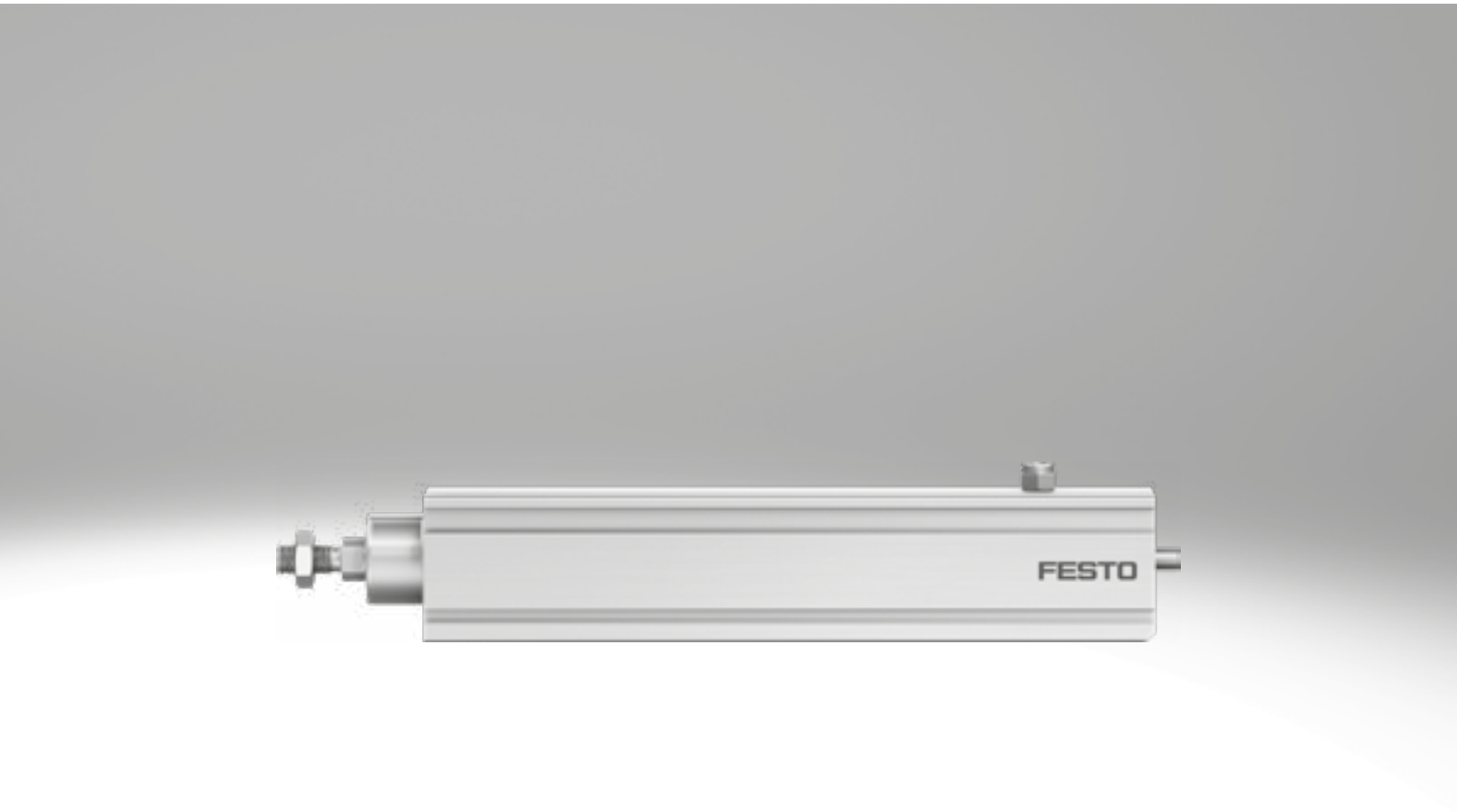
Electric cylinders EPCC, with spindle drive

FESTO



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Characteristics

At a glance

General information

The electric cylinder EPCC is a mechanical linear drive with piston rod. The driving component consists of an electrically actuated spindle that converts the rotary motion of the motor into linear motion of the piston rod.

Features

- With ball screw drive
- Degree of protection IP40
- Compact dimensions
- Extensive mounting accessories for various installation situations

Application areas

- Suitable for simple applications in factory automation that in the past were mostly carried out using pneumatic solutions

Complete system consisting of electric cylinder, motor and motor mounting kit

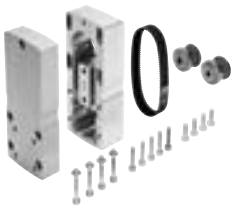
Electric cylinder → Page 3

Motor → Page 16

Motor mounting kit → Page 16

Axial kit

Parallel kit



A range of complete kits is available for both parallel and axial motor mounting.

Servo drive/motor controller

Type codes

001	Series	
EPCC	Electric cylinder	

002	Drive system	
BS	Ball screw drive	

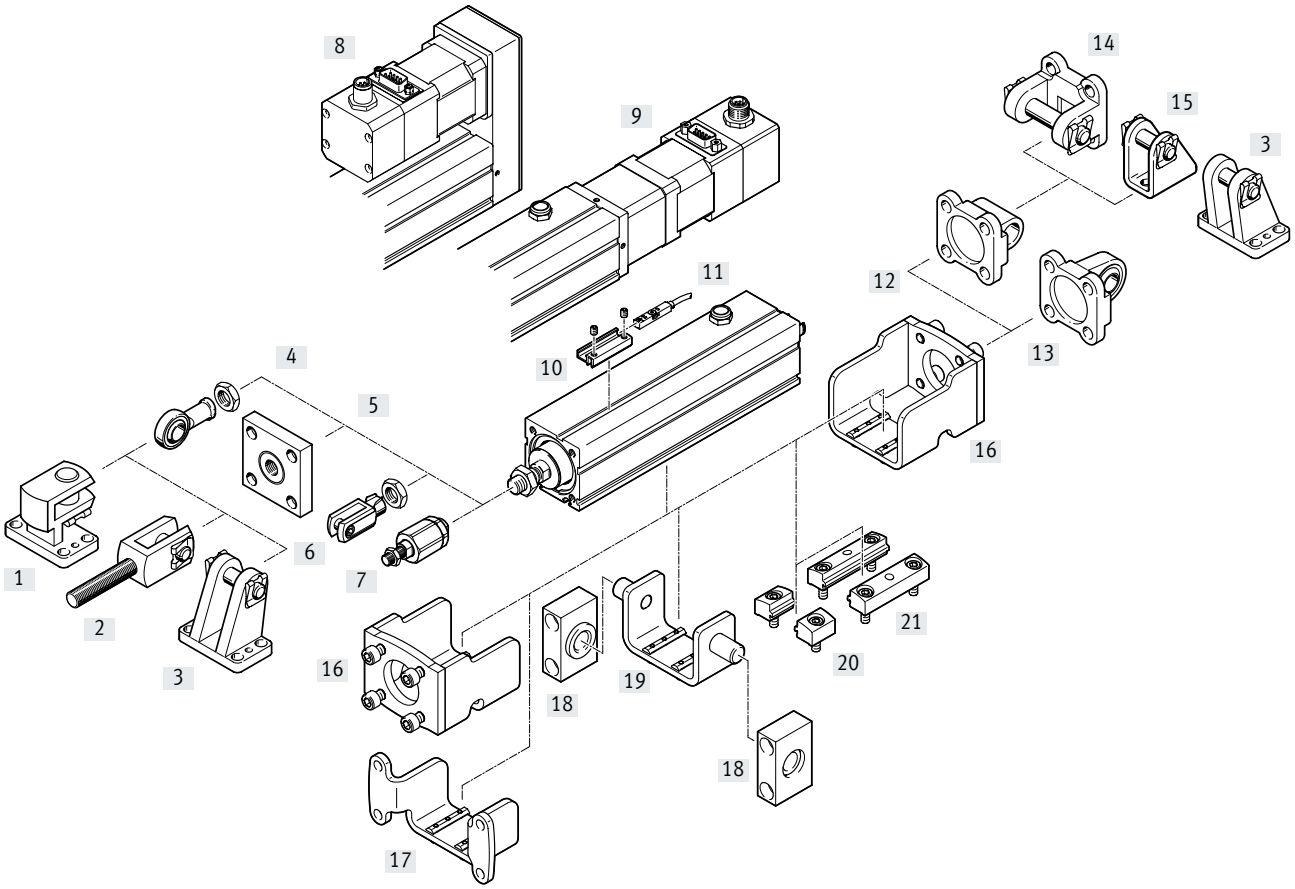
003	Size	
25	25	
32	32	
45	45	
60	60	

004	Stroke	
25	25	
50	50	
75	75	
100	100	
125	125	
150	150	
175	175	
200	200	
250	250	
300	300	
350	350	
400	400	
500	500	

005	Spindle pitch	
2P	2 mm	
3P	3 mm	
5P	5 mm	
6P	6 mm	
8P	8 mm	
10P	10 mm	
12P	12 mm	

006	Position sensing	
A	For proximity sensor	

Peripherals overview



Sealing air connection

Air is exchanged between the interior of the cylinder and the environment via a sealing air connection. This prevents negative pressure or overpressure arising in the interior of the cylinder.
Additional functions of the connection:

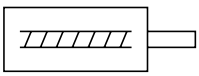
- Application of slight negative pressure prevents emission of particles
- Application of slight overpressure prevents immission of particles

