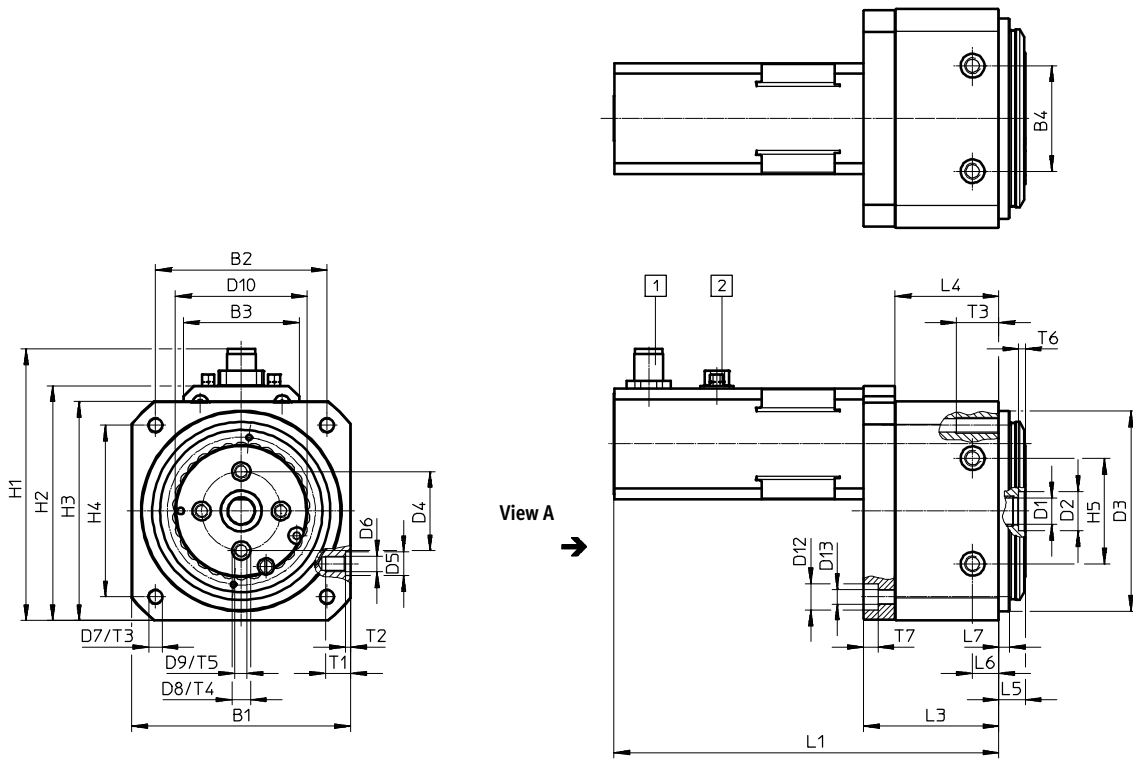
Size	L8	L9	T1	T2 +0.1	T3	T4 +0.1	T5	T6 +0.1	T7	T8	T9
16	250	350	8	1.5	14	1.5	8	2.5	4.5	1.5	1.5

1) Motor with brake

Dimensions

ERMO-25/32

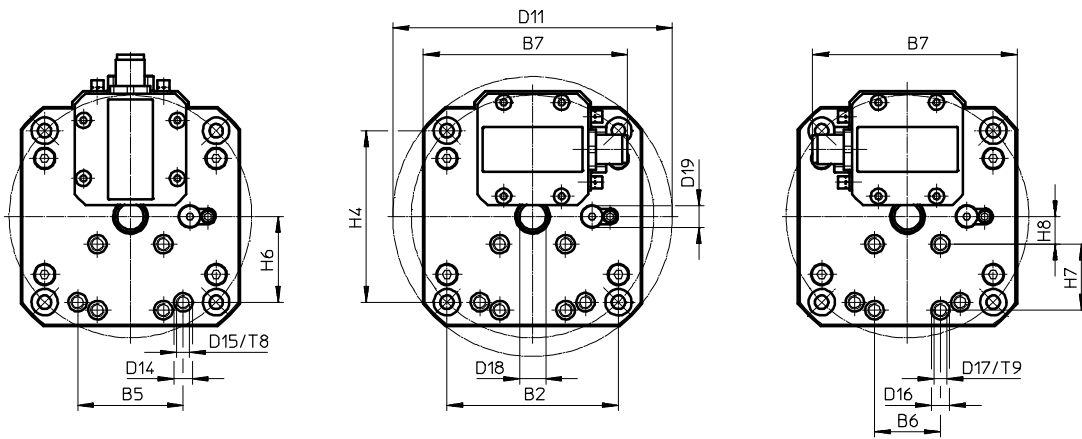
3



View A

ERMO-...-L

ERMO-...-R



- 1 Encoder connection
- 2 Motor connection

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

Size	B1 ±0.3	B2	B3	B4 ±0.03	B5 ±0.02	B6 ±0.02	B7	D1 ∅	D2 ∅ H8	D3 ∅ f8
25	83	65	44	40	40	25	78	10	15	76
32	105	85	58	60	–	25	96	16	20	96

Size	D4 ∅ ±0.02	D5 ∅ H7	D6	D7	D8 ∅ H7	D9	D10 ∅	D11 ∅ ±0.5	D12 ∅	D13 ∅
25	30	9	M6	M6	7	M5	50	106	10	5.5
32	42	12	M8	M8	7	M5	65	135	11	6.6

Size	D14 ∅ H7	D15	D16 ∅ H7	D17	D18 max.	D19	H1	H2	H3 ±0.3	H4
25	7	M5	7	M5	10	M8x1	103	89	83	65
32	–	–	7	M5	9	M8x1	125	110.5	105	85

Size	H5 ±0.03	H6	H7 ±0.02	H8	L1 ±1.5	L3 ±0.6	L4	L5 ±0.2	L6 ±0.1	L7 ±0.1
25	40	32.5	25	10.5	146/179 <sup>1)</sup>	51.3	39.3	10	10	4
32	60	–	25	15	148/189 <sup>1)</sup>	46.5	34.5	12	10	6

Size	T1	T2 +0.1	T3	T4 +0.1	T5	T6 +0.1	T7	T8	T9
25	9.5	2	16	1.5	8.5	2.5	5.5	1.5	1.5
32	15	2.5	20	1.5	10	2.8	6.8	–	1.5

1) Motor with brake





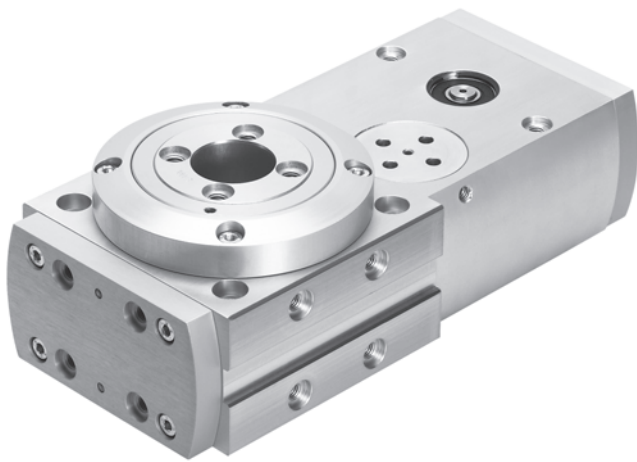
Overview/Configuration/Ordering  
→ [www.festo.com/catalogue/ermb](http://www.festo.com/catalogue/ermb)



