

Linear drives DGC-N, NPT



Linear drives DGC-N, NPT

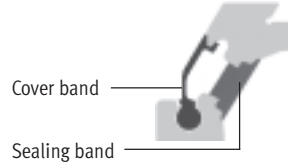
Key features

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General information

- Compact – fitting length relative to stroke
- Loads and devices can be directly mounted on the slide
- Three types of cushioning available:
 - Elastic cushioning
 - Pneumatic cushioning
 - Hydraulic cushioning
- All settings accessible from one side:
 - Precision end-position adjustment
 - Position of proximity sensors
 - Mounting of drive
 - Speed regulation
 - Pneumatic end-position cushioning

- Sealing system



- Advantages of the sealing system:
- Long strokes with no restrictions
 - Virtually no leakage

Wide choice of variants

Basic design DGC-N-G



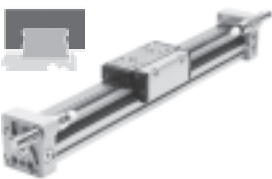
- Piston \varnothing 8 ... 63 mm
- Stroke lengths from 1 ... 8,500 mm
- Guide backlash = 0.2 mm
- For small loads
- Operating behaviour with torque load = average

Plain-bearing guide DGC-N-GF



- Piston \varnothing 18 ... 63 mm
- Stroke lengths from 1 ... 8,500 mm
- Guide backlash = 0.05 mm
- For small and medium loads
- Operating behaviour with torque load = average

Recirculating ball bearing guide DGC-N-KF



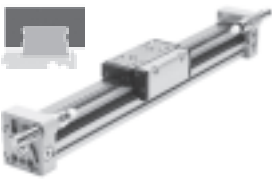
- Piston \varnothing 8 ... 63 mm
- Stroke lengths from 1 ... 8,500 mm
- Guide backlash = 0 mm
- For medium and large loads
- Precision mounting interface with stainless steel slide
- Operating behaviour under torque load = very good

Recirculating ball bearing guide with protected guide DGC-N-KF-GP



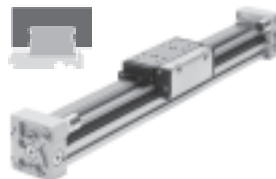
- Piston \varnothing 18 ... 40 mm
- Stroke lengths from 1 ... 8,500 mm
- Guide backlash = 0 mm
- The protected guide cleans the recirculating ball bearing guide by means of an additional wiper seal and lubrication unit

Passive guide axis DGC-N-FA



- Without drive
- Piston \varnothing 8 ... 63 mm
- Stroke lengths from 1 ... 8,500 mm
- Guide backlash = 0 mm
- Precision guide, suitable for DGC-N-KF. Can be used as machine component or as twin guide with DGC-N-KF

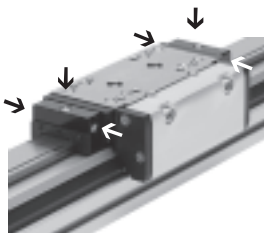
Passive guide axis with protected guide DGC-N-FA-GP



- Without drive
- Piston \varnothing 18 ... 40 mm
- Stroke lengths from 1 ... 8,500 mm
- Guide backlash = 0 mm
- The protected guide cleans the recirculating ball bearing guide by means of an additional wiper seal and lubrication unit

Central lubrication system

For DGC-N-KF with recirculating ball bearing guide



The lubrication adapter enables the guide of the linear drive DGC-N-KF to be permanently lubricated in applications in humid or wet ambient conditions using semi or fully automatic relubrication devices. The adapters are suitable for oils and greases.

- For piston \varnothing 25, 32, 40, 63 mm
- Connections:
 - On both sides of the slide
 - In three places (front, top, rear) on each side

Technical data → 49

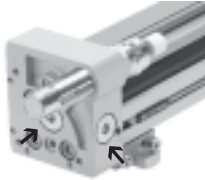
Order code C in the modular product system → 63

Linear drives DGC-N, NPT

Key features

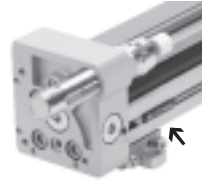
Versatile

1 Supply ports



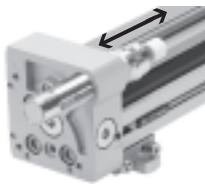
- Options on two sides (on the end face or at the front)
- For DGC-G/DGC-GF/DGC-KF
- For DGC-N-G/DGC-N-GF/DGC-N-KF

2 Proximity sensor G/H/I/J



- Proximity sensors can be integrated, which means there is no projection. Cable can be guided through the slot behind a second sensor
- For DGC-N-G/DGC-N-GF/DGC-N-KF

3 Precision end-position adjustment



- Between 0 ... 25 mm per side
- For DGC-N-GF/DGC-N-KF/DGC-N-FA

4 Profile mounting M



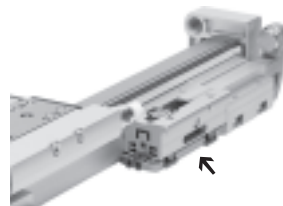
- Profile mounting remains on the base plate after the drive is dismantled. This means faster assembly and removal without repeat adjustment
- For DGC-N-G/DGC-N-GF/DGC-N-KF/DGC-N-FA

5 Mechanical end-position limiter YWZ



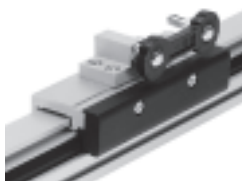
- For variable stroke adjustment, e.g. for format adjustments
- The end stop can be mounted at any position along the stroke
- For DGC-N-GF/DGC-N-KF/DGC-N-FA

6 Intermediate position module Z1/Z2/Z3



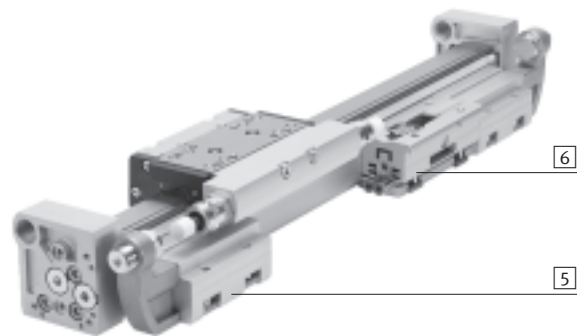
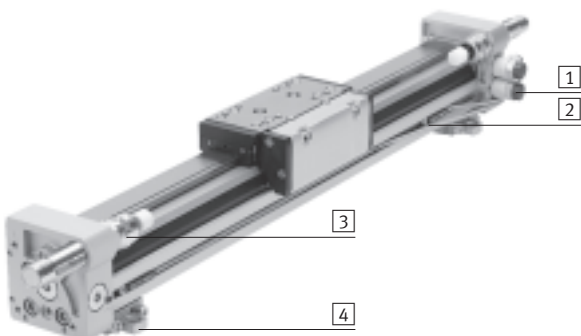
- Enables variable intermediate positions
- The intermediate position module can be mounted at any position along the stroke
- Precision repetition accuracy (0.02 mm) with high dynamic response
- For DGC-N-KF

Moment compensator FK



- Compensates for inaccuracies during mounting of the linear drive and external guide
- Max. offset 2.5 mm
- For DGC-N-G

Example

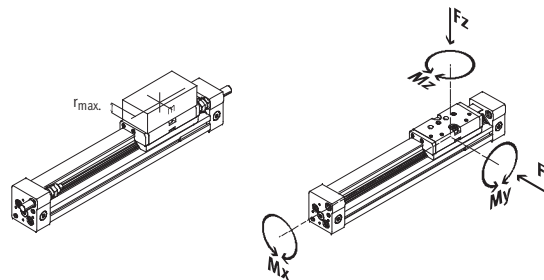


Linear drives DGC-N, NPT

Key features

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Product variants



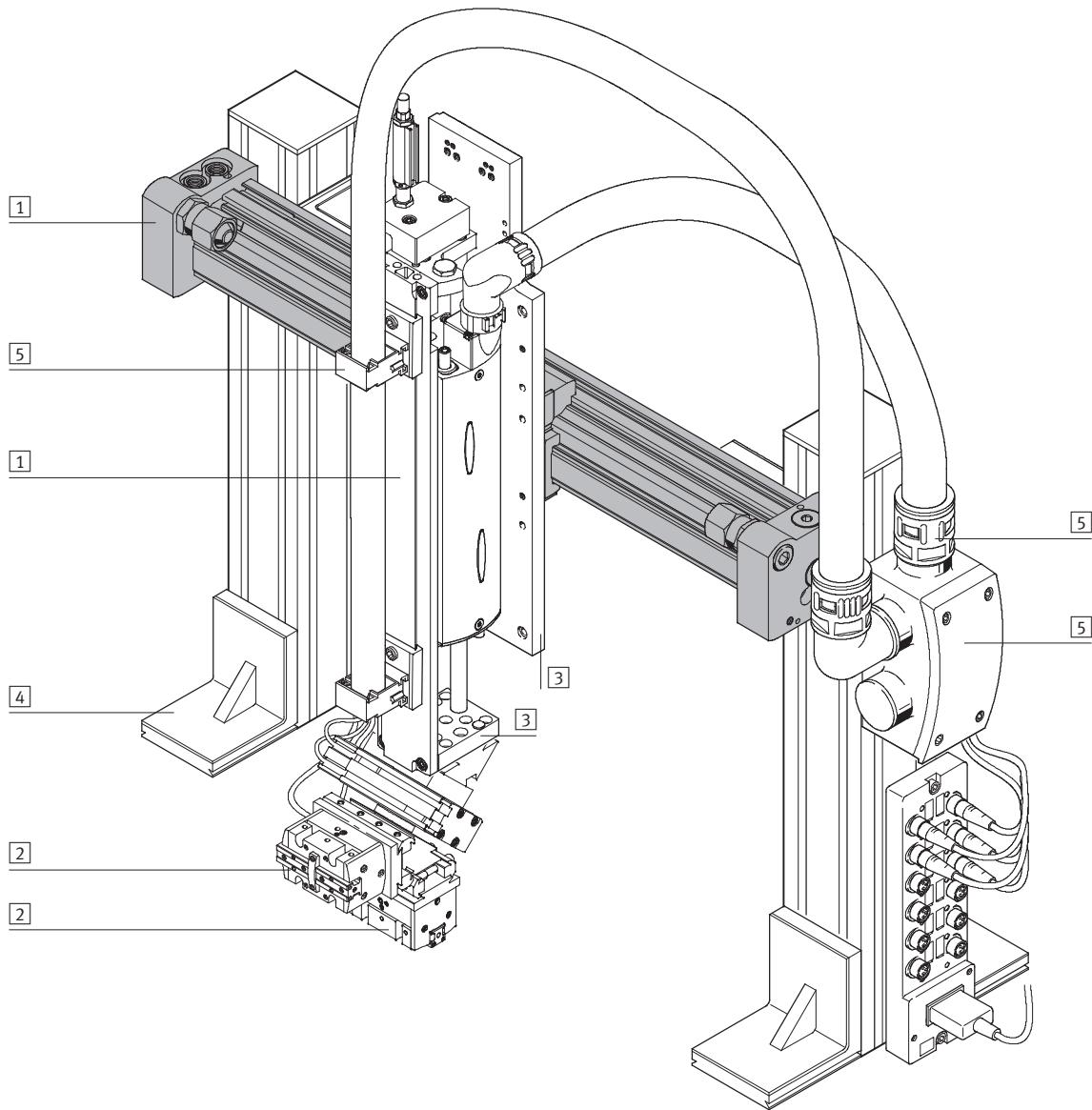
	Piston \varnothing [mm]	Theoretical force at 6 bar [N]	Max. perm. effective load ¹⁾ m [kg]/ at max. load distance r [mm]	Guide characteristics					→ Page/ Internet
				Fy [N]	Fz [N]	Mx [Nm]	My [Nm]	Mz [Nm]	
Basic design DGC-N-G									
	8	30	0.06/25	150	150	0.5	2	2	6
	12	68	0.1/35	300	300	1.3	5	5	
	18	153	-/-	70	340	1.9	12	4	
	25	295	-/-	180	540	4	20	5	
	32	483	-/-	250	800	9	40	12	
	40	754	-/-	370	1,100	12	60	25	
	50	1,178	-/-	480	1,600	20	150	37	
63	1,870	-/-	650	2,000	26	150	48		
Plain-bearing guide DGC-N-GF									
	18	153	3/35	440	540	3.4	20	8.5	22
	25	295	8/50	640	1,300	8.5	40	20	
	32	483	11/50	900	1,800	15	70	33	
	40	754	15/50	1,380	2,000	28	110	54	
	50	1,178	48/50	1,500	2,870	54	270	103	
	63	1,870	75/50	2,300	4,460	96	450	187	
Recirculating ball bearing guide DGC-N-KF/DGC-N-KF-GP									
	8	30	0.7/25	300	300	1.7	4.5	4.5	40
	12	68	1.8/35	650	650	3.5	10	10	
	18	153	10/35	1,850	1,850	16	51	51	
	25	295	30/50	3,050	3,050	36	97	97	
	32	483	30/50	3,310	3,310	54	150	150	
	40	754	50/50	6,890	6,890	144	380	380	
	50	1,178	90/50	6,890	6,890	144	634	634	
	63	1,870	130/50	15,200	15,200	529	1,157	1,157	
Passive guide axis without drive DGC-N-FA/DGC-N-FA-GP									
	8	0	0.7/25	300	300	1.7	4.5	4.5	dgc-fa
	12	0	1.8/35	650	650	3.5	10	10	
	18	0	10/35	1,850	1,850	16	51	51	
	25	0	30/50	3,050	3,050	36	97	97	
	32	0	30/50	3,310	3,310	54	150	150	
	40	0	50/50	6,890	6,890	144	380	380	
	50	0	90/50	6,890	6,890	144	634	634	
	63	0	130/50	15,200	15,200	529	1,157	1,157	

1) At v = 0.5 m/s with shock absorber YSR or YSRW

Linear drives DGC-N, NPT

Key features

System product for handling and assembly technology



System components and accessories		
	Brief description	→ Page/Internet
1	Drives	Wide range of combinations possible within handling and assembly technology drive
2	Grippers	Wide range of variations possible within handling and assembly technology gripper
3	Adapters	For drive/drive and drive/gripper connections adapter kit
4	Basic components	Profiles and profile connections as well as profile/drive connections basic component
5	Installation components	For a clear, safe layout of electrical cables and tubing installation component
-	Axes	Wide range of combinations possible within handling and assembly technology axis
-	Motors	Servo and stepper motors, with or without gearing motor

Linear drives DGC-N-G, NPT

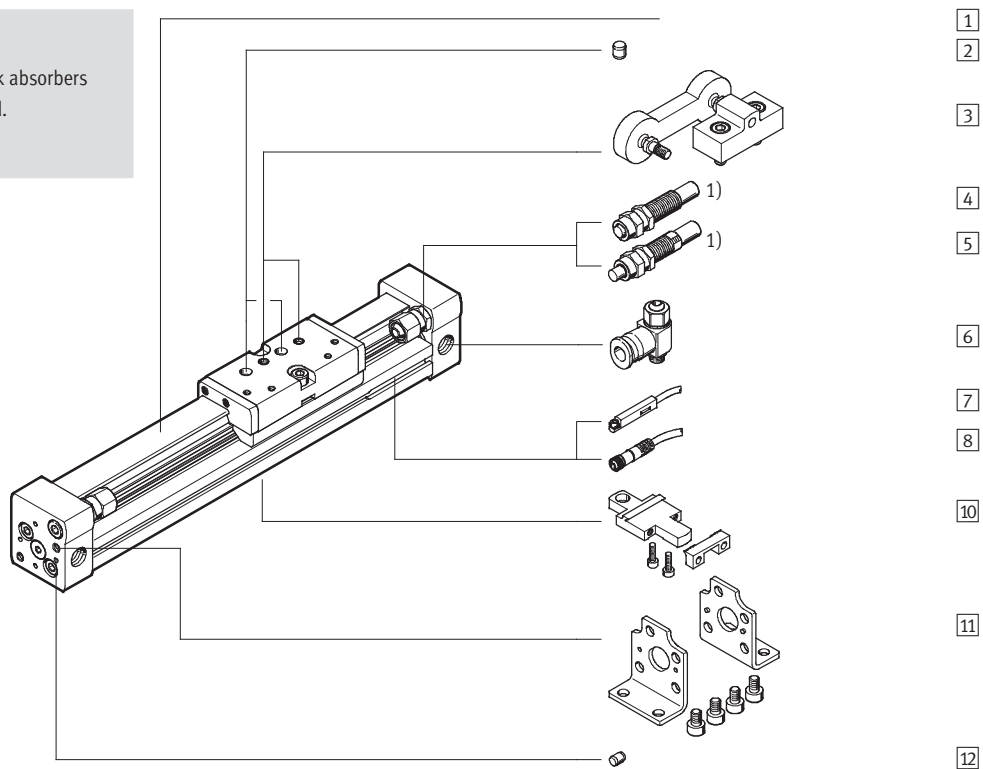
Peripherals overview



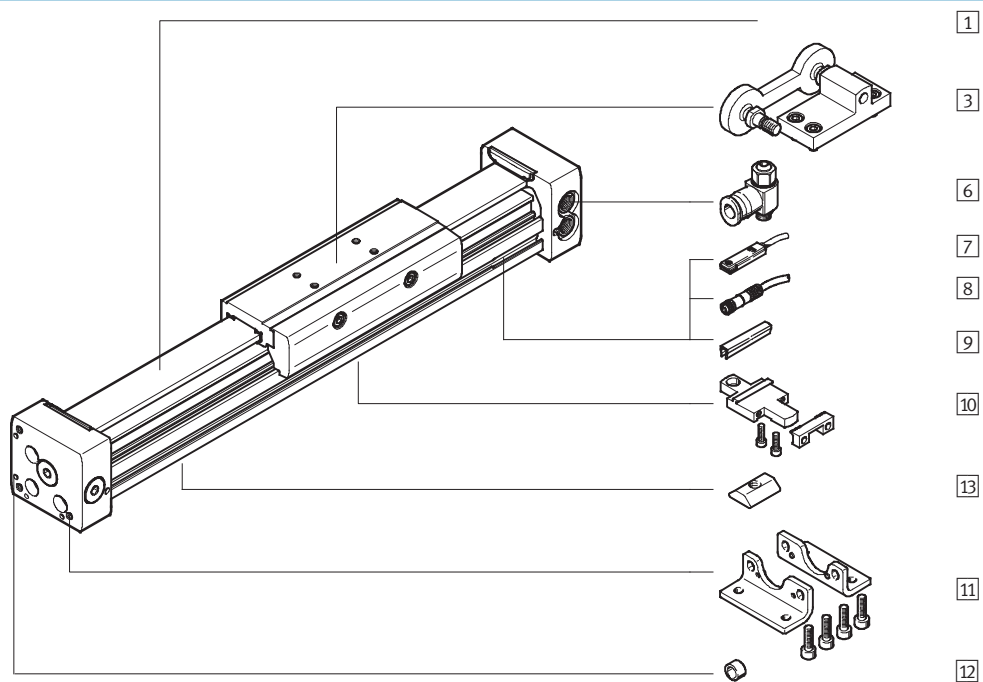
DGC-N-8/-12

Note

1) End stops or shock absorbers must not be removed.



DGC-N-18 ... 63



Linear drives DGC-N-G, NPT

Peripherals overview

Variants and accessories			
Type	For piston \varnothing	Brief description	→ Page/Internet
1 Linear drive DGC-N-G	8 ... 63	Linear drive without accessories, basic design	10
2 Centring pin ¹⁾ ZBS	8, 12	For centring loads and attachments on the slide	73
3 Moment compensator FK	8 ... 63	Compensates for inaccuracies in the mounting of the linear drive and external guide	67
- Cushioning P	8, 12	Non-adjustable, flexible cushioning. Used only at low speeds	21
- Cushioning PPV	18 ... 63	Adjustable pneumatic end-position cushioning. Used at medium speeds	21
4 Shock absorber YSR	8, 12	Self-adjusting hydraulic shock absorber with spring return and linear cushioning characteristic	21
5 Shock absorber YSRW	8, 12	Self-adjusting hydraulic shock absorber with spring return and progressive cushioning characteristic	21
6 One-way flow control valve GRLA	8 ... 63	For regulating speed	74
7 Proximity sensor G/H/I/J	8 ... 63	For sensing the slide position	74
8 Plug socket with cable V	8 ... 63	For proximity sensor	75
9 Slot cover L	18 ... 63	For protecting against ingress of dirt and securing proximity sensor cables	73
10 Profile mounting M	8 ... 63	Simple and precise mounting option via dovetail connection	65
11 Foot mounting F	8 ... 63	For mounting on end cap	64
12 Centring pin/sleeve ZBS/ZBH	8, 12, 50, 63	For centring the drive without foot mountings (user-specific)	73
13 Slot nut B	25 ... 63	For mounting attachments	73

1) Included in the scope of delivery of the drive

Linear drives DGC-N-G, NPT

Type codes

DGC – N – 25 – 1000 – G – PPV – A

Type

DGC	Linear drive
-----	--------------

Thread

N	NPT thread
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Piston Ø [mm]

Stroke [mm]

Guide

G	Basic design
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Cushioning

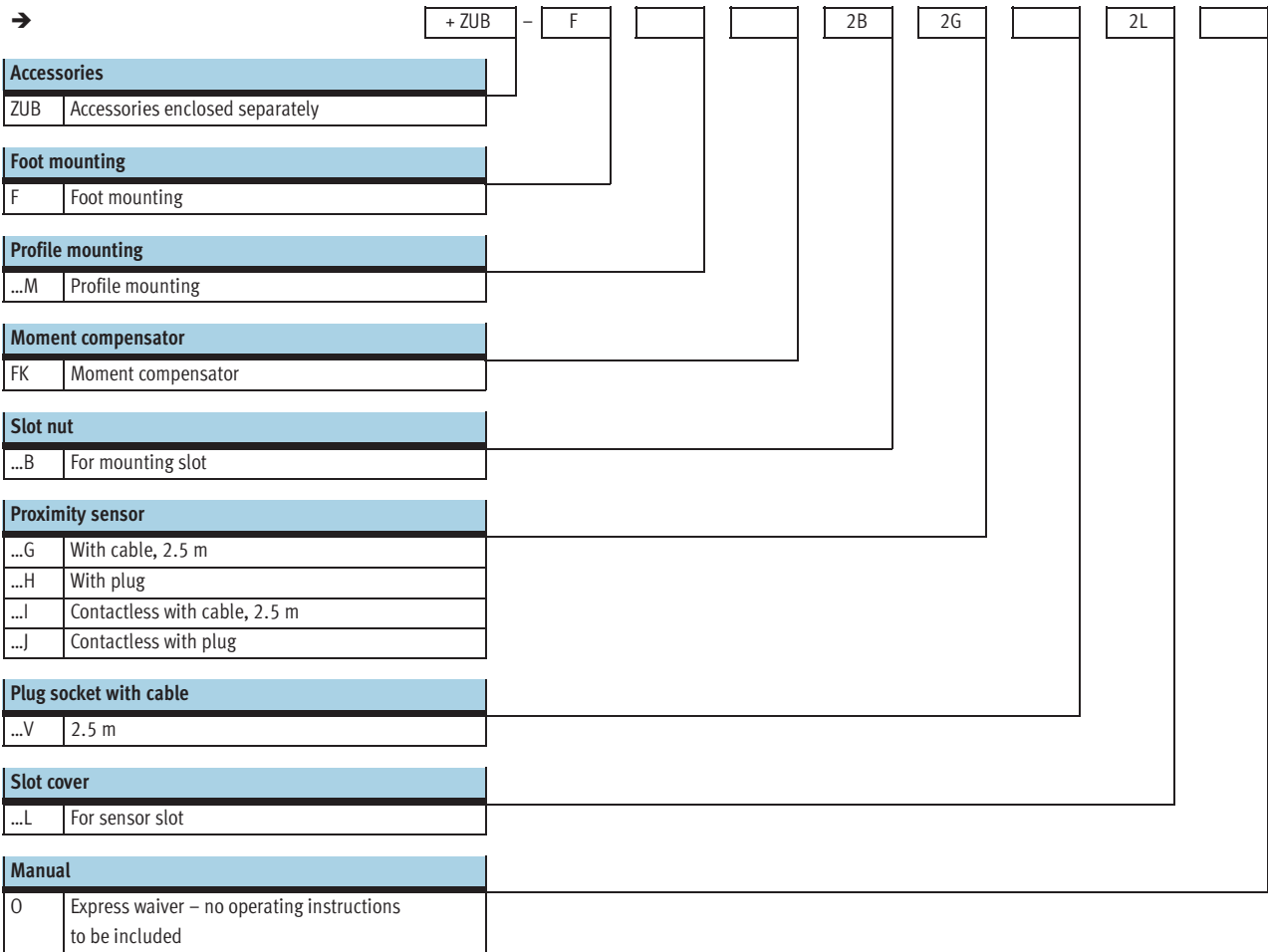
P	Flexible cushioning, non-adjustable
PPV	Adjustable end-position cushioning
YSR	Linear shock absorber, self-adjusting
YSRW	Progressive shock absorber, self-adjusting

Position sensing

A	Via proximity sensor
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Linear drives DGC-N-G, NPT

Type codes

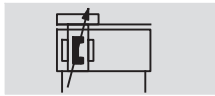


Linear drives DGC-N-G, NPT

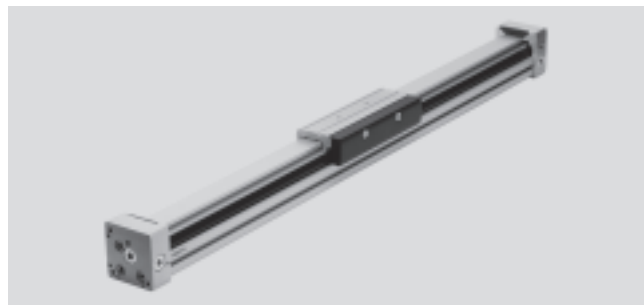
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Technical data

Function



- N- Diameter
8 ... 63 mm
- T- Stroke length
1 ... 8,500 mm



General technical data									
Piston \varnothing		8	12	18	25	32	40	50	63
Stroke	[mm]	1 ... 1,500	1 ... 2,000	1 ... 3,000	1 ... 8,500			1 ... 5,000	
Pneumatic connection		M5, suitable for 10-32 UNF			1/8 NPT		1/4 NPT		3/8 NPT
Mode of operation		Double-acting							
Design		Rodless drive							
Moment compensator principle		Slotted cylinder, mechanically coupled							
Guide		Basic design							
Mounting position		Any							
Cushioning → 13	P	Non-adjustable at both ends		-					
	PPV	-		Adjustable at both ends					
	YSR...	Self-adjusting at both ends		-					
Cushioning length with PPV cushioning	[mm]	-		16.5	15.5	17.5	29.5	29.8	31.1
Position sensing		Via proximity sensor							
Type of mounting		Profile mounting							
		Foot mounting							
		Direct mounting							
Max. speed	[m/s]	1	1.2	3					

Note: This product conforms to ISO 1179-1 and ISO 228-1

Operating and environmental conditions										
Piston \varnothing		8	12	18	25	32	40	50	63	
Operating pressure	[bar]	2.5 ... 8		2 ... 8			1.5 ... 8			
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:-:-]								
Note on operating/pilot medium		Operation with lubricated medium possible (in which case lubricated operation will always be required)								
Ambient temperature ¹⁾	[°C]	+5 ... +60		-10 ... +60						
Corrosion resistance class CRC ²⁾		2								
ATEX		Specified types → www.festo.com								

1) Note operating range of proximity sensors

2) 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.

