

Electric cylinder unit EPCE-TB

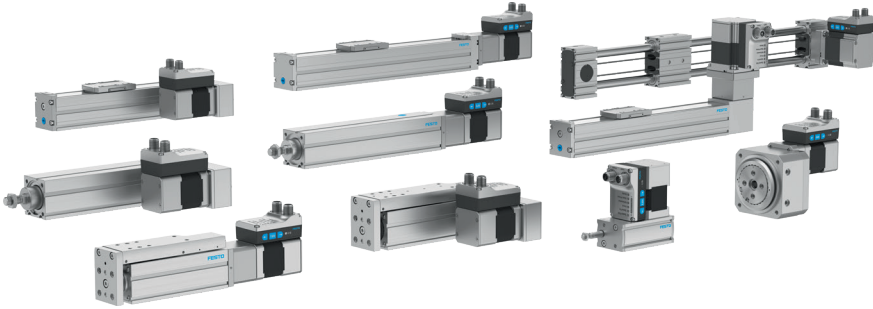
FESTO



Characteristics

At a glance

Further information → [epce](#)

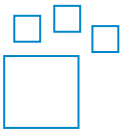


The simplicity of pneumatics is now combined for the first time with the advantages of electric automation thanks to the Simplified Motion Series. These integrated drives are the perfect solution for users who are looking for an electric alternative for very simple motion and positioning tasks between two mechanical end positions, but don't want the commissioning process for traditional electric drive systems that can often be quite complex.

- No external servo drive: all necessary electronic components combined in the integrated drive
- Two control options integrated as standard: digital I/O and IO-Link®
- Complete solution for simple movements between mechanical end positions
- Simplified commissioning: all parameters can be manually set directly on the drive
- No special knowledge required for commissioning
- Minimal zero stroke and extremely compact design make this product the perfect choice for applications where space is at a premium
- Innovative interpretation of toothed belt technology for maximum dynamic response and minimal positioning times
- Ideal for fast movement in sorting, distribution and testing applications

Ordering data - modular system

Further information → [epce](#)



Configurable product

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

Engineering tools

Further information → [engineering tools](#)



Save time with engineering tools Smart Engineering for the optimal solution. Our goal is to increase your productivity. Our engineering tools play an integral part in this. They help you size your system correctly, tap into unimagined productivity reserves and generate additional productivity along the entire value chain. In every phase of your project, from the initial contact to the modernisation of your machine, you will come across a number of different tools which will be of use to you.

Simplified Motion Series - Solution Finder

- Selection tool for simple electric drive solutions from the Simplified Motion Series: This Solution Finder makes finding solutions for electric motion tasks child's play. All you have to do is enter the main application parameters like stroke, payload and motion type, and the system suggests the best solution for your simple motion task in seconds. Then you can simply add it to your shopping basket with just one click and order it online.

Diagrams

Further information → [epce](#)

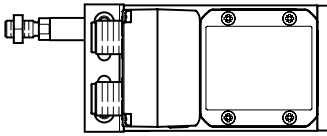


The diagrams shown in this document are also available online. These can be used to display precise values.

Characteristics

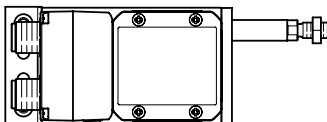
Piston rod, front left

[FL] Piston rod with male thread



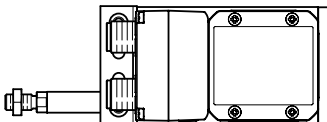
Piston rod, rear left

[BL] Piston rod with male thread



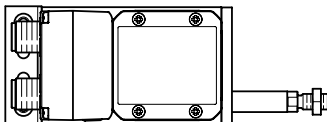
Piston rod, front right

[FR] Piston rod with male thread

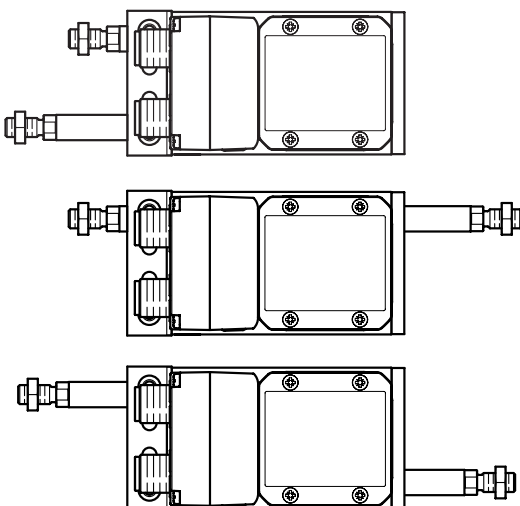


Piston rod, rear right

[BR] Piston rod with male thread



Overview



Additional piston rod variants

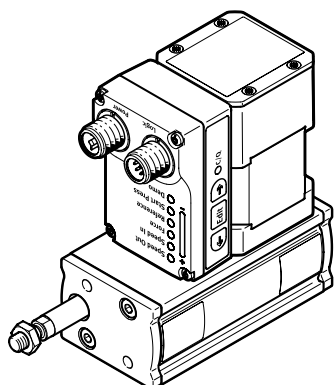
- Double piston rod
- Through piston rod
- Piston rods acting in opposite directions

Variants with 3 or 4 piston rods available.

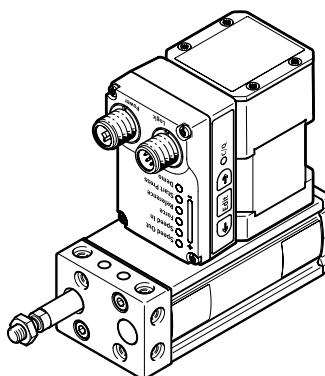
Characteristics

Cover variant

[] Standard

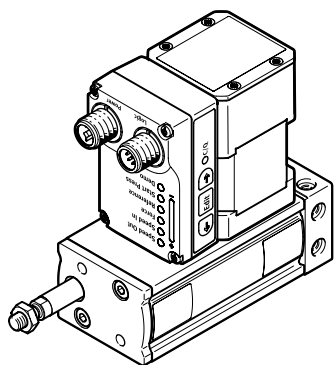


[MF] Multimount, front



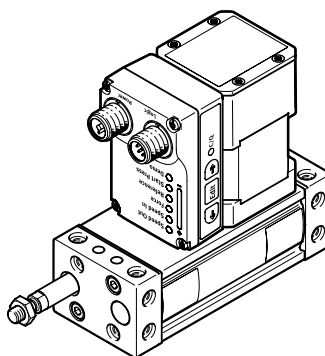
In this variant, additional lateral female threads with centring diameter as well as through-holes are available.

[MB] Multimount, rear



In this variant, additional lateral female threads with centring diameter as well as through-holes are available.

[MD] Multimount, both ends



In this variant, additional lateral female threads with centring diameter as well as through-holes are available.

Motor type

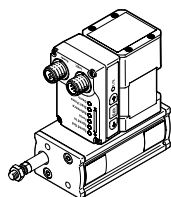
IO-Link

The motor is integrated into the drive and can be easily commissioned according to the “plug and work” principle. The relevant parameters can be set directly on the drive. Control is via digital I/O or IO-Link.

Control panel

When aligning the motor, make sure that the buttons (for parameterisation and control) can be used.

[H1] Integrated



Bus protocol/activation

PNP or NPN switching outputs can be selected for actuation.

End-position sensing

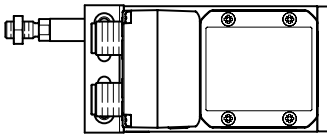
End position feedback similar to a conventional proximity switch, integrated as standard

Characteristics

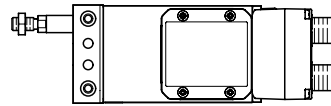
Cable outlet direction

Describes the alignment of the motor on the drive. Depending on the alignment, the connecting cables can be routed according to the customer's specifications. The cables are positioned at a 45° angle to the axis.