Peripherals overview

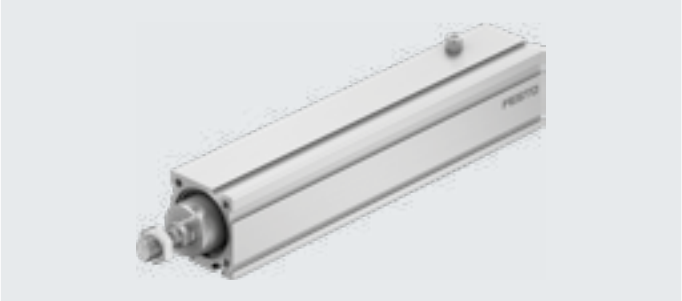
Mounting components and accessories

		Description	For size				→ Page/ Internet
			25	32	45	60	
[1]	Right angle clevis foot LQG	For rod eye SGS	–	–	■	■	26
[2]	Rod clevis SGA	For swivel mounting of cylinders	–	–	■	■	26
[3]	Clevis foot LBG/LBG-...-R3	With parallel motor mounting, for spherical bearing	–	–	■	■	26
[4]	Rod eye SGS/CRSGS	With spherical bearing	■	■	■	■	26
[5]	Coupling piece KSG	For compensating radial deviations	–	–	■	■	26
[6]	Rod clevis SG/CRSG	Permits a swivelling movement of the cylinder in one plane	■	■	■	■	26
[7]	Self-aligning rod coupler FK/CRFK	For compensating radial and angular deviations	■	■	■	■	26
[8]	Parallel kit EAMM-U	For parallel motor mounting	■	■	■	■	17
[9]	Axial kit EAMM-A	For axial motor mounting	■	■	■	■	16
[10]	Sensor bracket EAPM-L2	For mounting the proximity sensors on the axis. The proximity sensors can only be mounted using the sensor bracket	■	■	■	■	27
[11]	Proximity sensor SMT-8M	Magnetic proximity sensor, for T-slot	■	■	■	■	27
[12]	Swivel flange SNCL	With parallel motor mounting	■	■	■	■	24
[13]	Swivel flange SNCS/CRSNCS/SNCS-...-R3	With parallel motor mounting	–	–	■	■	23
[14]	Swivel flange SNCB	With parallel motor mounting, for spherical bearing	–	–	■	■	25
[15]	Clevis foot LBN	With parallel motor mounting, for spherical bearing	■	■	■	■	26
[16]	Adapter kit EAHA-P2	• For mounting the swivel flange and trunnion flange on the front • Can only be mounted on the rear in conjunction with parallel kit EAMM-U	■	■	■	■	21
[17]	Flange mounting EAHH-P2	• For mounting the electric cylinder via the profile • Position freely selectable along the cylinder length	■	■	■	■	20
[18]	Trunnion support LNZG	For cylinders with trunnion flange mounting	■	■	■	■	22
[19]	Swivel mounting EAHS-P2	Position freely selectable along the cylinder length	■	■	■	■	22
[20]	Profile mounting EAHF-L2-P-S	For mounting the axis on the side of the profile	■	■	■	■	18
[21]	Profile mounting EAHF-L2-P	• For mounting the axis on the side of the profile • The profile mounting can be attached to the mounting surface using the drilled hole in the centre	■	■	■	■	19

Data sheet



- Ø - Size
  25 ... 60
- | - Stroke length
  25 ... 500 mm



General technical data					
Size		25	32	45	60
Design		Electric cylinder with ball screw drive			
Piston rod thread		M6	M8	M10x1.25	M12x1.25
Piston rod end		Male thread			
Working stroke	[mm]	25 ... 200	25 ... 200	25 ... 300	25 ... 500
Stroke reserve	[mm]	0			
Protection against rotation/guide		With plain-bearing guide			
Max. angle of rotation at the piston rod	[°]	≤ ±1			
Position sensing		Via proximity sensor			
Type of mounting		–	Via female thread		
		Via accessories			
Mounting position		Any			

Mechanical data									
Size		25		32		45		60	
Spindle design		2P	6P	3P	8P	3P	10P	5P	12P
Spindle pitch	[mm/rev]	2	6	3	8	3	10	5	12
Spindle diameter	[mm]	6	6	8	8	10	10	12	12
Max. payload									
Horizontal	[kg]	12	12	24	24	60	60	120	120
Vertical	[kg]	6	6	12	12	30	30	60	60
Max. feed force F_x	[N]	75	75	150	150	450	450	1000	1000
Max. radial force[1]	[N]	30	30	75	75	180	180	230	230
Max. driving torque	[Nm]	0.05	0.1	0.15	0.3	0.4	0.9	1.2	2.4
No-load driving torque[2]	[Nm]	0.02	0.055	0.065	0.095	0.08	0.16	0.235	0.325
Max. speed[3]	[m/s]	0.133	0.4	0.188	0.5	0.18	0.6	0.25	0.6
Max. acceleration	[m/s²]	5	15	5	15	5	15	5	15
Max. rotational speed	[rpm]	4000	4000	3750	3750	3600	3600	3000	3000
Reversing backlash[4]	[mm]	≤ 0.1							
Repetition accuracy	[mm]	±0.02							

1) At the driving shaft
2) Corresponds to the required driving torque without load, at a spindle speed of 200 rpm.
3) The speed is stroke-dependent → Page 9
4) When new

Operating and environmental conditions		
Ambient temperature[1]	[°C]	0 ... +60
Storage temperature	[°C]	–20 ... +60
Relative humidity	[%]	0 ... 95 (non-condensing)
Degree of protection to IEC 60529		IP40
Duty cycle	[%]	100
Maintenance interval		Life-time lubrication

1) Note operating range of proximity sensors

Data sheet

Weight [g]				
Size	25	32	45	60
Basic weight with 0 mm stroke	132	225	555	1114
Additional weight per 10 mm stroke	13	24	41	69
Moving mass with 0 mm stroke	53	98	179	305
Moving mass per 10 mm stroke	2.6	3.3	4.9	6.5

Mass moments of inertia								
Size		25		32		45		60	
Spindle design		2P	6P	3P	8P	3P	10P	5P	12P
J_0 with 0 mm stroke	[kg mm²]	0.09	0.14	0.42	0.55	1.09	1.53	6.82	7.79
j_S per metre stroke	[kg mm²/m]	0.56	0.95	2.56	3.11	5.03	7.11	11.95	15.19
j_L per kg payload	[kg mm²/kg]	0.1	0.91	0.23	1.62	0.28	2.53	0.63	3.65

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

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

Homing

Homing can be carried out in two ways:

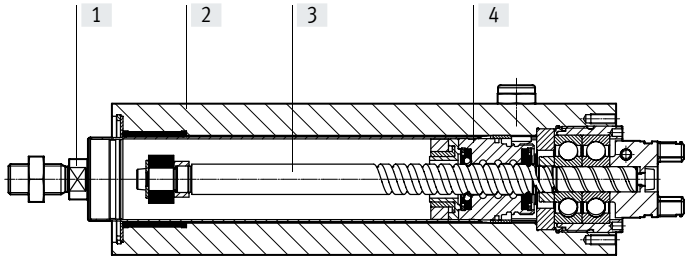
- Against a fixed stop
- Using a reference switch

The following values must be observed:

Size		25	32	45	60
Max. impact energy	[J]	0.0012	0.0036	0.012	0.024
Max. homing speed	[m/s]	0.01			

Materials

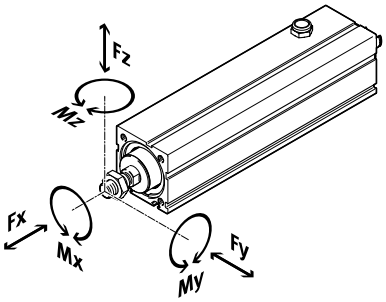
Sectional view



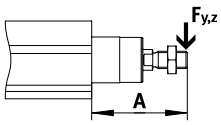
Electric cylinder		
[1]	Piston rod	High-alloy stainless steel
[2]	Housing	Smooth-anodised wrought aluminium alloy
[3]	Spindle	Rolled steel
[4]	Spindle nut	Steel
	Note on materials	RoHS-compliant
		Contains paint-wetting impairment substances

Data sheet

Maximum permissible loads on the piston rod



If there are two or more forces and torques simultaneously acting on the piston rod, the following equations must be satisfied:
F_1/M_1 = dynamic value
F_2/M_2 = maximum value

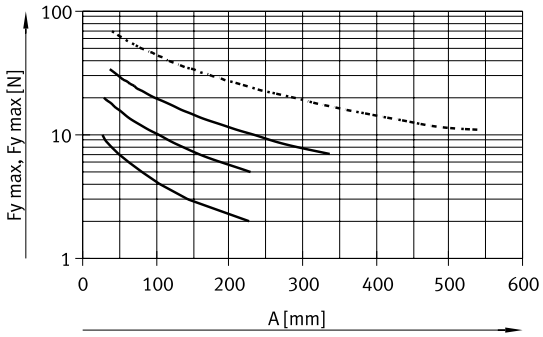


$$f_v = \frac{|F_{y1}|}{F_{y2}} + \frac{|F_{z1}|}{F_{z2}} + \frac{|M_{y1}|}{M_{y2}} + \frac{|M_{z1}|}{M_{z2}} \leq 1$$

$$|Fx| \leq Fx_{max}$$

$$|Mx| \leq Mx_{max}$$

Maximum permissible lateral force Fy_{max} and Fz_{max} on the piston rod as a function of projection A