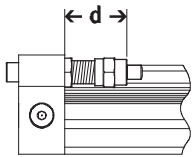
Forces [N] and impact energy [J]									
Piston \varnothing		8	12	18	25	32	40	50	63
Theoretical force at 6 bar		30	68	153	295	483	754	1,178	1,870
Impact energy in the end positions		→ 13							

Weight [g]									
Piston \varnothing		8	12	18	25	32	40	50	63
Basic weight with 0 mm stroke		170	290	546	1,004	2,126	4,121	9,050	14,040
Additional weight per 10 mm stroke		9	12	22	34	54	77	116	150
Moving load		36	65	178	287	508	1,312	2,850	4,330

Linear drives DGC-N-G, NPT

Technical data

Adjustable end-position range d [mm]



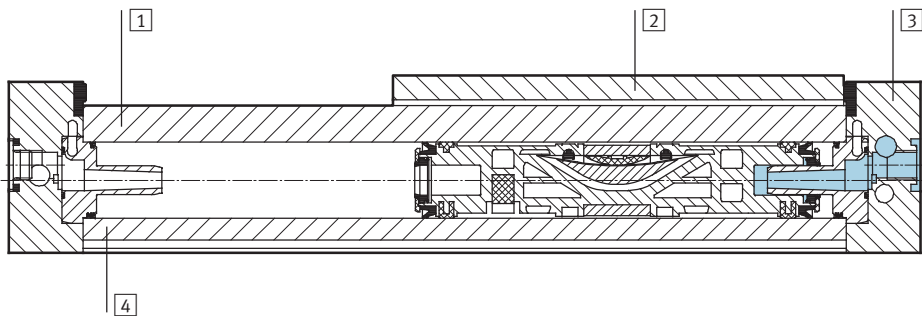
Note

The permissible kinetic energy decreases if the stroke is reduced with PPV adjustable cushioning at both ends.

Piston Ø	8	12	18	25	32	40	50	63
Cushioning P/PPV	11.3 ... 16.3	12.7 ... 17.7	-	-	-	-	-	-
Cushioning YSR/YSRW	12.8 ... 22.8	14 ... 24	-	-	-	-	-	-

Materials

Sectional view



Linear drives

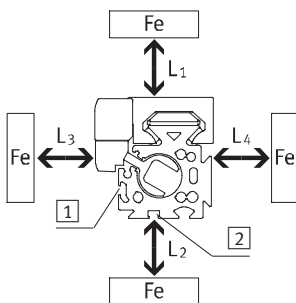
1	Guide rail	Anodised aluminium
2	Slide	Anodised aluminium
3	End cap	Anodised aluminium
4	Cylinder barrel	Anodised aluminium
-	Piston seal	Polyurethane
-	Sealing band/cover band	Polyurethane
-	Slide elements	Polyacetal

Influence of ferritic materials on proximity sensors

Ferritic materials (steel parts or panels) directly next to the proximity sensors can cause sensing

malfunctions. The following safety distances must be observed.

The distance depends on the position of the proximity sensor (see 1 and 2).



Piston Ø			8	12	18	25	32	40	50	63
Distance L1	1	[mm]	0	0	0	0	0	0	0	0
	2	[mm]	-	-	0	0	0	0	0	0
Distance L2	1	[mm]	20	10	10	10	0	0	0	0
	2	[mm]	-	-	25	25	25	25	25	25
Distance L3	1	[mm]	30	25	25	25	25	25	25	25
	2	[mm]	-	-	10	10	0	0	0	0
Distance L4	1	[mm]	0	0	0	0	0	0	0	0
	2	[mm]	-	-	0	0	0	0	0	0

Linear drives DGC-N-G, NPT

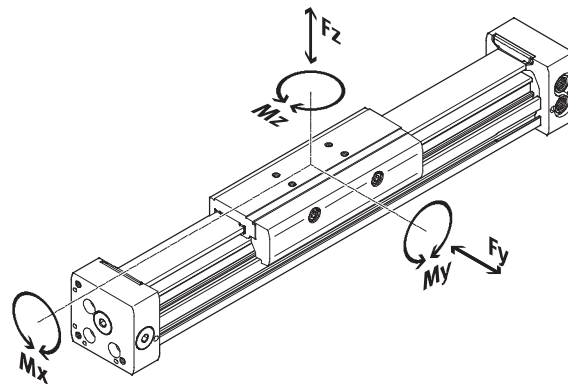
Technical data



Characteristic load values

The indicated forces and torques refer to the centre of the slide surface.

These values must not be exceeded during dynamic operation. Special attention must be paid to the cushioning phase.



Note

In order to avoid frictional restraint of the guide when using the basic drive DGC-N-G in a vertical position and with a high torque load, the variant with recirculating ball bearing guide DGC-N-KF → 40 is recommended.

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									
Piston Ø		8	12	18	25	32	40	50	63
F _y _{max.}	[N]	150	300	70	180	250	370	480	650
F _z _{max.}	[N]	150	300	340	540	800	1,100	1,600	2,000
M _x _{max.}	[Nm]	0.5	1.3	1.9	4	9	12	20	26
M _y _{max.}	[Nm]	2	5	12	20	40	60	150	150
M _z _{max.}	[Nm]	2	5	4	5	12	25	37	48

Note

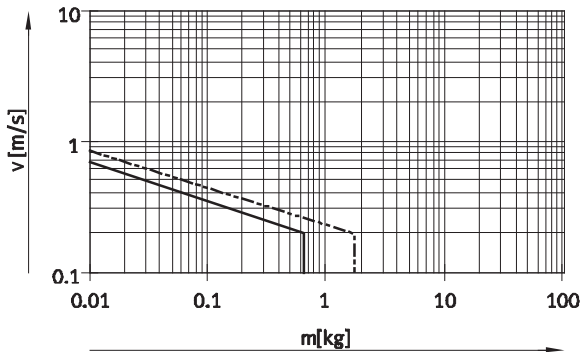
ProDrive
sizing software
→ www.festo.com

Linear drives DGC-N-G, NPT

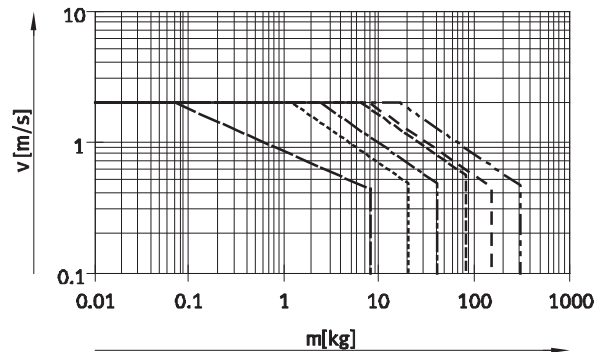
Technical data

Maximum permissible piston speed v as a function of effective load m

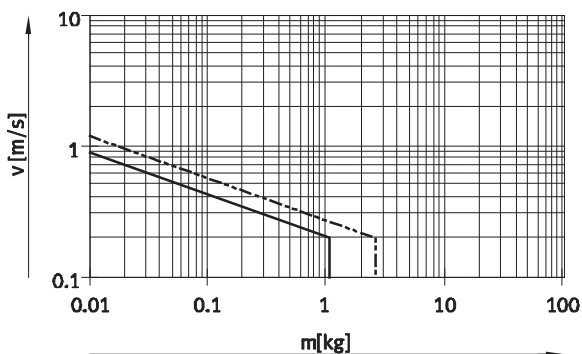
Piston \varnothing 8/12 with P cushioning



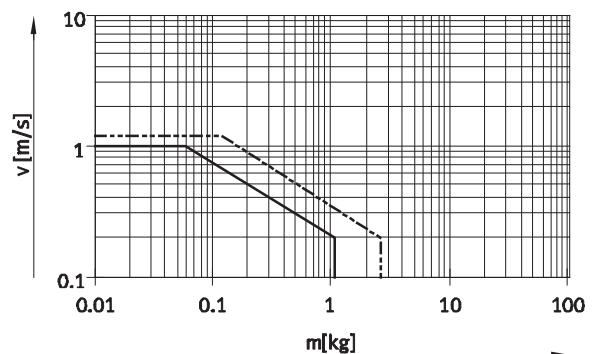
Piston \varnothing 18 ... 63 with PPV cushioning



Piston \varnothing 8/12 with YSR cushioning



Piston \varnothing 8/12 with YSRW cushioning



- \varnothing 8 - - - - \varnothing 18 - - - - - \varnothing 40
- - - - \varnothing 12 - - - - - \varnothing 25 - - - - \varnothing 50
- · — · \varnothing 32 - - - - \varnothing 63

Note

This data represents the maximum values that can be achieved. In practice, values fluctuate relative to the position of the effective load and mounting position.

Operating range of cushioning

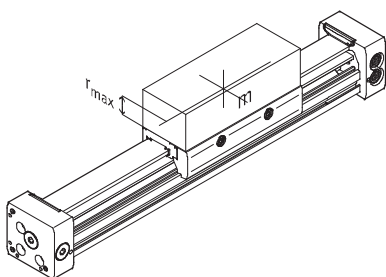
The end-position cushioning must be adjusted to ensure jerk-free operation. If the operating conditions are outside the permissible range, the load to be moved must be cushioned using suitable equipment (external shock absorbers), preferably at the centre of gravity of the load.

Note

To avoid distortion in the slide, the attachments must maintain a flatness of at least 0.03 mm.

Specifications for horizontal mounting position:

Piston \varnothing	8	12	18	25	32	40	50	63
Distance r_{max} [mm]	25	35	35	50	50	50	50	50



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Technical data



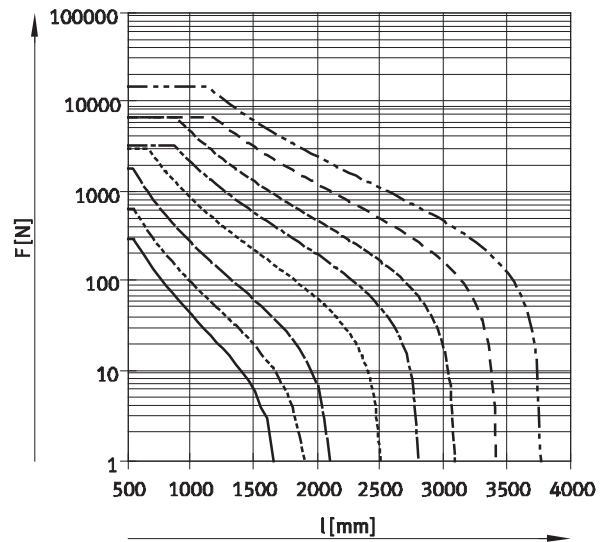
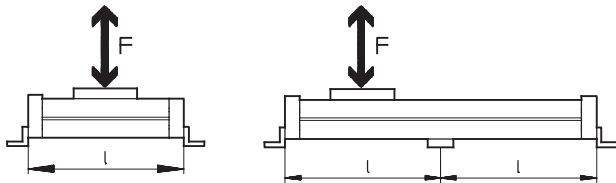
Number of profile mountings MUC as a function of force due to weight F and support span l

In order to limit deflection in the case of large strokes, the drive may need to be supported. The following graphs

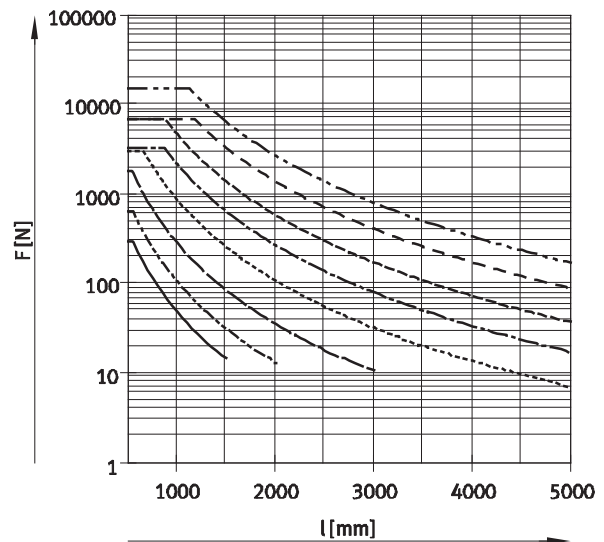
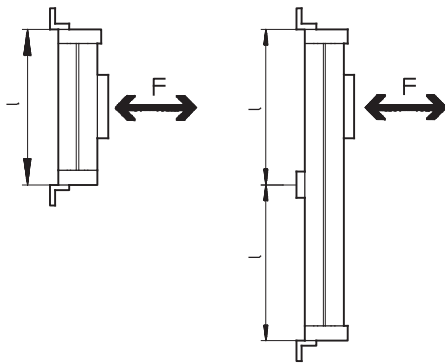
help to determine the maximum permissible support span as a

function of mounting position, force due to weight and normal force.

Horizontal mounting position



Vertical mounting position



Example:

The drive DGC-N-25-1500 is subjected to a force of 300 N in a horizontal mounting position.

The drive has an overall length of:
 $l = \text{stroke length} + L1$
 (see dimensions)
 $= 1,500 \text{ mm} + 200 \text{ mm}$
 $= 1,700 \text{ mm}$

According to the graph, the max. support span for the drive DGC-N-25 with a force of 300 N is 1,300 mm.

In this example, profile mountings are required as the max. support span (1,300 mm) is smaller than the overall length of the drive (1,700 mm).

Linear drives DGC-N-G, NPT

Technical data

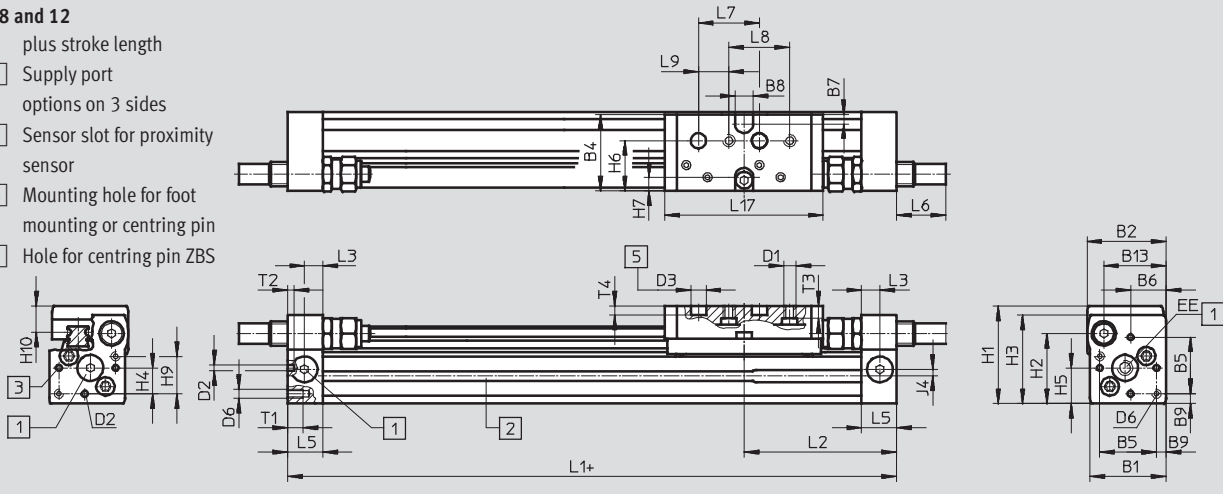
Dimensions

Download CAD Data → www.festo.com/us/cad

Ø 8 and 12

+ plus stroke length

- 1 Supply port options on 3 sides
- 2 Sensor slot for proximity sensor
- 3 Mounting hole for foot mounting or centring pin
- 5 Hole for centring pin ZBS



Ø	B1	B2	B4	B5	B6	B7	B8	B9	B13	D1	D2	D3	D6
[mm]							±0.05	±0.1			Ø H8	Ø H7	
8	25	26	25.5	18.6	11.7	3	6	3.2	20.5	M4	2	5	M3
12	30.2	31	30.5	20.6	13.5	3	8	4.8	25	M4	2	5	M4

Ø	EE ¹⁾	H1	H2	H3	H4	H5	H6	H7	H9	H10	J4	L1	L2
[mm]													
8	M5	32	23	29	8.5	11.7	16.5	4.5	12.3	8.7	2.2	100	50.1
12	M5	37.5	28.5	34.5	8.7	13.5	20.5	5	14.7	9.8	3	125	62.1

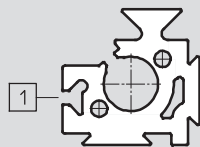
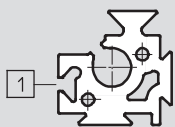
Ø	L3	L5	L6			L7	L8	L9	L17	T1	T2	T3	T4	Stroke tolerance
			P	YSR	YSRW									
[mm]						±0.03	±0.1	±0.1					+0.2	
8	6	11.5	0	16	16.2	20	20	10	52	5	2	4	3	0 ... 1.7
12	8	16	0	11.3	12.3	20	20	10	65	6	2	5	3	

1) Suitable for 10-32 UNF

Profile barrel

Ø 8

Ø 12



1 Sensor slot for proximity sensor

Linear drives DGC-N-G, NPT

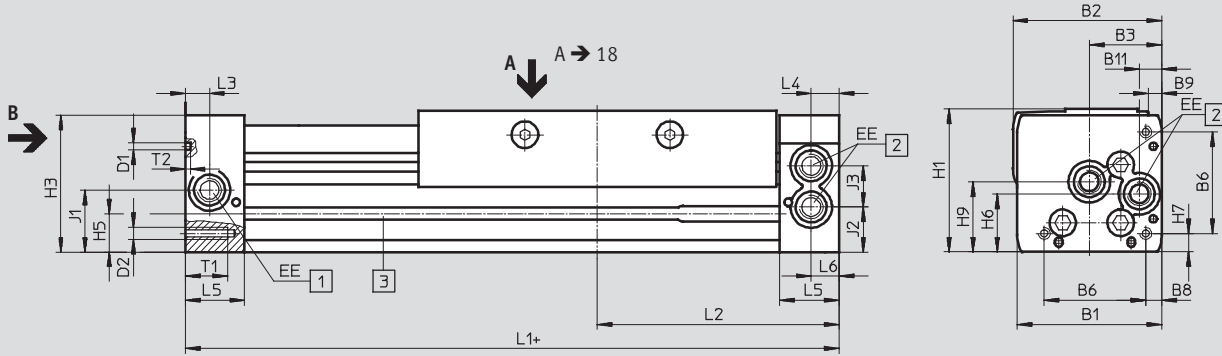
Technical data



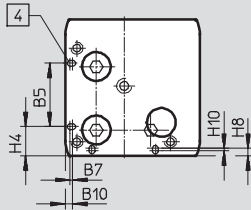
Dimensions

Download CAD Data → www.festo.com/us/cad

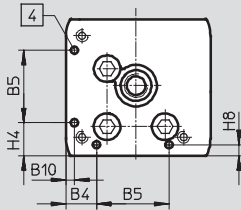
∅ 18 ... 40



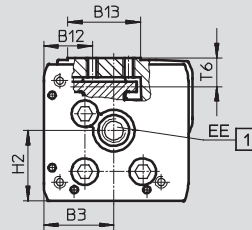
View B
∅ 18



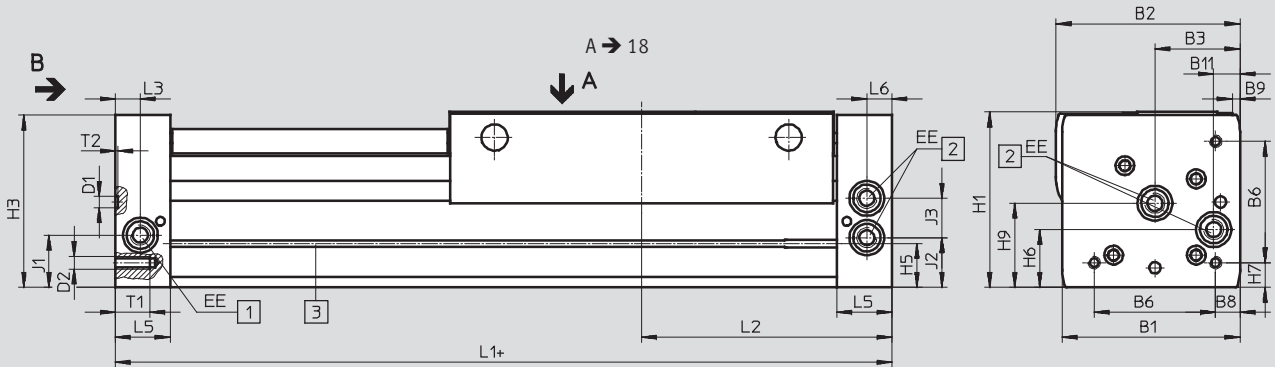
∅ 25 ... 40



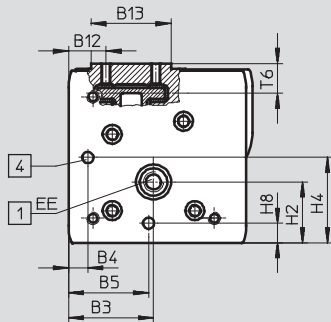
∅ 18 ... 40



∅ 50/63



View B



+ plus stroke length

1 Supply port options on 2 sides

2 Supply port options on 2 sides, for supply port at one end

3 Sensor slot for proximity sensor

4 Mounting hole for foot mounting HPC

Linear drives DGC-N-G, NPT

Technical data

∅ [mm]	B1	B2	B3	B4	B5 ±0.05	B6	B7	B8	B9	B10
18	44.5	46.3	19.5	8.8	21	31	0.3	3.8	3.3	2.4
25	59.8	61.6	30	12.65	30	42		6.65	5.6	3.5
32	73	75.5	38.5	5.7	63.1	57.5		8.5	5	14
40	91	94.5	45	17.2	55	65		12.2	5.3	8
50	113	127	60	8	52.8	81.6		12	0	-
63	142	147	68	15.5	68	97		19.5	6	-

∅ [mm]	B11	B12	B13	D1 ∅	D2	EE	H1	H2	H3	H4 ±0.2
18	5.5	19.3	20	2±0.05	M4	M5 ¹⁾	49.8	23.1	48.3	10.3
25	9.3	20.15	30	3±0.05	M5	1/8 NPT	58.5	29	56.5	13
32	14.9	20.5	35	3±0.05	M6	1/8 NPT	73	30	71.5	5.7
40	16.5	19.8	45	4±0.05	M6	1/4 NPT	88	41.5	85	17.2
50	21	24	64	9 ^{H7}	M8	1/4 NPT	120	38.5	116	52.8
63	21	30	64	9 ^{H7}	M10	3/8 NPT	140	48.5	137.5	68

∅ [mm]	H5	H6	H7	H8	H9	H10	J1	J2	J3	L1
18	13.4	20	5.3	2.4	25.2	0.4	20	16.5	11	150
25	15.8	24	7	4.5	29		26.1	18.6	17	200
32	17	27.7	8.5	14	35.2		30	22	18.5	250
40	25	36.5	12.2	8	44		35	26	26	300
50	29.3	36	12	8	53		30.5	30.5	28	350
63	34.8	46	19.5	15.5	67		41.5	39.5	31.5	400

∅ [mm]	L2	L3	L4	L5	L6	T1	T2	T6	Stroke tolerance
18	74.5	5.7	5.8	15	5.5	9	2	10.7	0 ... 2.5
25	100	10.5	10.6	24.5	10.6	17.5	2	12	
32	124.8	14.5	14.5	30.5	14.5	15	2	13.8	
40	150	14.6	14.6	33.5	14.6	20	3	16.8	
50	175	17	-	41	17	24	2.1 ^{+0.2}	20.75	
63	200	20	-	44	20	27.5	2.1 ^{+0.2}	20.75	

1) Suitable for 10-32 UNF

Note: This product conforms to ISO 1179-1 and ISO 228-1

Linear drives DGC-N-G, NPT

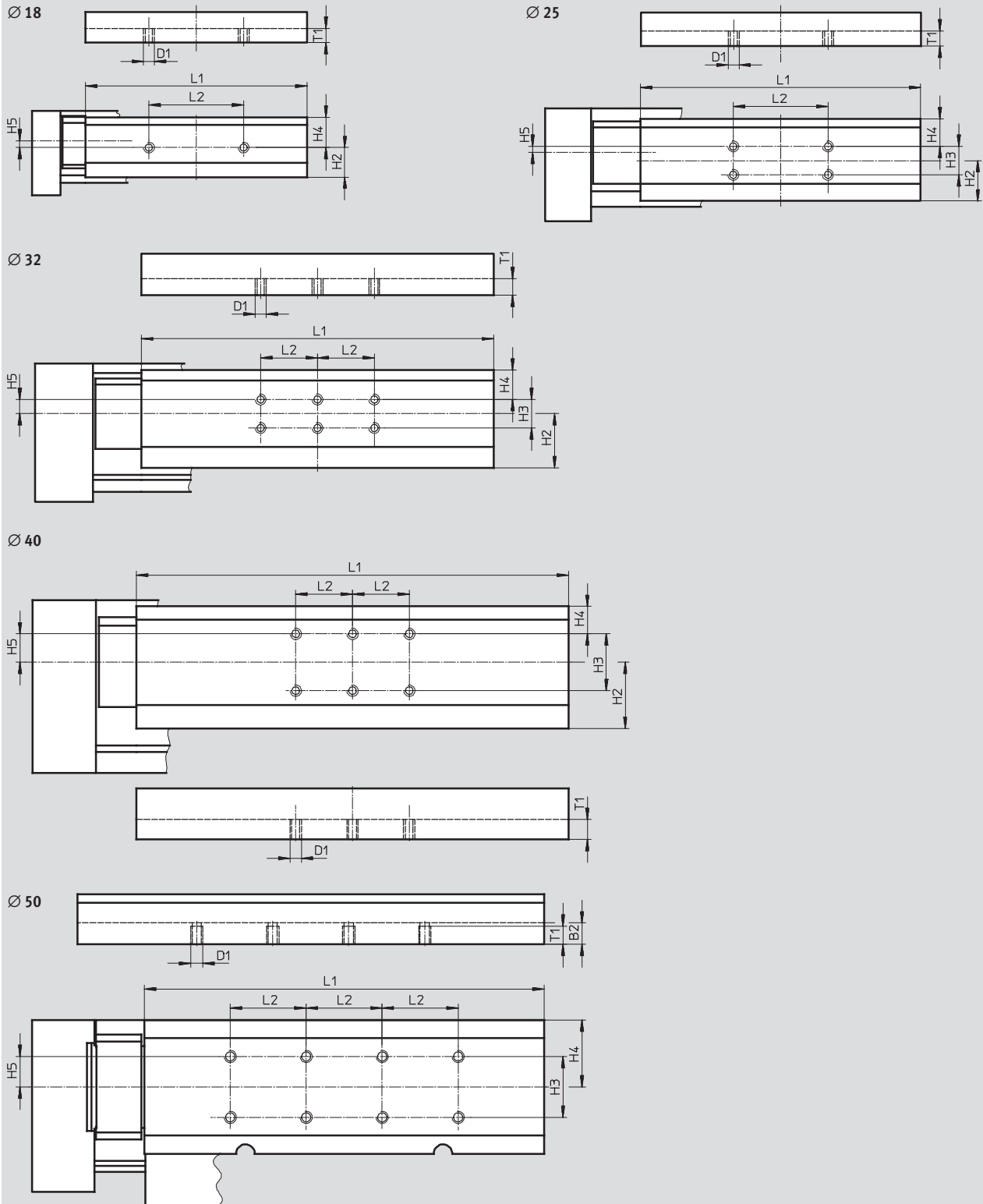
Technical data

FESTO

Dimensions

Download CAD Data → www.festo.com/us/cad

Slide – View A



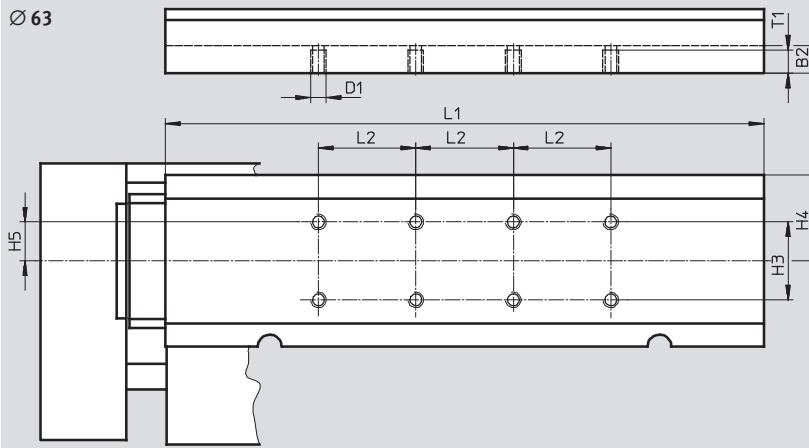
Linear drives DGC-N-G, NPT

Technical data

Dimensions

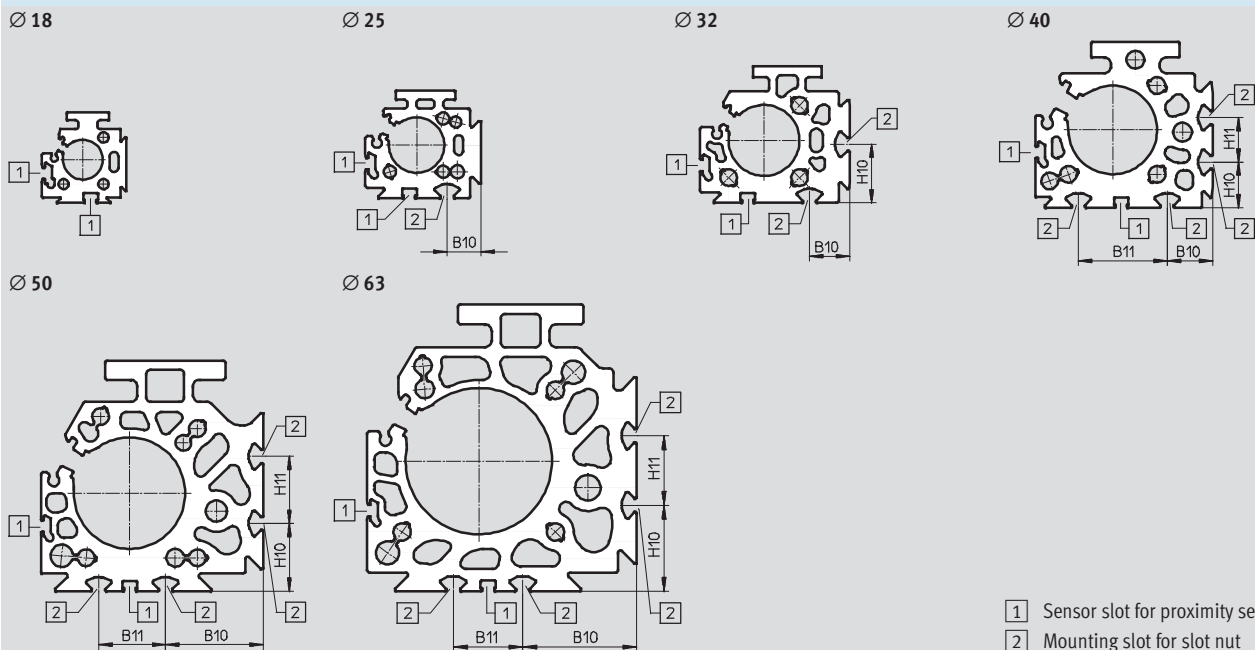
Download CAD Data → www.festo.com/us/cad