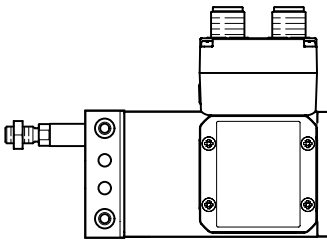
[] Standard



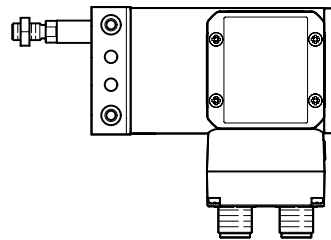
[B] Rear



[L] Left



[R] Right



Electrical accessories

Connecting cable between the motor and IO-Link master

Type code

001	Series	
EPCE	Toothed belt	
002	Drive system	
TB	Toothed belt	
003	Size	
45	45	
60	60	
004	Stroke [mm]	
5	5	
10	10	
15	15	
20	20	
25	25	
30	30	
35	35	
40	40	
45	45	
50	50	
60	60	
80	80	
005	Piston rod, front left	
	None	
FL	Piston rod with male thread	
006	Piston rod, rear left	
	None	
BL	Piston rod with male thread	
007	Piston rod, front right	
	None	
FR	Piston rod with male thread	

008	Piston rod, rear right	
	None	
BR	Piston rod with male thread	
009	Cover variant	
	Standard	
MB	Multimount, rear	
MD	Multimount, both ends	
MF	Multimount, front	
010	Motor type	
ST	Stepper motor ST	
011	Controller	
M	Integrated	
012	Control panel	
H1	Integrated	
013	Bus protocol/activation	
PLK	PNP and IO-Link®	
NLK	NPN and IO-Link®	
014	End-position sensing	
AA	With integrated end-position sensing	
015	Cable outlet direction	
	Standard	
L	Left	
R	Right	
B	Rear	
016	Electrical accessories	
	None	
L1	Adapter for operation as IO-Link® device	

Datasheet

General technical data		
Size	45	60
Design	Electric cylinder, With toothed belt, With integrated drive	
Protection against torque/ guide	With plain-bearing guide	
Piston-rod end	Male thread	
Piston rod thread	M6	M10x1.25
Stroke	10 mm; 20 mm; 30 mm; 50 mm	10 mm; 20 mm; 30 mm; 50 mm; 80 mm
Stroke reserve	0 mm	
Additional functions	User interface Built-in end-position sensing	
Display	LED	
Referencing	Positive fixed stop block Negative fixed stop block	
Type of mounting ¹⁾	With through-hole Via female thread Via centring sleeve With accessories	
Mounting position	optional	
Reference value operational performance	50 ... 500 km	50 ... 800 km
Max. cable length	15 m outputs 15 m inputs 20 m with IO-Link® operation	

1) Through-hole and centring sleeve only with multimount cover.

Mechanical data		
Size	45	60
Reference value effective load, horizontal	5 kg	10 kg
Reference value effective load, vertical	2.5 kg	5 kg
Max. feed force F _x	85 N	150 N
Max. speed ¹⁾	0.44 m/s	0.6 m/s
Speed "Speed press"	0.02 m/s	
Max. acceleration ²⁾	9 m/s ²	
Repetition accuracy	±0.05 mm	
Impact energy in end positions	0.003 J	0.016 J
Position detection	Motor encoder	

1) Adjustable in steps of 10%.

2) Parameter cannot be changed.

Toothed belt		
Size	45	60
Toothed-belt pitch	2	
Toothed-belt stretch	0.31%	0.375%
Effective diameter of drive pin- ion	10.18 mm	
Feed constant	32 mm/U	

Datasheet

Electrical data		
Size	45	60
Nominal voltage DC	24 V	
Permissible voltage fluctuations	+/- 15%	
Nominal current	3 A	5.3 A
Max. current consumption	3 A	5.3 A
Max. current consumption, logic	300 mA	
Rotor position sensor	Absolute single-turn encoder	
Rotor position sensor, encoder measuring principle	Magnetic	
Rotor position transducer resolution	16 bit	

Interfaces		
Size	45	60
Parameterisation interface	IO-Link, User interface	
Working range of logic input	24 V	
Number of digital logic inputs	2	
Features of logic input	Configurable Not galvanically isolated	
Switching logic for inputs	NPN (negative switching) PNP (positive switching)	
Specification logic input	Based on IEC 61131-2, type 1	
Max. current digital logic outputs	100 mA	
Number of digital logic outputs 24 V DC	2	
Features of digital logic outputs	Configurable Not galvanically isolated	
Switching logic for outputs	NPN (negative switching) PNP (positive switching)	

Technical data IO-Link®		
Size	45	60
IO-Link, SIO-Mode support	Yes	
IO-Link, communication mode	COM3 (230.4 kBaud)	
IO-Link, connection technology	Plug	
IO-Link, Port class	A	
IO-Link, Number of ports	1	
IO-Link, Process data length OUT	2 bytes	
IO-Link, Process data content OUT	Move in 1 bit Move out 1 bit Quit Error 1 bit Move intermediate 1 bit	Move in 1 bit Quit Error 1 bit Move out 1 bit Move intermediate 1 bit
IO-Link, Process data length IN	2 bytes	
IO-Link, Process data content IN	State In 1 bit State Out 1 bit State Move 1 bit State Device 1 bit State Intermediate 1 bit	State In 1 bit State Move 1 bit State Device 1 bit State Intermediate 1 bit State Out 1 bit
IO-Link, Service data IN	Speed 32 bit Position 32 bit Force 32 bit	
IO-Link, Min. cycle time	1 ms	
IO-Link, Data storage required	0.5 kB	
IO-Link, Protocol version	Device V 1.1	

Datasheet

Operating and environmental conditions		
Size	45	60
Ambient temperature	0 ... 50°C	
Storage temperature	-20 ... 60°C	
Note on ambient temperature	Power must be reduced by 2% per K at ambient temperatures above 30°C.	
Temperature monitoring	Switch-off for excessive temperature Integrated precise CMOS temperature sensor with analogue output	
Relative air humidity	0 - 90%	
Insulation protection class	B	
Protection class	III	
Degree of protection	IP40	
Duty cycle	100%	
CE mark (see declaration of conformity) ¹⁾	To EU EMC Directive In accordance with EU RoHS Directive	
CE marking (see declaration of conformity) ²⁾	To UK RoHS instructions To UK instructions for EMC	
KC mark	KC-EMV	
Approval	RCM trademark	
Vibration resistance	Transport application test with severity level 1 to FN 942017-4 and EN 60068-2-6	
Shock resistance	Shock test with severity level 1 to FN 942017-5 and EN 60068-2-27	
Maintenance interval	Life-time lubrication	

1) More information www.festo.com/catalogue/epce → Support/Downloads.

2) More information www.festo.com/catalogue/epce → Support/Downloads.

