

Spindle axes DGE

FESTO



Spindle axes DGE

Key features

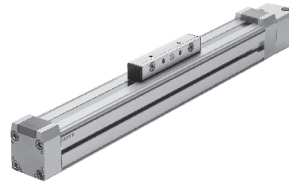
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At a glance

- Precision, rigid guide
- Highly adaptable, thanks to wide choice of mounting and attachment options
- Wide range of options for attaching drive units
- Comprehensive range of mounting accessories for multi-axis combinations
- Optimally adapted motor controller combinations

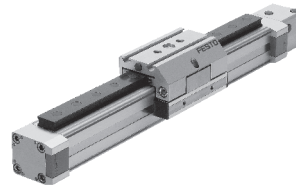
Basic version DGE-SP

- Stroke lengths from 100 ... 2000 mm
- Without guide
- Low characteristic load values



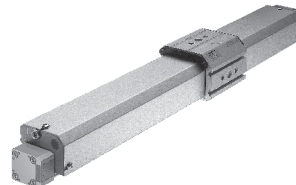
With recirculating ball bearing guide DGE-SP-KF-GK/-GV

- Stroke lengths from 100 ... 2000 mm
- Standard slide or extended slide
- Medium to high characteristic load values



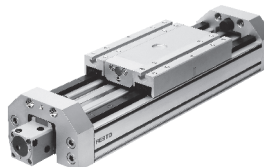
With protected version DGE-SP-KF-GA

- Stroke lengths from 140 ... 1500 mm
- Guide and slide are fitted with a cover to protect against the ingress of particles from above and from the side



With heavy-duty guide DGE-SP-HD

- Stroke lengths from 100 ... 1500 mm
- High guide precision
- Sturdy construction
- High characteristic load values



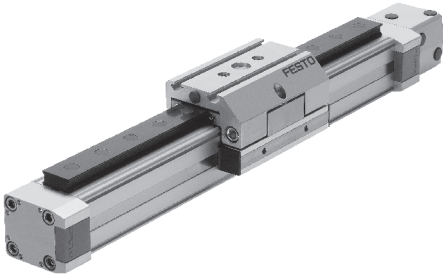
Spindle axes DGE

Key features

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System selection for electromechanical drives

Spindle axis



Note

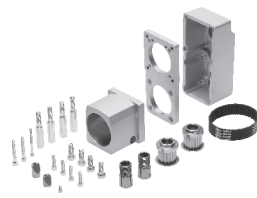
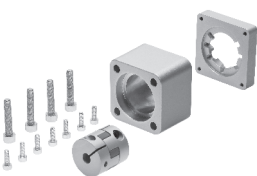
For the spindle axes and the motors there are matching complete solutions.

Motor kit

Axial kit

Parallel kit

→ 54

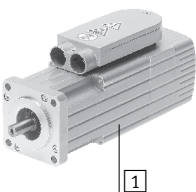


Axial kit consisting of:

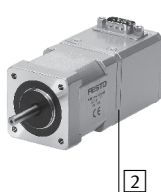
- Motor flange
- Coupling housing
- Coupling
- Screws

Motor

→ 54



1



2

- 1 Servo motor EMMS-AS
- 2 Stepper motor EMMS-ST

Motor controller

Technical data → Internet: motor controller



1



2

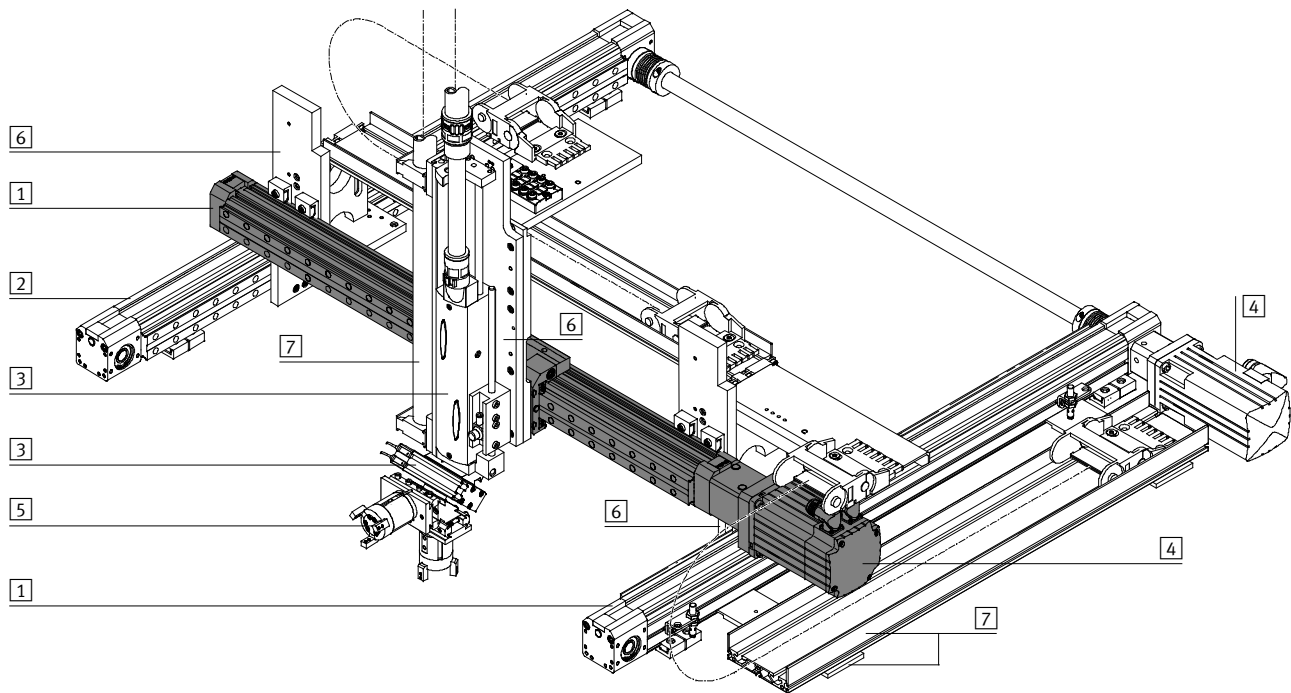
- 1 Servo motor ontroller CMMP-AS, CMMS-AS
- 2 Stepper motor controller CMMS-ST

Spindle axes DGE

System example

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System product for handling and assembly technology



System components and accessories		
Type	Brief description	→ Page/Internet
1 Axes	Wide range of combination options within handling and assembly technology	axes
2 Passive guide axes	Diverse possible combinations in handling and assembly technology	guide axes
3 Drives	Wide range of combination options within handling and assembly technology	drive
4 Motors	Servo and stepper motors, with or without gearing	motor
5 Grippers	Wide range of combination options within handling and assembly technology	gripper
6 Adapters	For combining drives with drives and drives with grippers	adapter kit
7 Installation components	For achieving a clear-cut, safe layout for electrical cables and tubing	installation component

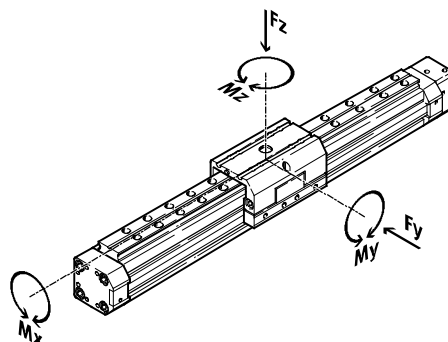
Spindle axes DGE

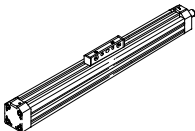
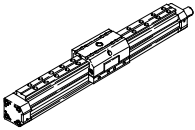
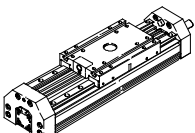
Selection aid

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Guide characteristics

The data in the table are maximum values. The precise values for each variant can be found in the corresponding data sheet included in the catalogue.

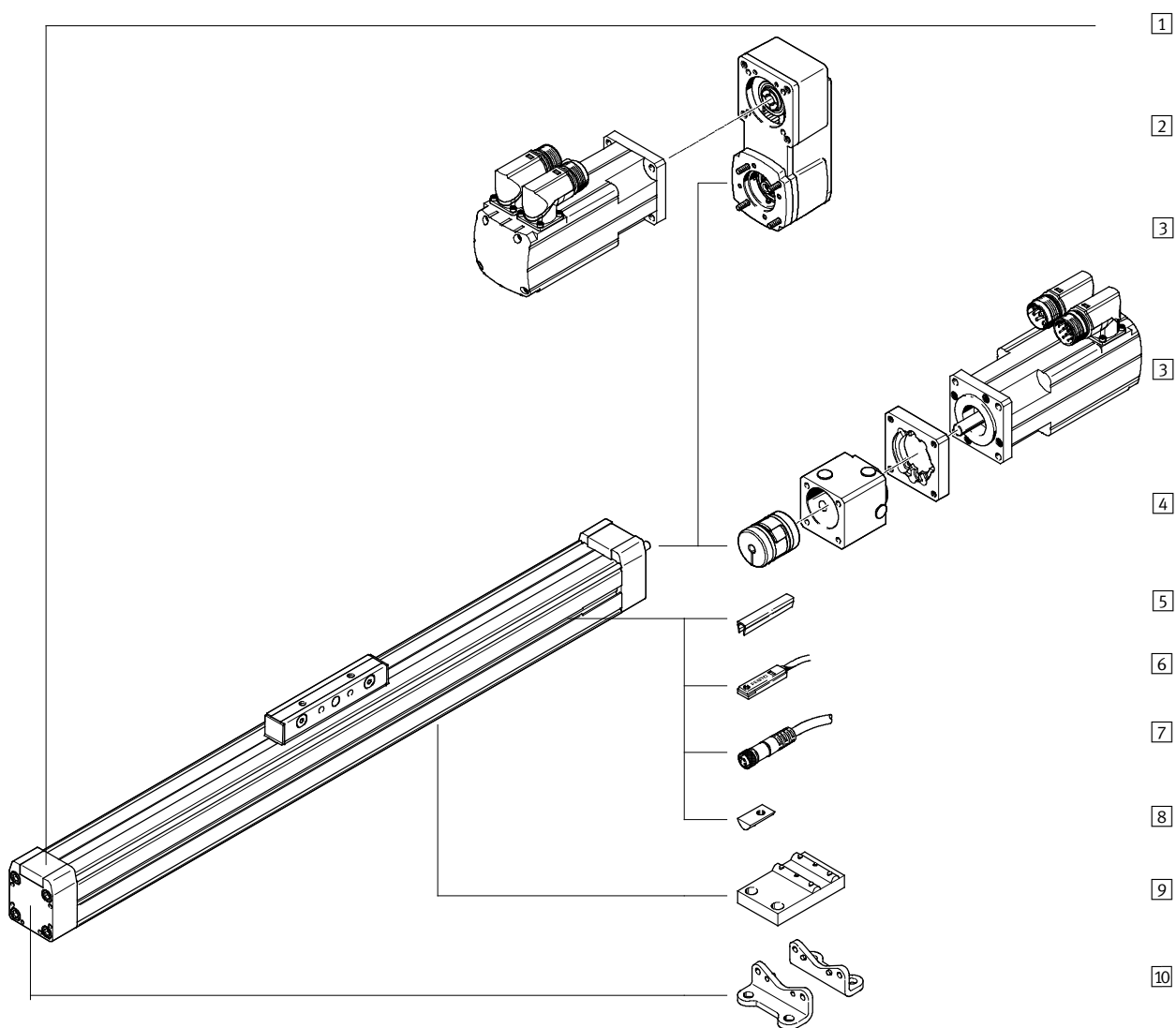
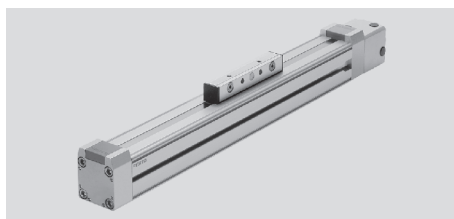


Version	Size	Working stroke [mm]	Speed [m/s]	Repeti- tion accuracy [mm]	Feed force [N]	Forces and torques					→ Page/Internet
						Fy	Fz	Mx	My	Mz	
						[N]	[N]	[Nm]	[Nm]	[Nm]	
Basic version without guide SP											
	18	100 ... 500	0.2	±0.02	140	–	1.8	0.5	0.8	0.8	6
	25	100 ... 1000	0.5	±0.02	250	–	2	1	1.5	1.5	
	40	200 ... 1500	1	±0.02	600	–	15	4	4	4	
	63	300 ... 2000	1.2	±0.02	1600	–	106	8	18	18	
With recirculating ball bearing guide SP-KF											
	18	100 ... 500	0.2	±0.02	140	930	930	7	45	45	20
	25	100 ... 1000	0.5	±0.02	250	3080	3080	45	170	170	
	40	140 ... 1500	1	±0.02	600	7300	7300	170	660	660	
	63	150 ... 2000	1.2	±0.02	1600	14050	14050	580	1820	1820	
With heavy-duty guide SP-HD											
	18	100 ... 400	0.2	±0.02	140	1820	1820	70	115	112	42
	25	100 ... 900	0.5	±0.02	250	5400	5600	260	415	400	
	40	200 ... 1500	1	±0.02	600	5400	5600	375	560	540	

Spindle axes DGE-SP

Peripherals overview

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Spindle axes DGE-SP

Peripherals overview



Variants and accessories		
Type	Brief description	→ Page/Internet
1 Spindle axis DGE-SP	Electromechanical axis without guide	8
2 Parallel kit EAMM-U	For parallel motor attachment (consisting of: housing, Clamping component, clamping sleeve, toothed belt gearwheel, toothed belt)	56
3 Motor EMMS	Motors specially matched to the axis, with or without gearing, with or without brake	54
4 Axial kit EAMM-A	For axial motor attachment (consisting of: coupling housing, clamping component, motor flange)	54
5 Slot cover B/S	For protecting against the ingress of dirt	64
6 Proximity sensor G/H/I/J/N	For use as a signal generator and safety monitoring	65
7 Cable with socket V	For proximity sensors	65
8 Slot nut for mounting slot Y	For mounting attachments	64
9 Central support M	For mounting the axis	57
10 Foot mounting F	For mounting the axis	57

Spindle axes DGE-SP

Type code

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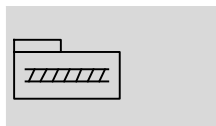
		DGE	-	25	-	500	-	SP	+	ZUB	-					F	2G	
Type																		
DGE	Spindle axis																	
Size																		
Stroke [mm]																		
Drive function																		
SP	Spindle																	
Accessories																		
ZUB	Accessories supplied loos																	
Slot cover																		
...S	Sensor slot																	
...B	Mounting slot																	
Slot nut																		
...Y	For mounting slot																	
Central support																		
...M	Central support																	
Foot mounting																		
...F	Foot mounting																	
Proximity sensor																		
...G	With cable, 2.5 m																	
...H	With plug																	
...I	Contactless with cable, 2.5 m																	
...J	Contactless, plug																	
...N	NC contact with cable, 2.5 m																	
Cable with socket																		
...V	2.5 m																	

Spindle axes DGE-SP

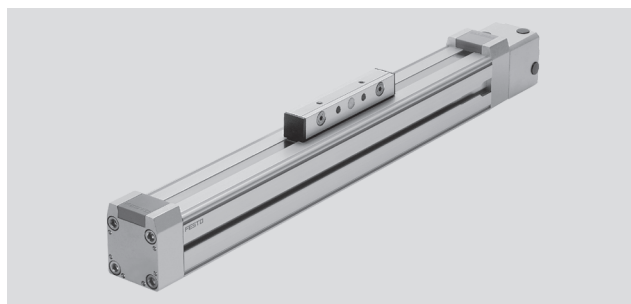
Technical data

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Function



www.festo.com



-  - Size
18 ... 63
-  - Stroke length
100 ... 2000 mm

General technical data				
Size	18	25	40	63
Constructional design	Electromechanical axis with spindle and driver			
Guide	-			
Mounting position	Any			
Max. working stroke ¹⁾	[mm]	100 ... 500	100 ... 1000 ⁴⁾	200 ... 1500 ⁴⁾
Max. feed force F_x	[N]	140	250	600
Max. driving torque	[Nm]	0.1	0.45	2.1
Max. no-load driving torque	[Nm]	0.04 ²⁾	0.15 ³⁾	0.33 ³⁾
Max. radial force ⁴⁾	[N]	40	75	250
Max. speed ⁵⁾	[m/s]	0.2	0.5	1
Max. acceleration	[m/s ²]	6		
Repetition accuracy	[mm]	±0.02		

- 1) Total stroke = working stroke + 2x stroke reserve
- 2) Measured at a speed of 0.05 m/s
- 3) Measured at a speed of 0.2 m/s
- 4) On drive shaft
- 5) The maximum speed is dependent on the stroke length → 13

Operating and environmental conditions				
Size	18	25	40	63
Ambient temperature	[°C] 0 ... +40			
Protection class	IP40			

Weights [kg]				
Size	18	25	40	63
Basic weight with 0 mm stroke ¹⁾	0.55	1.4	4.3	12.5
Additional weight per 100 mm stroke	0.21	0.41	0.71	2.53
Moving load	0,13	0,25	0,67	2,17

- 1) Including coupling housing

Mass moment of inertia				
Size	18	25	40	63
J_0	[kg cm ²]	0.007	0.029	0.364
J_H per metre stroke	[kg cm ² /m]	0.031	0.121	1
J_L per kg working load	[kg cm ² /kg]	0.005	0.025	0.101

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

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

Spindle axes DGE-SP

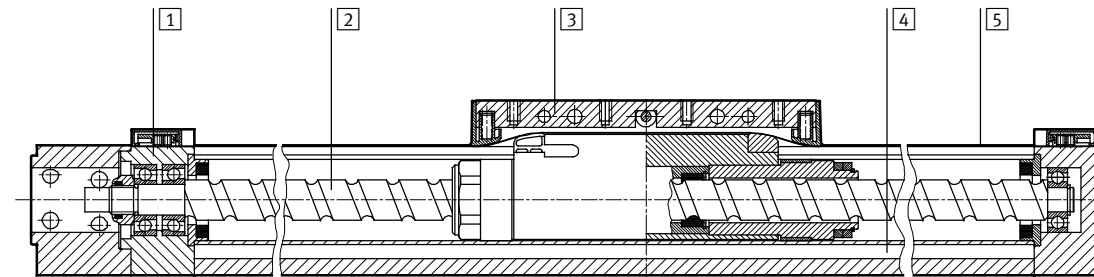
Technical data

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Spindle					
Size		18	25	40	63
Diameter	[mm]	8	12	20	32
Pitch	[mm/rev.]	4	10	20	30

Materials

Sectional view



Axis		
1	End cap	Wrought aluminium alloy, anodised
2	Spindle	Rolled steel
3	Driver	Wrought aluminium alloy, anodised
4	Profile	Wrought aluminium alloy, anodised
5	Cover strip	Corrosion resistant steel

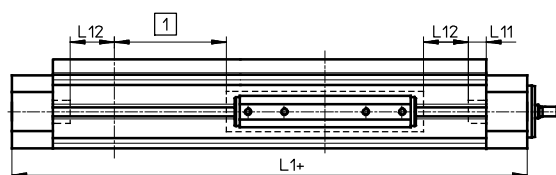
Stroke reserve

L1+ Overall length of axis
L11 Internal mechanical stop

1 The working stroke is the effective usable work range. Please quote this in your order.

L12 Stroke reserve:
Safety distance to mechanical stop, present at both ends of the axis in addition to the stroke.