Slide – View A



Ø [mm]	B2	D1	H2 ±0.1	H3 ±0.1	H4	H5	L1	L2 ±0.1	T1
18	–	M5	15.6	–	16	2	117±0.05	50	7
25	–	M5	21.35	15	14.55	4.85	148±0.05	50	8
32	–	M5	28.5	15	15.5	7.5	186±0.05	30	8.6
40	–	M6	35	30	14.5	15	228±0.05	30	10.5
50	14	M8	–	40	44	20	263±0.1	50	13
63	14	M8	–	40	44	20	307±0.1	50	13

Profile barrel



- 1 Sensor slot for proximity sensor
- 2 Mounting slot for slot nut

Ø [mm]	B10	B11	H10	H11
25	15.23	–	–	–
32	18	–	26.5	–
40	20.5	40	20.5	20
50	43.8	30	30.5	30
63	49	30	37	30

Linear drives DGC-N-G, NPT

Ordering data – Modular products

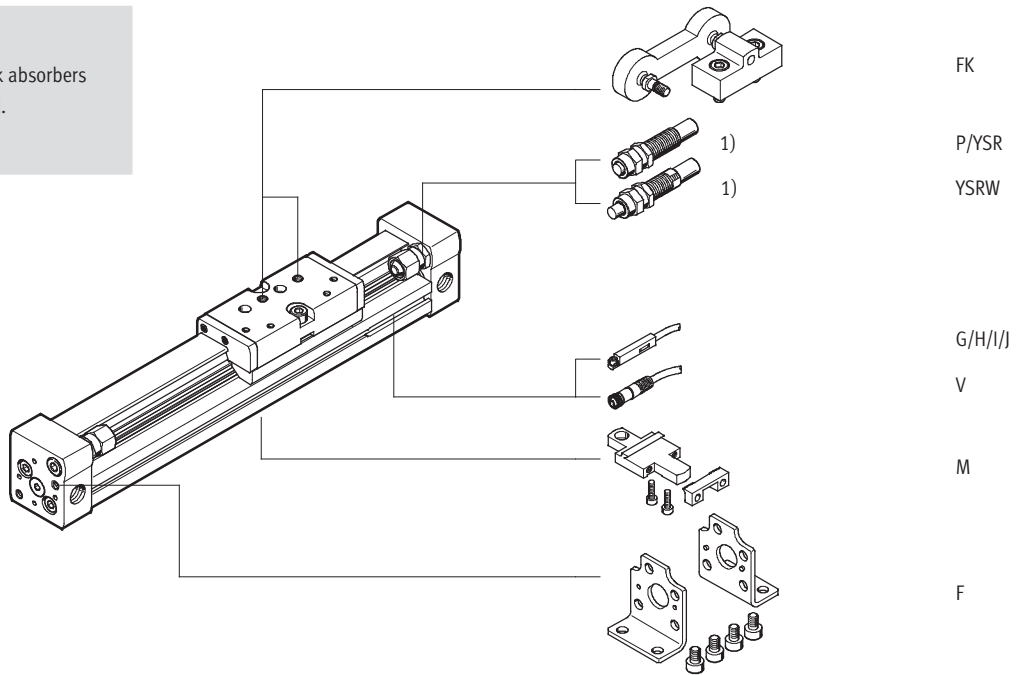
Order code

Mandatory data/options

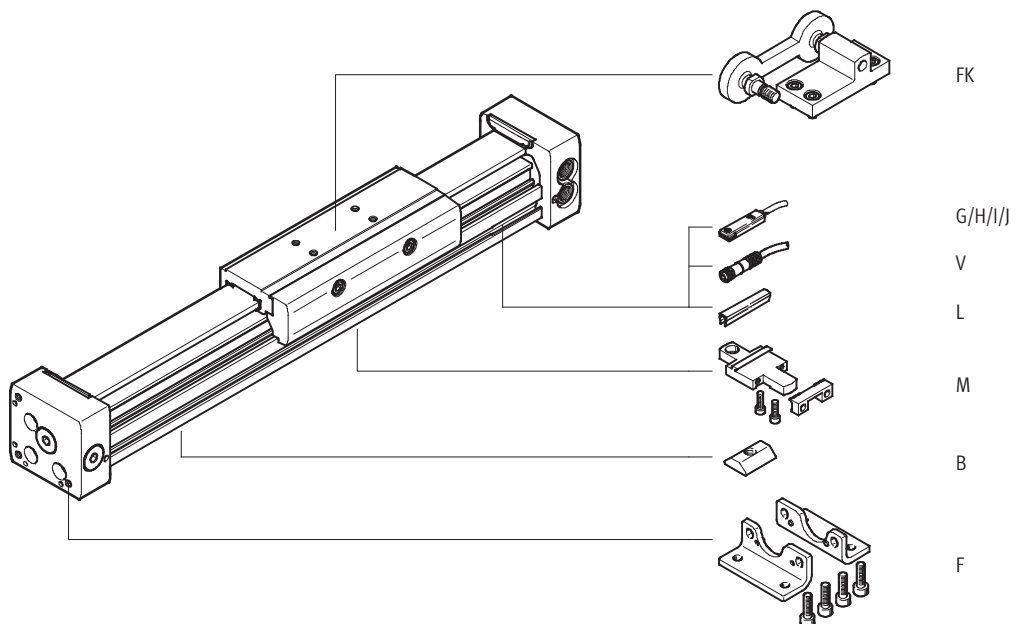
DGC-N-8/-12

Note

1) End stops or shock absorbers must not be removed.



DGC-N-18 ... 63



Linear drives DGC-N-G, NPT

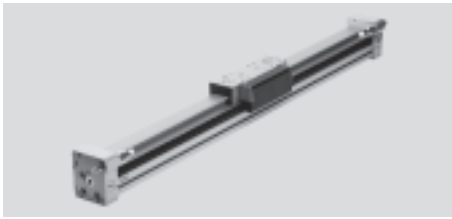
Ordering data – Modular products

Ordering table												
Size	8	12	18	25	32	40	50	63	Conditions	Code	Enter code	
M Module No.	530 906	530 907	532 446	532 447	532 448	532 449	532 450	532 451				
Function	Linear drive									DGC	DGC	
Thread	NPT thread									-N	-N	
Piston Ø [mm]	8	12	18	25	32	40	50	63		-...		
Stroke [mm]	1 ... 1,500	1 ... 2,000	1 ... 3,000	1 ... 8,500			1 ... 5,000			-...		
Guide	Basic design									-G	-G	
Cushioning	At both ends	Flexible cushioning rings/pads		-	-	-	-	-	-	-	-P	
	Adjustable at both ends	-	-	Pneumatic cushioning						-PPV		
	Self-adjusting	Shock absorber		-	-	-	-	-	-	-	-YSR	
Shock absorber, progressive		-	-	-	-	-	-	-	-	-YSRW		
Position sensing	Via proximity sensor									-A	-A	
O Accessories	Enclosed separately (can be retrofitted)									ZUB-	ZUB-	
Foot mounting	1									F		
Profile mounting	1 ... 9									...M		
Moment compensator	Moment compensator									FK		
Slot nut for mounting slot	-	-	-	1 ... 9					...B			
Proximity sensor	Cable 2.5 m	1 ... 9									...G	
	Plug M8	1 ... 9									...H	
Proximity sensor, contactless, PNP	Cable 2.5 m	1 ... 9									...I	
	Plug M8	1 ... 9									...J	
Plug socket with cable	M8, 2.5 m		1 ... 9							...V		
Slot cover for sensor slot	-	-	1 ... 9						...L			
Manual	Express waiver – no operating instructions to be included (already available)									-O		

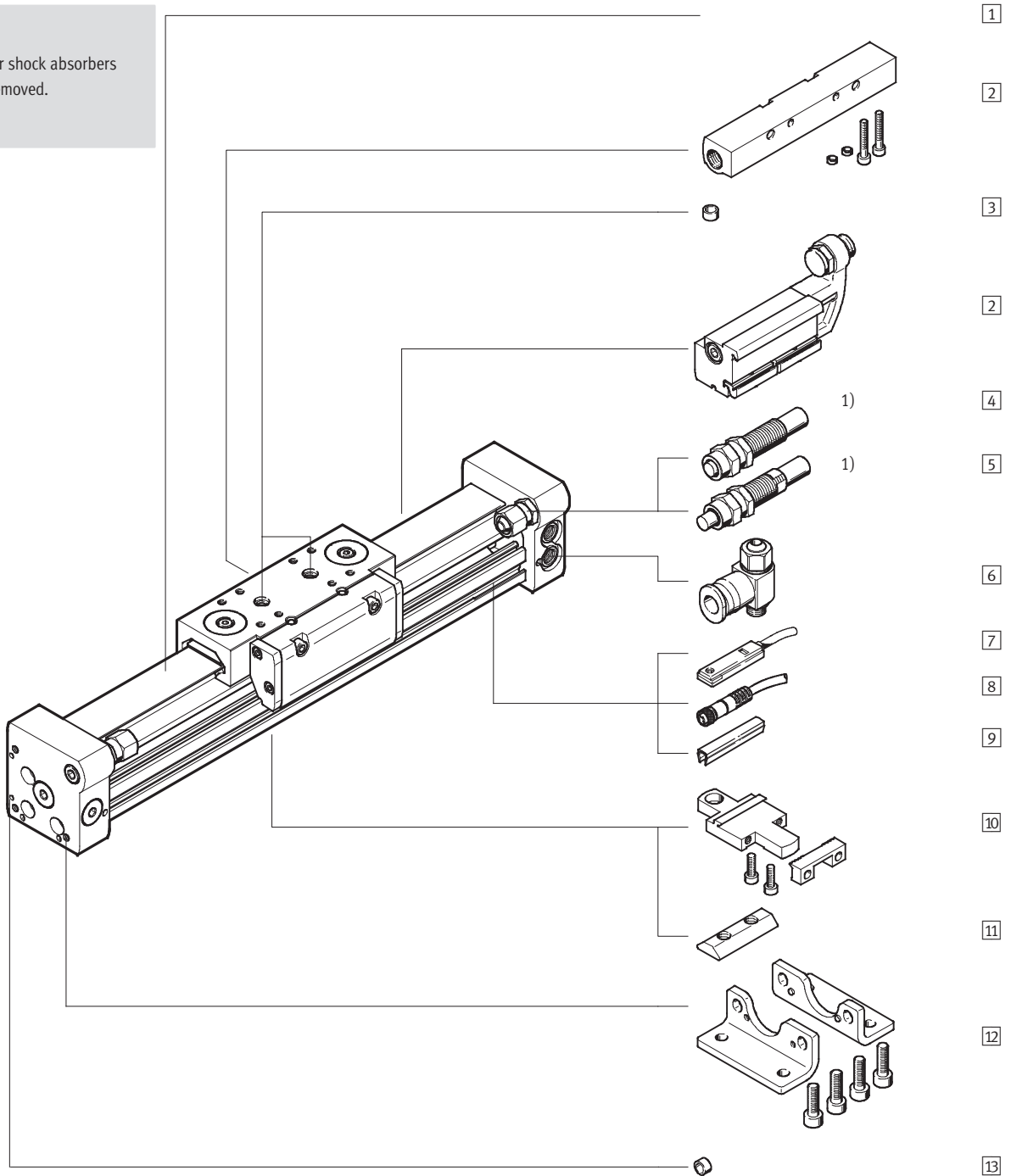
Transfer order code

Linear drives DGC-N-GF, with plain-bearing guide, NPT

Peripherals overview



Note
1) End stops or shock absorbers must not be removed.



Linear drives DGC-N-GF, with plain-bearing guide, NPT

Peripherals overview

Variants and accessories			
Type	For piston \varnothing	Brief description	→ Page/Internet
1 Linear drive DGC-N-GF	18 ... 63	Linear drive without accessories, plain-bearing guide	26
2 Mechanical end-position limiter YWZ	18 ... 63	For variable end-position adjustment, e.g. for format adjustments	69
3 Centring pin/sleeve ¹⁾ ZBS/ZBH	18 ... 63	For centring loads and attachments on the slide	73
- Cushioning PPV	18 ... 63	Adjustable pneumatic end-position cushioning. Used at medium speeds	39
4 Shock absorber YSR	18 ... 63	Self-adjusting hydraulic shock absorber with spring return and linear cushioning characteristic	39
5 Shock absorber YSRW	18 ... 63	Self-adjusting hydraulic shock absorber with spring return and progressive cushioning characteristic	39
6 One-way flow control valve GRLA	18 ... 63	For regulating speed	74
7 Proximity sensor G/H/I/J	18 ... 63	For sensing the slide position	74
8 Plug socket with cable V	18 ... 63	For proximity sensor	75
9 Slot cover L	18 ... 63	For protecting against ingress of dirt and securing proximity sensor cables	73
10 Profile mounting M	18 ... 63	Simple and precise mounting option via dovetail connection	65
11 Slot nut B	25 ... 63	For mounting attachments	73
12 Foot mounting F	18 ... 63	For mounting on end cap	64
13 Centring sleeve ZBH	50, 63	For centring the drive without foot mountings (user-specific)	73

1) Included in the scope of delivery of the drive

Linear drives DGC-N-GF, with plain-bearing guide, NPT

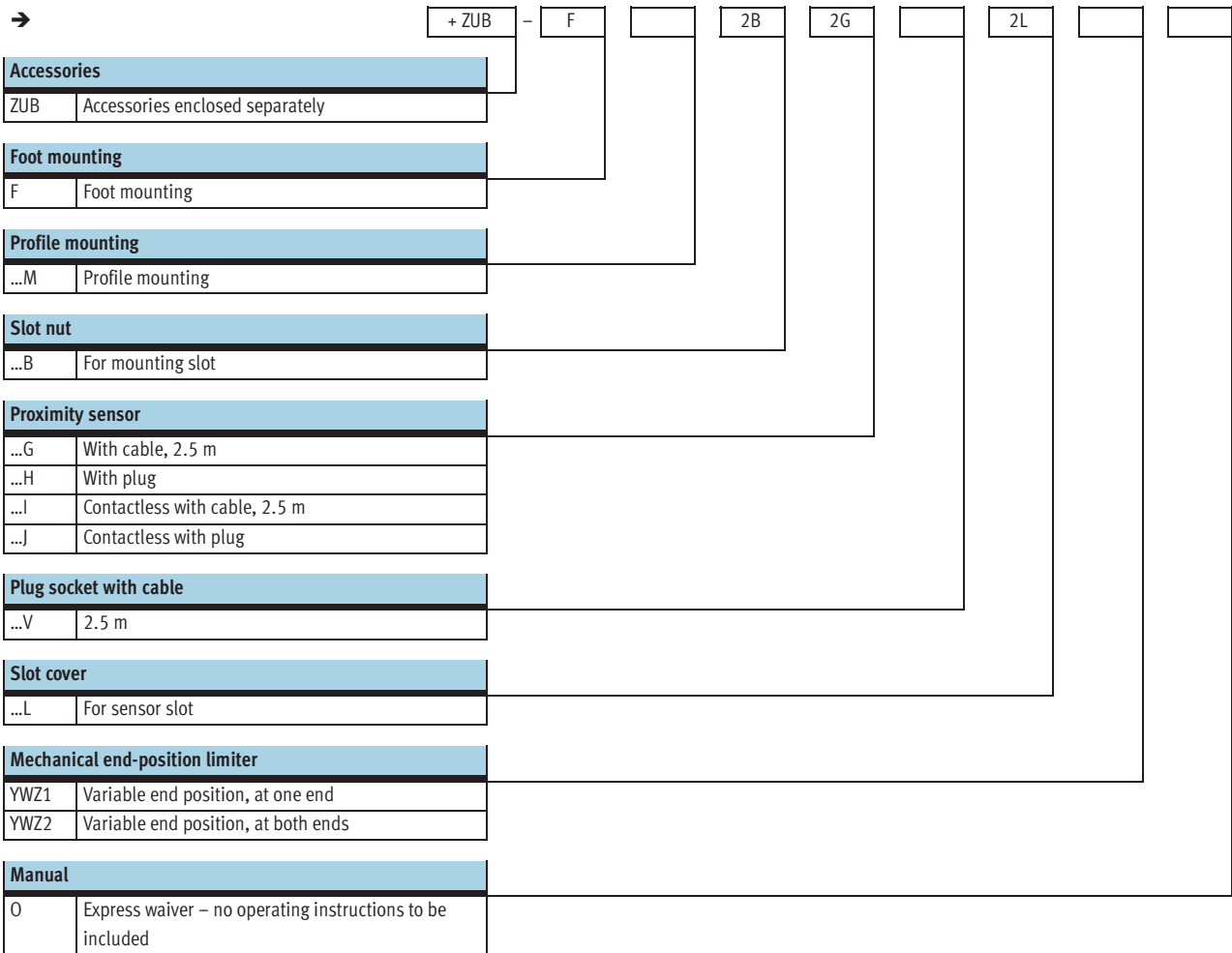
Type codes

DGC – N – 25 – 1000 – GF – YSR – A

Type	
DGC	Linear drive
Thread	
N	NPT thread
Piston Ø [mm]	
Stroke [mm]	
Guide	
GF	Plain-bearing guide
Cushioning	
PPV	Adjustable end-position cushioning
YSR	Linear shock absorber, self-adjusting
YSRW	Progressive shock absorber, self-adjusting
Position sensing	
A	Via proximity sensor

Linear drives DGC-N-GF, with plain-bearing guide, NPT

Type codes

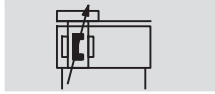


Linear drives DGC-N-GF, with plain-bearing guide, NPT

FESTO

Technical data

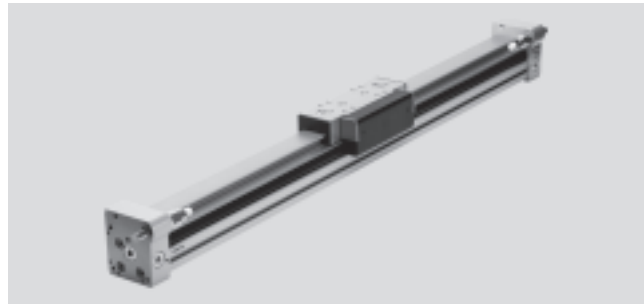
Function



- N- Diameter
18 ... 63 mm
- T- Stroke length
1 ... 8,500 mm

[www.festo.com/en/
Spare_parts_service](http://www.festo.com/en/Spare_parts_service)

Wearing parts kits
→ 39



General technical data						
Piston Ø	18	25	32	40	50	63
Stroke [mm]	1 ... 3,000		1 ... 8,500			1 ... 5,000
Pneumatic connection	M5, suitable for 10-32 UNF		1/8 NPT		1/4 NPT	3/8 NPT
Mode of operation	Double-acting					
Design	Rodless drive					
Moment compensator principle	Slotted cylinder, mechanically coupled					
Guide	Plain-bearing guide					
Mounting position	Any					
Cushioning	PPV	Adjustable at both ends				
→ 29	YSR...	Self-adjusting at both ends				
Cushioning length with PPV cushioning [mm]	16.5	15.5	17.5	29.5	29.8	31.1
Position sensing	Via proximity sensor					
Type of mounting	Profile mounting					
	Foot mounting					
	Direct mounting					
Max. speed [m/s]	3					

Note: This product conforms to ISO 1179-1 and ISO 228-1

Operating and environmental conditions						
Piston Ø	18	25	32	40	50	63
Operating pressure [bar]	2 ... 8			1.5 ... 8		
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [7:--]					
Note on operating/pilot medium	Operation with lubricated medium possible (in which case lubricated operation will always be required)					
Ambient temperature ¹⁾ [°C]	-10 ... +60					
Corrosion resistance class CRC ²⁾	2					
ATEX	Specified types → www.festo.com					

1) Note operating range of proximity sensors

2) 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.

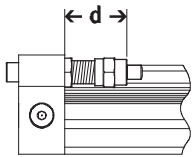
Forces [N] and impact energy [J]						
Piston Ø	18	25	32	40	50	63
Theoretical force at 6 bar	153	295	483	754	1,178	1,870
Impact energy in the end positions	→ 29					

Weight [g]						
Piston Ø	18	25	32	40	50	63
Basic weight with 0 mm stroke	763	1,609	2,532	5,252	10,065	16,308
Additional weight per 10 mm stroke	23	35	55	76	117	180
Moving load	267	526	824	1,725	3,319	5,226

Linear drives DGC-N-GF, with plain-bearing guide, NPT

Technical data

Adjustable end-position range d [mm]



Note

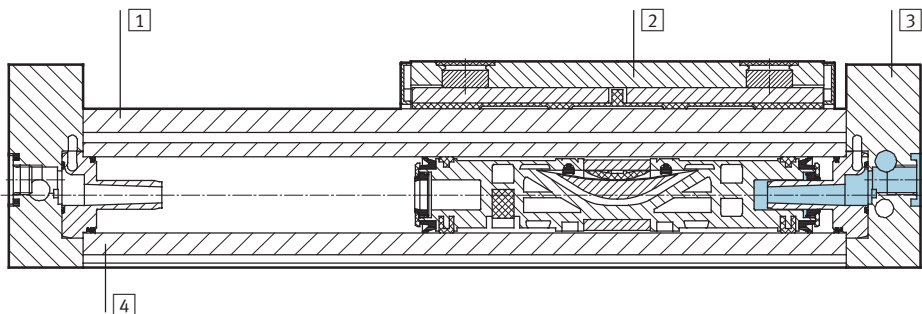
The permissible kinetic energy decreases if the stroke is reduced

with PPV adjustable cushioning at both ends.

Piston \varnothing	18	25	32	40	50	63
Cushioning PPV	13.8 ... 15.8	21.1 ... 25.1	25.2 ... 30.2	28.7 ... 33.7	28.7 ... 33.7	38.8 ... 43.8
Cushioning YSR/YSRW	14.5 ... 24.5	22.5 ... 32.5	27.3 ... 37.3	31 ... 41	31 ... 56	41 ... 76

Materials

Sectional view



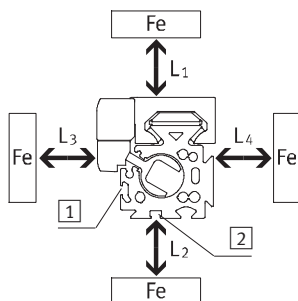
Linear drives		
1	Guide rail	Anodised aluminium
2	Slide	Anodised aluminium
3	End cap	Anodised aluminium
4	Cylinder barrel	Anodised aluminium
-	Piston seal	Polyurethane
-	Sealing band/cover band	Polyurethane
-	Slide elements	Polyacetal

Influence of ferritic materials on proximity sensors

Ferritic materials (steel parts or panels) directly next to the proximity sensors can cause sensing

malfunctions. The following safety distances must be observed.

The distance depends on the position of the proximity sensor (see 1 and 2).



Piston \varnothing		8	12	18	25	32	40	50	63
Distance L1	1 [mm]	0	0	0	0	0	0	0	0
	2 [mm]	-	-	0	0	0	0	0	0
Distance L2	1 [mm]	20	10	10	10	0	0	0	0
	2 [mm]	-	-	25	25	25	25	25	25
Distance L3	1 [mm]	30	25	25	25	25	25	25	25
	2 [mm]	-	-	10	10	0	0	0	0
Distance L4	1 [mm]	0	0	0	0	0	0	0	0
	2 [mm]	-	-	0	0	0	0	0	0

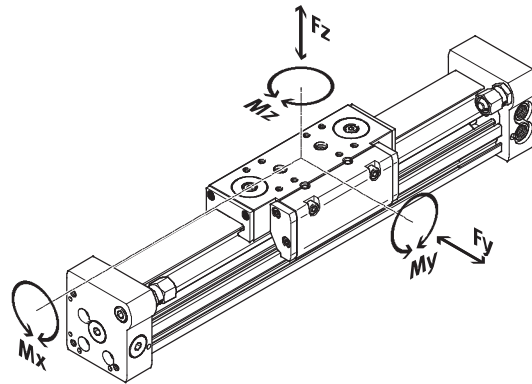
Linear drives DGC-N-GF, with plain-bearing guide, NPT

Technical data

Characteristic load values

The indicated forces and torques refer to the centre of the slide surface.

These values must not be exceeded during dynamic operation. Special attention must be paid to the cushioning phase.



Note

In order to avoid frictional restraint of the guide when using the drive DGC-N-GF with plain-bearing guide in a vertical position and with a high torque load, the variant with recirculating ball bearing guide DGC-N-KF → 40 is recommended.