EPCC-BS-25
EPCC-BS-32
EPCC-BS-45
EPCC-BS-60

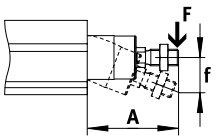
Size		25		32		45		60	
Spindle design		2P	6P	3P	8P	3P	10P	5P	12P
Fx_{max} (static)	[N]	75	75	150	150	450	450	1000	1000
Mx_{max}	[Nm]	0							
My_{max}, Mz_{max}	[Nm]	0.6		1.5		2.9		6.4	

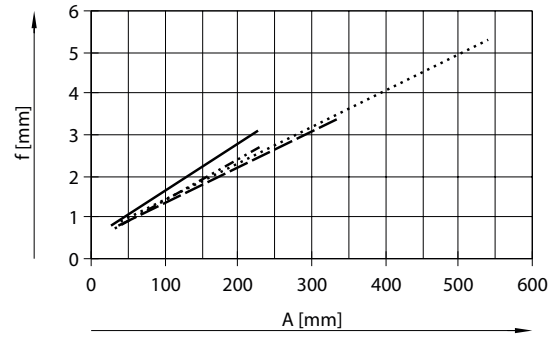
Note

Engineering software
PositioningDrives
➔ www.festo.com

Data sheet

Piston rod deflection f_2 as a function of projection A and lateral force F





EPCC-BS-25 (F_2 = 1.5 N)
EPCC-BS-32 (F_2 = 3.5 N)
EPCC-BS-45 (F_2 = 4.0 N)
EPCC-BS-60 (F_2 = 8.0 N)

$$f_1 = \frac{F_1}{F_2} \cdot f_2$$

f_1 = Piston rod deflection caused by lateral force [mm]
F_1 = Lateral force [N]
F_2 = Standardised lateral force [N] (constant load from graph)
f_2 = Piston rod deflection caused by lateral force [N] (value read from graph)

Example: Electric cylinder EPCC-25-50-6P with a lateral force of 3 N
F_1 = 3 N and $F_{standard}$ = 1.5 N

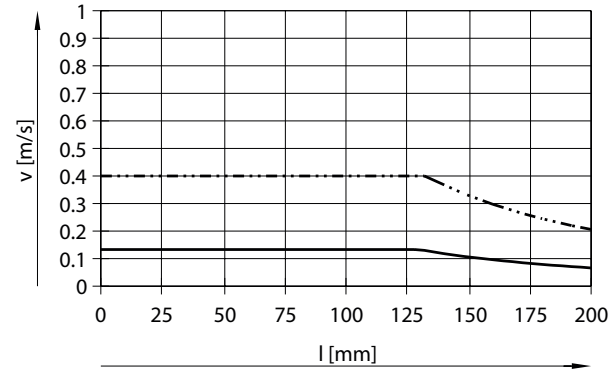
Value read from graph for EPCC-25 and projection = 50 mm
f_2 = 1 mm

Calculation of deflection caused by lateral force:

$$f_1 = \frac{F_1}{F_2} \cdot f_2 = \frac{3\ N}{1{,}5\ N} \cdot 1\ mm = 2\ mm$$

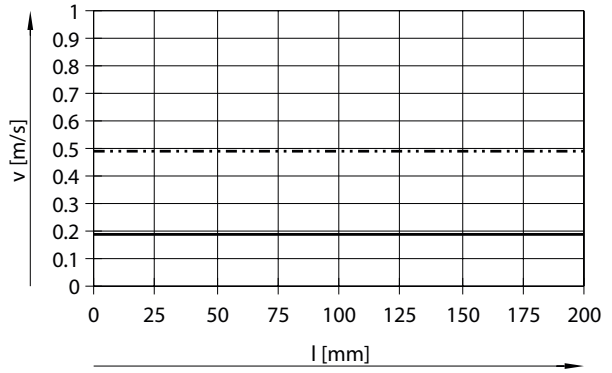
Feed speed v as a function of stroke length l

EPCC-BS-25-...



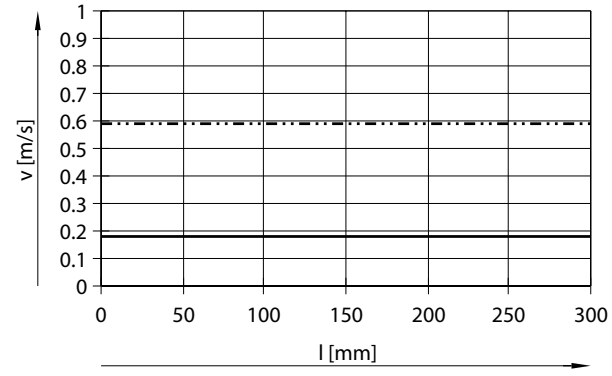
EPCC-BS-25-2P
EPCC-BS-25-6P

EPCC-BS-32-...



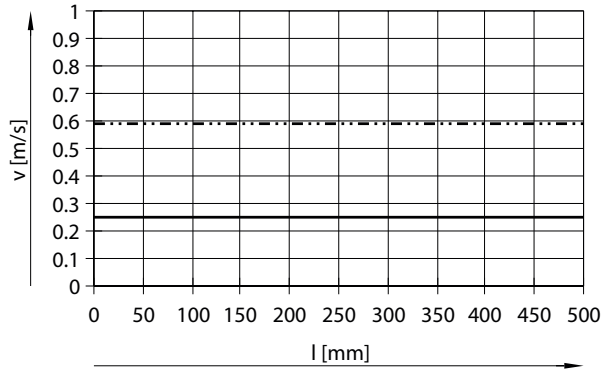
EPCC-BS-32-3P
EPCC-BS-32-8P

EPCC-BS-45-...



EPCC-BS-45-3P
EPCC-BS-45-10P

EPCC-BS-60-...



EPCC-BS-60-5P
EPCC-BS-60-12P

Data sheet

Calculating the mean feed force F_{xm} with the electric cylinder EPCC

The peak feed force value must not exceed the maximum feed force within a movement cycle. The peak value is generally achieved in vertical operation during the acceleration phase of the upwards stroke. If the maximum feed force is exceeded, this can increase wear and thus shorten the service life of the ball screw drive. The maximum speed must likewise not be exceeded:

$F_x \leq F_{xmax}$
and
$v_x \leq v_{xmax}$

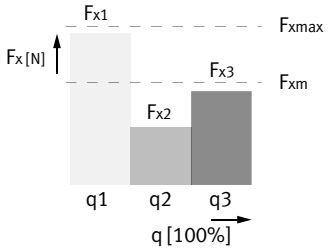
Calculating the mean feed force F_{xm} (to DIN 69051-4)

During operation, the continuous feed force may be briefly exceeded up to the maximum feed force. The continuous feed force must, however, be adhered to when averaged over a movement cycle:

$F_{xm} \leq F_{xcontinuous}$

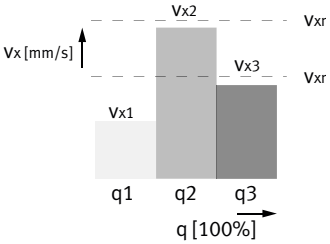
$$F_{xm} = \sqrt[3]{\sum F_x^3 \cdot \frac{v_x}{v_{xm}} \cdot \frac{q}{100}} =$$

$$F_{xm} = \sqrt[3]{F_{x1}^3 \cdot \frac{v_{x1}}{v_{xm}} \cdot \frac{q_1}{100} + F_{x2}^3 \cdot \frac{v_{x2}}{v_{xm}} \cdot \frac{q_2}{100} + F_{x3}^3 \cdot \frac{v_{x3}}{v_{xm}} \cdot \frac{q_3}{100} + \cdots}$$



Mean feed speed (to DIN 69051-4)

$$v_{xm} = \sum v_x \cdot \frac{q}{100} = v_{x1} \cdot \frac{q_1}{100} + v_{x2} \cdot \frac{q_2}{100} + v_{x3} \cdot \frac{q_3}{100} + \cdots$$

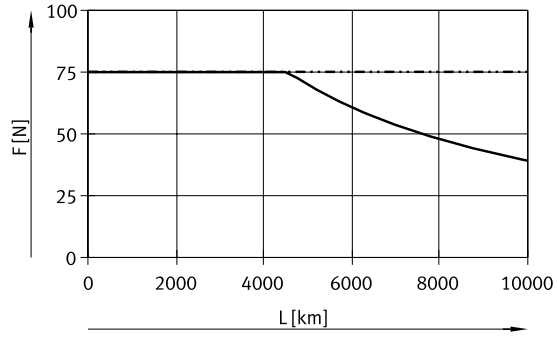


F_x	Feed force
F_{xm}	Mean feed force
$F_{xmax.}$	Max. feed force
$F_{xcontinuous}$	Continuous feed force
q	Time
v_x	Feed speed
v_{xm}	Mean feed speed
$v_{xmax.}$	Max. feed speed

Data sheet

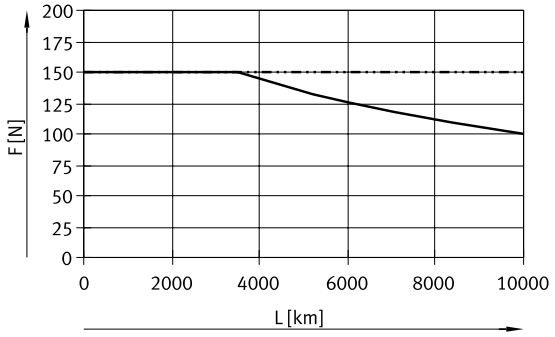
Mean feed force F_{xm} as a function of running performance L, with an operating coefficient f_B of 1.0 at room temperature

EPCC-BS-25-...