Example:
Type DGE-25-500-SP
Working stroke = 500 mm
Stroke reserve = (2 x 10 mm)
= 20 mm
Total stroke
520 mm = 500 mm + 20 mm



Size		18	25	40	63
L12 per end position	[mm]	6.5	10	20	30

Spindle axes DGE-SP

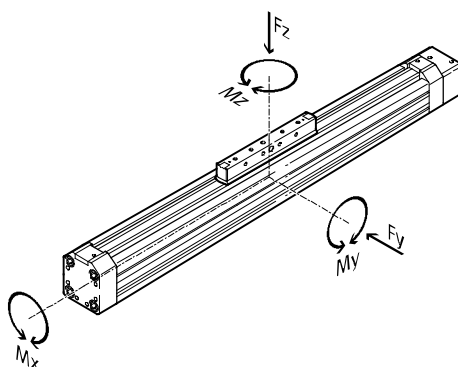
Technical data

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Characteristic load values

The indicated forces and torques refer to the centre line of the internal diameter of the profile.

They must not be exceeded in the dynamic range. Special attention must be paid to the cushioning phase.



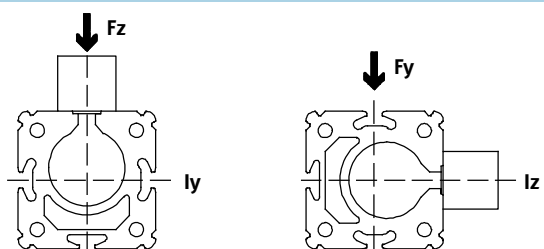
If the axis is subjected to more than two of the indicated forces and torques simultaneously, the following equations must be satisfied in addition to the indicated maximum loads:

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

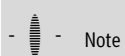
$$\frac{M_x}{M_{x_{\max.}}} \leq 1$$

Permissible forces and torques					
Size		18	25	40	63
F _y max.	[N]	–	–	–	–
F _z max.	[N]	1.8	2	15	106
M _x max.	[Nm]	0.5	1	4	8
M _y max.	[Nm]	0.8	1.5	4	18
M _z max.	[Nm]	0.8	1.5	4	18

2nd moment of area



Size		18	25	40	63
I _y	[mm ⁴]	69.8x10 ³	224x10 ³	673x10 ³	5688x10 ³
I _z	[mm ⁴]	72.3x10 ³	240x10 ³	748x10 ³	6031x10 ³



Note

Sizing software
PositioningDrives
→ www.festo.com

Spindle axes DGE-SP

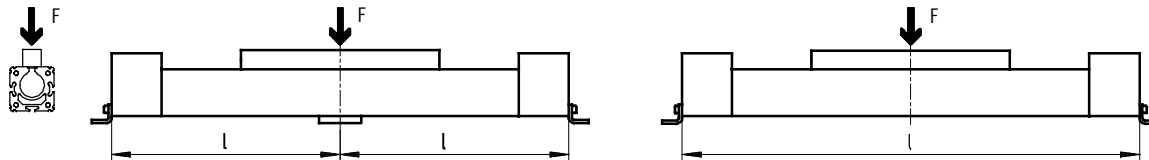
Technical data

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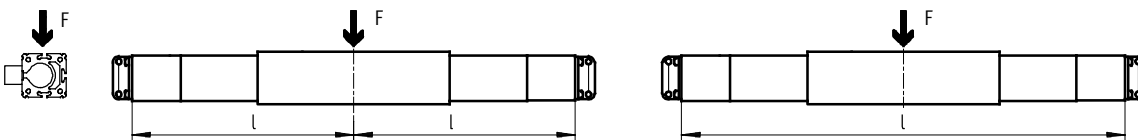
Maximum permissible support span l as a function of the force F

The axis may need to be supported with central supports in order to restrict deflection with long stroke lengths. The following diagrams serve to determine the maximum permissible support span l as a function of the force acting upon the axis F .

1 Force on the surface of the driver

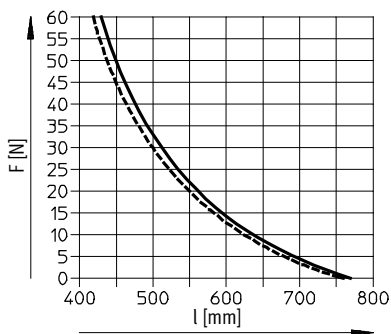


2 Force on the front of the driver

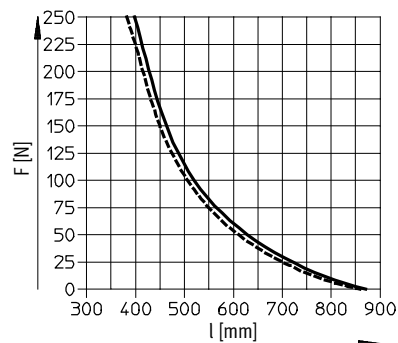


Maximum permissible support span l (without central support) as a function of the force F

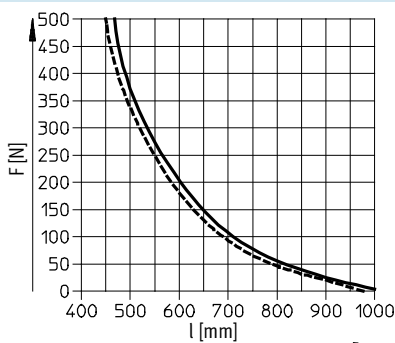
DGE-18



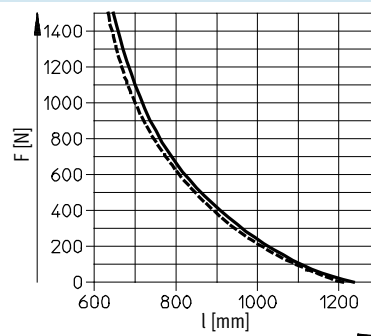
DGE-25



DGE-40



DGE-63



— 1
- - - 2

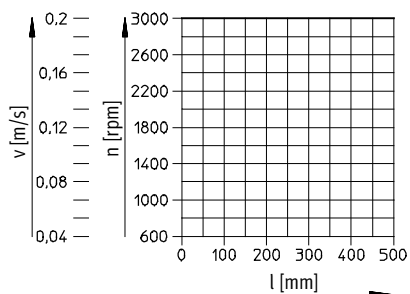
Spindle axes DGE-SP

Technical data

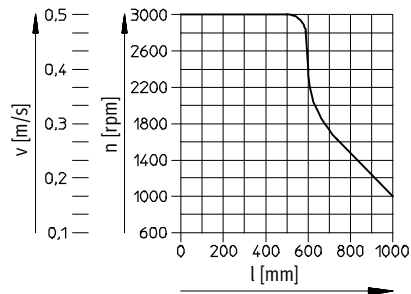
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Maximum permissible speed v or drive rpm n as a function of the stroke l

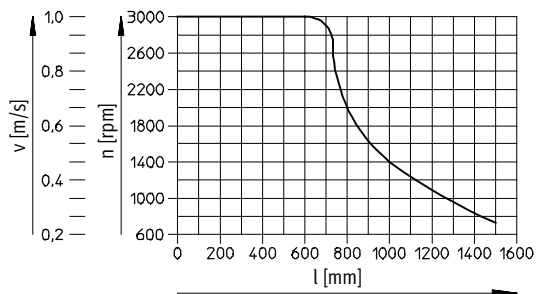
DGE-18



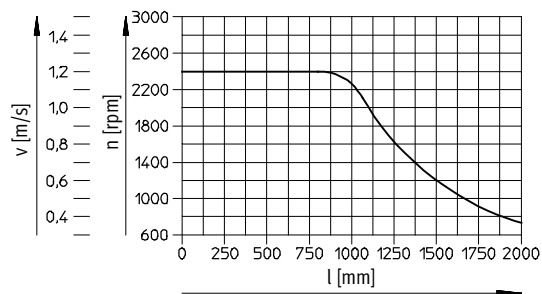
DGE-25



DGE-40



DGE-63



Spindle axes DGE-SP

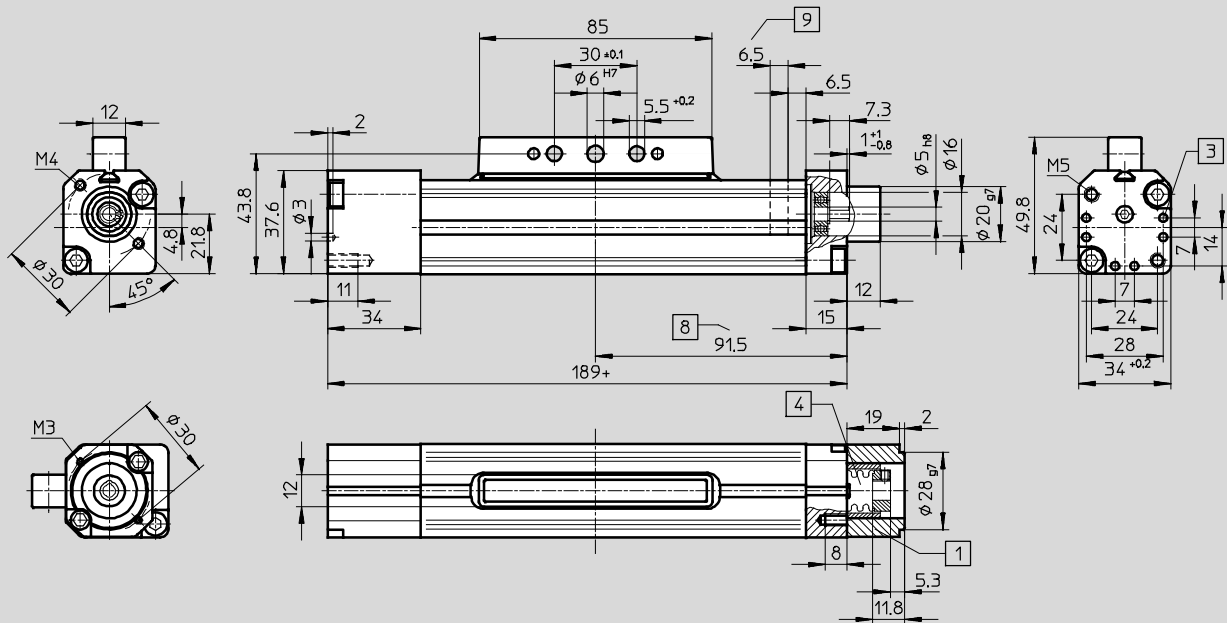
Technical data

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Dimensions

Download CAD data → www.festo.com

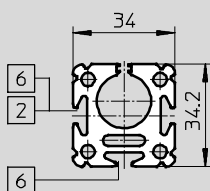
Size 18



- | | | | |
|--------------------------------------|---|-----------------------|------------------------|
| 1 Coupling housing | 4 Coupling | 9 Stroke reserve → 10 | + = plus stroke length |
| 3 Centring hole for foot mounting HP | 8 Driver in end position of working stroke (stroke reserve up to mechanical stop still present) | | |

Profile

Size 18



- | |
|------------------------------------|
| 2 Sensor slot for proximity sensor |
| 6 Mounting slot for slot nut NST |

Spindle axes DGE-SP

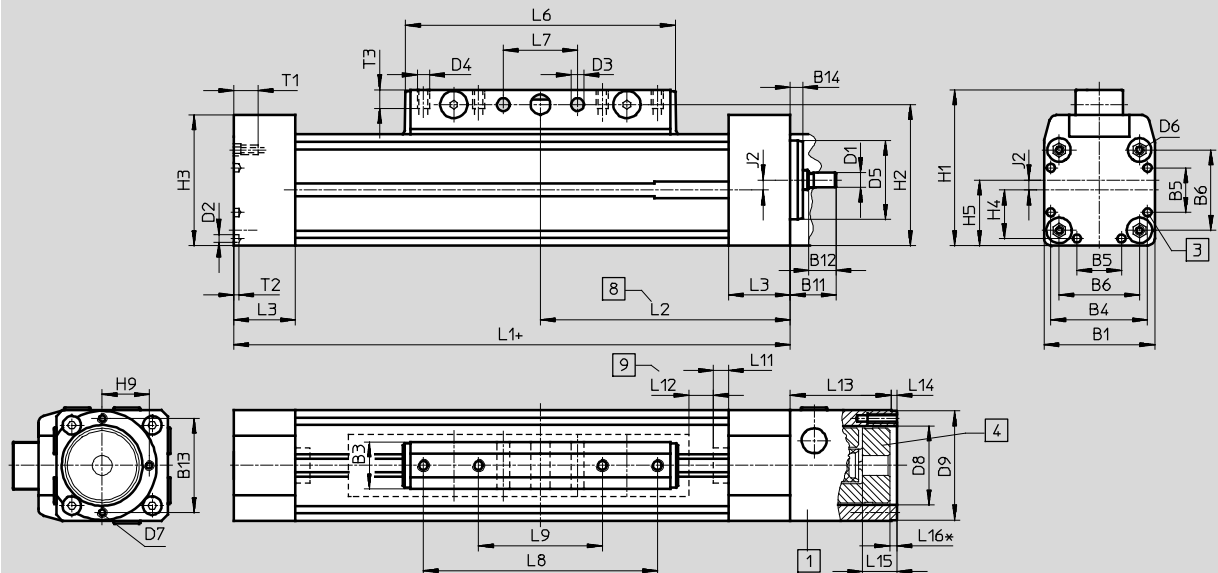
Technical data

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Dimensions

Download CAD data → www.festo.com

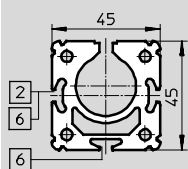
Size 25 ... 63



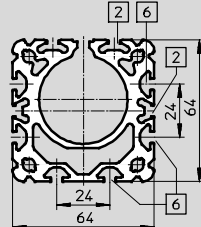
- 1 Coupling housing
 3 Centring hole for foot mounting HP
 4 Coupling
 8 Driver in end position of working stroke (stroke reserve up to mechanical stop still present)
 9 Stroke reserve → 10
 + = plus stroke length

Profile

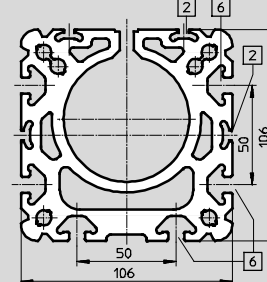
Size 25



Size 40



Size 63



- 2 Sensor slot for proximity sensor
 6 Mounting slot for slot nut NST

Size	B1	B3	B4	B5	B6	B11	B12	B13	B14	D1	D2	D3	D4	D5	D6	D7	D8	D9	H1	H2	H3
		+0.2								Ø	Ø	Ø		Ø			Ø	Ø			
25	45	19	39.1	18	32.5	18.5	11	38	4	6	3.3	5.2	M5	32	M4	M4	32	44	63	57	52.8
40	64	21	53	28	49	22.5	12	38	5	12	4.4	6.5	M6	48	M5	M4	32	44	86	78	71.8
63	106	24	89	44	83	47.5	25	56	7	20	6.4	8.5	M8	72	M8	M6	48	64	131	122	115

Size	H4	H5	H9	J2	L1	L2	L3	L6	L7	L8	L9	L11	L12	L13	L14	L15	L16 ¹⁾	T1	T2	T3
									±0.1	±0.1	±0.1									
25	19.6	26.5	19	4	213	101.5	25	109	30	–	50	6	10	43	2.5	14	3	13	2	7.5
40	26.5	37	19	5	315	153	31	171	70	130	40	7	20	46	3	14.5	3.5	13	3	10.5
63	44.5	61	28	8	410	200	36	234	110	190	70	9	30	83	4	23	–2	21	4	12.5

1) Negative dimension: Protrudes beyond coupling housing

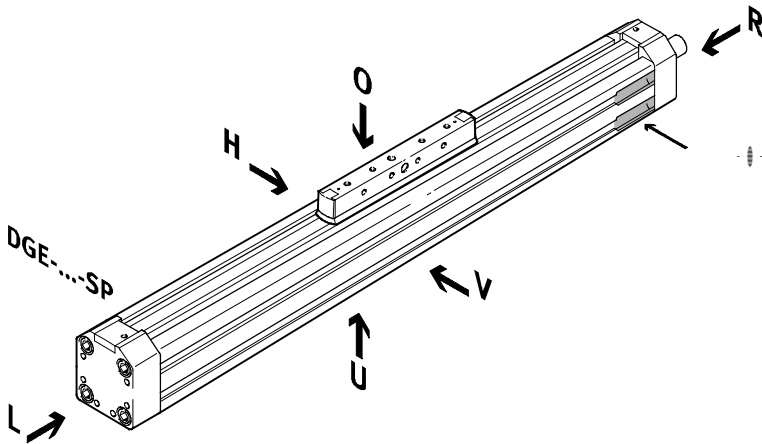
Spindle axes DGE-SP

Ordering data – Modular products

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Order code

Mandatory data



-  - Note

The insertion point for the proximity sensor is located on the right-hand side of the spindle axis DGE-...-SP

