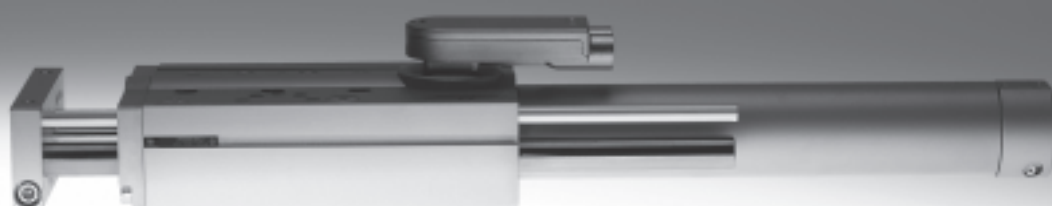


Guided drives DFME-LAS, electric

FESTO



Guided drives DFME-LAS, electric

Key features

FESTO

At a glance

Characteristics

- The guided drive consists of a freely positionable linear motor, integrated displacement encoder with magnetic strip and reference switch
- Enables positioning with very high dynamic response. Accelerations of up to 80 m/s^2 are possible without load
- Mechanical interfaces are largely compatible with the guided drive DFM-B
- Together with the motor controller SFC-LACI and the associated cables, it is a quickly commissioned positioning system for small loads

Range of applications

- Positioning of small loads such as:
 - placing small parts into and removing small parts from magazines,
 - sorting parts quickly,
 - for equipping and assembly processes

Everything from a single source

Guided drive
DFME-LAS

→ 3



Motor controller
SFC-LACI

→ Internet: sfc-laci

The guided drive DFME-LAS and motor controller SFC-LACI form one unit.

- Thanks to protection class IP54, the SFC can be mounted close to the DFME, either:
 - via central supports or
 - via H-rail
 - Just two cables are required between the guided drive DFME and motor controller SFC (motor and encoder cable)
 - The motor controller SFC is available with or without control panel
 - Up to 31 positioning records
- Parameterisation via:
- Control panel:
 - suitable for simple position sequences

Parameterisation via:

- FCT (Festo Configuration Tool) configuration package:
 - via RS 232 interface
 - Windows-based PC user interface, Festo Configuration Tool
- Easy actuation via:
 - I/O interface
 - Profibus
 - CANopen, incl. “interpolated position mode”
 - DeviceNet

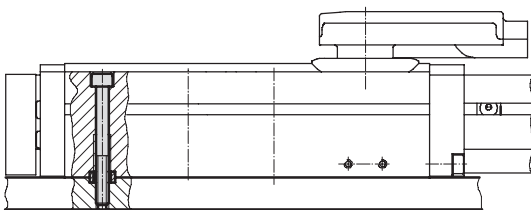


CANopen

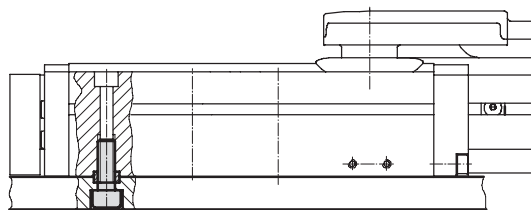
DeviceNet

Mounting options

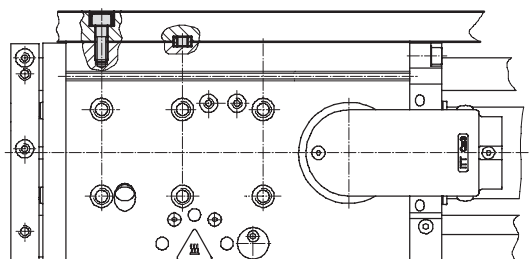
Flat from above



Flat from below



Side from below



Guided drives DFME-LAS, electric

Type codes

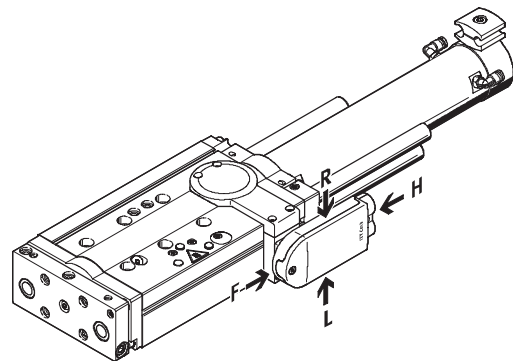
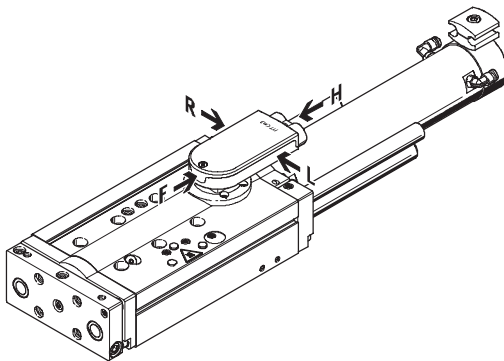
FESTO

		DFME	—	32	—	100	—	LAS	—	T	—	H	—	KF	—	S1
Type																
DFME	Guided drive															
Size																
Stroke [mm]																
Drive type/motor technology																
LAS	Linear motor, AC synchronous															
Cable outlet																
T	At the top															
S	At the side															
Cable outlet direction																
H	To the rear															
F	To the front															
L	To the left															
R	To the right															
Guide																
KF	Recirculating ball bearing guide															
Protection class for electrics																
S1	IP65															

Cable outlet direction

With cable outlet at top

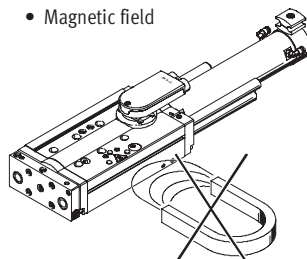
With cable outlet at side



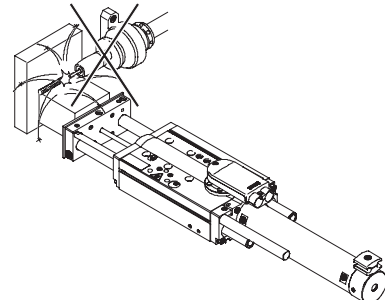
Instructions for use

The guided drive with linear motor is not designed for the following sample applications:

- Magnetic field



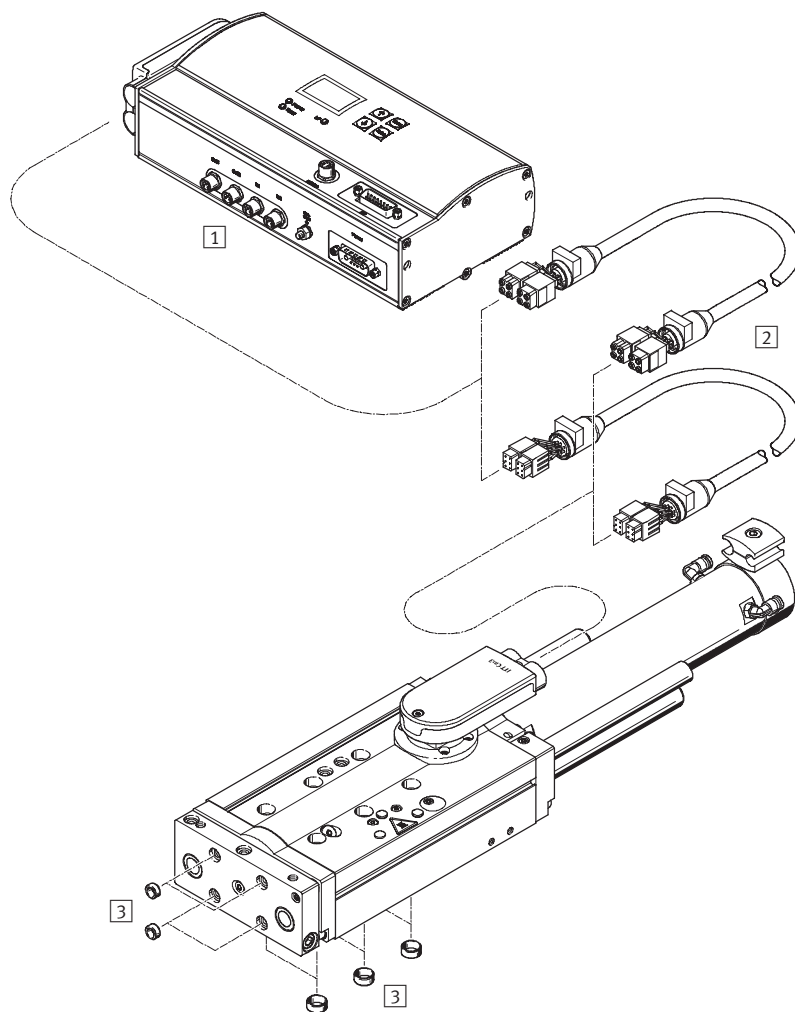
- Welding application



Guided drives DFME-LAS, electric

Peripherals overview

FESTO



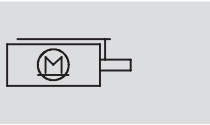
Accessories		
	Brief description	→ Page/Internet
1 Motor controller SFC-LACI	For parameterising and positioning the guided drives	sfc-laci
2 Motor/encoder cable NEBM	For connecting the motor and controller	sfc-laci
3 Centring sleeve ZBH	For centring loads and attachment components	16

Guided drives DFME-LAS, electric

Technical data

FESTO

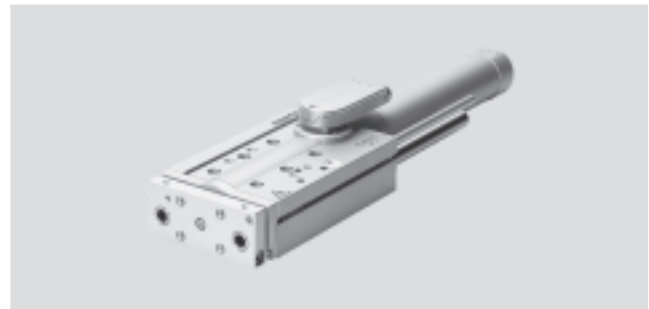
Function



-  Size
32, 40
-  Stroke length
100 ... 400 mm
-  www.festo.com

-  Note

All values are based on a standard temperature of 23 °C.
Dynamic response and accuracy are dependent on the mounting (rigidity) and temperature stresses (heat concentration).



General technical data								
Size		32			40			
Stroke	[mm]	100	200	320	100	200	320	400
Mechanical								
Design		Guided drive						
		Electric linear direct drive						
Guide		Recirculating ball bearing guide						
Drive unit operating mode		Yoke						
Type of mounting		Via female thread and centring sleeve						
		Via through-hole and centring sleeve						
Mounting position		Horizontal						
Stroke reserve	[mm]	3.5						
Continuous feed force ¹⁾	[N]	36	29	29	53	40	49	49
Peak feed force ¹⁾	[N]	94	141	141	183	202	202	202
Max. effective load ²⁾	[kg]	2	6	4	3.4	6	6	6
Max. speed	[m/s]	2	3	3	2	3	3	3
Repetition accuracy	[mm]	±0.015						
Electric								
Type of motor		Linear AC servo motor						
Displacement encoder		Relative measurement, magnetic, incremental, contactless						
Peak motor current	[A]	5.9	16.2	16.2	7.7	22.4	22.4	22.4
Nominal motor current	[A]	2.2	3.3	3.3	2.2	4.4	5.4	5.4
Rated motor output	[W]	108	87	87	159	120	147	147
Homing		Integrated reference sensor						