Weight		
Size	45	60
Basic weight for 0 mm stroke ¹⁾	775 g; 813 g	1,350 g; 1,407 g
Additional weight per 10 mm stroke	29 g	46 g
Moving mass for 0 mm stroke ²⁾	83 g; 87 g	188 g; 197 g
Additional moving mass per 10 mm stroke	4.55 g	9.75 g

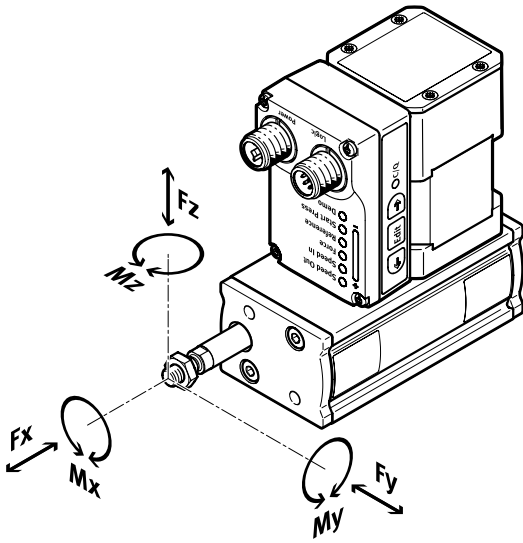
1) EPCE-.../EPCE-...-MF (with cover variant)

2) EPCE-.../EPCE-...-MF (with cover variant)

Materials		
Size	45	60
Material housing	Anodised wrought aluminium alloy	
Material piston rod	High-alloy stainless steel	
Material toothed belt	Polychloroprene with glass fibre	
LABS (PWIS) conformity	VDMA24364 zone III	
Note on materials	RoHS-compliant	

Datasheet

Max. permissible loads on the piston rod



Size	45	60
Max. feed force Fx	85 N	150 N
Max. moment Mx	0 Nm	
Max. moment My	0.4 Nm	1 Nm
Max. moment Mz	0.4 Nm	1 Nm

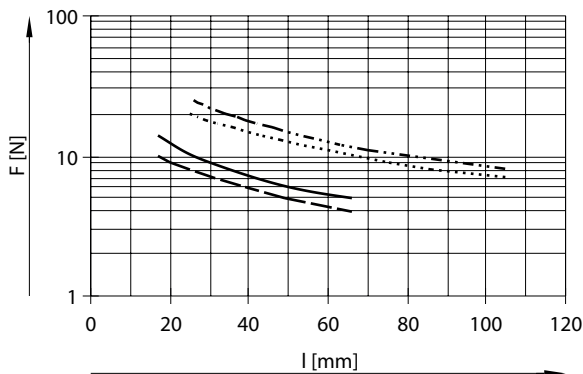
Calculation of the load comparison factor

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

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

F1 / M1 = dynamic value
 F2 / M2 = maximum value

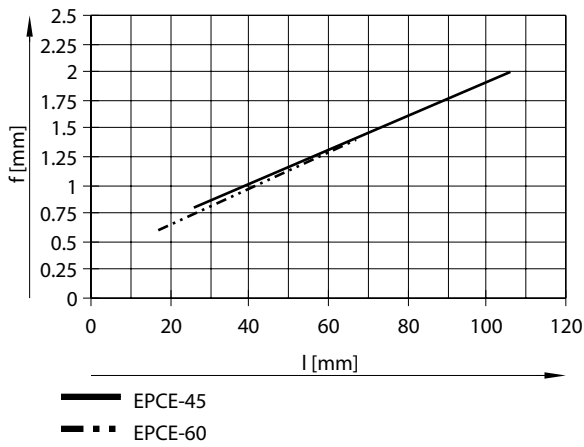
Max. permissible transverse forces F on the piston rod as a function of projection l



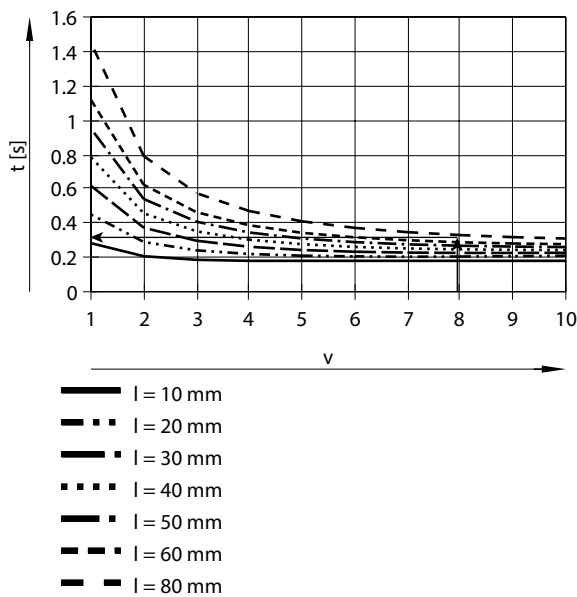
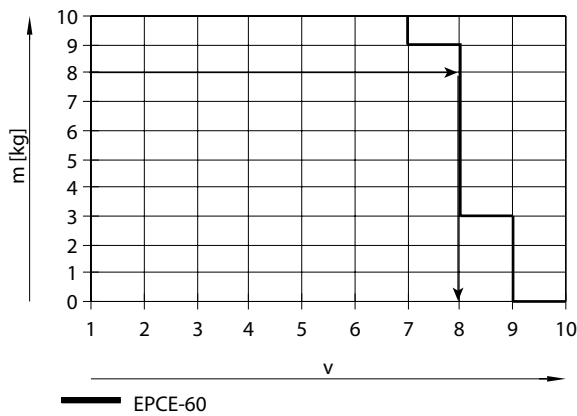
- EPCE-45
- - - EPCE-60
- ■ EPCE-45-M
- • • EPCE-60-M

Datasheet

Piston rod deflection f as a function of projection A



Sizing example



Application data:

- Payload: 8 kg
- Mounting position: horizontal
- Stroke: 60 mm
- Max. permissible positioning time: 0.5 s (one direction)

Step 1:

Smallest possible size from the table "Mechanical data": EPCE-TB-60

Step 2:

Selecting the max. speed level v for payload m (see diagram on the left)

Step 3:

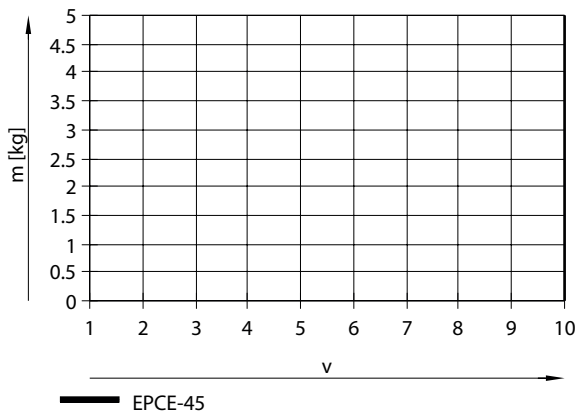
Reading off the min. positioning time t for stroke l (see diagram on the left)

Result: the application can be realised using EPCE-TB-60-60. A minimum positioning time (one direction) of 0.3 s is achieved.

Longer positioning times can be selected at any time using a lower speed level.

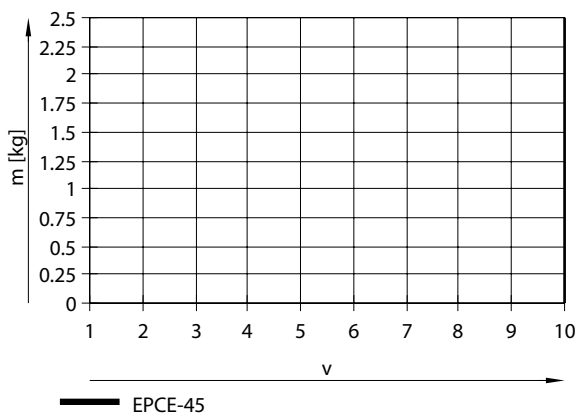
Datasheet

Mass m as a function of speed level v, horizontal mounting position for EPCE-45



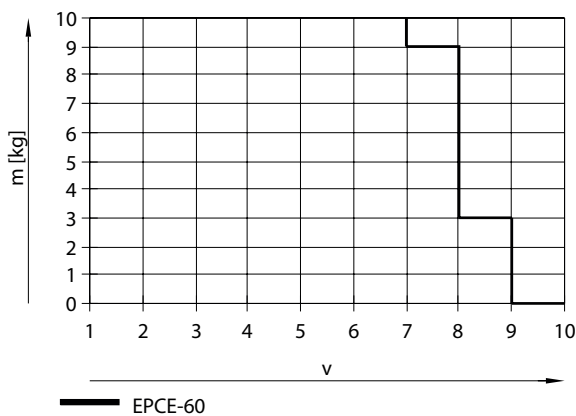
Note:
The lines represent the maximum values. The lower speed levels can be set at any time.