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 in relation to a travel speed of 0.2 m/s

Piston Ø		18	25	32	40	50	63
F _y _{max.}	[N]	440	640	900	1,380	1,500	2,300
F _z _{max.}	[N]	540	1,300	1,800	2,000	2,870	4,460
M _x _{max.}	[Nm]	3.4	8.5	15	28	54	96
M _y _{max.}	[Nm]	20	40	70	110	270	450
M _z _{max.}	[Nm]	8.5	20	33	54	103	187

Note

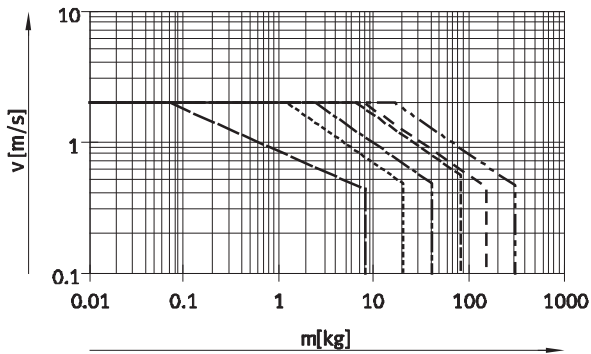
ProDrive
sizing software
→ www.festo.com

Linear drives DGC-N-GF, with plain-bearing guide, NPT

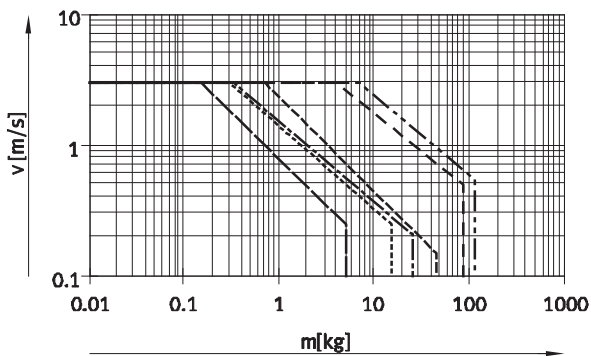
Technical data

Maximum permissible piston speed v as a function of effective load m

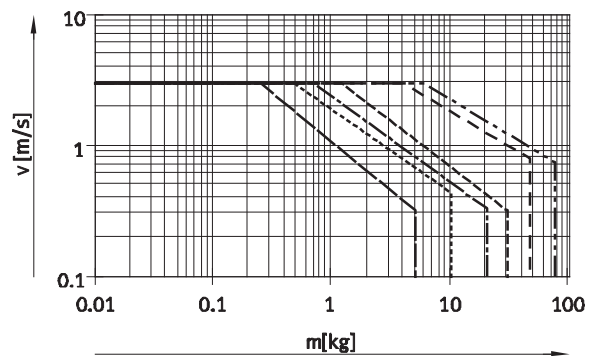
With PPV cushioning



With YSR cushioning



With YSRW cushioning



- Ø 18 - - - - - Ø 40
- · - · - · - Ø 25 - - - - - Ø 50
- · - · - · - Ø 32 - - - - - Ø 63

Note

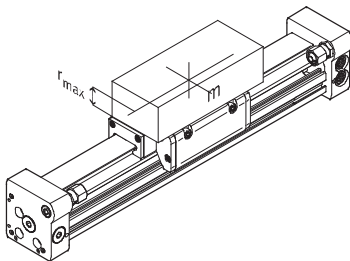
This data represents the maximum values that can be achieved. In practice, values fluctuate relative to the position of the effective load and mounting position.

Operating range of cushioning

The end-position cushioning must be adjusted to ensure jerk-free operation. If the operating conditions are outside the permissible range, the load to be moved must be cushioned using suitable equipment (external shock absorbers), preferably at the centre of gravity of the load.

Note

To avoid distortion in the slide, the bearing surfaces of the attachments must maintain a flatness of at least 0.03 mm.



Piston Ø	8	12	18	25	32	40	50	63
Distance r_{max} [mm]	25	35	35	50	50	50	50	50

Linear drives DGC-N-GF, with plain-bearing guide, NPT

Technical data

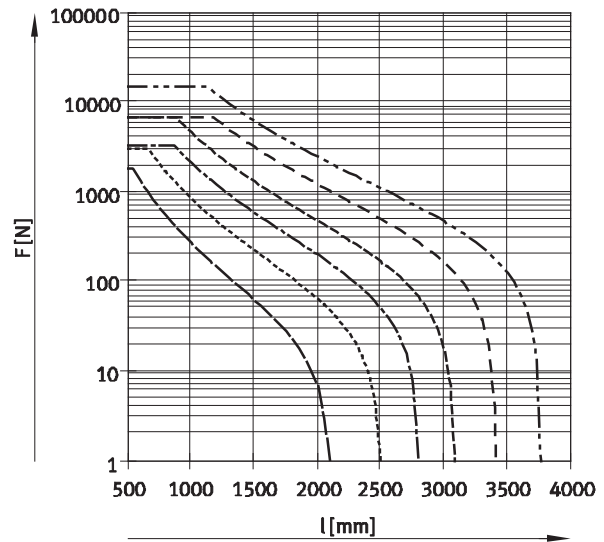
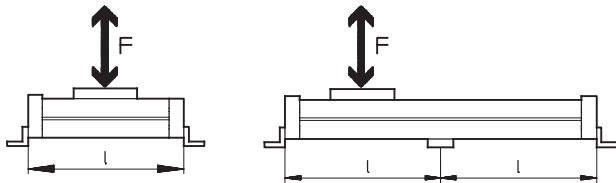
Number of profile mountings MUC as a function of force due to weight F and support span l

In order to limit deflection in the case of large strokes, the drive may need to be supported. The following graphs

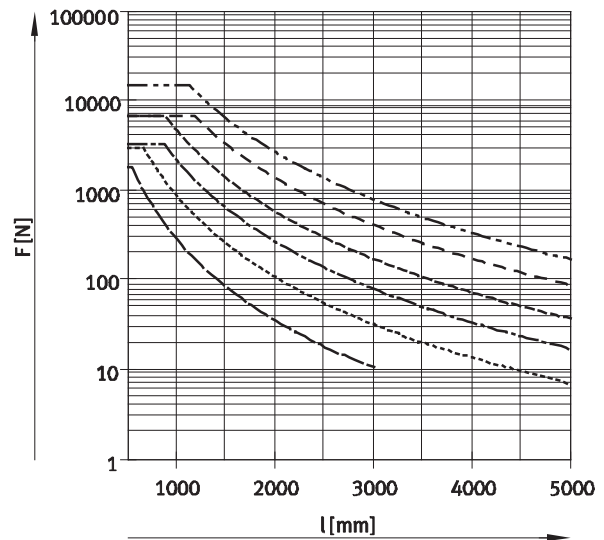
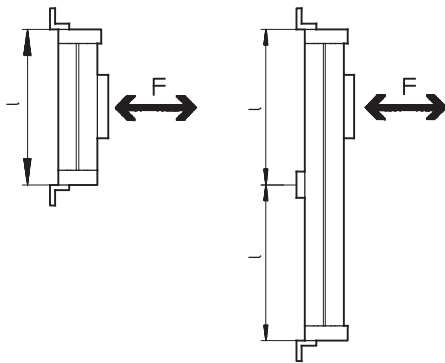
help to determine the maximum permissible support span as a

function of mounting position, force due to weight and normal force.

Horizontal mounting position



Vertical mounting position



- Ø 18
- - - - - Ø 25
- · — · — · Ø 32
- - - - - Ø 40
- - - - - Ø 50
- - - - - Ø 63

Example:

The drive DGC-N-25-1500 is subjected to a force of 300 N in a horizontal mounting position.

The drive has an overall length of:
 $l = \text{stroke length} + L1$
 (see dimensions)
 $= 1,500 \text{ mm} + 200 \text{ mm}$
 $= 1,700 \text{ mm}$

According to the graph, the max. support span for the drive DGC-N-25 with a force of 300 N is 1,300 mm.

In this example, profile mountings are required as the max. support span (1,300 mm) is smaller than the overall length of the drive (1,700 mm).

Linear drives DGC-N-GF, with plain-bearing guide, NPT

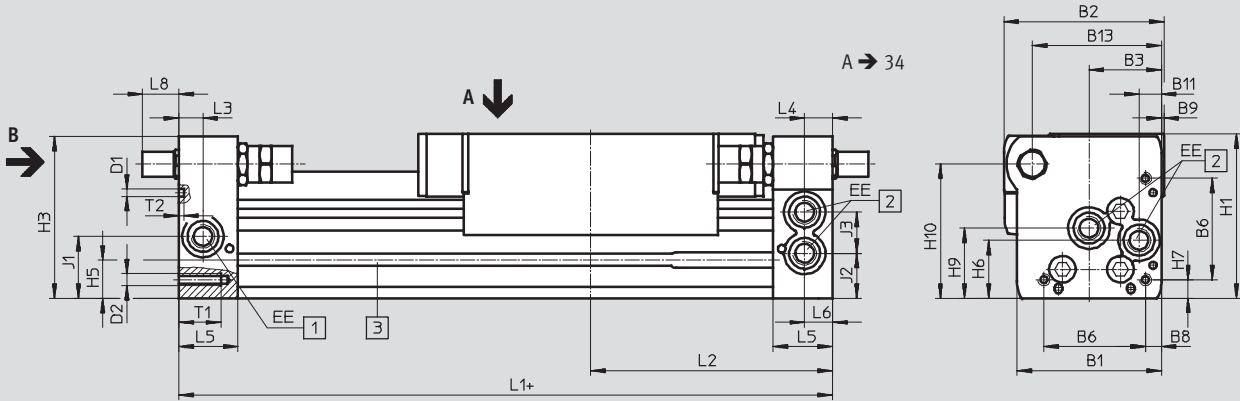
Technical data

FESTO

Dimensions

Download CAD Data → www.festo.com/us/cad

∅ 18 ... 40

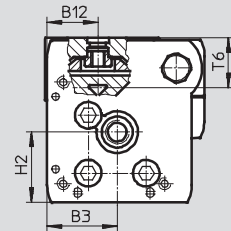
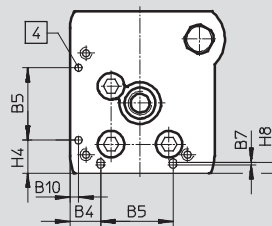
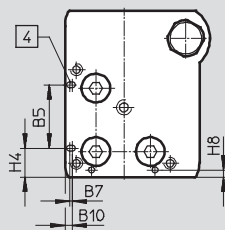


View B
∅ 18

∅ 25 ... 40

∅ 18 ... 40

- + plus stroke length
- 1 Supply port options on 2 sides
- 2 Supply port options on 2 sides, for supply port at one end
- 3 Sensor slot for proximity sensor
- 4 Mounting hole for foot mounting HPC



∅	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	D1
[mm]					±0.05									±0.05
18	44.5	49.9	19.5	8.8	21	31	0.8	3.8	1	2.4	5.5	15.5	39	2
25	59.8	66	30	12.65	30	42	1	6.65	1	3.5	9.3	21	53.5	3
32	73	79	38.5	5.7	63.1	57.5	-	8.5	1.5	14	14.9	18	66.5	3
40	91	98.5	45	17.2	55	65	-	12.2	2	8	16.5	24.8	80.5	4

∅	D2	EE	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	J1	J2
[mm]						±0.2								
18	M4	M5 ¹⁾	56.3	23.1	55	9.6	13.4	20	4.6	2.4	25.2	46	20	16.5
25	M5	1/8 NPT	68	29	67	13.65	15.8	24	7.65	4.5	29	55.5	26.1	18.6
32	M6	1/8 NPT	78.5	30	77	5.7	17	27.7	8.5	14	35.2	63.8	30	22
40	M6	1/4 NPT	99.5	41.5	97.5	17.2	25	36.5	12.2	8	44	81.5	35	26

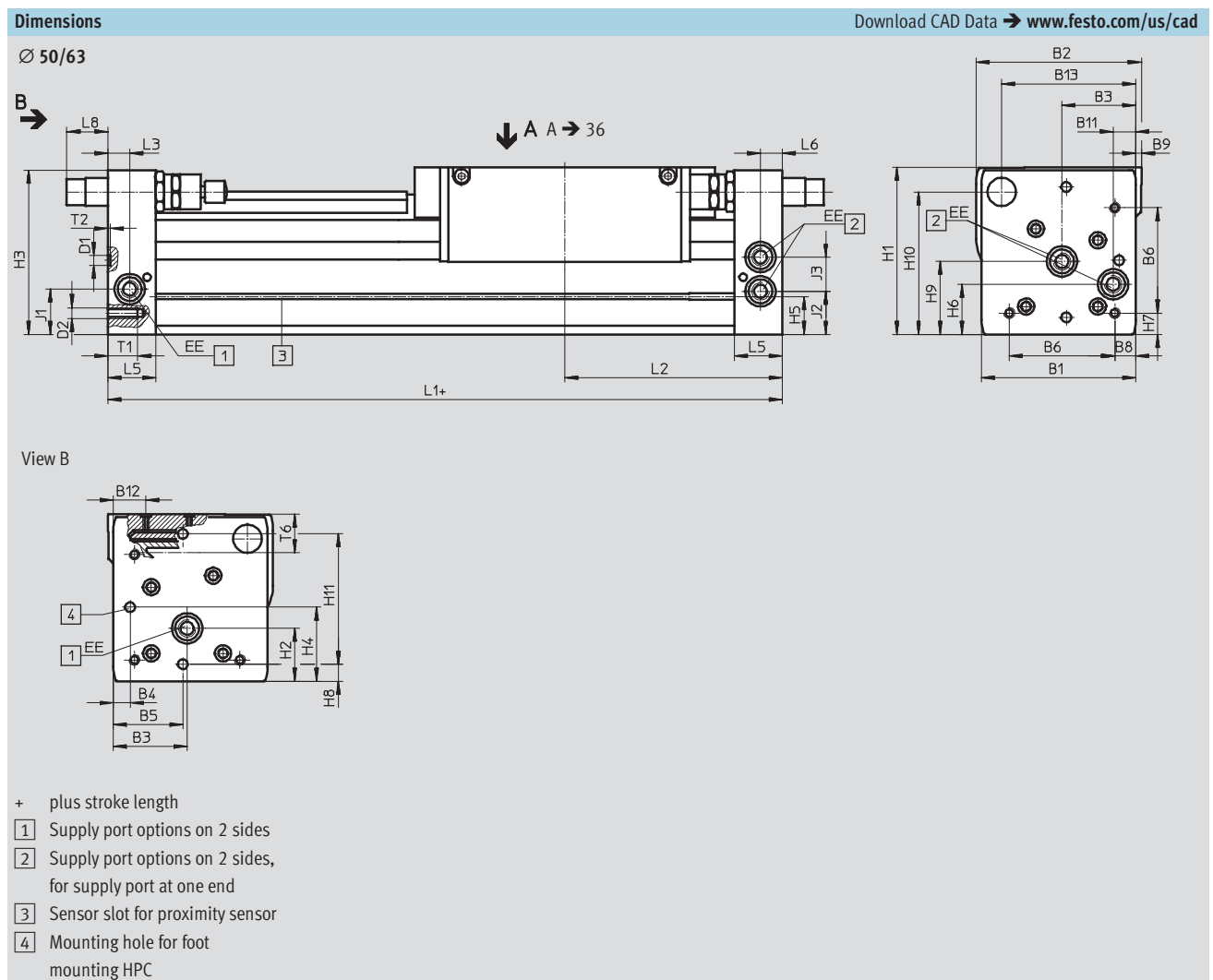
∅	J3	L1	L2	L3	L4	L5	L6	L8			T1	T2	T6	Stroke tolerance
								PPV	YSR	YSRW				
[mm]														
18	11	150	74.5	5.7	5.8	15	5.5	0	15.9	19.4	9	2	17.1	0 ... 2.5
25	17	200	100	10.5	10.6	24.5	10.6	0	12.5	15	17.5	2	20.5	
32	18.5	250	124.8	14.5	14.5	30.5	14.5	0	8.5	15.5	15	2	21.3	
40	26	300	150	14.6	14.6	33.5	14.6	0	12.8	21	20	3	30.7	

1) Suitable for 10-32 UNF

Note: This product conforms to ISO 1179-1 and ISO 228-1

Linear drives DGC-N-GF, with plain-bearing guide, NPT

Technical data



Linear drives DGC-N-GF, with plain-bearing guide, NPT

Technical data

∅	B1	B2	B3	B4	B5	B6	B8	B9	B11	B12	B13	D1	D2
[mm]					±0.05							∅ H7	
50	113	126.5	60	8	52.8	81.6	12	-	21	24	97	9	M8
63	142	149	68	15.5	68	97	19.5	5	21	30	123.5	9	M10

∅	EE	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	H11	J1
[mm]												±0.05	
50	1/4 NPT	124.5	38.5	122.5	52.8	29.3	36	12	8	53	104.5	100	30.5
63	3/8 NPT	153.5	48.5	151	68	34.8	46	19.5	15.5	67	131	120	41.5

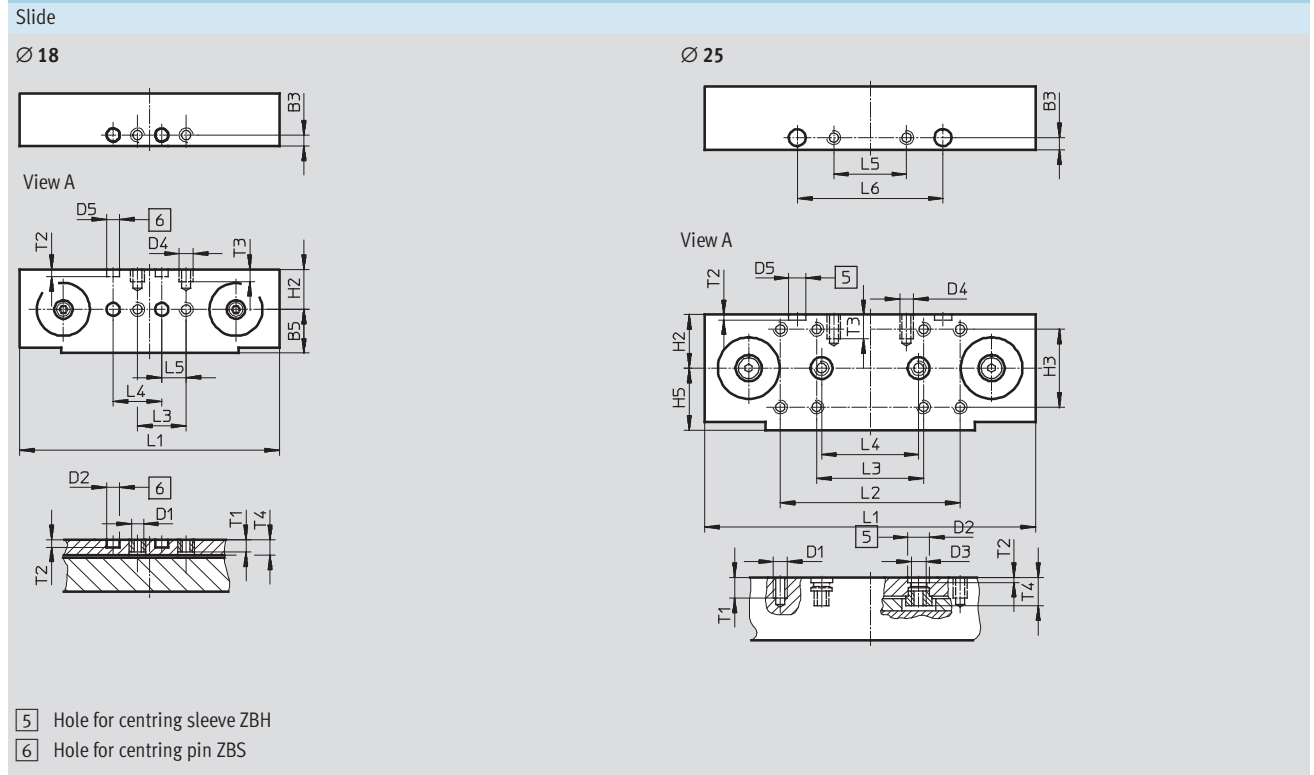
∅	J2	J3	L1	L2	L3	L5	L6	L8			T1	T2	T6	Stroke tolerance
								PPV	YSR	YSRW				
[mm]												+0.2		
50	30.5	28	350	175	17	41	17	0	31	36.3	24	2.1	30.4	0 ... 2.5
63	39.5	31.5	400	200	20	44	20	0	38.3	48.3	27.5	2.1	36.2	

Note: This product conforms to ISO 1179-1 and ISO 228-1

Linear drives DGC-N-GF, with plain-bearing guide, NPT

Technical data

Dimensions Download CAD Data → www.festo.com/us/cad



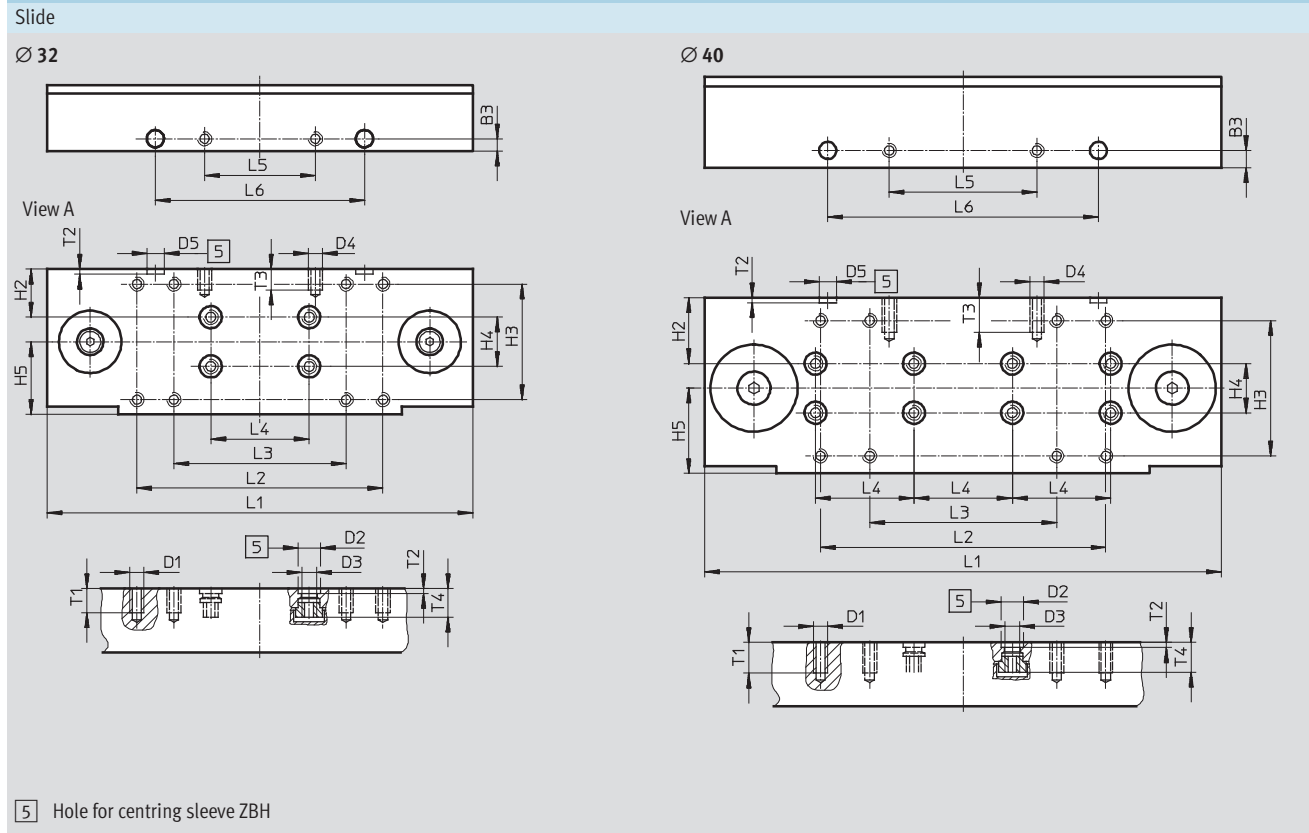
Ø	B3	D1	D2	D3	D4	D5	H2	H3	H4	H5	L1
[mm]	±0.05		Ø H7			Ø H7			±0.03	±0.1	±0.1
18	4.5	M5	5	-	M5	5	16.5	-	-	18	107
25	5	M5	9	M6	M5	7	22	32±0.2	-	25.5	136

Ø	L2	L3	L4	L5	L6	L7	T1	T2	T3	T4
[mm]	±0.1		±0.03	±0.1	±0.05	±0.1				
18	-	20±0.1	20	10	-	-	5	3.1±0.1	5	6.3
25	74	44±0.2	40	30	60	-	8.5	2.1+0.2	10	11.8

Linear drives DGC-GF, with plain-bearing guide

Technical data

Dimensions Download CAD Data → www.festo.com/us/cad



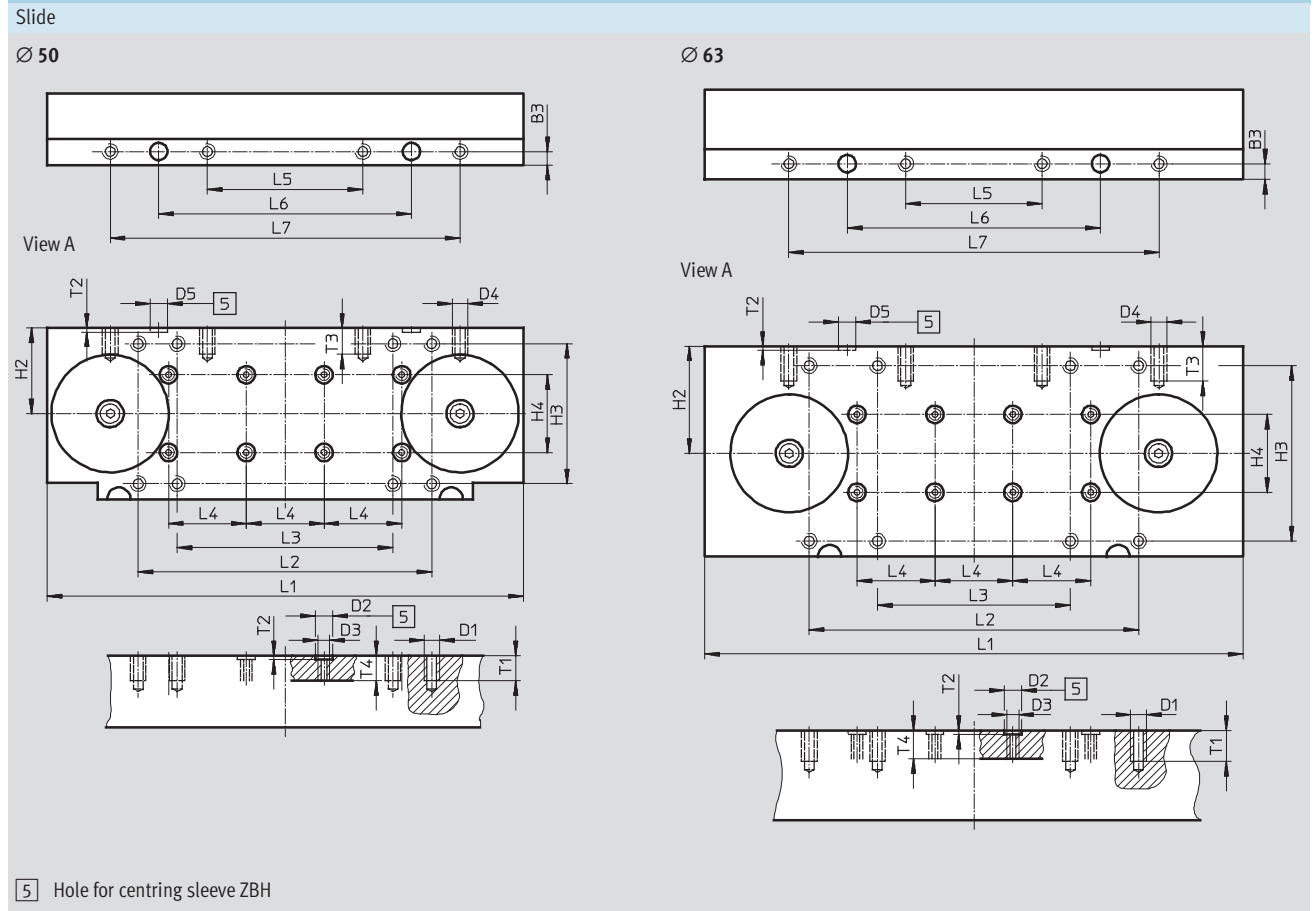
Ø	B3	D1	D2 Ø	D3	D4	D5 Ø	H2	H3	H4	H5	L1
[mm]	±0.05		H7			H7			±0.03	±0.1	±0.1
32	5	M5	9	M6	M5	7	19.5	47±0.2	20	29.5	173
40	7	M5	9	M6	M6	7	26.8	55±0.2	20	34.7	210

Ø	L2	L3	L4	L5	L6	L7	T1	T2	T3	T4
[mm]	±0.1		±0.03	±0.1	±0.05	±0.1				
32	100	70±0.2	40	45	85	-	10	2.1+0.2	8.5	11.8
40	116	76±0.2	40	60	110	-	12.5	2.1+0.2	14	12.1

Linear drives DGC-N-GF, with plain-bearing guide, NPT

Technical data

Dimensions Download CAD Data → www.festo.com/us/cad



Ø	B3	D1	D2	D3	D4	D5	H2	H3	H4	H5	L1
[mm]	±0.05		Ø H7			Ø H7			±0.03	±0.1	±0.1
50	7	M8	9	M6	M8	9	44	72±0.3	40	-	245
63	8	M8	9	M6	M8	9	55	90±0.3	40	-	276