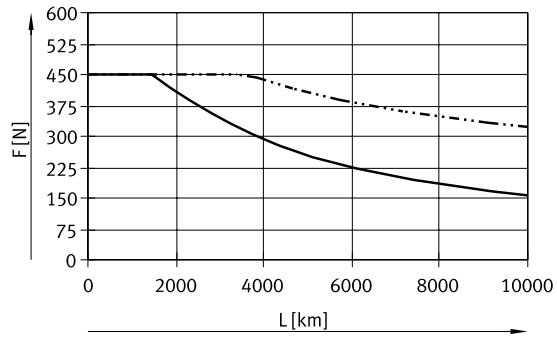
EPCC-BS-25-2P
EPCC-BS-25-6P

EPCC-BS-32-...



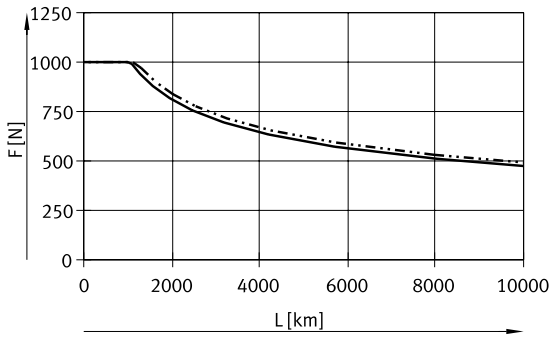
EPCC-BS-32-3P
EPCC-BS-32-8P

EPCC-BS-45-...



EPCC-BS-45-3P
EPCC-BS-45-10P

EPCC-BS-60-...



EPCC-BS-60-5P
EPCC-BS-60-12P

$$L_1 = \frac{L}{f_B^3}$$

L_1 Actual service life
L Target service life (➔ graphs)
f_B Operating coefficient

Service life taking into account the operating coefficient

Load[1)]	Operating coefficient f_B	Application example
None	1.0 ... 1.2	Measuring machine
Light	1.2 ... 1.4	Handling, robotics
Medium	1.4 ... 1.6	Press-in operations
High	1.6 ... 2.0	Construction, agriculture

1) This refers to loads caused by impact, temperature, contamination, shock and vibrations that affect the cylinder or piston rod.

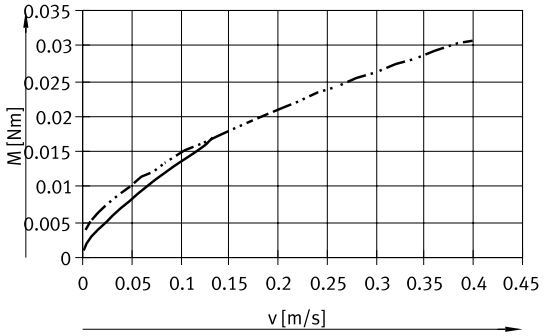
Note

The specifications for running performance are based on experimentally determined and theoretically calculated data (at room temperature). The running performance that can be achieved in practice can deviate considerably from the specified curves under different parameters.

Data sheet

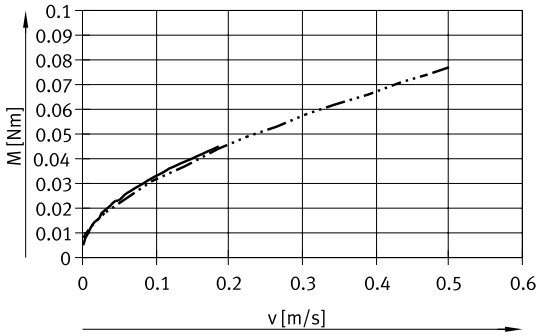
Friction torque M_v as a function of feed speed v

EPCC-BS-25



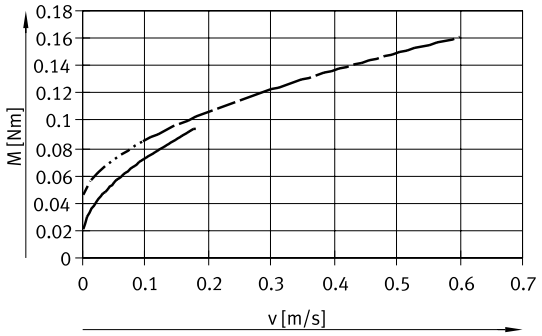
EPCC-BS-25-2P
EPCC-BS-25-6P

EPCC-BS-32



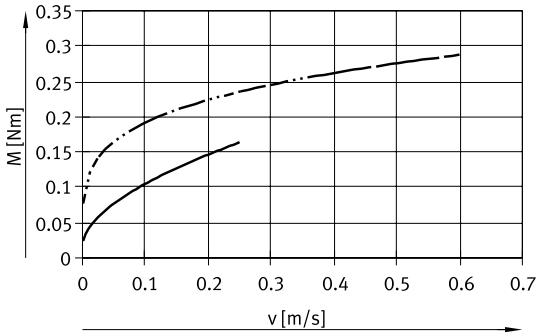
EPCC-BS-32-3P
EPCC-BS-32-8P

EPCC-BS-45



EPCC-BS-45-3P
EPCC-BS-45-10P

EPCC-BS-60



EPCC-BS-60-5P
EPCC-BS-60-12P

Friction losses and driving torque

Friction losses

The friction losses comprise the no-load driving torque and the speed-dependent friction losses.

$M_{friction} = M_{no\text{-}load} + M_v$

$M_{friction}$ = Friction torque
$M_{no\text{-}load}$ = No-load driving torque
M_V = Friction torque as a function of the feed speed

Driving torque

The driving torque required for the cylinder comprises the friction torque and the effective torque.

$M_{drive} = M_{friction} + M_{effective}$

M_{drive} = Required driving torque
$M_{friction}$ = Friction torque
$M_{effective}$ = Effective torque

No-load driving torque[1)]

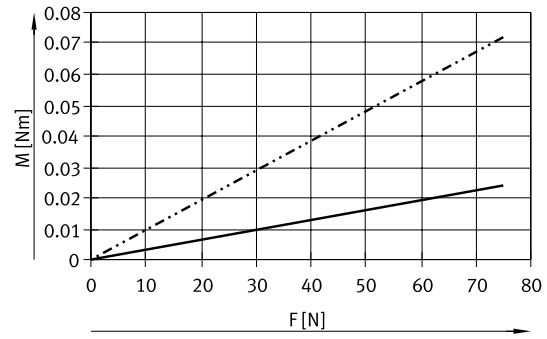
Size		25		32		45		60	
Spindle pitch	[mm/rev]	2	6	3	8	3	10	5	12
No-load driving torque $M_{no\text{-}load}$	[Nm]	0.02	0.055	0.065	0.095	0.08	0.16	0.235	0.325

1) Corresponds to the required driving torque without load, at a spindle rotational speed of 200 rpm.

Data sheet

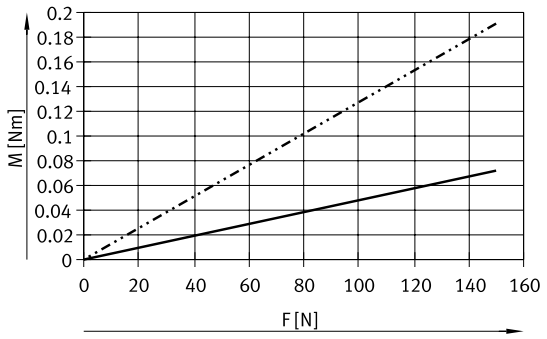
Effective torque $M_{effective}$ as a function of feed force F

EPCC-BS-25-...



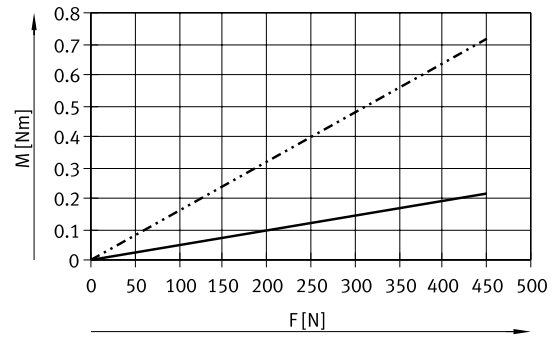
EPCC-BS-25-2P
EPCC-BS-25-6P

EPCC-BS-32-...



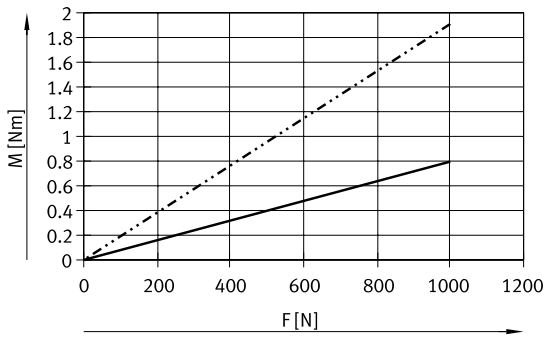
EPCC-BS-32-3P
EPCC-BS-32-8P

EPCC-BS-45-...