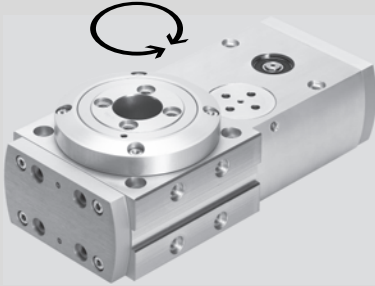
Additional information/Support/User documentation  
→ [www.festo.com/sp/ermb](http://www.festo.com/sp/ermb)

Swivel modules  
Rotary modules

# ERMB



- + Electromechanical rotary module with toothed belt
- + Compact design
- + Mounting interfaces on all sides
- + Stable arrangement of the output shaft bearings
- + Unlimited and flexible rotation angle



- Freely positionable
- Any rotation angle
- Position sensing with inductive proximity sensors
- Definition of non-operational areas with sensing module
- Spare parts service

→ [www.festo.com/catalogue/ermb](http://www.festo.com/catalogue/ermb)

## Product range overview

Type/Version	Size	Rotation angle [°]	Driving torque [Nm]	Output torque [Nm]
<b>ERMB</b>				
Rotary module	20, 25, 32	Infinite	0.7 ... 8.5	3.15 ... 25.5

## Data sheet

Technical data				Dimensions → 495
Size		20	25	32
Drive shaft Ø	[mm]	6	8	12
Rotation angle		Infinite		
Repetition accuracy <sup>1)</sup>				
With servo motor EMMS-AS	[°]	±0.03		
With stepper motor EMMS-ST <sup>2)</sup>	[°]	±0.08		
With motor unit MTR-DCI	[°]	±0.05		
Transmission ratio		4.5:1	4:1	3:1
Max. driving torque	[Nm]	0.7	2.2	8.5
Max. output torque <sup>3)</sup>	[Nm]	3.15	8.8	25.5
Idle drive torque <sup>4)</sup>	[Nm]	< 0.07	< 0.18	≤ 0.5
Max. input speed	[rpm]	1350	1200	900
Max. output speed	[rpm]	300	300	300
Max. mass moment of inertia <sup>5)</sup>				
With servo motor EMMS-AS	[kgcm <sup>2</sup> ]	50	200	1000
With stepper motor EMMS-ST	[kgcm <sup>2</sup> ]	30	100	500
With motor unit MTR-DCI-...-G7	[kgcm <sup>2</sup> ]	50	300	1000
With motor unit MTR-DCI-...-G14	[kgcm <sup>2</sup> ]	200	1200	3700

1) As per FN 942 027.

2) Dependent on the encoder resolution.

3) Output torque minus friction dependent on speed.

4) At maximum rotational speed.

5) Dependent on the size of the motor. Suitable motors → 494.

### Note

Note the maximum permissible drive torque of the rotary module ERMB. The motor current may need to be limited.

## Operating conditions

Ambient temperature <sup>6)</sup>	[°C]	-10 ... +60
Degree of protection		IP20

6) Note operating range of proximity sensors.

## Materials

Cover	Anodised wrought aluminium alloy
Output shaft	Anodised wrought aluminium alloy
Housing	Anodised wrought aluminium alloy
Drive shaft	High-alloy stainless steel
Toothed belt	Polychloroprene with glass fibre



## Order code

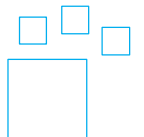
		ERMB	
Type			
ERMB	Rotary module		
Size			
20			
25			
32			

3

### Order example:

ERMB-25  
Rotary module ERMB - size 25

## Ordering – Product options



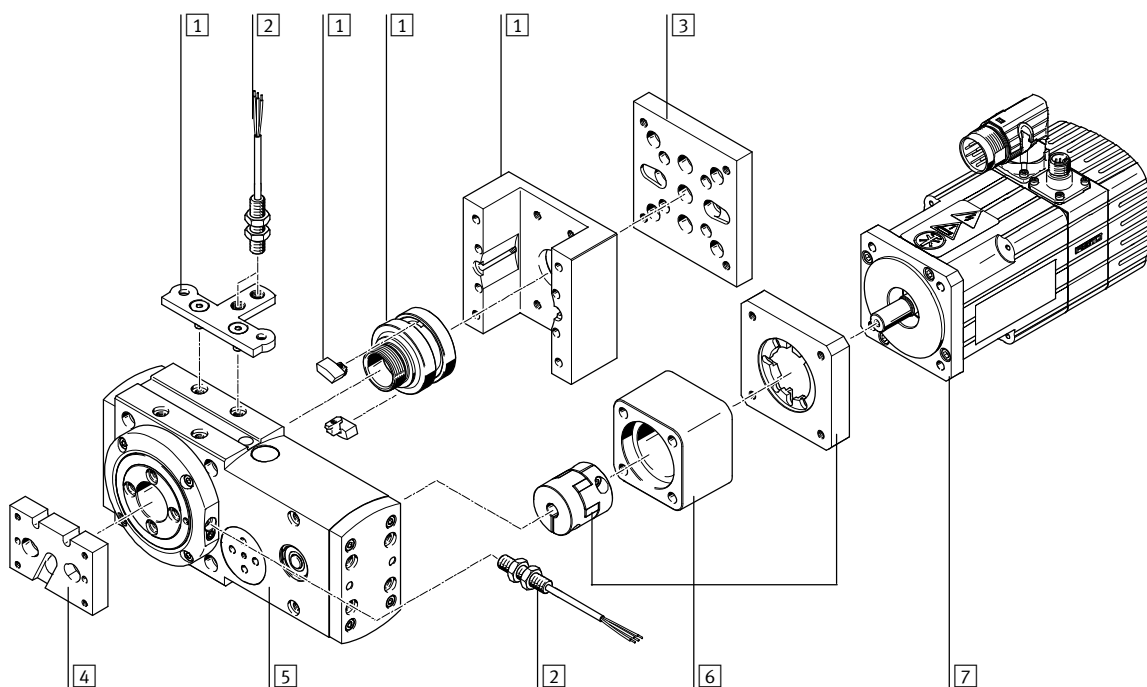
**Configurable product**

**This product and all its options can be ordered using the configurator.**

The configurator can be found under Products on the DVD or  
[→ www.festo.com/catalogue/...](http://www.festo.com/catalogue/...)

Enter the type code in the search field.