1) Disregarding friction

2) Limited by motor power. The values specified here are recommended values

Operating and environmental conditions		
Ambient temperature ¹⁾	[°C]	0 ... +40
Max. motor temperature	[°C]	70 (warning at 70 °C, shut-off at 75 °C)
Standard temperature ²⁾	[°C]	23
Temperature monitoring		Shuts off if motor overheats
Protection class (mechanical system)		IP40
Protection class (electrical connection)		IP40 (with DFME-...-S1: IP65)
CE marking (see declaration of conformity)		To EU EMC Directive

1) Note operating range of proximity sensors

2) Unless otherwise stated, all values are based on standard temperature

Guided drives DFME-LAS, electric

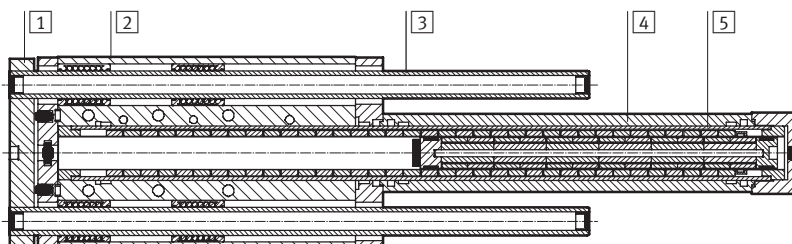
Technical data

FESTO

Weight [g]							
Size	32			40			
Stroke [mm]	100	200	320	100	200	320	400
Product weight	4,100	4,900	5,600	6,300	7,000	8,200	8,600
Moving load	1,030	1,280	1,500	1,620	2,060	2,290	2,520

Materials

Sectional view



Guided drive		
1	Yoke plate	Anodised wrought aluminium alloy
2	Housing	Anodised wrought aluminium alloy
3	Guide rod	Tempered steel (surface hardened)
4	Cooling tube	Anodised wrought aluminium alloy
5	Piston rod	High-alloy stainless steel
-	Terminal strip	Die-cast zinc
-	Screws	Steel
-	Note on materials	Contains PWIS (paint-wetting impairment substances) RoHS-compliant

Stroke reserve and cushioning length

1 Working stroke:

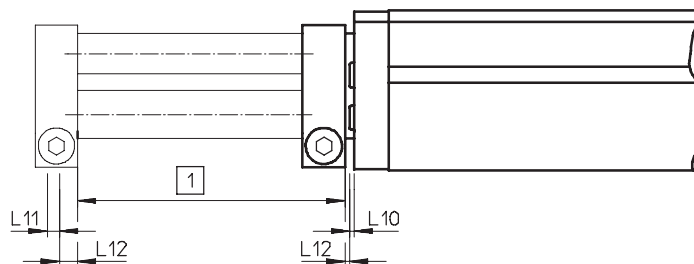
The recommended, available operating range

L12 Stroke reserve:

The distance from the end positions of the working stroke to the buffers

L10, L11 Cushioning length:

The distance from the buffer surface to the mechanical end position



Size		Retracted		Advanced	
		L12	L10	L12	L11
32	[mm]	1.75	1.5	1.75	2
40	[mm]	1.75	1.5	1.75	2

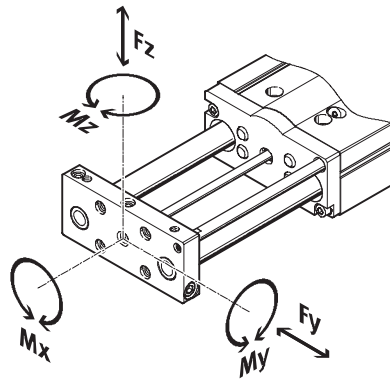
Guided drives DFME-LAS, electric

Technical data

FESTO

Dynamic characteristic load values

Torques are indicated with reference to the centre of the yoke plate.
These values must not be exceeded during dynamic operation.
Special attention must be paid to the cushioning phase.



If the drive is simultaneously subjected to several of the indicated forces and torques, the following equation must be satisfied in addition to the indicated maximum loads:

$$\frac{|F_y|}{F_{y_{max.}}} + \frac{|F_z|}{F_{z_{max.}}} + \frac{|M_x|}{M_{x_{max.}}} + \frac{|M_y|}{M_{y_{max.}}} + \frac{|M_z|}{M_{z_{max.}}} \leq 1$$

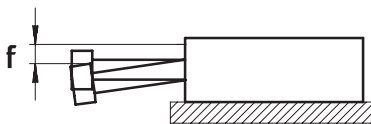
Permissible forces and torques

Size	32			40			
Stroke [mm]	100	200	320	100	200	320	400
$F_{y_{max.}}, F_{z_{max.}}$ [N]	20	60	40	34	60	60	60
$M_{x_{max.}}$ [Nm]	5	4	3	6.3	5.3	4.3	3.3
$M_{y_{max.}}$ [Nm]	2	12	12	3.4	12	19	24
$M_{z_{max.}}$ [Nm]	2	12	12	3.4	12	19	24

 Note

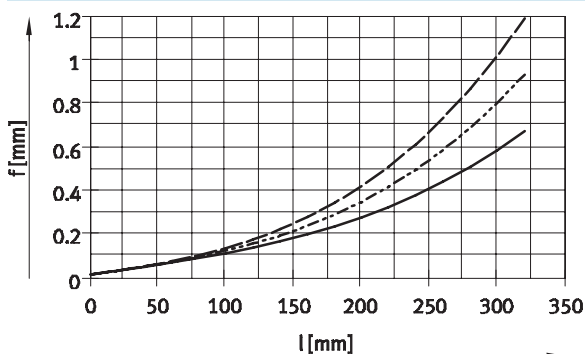
PositioningDrives
sizing software
→ www.festo.com

Piston rod displacement f, with fully advanced piston rod, as a function of stroke l