EPCC-BS-45-3P
EPCC-BS-45-10P

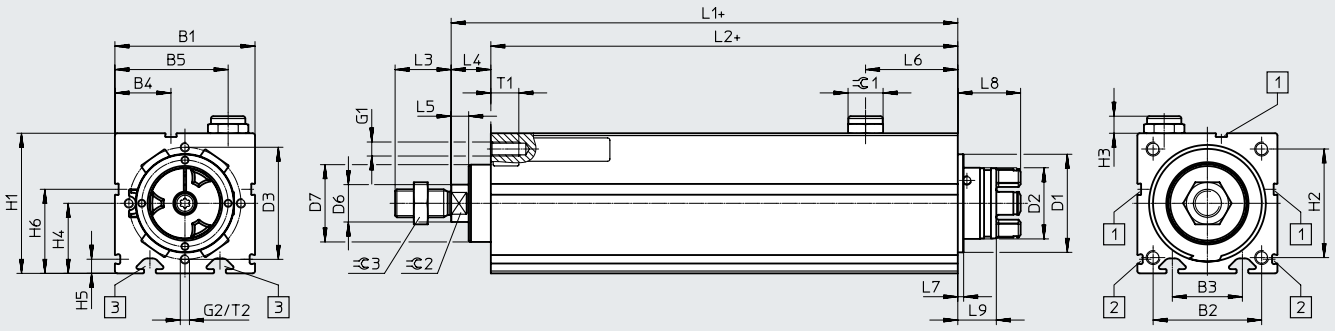
EPCC-BS-60-...



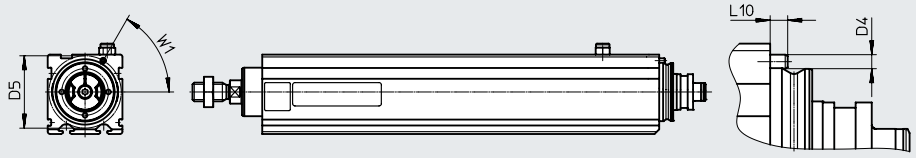
EPCC-BS-60-5P
EPCC-BS-60-12P

Data sheet

Dimensions Download CAD data ➔ www.festo.com



EPCC-BS-25/32/45



[1] For sensor bracket
[2] For profile mounting
[3] For slot nut mounting

Size	B1 ±0.15	B2	B3	B4	B5	D1 Ø	D2 Ø	D3 Ø	D4 Ø
25	25	–	14	5.8	20	20.5	10.8	–	2
32	32	24	16	8.1	25.5	25	15.5	–	2
45	45	32.5	24	16.5	35	32	16.3	–	3
60	60	46.5	30	24	48.5	42	30.5	48	–

Size	D5 Ø	D6 Ø	D7 Ø	G1	G2	H1 ±0.15	H2	H3	H4
25	25	8	17.3	–	–	27	–	4.7	–
32	31	10	21.3	M4	–	34	24	4.7	–
45	41	12	26.5	M5	–	45	32.5	6.3	–
60	–	16	33.6	M6	M4	60	46.5	7.3	30

Size	H5	H6 +0.15	L1	L2	L3	L4	L5	L6	L7
25	4.9	22.5	74.5	60	12	14.5	4.7	21.2	5
32	4.9	26	82.9	70	16	12.9	5.2	24.2	6
45	6.1	28.5	99.9	83	20	16.9	5.7	30.5	6
60	6.1	36	116	100	24	16	7.5	39.5	2.5

Size	L8	L9	L10	T1	T2	W1	⌀C1	⌀C2	⌀C3
25	15	10.5	2.5	–	–	60°	6	7	10
32	19.9	14.5	2.5	8	–	60°	6	9	13
45	19.9	14.5	3	10	–	60°	12	10	16
60	26.9	16.5	–	12	10	–	15	13	18

Data sheet

Ordering data

EPCC-BS-25

Stroke [mm]	Part no.	Type	Stroke [mm]	Part no.	Type
Spindle pitch 2 mm/rev			**Spindle pitch 6 mm/rev**		
25	**5428805**	**EPCC-BS-25-25-2P-A**	25	**5428813**	**EPCC-BS-25-25-6P-A**
50	**5428806**	**EPCC-BS-25-50-2P-A**	50	**5428814**	**EPCC-BS-25-50-6P-A**
75	**5428807**	**EPCC-BS-25-75-2P-A**	75	**5428815**	**EPCC-BS-25-75-6P-A**
100	**5428808**	**EPCC-BS-25-100-2P-A**	100	**5428816**	**EPCC-BS-25-100-6P-A**
125	**5428809**	**EPCC-BS-25-125-2P-A**	125	**5428817**	**EPCC-BS-25-125-6P-A**
150	**5428810**	**EPCC-BS-25-150-2P-A**	150	**5428818**	**EPCC-BS-25-150-6P-A**
175	**5428811**	**EPCC-BS-25-175-2P-A**	175	**5428819**	**EPCC-BS-25-175-6P-A**
200	**5428812**	**EPCC-BS-25-200-2P-A**	200	**5428820**	**EPCC-BS-25-200-6P-A**

EPCC-BS-32

Stroke [mm]	Part no.	Type	Stroke [mm]	Part no.	Type
Spindle pitch 3 mm/rev			**Spindle pitch 8 mm/rev**		
25	**5428833**	**EPCC-BS-32-25-3P-A**	25	**5428841**	**EPCC-BS-32-25-8P-A**
50	**5428834**	**EPCC-BS-32-50-3P-A**	50	**5428842**	**EPCC-BS-32-50-8P-A**
75	**5428835**	**EPCC-BS-32-75-3P-A**	75	**5428843**	**EPCC-BS-32-75-8P-A**
100	**5428836**	**EPCC-BS-32-100-3P-A**	100	**5428844**	**EPCC-BS-32-100-8P-A**
125	**5428837**	**EPCC-BS-32-125-3P-A**	125	**5428845**	**EPCC-BS-32-125-8P-A**
150	**5428838**	**EPCC-BS-32-150-3P-A**	150	**5428846**	**EPCC-BS-32-150-8P-A**
175	**5428839**	**EPCC-BS-32-175-3P-A**	175	**5428847**	**EPCC-BS-32-175-8P-A**
200	**5428840**	**EPCC-BS-32-200-3P-A**	200	**5428848**	**EPCC-BS-32-200-8P-A**

EPCC-BS-45

Stroke [mm]	Part no.	Type	Stroke [mm]	Part no.	Type
Spindle pitch 3 mm/rev			**Spindle pitch 10 mm/rev**		
25	**5428858**	**EPCC-BS-45-25-3P-A**	25	**5428868**	**EPCC-BS-45-25-10P-A**
50	**5428859**	**EPCC-BS-45-50-3P-A**	50	**5428869**	**EPCC-BS-45-50-10P-A**
75	**5428860**	**EPCC-BS-45-75-3P-A**	75	**5428870**	**EPCC-BS-45-75-10P-A**
100	**5428861**	**EPCC-BS-45-100-3P-A**	100	**5428871**	**EPCC-BS-45-100-10P-A**
125	**5428862**	**EPCC-BS-45-125-3P-A**	125	**5428872**	**EPCC-BS-45-125-10P-A**
150	**5428863**	**EPCC-BS-45-150-3P-A**	150	**5428873**	**EPCC-BS-45-150-10P-A**
175	**5428864**	**EPCC-BS-45-175-3P-A**	175	**5428874**	**EPCC-BS-45-175-10P-A**
200	**5428865**	**EPCC-BS-45-200-3P-A**	200	**5428875**	**EPCC-BS-45-200-10P-A**
250	**5428866**	**EPCC-BS-45-250-3P-A**	250	**5428876**	**EPCC-BS-45-250-10P-A**
300	**5428867**	**EPCC-BS-45-300-3P-A**	300	**5428877**	**EPCC-BS-45-300-10P-A**

EPCC-BS-60

Stroke [mm]	Part no.	Type	Stroke [mm]	Part no.	Type
Spindle pitch 5 mm/rev			**Spindle pitch 12 mm/rev**		
25	**5428888**	**EPCC-BS-60-25-5P-A**	25	**5428901**	**EPCC-BS-60-25-12P-A**
50	**5428889**	**EPCC-BS-60-50-5P-A**	50	**5428902**	**EPCC-BS-60-50-12P-A**
75	**5428890**	**EPCC-BS-60-75-5P-A**	75	**5428903**	**EPCC-BS-60-75-12P-A**
100	**5428891**	**EPCC-BS-60-100-5P-A**	100	**5428904**	**EPCC-BS-60-100-12P-A**
125	**5428892**	**EPCC-BS-60-125-5P-A**	125	**5428905**	**EPCC-BS-60-125-12P-A**
150	**5428893**	**EPCC-BS-60-150-5P-A**	150	**5428906**	**EPCC-BS-60-150-12P-A**
175	**5428894**	**EPCC-BS-60-175-5P-A**	175	**5428907**	**EPCC-BS-60-175-12P-A**
200	**5428895**	**EPCC-BS-60-200-5P-A**	200	**5428908**	**EPCC-BS-60-200-12P-A**
250	**5428896**	**EPCC-BS-60-250-5P-A**	250	**5428909**	**EPCC-BS-60-250-12P-A**
300	**5428897**	**EPCC-BS-60-300-5P-A**	300	**5428910**	**EPCC-BS-60-300-12P-A**
350	**5428898**	**EPCC-BS-60-350-5P-A**	350	**5428911**	**EPCC-BS-60-350-12P-A**
400	**5428899**	**EPCC-BS-60-400-5P-A**	400	**5428912**	**EPCC-BS-60-400-12P-A**
500	**5428900**	**EPCC-BS-60-500-5P-A**	500	**5428913**	**EPCC-BS-60-500-12P-A**

Accessories

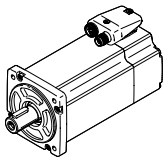
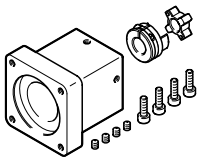
Note

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 particular kit must be taken into consideration.