## Accessories



		→ Page/online
1	Sensing kit EAPS	494
2	Inductive proximity sensor SIEN	494
3	Drive/Drive connections	<a href="#">ermb</a>
4	Drive/Gripper connections	<a href="#">ermb</a>

		→ Page/online
5	Rotary module ERMB	492
6	Axial kit EAMM-A	494
7	Motor EMME/EMMS / Motor unit MTR-DCI	494

# Rotary modules ERMB, electric

## Accessories – Ordering data

	For size	Part no.	Type
<b>1 Sensing kit</b> <span style="float: right;">Data sheet online: → <a href="#">eamm-a</a></span>			
	20	558392	EAPS-R1-20-S
	25	558393	EAPS-R1-25-S
	32	558394	EAPS-R1-32-S
<b>Sensing kit without housing</b>			
	20	558395	EAPS-R1-20-S-WH
	25	558396	EAPS-R1-25-S-WH
	32	558397	EAPS-R1-32-S-WH
<b>Cam</b>			
	20, 25, 32	558398	EAPS-R1-CK

1) Packaging unit 10 pieces

	For size	Part no.	Type
<b>Sensor bracket</b>			
	20, 25	558399	EAPS-R1-20-SH
	32	558400	EAPS-R1-32-SH
<b>Housing</b>			
	20	560673	EAPS-R1-20-H
	25	560674	EAPS-R1-25-H
	32	560675	EAPS-R1-32-H
<b>Centring sleeve<sup>1)</sup></b> <span style="float: right;">Data sheet online: → <a href="#">zbh</a></span>			
	20	186717	ZBH-7
	25.32	150927	ZBH-9
<b>2 Connecting cable, straight socket</b> <span style="float: right;">Data sheets → 1161</span>			
	2.5 m	★ 541333	NEBU-M8G3-K-2.5-LE3
	5 m	★ 541334	NEBU-M8G3-K-5-LE3

	For size	Connection	Cable length [m]	Part no.	Type
	20, 25, 32	Cable	2.5	★ 150386	SIEN-M8B-PS-K-L
		Plug	–	★ 150387	SIEN-M8B-PS-S-L
	20, 25, 32	Cable	2.5	150390	SIEN-M8B-PO-K-L
		Plug	–	150391	SIEN-M8B-PO-S-L

**Note**

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

Motor/Gear unit <sup>2)</sup>	Axial kit	
		Part no. Type
<b>6/7 Permissible axis/motor combination with axial kit</b> <span style="float: right;">Data sheets online: → <a href="#">eamm-a</a></span>		
<b>ERMB-20</b>		
<b>With servo motor</b>		
EMME-AS-40-...	2207441	EAMM-A-D32-35A-40P
EMMS-AS-40-...	560281	EAMM-A-D32-35A-40A
<b>With stepper motor</b>		
EMMS-ST-42-...	543148	EAMM-A-D32-42A
EMMS-ST-57-...	550980	EAMM-A-D32-57A
<b>With motor unit</b>		
MTR-DCI-32S-...	543149	EAMM-A-D32-32B
<b>ERMB-25</b>		
<b>With servo motor</b>		
EMMS-AS-55-...	543153	EAMM-A-D40-55A
EMME-AS-60-...	1977000	EAMM-A-D40-60P
EMMS-AS-70-...	550981	EAMM-A-D40-70A
<b>With servo motor and gear unit</b>		
EMME-AS-40-...	560282	EAMM-A-D40-40G
EMGA-40-P-G...-EAS-40		
EMMS-AS-40-...	560282	EAMM-A-D40-40G
EMGA-40-P-G...-SAS-40		

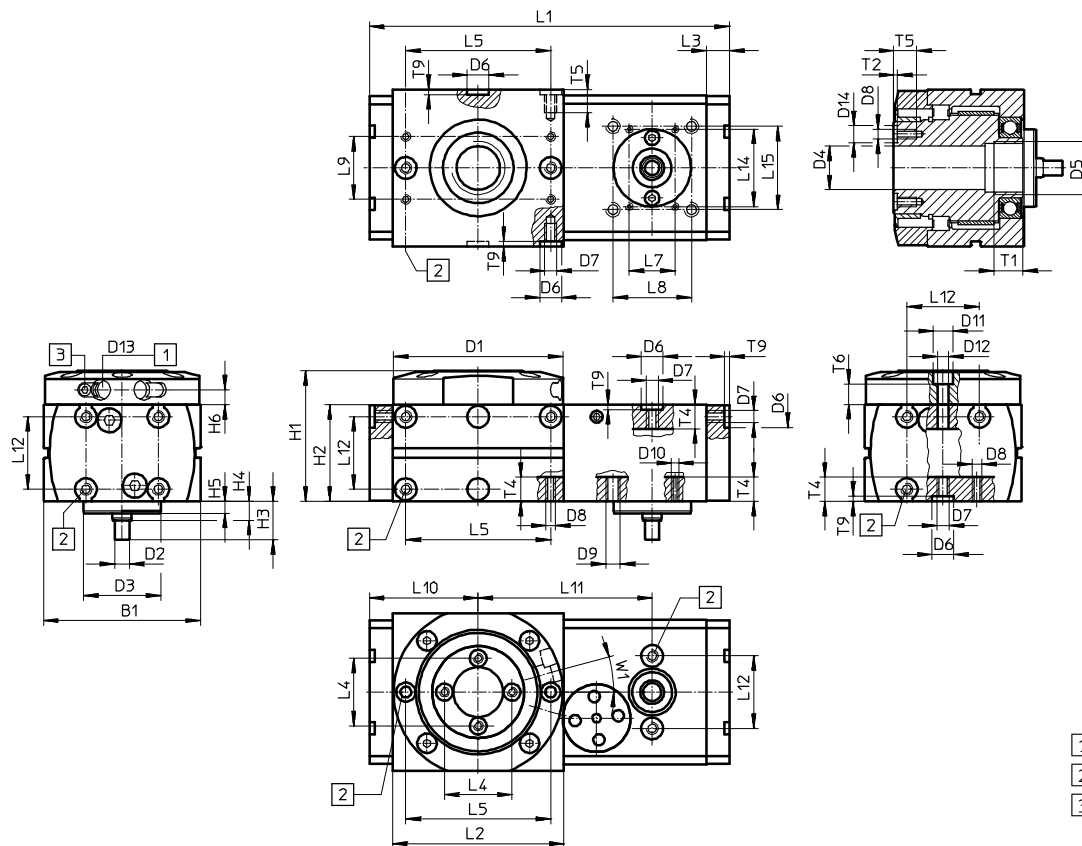
Motor/Gear unit <sup>2)</sup>	Axial kit	
	Part no.	Type
<b>With stepper motor</b>		
EMMS-ST-57-...	543154	EAMM-A-D40-57A
<b>With stepper motor and gear unit</b>		
EMMS-ST-42-...	560282	EAMM-A-D40-40G
EMGA-40-P-G...-SST-42		
<b>With motor unit</b>		
MTR-DCI-42S-...-G7	543155	EAMM-A-D40-42B
MTR-DCI-42S-...-G14	543156	EAMM-A-D40-42C
<b>ERMB-32</b>		
<b>With servo motor</b>		
EMMS-AS-70-...	★ 543161	EAMM-A-D60-70A
EMME-AS-80-...	★ 1977073	EAMM-A-D60-80P
EMME-AS-100-...	★ 550983	EAMM-A-D60-100A
EMMS-AS-100-...	★ 550983	EAMM-A-D60-100A
<b>With servo motor and gear unit</b>		
EMMS-AS-55-...	★ 560283	EAMM-A-D60-60G
EMGA-60-P-G...-SAS-55		
EMMS-AS-70-...	★ 560283	EAMM-A-D60-60G
EMGA-60-P-G...-SAS-70		
<b>With stepper motor</b>		
EMMS-ST-87-...	★ 543162	EAMM-A-D60-87A
<b>With stepper motor and gear unit</b>		
EMMS-ST-57-...	★ 560283	EAMM-A-D60-60G
EMGA-60-P-G...-SST-57		
<b>With motor unit</b>		
MTR-DCI-52S-...-G7	543163	EAMM-A-D60-52B
MTR-DCI-52S-...-G14	543164	EAMM-A-D60-52C

2) The input torque must not exceed the max. perm. transferable torque of the axial kit.