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

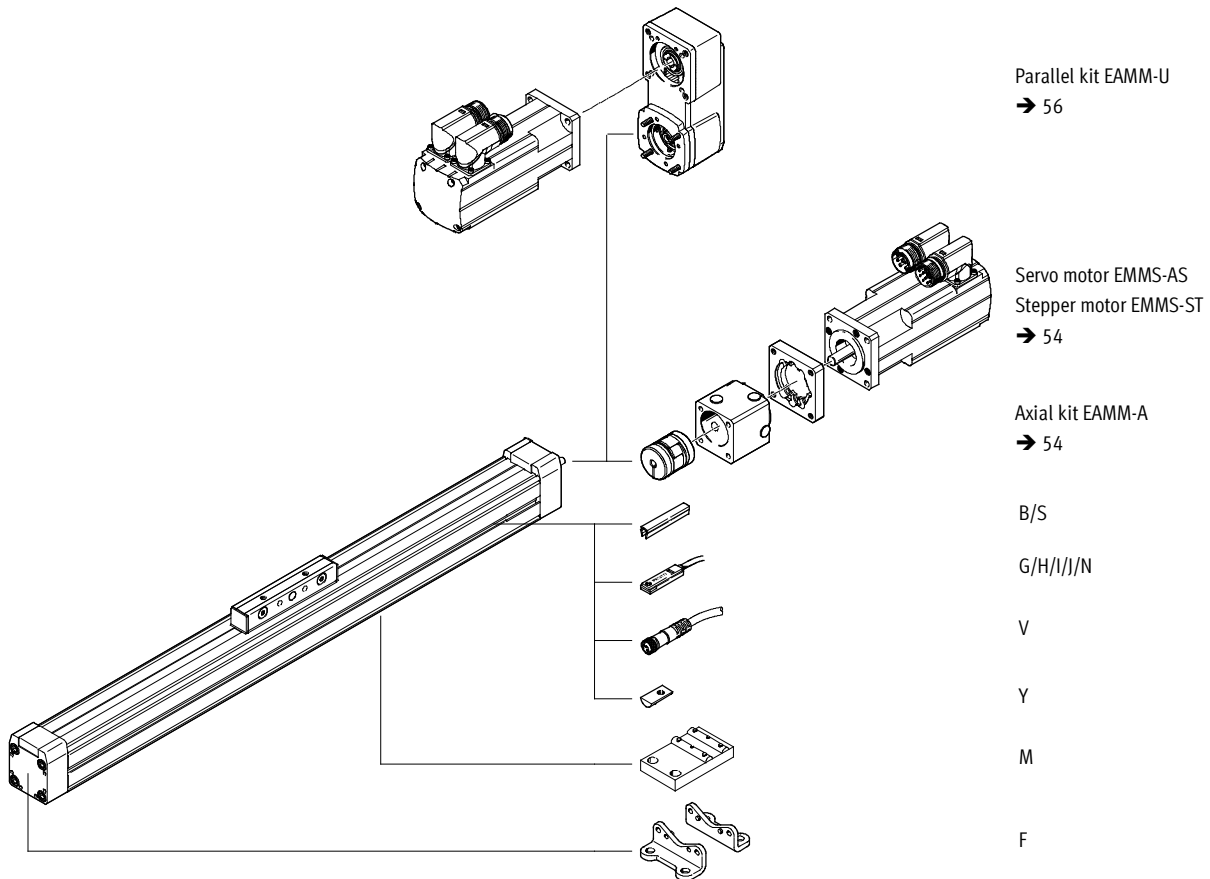
Spindle axes DGE-SP

Ordering data – Modular products

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Order code

Options



Spindle axes DGE-SP

Ordering data – Modular products

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M Mandatory data →

Module No.	Design	Size	Stroke	Drive function
193 745	DGE	18	1 ... 2 000	SP
193 746		25		
193 747		40		
193 748		63		
Ordering example				
193 747	DGE	- 40	- 800	- SP

Ordering table							
Size	18	25	40	63	Condi- tions	Code	Enter code
M Module No.	193 745	193 746	193 747	193 748			
Design	Electromechanical linear axis					DGE	DGE
Size	18	25	40	63		*...	
Stroke [mm]	100, 200, 300, 400, 500	100, 200, 300, 400, 500, 600, 700, 800, 900, 1000	200, 300, 400, 500, 600, 800, 1000, 1200, 1400, 1500	300, 400, 500, 600, 800, 1000, 1200, 1400, 1500, 1800, 2000		*...	
	–	1 ... 990	1 ... 1487	1 ... 1982			
Drive function	Electromechanical drive with ball screw					-SP	-SP

Transfer order code

	DGE	-		-		-	SP
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Spindle axes DGE-SP

Ordering data – Modular products

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Options

Accessories	Slot cover	Slot nut	Central support	Foot mounting	Proximity sensor	Plug socket
ZUB	...S ...B	...Y	...M	...F	...G ...H ...I ...J ...N	...V
ZUB	2S2B	10Y		F	2G	

Ordering table

Size	18	25	40	63	Condi- tions	Code	Enter code
Accessories	Supplied separately					ZUB-	ZUB-
Slot cover	Sensor slot	1 ... 10				...S	
	Mounting slot	–	–	1 ... 10		...B	
Slot nut	for mounting slot	1 ... 10				...Y	
Central support		1 ... 10				...M	
Foot mounting (kit)		1 ... 10				...F	
Proximity sensor	with cable, 2.5 m	1 ... 10				...G	
	with plug	1 ... 10				...H	
	contactless with cable, 2.5 m	1 ... 10				...I	
	contactless, plug	1 ... 10				...J	
	NC contact with cable, 2.5 m	1 ... 10				...N	
Cable with socket, 2.5 m		1 ... 10				...V	

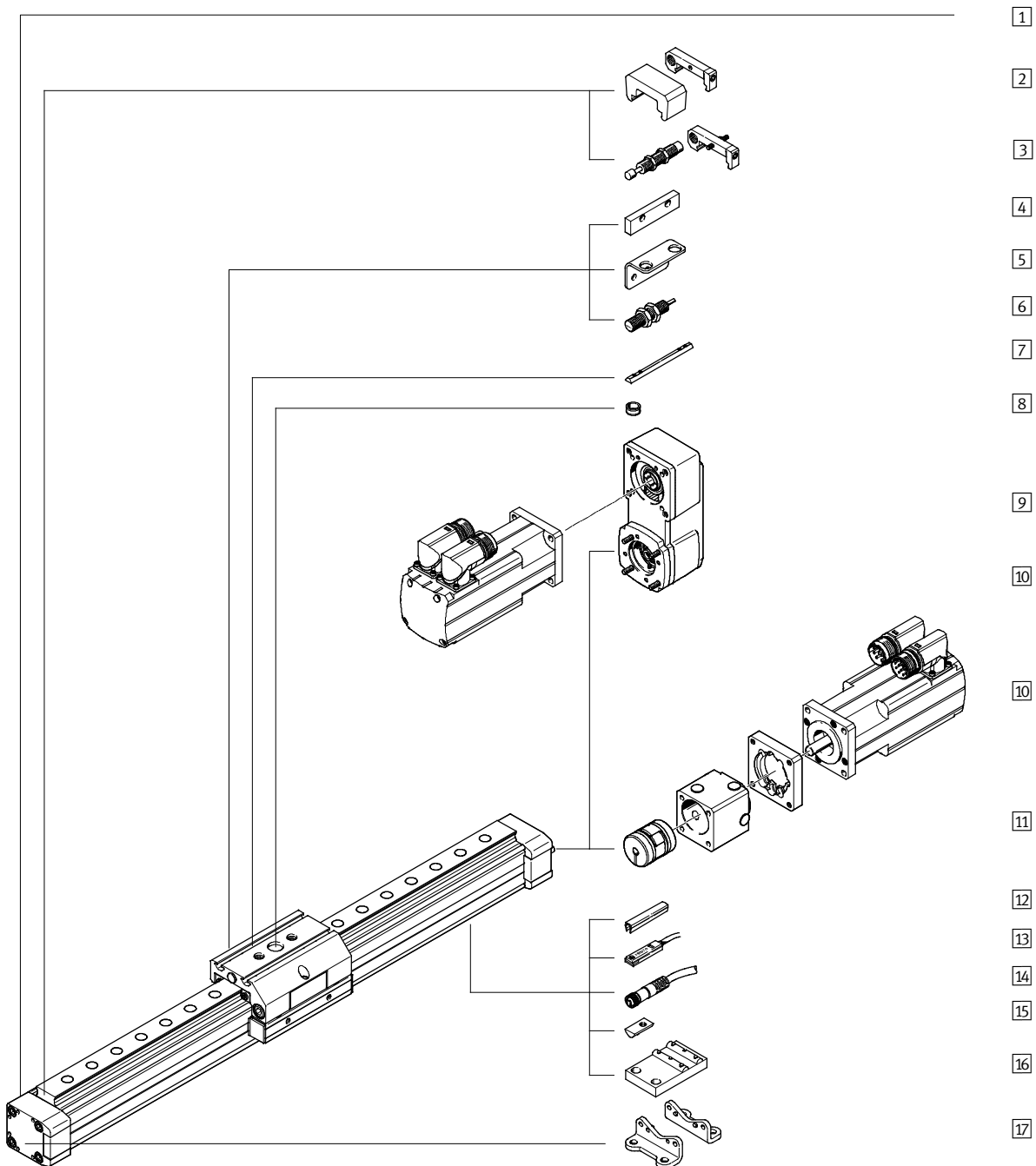
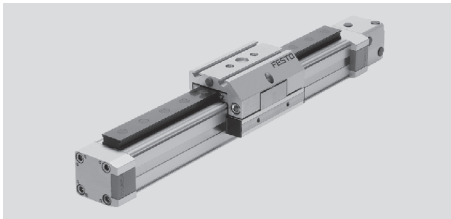
Transfer order code

ZUB	–						
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Spindle axes DGE-SP-KF, with recirculating ball bearing guide

Peripherals overview

FESTO



Spindle axes DGE-SP-KF, with recirculating ball bearing guide

Peripherals overview

Variants and accessories					
Type	Brief description	GK/GV	GA	→ Page/Internet	
1 Spindle axis DGE-SP-KF	Electromechanical axis with spindle and recirculating ball bearing guide	■	■	22	
2 Emergency buffer with retainer ¹⁾ A	For avoiding damage at the end stop in the event of malfunction	■	■	60	
3 Shock absorber kit C	For avoiding damage at the end stop in the event of malfunction	■	–	59	
3 Shock absorber kit E	For avoiding damage at the end stop in the event of malfunction	–	■	60	
4 Switching lug L	For sensing the slide position	■	–	62	
5 Sensor bracket T	Adapter for mounting the inductive proximity sensors on the axis	■	–	62	
6 Inductive proximity sensor O/P/R/W	For use as a signal generator and safety monitoring	■	–	65	
7 Slot nut for slide X	For mounting loads and attachments on the slide	■	■	64	
8 Centring pins/sleeves Z	For centring loads and attachments on the slide	■	■	64	
9 Parallel kit EAMM-U	For parallel motor attachment (consisting of: housing, Clamping component, clamping sleeve, toothed belt gearwheel, toothed belt)	■	■	56	
10 Motor EMMS	Motors specially matched to the axis, with or without gearing, with or without brake	■	■	54	
11 Axial kit EAMM-A	For axial motor attachment (consisting of: coupling housing, clamping component, motor flange)	■	■	54	
12 Slot cover B/S	For protecting against the ingress of dirt	■	■	64	
13 Proximity sensor G/H/I/J/N	For use as a signal or safety check	■	■	65	
14 Cable with socket V	For proximity sensors	■	■	65	
15 Slot nut for mounting slot Y	For mounting attachments	■	■	64	
16 Central support M	For mounting the axis	■	■	57	
17 Foot mounting F	For mounting the axis	■	■	57	

1) Fitted as standard for GV and GA.

Spindle axes DGE-SP-KF, with recirculating ball bearing guide

FESTO

Type code

	DGE	-	25	-	500	-	SP	-	KF	-	GK	-	SV	-	
Type															
DGE	Spindle axis														
Size															
Stroke [mm]															
Drive function															
SP	Spindle														
Guide															
KF	Recirculating ball bearing guide														
Slide															
GK	Standard slide														
GV	Extended slide														
GA	Protected version														
Slide attachment position															
SV	At front														
SH	At rear														
Additional slide															
KL	Left														
KR	Right														

Spindle axes DGE-SP-KF, with recirculating ball bearing guide

FESTO

Type code

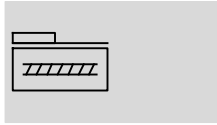
		+ ZUB	-	2S	-		-	M	-	F				Z	2H	2V			
Accessories																			
ZUB	Accessories supplied loose																		
Slot cover																			
...S	Sensor slot																		
...B	Mounting slot																		
Slot nut																			
...Y	For mounting slot																		
...X	For slide																		
Central support																			
...M	Central support																		
Foot mounting																			
...F	Foot mounting																		
Emergency buffer and retainer																			
...A	Emergency buffer																		
Shock absorber kit																			
...C	Plus retainer for GK/GV																		
...E	For GA																		
Centring sleeve																			
...Z	For slide																		
Proximity sensor																			
...G	With cable, 2.5 m																		
...H	With plug																		
...I	Contactless with cable, 2.5 m																		
...J	Contactless, plug																		
...N	NC contact with cable, 2.5 m																		
Cable with socket																			
...V	2.5 m																		
Sensor bracket																			
...T	For inductive proximity sensors																		
Switching lug																			
L	Switching lug																		
Inductive sensor																			
...O	NO contact, cable																		
...P	NC contact, cable																		
...W	NO contact, plug																		
...R	NC contact, plug																		

Spindle axes DGE-SP-KF, with recirculating ball bearing guide

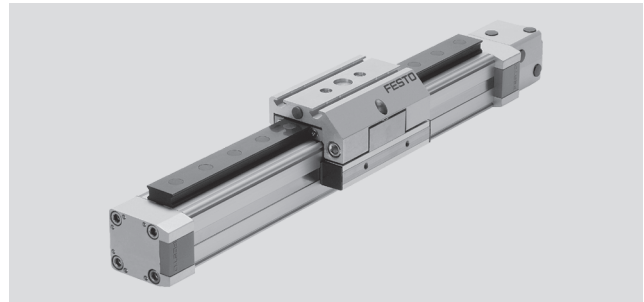
FESTO

Technical data

Function



www.festo.com



-  - Size
18 ... 63
-  - Stroke length
100 ... 2000 mm

General technical data					
Size		18	25	40	63
Constructional design		Electromechanical axis with spindle and recirculating ball bearing guide			
Guide		Recirculating ball bearing guide			
Mounting position		Any			
Max. working stroke ¹⁾	GK [mm]	100 ... 500	100 ... 1000 ⁴⁾	200 ... 1500 ⁴⁾	300 ... 2000 ⁴⁾
	GV [mm]	110 ... 410	170 ... 870 ⁴⁾	170 ... 1270 ⁴⁾	150 ... 1650 ⁴⁾
	GA [mm]	–	170 ... 970 ⁴⁾	140 ... 1440 ⁴⁾	–
Max. working load	[kg]	6	25	50	150
Max. feed force F_x	[N]	140	250	600	1600
Max. driving torque	[Nm]	0.1	0.45	2.1	8.5
Max. no-load driving torque	[Nm]	0.04 ²⁾	0.15 ³⁾	0.33 ³⁾	1.15 ³⁾
Max. radial force ⁴⁾	[N]	40	75	250	800
Max. speed ⁵⁾	[m/s]	0.2	0.5	1	1.2
Max. acceleration	[m/s ²]	6			
Repetition accuracy	[mm]	±0.02			

- 1) Total stroke = working stroke + 2x stroke reserve → 28
- 2) Measured at a speed of 0.05 m/s
- 3) Measured at a speed of 0.2 m/s
- 4) On drive shaft
- 5) The maximum speed is dependent on the stroke length → 30

Operating and environmental conditions				
Size	18	25	40	63
Ambient temperature	[°C] 0 ... +40			
Protection class	IP40			

Weights [kg]					
Size		18	25	40	63
Basic weight with 0 mm stroke ¹⁾	GK	1	2.1	6.4	18.1
	GV	1.52	3.26	10.04	32.2
	GA	–	3.1	8.97	–
Additional weight per 100 mm stroke	GK	0.3	0.56	1.14	3.31
	GV	0.3	0.56	1.14	3.31
	GA	–	0.65	1.26	–
Moving load	GK	0,45	0,68	1,82	5,38
	GV	0,61	0,94	2,54	7,84
	GA	–	1,24	3,19	–
Additional slide	KL/KR	0.25	0.38	1.06	3.1

- 1) Including coupling housing and slide

Spindle axes DGE-SP-KF, with recirculating ball bearing guide

FESTO

Technical data

Mass moment of inertia			18	25	40	63
Size						
J_0	GK	[kg cm ²]	0.008	0.04	0.48	3.88
	GV	[kg cm ²]	0.0117	0.0617	0.782	6.77
	GA	[kg cm ²]	–	0.0573	0.678	–
J_H per metre stroke			[kg cm ² /m]	0.031	0.121	1
J_L per kg working load			[kg cm ² /kg]	0.005	0.025	0.101
J_W for additional slide			[kg cm ²]	0.001	0.0096	0.107

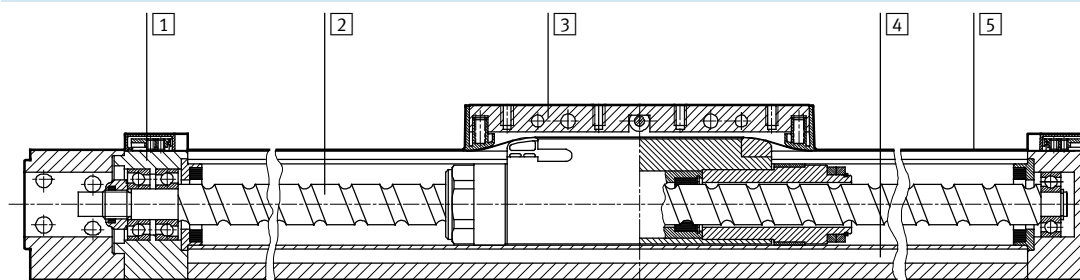
The mass moment of inertia J_A of the entire axis is calculated as follows:

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

Spindle			18	25	40	63
Size						
Diameter	[mm]		8	12	20	32
Pitch	[mm/rev.]		4	10	20	30

Materials

Sectional view



Axis		
1	End cap	Wrought aluminium alloy, anodised
2	Spindle	Rolled steel
3	Slide	Wrought aluminium alloy, anodised
4	Profile	Wrought aluminium alloy, anodised
5	Cover strip	Corrosion resistant steel

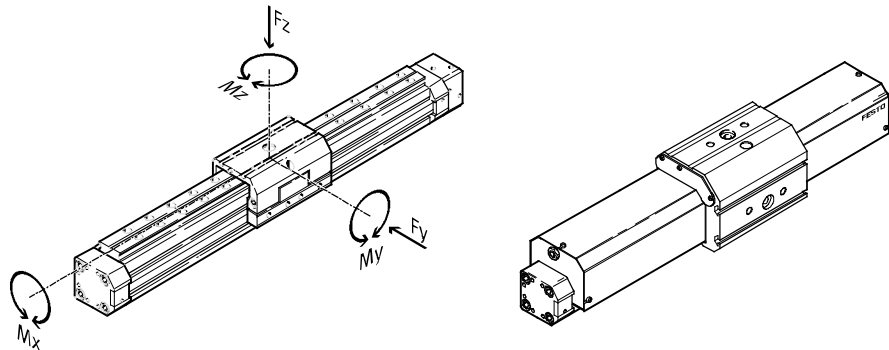
Spindle axes DGE-SP-KF, with recirculating ball bearing guide

Technical data

FESTO

Characteristic load values for axis with standard slide GK or protected version GA

The indicated forces and torques refer to the centre of the guide rail. They must not be exceeded in the dynamic range. Special attention must be paid to the cushioning phase.

