

Linear drives DGC-N, NPT

FESTO



Linear drives DGC-N, NPT

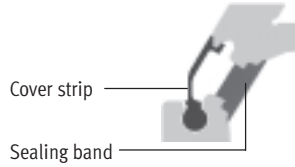
Key features

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General

- Compact – fitting length relative to stroke
- Loads and devices can be directly mounted on the slide
- Three types of cushioning available:
 - Flexible 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 without restrictions
 - Virtually zero leakage

Wide choice of variants

Basic design DGC-N-G



- Piston Ø 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



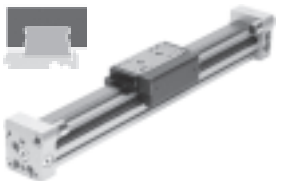
- Piston Ø 18 ... 63 mm
- Stroke lengths from 1 ... 8,500 mm
- Guide backlash = 0.05 mm
- For small and medium loads
- Operating behaviour with torque load = average

Recirculating ball bearing guide DGC-N-KF



- Piston Ø 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 with torque load = very good

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



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

Passive guide axis DGC-N-FA



- Without drive
- Piston Ø 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-KF

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



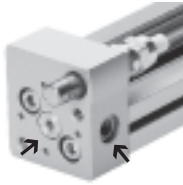
- Without drive
- Piston Ø 18 ... 40 mm
- Stroke lengths from 1 ... 8,500 mm
- Guide backlash = 0 mm
- The protected guide cleans the guide rail and protects the recirculating ball bearing guide by means of an additional wiper seal and lubrication unit

Linear drives DGC-N, NPT

Key features

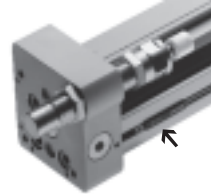
Versatile

1 Supply ports



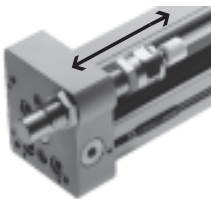
- Optionally on two sides (on the end face or on the front)
- For DGC-N-G/DGC-N-GF/DGC-N-KF

2 Proximity sensor G/H/I/J



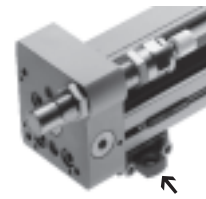
- Proximity sensors can be integrated, which means there is no projection. Cable can be guided through the slot behind a second sensor
- For DGC-N-G/DGC-N-GF/DGC-N-KF

3 Precision end-position adjustment



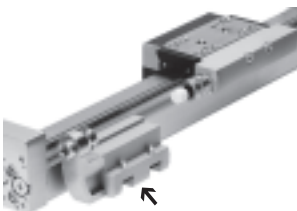
- Between 0 ... 25 mm per side
- For DGC-N-GF/DGC-N-KF/DGC-N-FA

4 Profile mounting M



- Profile mounting attachment 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



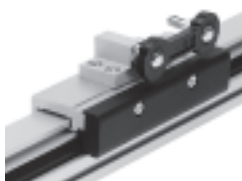
- For variable stroke adjustment, e.g. for format adjustments
- The end stop can be mounted at any position along the stroke
- For DGC-N-GF/DGC-N-KF/DGC-N-FA

6 Intermediate position module Z1/Z2/Z3



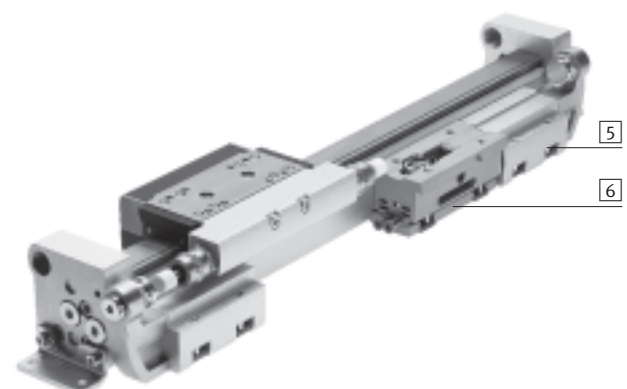
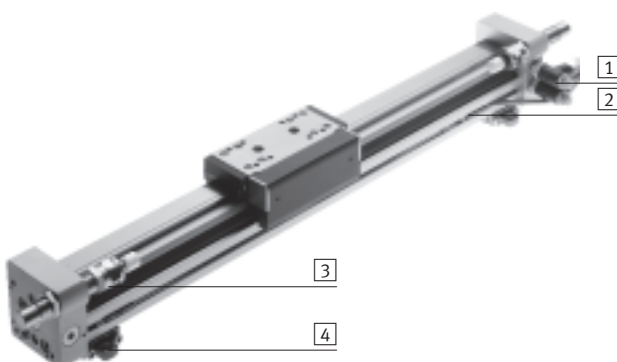
- Enables variable intermediate positions
- The intermediate position module can be mounted at any position along the stroke
- Precision repetition accuracy (0.02 mm) with high dynamic response
- For DGC-N-KF