## Dimensions

Size 20

3



- 1 Thread for reference switch
- 2 Mounting options
- 3 Clamping component, width across flats 2.5 (enclosed separately)

Size	B1	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13
	±0.2	∅ f9	∅ h6	∅ g7	H7	M22x1	∅ H7					∅	∅	
20	65	70	6	32	20	M22x1	9	M5	M4	M6	M3	8	4.5	M8x1

Size	D14	H1	H2	H3	H4	H5	H6	L1	L2	L3	L4 <sup>1)</sup>	L5 <sup>1)</sup>	L7	L8
	∅ H7	±0.5	±0.1					±0.5	±0.2	±0.1			±0.15	±0.15
20	7	54	40	15.9	7.9	5	6.15	149	71	9.5	28	60	19	32.5

Size	L9 <sup>1)</sup>	L10	L11	L12 <sup>1)</sup>	L14	L15	T1	T2	T4	T5	T6	T9	W1
			±0.05		±0.15	±0.15		+0.1		min		+0.2	
20	26	45	72	30	32	32.5	12	1.6	10	9.6	8.4	2.1	15°

1) Tolerance for centring hole ±0.02 mm.  
Tolerance for thread ±0.1 mm.

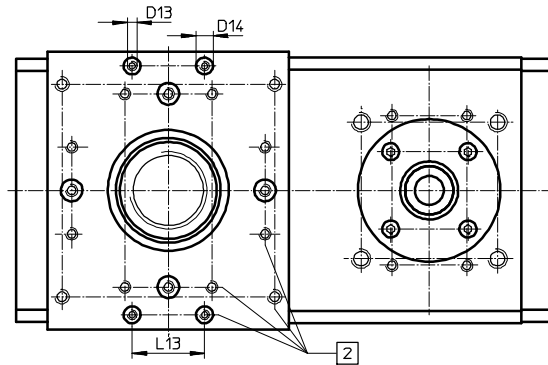
# Rotary modules ERMB, electric

## Dimensions

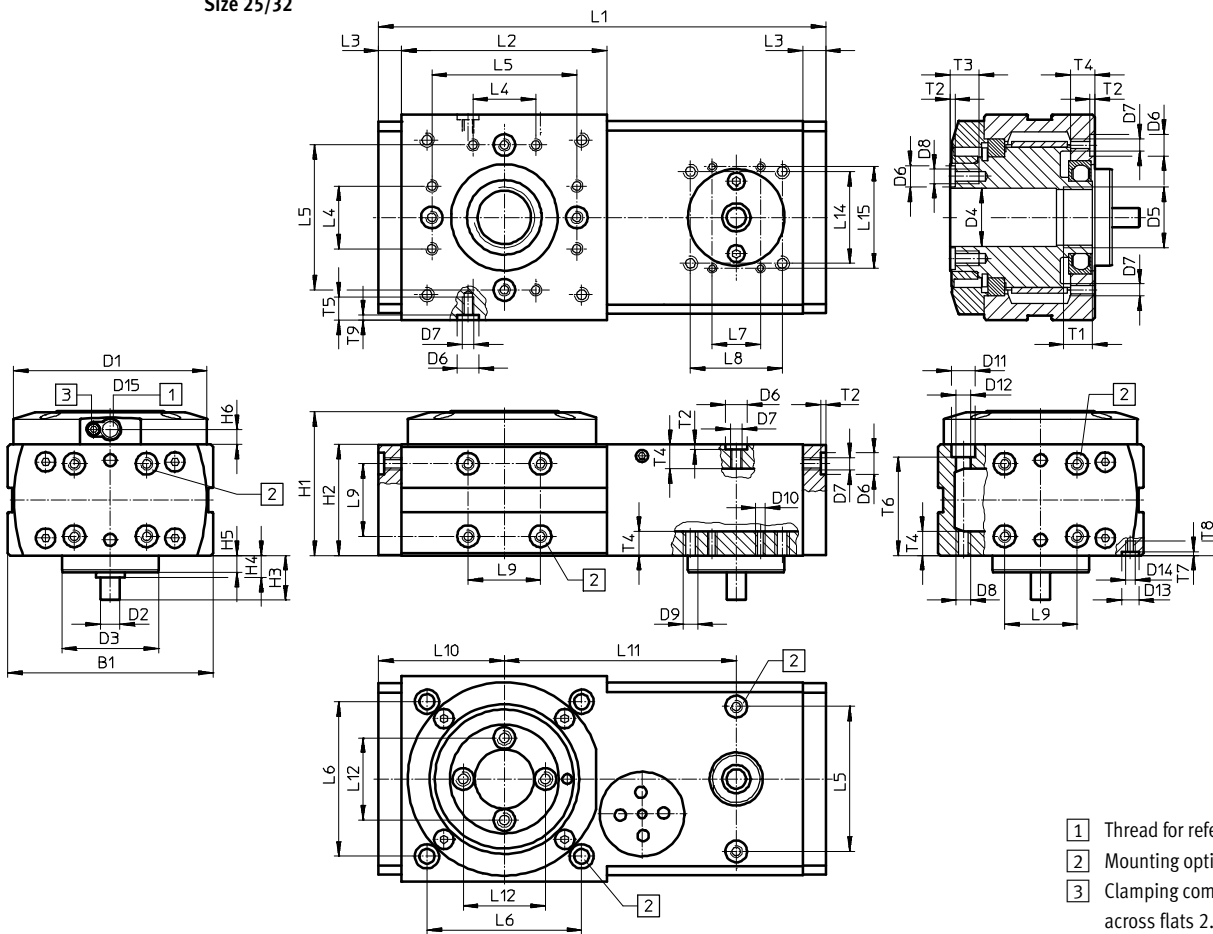
Download CAD data → [www.festo.com](http://www.festo.com)

Size 25/32

Size 32



Size 25/32



- 1 Thread for reference switch
- 2 Mounting options
- 3 Clamping component, width across flats 2.5 (enclosed separately)

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

Size	B1 ±0.2	D1 ∅ f9	D2 ∅ h6	D3 ∅ g7	D4 ∅ H7	D5	D6 ∅ H7	D7	D8	D9	D10
25	85	80	8	40	24	M25x1	9	M5	M6	M6	M4
32	115	112	12	60	28	M32x1.5	9	M5	M6	M8	M5

Size	D11 ∅	D12 ∅	D13 ∅ H7	D14	D15	H1 ±0.5	H2 ±0.1	H3	H4	H5	H6	L1 ±0.5
25	10	6.2	–	–	M8x1	60	46	18.45	–	7	6.3	185
32	10	6.2	7	M4	M8x1	76.05	60	23.5	6.5	6	9.4	222

Size	L2 ±0.2	L3 ±0.1	L4 ±0.1	L5 <sup>1)</sup>	L6	L7 ±0.15	L8 ±0.15	L9 <sup>1)</sup>	L10	L11 ±0.05	L12 <sup>1)</sup>	L13 <sup>1)</sup>
25	85	9.5	26	60	64 ±0.15	20	38	30	52	96	34	–
32	100	13	36	80	88 ±0.1	31	56.5	40	63	108	45	30

Size	L14 ±0.15	L15 ±0.15	T1	T2 +0.1	T3 min	T4	T5 min	T6	T7 +0.1	T8 min	T9 +0.2
25	38	42	12	2.1	12	10	9.6	40.8±0.2	–	–	2.1
32	56.5	62	12	2.1	12	10	10	54.3	1.6	7.6	2.1

1) Tolerance for centring hole ±0.02 mm.  
Tolerance for thread ±0.1 mm.