Mass m as a function of speed level v, vertical mounting position for EPCE-45



Note:
The lines represent the maximum values. The lower speed levels can be set at any time.

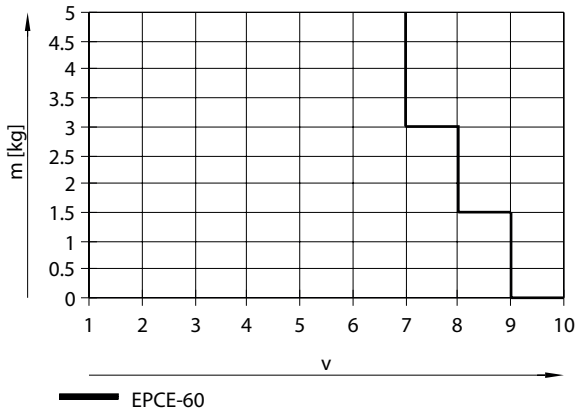
Mass m as a function of speed level v, horizontal mounting position for EPCE-60



Note:
The lines represent the maximum values. The lower speed levels can be set at any time.

Datasheet

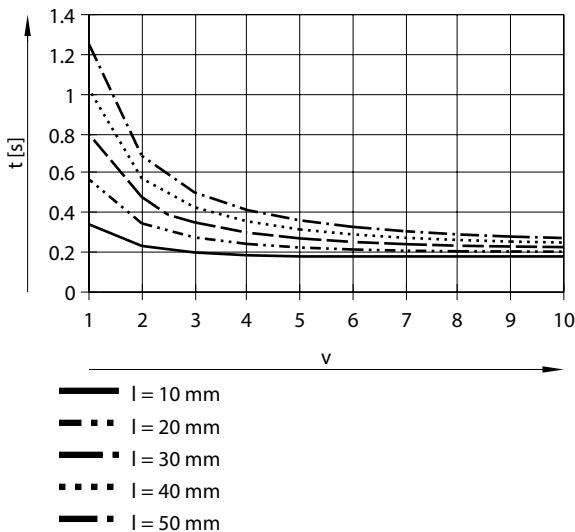
Mass m as a function of speed level v , vertical mounting position for EPCE-60



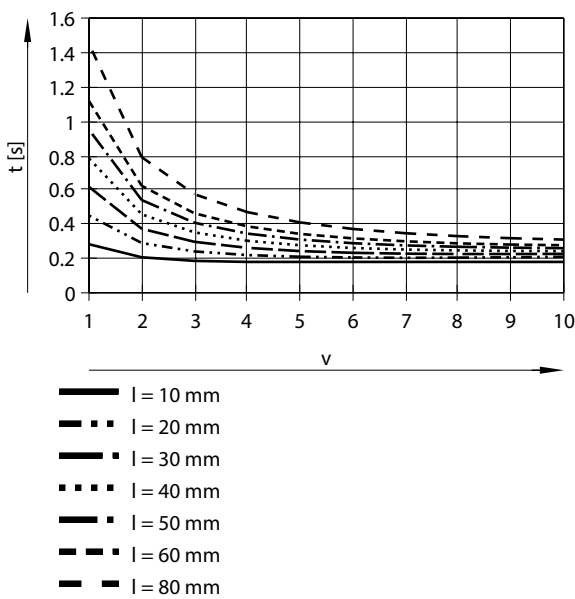
Note:

The lines represent the maximum values. The lower speed levels can be set at any time.

Positioning time t as a function of speed level v and stroke l EPCE-45

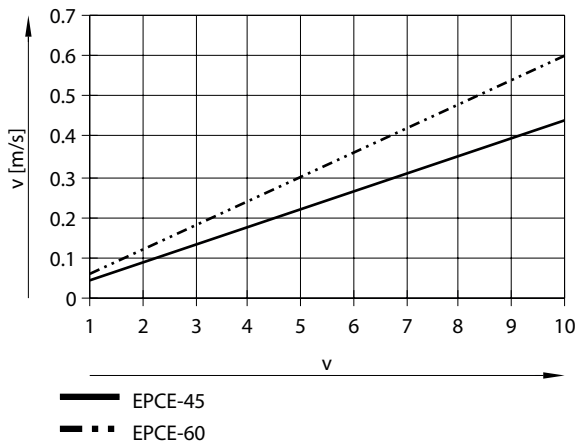


Positioning time t as a function of speed level v and stroke l EPCE-60

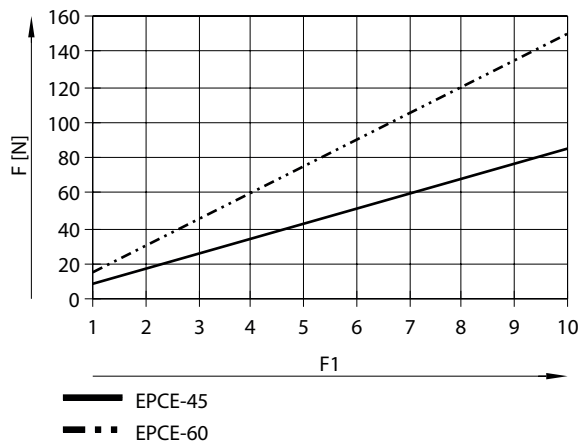


Datasheet

Speed v as a function of speed level v



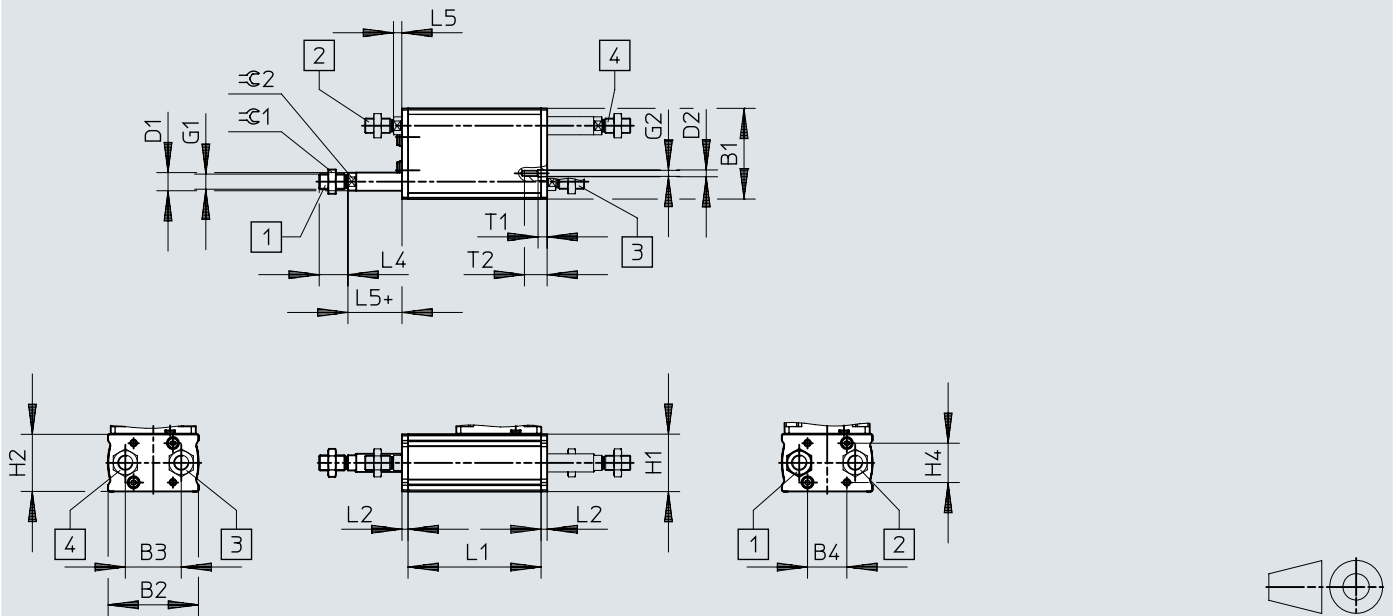
Feed force F as a function of force level $F1$