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

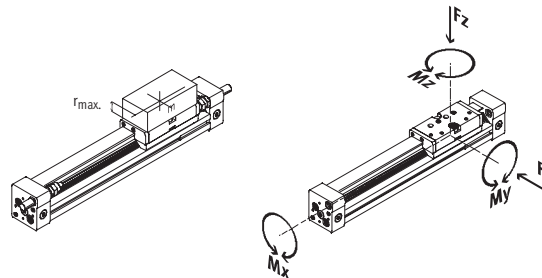


Linear drives DGC-N, NPT

Key features

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Product variants



	Piston Ø	Theoretical force at 6 bar	Max. perm. effective load ¹⁾ m [kg]/ at max. load distance r [mm]	Guide characteristics					→ Page/ Internet	
	[mm]	[N]		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	8	
	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	24	
	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	4	
	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		

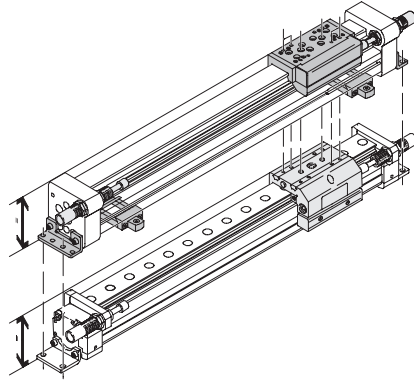
1) At v = 0.5 m/s with shock absorber YSR or YSRW

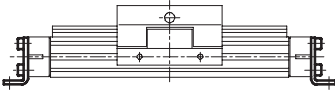
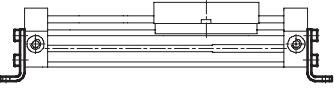
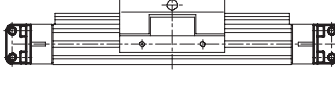
Linear drives DGC-N, NPT

Key features

Interchangeability with linear drive DGPL

Special foot mountings for the drive DGC enable the linear drive DGPL to be replaced with the linear drive DGC-N-GF/-KF with identical slide position and identical interfaces.



Slide position	Linear drive DGPL	Linear drive DGC-N-GF/-KF	Foot mounting required → Internet: hpc
Top	 	 	Type HPC-...-S0/ HPC-...-S
Rear	 	 	Type HPC-...-SH/ HPC-...-S

Alternatives

Electro-mechanical drives

Toothed belt axes DGE-ZR

Spindle axes DGE-SP



Advantages:

Positioning drive for approaching several positions

→ Internet: dge-zr



Positioning drive for approaching several positions

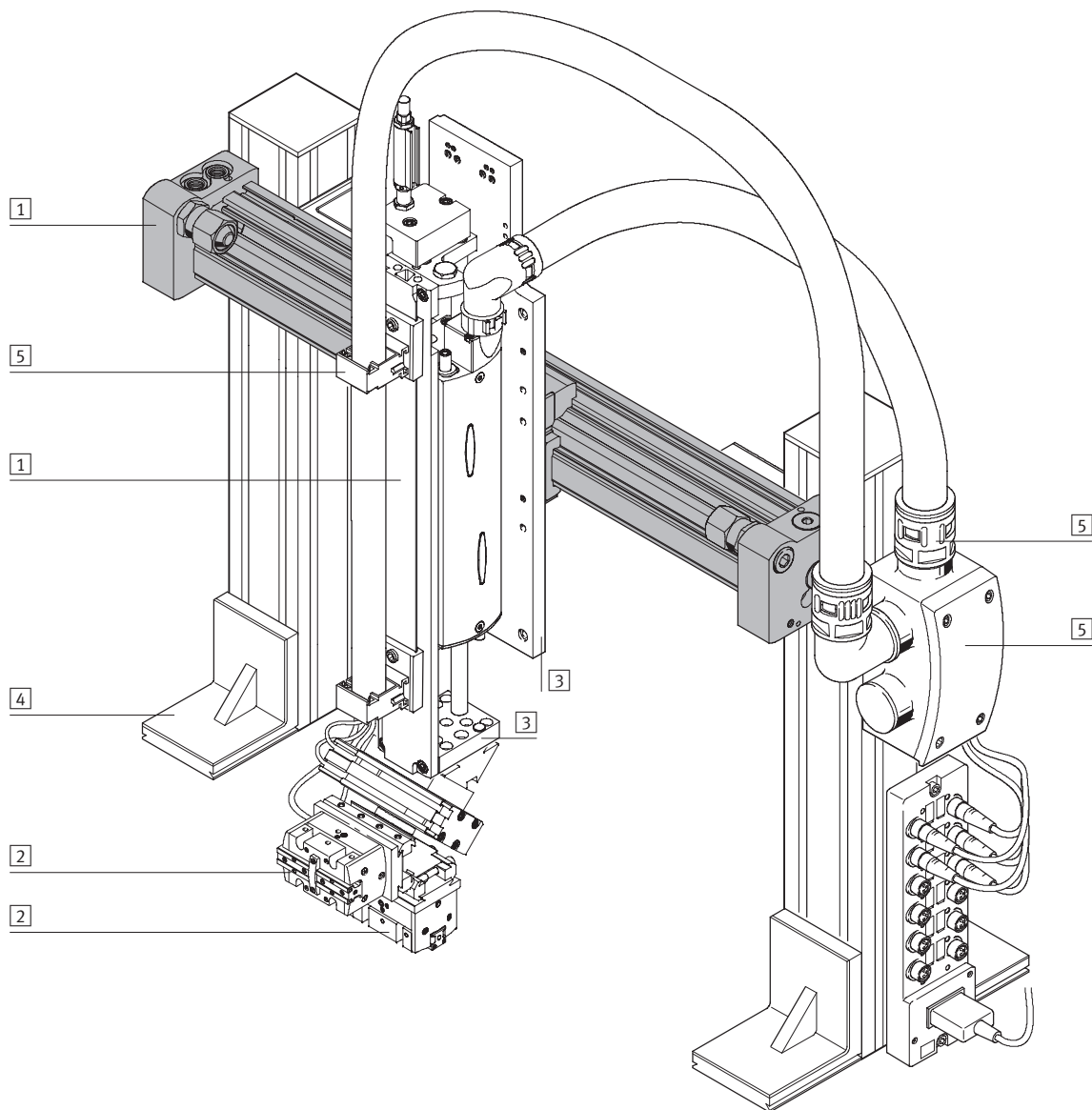
→ Internet: dge-sp

Linear drives DGC-N, NPT

Key features

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System product for handling and assembly technology



Linear drives DGC-N, NPT

Key features

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

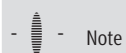
Linear drives DGC-N-G, NPT

Peripherals overview

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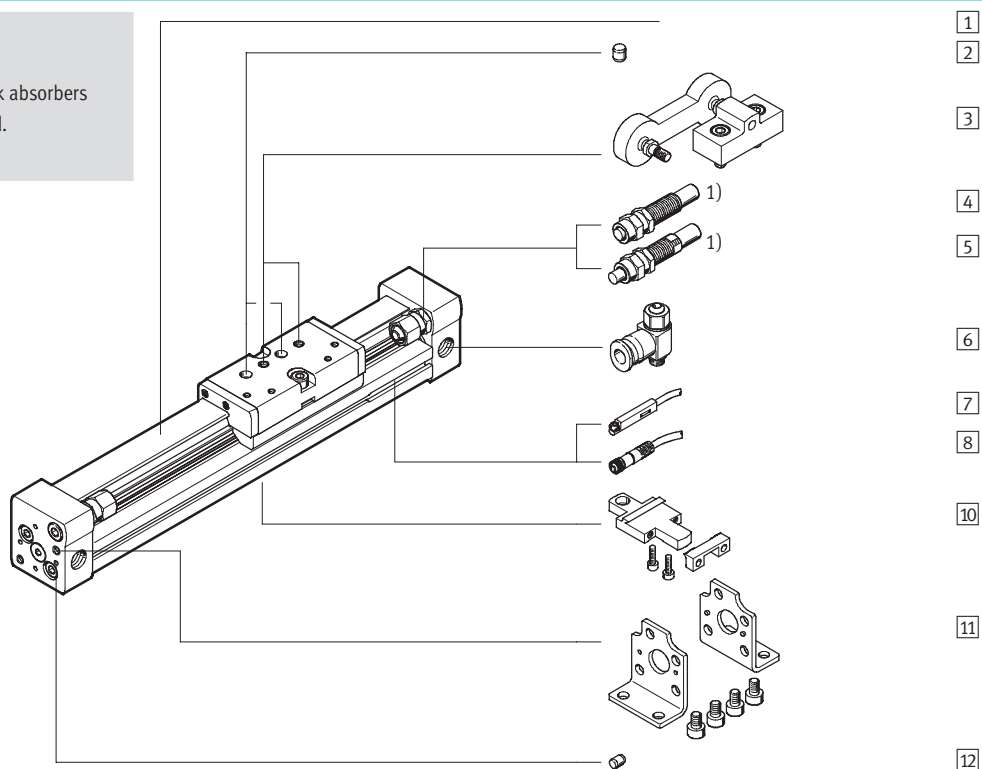