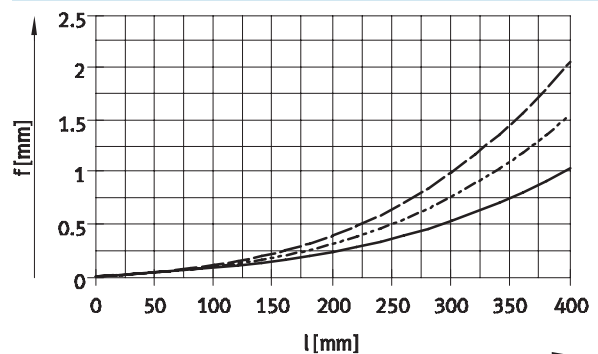


— 2 kg
- - - 4 kg
- · - 6 kg

DFME-32



DFME-40



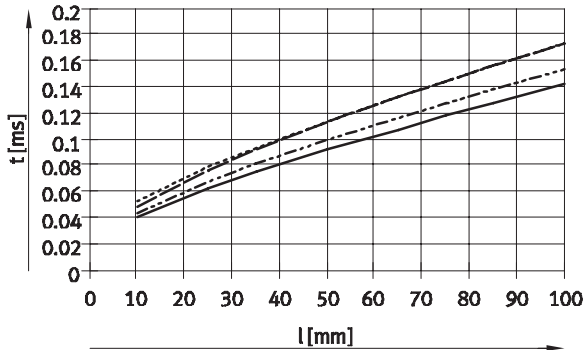
Guided drives DFME-LAS, electric

Technical data

FESTO

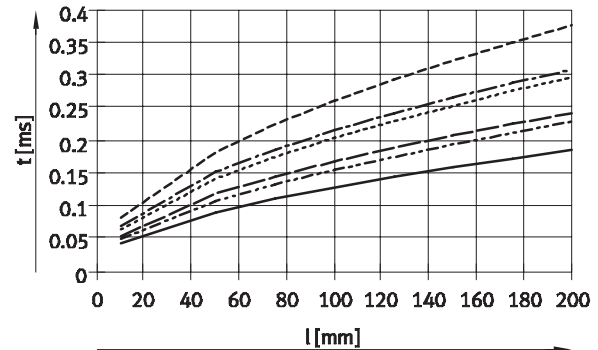
Positioning time t as a function of stroke l , effective load M and duty cycle ED

DFME-32-100



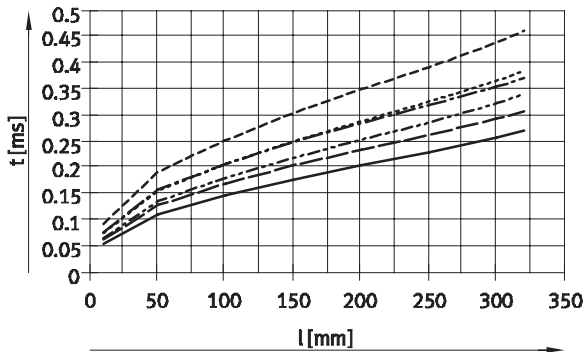
— M 0.5 kg, ED 25% to 50%
 - - - M 1.0 kg, ED 25% to 50%
 — M 2.0 kg, ED 25%
 - - - M 2.0 kg, ED 50%

DFME-32-200



— M 1.0 kg, ED 25%
 - - - M 1.0 kg, ED 50%
 — M 3.0 kg, ED 25%
 - - - M 3.0 kg, ED 50%
 — M 6.0 kg, ED 25%
 - - - M 6.0 kg, ED 50%

DFME-32-320



— M 1.0 kg, ED 25%
 - - - M 1.0 kg, ED 50%
 — M 2.0 kg, ED 25%
 - - - M 2.0 kg, ED 50%
 — M 4.0 kg, ED 25%
 - - - M 4.0 kg, ED 50%

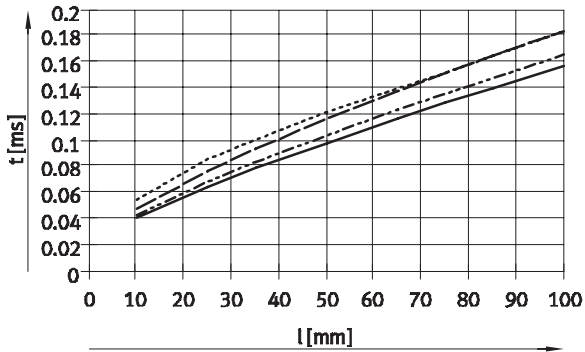
Guided drives DFME-LAS, electric

Technical data

FESTO

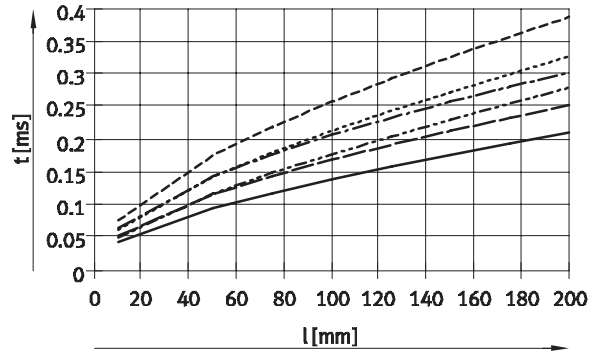
Positioning time t as a function of stroke l , effective load M and duty cycle ED

DFME-40-100



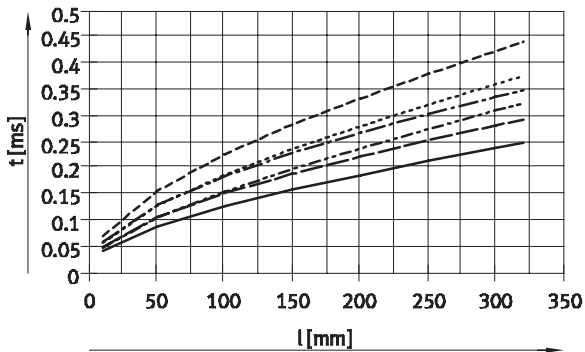
- M 1.0 kg, ED 25% to 50%
- - - M 1.7 kg, ED 25% to 50%
- M 3.4 kg, ED 25%
- - - M 3.4 kg, ED 50%