Dimensions

Dimensions – With cover variant – standard

Download CAD data → www.festo.com



- [1] EPCE-TB-...-FL
- [2] EPCE-TB-...-FR
- [3] EPCE-TB-...-BL
- [4] EPCE-TB-...-BR
- [5] + = plus stroke length

	B1	B2	B3	B4	D1	D2	G1	G2	H1
	+0,4	±0,1			∅ h8	∅ H13			+0,3/-0,1
EPCE-45	45	44,8	28	20	8	4,5	M6	M4	34
EPCE-60	60	59,8	37	26	12	4,5	M10x1,25	M4	38

	H2	H4	L2	L4	L5	T1	T2	≅C 1	≅C 2
	±0,1		±0,1						
EPCE-45	33,7	22,5	4	12	4,7+0,2/-1,2	6	15	10	7
EPCE-60	37,7	26	4	19	6+0,2/-1,3	6	15	17	10

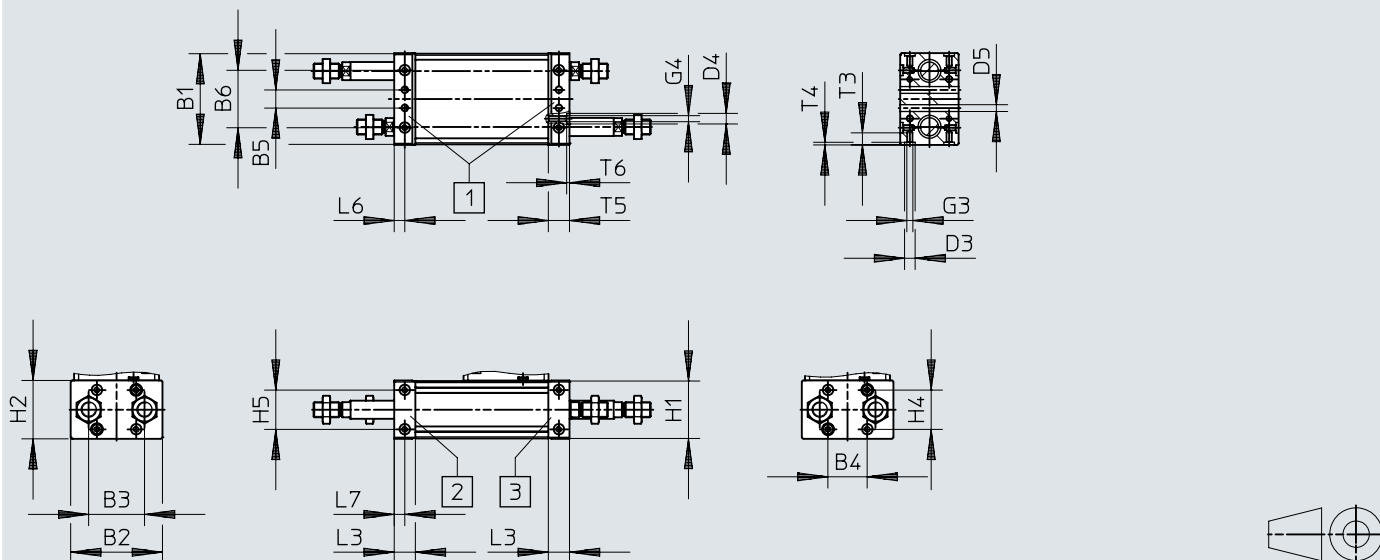
	L ¹⁾	L1		L ¹⁾	L1
		±0,1			±0,1
EPCE-45	5	59,5	EPCE-60	5	68
	10	59,5		10	68
	15	69,5		15	78
	20	69,5		20	78
	25	79,5		25	88
	30	79,5		30	88
	35	89,5		35	98
	40	89,5		40	98
	45	99,5		45	108
	50	99,5		50	108
			60	118	
			80	138	

1) Stroke
2) Orientation of the spanner flat 2 is not clear

Dimensions

Dimensions – With cover variant – multimount

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[1] EPCE-TB-...-MD

[2] EPCE-TB-...-MF

[3] EPCE-TB-...-M

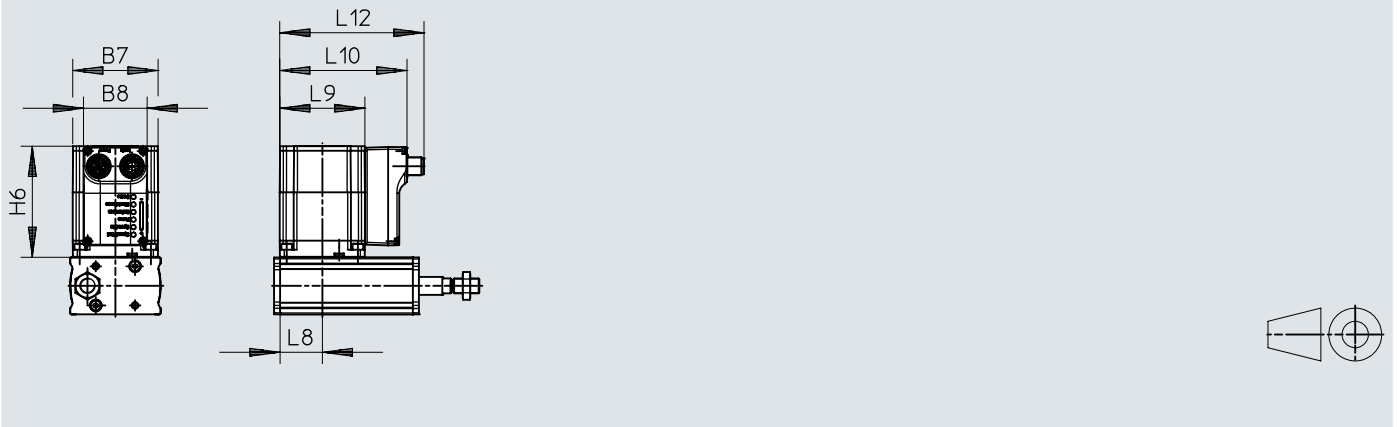
[4] For size 60, the through-holes cannot be used in the following combinations: “through-hole at the front” not in combination with stroke 5 or 10 mm and motor mounting variant “standard” (front) and for “through-hole at the rear”, not in combination with motor mounting variant “rear”.