Permissible axis/motor combinations with axial kit

Data sheets → Internet: eamm-a

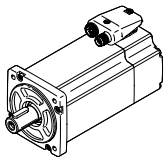
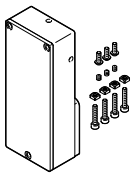
Motor/gear unit[1]	Axial kit	
		
Type	Part no.	Type
EPCC-25		
With stepper motor		
EMMS-ST-28-...	**4505258**	**EAMM-A-V20-28A**
EPCC-32		
With servo motor		
EMME-AS-40-...	**4491059**	**EAMM-A-V25-40P**
With stepper motor		
EMMS-ST-42-...	**4582608**	**EAMM-A-V25-42A**
EPCC-45		
With servo motor		
EMME-AS-40-...	**4595742**	**EAMM-A-V32-40P**
EMME-AS-60-...	**4608750**	**EAMM-A-V32-60P**
With stepper motor		
EMMS-ST-42-...	**4281142**	**EAMM-A-V32-42A**
EMMS-ST-57-...	**4597016**	**EAMM-A-V32-57A**
EPCC-60		
With servo motor		
EMME-AS-60-...	**4133487**	**EAMM-A-T42-60P**
EMME-AS-80-...	**4623788**	**EAMM-A-T42-80P**
With stepper motor		
EMMS-ST-57-...	**4327034**	**EAMM-A-T42-57A**
EMMS-ST-87-...	**4610008**	**EAMM-A-T42-87A**

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

Accessories

Permissible axis/motor combinations with parallel kit

Data sheets → Internet: eamm-u

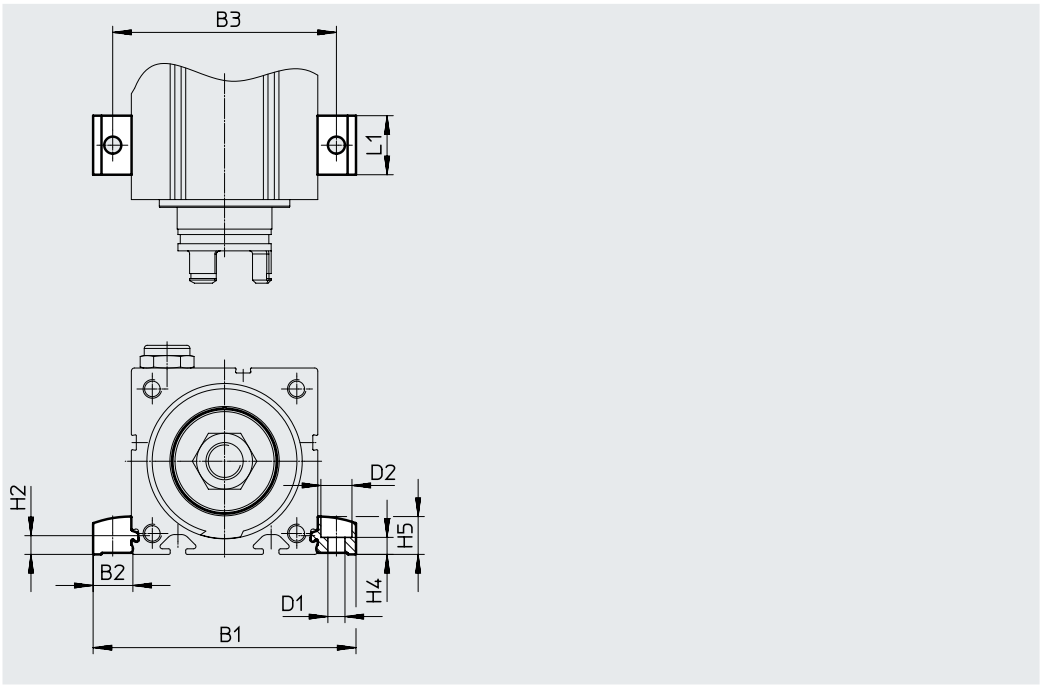
Motor/gear unit[1]	Parallel kit	
	 • The kit can be mounted in all directions	
Type	Part no.	Type
EPCC-25		
With stepper motor		
EMMS-ST-28-...	**4767125**	**EAMM-U-30-V20-28A-44**
EPCC-32		
With servo motor		
EMME-AS-40-...	**4782056**	**EAMM-U-45-V25-40P-63**
With stepper motor		
EMMS-ST-42-...	**4825645**	**EAMM-U-45-V25-42A-63**
EPCC-45		
With servo motor		
EMME-AS-40-...	**4718297**	**EAMM-U-45-V32-40P-63**
With stepper motor		
EMMS-ST-42-...	**4280674**	**EAMM-U-45-V32-42A-63**
EPCC-60		
With servo motor		
EMME-AS-60-...	**4784301**	**EAMM-U-65-T42-60P-87**
With stepper motor		
EMMS-ST-57-...	**4331535**	**EAMM-U-65-T42-57A-87**

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

Accessories

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

- For mounting the slide on the side of the profile



Dimensions and ordering data

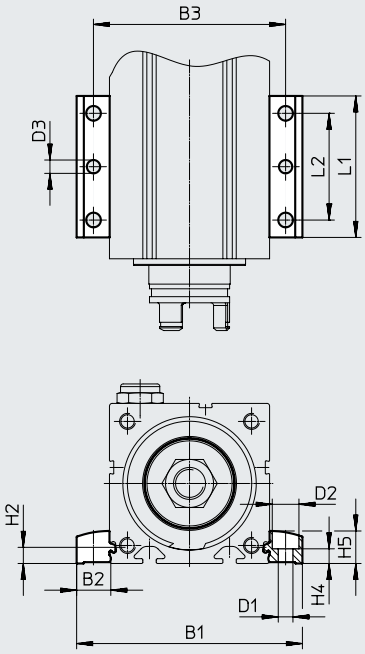
For size	B1	B2	B3	D1 ø H13	D2 ø H13	H2
25	44.4	9.7	35	4.5	8	4.9
32	51.4	9.7	42	4.5	8	4.9
45	70.6	12.8	58	5.5	10	6.1
60	85.6	12.8	73	5.5	10	6.1

For size	H4 ±0.1	H5	L1	Weight [g]	Part no.	Type
25	4.2	9	19	4	**5183153**	**EAHF-L2-25-P-S**
32	4.2	9	19	4	**5183153**	**EAHF-L2-25-P-S**
45	5.5	12.2	19	6	**5184133**	**EAHF-L2-45-P-S**
60	5.5	12.2	19	6	**5184133**	**EAHF-L2-45-P-S**

Accessories

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

- For mounting the slide on the side of the profile.
  The profile mounting can be attached to the mounting surface using the drilled hole in the centre



Dimensions and ordering data

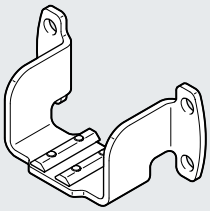
For size	B1	B2	B3	D1 ø H13	D2 ø H13	D3 ø	H2
25	44.4	9.7	35	4.5	8	4	4.9
32	51.4	9.7	42	4.5	8	4	4.9
45	70.6	12.8	58	5.5	10	5	6.1
60	85.6	12.8	73	5.5	10	5	6.1

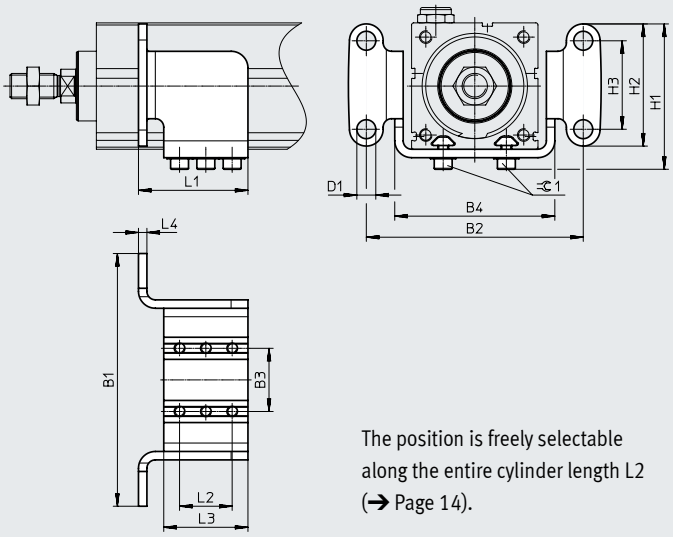
For size	H4 ±0.1	H5	L1	L2	Weight [g]	Part no.	Type
25	4.2	9	53	40	19	**4835684**	**EAHF-L2-25-P**
32	4.2	9	53	40	19	**4835684**	**EAHF-L2-25-P**
45	5.5	12.2	53	40	35	**4835728**	**EAHF-L2-45-P**
60	5.5	12.2	53	40	35	**4835728**	**EAHF-L2-45-P**

Accessories

Flange mounting EAHH

Material:
Galvanised steel
RoHS-compliant





The position is freely selectable along the entire cylinder length L2 (→ Page 14).