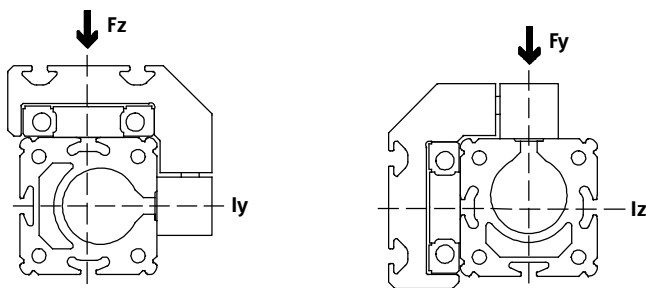


If the drive is subjected to more than two of the indicated forces and torques simultaneously, the following equations must be satisfied in addition to the indicated maximum loads:

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

Permissible forces and torques GK/-GA					
Size		18	25	40	63
F _y _{max.}	[N]	930	3080	7300	14050
F _z _{max.}	[N]	930	3080	7300	14050
M _x _{max.}	[Nm]	7	45	170	580
M _y _{max.}	[Nm]	23	85	330	910
M _z _{max.}	[Nm]	23	85	330	910

2nd moment of area



Size		18	25	40	63
I _y	[mm ⁴]	172.3x10 ³	551x10 ³	1908x10 ³	13677x10 ³
I _z	[mm ⁴]	73.7x10 ³	250x10 ³	875x10 ³	6987x10 ³

-  - Note
Sizing software
PositioningDrives
→ www.festo.com

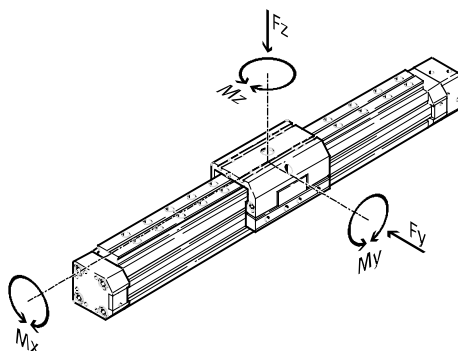
Spindle axes DGE-SP-KF, with recirculating ball bearing guide

FESTO

Technical data

Characteristic load values for axis with extended slide GV

The indicated forces and torques refer to the centre of the guide rail. They must not be exceeded in the dynamic range. Special attention must be paid to the cushioning phase.

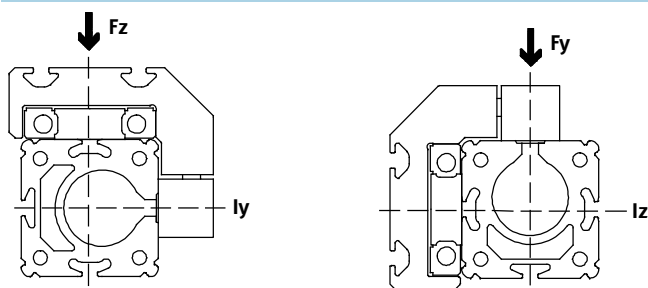


If the drive is subjected to more than two of the indicated forces and torques simultaneously, the following equations must be satisfied in addition to the indicated maximum loads:

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

Permissible forces and torques					
Size		18	25	40	63
F _y max.	[N]	930	3080	7300	14050
F _z max.	[N]	930	3080	7300	14050
M _x max.	[Nm]	7	45	170	580
M _y max.	[Nm]	45	170	660	1820
M _z max.	[Nm]	45	170	660	1820

2nd moment of area



Size		18	25	40	63
I _y	[mm ⁴]	172.3x10 ³	551x10 ³	1908x10 ³	13677x10 ³
I _z	[mm ⁴]	73.7x10 ³	250x10 ³	875x10 ³	6987x10 ³

Spindle axes DGE-SP-KF, with recirculating ball bearing guide

FESTO

Technical data

Stroke reserve

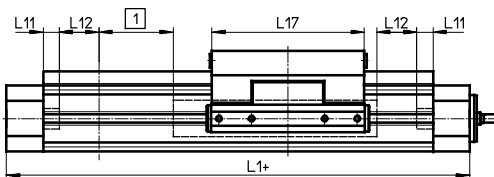
L11 Internal mechanical stop
L1+ Overall length of axis
L17 Slide length

1 The working stroke is the effective usable work range. Please quote this in your order.

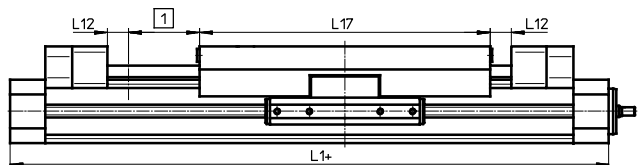
L12 The stroke reserve is a safety distance available on both sides of the axis in addition to the stroke.

Example:
Type DGE-25-500-SP
Working stroke = 500 mm
Stroke reserve = (2x 10 mm)
= 20 mm
Total stroke:
520 mm = 500 mm + 20 mm

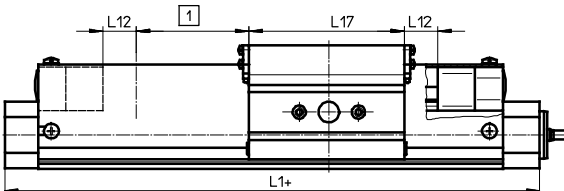
for standard slide GK



for extended slide GV



for protected version GA

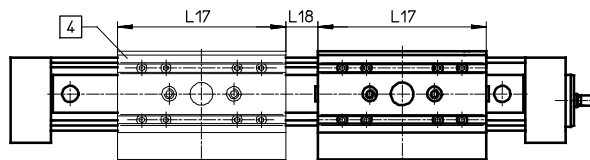


Stroke reserve L12 [mm] per end position

Size Variant	18	25	40	63
Standard slide GK	6.5	10	20	30
Extended slide GV	3.5	0	1	0
Protected version GA	–	0	1	–

Working stroke reduction with standard slide GK or extended slide GV and additional slide KL/KR

L17 = Slide/additional slide length
L18 = Distance between both slides
4 Additional slide

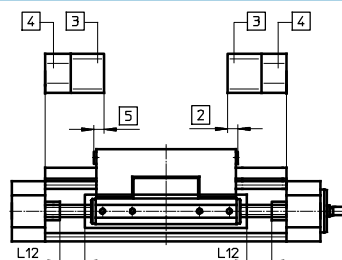


For a spindle axis with additional slide, the working stroke is reduced by the length of the additional slide and the distance between both slides.

Example:
Type DGE-25-500-SP-...-KF-GK-KL
Working stroke without additional slide = 500 mm
L18 = 20 mm
L17 = 105 mm
Working stroke with additional slide = 375 mm
(500 mm – 20 mm – 105 mm)

Working stroke reduction with standard slide GK with optional emergency buffer

2 Reduction of working stroke
5 Reduction of working stroke
3 Emergency buffer
4 Shock absorber retainer
L12 Stroke reserve



For a spindle axis with optional emergency buffer, the working stroke is reduced, as the stroke reserve is smaller than the overall dimensions of the emergency buffer and shock absorber retainer. The working stroke reduction varies depending on the size of the axis.

	18	25	40	63
2 [mm]	–5	20	33.5	55
5 [mm]	8	10	24.5	45

Spindle axes DGE-SP-KF, with recirculating ball bearing guide

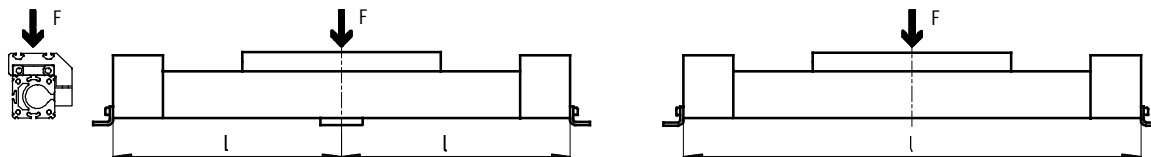
FESTO

Technical data

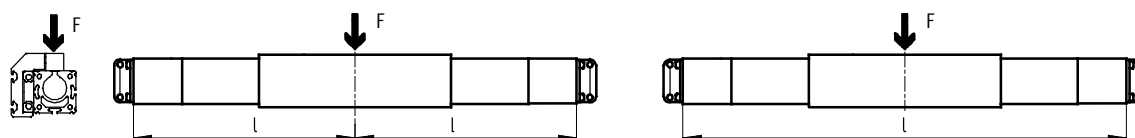
Maximum permissible support span l as a function of the force F

The axis may need to be supported with central supports in order to restrict deflection with long stroke lengths. The following diagrams serve to determine the maximum permissible support span l as a function of the force acting upon the axis F .

1 Force on the surface of the slide

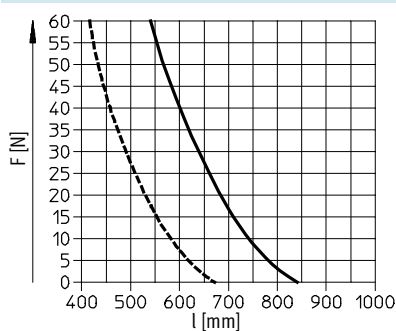


2 Force on the front of the slide

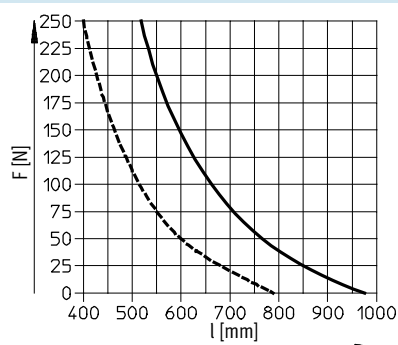


Maximum permissible support span l (without central support) as a function of the force F

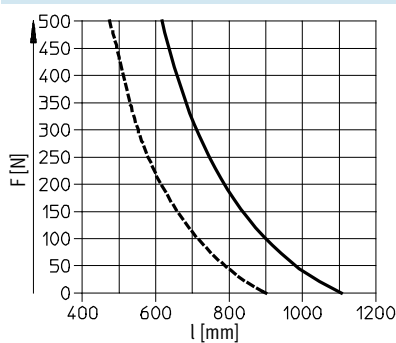
DGE-18



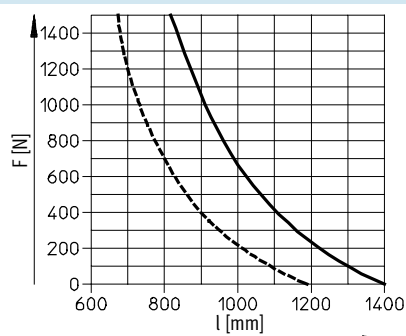
DGE-25



DGE-40



DGE-63



— 1
- - - 2

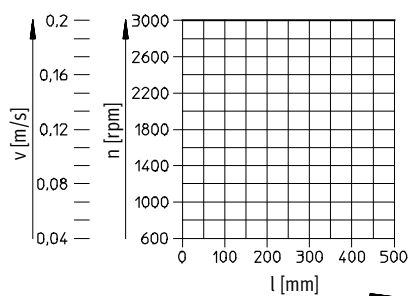
Spindle axes DGE-SP-KF, with recirculating ball bearing guide

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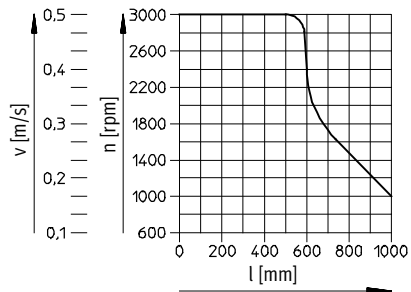
Technical data

Maximum permissible speed v or drive rpm n as a function of the stroke l

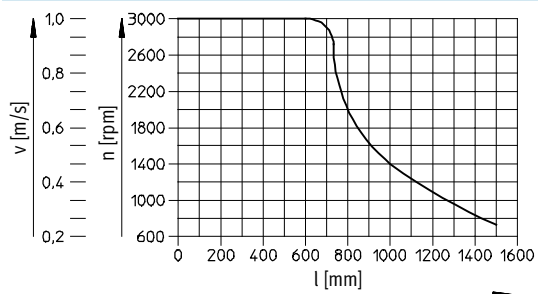
DGE-18



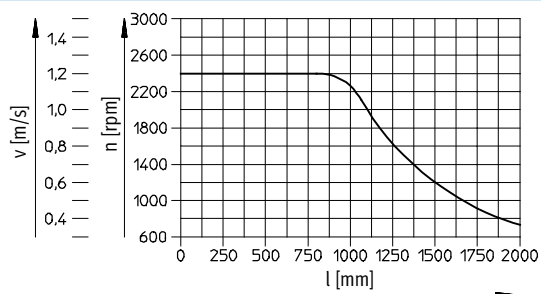
DGE-25



DGE-40



DGE-63



Spindle axes DGE-SP-KF, with recirculating ball bearing guide

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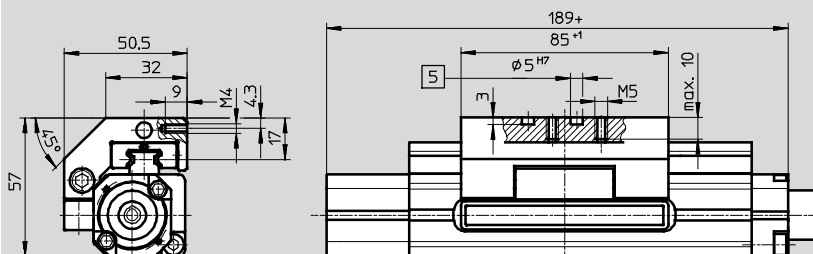
Technical data

Dimensions

Download CAD data → www.festo.com

Standard slide GK

Size 18



- 5 Hole for centring pin ZBS-5
- + = plus stroke length

Basic dimensions

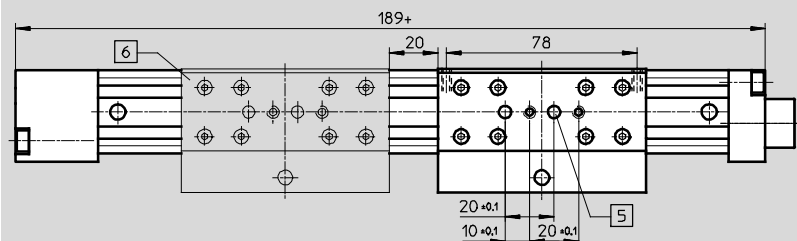
→ 14

Stroke reserve

→ 28

Additional slide KL/KR

Size 18



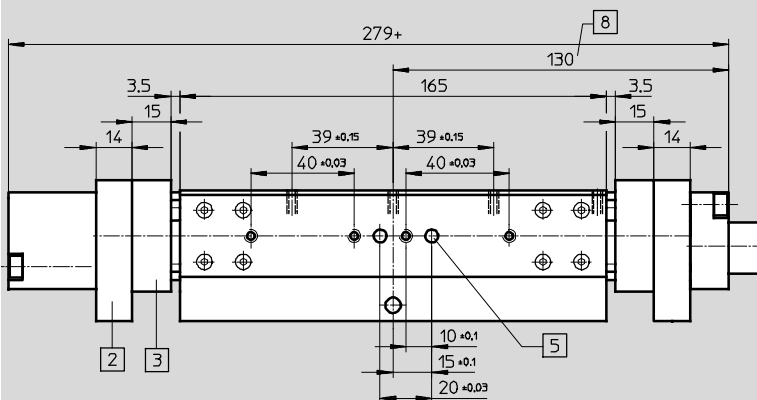
- 5 Hole for centring pin ZBS-5
- 6 Additional slide
- DGE-18-...-KL/KR
- + = plus stroke length

Reduction of working stroke

→ 28

Extended slide GV

Size 18



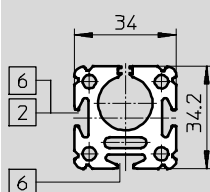
- 2 Shock absorber retainer KYP
- 3 Emergency buffer NPE
- 5 Hole for centring pin ZBS-5
- 8 Driver in end position of working stroke (stroke reserve up to mechanical stop still present)
- + = plus stroke length

Stroke reserve

→ 28

Profile

Size 18



- 2 Sensor slot for proximity sensor
- 6 Mounting slot for slot nut NST

Spindle axes DGE-SP-KF, with recirculating ball bearing guide

Technical data

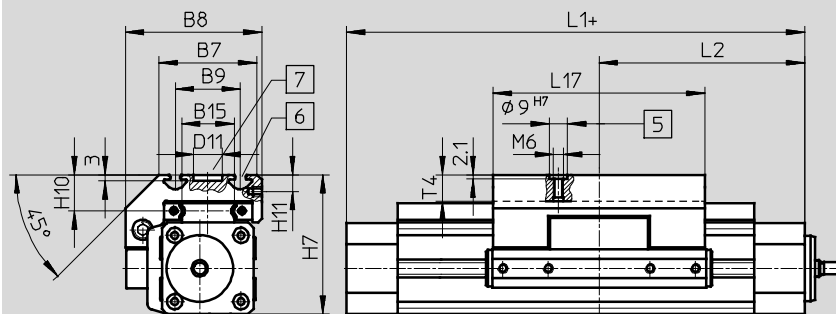
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Dimensions

Download CAD data → www.festo.com

Standard slide GK

Size 25 ... 63



- 5 Hole for centring sleeve ZBH-9
- 6 Mounting slot for slot nut NSTL
- 7 Hole for central mounting SLZZ
- + = plus stroke length

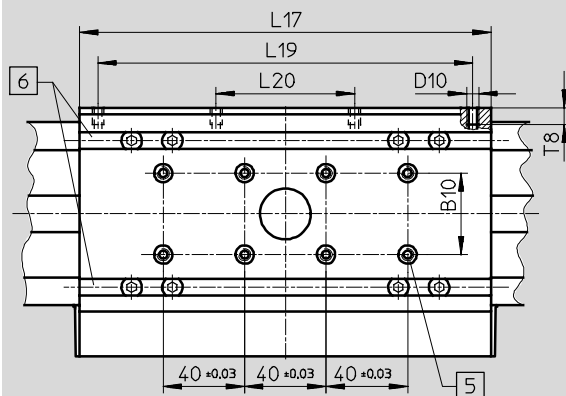
Basic dimensions

→ 15

Stroke reserve

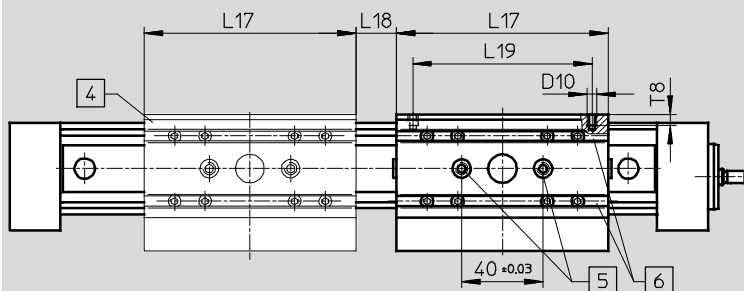
→ 28

Size 40/63



- 5 Hole for centring sleeve ZBH-9
- 6 Mounting slot for slot nut NSTL
- + = plus stroke length