Ø	L2	L3	L4	L5	L6	L7	T1	T2	T3	T4
[mm]	±0.1		±0.03	±0.1	±0.05	±0.1				
50	151	111±0.2	40	80	130	180	13	2.1+0.2	13.5	13
63	169	99±0.2	40	70	130	190	16	2.1+0.2	18	14.5

Linear drives DGC-N-GF, with plain-bearing guide, NPT

Technical data

Dimensions Download CAD Data → www.festo.com/us/cad

Profile barrel

1 Sensor slot for proximity sensor
2 Mounting slot for slot nut

∅	B10	B11	H10	H11
[mm]				
25	15.23	-	-	-
32	18	-	26.5	-
40	20.5	40	20.5	20
50	43.8	30	30.5	30
63	49	30	37	30

Linear drives DGC-N-GF, with plain-bearing guide, NPT

Ordering data – Modular products

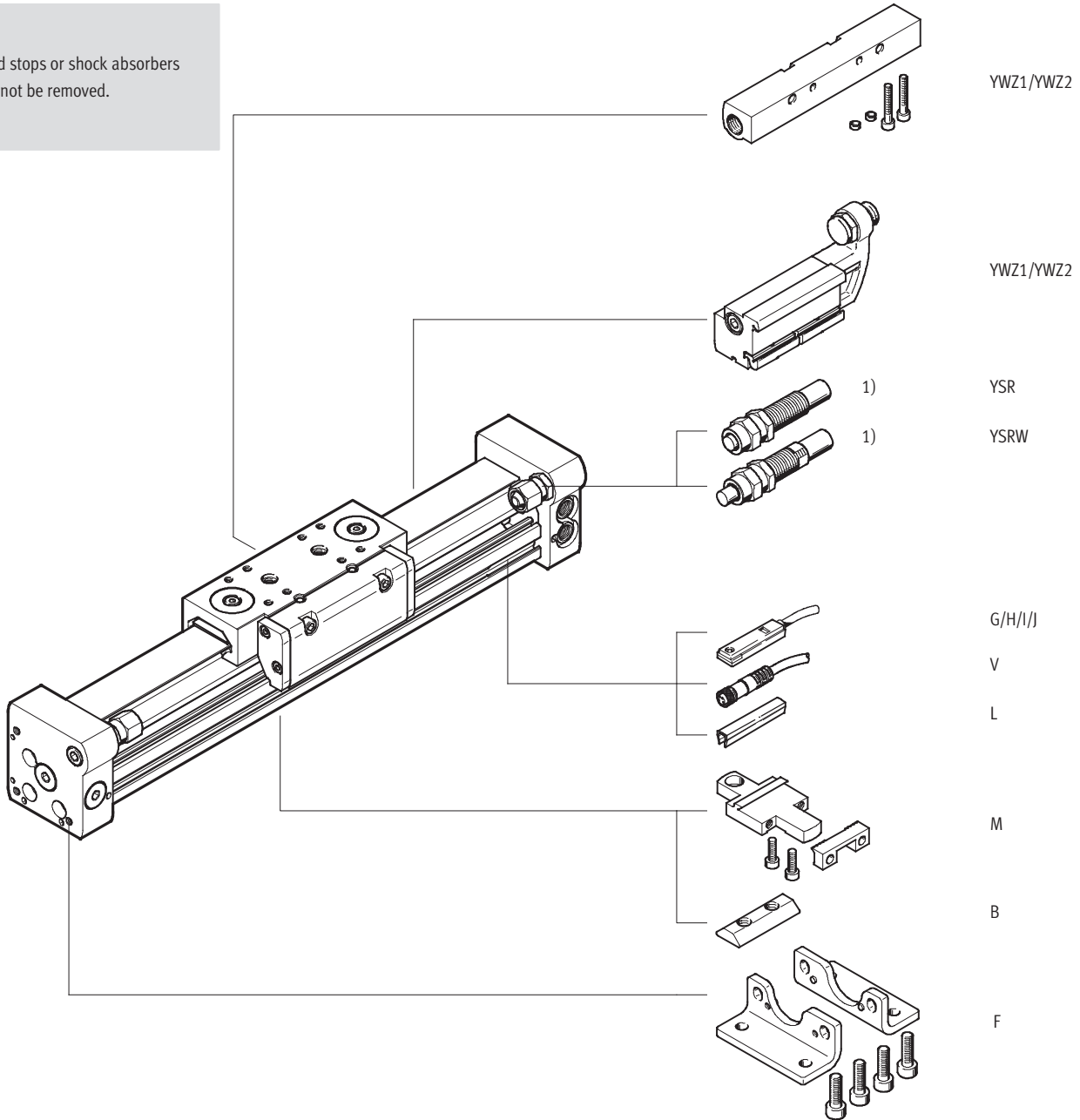
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Order code

Mandatory data/options

Note

1) End stops or shock absorbers must not be removed.



Linear drives DGC-N-GF, with plain-bearing guide, NPT

Ordering data – Modular products

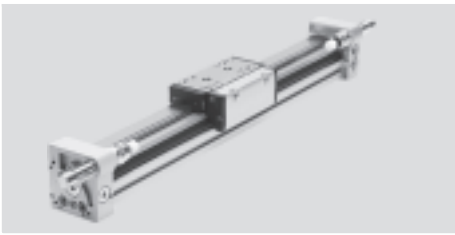
Ordering table									
Size	18	25	32	40	50	63	Conditions	Code	Enter code
M Module No.	532 446	532 447	532 448	532 449	532 450	532 451			
Function	Linear drive							DGC	DGC
Thread	NPT thread							-N	-N
Piston Ø [mm]	18	25	32	40	50	63		-...	
Stroke [mm]	1 ... 3,000		1 ... 8,500		1 ... 5,000			-...	
Guide	Plain-bearing guide							-GF	-GF
Cushioning	Pneumatic cushioning, adjustable at both ends							-PPV	
	Shock absorber, self-adjusting							-YSR	
	Shock absorber, self-adjusting, progressive							-YSRW	
Position sensing	Via proximity sensor							-A	-A
O Accessories	Enclosed separately (can be retrofitted)							ZUB-	ZUB-
Foot mounting	1							F	
Profile mounting	1 ... 9							...M	
Slot nut for mounting slot	-	1 ... 9						...B	
Proximity sensor	Cable 2.5 m	1 ... 9						...G	
	Plug M8	1 ... 9						...H	
Proximity sensor, contactless, PNP	Cable 2.5 m	1 ... 9						...I	
	Plug M8	1 ... 9						...J	
Plug socket with cable M8, 2.5 m	1 ... 9							...V	
Slot cover for sensor slot	1 ... 9							...L	
Mechanical end-position limiter	Variable end position, at one end						1	YWZ1	
	Variable end position, at both ends						1	YWZ2	
Manual	Express waiver – no operating instructions to be included (already available)							-O	

¹ **YWZ1, YWZ2** Only with cushioning YSR or YSRW

Transfer order code

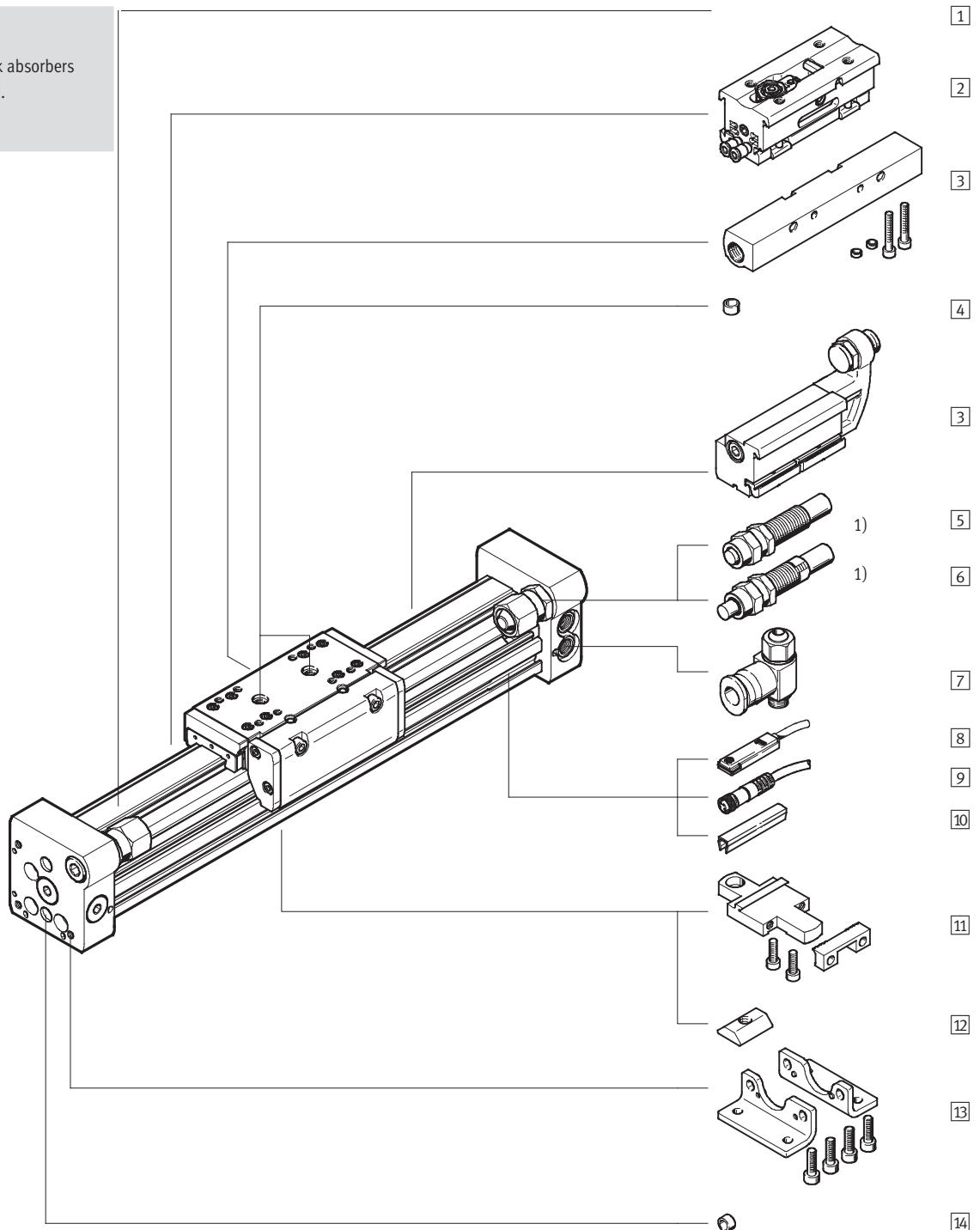
Linear drives DGC-N-KF, with recirculating ball bearing guide, NPT

Peripherals overview



Note

1) End stops or shock absorbers must not be removed.



Linear drives DGC-N-KF, with recirculating ball bearing guide, NPT

Peripherals overview

Variants and accessories			
Type	For piston \varnothing	Brief description	→ Page/Internet
1 Linear drive DGC-N-KF	8 ... 63	Linear drive without accessories, with recirculating ball bearing guide.	44
2 Intermediate position module Z1/Z2/Z3	25, 32, 40	Enables up to three intermediate positions.	71
3 Mechanical end-position limiter YWZ	18 ... 63	For variable end-position adjustment, e.g. for format adjustments.	69
4 Centring pin/sleeve ¹⁾ ZBS/ZBH	8 ... 63	For centring loads and attachments on the slide.	73
– Cushioning P	8, 12	Non-adjustable, flexible cushioning. Used only at low speeds.	62
– Cushioning PPV	18 ... 63	Adjustable pneumatic end-position cushioning. Used at medium speeds.	62
5 Shock absorber YSR	8 ... 63	Self-adjusting hydraulic shock absorber with spring return and linear cushioning characteristic.	62
6 Shock absorber YSRW	8 ... 63	Self-adjusting hydraulic shock absorber with spring return and progressive cushioning characteristic.	62
7 One-way flow control valve GRLA	8 ... 63	For regulating speed.	74
8 Proximity sensor G/H/I/J	8 ... 63	For sensing the slide position.	74
9 Plug socket with cable V	8 ... 63	For proximity sensor.	75
10 Slot cover L	18 ... 63	For protecting against ingress of dirt and securing proximity sensor cables.	73
11 Profile mounting M	8 ... 63	Simple and precise mounting option via dovetail connection.	65
12 Slot nut B	25 ... 63	For mounting attachments.	73
13 Foot mounting F	8 ... 63	For mounting on end cap.	64
14 Centring pin/sleeve ZBS/ZBH	8 ... 63	For centring the drive without foot mountings (user-specific).	73

1) Included in the scope of delivery of the drive

Linear drives DGC-N-KF, with recirculating ball bearing guide, NPT

Type codes

DGC – N – 25 – 1000 – KF – YSR – A – [] – [] – []

Type

DGC	Linear drive
-----	--------------

Thread

N	NPT thread
---	------------

Piston Ø [mm]

Stroke [mm]

Guide

KF	Recirculating ball bearing guide
----	----------------------------------

Cushioning

P	Elastic cushioning, non-adjustable
PPV	Adjustable end-position cushioning
YSR	Linear shock absorber, self-adjusting
YSRW	Progressive shock absorber, self-adjusting

Position sensing

A	Via proximity sensor
---	----------------------

Slide

GP	Protected recirculating ball bearing guide
----	--

Lubrication function

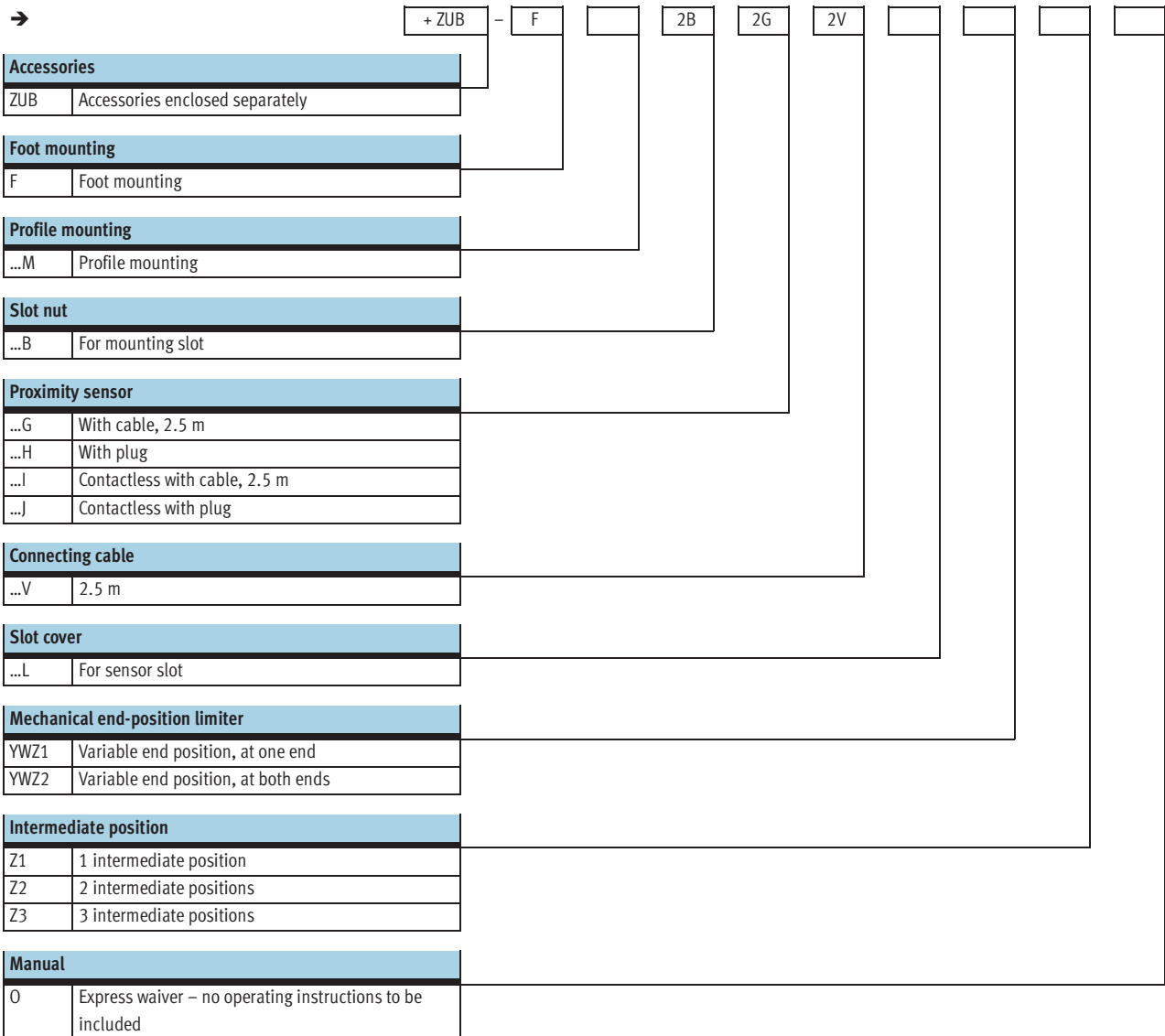
	Standard
C	Lubrication adapter

Additional slide

KL	Additional slide on left
KR	Additional slide on right

Linear drives DGC-N-KF, with recirculating ball bearing guide, NPT

Type codes

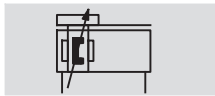


Linear drives DGC-N-KF, with recirculating ball bearing guide, NPT

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Technical data

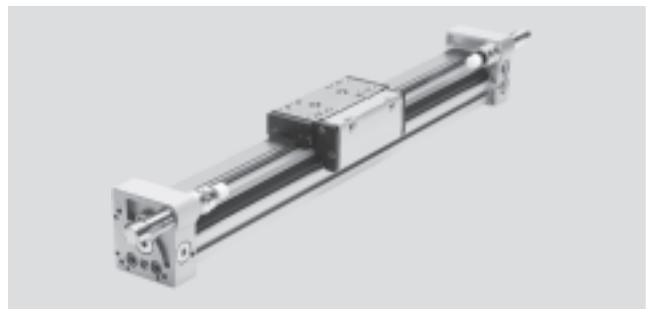
Function



- N- Diameter
8 ... 63 mm
- T- Stroke length
1 ... 8,500 mm

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Spare_parts_service

Wearing parts kits
→ 62



General technical data									
Piston Ø		8	12	18	25	32	40	50	63
Stroke	[mm]	1 ... 1,300	1 ... 1,900	1 ... 3,000	1 ... 8,500			1 ... 5,000	
Pneumatic connection		M5, suitable for 10-32 UNF			1/8 NPT		1/4 NPT		3/8 NPT
Mode of operation		Double-acting							
Design		Rodless drive							
Moment compensator principle		Slotted cylinder, mechanically coupled							
Guide		External recirculating ball bearing guide							
Mounting position		Any							
Cushioning → 47	P	Non-adjustable at both ends		-					
	PPV	-		Adjustable at both ends					
	YSR...	Self-adjusting at both ends							
Cushioning length with PPV cushioning	[mm]	-		16.5	15.5	17.5	29.5	29.8	31.1
Position sensing		Via proximity sensor							
Type of mounting		Profile mounting							
		Foot mounting							
		Direct mounting							
Max. speed	[m/s]	1	1.2	3					
Repetition accuracy	[mm]	0.02 (with shock absorber YSR/YSRW)							

Note: This product conforms to ISO 1179-1 and ISO 228-1

Operating and environmental conditions										
Piston Ø		8	12	18	25	32	40	50	63	
Operating pressure	[bar]	2.5 ... 8		2 ... 8			1.5 ... 8			
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:-:-]								
Note on operating/pilot medium		Operation with lubricated medium possible (in which case lubricated operation will always be required)								
Ambient temperature ¹⁾	[°C]	-10 ... +60								
Corrosion resistance class CRC ²⁾		1								
ATEX		Specified types → www.festo.com								

1) Note operating range of proximity sensors

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

Components subject to low corrosion stress. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

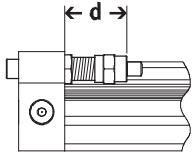
Forces [N]									
Piston Ø		8	12	18	25	32	40	50	63
Theoretical force at 6 bar		30	68	153	295	483	754	1,178	1,870
Impact energy in the end positions		→ 47							

Linear drives DGC-N-KF, with recirculating ball bearing guide, NPT

Technical data

Weight [g]								
Piston \varnothing	8	12	18	25	32	40	50	63
Basic weight with 0 mm stroke	225	391	975	2,113	2,837	6,996	13,342	22,220
Additional weight per 10 mm stroke	11	16	31	49	74	117	153	236
Moving load	77	149	331	732	1,146	2,330	4,511	8,225

Adjustable end-position range d [mm]



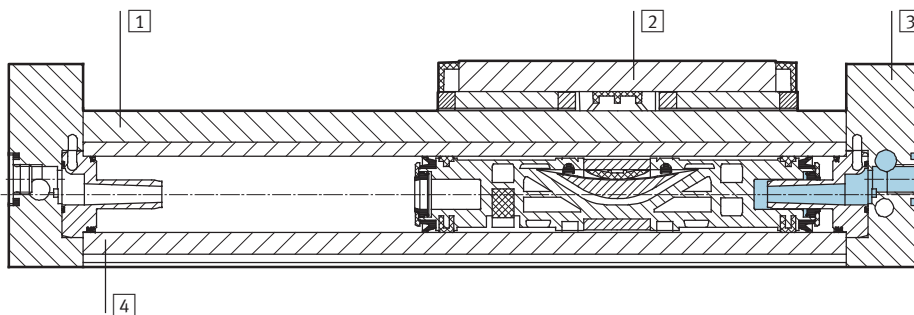
Note

The permissible kinetic energy decreases if the stroke is reduced with PPV adjustable cushioning at both ends.

Piston \varnothing	8	12	18	25	32	40	50	63
Cushioning P/PPV	11.3 ... 16.3	12.7 ... 17.7	13.8 ... 15.8	21.1 ... 25.1	25.2 ... 30.2	28.7 ... 33.7	28.7 ... 33.7	38.8 ... 43.8
Protected guide with cushioning P/PPV	–	–	16.9 ... 18.9	23.6 ... 27.6	25.2 ... 30.2	34.7 ... 39.7	–	–
Cushioning YSR/YSRW	12.8 ... 22.8	14 ... 24	14.5 ... 34.5	22.5 ... 47.5	27.3 ... 52.3	31 ... 56	31 ... 56	41 ... 76

Materials

Sectional view



Linear drives		
1	Guide rail	High-alloy steel
2	Slide	High-alloy steel
3	End cap	Anodised aluminium
4	Cylinder barrel	Anodised aluminium
–	Piston seal	Polyurethane
–	Sealing band/cover band	Polyurethane
–	Note on materials	Free of copper, PTFE and silicone

Linear drives DGC-N-KF, with recirculating ball bearing guide, NPT

Technical data

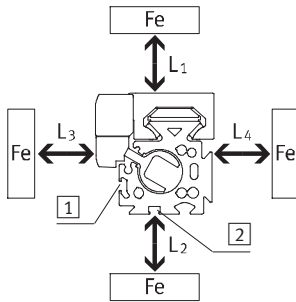


Influence of ferritic materials on proximity sensors

Ferritic materials (steel parts or panels) directly next to the proximity sensors can cause sensing

malfunctions. The following safety distances must be observed.

The distance depends on the position of the proximity sensor (see [1] and [2]).

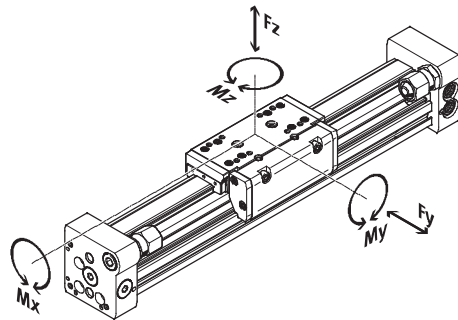


Piston Ø		8	12	18	25	32	40	50	63
Distance L1	[1] [mm]	0	0	0	0	0	0	0	0
	[2] [mm]	-	-	0	0	0	0	0	0
Distance L2	[1] [mm]	20	10	10	10	0	0	0	0
	[2] [mm]	-	-	25	25	25	25	25	25
Distance L3	[1] [mm]	30	25	25	25	25	25	25	25
	[2] [mm]	-	-	10	10	0	0	0	0
Distance L4	[1] [mm]	0	0	0	0	0	0	0	0
	[2] [mm]	-	-	0	0	0	0	0	0

Characteristic load values

The indicated forces and torques refer to the centre of the slide surface.

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

Piston Ø		8	12	18	25	32	40	50	63
F _y _{max.}	[N]	300	650	1,850	3,050	3,310	6,890	6,890	15,200
F _z _{max.}	[N]	300	650	1,850	3,050	3,310	6,890	6,890	15,200
M _x _{max.}	[Nm]	1.7	3.5	16	36	54	144	144	529
M _y _{max.}	[Nm]	4.5	10	51	97	150	380	634	1,157
M _z _{max.}	[Nm]	4.5	10	51	97	150	380	634	1,157

Note

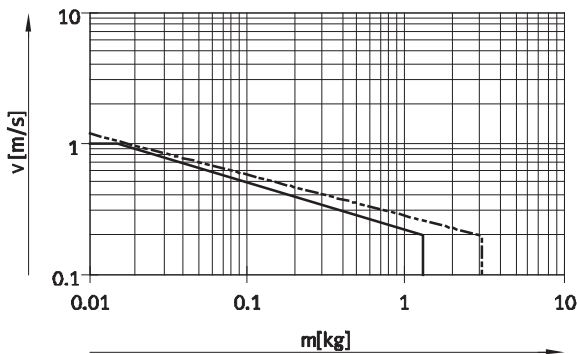
ProDrive
sizing software
→ www.festo.com

Linear drives DGC-N-KF, with recirculating ball bearing guide, NPT

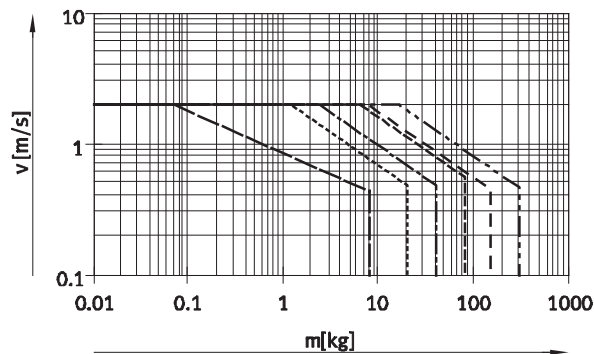
Technical data

Maximum permissible piston speed v as a function of effective load m

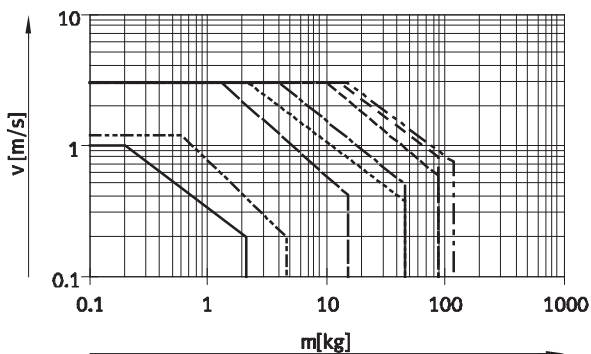
Piston \varnothing 8/12 with P cushioning



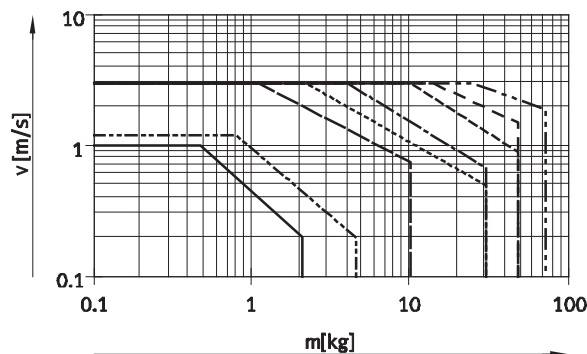
Piston \varnothing 18 ... 63 with PPV cushioning



Piston \varnothing 8 ... 63 with YSR cushioning



Piston \varnothing 8 ... 63 with YSRW cushioning



- \varnothing 8 - - - - \varnothing 18 - - - - - \varnothing 40
- - - - \varnothing 12 - - - - - \varnothing 25 - - - - \varnothing 50
- · — · \varnothing 32 - - - - \varnothing 63

Note

This data represents the maximum values that can be achieved. In practice, values fluctuate relative to the position of the effective load and mounting position.