Overview/Configuration/Ordering  
→ [www.festo.com/catalogue/ehmb](http://www.festo.com/catalogue/ehmb)

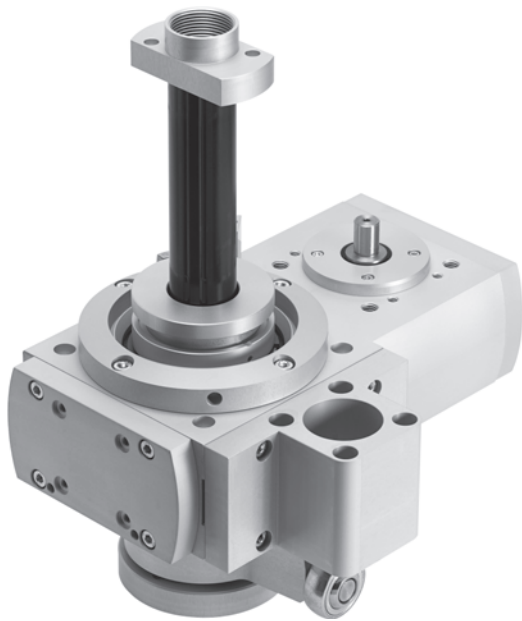


Additional information/Support/User documentation  
→ [www.festo.com/sp/ehmb](http://www.festo.com/sp/ehmb)

Electric handling modules

Rotary/Lifting module, electric

# EHMB



- + Complete module with combined and configurable rotary/lifting movement
- + Dynamic, flexible, economical thanks to the modular drive concept for linear movement
- + Hollow axis with large internal diameter makes laying power supply lines easy, convenient and safe
- + Extremely short positioning times thanks to high dynamic response during rotation, e.g. 0.25 s when swivelling a 1 kg load by 180°

3



- Combined and configurable rotary/lifting movement
- Linear and rotary movements can be set independently of each other
- Modular drive concept for linear motion
- Simple and convenient laying of energy cables through hollow shaft with large internal diameter

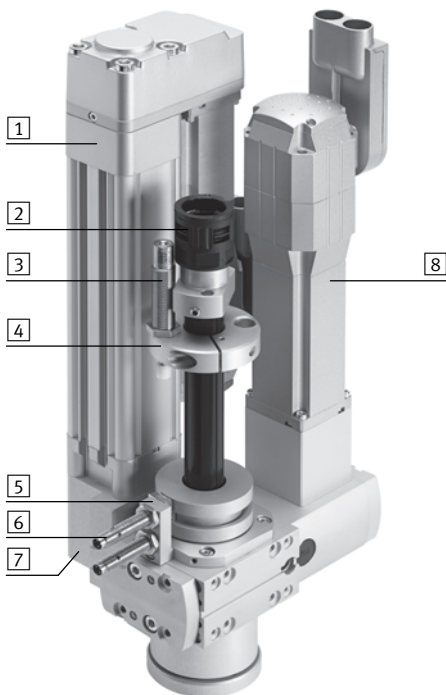
→ [www.festo.com/catalogue/ehmb](http://www.festo.com/catalogue/ehmb)

## Product range overview

Type/Version	Size	Drive shaft Ø	Stroke [mm]	Rotation angle	Output torque [Nm]	Payload [kg]
<b>EHMB</b>						
Rotary/Lifting module	20, 25, 32	6, 8, 12	100, 200	Infinite	3.15 ... 20	3 ... 15

### Complete system consisting of rotary/lifting module, motor and axial kit

Rotary/Lifting module

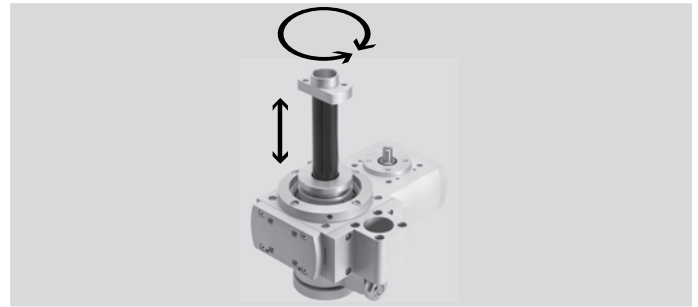


- 1) Electric cylinder DNCE, alternatively standard cylinder DNC<sup>1)</sup>
- 2) Protective conduit fitting<sup>1)</sup>
- 3) Shock absorber<sup>1)</sup>
- 4) Shock absorber retainer<sup>1)</sup>
- 5) Sensor bracket
- 6) Proximity sensor SIEN<sup>1)</sup>
- 7) Cylinder retainer
- 8) Motor for rotary movement<sup>1)</sup>

1) These parts must be ordered separately as accessories.



## Data sheet



3

Technical data		Dimensions → 506		
Size		20	25	32
Drive shaft Ø	[mm]	6	8	12
Rotation angle		Infinite		
Stroke, linear	[mm]	100, 200		
Repetition accuracy, rotary <sup>1)</sup>				
With servo motor EMMS-AS	[°]	±0.03		
With stepper motor EMMS-ST <sup>2)</sup>	[°]	±0.08		
With motor unit MTR-DCI	[°]	±0.05		
Repetition accuracy, linear <sup>1)</sup>	[mm]	±0.02		
Max. speed, linear				
With standard cylinder DNC	[m/s]	1.5		
With electric cylinder DNCE	[m/s]	0.5		
Transmission ratio		4.5:1	4:1	3:1
Max. driving torque	[Nm]	0.7	2.2	6.7
Max. output torque <sup>3)</sup>	[Nm]	3.15	8.8	20
Average no-load drive torque <sup>4)</sup>	[Nm]	< 0.07	< 0.18	< 0.5
Max. input speed	[rpm]	1350	1200	900
Max. output speed	[rpm]	300	300	300
Max. payload, horizontal	[kg]	3	5	8
Max. payload, vertical	[kg]	3	5	15 <sup>5)</sup>
Max. mass moment of inertia <sup>6)</sup>				
With servo motor EMMS-AS	[kgcm <sup>2</sup> ]	50	200	1000
With stepper motor EMMS-ST	[kgcm <sup>2</sup> ]	30	100	500
With motor unit MTR-DCI-....-G7	[kgcm <sup>2</sup> ]	50	300	1000
With motor unit MTR-DCI-....-G14	[kgcm <sup>2</sup> ]	200	1200	3700
Toothed belt pitch		2	3	5

- 1) As per FN 942 027, with electric cylinder DNCE.
- 2) Dependent on the encoder resolution.
- 3) Output torque minus friction dependent on speed.
- 4) At maximum rotational speed.
- 5) With symmetrical and non-eccentric arrangement.
- 6) Dependent on the size of the motor. Suitable motors → 504

**Note**

When laying electrical cables or compressed air tubing through the hollow shaft of the grooved shaft guide, the ro-

tation angle of the EHMB must be limited to a rotation angle appropriate to the cables or compressed air tubing.

Endless rotation damages cables and tubing.

All values are based on a room temperature of 23 °C.