Size 25 ... 63



- 4 Additional slide
DGE-...-KL/KR
- 5 Hole for centring sleeve ZBH-9
- 6 Mounting slot for slot nut NSTL
- + = plus stroke length

Reduction of working stroke

→ 28

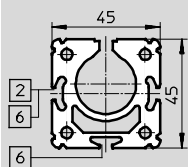
Spindle axes DGE-SP-KF, with recirculating ball bearing guide

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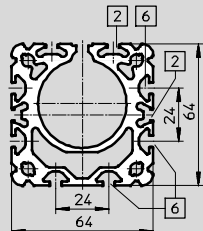
Technical data

Profile

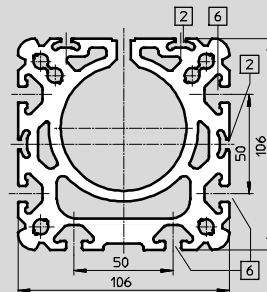
Size 25



Size 40



Size 63



- 2 Sensor slot for proximity sensor
- 6 Mounting slot for slot nut NST

Size	B7	B8	B9 ±0.2	B10	B15	D10	D11 Ø G7	H7	H10
25	48	67	32	–	23.5	M5	14	68.5	18.5
40	78.5	96.5	55	20	42	M5	25	90.5	20
63	121	142	90	40	71	M8	25	144.5	30

Size	H11	L1	L2	L17	L18 ¹⁾	L19 ±0.1	L20 ±0.1	T4 max.	T8
25	8.2	213	101.5	105	20	88	–	12.5	8.5
40	7	315	153	167	20	150	58	12.5	8.5
63	12.5	410	200	230	27	200	72	20.5	10.5

1) Recommended minimum distance for access to lubrication nipple

Spindle axes DGE-SP-KF, with recirculating ball bearing guide

Technical data

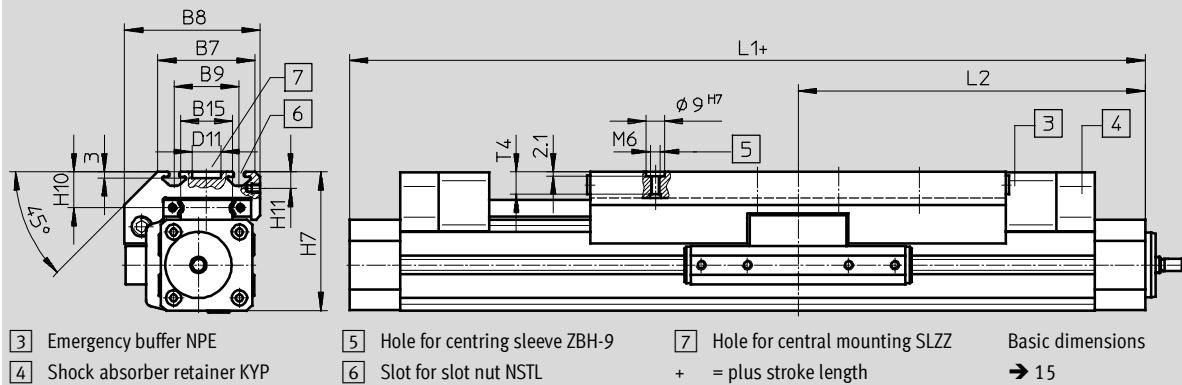
FESTO

Dimensions

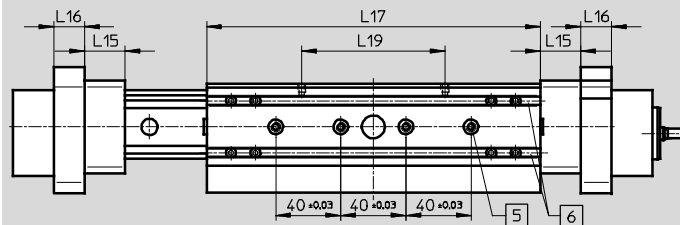
Download CAD data → www.festo.com

Extended slide GV

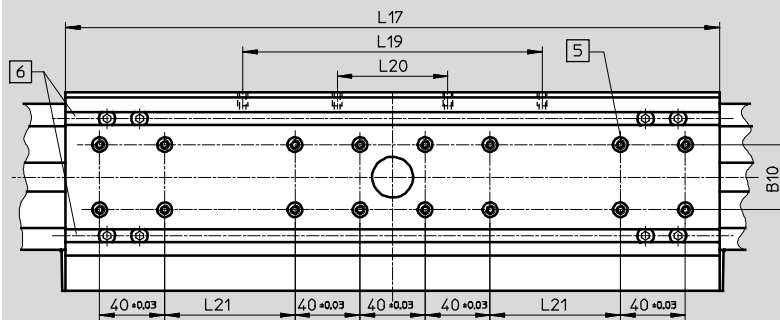
Size 25 ... 63



Size 25



Size 40/63



Spindle axes DGE-SP-KF, with recirculating ball bearing guide

FESTO

Technical data

Size	B7	B8	B9 ±0.2	B10	B15	D10	D11 Ø G7	H7	H10	H11
25	48	67	32	–	23.5	M5	14	68.5	18.5	8.2
40	78.5	96.5	55	20	42	M5	25	90.5	20	7
63	121	142	90	40	71	M8	25	144.5	30	12.5

Size	L1	L2	L15	L16	L17 ±0.2	L19 ±0.1	L20 ±0.1	L21 ±0.1	T4 max.	T8
25	343	171.5	25	19	205	88	–	–	12.5	8.5
40	545	271.5	40	32	337	150	58	40	12.5	8.5
63	760	380	60	44	480	200	72	120	20.5	10.5

Spindle axes DGE-SP-KF, with recirculating ball bearing guide

Technical data

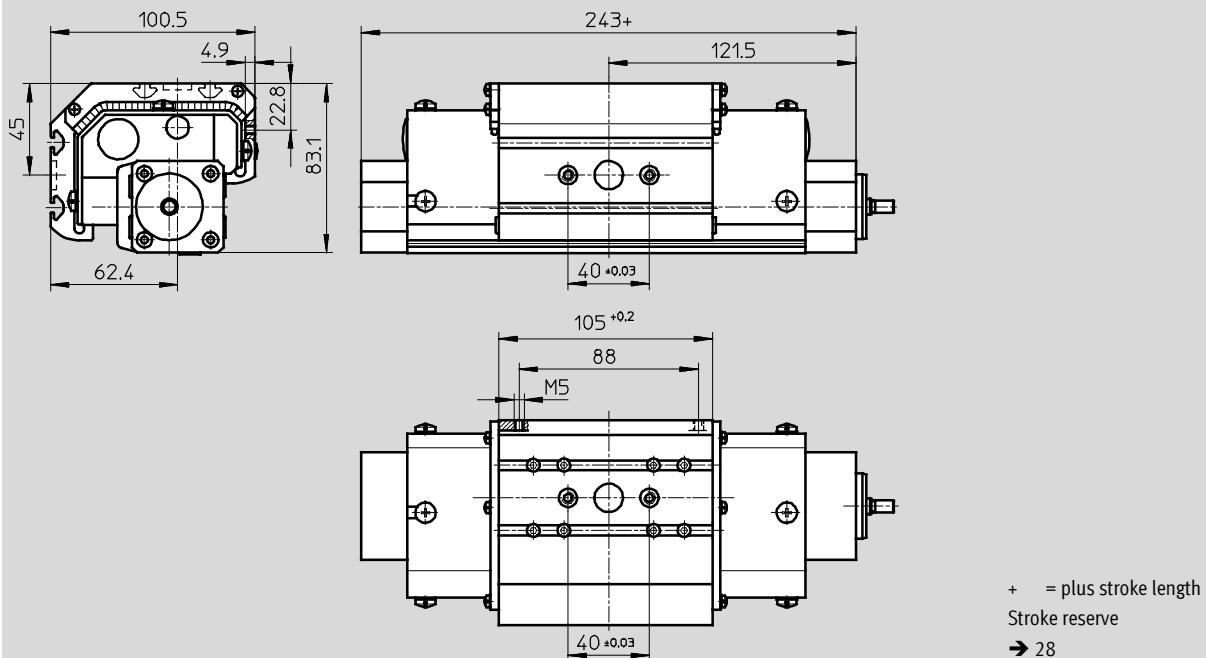
FESTO

Dimensions

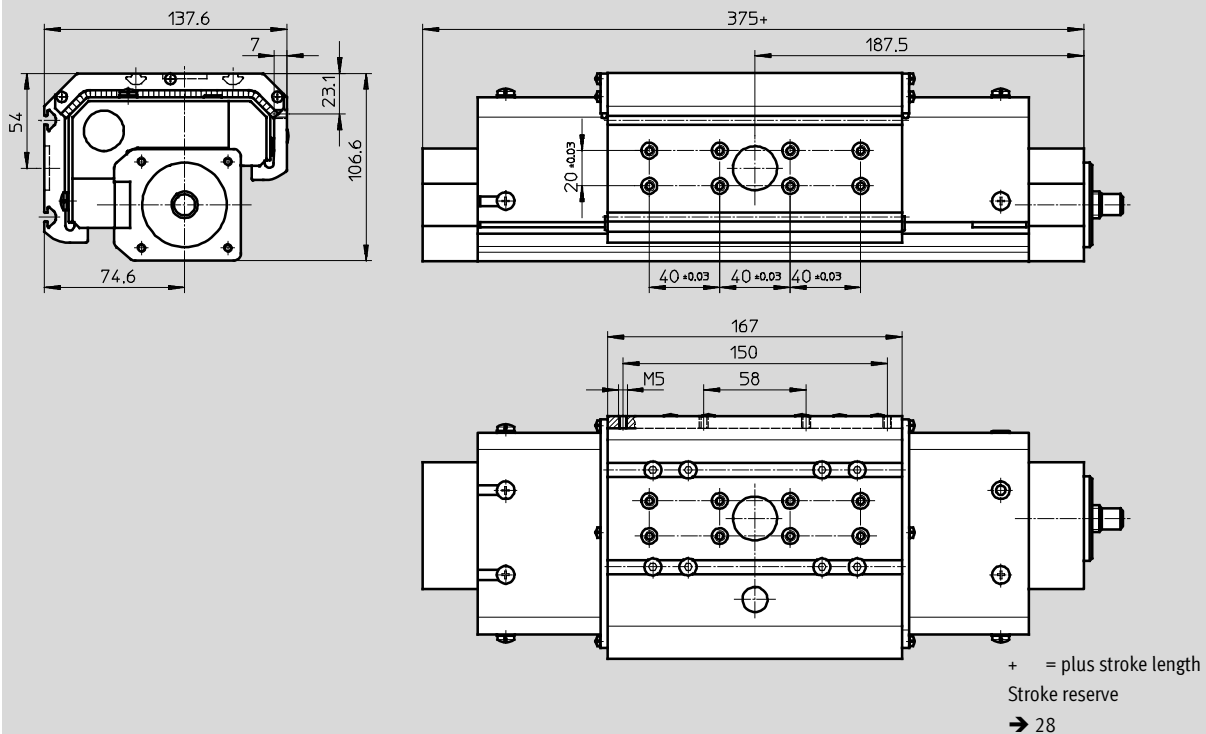
Download CAD data → www.festo.com

Protected version GA

Size 25



Size 40



Spindle axes DGE-SP-KF, with recirculating ball bearing guide

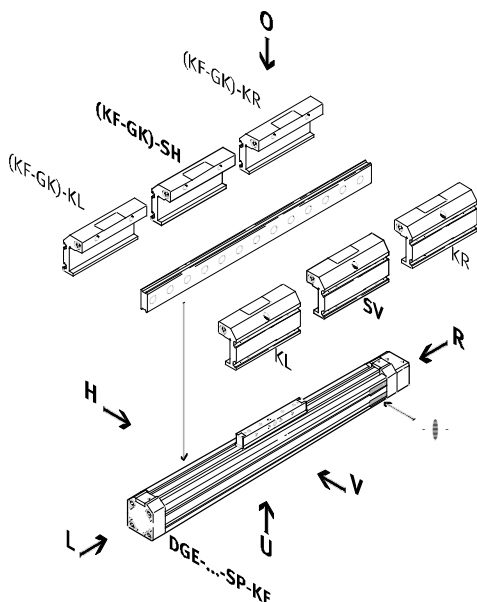
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Ordering data – Modular products

Order code

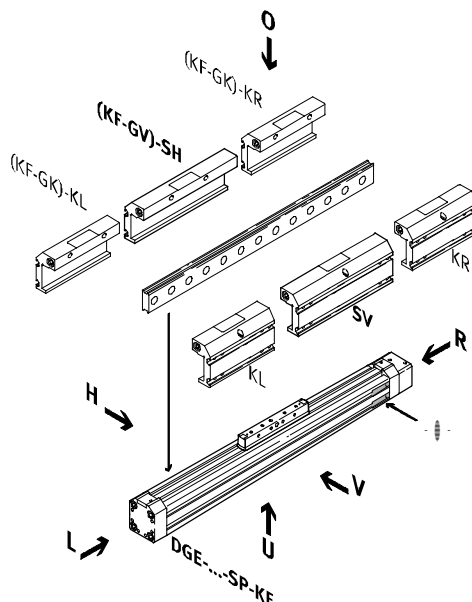
Mandatory data

Standard slide GK



- KF Recirculating ball bearing guide
- KL Additional slide at left
- KR Additional slide at right
- SV Slide at front
- SH Slide at rear

Extended slide GV

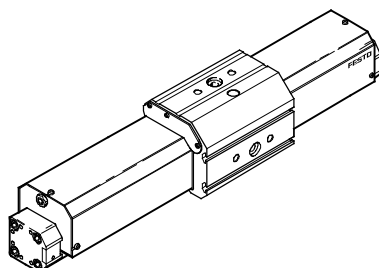


Note

The insertion point for the proximity sensor is located on the right-hand side of the spindle drive DGE-...-SP-KF

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

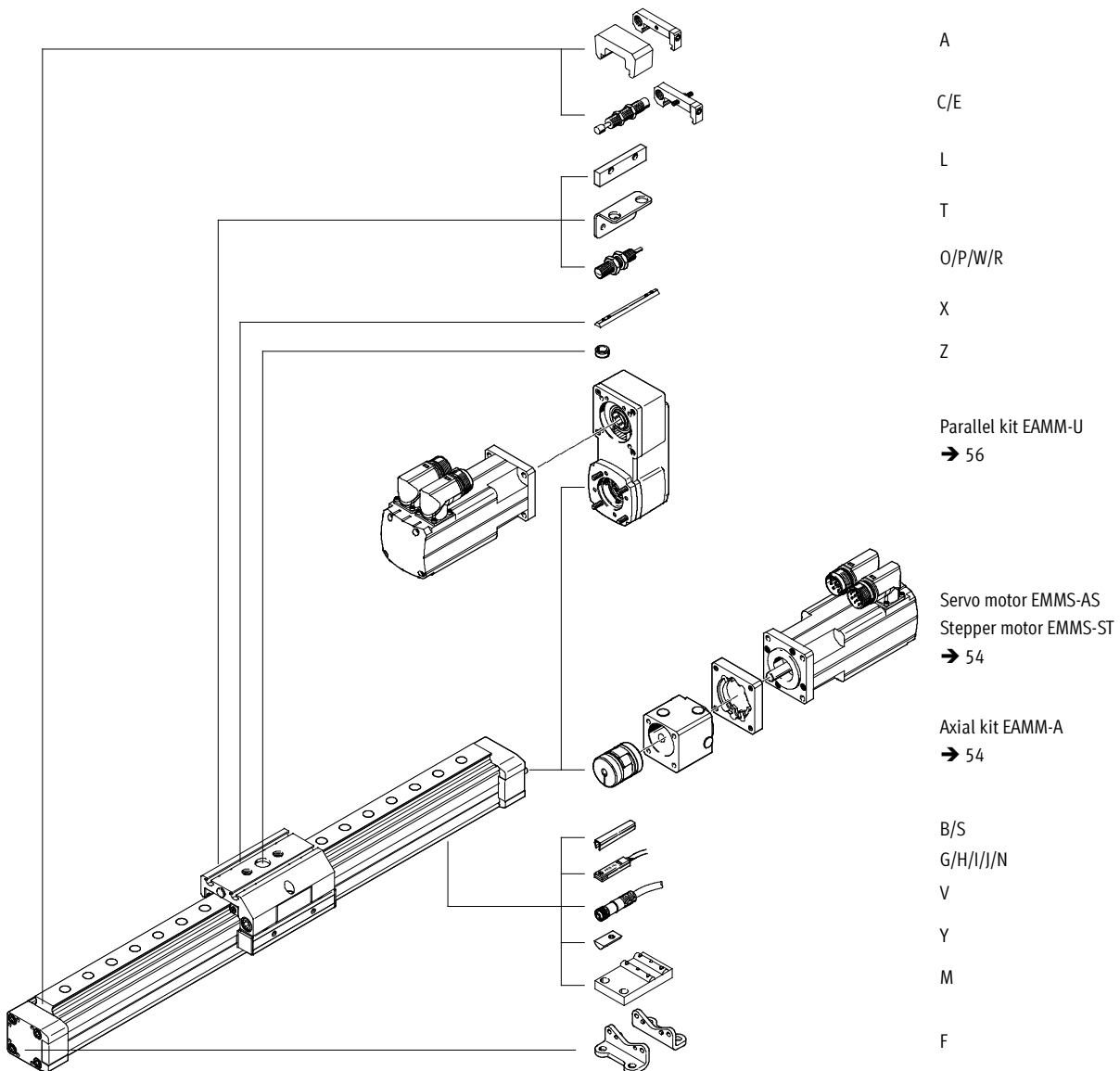
Protected version GA



Spindle axes DGE-SP-KF, with recirculating ball bearing guide

Ordering data – Modular products

FESTO



Spindle axes DGE-SP-KF, with recirculating ball bearing guide

FESTO

Ordering data – Modular products

M Mandatory data →				
Module No.	Design	Size	Stroke	Drive function
193 745 193 746 193 747 193 748	DGE	18 25 40 63	1 ... 2000	SP
Ordering example				
193 745	DGE	18	410	SP

Ordering table							
Size	18	25	40	63	Condi- tions	Code	Enter code
M Module No.	193 745	193 746	193 747	193 748			
Design	Electromechanical linear axis					DGE	DGE
Size	18	25	40	63		*...	
Stroke [mm] Standard slide GK	100, 200, 300, 400, 500	100, 200, 300, 400, 500, 600, 700, 800, 900, 1000	200, 300, 400, 500, 600, 800, 1000, 1200, 1400, 1500	300, 400, 500, 600, 800, 1000, 1200, 1400, 1500, 1800, 2000		*...	
	–	1 ... 990	1 ... 1487	1 ... 1982			
	Extended slide GV	110, 210, 310, 410	170, 270, 370, 470, 570, 670, 770, 870	150, 250, 450, 650, 850, 1050, 1150, 1450, 1650		*...	
	–	1 ... 860	1 ... 1257	1 ... 1632			
Protected version GA	–	170, 270, 370, 470, 570, 670, 770, 870, 970	140, 240, 340, 440, 540, 740, 940, 1140, 1340, 1440	–		*...	
	–	1 ... 960	1 ... 1427	–			
Drive function	Electromechanical drive with ball screw					-SP	-SP

Transfer order code

	DGE	–		–		–	SP
--	-----	---	--	---	--	---	----

Spindle axes DGE-SP-KF, with recirculating ball bearing guide

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Ordering data – Modular products

0 Options			
Guide	Slide	Slide attachment position	Additional slide
KF	GK GV GA	SV SH	KL KR
- KF	- GV	- SV	-

Ordering table									
Size		18	25	40	63	Condi- tions	Code	Enter code	
0	Guide		Recirculating ball bearing guide			1	-KF	-KF	
	Slide	Standard	Standard			2	-GK		
		Extended	Extended			3	-GV		
		Dust protection	–	Dust-proof version		–	3		-GA
↓	Slide attachment position		Slide at front				-SV		
			Slide at rear				-SH		
	Additional slide	left (effective stroke reduction)	Standard slide at left (85 mm*)	(105 mm*)	(167 mm*)	(230 mm*)	4	-KL	
		right (effective stroke reduction)	Standard slide at right (85 mm*)			(105 mm*)	(167 mm*)	(230 mm*)	

* Plus working tolerance between slide and additional slide.