Operating range of cushioning

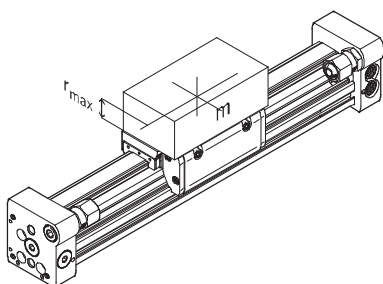
The end-position cushioning must be adjusted to ensure jerk-free operation. If the operating conditions are outside the permissible range, the load to be moved must be cushioned using suitable equipment (shock absorbers, stops, etc.), preferably at the centre of gravity of the load.

Note

To avoid distortion in the slide, the attachments must maintain a flatness of at least 0.01 mm.

The specifications apply to a horizontal mounting position:

Piston \varnothing	8	12	18	25	32	40	50	63
Distance r_{max} [mm]	25	35	35	50	50	50	50	50



Linear drives DGC-N-KF, with recirculating ball bearing guide, NPT

Technical data



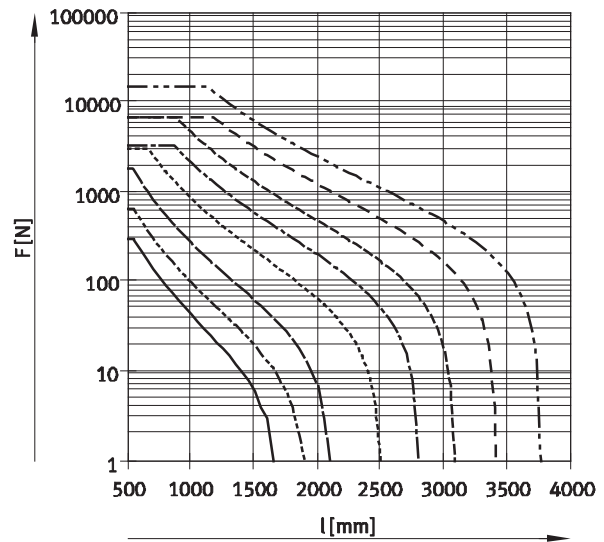
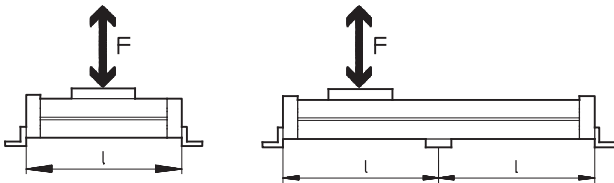
Number of profile mountings MUC as a function of force due to weight F and support span l

In order to limit deflection in the case of large strokes, the drive may need to be supported. The following graphs

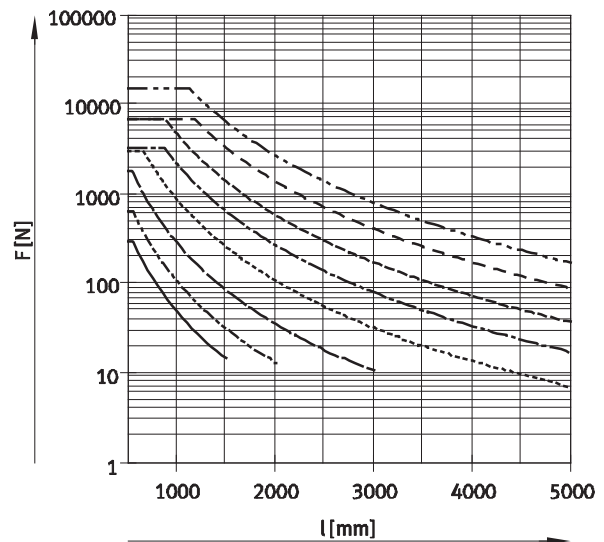
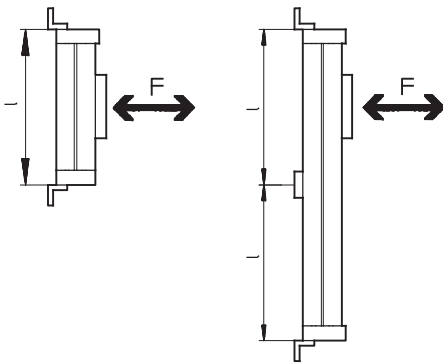
help to determine the maximum permissible support span as a

function of mounting position, force due to weight and normal force.

Horizontal mounting position



Vertical mounting position



Example:

The drive DGC-N-25-1500 is subjected to a force of 300 N in a horizontal mounting position.

The drive has an overall length of:
 $l = \text{stroke length} + L1$
 (see dimensions)
 $= 1,500 \text{ mm} + 200 \text{ mm}$
 $= 1,700 \text{ mm}$

According to the graph, the max. support span for the drive DGC-N-25 with a force of 300 N is 1,300 mm.

In this example, profile mountings are required as the max. support span (1,300 mm) is smaller than the overall length of the drive (1,700 mm).

Linear drives DGC-N-KF, with recirculating ball bearing guide, NPT

Technical data

Central lubrication system

The lubrication adapter enables the guide of the linear drive DGC-N-KF to be permanently lubricated in applications in humid or wet ambient conditions using semi or fully automatic relubrication devices.

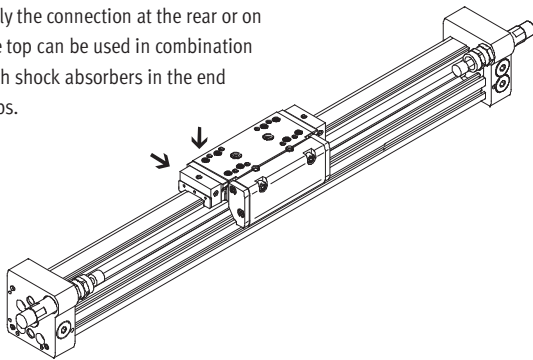
- For piston \varnothing 25, 32, 40, 63
- The modules are suitable for oils and greases
- The dimensions of the linear drive DGC-N-KF are the same with and without central lubrication modules
- Both lubrication adapters must be connected
- There are three connection options on each side
- Can be used in combination with:
 - Standard slide GK
 - Additional slide KL, KR
- Cannot be used in combination with:
 - Protected recirculating ball bearing guide GP

Slide dimensions
→ 58

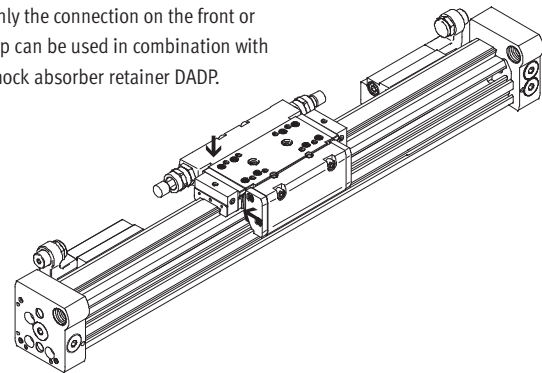
Order code C in the modular product system → 63

Connection options

Only the connection at the rear or on the top can be used in combination with shock absorbers in the end caps.

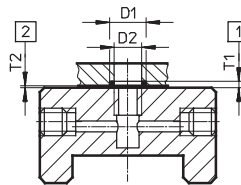


Only the connection on the front or top can be used in combination with shock absorber retainer DADP.



Connection option for customer design

The drawing opposite shows the connection option on the top lubrication interface using a customer design.



- D1 $8^{+0.2}$ mm
- D2 6 mm
- T1 $0.6_{-0.05}$ mm
- T2 $0.1^{+0.2}$ mm
- O-ring \varnothing 6x1 mm (DIN 3771)

- 1 Slot depth for O-ring
- 2 Required air gap

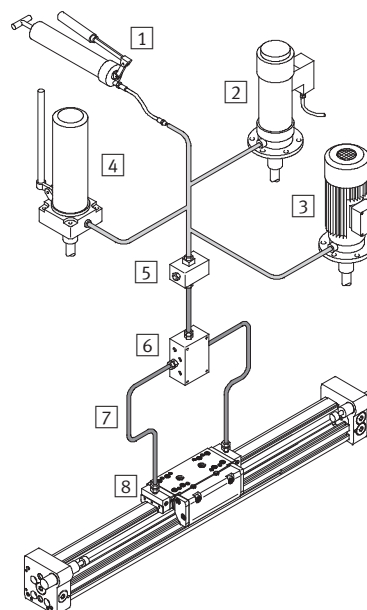
Additional dimensions → 58

Structure of a central lubrication system

A central lubrication system requires various additional components. The illustration shows different options (using a hand pump, pneumatic container pump or electric container pump) required as a minimum for designing a central lubrication system. Festo does not sell these additional components, however they can be obtained from the following companies:

- Lincoln
- Bilomatik
- SKF (Vogel)

Festo recommends these companies because they can supply all the necessary components.



- 1 Hand pump
- 2 Pneumatic container pump
- 3 Electric container pump
- 4 Manually operated container pump
- 5 Nipple block
- 6 Distributor block
- 7 Tubing or piping
- 8 Fittings

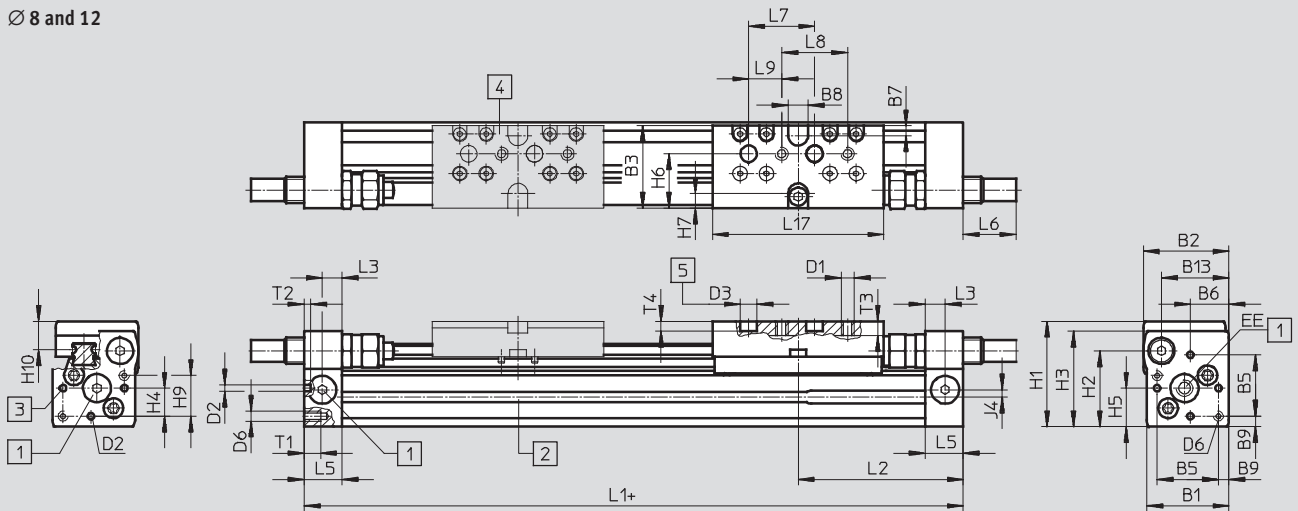
Linear drives DGC-N-KF, with recirculating ball bearing guide, NPT

Technical data

Dimensions

Download CAD Data → www.festo.com/us/cad

∅ 8 and 12



- + plus stroke length
- 1 Supply port options on 3 sides
- 2 Sensor slot for proximity sensor
- 3 Mounting hole for foot mounting or centring pin
- 4 Additional slide KL
- 5 Hole for centring pin ZBS

Linear drives DGC-N-KF, with recirculating ball bearing guide, NPT

Technical data

∅	B1	B2	B3	B5	B6	B7	B8	B9	B13	D1	D2	D3	D6
[mm]							±0.05	±0.1			∅ H8	∅ H7	
8	25	26	25	18.6	11.7	3	6	3.2	20.5	M4	2	5	M3
12	30.2	31	31	20.6	13.5	3	8	4.8	25	M4	2	5	M4

∅	EE ¹⁾	H1	H2	H3	H4	H5	H6	H7	H9	H10	J4	L1	L2
[mm]													
8	M5	32	23	29	8.5	11.7	16.5	4.5	12.3	8.7	2.2	100	50.1
12	M5	37.5	28.5	34.5	8.7	13.5	20.5	5	14.7	9.8	3	125	62.1

∅	L3	L5	L6			L7	L8	L9	L17	T1	T2	T3	T4	Stroke tolerance
			P	YSR	YSRW									
[mm]						±0.03	±0.1	±0.1					+0.2	
8	6	11.5	0	16	16.2	20	20	10	52	5	2	4.3	3	0 ... 1.7
12	8	16	0	11.3	12.3	20	20	10	65	6	2	5	3	

1) Suitable for 10-32 UNF

Profile barrel

∅ 8



∅ 12



1 Sensor slot for proximity sensor

Linear drives DGC-N-KF, with recirculating ball bearing guide, NPT

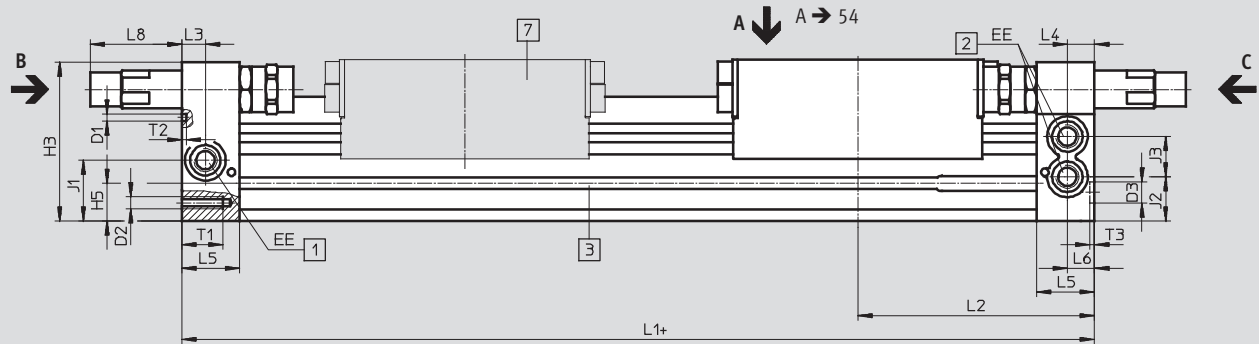
Technical data

FESTO

Dimensions

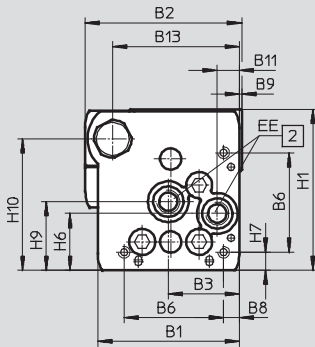
Download CAD Data → www.festo.com/us/cad

Ø 18 ... 40



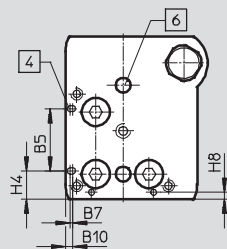
View C

Ø 18 ... 40

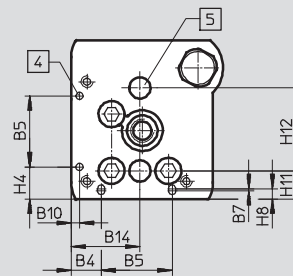


View B

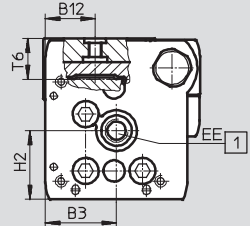
Ø 18



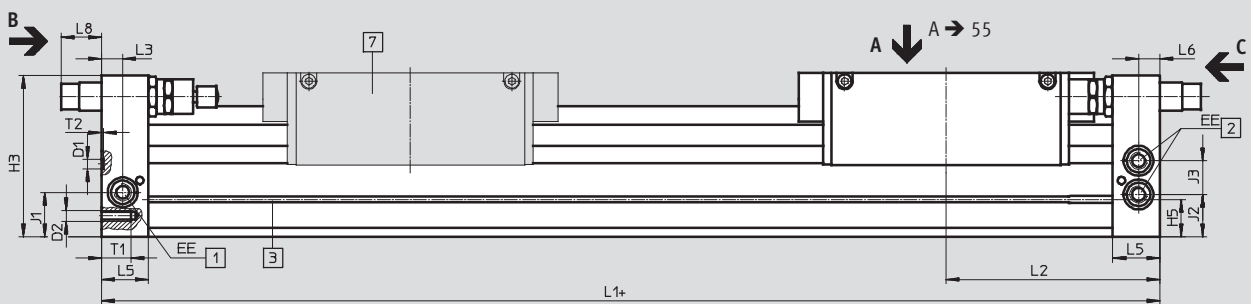
Ø 25 ... 40



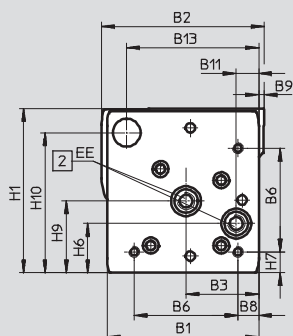
Ø 18 ... 40



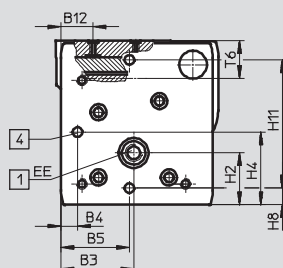
Ø 50/63



View C



View B



+ plus stroke length

- 1 Supply port options on 2 sides
- 2 Supply port options on 2 sides, for supply port at one end only
- 3 Sensor slot for proximity sensor
- 4 Mounting hole for foot mounting HPC
- 5 Hole for centring sleeve ZBH
- 6 Hole for centring pin ZBS
- 7 Additional slide

Linear drives DGC-N-KF, with recirculating ball bearing guide, NPT

Technical data

∅ [mm]	B1	B2	B3	B4	B5 ±0.05	B6	B7	B8	B9	B10	B11	B12
18	44.5	49.9	19.5	8.8	21	31	0.8	3.8	1	2.4	5.5	15.5
25	59.8	66	30	12.65	30	42	1	6.65	1	3.5	9.3	21
32	73	79	38.5	5.7	63.1	57.5	–	8.5	1.5	14	14.9	18
40	91	98.5	45	17.2	55	65	–	12.2	2	8	16.5	24.8
50	113	126.5	60	8	52.8	81.6	–	12	–	–	21	24
63	142	149	68	15.5	68	97	–	19.5	5	–	21	30

∅ [mm]	B13	B14	D1 ∅	D2	D3 ∅ H7	EE	H1	H2	H3	H4 ±0.2	H5	H6
18	39	19.5	2±0.05	M4	5	M5 ¹⁾	56.3	23.1	55	9.6	13.4	20
25	53	29	3±0.05	M5	9	1/8 NPT	68	29	67	13.65	15.8	24
32	65	38.5	3±0.05	M6	9	1/8 NPT	78.5	30	77	5.7	17	27.7
40	80.5	45	4±0.05	M6	9	1/4 NPT	99.5	41.5	97.5	17.2	25	36.5
50	97	–	9 ^{H7}	M8	–	1/4 NPT	124.5	38.5	122.5	52.8	29.3	36
63	123.5	–	9 ^{H7}	M10	–	3/8 NPT	153.5	48.5	151	68	34.8	46

∅ [mm]	H7	H8	H9	H10	H11	H12 ±0.05	J1	J2	J3	L1	
										KF	KF-GP
18	4.6	2.4	25.2	46	8.5±0.15	30	20	16.5	11	150	157
25	7.65	4.5	29	55.5	12±0.15	35	26.1	18.6	17	200	205
32	8.5	14	35.2	63.8	11.45±0.15	50	30	22	18.5	250	250
40	12.2	8	44	81.5	15±0.15	60	35	26	26	300	312
50	12	8	53	104.5	100±0.05	–	30.5	30.5	28	350	–
63	19.5	15.5	67	131	120±0.05	–	41.5	39.5	31.5	400	–

∅ [mm]	L2		L3	L4	L5	L6	L8			T1	T2	T3	T6	Stroke tolerance
	KF	KF-GP					PPV	YSR	YSRW					
18	74.5	78	5.7	5.8	15	5.5	0	29.9	32.4	9	2	3.1 ^{+0.2}	15	0 ... 2.5
25	100	102.5	10.5	10.6	24.5	10.6	0	35.6	38.6	17.5	2	2.1 ^{+0.2}	17.3	
32	124.8	124.8	14.5	14.5	30.5	14.5	0	19.5	28	15	2	2.1 ^{+0.2}	20	
40	150	156	14.6	14.6	33.5	14.6	0	38.5	43.5	20	3	2.1 ^{+0.2}	25.7	
50	175	–	17	–	41	17	0	31	36.3	24	2.1 ^{+0.2}	–	28.75	
63	200	–	20	–	44	20	0	38.3	48.3	27.5	2.1 ^{+0.2}	–	36.1	

1) Suitable for 10-32 UNF

Note: This product conforms to ISO 1179-1 and ISO 228-1

Linear drives DGC-N-KF, with recirculating ball bearing guide, NPT

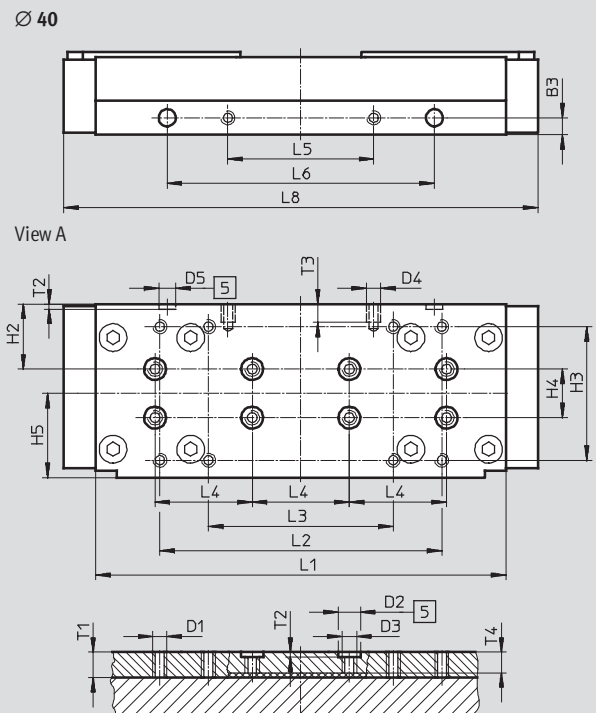
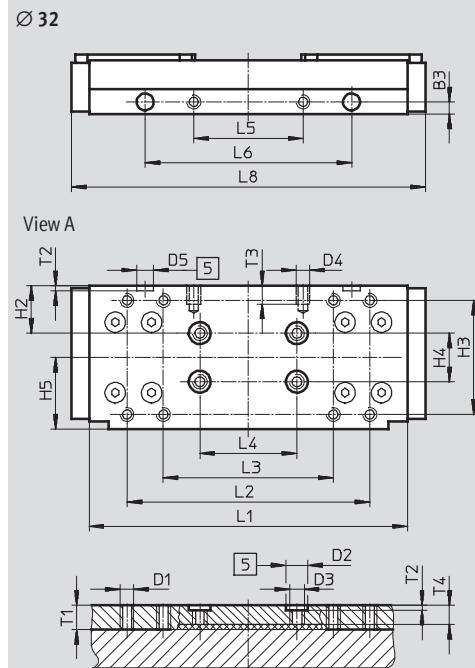
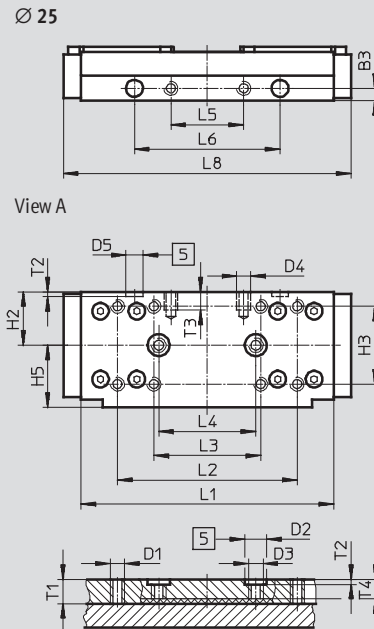
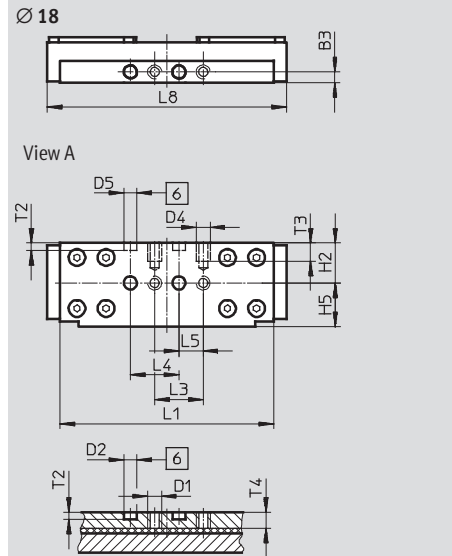
FESTO

Technical data

Dimensions

Download CAD Data → www.festo.com/us/cad

Slide



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

Linear drives DGC-N-KF, with recirculating ball bearing guide, NPT

Technical data

Dimensions Download CAD Data → www.festo.com/us/cad

Slide

Ø 50

Ø 63

View A

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

Ø	B3	D1	D2	D3	D4	D5	H2	H3	H4	H5	L1
[mm]	±0.05		Ø H7			Ø H7			±0.03	±0.1	
18	4.5	M5	5	-	M5	5	16.5	-	-	18	88±0.1
25	5	M5	9	M6	M5	7	22	32±0.2	-	25.5	104±0.2
32	5	M5	9	M6	M5	7	19.5	47±0.2	20	29.5	131±0.2
40	7	M5	9	M6	M6	7	26.8	55±0.2	20	34.7	169±0.2
50	7	M8	9	M6	M8	9	44	72±0.3	40	-	237±0.1
63	8	M8	9	M6	M8	9	55	90±0.3	40	-	256±0.1

Ø	L2	L3	L4	L5	L6	L7	L8	T1	T2	T3	T4
[mm]	±0.2		±0.03	±0.1	±0.05	±0.1					
18	-	20±0.1	20	10	-	-	99	-	3.1±0.1	7.5	6.7
25	74	44±0.2	40	30	60	-	118.5	10	2.1±0.2	7.5	8
32	100	70±0.2	40	45	85	-	145.7	10	2.1±0.2	7.5	8
40	116	76±0.2	40	60	110	-	195.4	10.5	2.1±0.2	7.5	8.5
50	151	111±0.2	40	80	130	180	256.8	13.5	2.1±0.2	18	13.5
63	169	99±0.2	40	70	130	190	280	15.5	2.1±0.2	18	13.6

Linear drives DGC-N-KF, with recirculating ball bearing guide, NPT

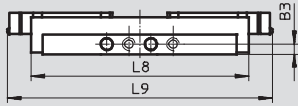
Technical data

Dimensions

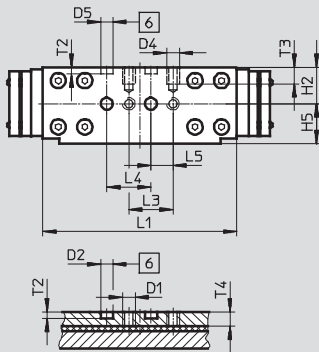
Download CAD Data → www.festo.com/us/cad

Slide, variant GP – Protected recirculating ball bearing guide

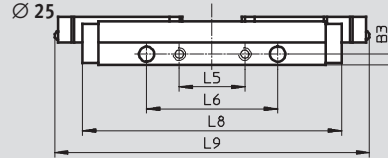
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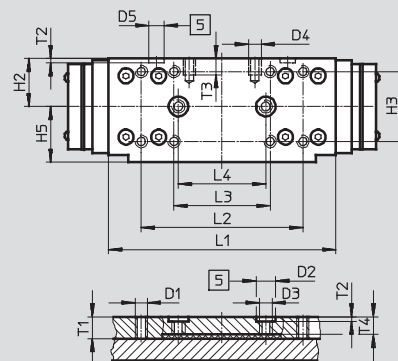
View A