Dimensions and ordering data

For size	B1	B2	B3 ±0.1	B4	D1 Ø	H1	H2	H3	L1
25	61	50	14	35	4.5	32.5	25	15	38
32	70	58	16	42	5.5	39	31	20	38
45	100	85	24	61	6.6	54.5	48	35	42
60	120	103	30	76	9	69	58	42	52

For size	L2	L3	L4	=⊂1	CRC[1)]	Weight [g]	Part no.	Type
25	20	30	2.5	2.5	1	65	**5127286**	**EAHH-P2-25**
32	20	30	2.5	2.5	1	80	**5126157**	**EAHH-P2-32**
45	20	30	4	2.5	1	185	**5126669**	**EAHH-P2-45**
60	25	40	4	4	1	320	**5127005**	**EAHH-P2-60**

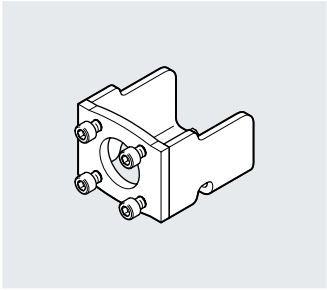
1) Corrosion resistance class CRC 1 to Festo standard FN 940070
Low corrosion stress. Dry indoor application or transport and storage protection. Also applies to parts behind coverings, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

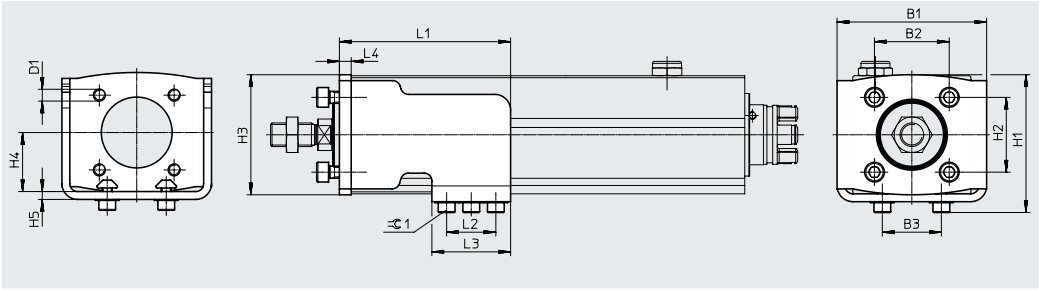
Accessories

Adapter kit EAHA

Material:
Galvanised steel

RoHS-compliant





Dimensions and ordering data

For size	B1	B2 ±0.2	B3 ±0.1	D1	H1	H2 ±0.2	H3	H4	H5
25	37	18	14	M4	35	18	30	14.5	2.5
32	53	22	16	M5	42	22	37	18	2.5
45	61	32.5	24	M6	54	32.5	49	22.5	4
60	76	38	30	M6	69.5	38	61	30	4

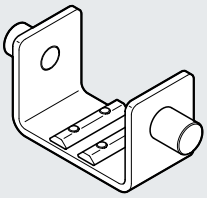
For size	L1	L2	L3	L4	⌀1	CRC[1)]	Weight [g]	Part no.	Type
25	58	20	30	4	2.5	1	110	**5172843**	**EAHA-P2-25**
32	64	20	30	4	2.5	1	165	**5173020**	**EAHA-P2-32**
45	68	20	30	6	2.5	1	340	**5172353**	**EAHA-P2-45**
60	87	25	40	6	4	1	560	**5173082**	**EAHA-P2-60**

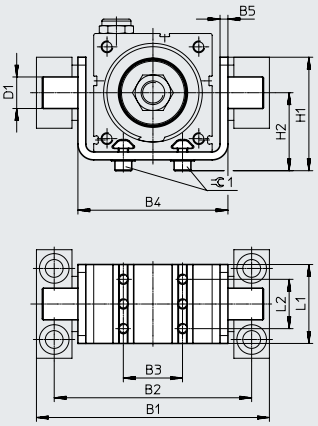
1) Corrosion resistance class CRC 1 to Festo standard FN 940070
Low corrosion stress. Dry indoor application or transport and storage protection. Also applies to parts behind coverings, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

Accessories

Swivel mounting EAHS

Material:
Galvanised steel
RoHS-compliant





The position is freely selectable along the entire cylinder length L2 (→ Page 14).

Dimensions and ordering data

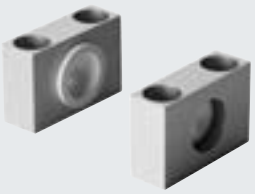
For size	B1	B2	B3 ±0.1	B4	B5	D1 ø e9	H1
25	61	50	14	35	2.5	8	30
32	68	57	16	42	2.5	8	32
45	98	83	24	62	4	12	44.5
60	118	100	30	76	4	16	57

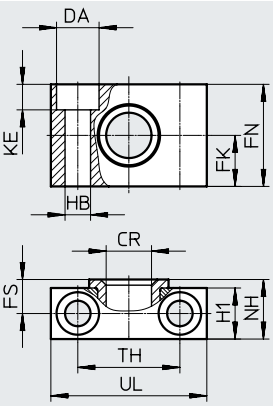
For size	H2	L1	L2	⫩1	CRC[1]	Weight [g]	Part no.	Type
25	20	30	20	2.5	1	70	**5125383**	**EAHS-P2-25**
32	23.5	30	20	2.5	1	75	**5125041**	**EAHS-P2-32**
45	29.5	30	20	2.5	1	165	**5125167**	**EAHS-P2-45**
60	39	40	25	4	1	305	**5125281**	**EAHS-P2-60**

1) Corrosion resistance class CRC 1 to Festo standard FN 940070
Low corrosion stress. Dry indoor application or transport and storage protection. Also applies to parts behind coverings, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

Trunnion support LNZG

Material:
Trunnion support: Anodised aluminium
Plain bearing: Plastic
Free of copper and PTFE
RoHS-compliant





Dimensions and ordering data

For size	CR ø D11	DA ø H13	FK ø ±0.1	FN	FS	H1	HB ø H13	KE	NH	TH ±0.2	UL	CRC[1]	Weight [g]	Part no.	Type
25, 32	8	8	10	20	7.5	11	4.5	4.6	13	20	30	2	26	**1434912**	**LNZG-16**
45	12	11	15	30	10.5	15	6.6	6.8	18	32	46	2	83	**32959**	**LNZG-32**
60	16	15	18	36	12	18	9	9	21	36	55	2	129	**32960**	**LNZG-40/50**

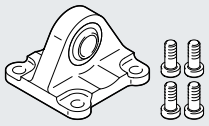
1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation can occur. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

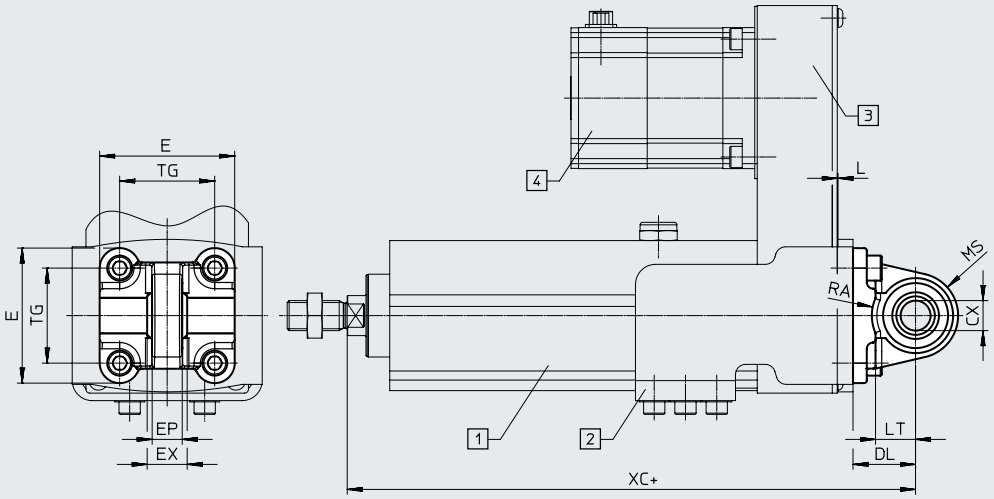
Accessories

Swivel flange SNCS

Material:
Die-cast aluminium

Free of copper and PTFE
RoHS-compliant





[1] Electric cylinder EPCC
[2] Adapter kit EAHA
[3] Motor mounting kit EAMM-U
[4] Motor EMME, EMMS
+ = plus stroke length

Dimensions and ordering data

For size	CX	DL ±0.2	E	L	EP ±0.2	EX	LT
45	$10^{+0.13}$	22	$45_{+0.2/-0.5}$	3	10.5	14	13
60	$12^{+0.15}$	25	$54_{-0.5}$	3	12	16	16

For size	MS	RA	TG	XC	CRC[1)]	Weight [g]	Part no.	Type
45	15	14.5	32.5	154.9	1	86	**174397**	**SNCS-32**
60	17	17.5	38	182	1	122	**174398**	**SNCS-40**

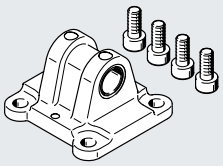
1) Corrosion resistance class CRC 1 to Festo standard FN 940070
Low corrosion stress. Dry indoor application or transport and storage protection. Also applies to parts behind coverings, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