1 KF Only with slide GK, GV, GA.

2 GK Only with slide attachment position SV, SH.
Emergency buffer recommended → Accessory option "A".

3 GV, GA Only with slide attachment position SV, SH.
Emergency buffer included in delivery.

4 KL, KR Not with slide GA.
Emergency buffer recommended → Accessory option "A".

Transfer order code

- KF	-		-		-	
------	---	--	---	--	---	--

Spindle axes DGE-SP-KF, with recirculating ball bearing guide

FESTO

Ordering data – Modular products

Options												
Accessories	Slot cover	Slot nut	Central support	Foot mounting	Emergency buffer and retainer	Shock absorber	Centring pins/sleeves	Proximity sensor	Plug socket	Sensor bracket	Switching lug	Inductive sensor
ZUB	...S ...B	...Y ...X	...M	...F	...A	...C ...E	...Z	...G ...H ...I ...J ...N	...V	...T	L	...O ...P ...W ...R
ZUB	– 2S	10Y		F				2G				

Ordering table									
Size			18	25	40	63	Condi- tions	Code	Enter code
↓	Accessories		Supplied separately					ZUB-	ZUB-
0	Slot cover	Sensor slot	1 ... 10					...S	
		Mounting slot	–	–	1 ... 10			...B	
	Slot nut	for mounting slot	1 ... 10					...Y	
		for slide	–	1 ... 10				...X	
Central support			1 ... 10					...M	
Foot mounting (kit)			1 ... 10					...F	
	Emergency buffer and retainer for KF	(effective stroke reduc- tion with emergency buffer at both ends)	1 ... 2 (10 mm)	(30 mm)	(60 mm)	(100 mm)	9	...A	
	Shock absorber and retainer for KF-GK, KF-GV		1 ... 2				10	...C	
			–	1 ... 2		–	11	...E	
Centring pins/sleeves (pack of 10)			10, 20, 30, 40, 50, 60, 70, 80, 90					...Z	
	Proximity sensor	with cable, 2.5 m	1 ... 10					...G	
		with plug	1 ... 10					...H	
		contactless with cable, 2.5 m	1 ... 10					...I	
		contactless, plug	1 ... 10					...J	
		NC contact with cable, 2.5 m	1 ... 10					...N	
Cable with socket, 2.5 m			1 ... 10					...V	
Sensor bracket for inductive sensors			1 ... 5				10	...T	
Switching lug			1				10	L	
	Inductive sensor	NO contact, cable	1 ... 5				10	...O	
		NC contact, cable	1 ... 5				10	...P	
		NO contact, plug	1 ... 5				10	...W	
		NC contact, plug	1 ... 5				10	...R	

9 A Only with slide GK.
Mounted as standard for slide GV, GA

11 E Only with slide GA.

10 C, T, L, O, P, W, R.
Not with slide GA.

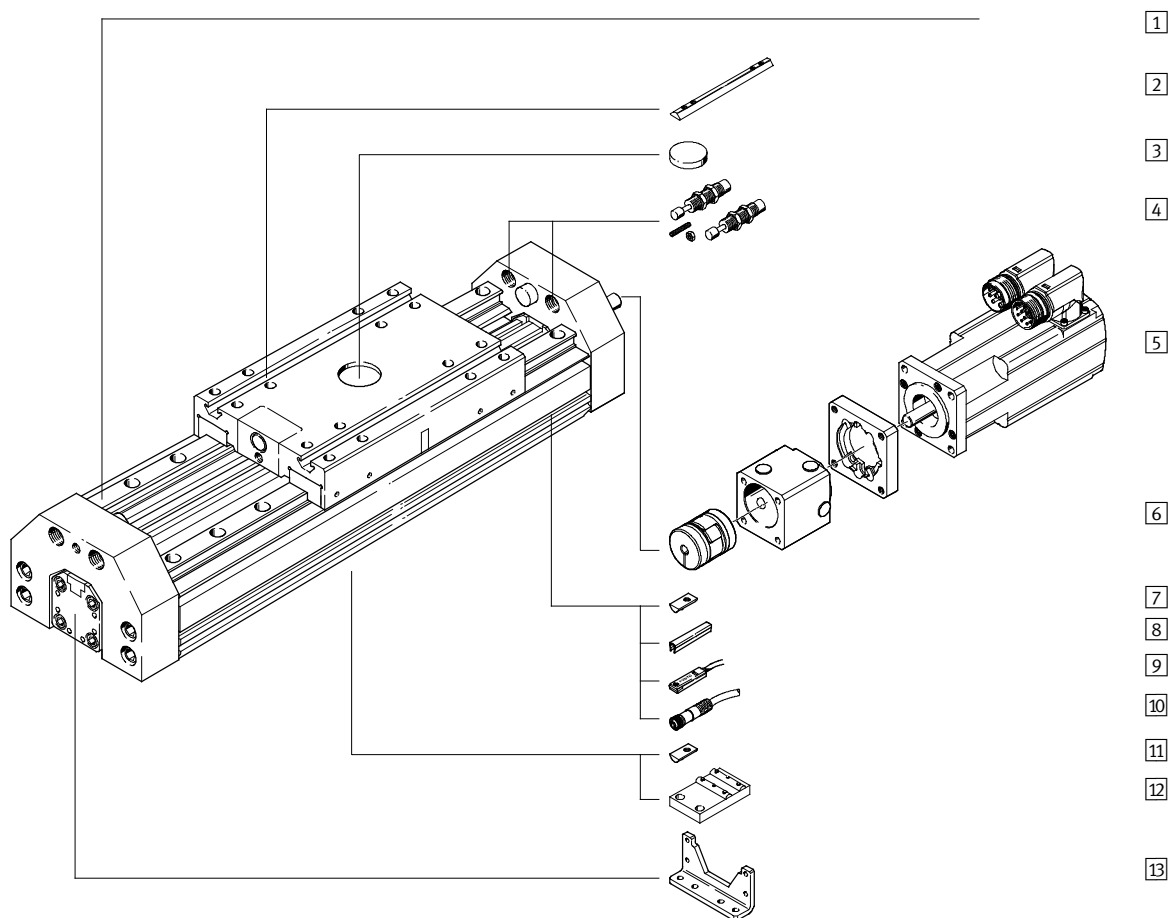
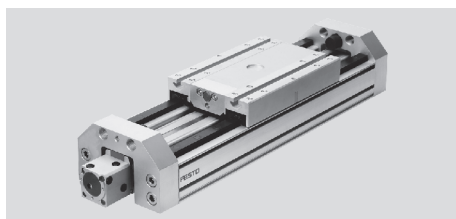
Transfer order code

ZUB –

Spindle axes DGE-SP-HD, with heavy-duty guide

Peripherals overview

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Spindle axes DGE-SP-HD, with heavy-duty guide

Peripherals overview

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Variants and accessories		
Type	Brief description	→ Page/Internet
1 Spindle axis DGE-SP-HD	Electromechanical axis with heavy-duty guide	44
2 Slot nut for slide X	For mounting loads and attachments on the slide	64
3 Centring disc Q	For centring loads and attachments on the slide	64
4 Shock absorber kits D	For avoiding damage at the end stop in the event of malfunction	61
5 Axial kit EAMM-A	For axial motor attachment (consisting of: coupling housing, clamping component, motor flange)	54
6 Motor EMMS	Motors specially matched to the axis, with or without gearing, with or without brake	54
7 Slot nut for mounting slot Y	For mounting attachments	64
8 Slot cover B/S	For protecting against the ingress of dirt	64
9 Proximity sensor G/H/I/J/N	For use as a signal generator and safety monitoring	65
10 Cable with socket V	For proximity sensors	65
11 Slot nut for HD underneath U	For mounting attachments	64
12 Central support M	For mounting the axis	58
13 Foot mounting F	For mounting the axis	58

Spindle axes DGE-SP-HD, with heavy-duty guide

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Type code

		DGE	-	25	-	500	-	SP	-	HD	-	GK
Type												
DGE	Spindle axis											
Size												
Stroke [mm]												
Drive function												
SP	Spindle											
Guide												
HD	Heavy-duty guide											
Slide												
GK	Standard slide											

Spindle axes DGE-SP-HD, with heavy-duty guide

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Type code



+ ZUB

-

F

Q

2H

2V

Accessories

ZUB Accessories supplied loose

Slot cover

...S Sensor slot

...B Mounting slot

Slot nut

...Y For mounting slot

...X For slide

...U For HD underneath

Central support

...M Central support

Foot mounting

...F Foot mounting

Shock absorber

...D Kit for HD

Central mounting

...Q Central mounting

Proximity sensor

...G With cable, 2.5 m

...H With plug

...I Contactless with cable, 2.5 m

...J Contactless, plug

...N NC contact with cable, 2.5 m

Cable with socket

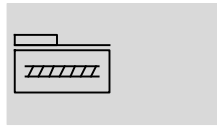
...V 2.5 m

Spindle axes DGE-SP-HD, with heavy-duty guide

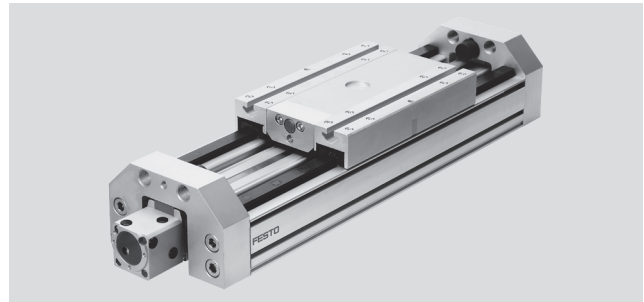
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Technical data

Function



- Size
18 ... 40
- Stroke length
1 ... 1500 mm



General technical data					
Size		18-HD18	25-HD25	25-HD40	40-HD40
Constructional design		Electromechanical axis with heavy-duty guide			
Guide		Recirculating ball bearing guide			
Mounting position		Any			
Max. working stroke	[mm]	100 ... 400	1 ... 900	1 ... 900	1 ... 1500
Max. working load	[kg]	6	25	25	50
Max. feed force F _x	[N]	140	250	250	600
Max. driving torque	[Nm]	0.1	0.45	0.45	2.1
No-load torque	[Nm]	0.04 ¹⁾	0.2 ²⁾	0.2 ²⁾	0.43 ²⁾
Max. radial force ³⁾	[N]	40	75	250	800
Max. speed	[m/s]	0.2	0.5	0.5	1
Max. acceleration	[m/s ²]	6			
Repetition accuracy	[mm]	±0.02			

1) Measured at a speed of 0.05 m/s

2) Measured at a speed of 0.2 m/s

3) On drive shaft

Operating and environmental conditions					
Size		18-HD18	25-HD25	25-HD40	40-HD40
Ambient temperature	[°C]	0 ... +40			
Protection class		IP40			

Weights [kg]				
Size	18-HD18	25-HD25	25-HD40	40-HD40
Basic weight with 0 mm stroke ¹⁾	4.31	7.04	16.13	19.02
Additional weight per 100 mm stroke	0.32	1.6	2.19	2.62

1) Including coupling housing and slide

Mass moment of inertia					
Size		18-HD18	25-HD25	25-HD40	40-HD40
J ₀	[kg cm ²]	0.013	0.086	0.375	0.698
J _H per metre stroke	[kg cm ² /m]	0.031	0.121	0.121	1
J _L per kg working load	[kg cm ² /kg]	0.005	0.025	0.025	0.101

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

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

Spindle axes DGE-SP-HD, with heavy-duty guide

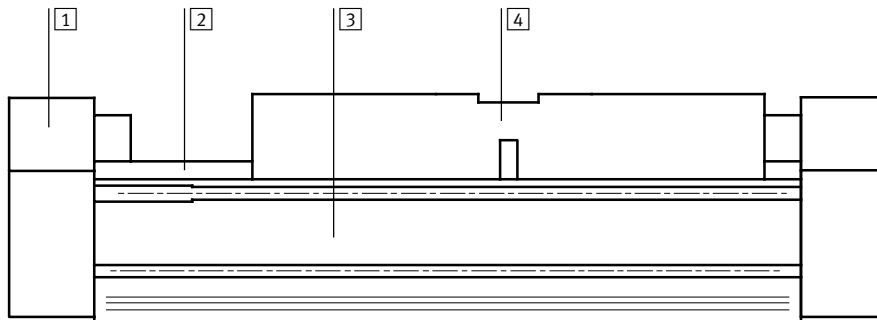
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Technical data

Spindle					
Size		18-HD18	25-HD25	25-HD40	40-HD40
Diameter	[mm]	8	12	12	20
Pitch	[mm/rev.]	4	10	10	20

Materials

Sectional view



Axis		
1	End cap	Anodised aluminium
2	Guide	Rolled steel
3	Profile	Anodised aluminium
4	Slide	Anodised aluminium

Spindle axes DGE-SP-HD, with heavy-duty guide

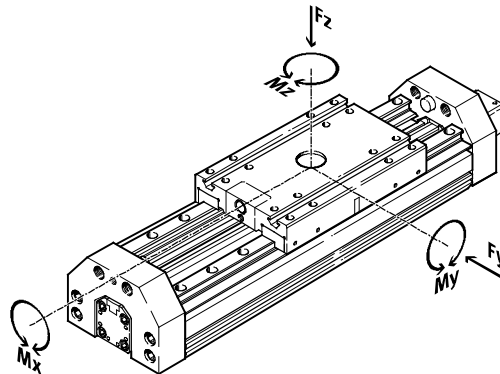
Technical data

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Characteristic load values

The indicated forces and torques refer to the centre of the heavy-duty guide.

They must not be exceeded in the dynamic range. Special attention must be paid to the cushioning phase.



If the drive is subjected to more than two of the indicated forces and torques simultaneously, the following equations 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		18-HD18	25-HD25	25-HD40	40-HD40
F _{y_{max.}}	[N]	1820	5400	5400	5400
F _{z_{max.}}	[N]	1820	5600	5600	5600
M _{x_{max.}}	[Nm]	70	260	375	375
M _{y_{max.}}	[Nm]	115	415	560	560
M _{z_{max.}}	[Nm]	112	400	540	540

-  - Note

Sizing software
PositioningDrives
→ www.festo.com

Spindle axes DGE-SP-HD, with heavy-duty guide

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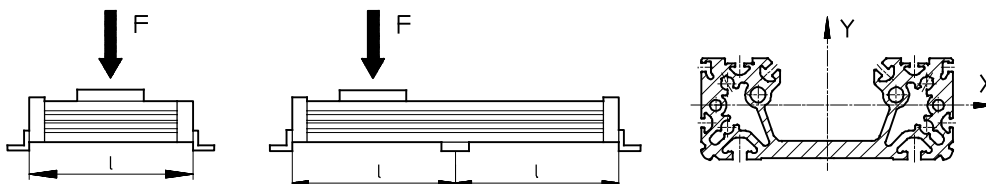
Technical data

Maximum permissible support span l as a function of the force F

The drive may need to be supported in order to restrict deflection with long stroke lengths. The following diagrams serve to determine the

maximum permissible support span l as a function of the force acting upon the axis F .