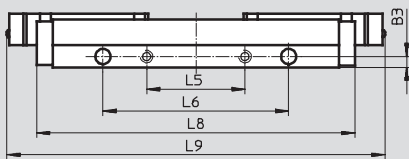
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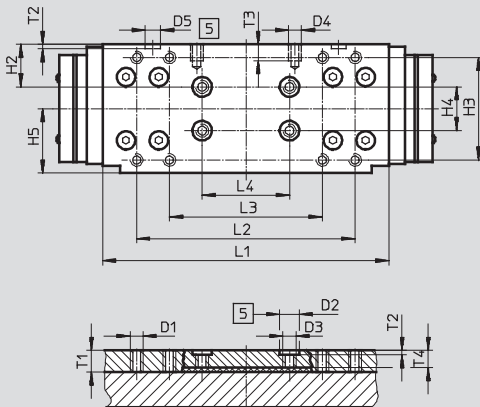
View A



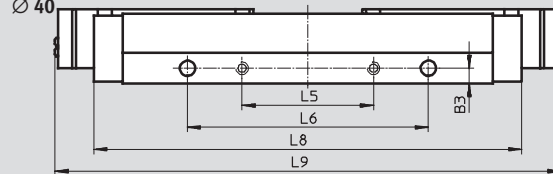
Ø 32



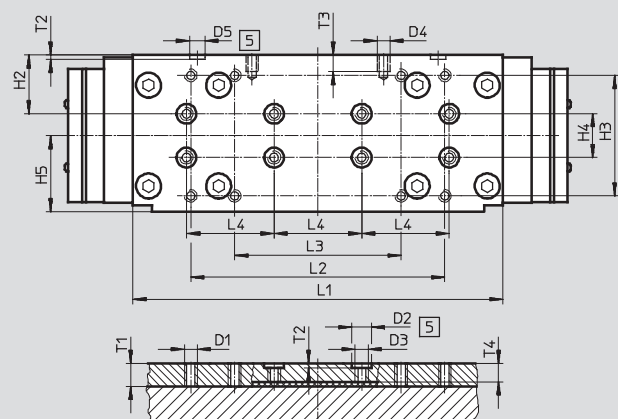
View A



Ø 40



View A



5 Hole for centring sleeve ZBH

6 Hole for centring pin ZBS

Linear drives DGC-N-KF, with recirculating ball bearing guide, NPT

Technical data

∅ [mm]	B3 ±0.05	D1	D2 ∅ H7	D3	D4	D5 ∅ H7	H2	H3
18	4.5	M5	5	–	M5	5	16.5	–
25	5	M5	9	M6	M5	7	22	32±0.2
32	5	M5	9	M6	M5	7	19.5	47±0.2
40	7	M5	9	M6	M6	7	26.8	55±0.2

∅ [mm]	H4 ±0.03	H5 ±0.1	L1	L2 ±0.2	L3	L4 ±0.03	L5 ±0.1	L6 ±0.05
18	–	18	88±0.1	–	20±0.1	20	10	–
25	–	25.5	104±0.2	74	44±0.2	40	30	60
32	20	29.5	131±0.2	100	70±0.2	40	45	85
40	20	34.7	169±0.2	116	76±0.2	40	60	110

∅ [mm]	L7 ±0.1	L8	L9	T1	T2	T3	T4
18	–	99	120	–	3.1±0.1	7.5	6.7
25	–	118.5	144	10	2.1±0.2	7.5	8
32	–	145.7	173	10	2.1±0.2	7.5	8
40	–	195.4	231	10.5	2.1±0.2	7.5	8.5

Linear drives DGC-N-KF, with recirculating ball bearing guide, NPT

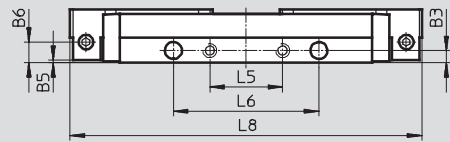
Technical data

Dimensions

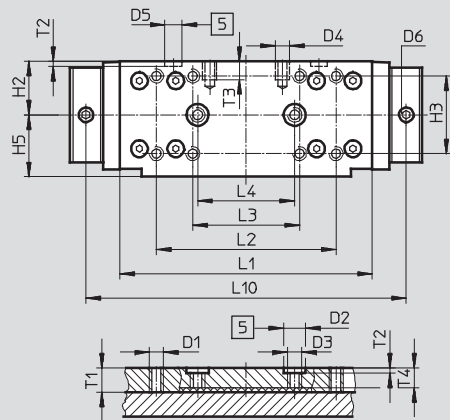
Download CAD Data → www.festo.com/us/cad

Slide, variant C – Lubrication adapter

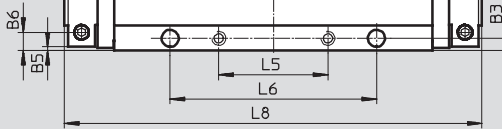
Ø 25



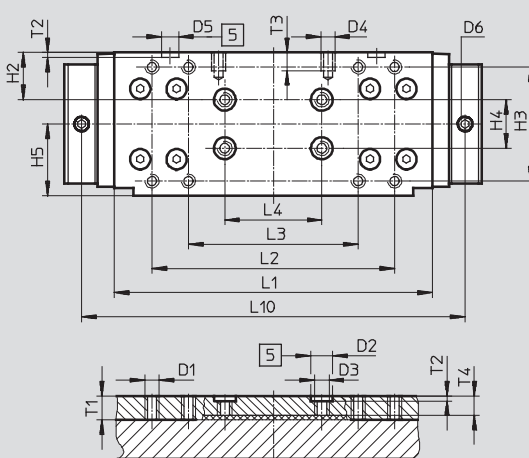
View A



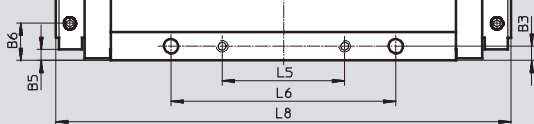
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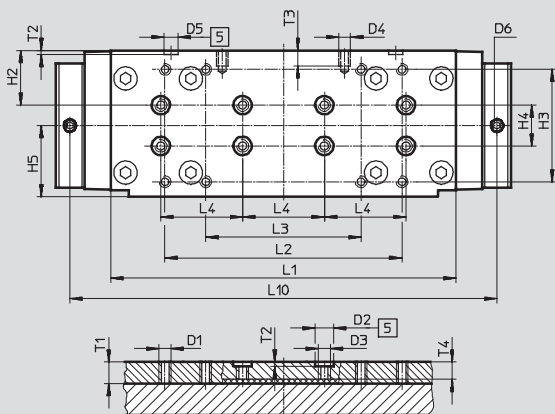
View A



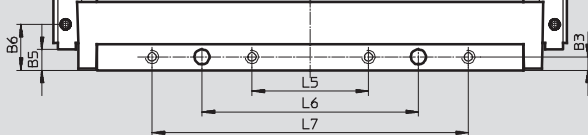
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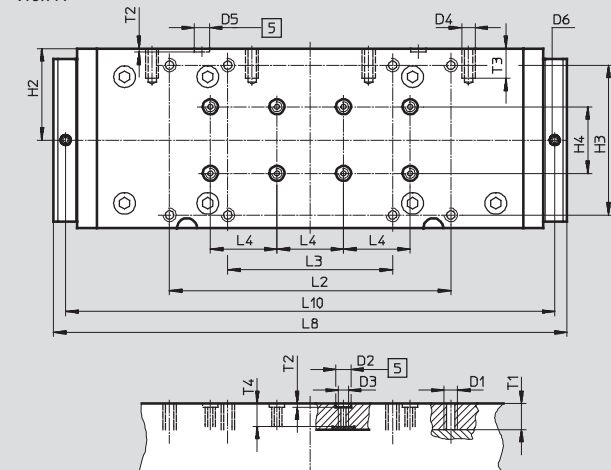
View A



Ø 63



View A



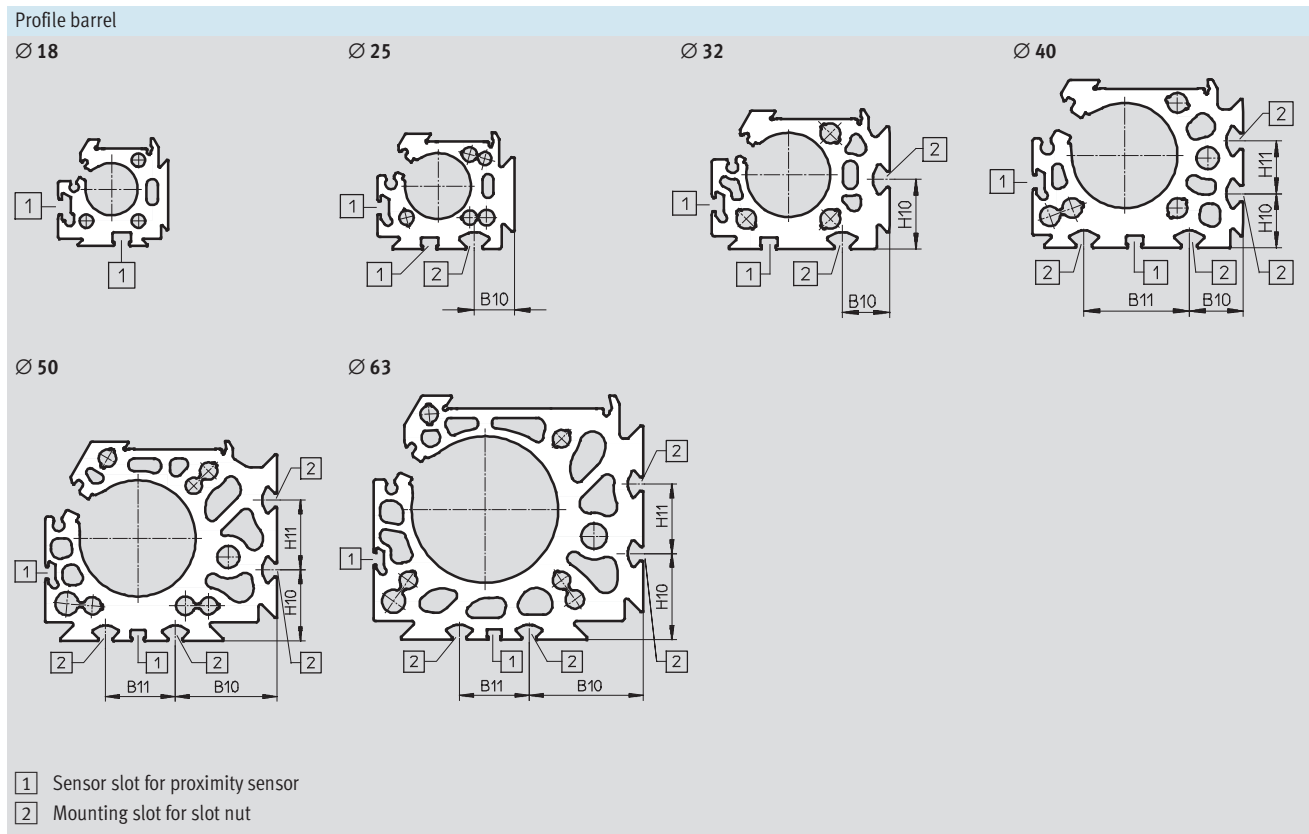
5 Hole for centring sleeve ZBH

Linear drives DGC-N-KF, with recirculating ball bearing guide, NPT

Technical data

∅	B3	B5	B6	D1	D2	D3	D4	D5	D6	H2	H3	H4	H5
[mm]	±0.05	±0.05			∅ H7			∅ H7				±0.03	±0.1
25	5	1	8.5	M5	9	M6	M5	7	M6x1	22	32±0.2	-	25.5
32	5	1.5	7.5	M5	9	M6	M5	7	M6x1	19.5	47±0.2	20	29.5
40	7	18.2	18.2	M5	9	M6	M6	7	M6x1	26.8	55±0.2	20	34.7
63	8	12.5	27.5	M8	9	M6	M8	9	M6x1	55	90±0.3	40	-

∅	L1	L2	L3	L4	L5	L6	L7	L8	L10	T1	T2	T3	T4
[mm]		±0.2	±0.2	±0.03	±0.1	±0.05	±0.1				±0.2		
25	104±0.2	74	44	40	30	60	-	145	132	10	2.1	7.5	8
32	131±0.2	100	70	40	45	85	-	172	158	10	2.1	7.5	8
40	169±0.2	116	76	40	60	110	-	223	209	10.5	2.1	7.5	8.5
63	256±0.1	169	99	40	70	130	190	308.4	293.8	15.5	2.1	18	13.6



∅	B10	B11	H10	H11
[mm]				
25	15.23	-	-	-
32	18	-	26.5	-
40	20.5	40	20.5	20
50	43.8	30	30.5	30
63	49	30	37	30

Linear drives DGC-N-KF, with recirculating ball bearing guide, NPT

Ordering data – Modular products

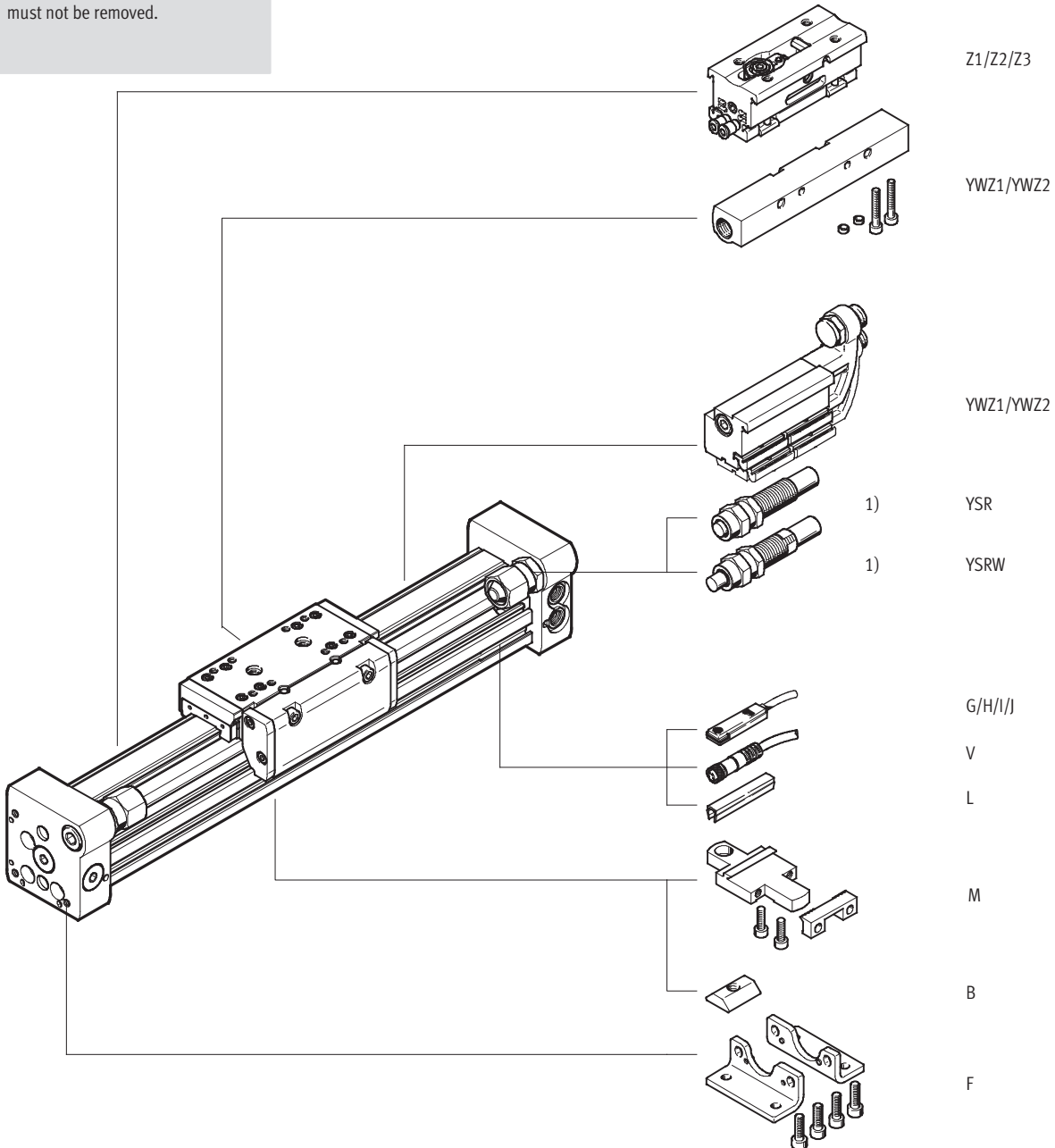


Order code

Mandatory data/options

Note

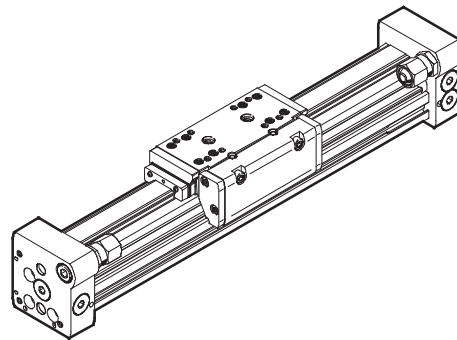
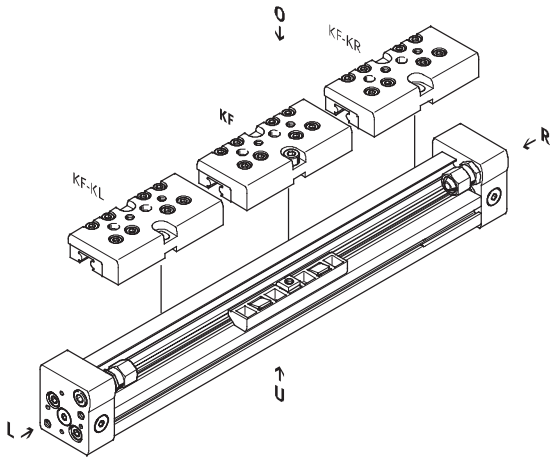
1) End stops or shock absorbers must not be removed.



Linear drives DGC-N-KF, with recirculating ball bearing guide, NPT

Ordering data – Modular products

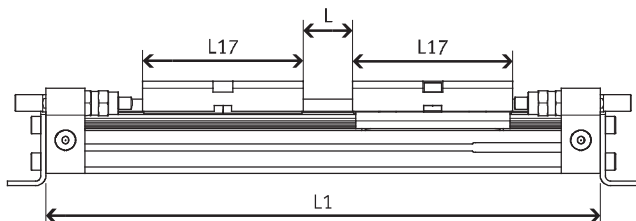
Order code	KL/KR – With additional slide	GP – With protected recirculating ball bearing guide
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Effective stroke reduction when ordering an additional slide KL or KR

With a guide axis DGC with additional slide, the effective stroke is reduced by the length of the additional slide and the distance between both slides.

Given:
 DGC-N-12-500-...
 L = 20 mm
 L17 = 65 mm



∅ [mm]	8	12	18	25	32	40	50	63
L17	52	65	99	118.5	145.7	195.4	256.8	280

The effective stroke is reduced to
 415 mm = 500 mm – 20 mm – 65 mm

Linear drives DGC-N-KF, with recirculating ball bearing guide, NPT



Ordering data – Modular products

Ordering table												
Size	8	12	18	25	32	40	50	63	Conditions	Code	Enter code	
M Module No.	530 906	530 907	532 446	532 447	532 448	532 449	532 450	532 451				
Function	Linear drive									DGC	DGC	
Thread	NPT thread									-N	-N	
Piston Ø [mm]	8	12	18	25	32	40	50	63		-...		
Stroke [mm]	1 ... 1,300	1 ... 1,900	1 ... 3,000	1 ... 8,500			1 ... 5,000				-...	
Guide	Recirculating ball bearing guide									-KF	-KF	
Cushioning	Elastic cushioning rings/pads at both ends		-	-	-	-	-	-		-P		
	-		Pneumatic cushioning, adjustable at both ends								-PPV	
	Shock absorber, self-adjusting										-YSR	
	Shock absorber, self-adjusting, progressive										-YSRW	
↓ Position sensing	Via proximity sensor									-A	-A	

Transfer order code

Linear drives DGC-N-KF, with recirculating ball bearing guide, NPT

Ordering data – Modular products

Ordering table												
Size	8	12	18	25	32	40	50	63	Conditions	Code	Enter code	
0 Slide	-	-	Protected recirculating ball bearing guide			-	-		1	-GP		
Lubrication function	Standard											
	-	-	-	Lubrication adapter			-	Lubrication adapter	5	-C		
Additional slide on left	Additional slide, standard, on left								2	-KL		
Additional slide on right	Additional slide, standard, on right								2	-KR		
Accessories	Enclosed separately (can be retrofitted)									ZUB-	ZUB-	
Foot mounting	1									F		
Profile mounting	1 ... 9									...M		
Slot nut for mounting slot	-	-	-	1 ... 9				...B				
Proximity sensor	Cable, 2.5 m	1 ... 9									...G	
	Plug M8	1 ... 9									...H	
Proximity sensor, contactless, PNP	Cable, 2.5 m	1 ... 9									...I	
	Plug M8	1 ... 9									...J	
Connecting cable	M8, 2.5 m									...V		
Slot cover for sensor slot	-	-	1 ... 9				...L					
Mechanical end-position limiter	Variable end position, at one end								3	YWZ1		
	Variable end position, at both ends								3	YWZ2		
Intermediate position	-			1 intermediate position			-	-	4	-Z1		
	-			2 intermediate positions			-	-	4	-Z2		
	-			3 intermediate positions			-	-	4	-Z3		
Manual	Express waiver – no operating instructions to be included (already available)									-O		

- 1 GP Not with cushioning YSR and YSRW
- 2 KL, KR Not with additional slide on left KL or additional slide on right KR
With a linear drive DGC with additional slide, the effective stroke is reduced by the length of the additional slide and the distance between both slides
Not with cushioning PPV
- 3 YWZ1, YWZ2 Only with cushioning YSR or YSRW
- 4 Z1, Z2, Z3 Only with cushioning YSR or YSRW and mechanical end-position limiter YWZ1 or YWZ2
- 5 C Not with slide GP

Transfer order code

- - - **ZUB** - - -

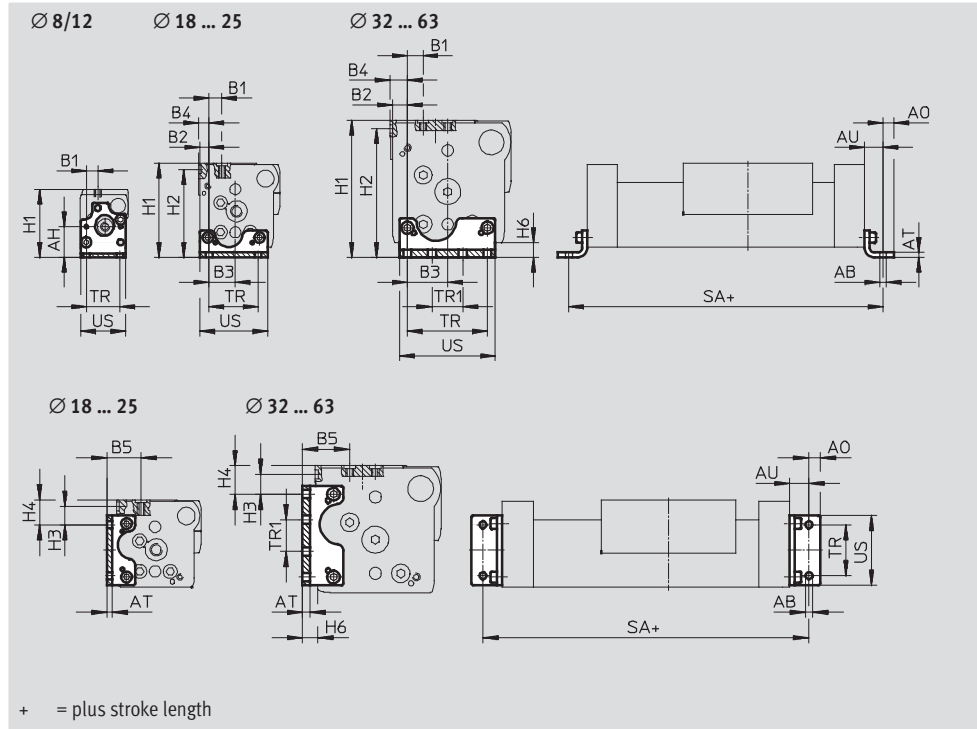
Linear drives DGC-N, NPT

Accessories



Foot mounting HPC
(order code: F)

Material:
Galvanised steel



Dimensions and ordering data															
For Ø	AB	AH	A0	AT	AU	B1		B2	B3	B4		B5		H1	
[mm]	Ø					G	GF/KF			GF	KF	G	GF/KF	G	GF/KF
8	3.4	16.7	3	2	9	6	6	-	-	-	-	-	-	37	37
12	4.5	18.5	4.5	2	11.5	5.4	5.4	-	-	-	-	-	-	42.5	42.5
18	5.5	-	6.75	3	13.25	15	11.2	4.3	15.2	-	5.3	27	23.2	57.5	64
25	5.5	-	9	4	15	12.5	13.35	7.65	21.35	-	8.65	28.65	29.5	67	76.5
32	6.6	-	10	5	19	11.5	9	9	29.5	-	10.5	29.5	27	82	87.5
40	6.6	-	10	6	20	7.6	12.6	12.2	32.8	-	14.2	31.8	36.8	100	111.5
50	9	-	11	8	25	12.5	12.5	11.5	48.5	11.5	11.5	41	41	137	141.5
63	11	-	13.5	8	28	17.5	17.5	12.5	55.5	6.5	17.5	49	49	159	172.5

For Ø	H2	H3	H4		H6	SA	TR	TR1	US	Weight	Part No.	Type
[mm]	GF/KF	GF/KF	G	GF/KF			±0.1	±0.1		[g]		
8	-	-	-	-	5	118	18	-	24.4	25	526 385	HPC-8
12	-	-	-	-	5	148	20	-	29.6	41	526 388	HPC-12
18	59.5	16	14	21.2	7.7	176.5	30	-	38.6	58	533 667	HPC-18
25	71.5	14.35	9.85	19.35	8.5	230	40	-	55	131	533 668	HPC-25
32	82.5	8	7.5	13	9	288	56.5	19.5	68	239	533 669	HPC-32
40	104.5	15.3	10.8	22.3	12	340	65	25	78	348	533 670	HPC-40
50	134.5	23.4	25.9	30.4	17	400	82.6	47.4	102	754	545 236	HPC-50
63	164.5	22	24	30	19	456	111	39	133	1,245	545 237	HPC-63

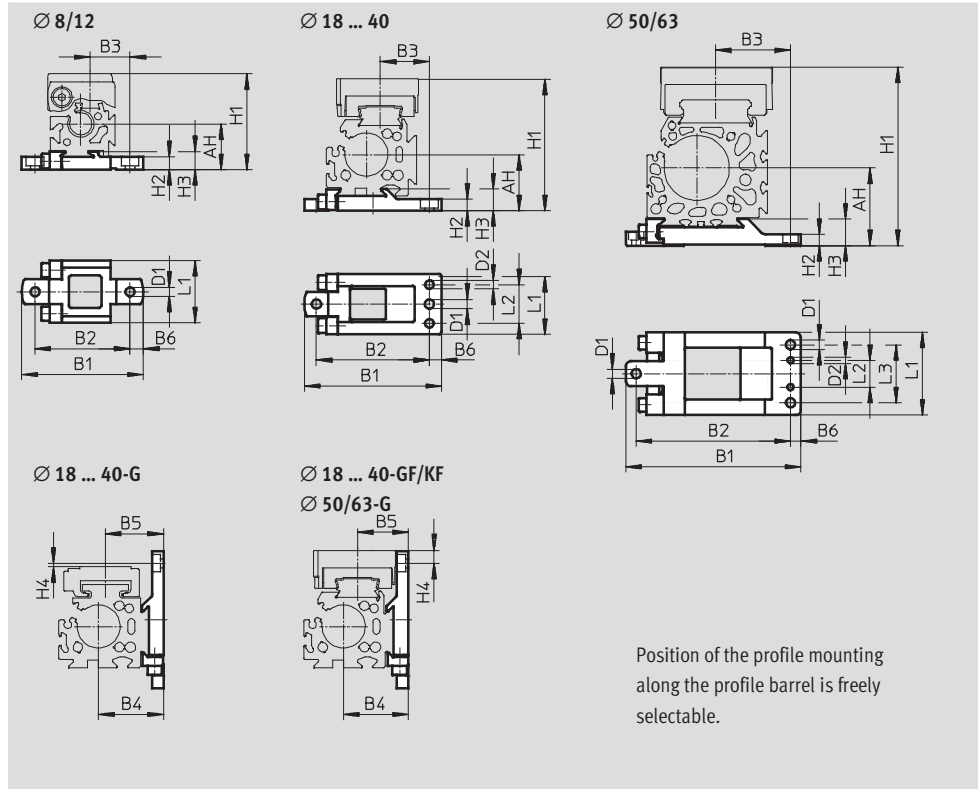
Linear drives DGC-N, NPT

Accessories

FESTO

Profile mounting MUC
(order code: M)

Material:
High-alloy steel



Position of the profile mounting along the profile barrel is freely selectable.