DFME-40-200



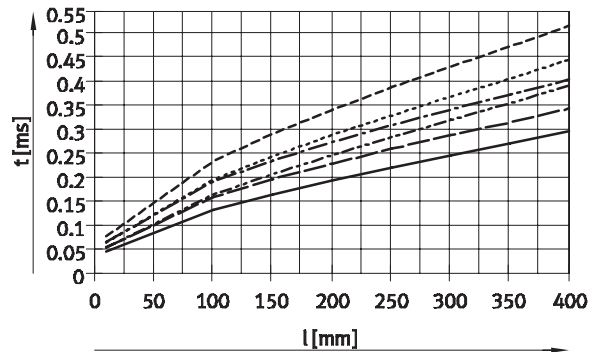
- M 1.0 kg, ED 25%
- - - M 1.0 kg, ED 50%
- M 3.0 kg, ED 25%
- - - M 3.0 kg, ED 50%
- - - M 3.0 kg, ED 50%
- - - M 6.0 kg, ED 25%
- - - M 6.0 kg, ED 50%

DFME-40-320



- M 1.0 kg, ED 25%
- - - M 1.0 kg, ED 50%
- M 3.0 kg, ED 25%
- - - M 3.0 kg, ED 50%
- - - M 6.0 kg, ED 25%
- - - M 6.0 kg, ED 50%

DFME-40-400



- M 1.0 kg, ED 25%
- - - M 1.0 kg, ED 50%
- M 3.0 kg, ED 25%
- - - M 3.0 kg, ED 50%
- - - M 6.0 kg, ED 25%
- - - M 6.0 kg, ED 50%

Guided drives DFME-LAS, electric

Technical data

FESTO

Feed force F as a function of stroke l

The graphs are based on practical values with friction taken into account.

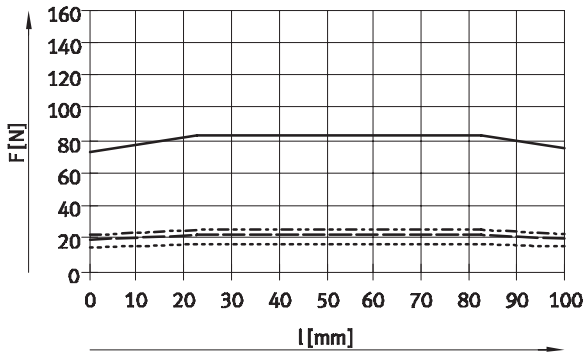
Peak feed force

—

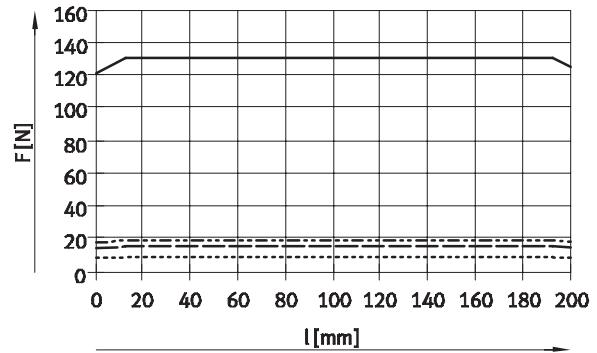
Continuous feed force at ambient temperature:

----- from 23 °C
 - - - - - from 30 °C
 from 40 °C

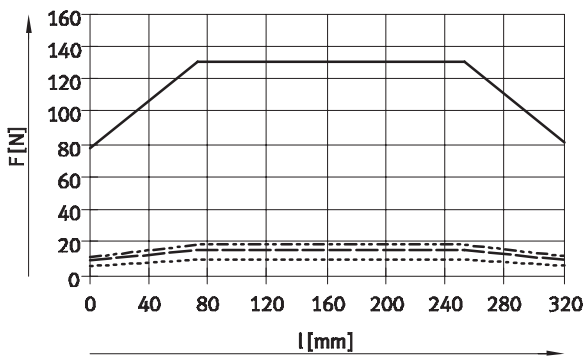
DFME-32-100



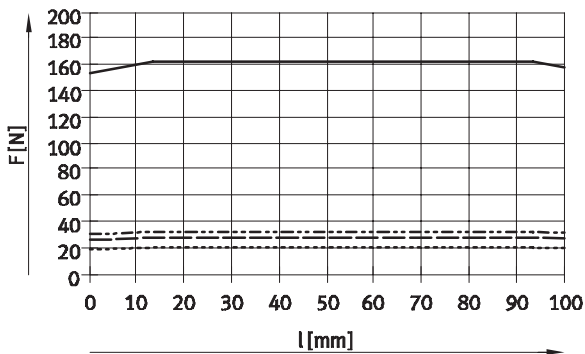
DFME-32-200



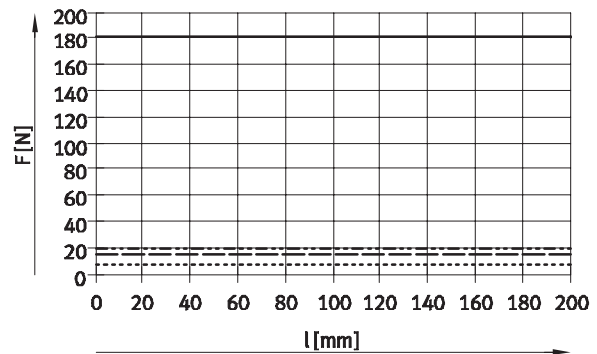
DFME-32-320



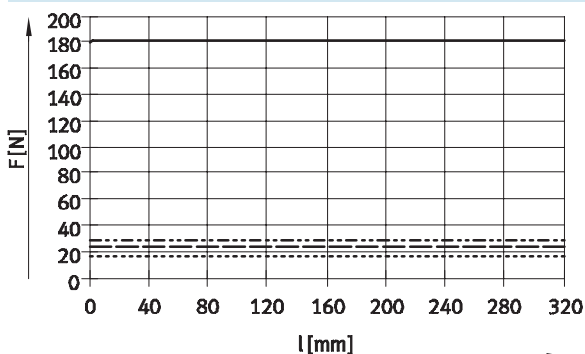
DFME-40-100



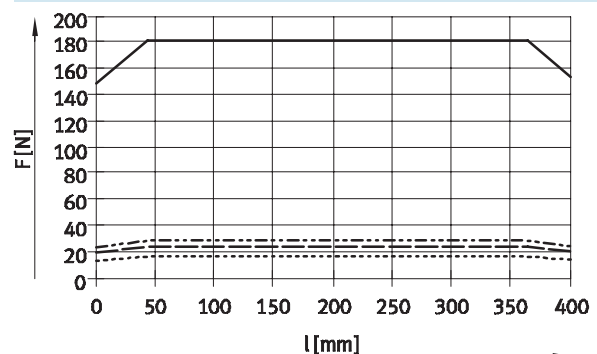
DFME-40-200



DFME-40-320



DFME-40-400



Guided drives DFME-LAS, electric

Technical data

FESTO

Feed force F as a function of speed v

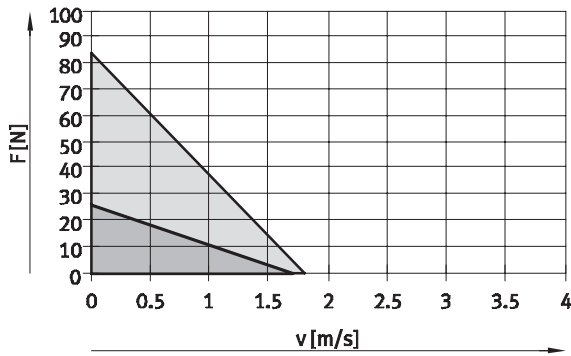
The graphs are based on practical values under the following conditions:

- Stroke centre of the electric cylinder
- Friction taken into account

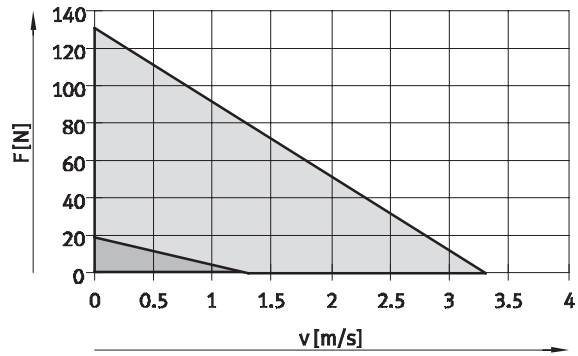
- Standard temperature of 23 °C
- Max. motor temperature of 70 °C