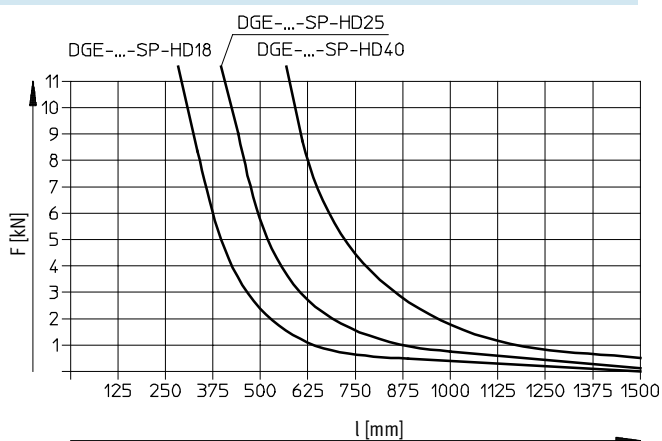
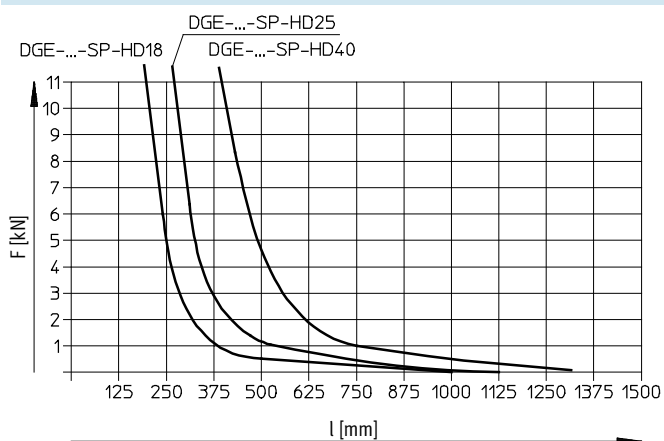
Force on the surface of the slide



Maximum permissible support span l (without central support) as a function of the force F

Deflection around the X axis

Deflection around the Y axis



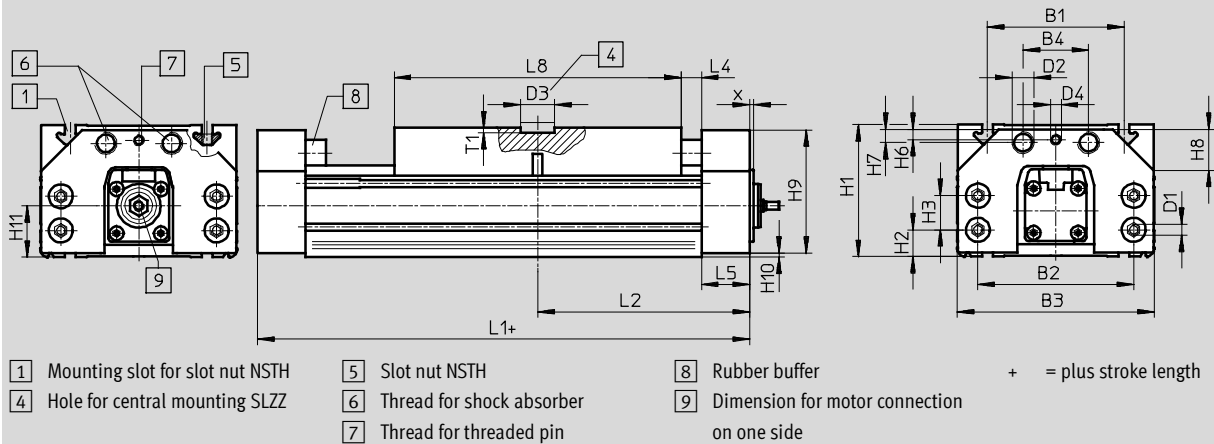
Spindle axes DGE-SP-HD, with heavy-duty guide

Technical data

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Dimensions

Download CAD data → www.festo.com



Profile



Size	B1	B2 ±0,2	B3	B4	D1	D2	D3 Ø G7	D4	D5	H1	H2	H3	H4
18-HD18	80±0,3	85	116	40	M5	M12x1	25	M6	M5	70	12.8	19.5±0,1	14
25-HD-25	100±0,3	114	144	48	M8	M16x1	25	M8	G1/8	93.5	18.5	25±0,2	21
25-HD40	140±0,35	156	185	54	M8	M22x1.5	25	M8	G1/8	124.5	21	48±0,2	35
40-HD40	140±0,35	156	185	54	M8	M22x1.5	25	M8	G1/4	124.5	21	48±0,2	35

Size	H5	H6	H7	H8	H9	H10	H11	L1	L2	L4	L5	L8	T1	X
18-HD18	42.3	5.9	8.7	20x45°	68	0.8	30.3	240	120	15	25	160	3.5	49
25-HD25	52.8	9	9.8	30x45°	90	2	37	310	155	15	35	210	3.5	3
25-HD40	82.8	5.5	15.5	35x45°	120	2	63	354	177	15	32	260	4	–
40-HD40	82.8	5.5	15.5	35x45°	120	2	52.5	354	177	15	32	260	4	–7

Spindle axes DGE-SP-HD, with heavy-duty guide

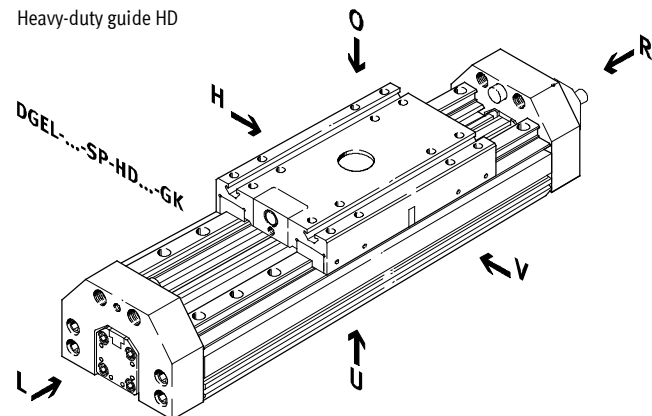
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Ordering data – Modular products

Order code

Mandatory data

Heavy-duty guide HD



-  Note

The insertion point for the proximity sensor is located on the right-hand side of the heavy-duty guide

U = underneath

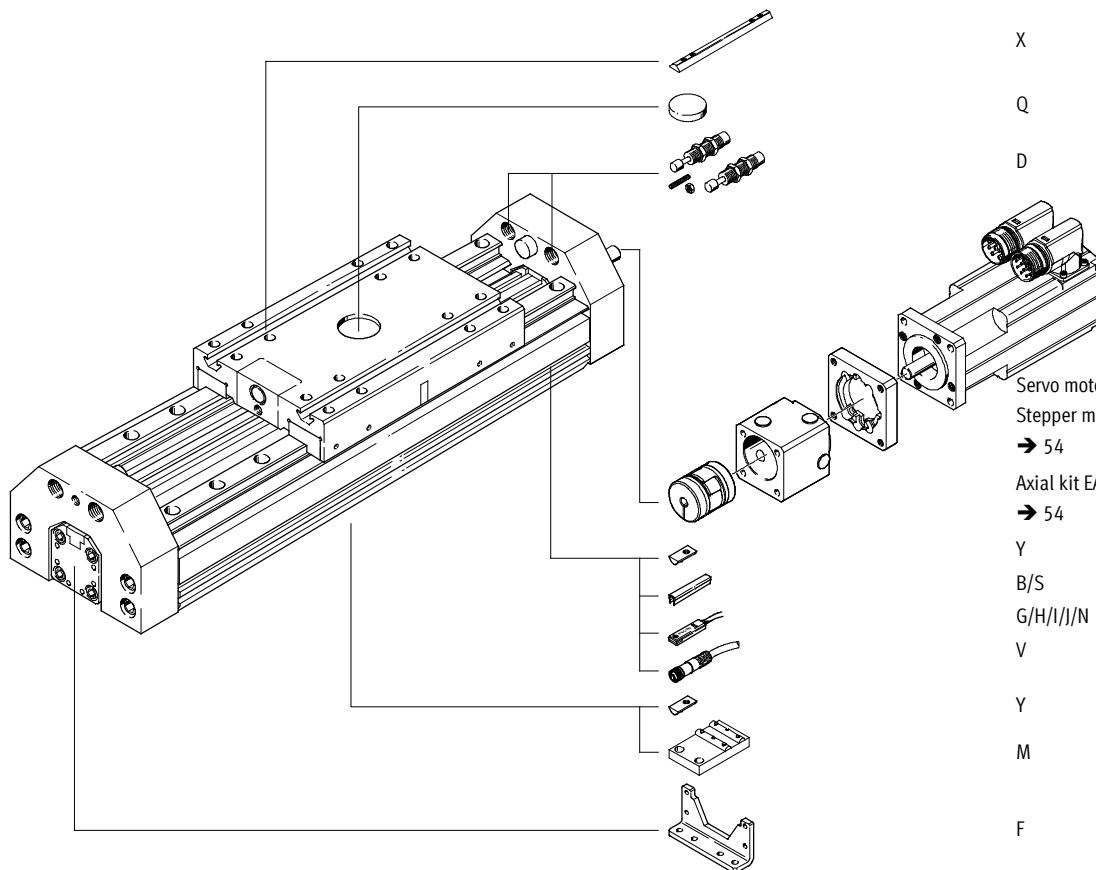
O = top

R = right

L = left

V = front

H = rear



X

Q

D

Servo motor EMMS-AS
Stepper motor EMMS-ST
→ 54

Axial kit EAMM-A
→ 54

Y

B/S

G/H/I/J/N

V

Y

M

F

Spindle axes DGE-SP-HD, with heavy-duty guide

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Ordering data – Modular products

M Mandatory data					O Options →	
Module No.	Design	Size	Stroke	Drive function	Guide	Slide
193 745 193 746 193 747	DGE	18 25 40	1 ... 1 500	SP	HD18 HD25 HD40	GK
Ordering example						
193 747	DGE	40	800	SP	HD40	GK

Ordering table							
Size	18	25	40	Condi- tions	Code	Enter code	
M Module No.	193 745	193 746	193 747				
Design	Electromechanical linear axis				DGE		DGE
Size	18	25	40		-...		
Stroke [mm]	100, 200, 300, 400	100, 200, 300, 400, 500, 600, 700, 800, 900	200, 300, 400, 500, 600, 800, 1000, 1200, 1400, 1500		-...		
	-	1 ... 890	1 ... 1487				
Drive function	Electromechanical drive with ball screw				-SP		-SP
O Guide	Heavy-duty guide HD18	-	-		-HD18		-HD...
	-	Heavy-duty guide HD25	-		-HD25		
	-	Heavy-duty guide HD40	Heavy-duty guide HD40		-HD40		
↓ Slide	Standard			1	-GK		-GK

1 GK Emergency buffer recommended → Accessory option "A".

Transfer order code

	DGE	-		-		-	SP	-	HD...	-	GK
--	-----	---	--	---	--	---	----	---	-------	---	----

Spindle axes DGE-SP-HD, with heavy-duty guide

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Ordering data – Modular products

Options								
Accessories	Slot cover	Slot nut	Central support	Foot mounting	Shock absorber	Central mounting	Proximity sensor	Plug socket
ZUB	...S ...B	...Y ...X ...U	...M	...F	...D	...Q	...G ...H ...I ...J ...N	...V
ZUB	2SB	10Y2X	M	F		Q	2J	2V

Ordering table							
Size		18	25	40	Condi- tions	Code	Enter code
↓	Accessories	Supplied separately				ZUB-	ZUB-
0	Slot cover	Sensor slot	1 ... 10			...S	
		Mounting slot	1 ... 10			...B	
	Slot nut	for mounting slot	1 ... 10			...Y	
		for slide	1 ... 10			...X	
		for HD underneath	1 ... 10			...U	
	Central support		1 ... 10			...M	
	Foot mounting (kit)		1 ... 10			...F	
	Shock absorber	Kit for HD	1 ... 2			...D	
	Central mounting		1 ... 10			...Q	
	Proximity sensor	with cable, 2.5 m	1 ... 10			...G	
		with plug	1 ... 10			...H	
		contactless with cable, 2.5 m	1 ... 10			...I	
		contactless, plug	1 ... 10			...J	
		NC contact with cable, 2.5 m	1 ... 10			...N	
	Cable with socket, 2.5 m		1 ... 10			...V	

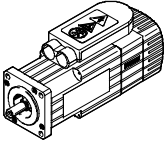
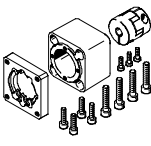
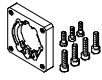
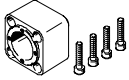
Transfer order code

ZUB -

Spindle axes DGE

Accessories

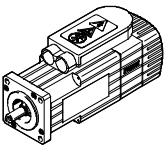
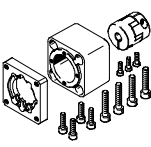
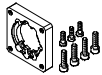
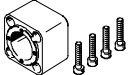
FESTO

Permissible axis/motor combinations with axial kit – Without gear unit				Technical data → Internet: eamm-a
Motor	Axial kit	Axial kit consisting of:		
		Motor flange	Coupling	Coupling housing
				
Type	Part No. Type	Part No. Type	Part No. Type	Part No. Type
DGE-18				
With servo motor				
EMMS-AS-40-...	550 961 EAMM-A-E20-40A	552 163 EAMF-A-28B-40A	540 751 EAMC-15-22-5-6	170 374 EAMK-A-E20-28B
EMMS-AS-55-...	550 963 EAMM-A-E20-55A	529 946 EAMF-A-28A/B-55A	529 953 EAMC-15-22-5-9	170 374 EAMK-A-E20-28B
With stepper motor				
EMMS-ST-42-...	550 962 EAMM-A-E20-42A	552 164 EAMF-A-28B-42A	530 085 EAMC-15-22-5-5	170 374 EAMK-A-E20-28B
With motor unit				
MTR-DCI-32S-...	556 991 EAMM-A-E20-32B	–	533 707 EAMC-15-20-5-6	533 703 EAMK-A-E20-32B
DGE-25				
With servo motor				
EMMS-AS-40-...	550 964 EAMM-A-E32-40A	550 985 EAMF-A-44A/B-40A	123 040 EAMC-30-35-6-6	124 631 EAMK-A-E32-44A
EMMS-AS-55-...	550 965 EAMM-A-E32-55A	529 942 EAMF-A-44A/B-55A	530 941 EAMC-30-35-6-9	124 631 EAMK-A-E32-44A
With stepper motor				
EMMS-ST-57-...	550 966 EAMM-A-E32-57A	530 081 EAMF-A-44A/B-57A	530 087 EAMC-30-35-6-6.35	124 631 EAMK-A-E32-44A
With motor unit				
MTR-DCI-42S-...-G07	556 992 EAMM-A-E32-42B	–	533 708 EAMC-30-32-6-8	533 704 EAMK-A-E32-42B
MTR-DCI-42S-...-G14	556 993 EAMM-A-E32-42C	–	533 708 EAMC-30-32-6-8	538 578 EAMK-A-E32-42C

Spindle axes DGE

Accessories

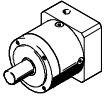
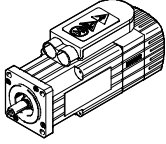
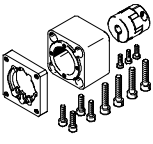
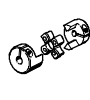
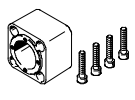
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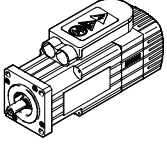
Permissible axis/motor combinations with axial kit – Without gear unit					Technical data → Internet: eamm-a
Motor	Axial kit	Axial kit consisting of:			
		Motor flange	Coupling	Coupling housing	
					
Type	Part No. Type	Part No. Type	Part No. Type	Part No. Type	
DGE-40					
With servo motor					
EMMS-AS-55-...	550 969 EAMM-A-E48-55A	529 942 EAMF-A-44A/B-55A	550 996 EAMC-30-35-9-12	124 632 EAMK-A-E48-44A	
EMMS-AS-70-...	550 971 EAMM-A-E48-44A-70A	529 943 EAMF-A-44A/B-70A	123 051 EAMC-30-35-11-12	124 632 EAMK-A-E48-44A	
EMMS-AS-100-...	550 973 EAMM-A-E48-100A	529 947 EAMF-A-64A/C-100A	529 952 EAMC-40-66-12-19	529 940 EAMK-A-E48-64A	
With stepper motor					
EMMS-ST-57-...	550 970 EAMM-A-E48-57A	530 081 EAMF-A-44A/B-57A	550 995 EAMC-30-35-6.35-12	124 632 EAMK-A-E48-44A	
EMMS-ST-87-...	550 972 EAMM-A-E48-87A	533 140 EAMF-A-64A/B-87A	525 864 EAMC-40-66-11-12	529 940 EAMK-A-E48-64A	
With motor unit					
MTR-DCI-52S-...-G07	556 994 EAMM-A-E48-52B	–	533 709 EAMC-42-50-12-12	533 705 EAMK-A-E48-52B	
MTR-DCI-52S-...-G14	556 995 EAMM-A-E48-52C	–	533 709 EAMC-42-50-12-12	538 579 EAMK-A-E48-52C	
DGE-63					
With servo motor					
EMMS-AS-70-...	550 975 EAMM-A-E72-70A	529 945 EAMF-A-64A/B-70A	550 999 EAMC-40-66-11-20	529 941 EAMK-A-E72-64A	
EMMS-AS-100-...	550 978 EAMM-A-E72-100A	529 947 EAMF-A-64A/C-100A	123 847 EAMC-40-66-19-20	529 941 EAMK-A-E72-64A	
With stepper motor					
EMMS-ST-87-...	550 977 EAMM-A-E72-87A	533 140 EAMF-A-64A/B-87A	550 999 EAMC-40-66-11-20	529 941 EAMK-A-E72-64A	
With motor unit					
MTR-DCI-62S-...	556 996 EAMM-A-E72-62B	–	533 710 EAMC-42-50-14-20	533 706 EAMK-A-E72-62B	

Spindle axes DGE

Accessories

FESTO

Permissible axis/motor combinations with axial kit – With gear unit					Technical data → Internet: eamm-a
Gear unit	Motor	Axial kit	Axial kit consisting of:		
			Motor flange	Coupling	Coupling housing
					
Type	Type	Part No. Type	Part No. Type	Part No. Type	Part No. Type
DGE-40					
With servo motor					
EMGA-40-P-G...-SAS-40	EMMS-AS-40-...	550 968 EAMM-A-E48-40G	550 986 EAMF-A-44A/B-40G	552 640 EAMC-30-35-10-12	124 632 EAMK-A-E48-44A
DGE-63					
With servo motor					
EMGA-60-P-G...-SAS-70	EMMS-AS-70-S-...	550 974 EAMM-A-E72-60G	550 987 EAMF-A-64A/B-60G	550 999 EAMC-40-66-11-20	529 941 EAMK-A-E72-64A
EMGA-80-P-G...-SAS-70	EMMS-AS-70-M-...	550 976 EAMM-A-E72-80G	533 139 EAMF-A-64A/C-80G	123 849 EAMC-40-66-20-20	529 941 EAMK-A-E72-64A
With stepper motor					
EMGA-80-P-G...-SST-87	EMMS-ST-87-...	550 976 EAMM-A-E72-80G	533 139 EAMF-A-64A/C-80G	123 849 EAMC-40-66-20-20	529 941 EAMK-A-E72-64A

Permissible axis/motor combinations with parallel kit – Without gear unit			Technical data → Internet: eamm-u
Motor	Parallel kit		
			
Type	Part No.	Type	
DGE-25			
With servo motor			
EMMS-AS-55-...	543 230	EAMM-U-E32-55A	
With motor unit			
MTR-DCI-42S-...-G07	543 228	EAMM-U-E32-42B	
MTR-DCI-42S-...-G14	543 229	EAMM-U-E32-42C	
DGE-40			
With servo motor			
EMMS-AS-70-...	543 234	EAMM-U-E48-70A	
With motor unit			
MTR-DCI-52S-...-G07	543 232	EAMM-U-E48-52B	
MTR-DCI-52S-...-G14	543 233	EAMM-U-E48-52C	