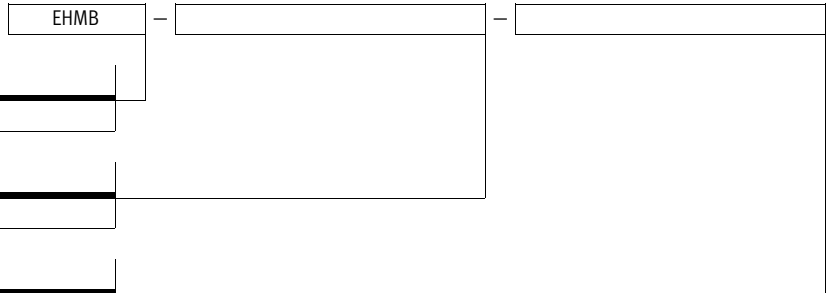
## Data sheet

Operating conditions				
Size		20	25	32
Ambient temperature <sup>1)</sup>	[°C]	-10 ... +60		

1) Note operating range of proximity sensors.

Materials	
Flange	Anodised aluminium
Retainer	Anodised aluminium
Holder	Anodised wrought aluminium alloy
Cover	Anodised wrought aluminium alloy
Output shaft	Steel
Housing	Anodised wrought aluminium alloy
Drive shaft	High-alloy stainless steel
Tooth belt	Polychloroprene with glass fibre

## Order code



Type	Rotary/Lifting module, electric
Size	20, 25, 32
Stroke [mm]	100, 200

### Order example:

EHMB-25-200

Rotary/Lifting module EHMB - size 25 - stroke 200 mm

## Ordering – Product options

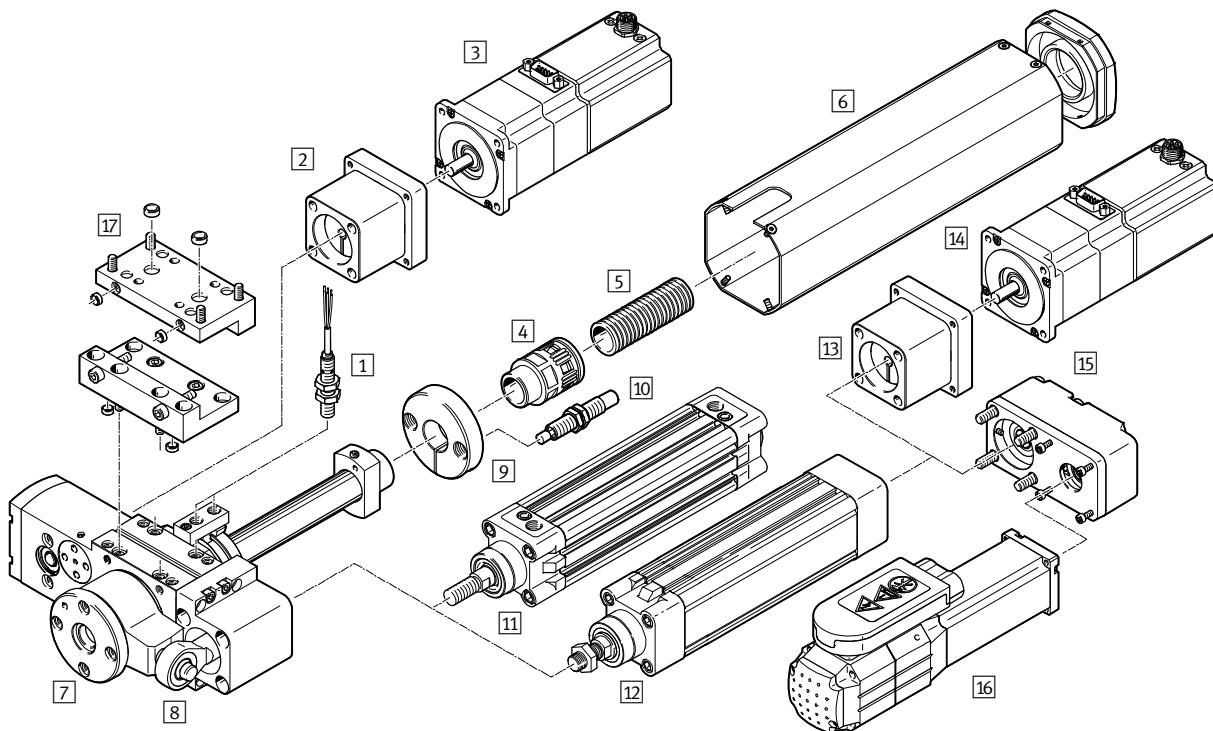
**Configurable product**

**This product and all its options can be ordered using the configurator.**

The configurator can be found under Products on the DVD or  
[→ www.festo.com/catalogue/...](http://www.festo.com/catalogue/...)

Enter the type code in the search field.

## Accessories



		→ Page/online
1	Proximity sensor SIEN	504
2	Axial kit EAMM-A, for the rotary movement of the rotary/lifting module	504
3	Motor EMMS, MTR-DCI, for the rotary movement of the rotary/lifting module	504
4	Protective conduit fitting EASA	504
5	Protective conduit MKR	504
6	Cover EASC	504
7	Rotary/Lifting module EHMB	500
8	Rod eye SGS	505
9	Shock absorber retainer EAYH	505
10	Shock absorber DYSW	505
11	Standard cylinder DNC, pneumatic drive for the linear movement of the rotary/lifting module	505

		→ Page/online
12	Electric cylinder DNCE, electric drive for the linear movement of the rotary/lifting module	505
13	Axial kit EAMM-A, for the linear movement of the rotary/lifting module	504
14	Motor EMMS, MTR-DCI, for the linear movement of the rotary/lifting module	504
15	Parallel kit EAMM-U, for the linear movement of the rotary/lifting module	504
16	Motor EMMS, MTR-DCI, for the linear movement of the rotary/lifting module	504
17	Adapter plate kit EHAM	505
-	Connecting cable NEBU	505
-	Centring sleeve ZBH	505
-	Cam EAPS	505

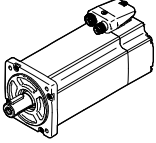
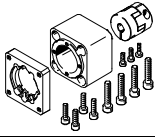
# Rotary/Lifting modules EHMB, electric

## Accessories – Ordering data

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

3

### Motor mounting for rotary movement

Motor/Gear unit <sup>1)</sup>	Axial kit
	
	Part no. Type

**2/3** Permissible axis/motor combination with axial kit  
Data sheets online: → [eamm-a](#)

EHMB-20		
<b>With servo motor</b>		
EMMS-AS-40-...	2207441	EAMM-A-D32-35A-40P
EMMS-AS-40-...	560281	EAMM-A-D32-35A-40A
<b>With stepper motor</b>		
EMMS-ST-42-...	543148	EAMM-A-D32-42A
EMMS-ST-57-...	550980	EAMM-A-D32-57A
<b>With motor unit</b>		
MTR-DCI-32S-...	543149	EAMM-A-D32-32B
EHMB-25		
<b>With servo motor</b>		
EMMS-AS-55-...	543153	EAMM-A-D40-55A
EMME-AS-60-...	1977000	EAMM-A-D40-60P
EMMS-AS-70-...	550981	EAMM-A-D40-70A
<b>With servo motor and gear unit</b>		
EMME-AS-40-...	560282	EAMM-A-D40-40G
EMGA-40-P-G...-EAS-40		
EMMS-AS-40-...	560282	EAMM-A-D40-40G
EMGA-40-P-G...-SAS-40		
<b>With stepper motor</b>		
EMMS-ST-57-...	543154	EAMM-A-D40-57A
<b>With stepper motor and gear unit</b>		
EMMS-ST-42-...	560282	EAMM-A-D40-40G
EMGA-40-P-G...-SST-42		
<b>With motor unit</b>		
MTR-DCI-42S-...-G7	543155	EAMM-A-D40-42B
MTR-DCI-42S-...-G14	543156	EAMM-A-D40-42C