- Peak feed force
- Continuous feed force

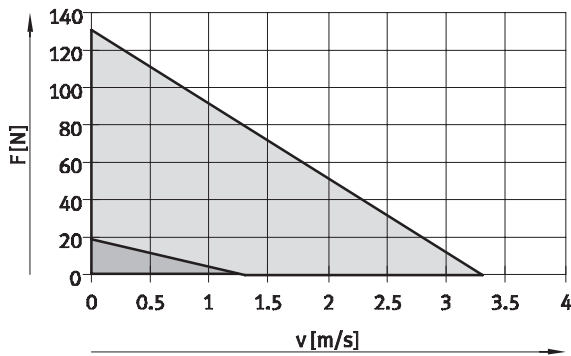
DFME-32-100



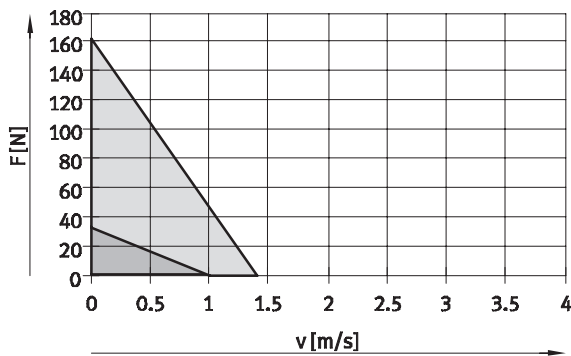
DFME-32-200



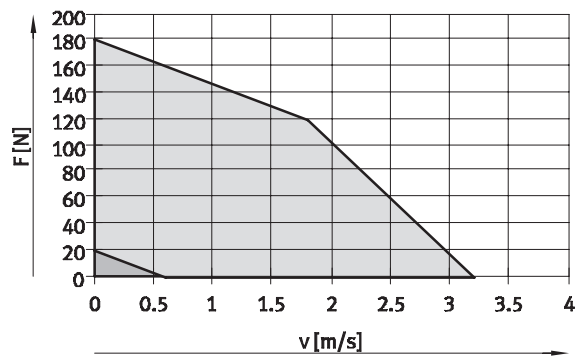
DFME-32-320



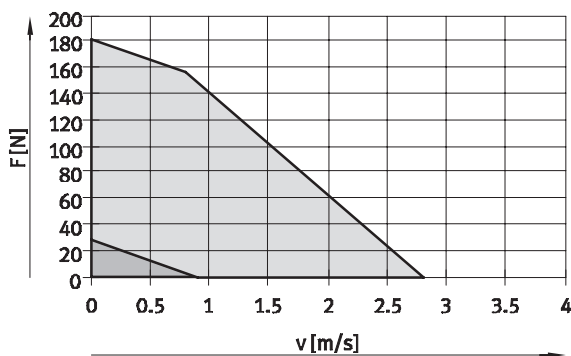
DFME-40-100



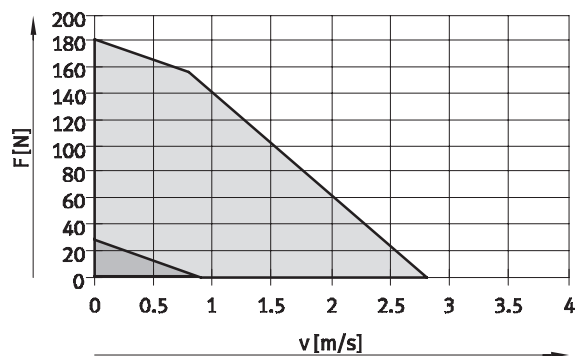
DFME-40-200



DFME-40-320



DFME-40-400



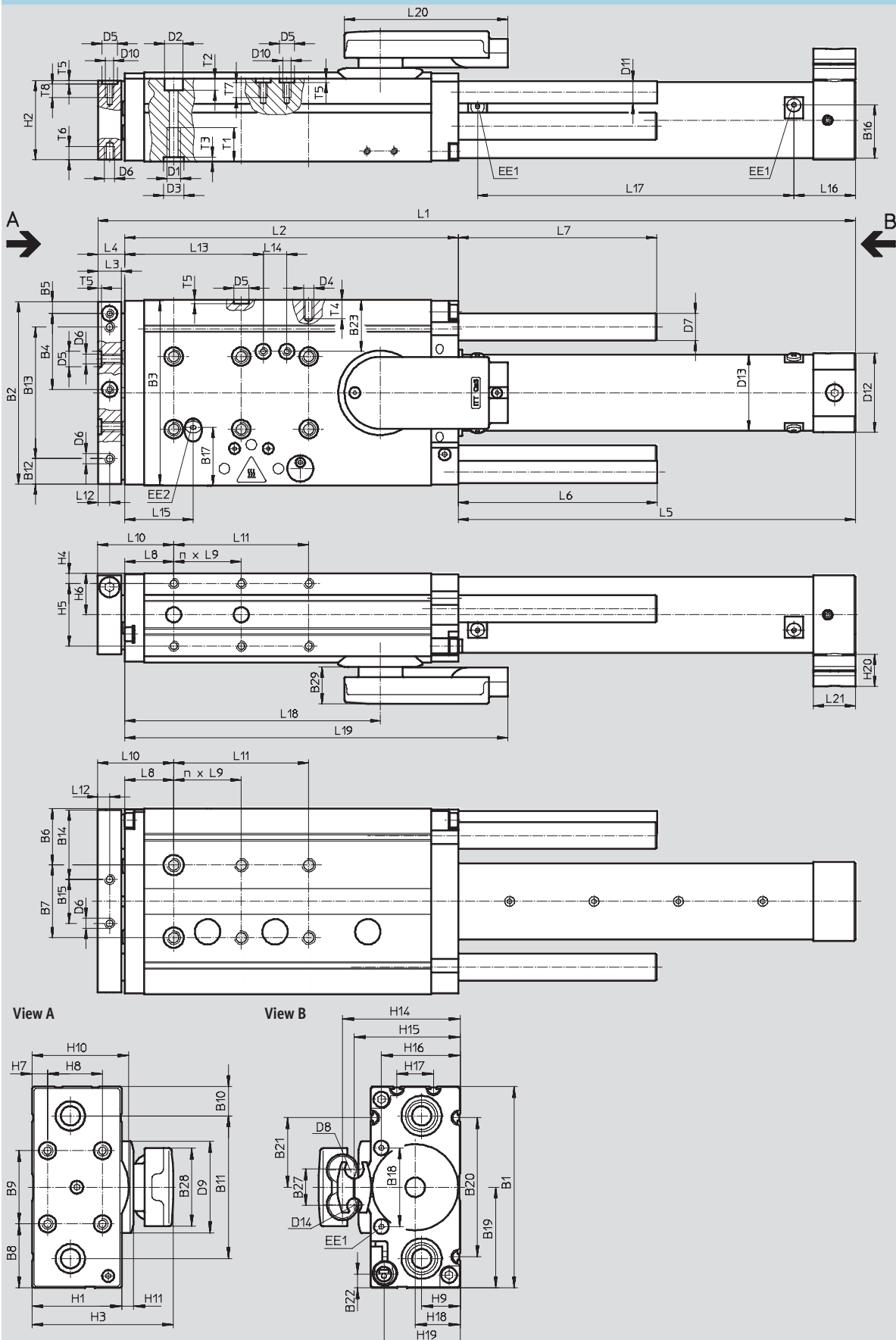
Guided drives DFME-LAS, electric

Technical data

FESTO

Dimensions

Download CAD data → www.festo.com



Guided drives DFME-LAS, electric

Technical data

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Size	B1	B2	B3	B4 ¹⁾	B5	B6	B7 ¹⁾	B8	B9 ¹⁾	B10	B11	B12
32	110	108	109	45	7	33.5	43	35	40	16	78	15
40	120	118	119	46	6.5	34.5	51	35	50	16	88	15

Size	B13	B14	B15 ¹⁾	B16	B17	B18	B19	B20	B21	B22	B23	B27
32	78	41	26	31.6	34.5	43	55	76	38	8	30.5	20
40	88	41	36	33	36.6	45	60	76	39	8	30.5	20

Size	B28	B29	D1	D2 Ø	D3 Ø H7	D4	D5 Ø H7	D6	D7 Ø	D8 Ø	D9 Ø	D10
32	42.6	21.8	M8	11	12	M6	9	M6	16	10.5	50	M5
40	42.6	21.8	M8	11	12	M8	9	M6	16	10.5	50	M5