Spindle axes DGE

Accessories

FESTO

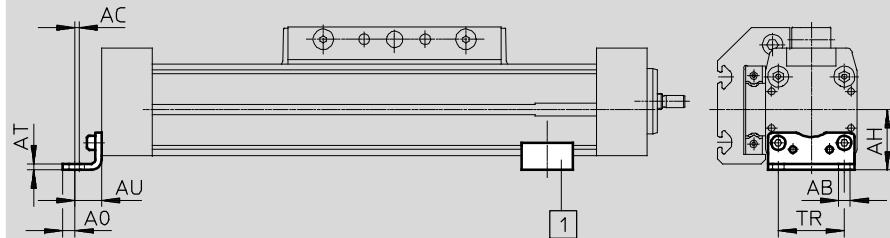
Foot mounting HP (order code F)



HP-25

Material:
Galvanised steel
Free of copper, PTFE and silicone

DGE-18-...-63



Dimensions and ordering data										
For size	AB Ø	AC	AH	AO	AT	AU	TR	Weight [g]	Part No.	Type
18	5.5	2	24	4.8	3	13.3	24	70	158 472	HP-18
25	5.5	2	29.5	6	3	13	32.5	61	150 731	HP-25
40	6.6	2	46	8.5	5	17.5	45	188	150 733	HP-40
63	11	3	69	13.5	6	28	75	305	150 735	HP-63

Central support MUP (order code M)

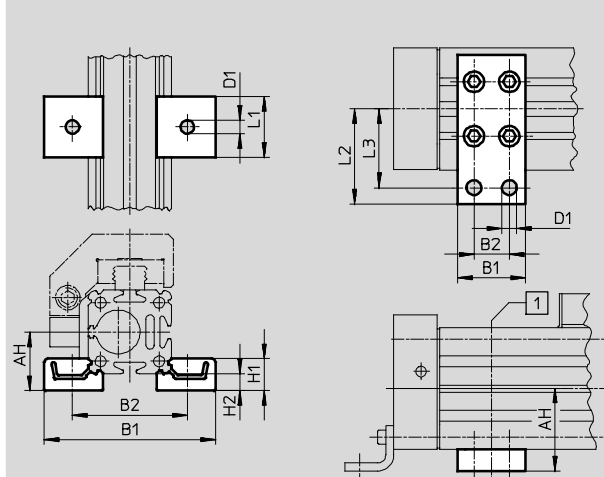


MUP-40

Material:
Galvanised steel
Free of copper, PTFE and silicone

DGE-18-...-25

DGE-40-...-63



1 Position of the central support along the profile is freely selectable

Dimensions and ordering data												
For size	AH	B1	B2	D1 Ø	H1	H2	L1	L2	L3	Weight [g]	Part No.	Type
18	24	70.5	47	5.5	13	7	25	–	–	33	150 736	MUP-18/25
25	29.5	81	58	5.5	13	7	25	–	–	33	150 736	MUP-18/25
40	46	35	22	6.6	–	–	–	47	40	126	150 738	MUP-40
63	69	50	26	11	–	–	–	77	65	340	150 800	MUP-63

Spindle axes DGE

Accessories

FESTO

Foot mounting HHP

for heavy-duty guide

(order code F)

Material:

Galvanised steel



Central support MUP

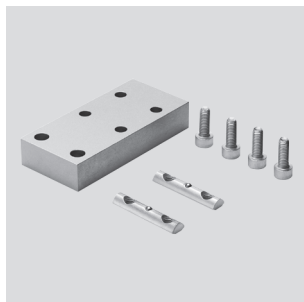
for heavy-duty guide

(order code M)

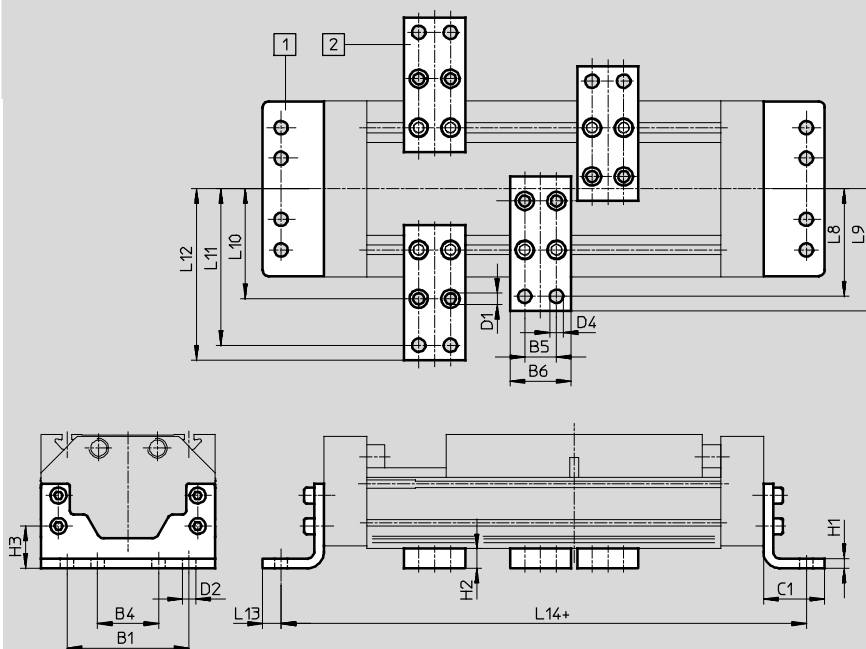
Material:

Galvanised steel

Free of copper, PTFE and silicone



DGE...-HD18/-HD25/-HD40



- 1 Foot mounting HHP
- 2 Central support MUP

+ = plus stroke length

Dimensions and ordering data

For heavy-duty guide	B1	B4	B5	B6	C1	D1	D2	D4	H1	H2	H3
HD18	80	40	22	35	34	5.5	6.6	6.6	8	14	26.8
HD25	100	50	26	50	50	9	11	11	8	16	34.5
HD40	140	70	26	50	50	9	11	11	10	16	37

For heavy-duty guide	L8	L9	L10	L11	L12	L13	L14	Weight [g]	Part No.	Type
HD18	68	75	64	92	99	9	290	357 126	161 993 150 738	HHP-18 MUP-40
HD25	88	100	90	128	140	15	380	794 347	161 994 150 739	HHP-25 MUP-50
HD40	108	120	110	148	160	15	424	1,318 347	161 995 150 739	HHP-40 MUP-50

Spindle axes DGE

Accessories

FESTO

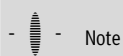
Shock absorber YSR-...-C (order code C)

Materials:

Housing: Galvanised steel; piston rod:
high-alloy steel

Seals: nitrile rubber, polyurethane

Free of copper, PTFE and silicone



Note

Shock absorber YSRW with
progressive characteristics

→ Internet: ysrw

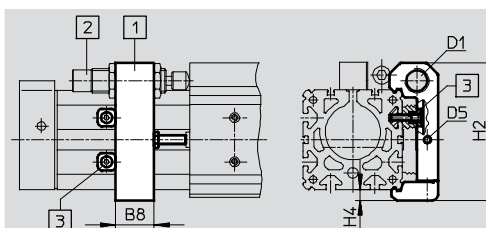
Ordering data		
For size	Weight [g]	Part No. Type
18	30	34 571 YSR-8-8-C
25	70	34 572 YSR-12-12-C
40	140	34 573 YSR-16-20-C
63	240	34 574 YSR-20-25-C

Shock absorber retainer KYP (order code C)

Materials:

Retainer: Aluminium

Sleeve: Corrosion-resistant steel



- 1 Shock absorber retainer KYP
(if the retainer is in contact with
the bearing cap, i.e. cap serves
to secure position, the entire
stroke length can be utilised)
- 2 Shock absorber YSR-...-C
- 3 Position retainer
(included in the scope of deliv-
ery) either behind or underneath
the shock absorber retainer KYP

Dimensions and ordering data							
For size	B8	D1	D5	H2	H4	Weight [g]	Part No. Type
18	14	M12x1	M4	50.5	4.5	66	158 907 KYP-18
25	19	M16x1	M5	69.5	6	95	158 908 KYP-25
40	32	M22x1.5	M5	102	8	209	158 910 KYP-40
63	44	M26x1.5	M10	152.5	11.5	609	158 912 KYP-63

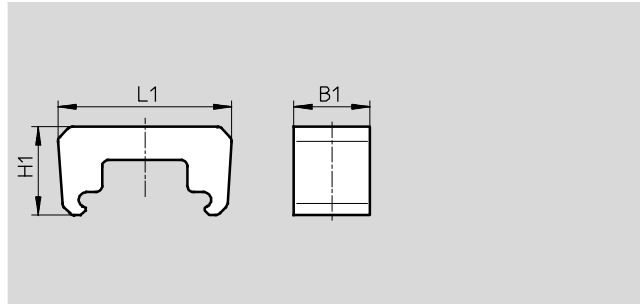
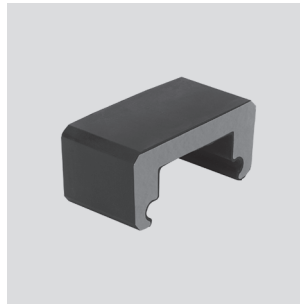
Spindle axes DGE

Accessories

FESTO

Emergency buffer NPE (order code A)

Material:
Polyurethane



Dimensions and ordering data						
For size	B1	L1	H1	Weight [g]	Part No.	Type
18	15	43.1	28.5	6	193 901	NPE-18
25	25	57	29	12	193 902	NPE-25
40	40	80.5	36	41	193 904	NPE-40
63	60	128.6	55	152	193 906	NPE-63

 Note

The emergency buffer can only be used in combination with shock absorber retainer KYP. → 59
(A threaded stud and nut are not required.)

Shock absorber DG-GA for protected version GA (order code E)

Materials:
Housing: Galvanised steel; piston rod: high-alloy steel
Seals: nitrile rubber, polyurethane
Free of copper, PTFE and silicone



Ordering data			
For size	Weight [g]	Part No.	Type
25	70	192 875	DG-GA-25-YSR
40	140	192 877	DG-GA-40-YSR

Spindle axes DGE

Accessories

FESTO

Shock absorber kit YHD

for heavy-duty guide

(order code D)

Materials:

Housing: Galvanised steel

Seals: TPE-U(PU), NBR

Free of copper, PTFE and silicone



Ordering data			
For heavy-duty guide	Weight	Part No.	Type
	[g]		
HD18	203	174 544	YHD-18
HD25	293	174 545	YHD-25
HD40	515	174 546	YHD-40

Spindle axes DGE

Accessories

FESTO

Sensor bracket HWS

for inductive proximity sensors
(order code T)

Material:

Galvanised steel



Switch lug SF

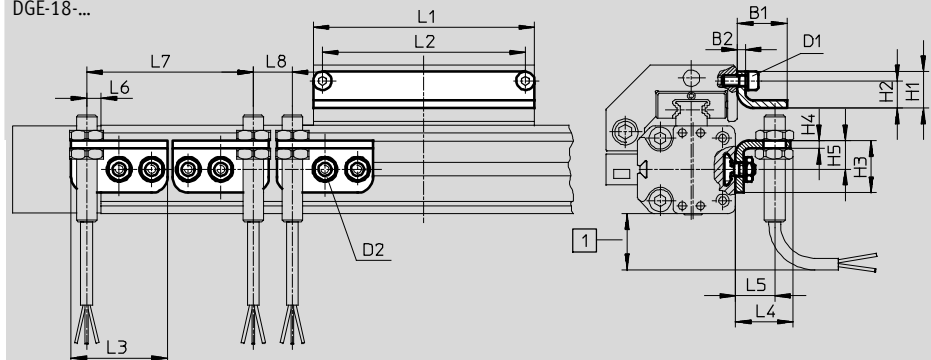
(order code L)

Material:

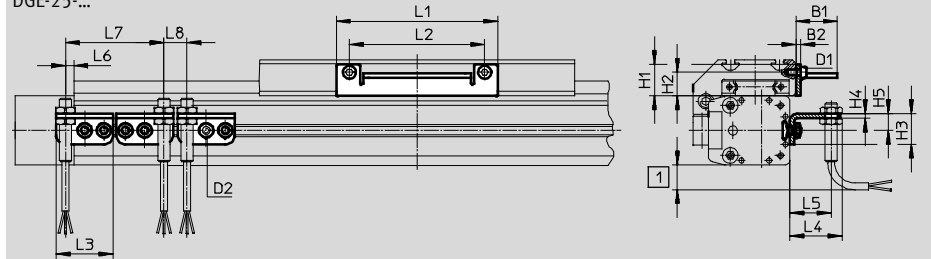
Galvanised steel



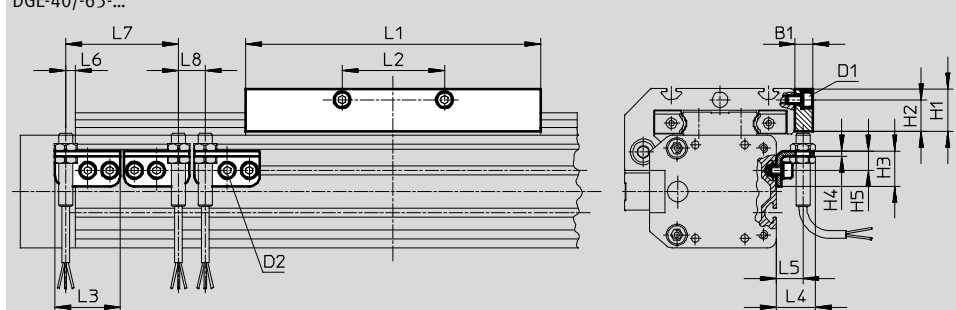
DGE-18-...



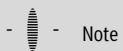
DGE-25-...



DGE-40/-63-...



- 1 Protruding sensor cable, ensure sufficient installation space



Note

Cannot be used in combination with the variant DGE-...-GA (protected version).

Spindle axes DGE

Accessories

FESTO

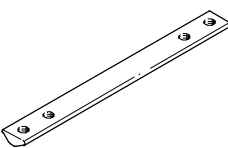
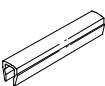
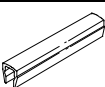
Dimensions and ordering data														
For size	D1	D2	B1	B2	H1	H2	H3	H4	H5	L1	L2	L3	L4	L5
18	M4	M5	19	3	14	10.5	20	3	11	85	78	37	22.5	15
25	M5	M5	27	3	20.5	15.3	20	3	11	105	88	37	34.5	27
40	M5	M5	10	–	24	18	20	3	11	167	58	37	22.5	15
63	M8	M5	10	–	35	25	20	3	11	230	72	37	22.5	15

For size	L6 max.	L7 min.	L8 min.	Weight [g]	Part No.	Type
18	5.5	64	15	30	188 968	HWS-18/25-M8
				60	188 964	SF-18
25	5.5	64	15	30	540 780	HWS-25-MAB-M8
				80	540 430	SF-25-MAB
40	5.5	64	15	40	188 969	HWS-40-M8
				310	188 966	SF-40
63	5.5	64	15	40	188 970	HWS-63-M8
				630	188 967	SF-63

Spindle axes DGE

Accessories

FESTO

Ordering data			Technical data → Internet: mounting attachment			
	For size	Comment	Order code	Part No.	Type	PU ¹⁾
Slot nut NST						
	18, 25	For mounting slot	Y	526 091	NST-HMV-M4	1
	40			150 914	NST-5-M5	1
	63			150 915	NST-8-M6	1
	HD18, HD25	For heavy-duty guide: mounting slot	Y	150 914	NST-5-M5	1
	HD40			150 915	NST-8-M6	1
	HD18	For heavy-duty guide: HD underneath	U	150 914	NST-5-M5	1
	HD25, HD40			150 915	NST-8-M6	1
Slot nut NSTL						
	25	For slide	X	158 410	NSTL-25	1
	40			158 412	NSTL-40	1
	63			158 414	NSTL-63	1
	HD18	For heavy-duty guide: slide	X	161 020	NSTH-18	1
	HD25			161 021	NSTH-25	1
	HD40			161 022	NSTH-40	1
Centring pin/sleeve ZBS/ZBH						
	18	For slide	Z	150 928	ZBS-5	10
	25 ... 63			150 927	ZBH-9	10
Central mounting SLZZ						
	HD18	For heavy-duty guide: slide	Q	150 901	SLZZ-25/16	1
	HD25					
	HD40					
Slot cover ABP						
	40	For mounting slot every 0.5 m	B	151 681	ABP-5	2
	63			151 682	ABP-8	
	HD18, HD25	For mounting slot on the side and underneath, each 0.5 m		151 681	ABP-5	
	HD40			151 682	ABP-8	
Slot cover ABP-S						
	18 ... 63	For sensor slot every 0.5 m	S	151 680	ABP-5-S	2

1) Packaging unit

Spindle axes DGE

Accessories

FESTO

Ordering data – Proximity sensors for T-slot, magnetic reed						Technical data → Internet: sme	
	Type of mounting	Switching output	Electrical connection	Cable length [m]	Part No.	Type	
N/O contact							
	Insertable in the slot lengthwise, flush with the cylinder profile	Contacting	Cable, 3-wire	2.5	150 855	SME-8-K-LED-24	
			Plug M8x1, 3-pin	0.3	150 857	SME-8-S-LED-24	
N/C contact							
	Insertable in the slot lengthwise, flush with the cylinder profile	Contacting	Cable, 3-wire	7.5	160 251	SME-8-O-K-LED-24	

Ordering data – Proximity sensors for T-slot, magneto-resistive					Technical data → Internet: smt	
	Type of mounting	Switching output	Electrical connection	Cable length [m]	Part No.	Type
N/O contact						
	Insertable in the slot lengthwise, flush with the cylinder profile	PNP	Cable, 3-wire	2.5	175 436	SMT-8-PS-K-LED-24-B
			Plug M8x1, 3-pin	0.3	175 484	SMT-8-PS-S-LED-24-B
N/C contact						
	Insertable in the slot from above, flush with the cylinder profile	PNP	Cable, 3-wire	7.5	543 873	SMT-8M-PO-24V-K7,5-OE

Ordering data – Inductive proximity sensors M8						Technical data → Internet: sien
	Electrical connection		Switching output	LED	Cable length [m]	Part No. Type
	Cable	Plug M8				
N/O contact						
	3-wire	–	PNP	■	2.5	150 386 SIEN-M8B-PS-K-L
	–	3-pin	PNP	■	–	150 387 SIEN-M8B-PS-S-L
N/C contact						
	3-wire	–	PNP	■	2.5	150 390 SIEN-M8B-PO-K-L
	–	3-pin	PNP	■	–	150 391 SIEN-M8B-PO-S-L

Ordering data – Connecting cables					Technical data → 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	541 333 NEBU-M8G3-K-2.5-LE3
				5	541 334 NEBU-M8G3-K-5-LE3
	Angled socket, M8x1, 3-pin		Cable, open end, 3-wire	2.5	541 338 NEBU-M8W3-K-2.5-LE3
				5	541 341 NEBU-M8W3-K-5-LE3