	B1	B2	B3	B4	B5	B6	D3 ∅ H7	D4 ∅ H7	D5 ∅ H13	G3	G4
	+0,4	±0,1									
EPCE-45	45	45,7	28	20	10	32,5	7	7	4,5	M4	M4
EPCE-60	60	60,7	37	26	12	38	7	7	4,5	M4	M4

	H1	H2	H4	H5	L3	L6	L7	T3	T4	T5	T6
	+0,3/-0,1	±0,1			±0,1				-0,1		-0,1
EPCE-45	34	34,6	22,5	16	14	7	7	8	1,8	14	1,8
EPCE-60	38	38,6	26	26	14	7	7	8	1,8	14	1,8

Dimensions

Dimensions – Motor mounting

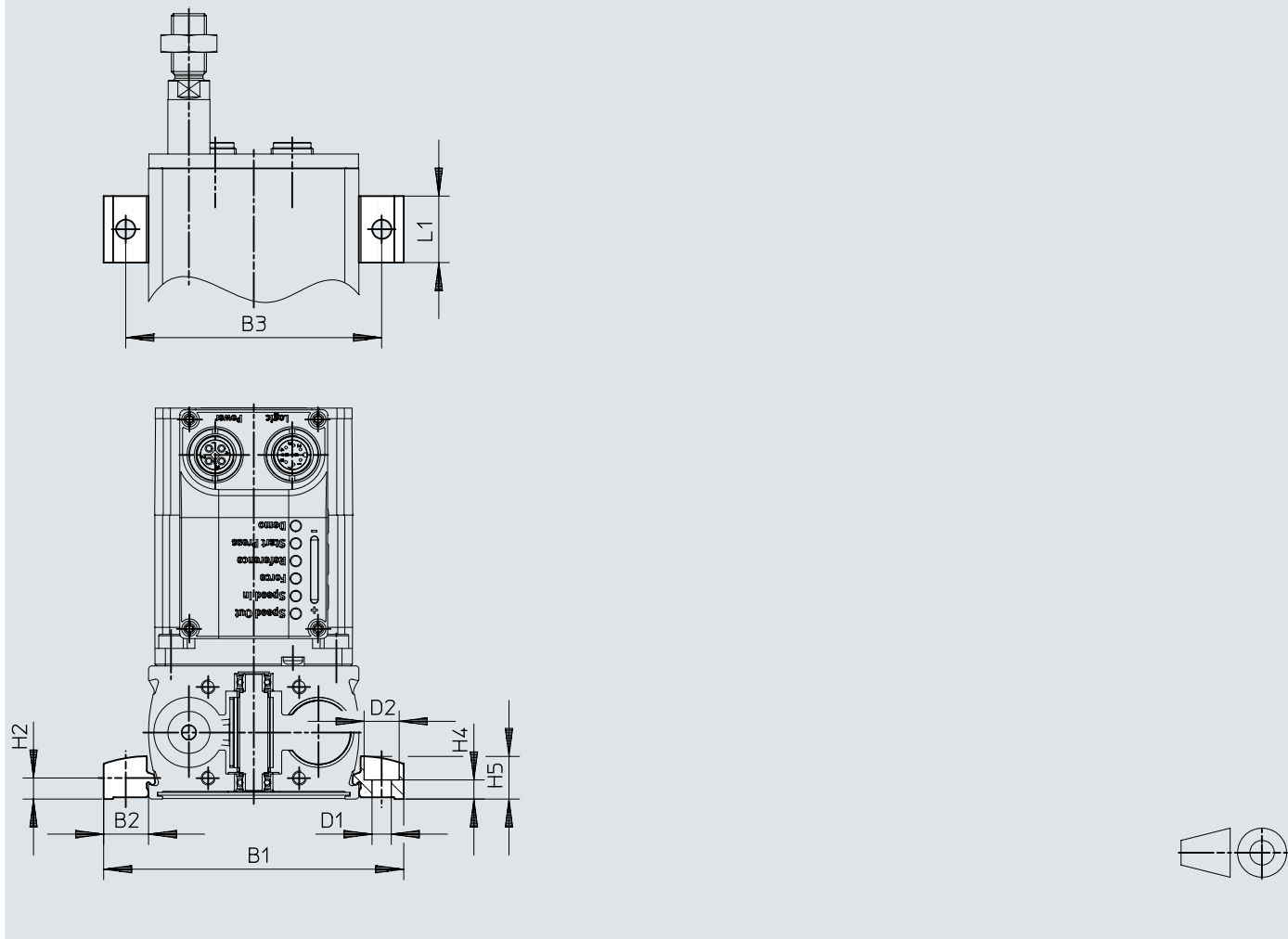
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	B7	B8	H6	L8	L9	L10	L12
	±0,3	±0,25			±0,3	±0,6	±0,8
EPCE-45	42,3	42,2	65±1,1	21	42,3	70,1	81,3
EPCE-60	56,6	42,2	73,5±0,9	28	56,6	84,5	95,6

Dimensions

Dimensions – Profile mounting EAHF-L2-...-P-S

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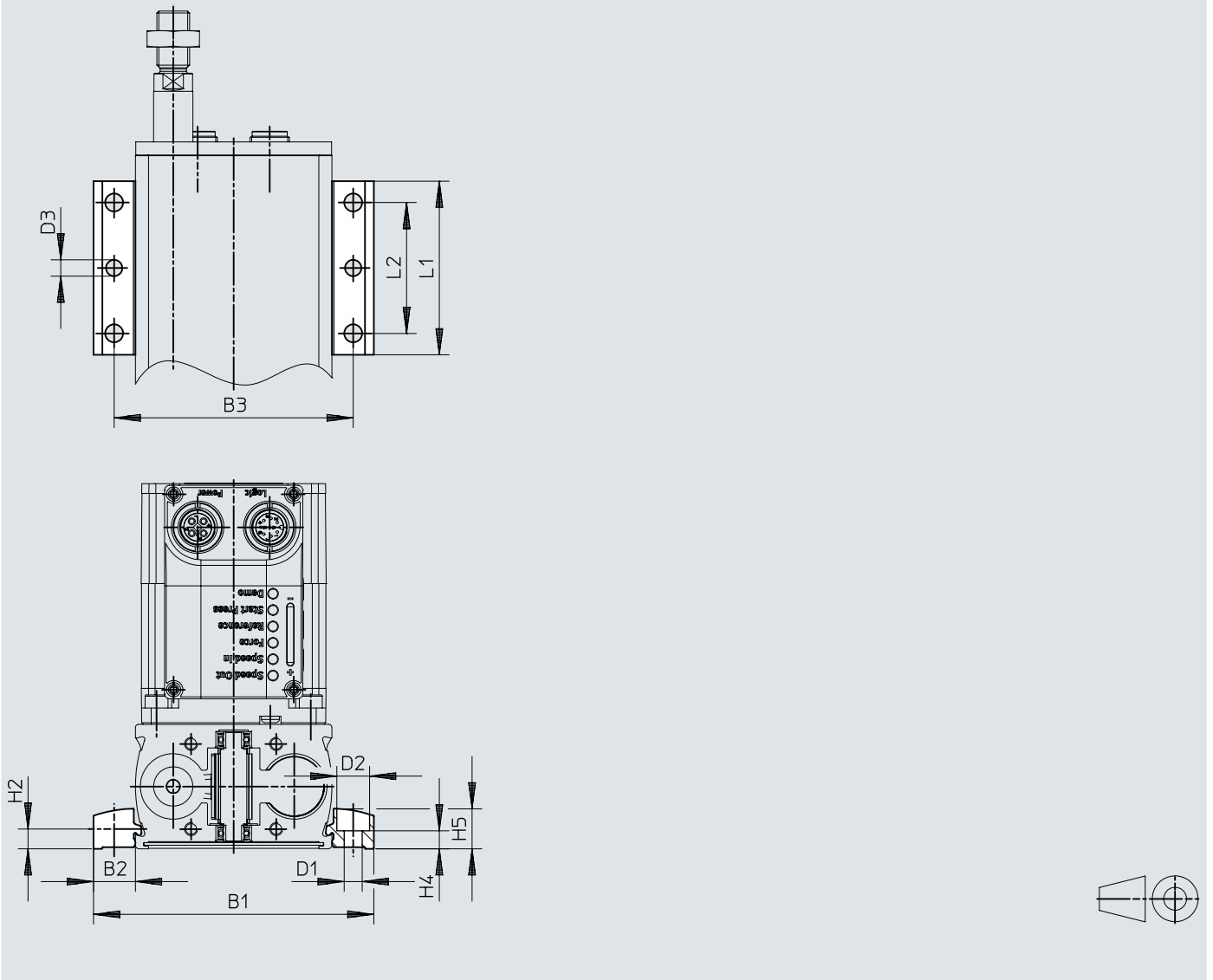