Motor/Gear unit <sup>1)</sup>		Axial kit	
		Part no.	Type
EHMB-32			
<b>With servo motor</b>			
EMMS-AS-70-...	★	543161	EAMM-A-D60-70A
EMME-AS-80-...	★	1977073	EAMM-A-D60-80P
EMME-AS-100-...	★	550983	EAMM-A-D60-100A
EMMS-AS-100-...	★	550983	EAMM-A-D60-100A
<b>With servo motor and gear unit</b>			
EMMS-AS-55-...	★	560283	EAMM-A-D60-60G
EMGA-60-P-G...-SAS-55			
EMMS-AS-70-...	★	560283	EAMM-A-D60-60G
EMGA-60-P-G...-SAS-70			
<b>With stepper motor</b>			
EMMS-ST-87-...	★	543162	EAMM-A-D60-87A
<b>With stepper motor and gear unit</b>			
EMMS-ST-57-...	★	560283	EAMM-A-D60-60G
EMGA-60-P-G...-SST-57			
<b>With motor unit</b>			
MTR-DCI-52S-...-G7		543163	EAMM-A-D60-52B
MTR-DCI-52S-...-G14		543164	EAMM-A-D60-52C


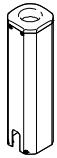
1) The input torque must not exceed the max. perm. transferable torque of the axial kit.

**Note**

Note the maximum permissible driving torque of the EHMB. The motor current may need to be limited.


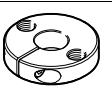
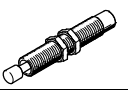
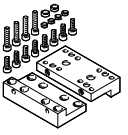
The following tool is available for sizing: engineering software PositioningDrives → [www.festo.com](http://www.festo.com)




	For size	Part no.	Type
<b>1</b> Inductive proximity sensor, N/O contact, M8			Data sheets → 899
	PNP, cable	★ 150386	SIEN-M8B-PS-K-L
	PNP, plug connector	★ 150387	SIEN-M8B-PS-S-L
<b>N/C contact, M8</b> Data sheets → 899			
	PNP, cable	150390	SIEN-M8B-PO-K-L
	PNP, plug connector	150391	SIEN-M8B-PO-S-L
<b>4</b> Protective conduit fitting <sup>1)</sup>			
	20	1157774	EASA-H1-20-PG16
	25, 32	1096549	EASA-H1-22-PG21

	For size	Part no.	Type
<b>5</b> Protective conduit			
	20	177566	MKR-16,5-PG-16
	25, 32	177567	MKR-23-PG-21
<b>6</b> Cover <sup>1)</sup>			
	20	1099901	EASC-H1-20-100
		1099902	EASC-H1-20-200
	25	1096387	EASC-H1-25-100
		1096388	EASC-H1-25-200
	32	1107235	EASC-H1-32-100
	1107236	EASC-H1-32-200	

1) Packaging unit 1 piece

Accessories – Ordering data

	For size	Part no.	Type
<b>8</b> <b>Rod eye</b>			<b>Data sheets online: → sgs</b>
	20.25	★ 9261	SGS-M10x1,25
	32	★ 9262	SGS-M12x1,25
<b>9</b> <b>Shock absorber retainer<sup>1)</sup></b>			
	20	1153896	EAYH-H1-20
	25, 32	1153905	EAYH-H1-25
<b>10</b> <b>Shock absorber<sup>1)</sup></b>			<b>Data sheets online: → dysw</b>
	20	548073	DYSW-8-14-Y1F
	25, 32	548074	DYSW-10-17-Y1F
<b>17</b> <b>Adapter plate kit<sup>1)</sup></b>			
	20	1132369	EHAM-H1-20-L2-80
	25	1132402	EHAM-H1-25-L2-80
	32	1132529	EHAM-H1-32-L2-120

	For size	Part no.	Type
<b>Connecting cable, straight socket</b>			<b>Data sheets → 1161</b>
	2.5 m	★ 541333	NEBU-M8G3-K-2.5-LE3
	5 m	★ 541334	NEBU-M8G3-K-5-LE3
<b>Centring sleeve<sup>2)</sup></b>			<b>Data sheets online: → zbh</b>
	– <sup>3)</sup>	186717	ZBH-7
		150927	ZBH-9
		189653	ZBH-12
<b>Cam<sup>4)</sup></b>			
	20	1234887	EAPS-H1-20-CK
	25, 32	1234888	EAPS-H1-25-CK

- 1) Packaging unit 1 piece
- 2) Packaging unit 10 pieces
- 3) → Dimensional drawing.506
- 4) 2 included in the scope of delivery of the rotary/lifting module EHMB.

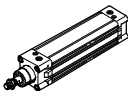
**Note**

The bracket for the proximity sensor of the rotary/lifting module. SIEN is included in the scope of delivery

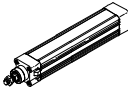
3

Cylinder connection for linear movement

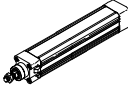
**11** In combination with pneumatic standard cylinder DNC Data sheets online: → dnc

	for rotary/lifting module	Standard cylinder DNC	
		Part no.	Type
	EHMB-20-100	163309	DNC-32-100-PPV-A
	EHMB-20-200	163312	DNC-32-200-PPV-A
	EHMB-25-100	163309	DNC-32-100-PPV-A
	EHMB-25-200	163312	DNC-32-200-PPV-A
	EHMB-32-100	163341	DNC-40-100-PPV-A
	EHMB-32-200	163344	DNC-40-200-PPV-A

**12** In combination with electric cylinder DNCE Data sheets online: → dnce

	for rotary/lifting module	Electric cylinder DNCE	
		Part no.	Type
	EHMB-20-100	543115	DNCE-32-100-BS-”3”P-Q <sup>5</sup>
	EHMB-20-200	543116	DNCE-32-200-BS-”3”P-Q <sup>5</sup>
	EHMB-25-100	543115	DNCE-32-100-BS-”3”P-Q <sup>5</sup>
	EHMB-25-200	543116	DNCE-32-200-BS-”3”P-Q <sup>5</sup>
	EHMB-32-100	543127	DNCE-40-100-BS-”5”P-Q <sup>6</sup>
	EHMB-32-200	543128	DNCE-40-200-BS-”5”P-Q <sup>6</sup>

**12** In combination with electric cylinder DNCE Data sheets online: → dnce

	for rotary/lifting module	Electric cylinder DNCE	
		Part no.	Type
	EHMB-20-100	543119	DNCE-32-100-BS-”10”P-Q <sup>7</sup>
	EHMB-20-200	543120	DNCE-32-200-BS-”10”P-Q <sup>7</sup>
	EHMB-25-100	543119	DNCE-32-100-BS-”10”P-Q <sup>7</sup>
	EHMB-25-200	543120	DNCE-32-200-BS-”10”P-Q <sup>7</sup>
	EHMB-32-100	543131	DNCE-40-100-BS-”12,7”P-Q <sup>8</sup>
	EHMB-32-200	543132	DNCE-40-200-BS-”12,7”P-Q <sup>8</sup>