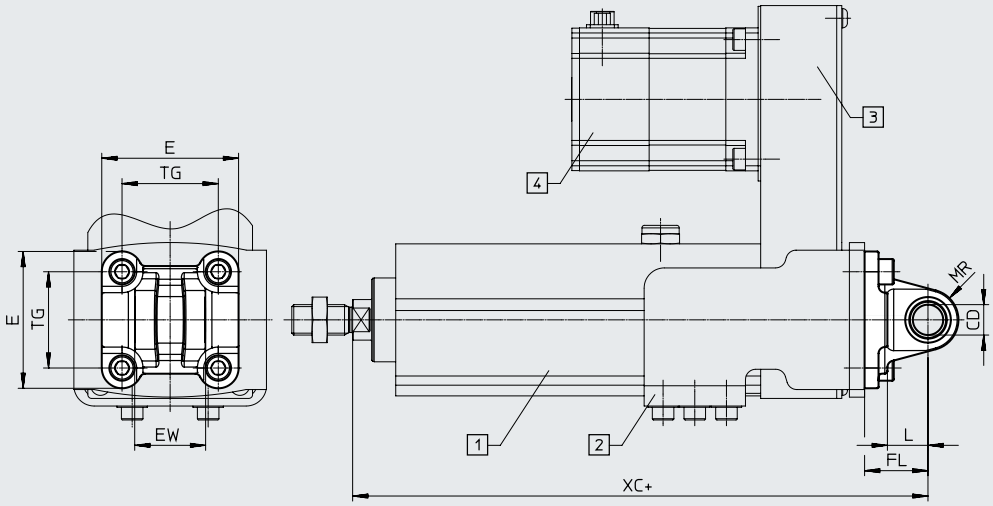
Accessories

Swivel flange SNCL

Material:
Wrought aluminium alloy

Free of copper and PTFE
RoHS-compliant





[1] Electric cylinder EPCC
[2] Adapter kit EAHA
[3] Motor mounting kit EAMM-U
[4] Motor EMME, EMMS
\+ = plus stroke length

Dimensions and ordering data

For size	CD Ø H10	E	EW h12	FL ±0.2	L	LT
25	6	$27.5_{-0.6}$	12_{h12}	16	3	10
32	8	$34.5_{-0.6}$	16_{h12}	20	3	14
45	10	$45_{+0.2/-0.5}$	$26_{-0.2/-0.6}$	22	3	13
60	12	$54_{-0.5}$	$28_{-0.2/-0.6}$	25	3	16

For size	MR	TG	XC	CRC[1)]	Weight [g]	Part no.	Type
25	6	18	115.7	2	21	**537791**	**SNCL-16**
32	8	22	133.9	2	38	**537792**	**SNCL-20**
45	10	32.5	154.9	1	71	**174404**	**SNCL-32**
60	12	38	182	1	95	**174405**	**SNCL-40**

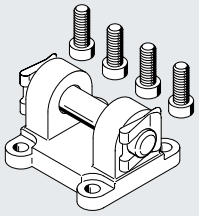
1) Corrosion resistance class CRC 1 to Festo standard FN 940070
Low corrosion stress. Dry indoor application or transport and storage protection. Also applies to parts behind coverings, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).
Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation can occur. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

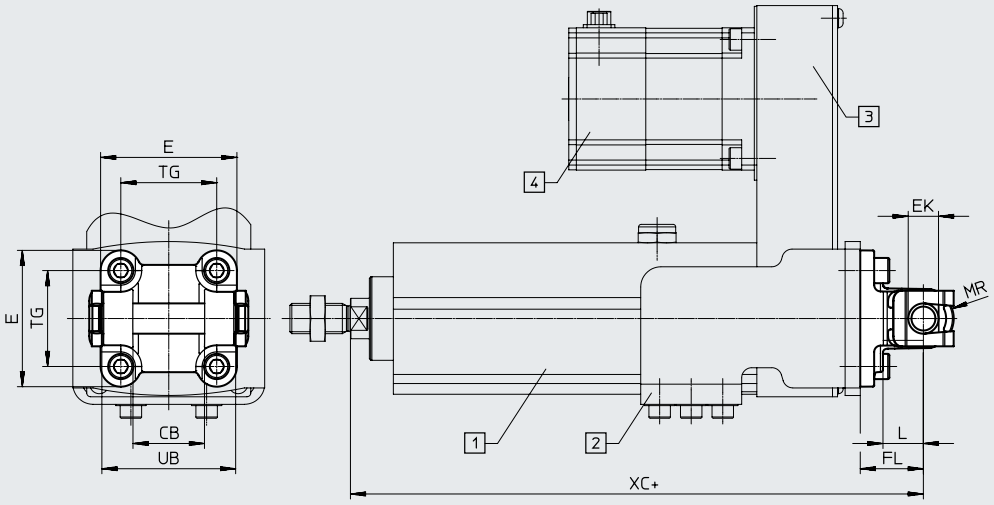
Accessories

Swivel flange SNCB

Material:
Die-cast aluminium

Free of copper and PTFE
RoHS-compliant





[1] Electric cylinder EPCC
[2] Adapter kit EAHA
[3] Motor mounting kit EAMM-U
[4] Motor EMME, EMMS
\+ = plus stroke length

Dimensions and ordering data

For size	CB	E	EK	FL	L	LT	MR
			Ø				
	H14		H10/e8	±0.2			–0.5
45	26	$45^{+0.2/-0.5}$	10	22	3	13	8.5
60	28	$54_{-0.5}$	12	25	3	16	12

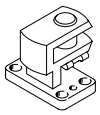
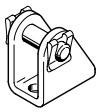
For size	TG	UB	XC	CRC[1)]	Weight	Part no.	Type
		h14			[g]		
45	32.5	45	154.9	1	103	**174390**	**SNCB-32**
60	38	52	182	1	155	**174391**	**SNCB-40**

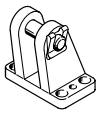
1) Corrosion resistance class CRC 1 to Festo standard FN 940070
Low corrosion stress. Dry indoor application or transport and storage protection. Also applies to parts behind coverings, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

Accessories

Ordering data – Mounting components

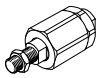
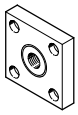
Data sheets → Internet: clevis foot

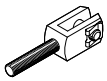
Designation	For size	Part no.	Type
Right-angle clevis foot LQG			
	45	**31768**	**LQG-32**
	60	**31769**	**LQG-40**
Clevis foot LBN			
	25	**6058**	**LBN-12/16**
	32	**6059**	**LBN-20/25**
	45	**195860**	**LBN-32**
	60	**195861**	**LBN-40**

Designation	For size	Part no.	Type
Clevis foot LBG			
	45	**31761**	**LBG-32**
	60	**31762**	**LBG-40**

Ordering data – Piston rod attachments

Data sheets → Internet: piston rod attachment

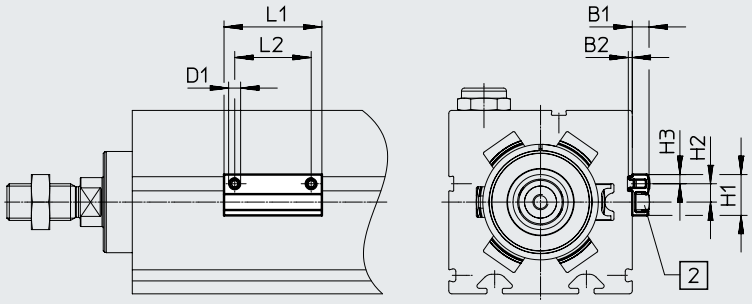
Designation	For size	Part no.	Type
Rod eye SGS			
	25	**9254**	**SGS-M6**
	32	**9255**	**SGS-M8**
	45	**9261**	**SGS-M10x1.25**
	60	**9262**	**SGS-M12x1.25**
Self-aligning rod coupler FK			
	25	**2061**	**FK-M6**
	32	**2062**	**FK-M8**
	45	**6140**	**FK-M10x1.25**
	60	**6141**	**FK-M12x1.25**
Coupling piece KSG			
	45	**32963**	**KSG-M10x1.25**
	60	**32964**	**KSG-M12x1.25**

Designation	For size	Part no.	Type
Rod clevis SG			
	25	**3110**	**SG-M6**
	32	**3111**	**SG-M8**
	45	**6144**	**SG-M10x1.25**
	60	**6145**	**SG-M12x1.25**
Rod clevis SGA			
	45	**32954**	**SGA-M10x1.25**
	60	**10767**	**SGA-M12x1.25**

Accessories

Sensor bracket EAPM-L2

Material:
Anodised wrought aluminium alloy
RoHS-compliant



[2] Proximity sensor

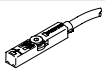
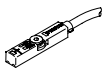
Dimensions and ordering data

For size	B1	B2	D1	H1	H2
25, 32, 45, 60	5.5	1.3	M4	13.4	6

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

Ordering data – Proximity sensors for T-slot, magneto-resistive

Data sheets → Internet: smt

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

Ordering data – Connecting cables

Data sheets → Internet: nebu

	Electrical connection, left	Electrical connection, right	Cable length [m]	Part no.	Type
	Straight socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	**541333**	**NEBU-M8G3-K-2.5-LE3**
			5	**541334**	**NEBU-M8G3-K-5-LE3**
	Angled socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	**541338**	**NEBU-M8W3-K-2.5-LE3**
			5	**541341**	**NEBU-M8W3-K-5-LE3**