		B1	B2	B3	D1 ∅ H13	D2 ∅ H13	H2	H4 ±0,1	H5	L1
EAHF-L2-45-P-S	EPCE-45	70,6	12,8	58	5,5	10	6,1	5,5	12,2	19
EAHF-L2-45-P-S	EPCE-60	85,6	12,8	73	5,5	10	6,1	5,5	12,2	19

Dimensions


Dimensions – Profile mounting EAHF-L2-...-P


Download CAD data → www.festo.com



		B1	B2	B3	D1 ∅ H13	D2 ∅ H13	D3 ∅	H2	H4 ±0,1	H5	L1	L2
EAHF-L2-45-P	EPCE-45	70,6	12,8	58	5,5	10	5	6,1	5,5	12,2	53	40
EAHF-L2-45-P	EPCE-60	85,6	12,8	73	5,5	10	5	6,1	5,5	12,2	53	40

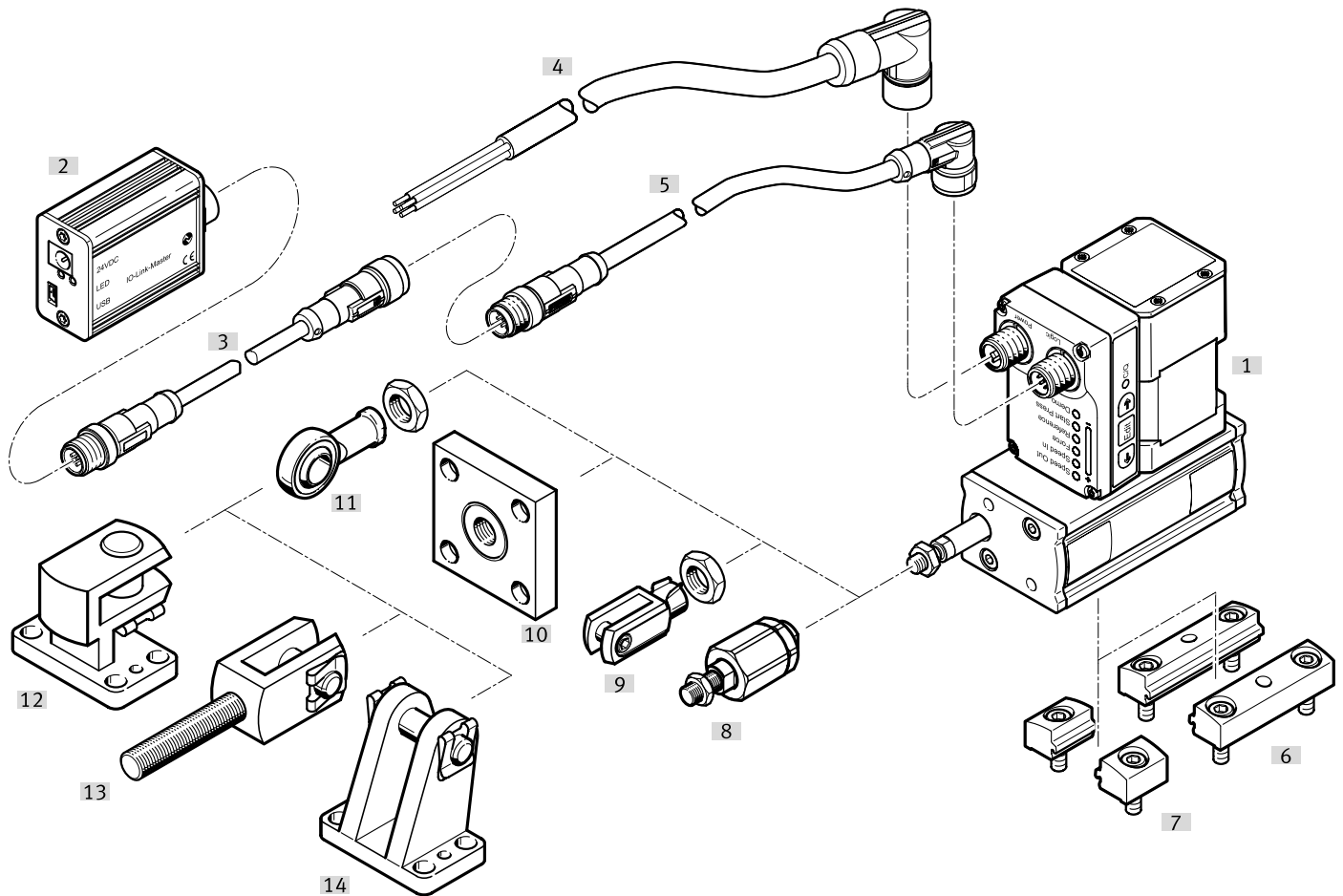
Ordering data

Ordering data						
	Size	Stroke	Cover variant	Part no.	Type	
	45	10 mm		8101539	EPCE-TB-45-10-FL-ST-M-H1-PLK-AA	
		20 mm		8101540	EPCE-TB-45-20-FL-ST-M-H1-PLK-AA	
			Multimount, front	8101544	EPCE-TB-45-20-FL-MF-ST-M-H1-PLK-AA	
		30 mm		8101541	EPCE-TB-45-30-FL-ST-M-H1-PLK-AA	
			Multimount, front	8101545	EPCE-TB-45-30-FL-MF-ST-M-H1-PLK-AA	
		50 mm		8101542	EPCE-TB-45-50-FL-ST-M-H1-PLK-AA	
		Multimount, front	8101546	EPCE-TB-45-50-FL-MF-ST-M-H1-PLK-AA		
	60	10 mm			8102163	EPCE-TB-60-10-FL-ST-M-H1-PLK-AA
				Multimount, front	8102166	EPCE-TB-60-10-FL-MF-ST-M-H1-PLK-AA
		20 mm			8102162	EPCE-TB-60-20-FL-ST-M-H1-PLK-AA
				Multimount, front	8102169	EPCE-TB-60-20-FL-MF-ST-M-H1-PLK-AA
		30 mm			8102164	EPCE-TB-60-30-FL-ST-M-H1-PLK-AA
				Multimount, front	8102168	EPCE-TB-60-30-FL-MF-ST-M-H1-PLK-AA
		50 mm			8102170	EPCE-TB-60-50-FL-ST-M-H1-PLK-AA
			Multimount, front	8102165	EPCE-TB-60-50-FL-MF-ST-M-H1-PLK-AA	
80 mm			8102167	EPCE-TB-60-80-FL-ST-M-H1-PLK-AA		
		Multimount, front	8102171	EPCE-TB-60-80-FL-MF-ST-M-H1-PLK-AA		