- 5) Ball screw with spindle pitch 3 mm, with reduced dynamic response
- 6) Ball screw with spindle pitch 5 mm, with reduced dynamic response

- 7) Ball screw with spindle pitch 10 mm
- 8) Ball screw with spindle pitch 12.7 mm

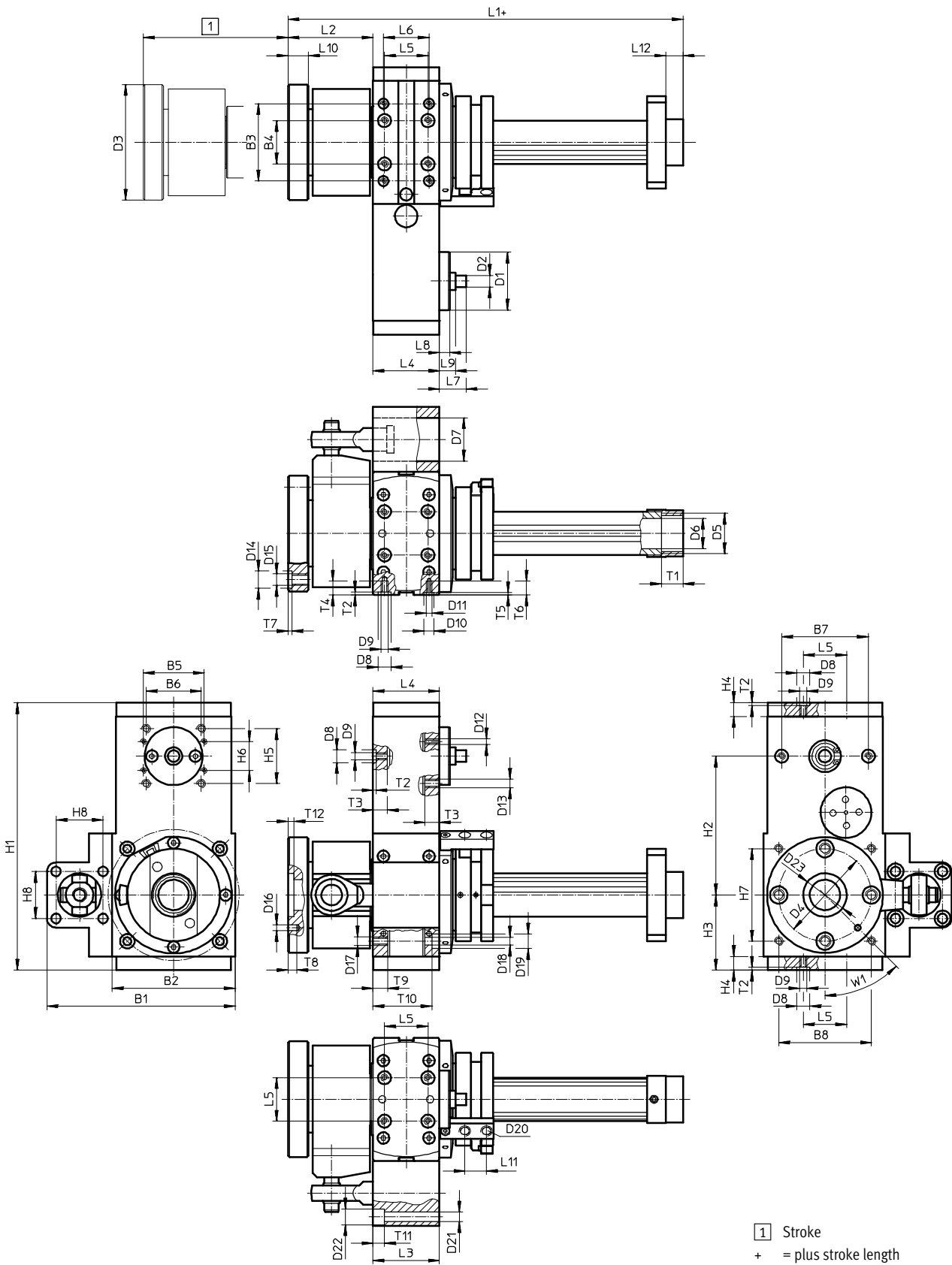
**Note**

Depending on the combination of motor/ motor unit and rotary/lifting module, it may not be possible to reach the maximum feed force of the cylinder. The following tool is available for sizing: Engineering software PositioningDrives → [www.festo.com](http://www.festo.com)

# Rotary/Lifting modules EHMB, electric

## Dimensions

3



## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

Size	B1	B2	B3 <sup>1)</sup>	B4 <sup>1)</sup>	B5	B6	B7 <sup>1)</sup>	B8	D1 ∅	D2 ∅	D3 ∅	D4 ∅
	±0.5	±0.2			±0.15	±0.15		±0.15	g7	h6		±0.05
20	110	65	54	34	32	32.5	30	52	32	6	58	45
25	130	85	53.5	30	42	38	60	64	40	8	80	64
32	169.5	115	70	40	62	56.5	80	88	60	12	80	64

Size	D5	D6 ∅	D7 ∅	D8 ∅	D9	D10 ∅	D11	D12	D13	D14 ∅	D15	D16 ∅
			H8	H7		H7				H7		H7
20	Pg16	14	30	9	M5	7	M4	M3	M6	9	M6	4
25	Pg21	21	30	9	M5	7	M4	M4	M6	12	M8	4
32	Pg21	21	35	9	M5	–	M5	M5	M8	12	M8	4

Size	D17	D18 ∅	D19 ∅	D20	D21 ∅	D22 ∅	D23 ∅	H1	H2	H3	H4	H5
								±0.5	±0.05			±0.15
20	M5	–	–	M8x1	6.6	11	19 <sup>H8</sup>	149	72	45	9.5	32.5
25	M6	5.5	10	M8x1	6.6	11	30 <sup>H7</sup>	185	96	52	9.5	38
32	M6	6.2	10	M8x1	6.6	11	30 <sup>H7</sup>	229.5	108	70.5	13	56.5

Size	H6	H7	H8	L1	L2	L3	L4	L5 <sup>1)</sup>	L6 <sup>1)</sup>	L7	L8	L9	L10	L11
	±0.15	±0.15			min.	±0.1	±0.1							±0.1
20	19	44	32.5	147.5	40.5	52	40	30	30	15.8	5	7.8	9	15
25	20	64	32.5	173	58.6	46	46	30	31.5	18.35	7	–	14	15
32	31	88	38	183	61.4	60	60	40	47	23.3	6	–	14	15

Size	L12	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	W1
			+0.1			+0.2		+0.1			±0.2		±0.5	
20	12	14	2.1	10	9	1.6	9.5	2.1	6	8.5	–	11	3	45°
25	12	15	2.1	10	9.6	1.6	9.5	2.7	6	10	40.8	8	4	45°
32	12	15	2.1	10	9	–	9.5	2.7	6	10	54.3	15	4	45°

1) Tolerance for centring hole ±0.02 mm.  
Tolerance for thread ±0.1 mm.