Dimensions and ordering data						
For Ø	AH	B1	B2	B3		B4
[mm]				G	GF/KF	
8	17.7	47	36.7	15.35	15.35	–
12	18.5	52.5	42.2	16.5	16.5	–
18	27.2	67.8±0.2	56±0.15	30.5	28.7	27.2
25	32.5	79.5±0.2	65.5±0.15	32.5	28.5	37.5
32	37.5	94±0.2	80±0.15	35	35	47.5
40	47	110.5±0.2	96±0.15	43	43	57
50	61	145±0.5	125±0.2	56	56	77
63	75	169±0.5	149±0.2	72.5	72.5	87

For Ø	B5		B6	D1	D2	H1	
[mm]	G	GF/KF		Ø H13	Ø H7	G	GF/KF
8	–	–	5.1	3.5	–	37	37
12	–	–	5.1	3.5	–	42.5	42.5
18	25	23.2	5.7	5.5	5	57.5	64
25	33.5	29.5	7	5.5	5	67	76.5
32	37	37	7	5.5	5	82	87.5
40	46.8	46.8	7	6.5	6	100	111.5
50	61	61	7	9	6	137	141.5
63	69	69	10	9	6	159	172.5

Linear drives DGC-N, NPT

Accessories

FESTO

Dimensions and ordering data					
For Ø [mm]	H2	H3	H4		L1
			G	GF/KF	
8	5	7	–	–	24
12	4.5	7	–	–	24
18	5.7 _{-0.2}	9.9 _{±0.1}	0.1	6.4	33 _{±0.1}
25	6.5 _{-0.2}	12.5 _{±0.1}	2.07	7.43	35 _{±0.1}
32	6.5 _{-0.2}	13 _{±0.1}	1.5	4	45 _{±0.1}
40	8.5 _{-0.2}	16 _{±0.1}	0.2	11.3	60 _{±0.1}
50	11	23.5	4.7	9.2	80 _{±0.4}
63	11	25.5	1.5	15	80 _{±0.4}

For Ø [mm]	L2 ±0.05	L3 ±0.2	Weight [g]	Part No.	Type
				8	–
12	–	–	32	526 387	MUC-12
18	20.5	–	78	531 752	MUC-18
25	22.5	–	113	531 753	MUC-25
32	30	–	174	531 754	MUC-32
40	44	–	346	531 755	MUC-40
50	26	56	874	531 756	MUC-50
63	26	56	1,080	531 757	MUC-63

Linear drives DGC-N, NPT

Accessories



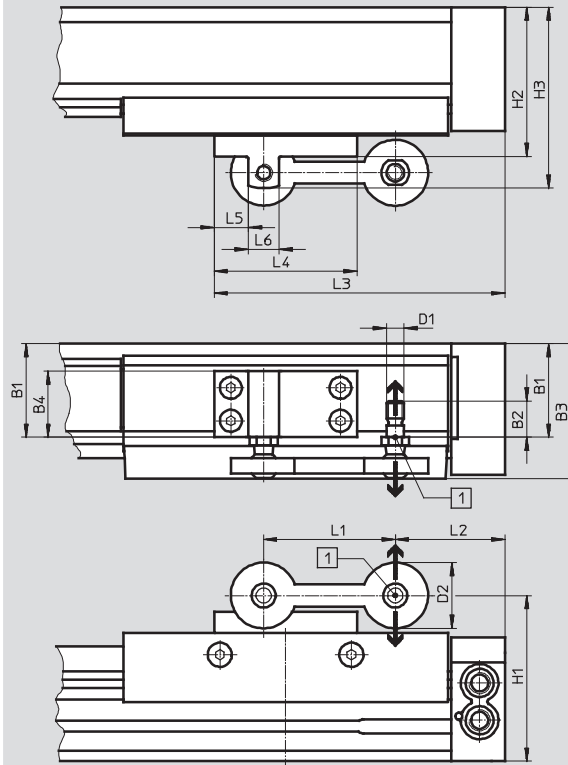
Moment compensator FKC
(order code: FK)
for DGC-N-G

Materials:
Plate: Wrought aluminium alloy

Link: Polyamide
Ball pin: High-alloy steel



For $\varnothing 8 \dots 40$

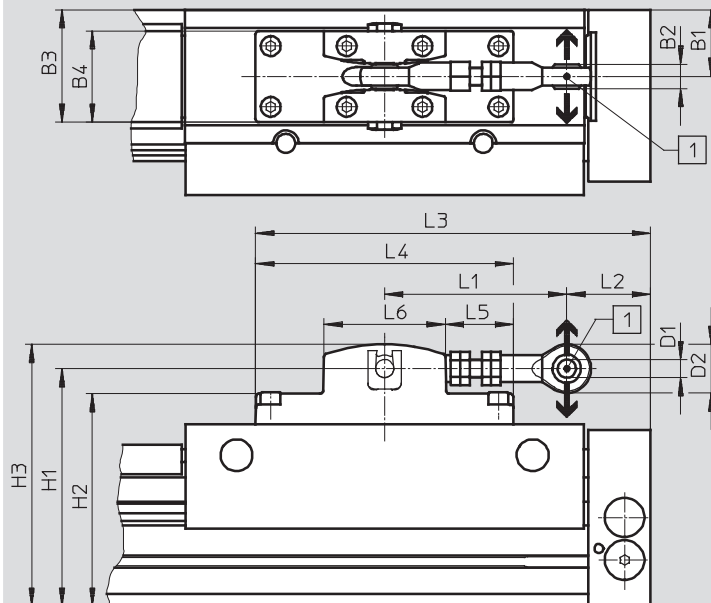


Note

Compensation possible in direction of arrow.

- 1 Radial deflection:
with $\varnothing 8 \dots 40$: ± 2.5 mm
with $\varnothing 50/63$: ± 4 mm

For $\varnothing 50/63$



Linear drives DGC-N, NPT

Accessories

FESTO

Dimensions and ordering data				
For Ø [mm]	Max. offset between linear drive and external guide [mm]	Max. permissible load in direction of force		Ambient temperature
		[N]		[°C]
8	±2.5	550	Backlash-free	-10 ... +60
12		550	Backlash-free	
18		1,400	Backlash-free	
25		1,400	Backlash-free	
32		1,400	Backlash-free	
40		1,400	Backlash-free	
50	±4	5,000	Low-backlash	
63		5,000	Low-backlash	

For Ø [mm]	B1	B2	B3	B4	D1	D2	H1	H2	H3	L1
8	17.5	10.2	30	16	M5	20	43.5	42	48	40
12	18.5	10.2	31	16	M5	20	49	47.5	53.5	40
18	29.3	16.5	47.8	20	M8	30	66.8	59.8	73.8	60
25	42.65	16.5	61.15	30	M8	30	75.5	68	82.5	60
32	43	16.5	61.5	30	M8	30	90	82.5	97	60
40	57.3	16.5	75.8	45	M8	30	105	97.5	113	60
50	44	16	74	60	12 ^{H7}	32	156.5	140	172.4	120 ... 125
63	50	16	80	60	12 ^{H7}	32	176.5	161.5	192.4	120 ... 125

For Ø [mm]	L2	L3	L4	L5	L6	CRC ¹⁾	Weight [g]	Part No.	Type
8	5.1	62.6	35	13	9	1	29	529 350	FKC-8/12
12	17.1	74.6	35	13	9	1	29	529 350	FKC-8/12
18	24.5	107	65	15.5	14	1	97	538 714	FKC-18
25	50	132.5	65	15.5	14	1	119	538 715	FKC-25
32	77.5	162	75	17.5	14	1	122	538 961	FKC-32
40	103	187.5	75	17.5	14	1	180	538 962	FKC-40
50	50 ... 55	260	170	45	80	1	1,200	545 240	FKC-50/63
63	75 ... 80	260	170	45	80	1	1,200	545 240	FKC-50/63

1) Corrosion resistance class 1 as per Festo standard 940 070
Components subject to low corrosion stress. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

Linear drives DGC-N, NPT

Accessories

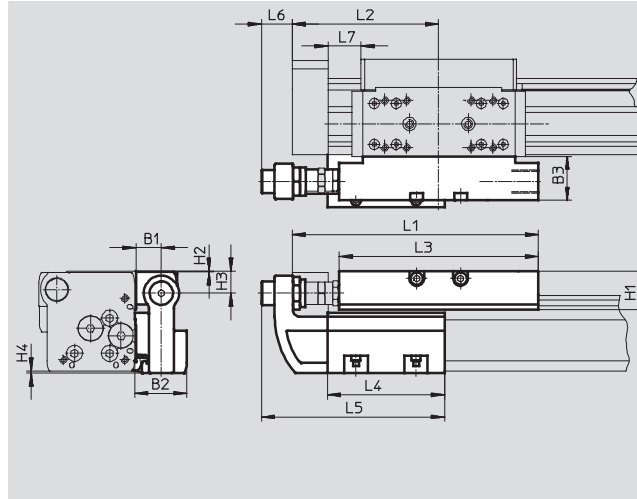


Shock absorber retainer DADP-DGC Stop KYC

(order code: YWZ1 or YWZ2)
for DGC-N-GF, DGC-N-KF, DGC-N-FA

Materials: Stop
Housing: Anodised aluminium
Stop bracket: Stainless steel casting
Clamp: High-alloy steel
Free of copper and PTFE

Materials: Shock absorber retainer
Housing: Anodised aluminium
Free of copper and PTFE



Note

Shock absorber not included in scope of delivery.
Existing shock absorbers can be removed from the end caps of the linear drive and installed in the shock absorber retainer.
Under no circumstances may the linear drive and the intermediate position module be operated without a shock absorber.

Dimensions								
For Ø [mm]	B1	B2	B3	H1	H2	H3	H4	
18	GF KF	16	34.5	29	20.7	0.2	12.5	0.7
25	GF	16.5	35	28	25.5	0.5	15	1.4
	KF			30				
32	GF	16.5	35	28	25.5	0.5	15	1.7
	KF			30				
40	GF	16	35.7	29	32	0.5	21.5	1.6
	KF			35				37
50	GF	25	50	41	40.5	0.5	24	0
	KF							
63	GF	25	50	40	51.5	1.5	33	0
	KF							

For Ø [mm]	L1	L2	L3	L4	L5	L6	L7 min.	
18	GF KF	128	74.5	107	80	118.5	23.5	14.5
25	GF	168	100	136	80	125	20.5	22.5
	KF							
32	GF	206.8	124.8	164	120	165	14.5	42.8
	KF							27.3
40	GF	255	150	210	156	220.5	31	30.8
	KF							31
50	GF	301	175	252	170	238	27	31
	KF							
63	GF	328	200	256	200	268	24	41
	KF							

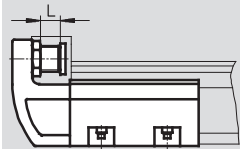
Linear drives DGC-N, NPT

Accessories

FESTO

Technical data and ordering codes

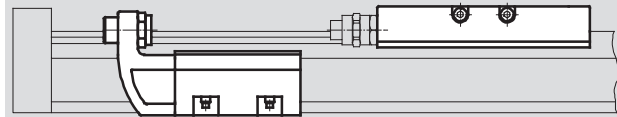
Precision adjustment



Note

The stop KYC can be used in both directions.

Installation example



Note

The stop KYC can be mounted at any position along the stroke.

For Ø [mm]	Max. impact force [N]	Ambient temperature [°C]	CRC ¹⁾	Weight [g]	Part No.	Type
Shock absorber retainer						
18	GF	1,100	-10 ... +80	2	140	541 725 DADP-DGC-18-GF
	KF				130	541 729 DADP-DGC-18-KF
25	GF	1,400			205	541 726 DADP-DGC-25-GF
	KF				180	541 730 DADP-DGC-25-KF
32	GF	1,700			225	541 727 DADP-DGC-32-GF
	KF				215	541 731 DADP-DGC-32-KF
40	GF	3,500			380	541 728 DADP-DGC-40-GF
	KF				460	541 732 DADP-DGC-40-KF
50	GF	3,500			890	545 244 DADP-DGC-50
	KF					
63	GF	4,300			1,080	545 245 DADP-DGC-63
	KF					

1) Corrosion resistance class 2 as per 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.

For Ø [mm]	Precision adjustment L [mm]	Ambient temperature [°C]	CRC ¹⁾	Weight [g]	Part No.	Type
Stop						
18	10	-10 ... +80	2	400	541 691	KYC-18
25	10			560	541 692	KYC-25
32	10			790	541 693	KYC-32
40	15			1,525	541 694	KYC-40
50	15			2,270	545 242	KYC-50
63	15			2,950	545 243	KYC-63

1) Corrosion resistance class 2 as per 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.

Linear drives DGC-N, NPT

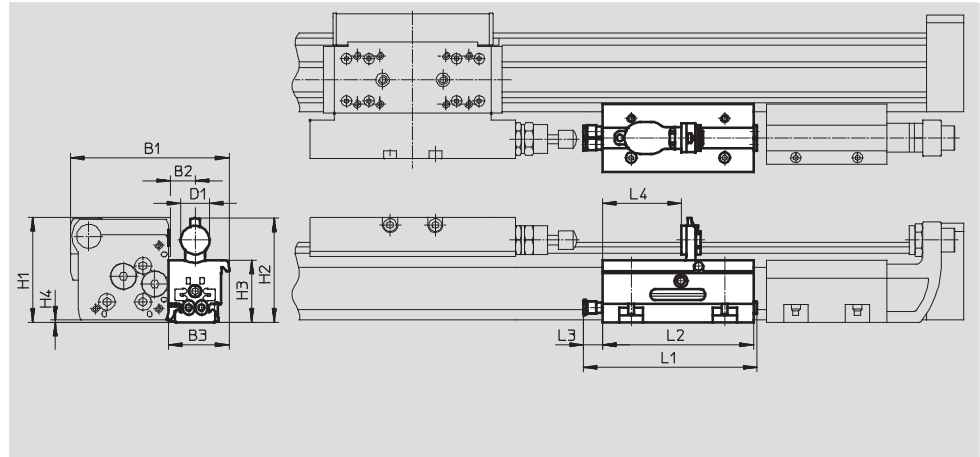
Accessories

Intermediate position module DADM-DGC

(order code: Z1, Z2 or Z3)
for DGC-N-KF

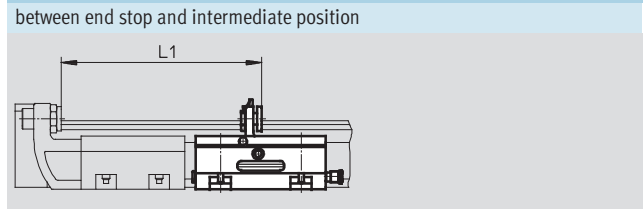
Materials:
Housing: Anodised aluminium
Stop screw, nut: Galvanised steel

Clamp, lever:
High-alloy steel
Free of copper and PTFE

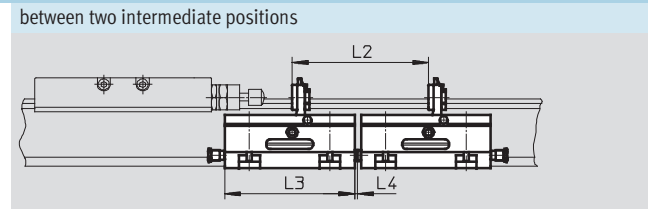


Dimensions												
For Ø [mm]	B1	B2	B3	D1	H1	H2	H3	H4	L1	L2	L3	L4
25	105	16.5	40	19	69.4	68.6	41	1.4	116	100	13.4	52.2
32	117.5	16.5	40	19	80.2	79.7	52	1.7	116	100	13.4	52.2
40	137.5	16	41	27	101.6	101.1	63	2.1	186	170	13.4	76.5

Minimum distance



For Ø [mm]	L1
25	145.3
32	185.3
40	271.5



For Ø [mm]	L2	L3	L4
25	105	100	2.5
32	105	100	2.5
40	175	170	2.5

Note

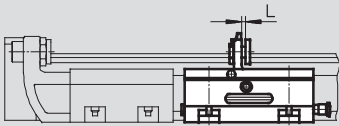
- Shock absorbers not included in scope of delivery. Existing shock absorbers can be removed from the end caps of the linear drive and installed in the shock absorber retainer. Under no circumstances may the linear drive and the intermediate position module be operated without a shock absorber.
- A shock absorber retainer DADP-DGC and a stop KYC are additionally needed when using an intermediate position module.
- The projection (dimension H4) must be observed when using the drive in combination with the intermediate position module DADM-DGC. Mounting via foot mountings HP or profile mountings MUC is recommended in this case.
- The stop lever positions can be sensed via proximity sensors SME/SMT-10 → 74.

Linear drives DGC-N, NPT

Accessories

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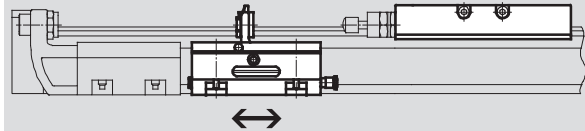
Precision adjustment L



Note

The intermediate position module DADM-DGC can be used in both directions. A shock absorber retainer DADP-DGC and a stop KYC are additionally needed when using an intermediate position module.

Installation example



Note

The intermediate position module DADM-DGC can be mounted at any position along the stroke.

Technical data

For Ø	[mm]	25	32	40
Pneumatic connection		QS-4		
Operating pressure	[bar]	2.5 ... 8		
Mounting position		Any		
Impact velocity	[m/s]	→ 47		
Swivel time	[ms]	≤100	≤100	≤300
Precision adjustment L	[mm]	2	2	4
Repetition accuracy	[mm]	0.02		
Position sensing		Via proximity sensor SME/SMT-10		
Weight	[g]	430	530	970
Ambient temperature	[°C]	-10 ... +60		
Corrosion resistance class CRC ¹⁾		2		
Note on materials		Free of copper and PTFE		
		RoHS-compliant		

1) Corrosion resistance class 2 as per 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.




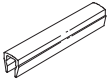
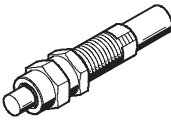
Ordering data

	For Ø [mm]	Part No.	Type
	25	541 700	DADM-DGC-25-A
	32	541 701	DADM-DGC-32-A
	40	541 702	DADM-DGC-40-A

Linear drives DGC-N, NPT

Accessories

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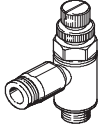
Ordering data						
	For Ø	Comment	Order code	Part No.	Type	PU ¹⁾
Slot nut HMBN Technical data → Internet: hmbn						
	25 ... 40	For mounting slot	B	547 264	HMBN-5-1M5	10
	50, 63			186 566	HMBN-5-2M5	
Centring pin/sleeve ZBS/ZBH Technical data → Internet: zbs, zbh						
	For DGC-G					
	8, 12	For slide	–	150 928	ZBS-5	10
	8, 12	For end cap	–	525 273	ZBS-2	
	50, 63			150 927	ZBH-9	
	For DGC-GF					
	18	For slide	–	150 928	ZBS-5	10
	25 ... 63			150 927	ZBH-9	
	50, 63	For end cap	–	150 927	ZBH-9	
	For DGC-KF					
	8, 12, 18	For slide	–	150 928	ZBS-5	10
	25 ... 63			150 927	ZBH-9	
	8, 12	For end cap	–	525 273	ZBS-2	
18			150 928	ZBS-5		
25 ... 63			150 927	ZBH-9		
Slot cover ABP-S Technical data → Internet: abp						
	18 ... 63	For sensor slot every 0.5 m	L	151 680	ABP-5-S	2
Shock absorber YSRW Technical data → Internet: ysrw						
	8	For DGC basic design and recirculating ball bearing guide	YSRW	540 344	YSRW-DGC-8	1
	12			540 345	YSRW-DGC-12	
	18			540 346	YSRW-DGC-18-GF	
	25			540 348	YSRW-DGC-25-GF	
	32	540 350		YSRW-DGC-32-GF		
	40	540 352		YSRW-DGC-40-GF		
	50	1232870		YSRW-DGC-40/50-B		
	63	543 069		YSRW-DGC-63		
	18	For DGC with recirculating ball bearing guide		540 347	YSRW-DGC-18-KF	
	25			540 349	YSRW-DGC-25-KF	
	32			540 351	YSRW-DGC-32-KF	
	40, 50			1232870	YSRW-DGC-40/50-B	
	63			543 069	YSRW-DGC-63	

1) Packaging unit quantity

Linear drives DGC-N, NPT


Accessories


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Ordering data						
	For Ø	Remarks	Order code	Part No.	Type	PU ¹⁾
One-way flow control valve GRLA			Technical data → Internet: grla			
	8 ... 18	Metal design	-	564 840	GRLA-10-32-UNF-QB- $\frac{5}{32}$ -U	1
	25, 32			564 842	GRLA-10-32-UNF-QB- $\frac{1}{4}$ -U	
				534 656	GRLA- $\frac{1}{8}$ -QB- $\frac{5}{32}$ -U	
	40, 50			534 658	GRLA- $\frac{1}{8}$ -QB- $\frac{1}{4}$ -U	
				534 661	GRLA- $\frac{1}{4}$ -QB- $\frac{1}{4}$ -U	
	63			534 662	GRLA- $\frac{1}{4}$ -QB- $\frac{5}{16}$ -U	
				190 947	GRLA- $\frac{1}{4}$ -NPT-QS- $\frac{3}{8}$ -U	
				534 664	GRLA- $\frac{3}{8}$ -QB- $\frac{1}{4}$ -U	
				534 665	GRLA- $\frac{3}{8}$ -QB- $\frac{5}{16}$ -U	




1) Packaging unit quantity

Proximity sensors for piston Ø 8/12 and intermediate position module DADM

Ordering data – Proximity sensors for C-slot, magneto-resistive						Technical data → Internet: smt	
	Type of mounting	Switching output	Electrical connection, connection direction	Cable length [m]	Part No.	Type	
N/O contact							
	Insertable in slot lengthwise	PNP	Plug M8x1, 3-pin, in-line	0.3	173 220	SMT-10-PS-SL-LED-24	
			Cable, 3-wire, in-line	2.5	173 218	SMT-10-PS-KL-LED-24	

Ordering data – Proximity sensors for C-slot, magnetic reed						Technical data → Internet: sme	
	Type of mounting	Switching output	Electrical connection, connection direction	Cable length [m]	Part No.	Type	
N/O contact							
	Insertable in slot lengthwise	Contacting	Plug M8x1, 3-pin, in-line	0.3	173 212	SME-10-SL-LED-24	
			Cable, 3-wire, in-line	2.5	173 210	SME-10-KL-LED-24	

Proximity sensors for piston Ø 18 ... 63

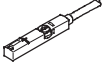


Ordering data – Proximity sensors for T-slot, magneto-resistive						Technical data → Internet: smt	
	Type of mounting	Switching output	Electrical connection	Cable length [m]	Part No.	Type	
N/O contact							
	Insertable in slot from above, flush with cylinder profile	PNP	Cable, 3-wire	2.5	543 867	SMT-8M-PS-24V-K-2,5-OE	
			Plug M8x1, 3-pin	0.3	543 866	SMT-8M-PS-24V-K-0,3-M8D	
			Plug M12x1, 3-pin	0.3	543 869	SMT-8M-PS-24V-K-0,3-M12	
		NPN	Cable, 3-wire	2.5	543 870	SMT-8M-NS-24V-K-2,5-OE	
			Plug M8x1, 3-pin	0.3	543 871	SMT-8M-NS-24V-K-0,3-M8D	
	Insertable in slot lengthwise, flush with 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 slot from above, flush with cylinder profile	PNP	Cable, 3-wire	7.5	543 873	SMT-8M-PO-24V-K7,5-OE	



Linear drives DGC-N, NPT

Accessories

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Proximity sensors for piston $\varnothing 18 \dots 63$

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 slot from above, flush with cylinder profile	Contacting	Cable, 3-wire	2.5	543 862	SME-8M-DS-24V-K-2,5-OE
				5.0	543 863	SME-8M-DS-24V-K-5,0-OE
			Cable, 2-wire	2.5	543 872	SME-8M-ZS-24V-K-2,5-OE
			Plug M8x1, 3-pin	0.3	543 861	SME-8M-DS-24V-K-0,3-M8D
	Insertable in slot lengthwise, flush with 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 slot lengthwise, flush with cylinder profile	Contacting	Cable, 3-wire	7.5	160 251	SME-8-O-K-LED-24

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
	Straight socket, M12x1, 5-pin	Cable, open end, 3-wire	2.5	541 363	NEBU-M12G5-K-2.5-LE3
			5	541 364	NEBU-M12G5-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
	Angled socket, M12x1, 5-pin	Cable, open end, 3-wire	2.5	541 367	NEBU-M12W5-K-2.5-LE3
			5	541 370	NEBU-M12W5-K-5-LE3

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Festo North America

Festo Regional Contact Center

5300 Explorer Drive
Mississauga, Ontario L4W 5G4
Canada

USA Customers:

For ordering assistance,

Call: 1.800.99.FESTO (1.800.993.3786)

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For technical support,

Call: 1.866.GO.FESTO (1.866.463.3786)

Fax: 1.800.96.FESTO (1.800.963.3786)

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Canadian Customers:

Call: 1.877.GO.FESTO (1.877.463.3786)

Fax: 1.877.FX.FESTO (1.877.393.3786)

Email: festo.canada@ca.festo.com

USA Headquarters

Festo Corporation
395 Moreland Road
P.O. Box 18023
Hauppauge, NY 11788, USA
www.festo.com/us

USA Sales Offices

Appleton

North 922 Tower View Drive, Suite N
Greenville, WI 54942, USA

Boston

120 Presidential Way, Suite 330
Woburn, MA 01801, USA

Chicago

1441 East Business Center Drive
Mt. Prospect, IL 60056, USA

Dallas

1825 Lakeway Drive, Suite 600
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Detroit – Automotive Engineering Center

2601 Cambridge Court, Suite 320
Auburn Hills, MI 48326, USA

New York

395 Moreland Road
Hauppauge, NY 11788, USA

Silicon Valley

4935 Southfront Road, Suite F
Livermore, CA 94550, USA

United States



USA Headquarters, East: Festo Corp., 395 Moreland Road, Hauppauge, NY 11788

Phone: 1.631.435.0800; Fax: 1.631.435.8026;

Email: info@festo-usa.com

www.festo.com/us

Canada



Headquarters: Festo Inc., 5300 Explorer Drive, Mississauga, Ontario L4W 5G4

Phone: 1.905.624.9000; Fax: 1.905.624.9001;

Email: festo.canada@ca.festo.com

www.festo.ca

Mexico



Headquarters: Festo Pneumatic, S.A., Av. Ceylán 3, Col. Tequesquahuac,
54020 Tlalneantla, Edo. de México

Phone: 011 52 [55] 53 21 66 00; Fax: 011 52 [55] 53 21 66 65;

Email: festo.mexico@mx.festo.com

www.festo.com/mx

Central USA

Festo Corporation
1441 East Business
Center Drive
Mt. Prospect, IL 60056, USA
Phone: 1.847.759.2600
Fax: 1.847.768.9480



Western USA

Festo Corporation
4935 Southfront Road,
Suite F
Livermore, CA 94550, USA
Phone: 1.925.371.1099
Fax: 1.925.245.1286



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