Ordering information – Modular product system					Further information → epce
	Size	Stroke	Part no.	Type	
	45	10 ... 50 mm	8103354	EPCE-TB-45-	
	60	10 ... 80 mm	8103355	EPCE-TB-60-	


Peripherals

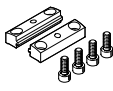
Peripherals overview

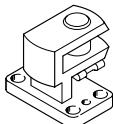


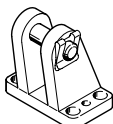
Accessories			→ Page/Internet
Type/order code	Description		
[1] Electric cylinder unit EPCE	Electric drive		epce
[2] IO-Link® master USB CDSU-1	For straightforward use of the electric cylinder unit with IO-Link®		23
[3] Adapter NEFC-M12G8	Connection between the motor and the IO-Link® master		23
[4] Supply cable NEBL-T12	For connecting the load and logic supply		24
[5] Connecting cable NEBC-M12	For connecting to a controller		24
[6] Profile mounting EAHF-L2-P	<ul style="list-style-type: none"> • 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 		22
[7] Profile mounting EAHF-L2-P-S	For mounting the axis on the side of the profile		22
[8] Self-aligning rod coupler FK	To compensate for radial and angular deviations		22
[9] Rod clevis SG	Permits a swivelling movement of the cylinder in one plane		23
[10] Coupling piece KSG	To compensate for radial deviations		23
[11] Rod eye SGS	With spherical bearing		22
[12] Right angle clevis foot LQG	For rod eye SGS		22
[13] Rod clevis SGA	For swivelling cylinder mounting		23
[14] Clevis foot LBG	For parallel motor mounting, for spherical bearing		22

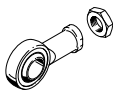
Accessories

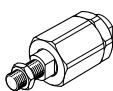
Profile mounting EAHF-L2-...-P-S						
	Description	Material plate	Note on materials	Product weight	Part no.	Type
	For size 45, 60	Anodised wrought aluminium alloy	RoHS-compliant	6 g	5184133	EAHF-L2-45-P-S

Profile mounting EAHF-L2-...-P						
	Description	Material plate	Note on materials	Product weight	Part no.	Type
	For size 45, 60	Anodised wrought aluminium alloy	RoHS-compliant	35 g	4835728	EAHF-L2-45-P

Clevis foot transverse LQG						
	Description	Material mounting	Note on materials	Product weight	Part no.	Type
	For size 60	Stainless steel casting	RoHS-compliant	301 g	31768	LQG-32

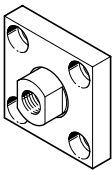
Clevis foot LBG						
	Description	Material mounting	Note on materials	Product weight	Part no.	Type
	For size 60	Stainless steel casting	RoHS-compliant	220 g	31761	LBG-32

Rod eye SGS						
	Description	Material housing	Note on materials	Product weight	Part no.	Type
	For size 45	Galvanised steel	RoHS-compliant	30 g	★ 9254	SGS-M6
	For size 60			88 g	★ 9261	SGS-M10X1,25

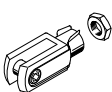
Self-aligning rod coupler FK						
	Description	Material housing	Note on materials	Product weight	Part no.	Type
	For size 45	Steel, Galvanised	RoHS-compliant	23 g	★ 2061	FK-M6
	For size 60			210 g	★ 6140	FK-M10X1,25

Accessories

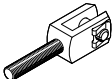
Coupling piece KSG

	Description	Material mounting	Note on materials	Product weight	Part no.	Type
	For size 60	Steel, Galvanised	RoHS-compliant	229 g	32963	KSG-M10X1,25


Rod clevis SG

	Description	Material housing	Note on materials	Product weight	Part no.	Type
	For size 45		RoHS-compliant	22 g	★ 3110	SG-M6
	For size 60			103 g	★ 6144	SG-M10X1,25


Rod clevis SGA

	Description	Material housing	Note on materials	Product weight	Part no.	Type
	For size 60		RoHS-compliant	129 g	32954	SGA-M10X1,25

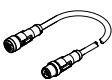
Centring sleeve ZBH

	Description	Material sleeve	Size of pack	Product weight	Part no.	Type
	For centring the electric cylinder unit in conjunction with multi-mount cover	Steel	10	1 g	8146544	ZBH-7-B

IO-Link® master USB

	Description	Part no.	Type
	For using the unit with IO-Link®, an external power supply plug is also required (not included in the scope of delivery)	8091509	CDSU-1

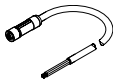
Adapter NEFC

	Electrical connection 1, connector system	Electrical connection 2, connector system ¹⁾	Electrical connection 2, number of connections/cores	Cable length	Part no.	Type
	M12x1, A-coded to EN 61076-2-101	M12x1, A-coded to EN 61076-2-101	5	0.3 m	8080777	NEFC-M12G8-0.3-M12G5-LK


1) Only recommended for use with IO-Link® Port class A master

Accessories


Supply cables NEBL, straight

	Electrical connection 1, connector system	Electrical connection 2, connector system	Electrical connection 2, number of connections/cores	Cable length	Part no.	Type
	M12x1, T-coded according to EN 61076-2-111	Open end	4	2 m	8080790	NEBL-T12G4-E-2-N-LE4
				5 m	8080791	NEBL-T12G4-E-5-N-LE4
				10 m	8080792	NEBL-T12G4-E-10-N-LE4
				15 m	8080793	NEBL-T12G4-E-15-N-LE4


Supply cables NEBL, angled

	Electrical connection 1, connector system	Electrical connection 2, connector system	Electrical connection 2, number of connections/cores	Cable length	Part no.	Type
	M12x1, T-coded according to EN 61076-2-111	Open end	4	2 m	8080778	NEBL-T12W4-E-2-N-LE4
				5 m	8080779	NEBL-T12W4-E-5-N-LE4
				10 m	8080780	NEBL-T12W4-E-10-N-LE4
				15 m	8080781	NEBL-T12W4-E-15-N-LE4

Connecting cables NEBC, straight

	Electrical connection 1, connector system	Electrical connection 2, connector system	Electrical connection 2, number of connections/cores	Cable length	Part no.	Type	
	M12x1, A-coded to EN 61076-2-101	M12x1, A-coded to EN 61076-2-101	8	2 m	8080782	NEBC-M12G8-E-2-N-M12G8	
				5 m	8080783	NEBC-M12G8-E-5-N-M12G8	
				10 m	8080784	NEBC-M12G8-E-10-N-M12G8	
				15 m	8080785	NEBC-M12G8-E-15-N-M12G8	
		Open end			2 m	8094480	NEBC-M12G8-E-2-N-B-LE8
					5 m	8094477	NEBC-M12G8-E-5-N-B-LE8
					10 m	8094482	NEBC-M12G8-E-10-N-B-LE8
					15 m	8094475	NEBC-M12G8-E-15-N-B-LE8

Connecting cables NEBC, angled

	Electrical connection 1, connector system	Electrical connection 2, connector system	Electrical connection 2, number of connections/cores	Cable length	Part no.	Type	
	M12x1, A-coded to EN 61076-2-101	M12x1, A-coded to EN 61076-2-101	8	2 m	8080786	NEBC-M12W8-E-2-N-M12G8	
				5 m	8080787	NEBC-M12W8-E-5-N-M12G8	
				10 m	8080788	NEBC-M12W8-E-10-N-M12G8	
				15 m	8080789	NEBC-M12W8-E-15-N-M12G8	
		Open end			2 m	8094476	NEBC-M12W8-E-2-N-B-LE8
					5 m	8094478	NEBC-M12W8-E-5-N-B-LE8
					10 m	8094481	NEBC-M12W8-E-10-N-B-LE8
					15 m	8094479	NEBC-M12W8-E-15-N-B-LE8