Size	D11 Ø	D12 Ø	D13 Ø	D14 Ø	EE1	EE2	H1	H2	H3	H4	H5 ¹⁾	H6
32	13.3	47	45	8	M5	M7	49	47	77.3	6	37	24.5
40	13.3	52	50.5	8	M5	M7	54	52	82.8	6	42	27

Size	H7	H8 ¹⁾	H9	H10	H11	H14	H15	H16	H17	H18	H19	H20
32	8.5	30	21	52.9	6.5	64.3	57.9	43	20	24.5	41.6	19
40	10	30	26	59.5	8	70.8	62.7	48.5	20	27	46	19

Size	L2	L3	L4	L8	L9 ¹⁾	L10	L11 ¹⁾	L12	L13	L14 ¹⁾	L15	L16
32	197.5	14	16	29	40	45	80	7	82	14	40.5	36.5
40	227.5	14	16	29	40	45	120	7	85	11.5	42.7	38.5

Size	L18	L19	L20	L21	n	T1	T2	T3 +0.1	T4	T5 +0.1	T6	T7	T8
32	151.5	227	96.8	25	1	20	6.8	2.6	11	2.1	8	9	8
40	181.5	257	96.8	25	2	20	6.8	2.6	16	2.1	12	9	10

Size	Stroke [mm]	L1	L5	L6	L7	L17
32	100	349	135.5	18	17.7	87.5
	200	449	235.5	118	117.7	187.5
	320	569	355.5	238	237.7	307.5
40	100	423.5	180	18	16.7	127.8
	200	523.5	280	118	116.7	227.8
	320	643.5	400	238	236.7	347.8
	400	723.5	480	318	316.7	427.8

1) Tolerance for centring hole ± 0.02 mm
Tolerance for threaded hole ± 0.1 mm

Guided drives DFME-LAS, electric

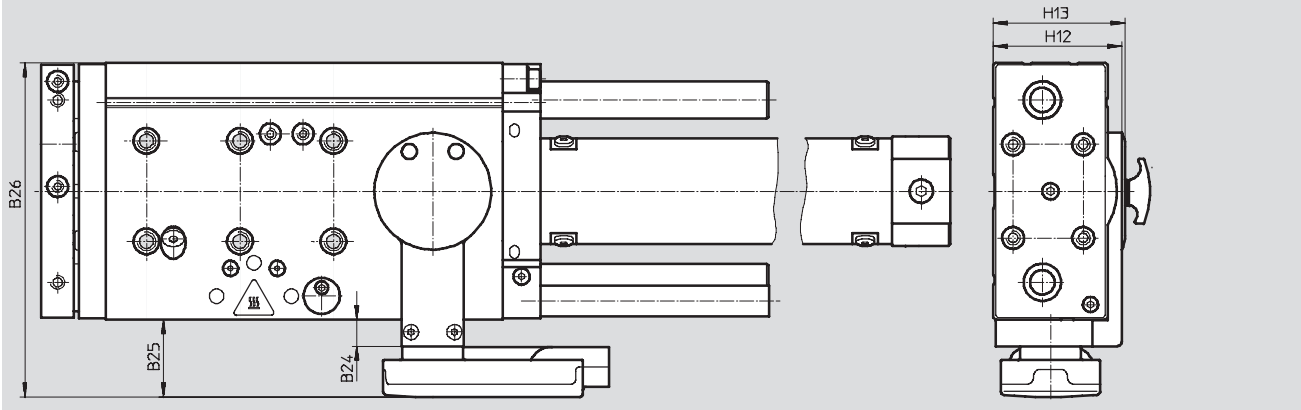
Technical data

FESTO

Dimensions

Download CAD data → www.festo.com

DFME-...S – Cable outlet at side



Size	B24	B25	B26	H12	H13
32	11.3	33	143	55	56.5
40	11.3	33	153	61.5	63

Guided drives DFME-LAS, electric

Ordering data – Modular products

FESTO

Ordering table					
Size	32	40	Condi- tions	Code	Enter code
[M] Module No.	562828	562829			
Function	Guided drive			DFME	DFME
Size	32	40		-...	
Stroke [mm]	100	100		-...	
	200	200			
	320	320			
	–	400			
Drive type	Linear motor			-L	-L
Motor technology	AC synchronous			AS	AS
Cable outlet	At the top			-T	
	At the side			-S	
Cable outlet direction	To the rear			-H	
	To the front			-F	
	To the left			-L	
	To the right			-R	
Guide	Recirculating ball bearing guide			-KF	-KF
[O] Protection class for electrics	IP65			-S1	

Transfer order code

	DFME	-		-		-	L		AS	-		-		-	KF	-	
--	------	---	--	---	--	---	---	--	----	---	--	---	--	---	----	---	--

Guided drives DFME-LAS, electric

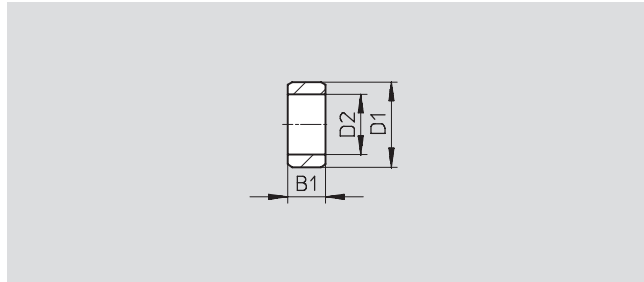
Accessories

FESTO

Centring sleeve ZBH

Material:

High-alloy steel



Dimensions and ordering data							
B1	D1	D2	CRC ¹⁾	Weight	Part No.	Type	PU ²⁾
-0.2	Ø h7	Ø		[g]			
4	9	6.4	2	1	150927	ZBH-9	10
5	12	10.3	2	1	189653	ZBH-12	10

1) Corrosion resistance class 2 according to Festo standard 940 070

Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents

2) Packaging unit quantity