DGC-N-8/-12

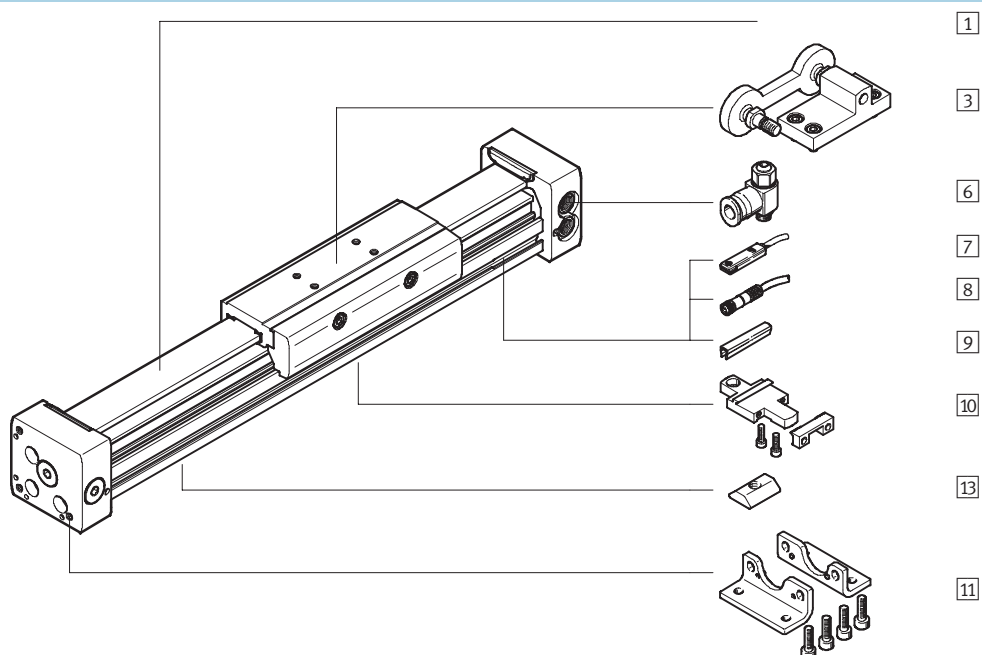


Note

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 Ø	Brief description	→ Page/Internet
1 Linear drive DGC-N-G	8 ... 63	Linear drive without accessories, basic design.	12
2 Centring pin ¹⁾ ZBS	8, 12	For centring loads and attachments on the slide.	72
3 Moment compensator FK	8 ... 63	Compensates for inaccuracies in the mounting of the linear drive and external guide.	66
– Cushioning P	8, 12	Non-adjustable, flexible cushioning. Used only at low speeds.	23
– Cushioning PPV	18 ... 63	Adjustable pneumatic end-position cushioning. Used at medium speeds.	23
4 Shock absorber YSR	8, 12	Self-adjusting hydraulic shock absorber with spring return and linear cushioning characteristic.	23
5 Shock absorber YSRW	8, 12	Self-adjusting hydraulic shock absorber with spring return and progressive cushioning characteristic.	23
6 One-way flow control valve GRLA	8 ... 63	For regulating speed.	72
7 Proximity sensor G/H/I/J	8 ... 63	For sensing the slide position.	73
8 Plug socket with cable V	8 ... 63	For proximity sensor.	74
9 Slot cover L	18 ... 63	For protecting against ingress of dirt and securing proximity sensor cables.	72
10 Profile mounting M	8 ... 63	Simple and precise mounting option via dovetail connection.	64
11 Foot mounting F	8 ... 63	For mounting on end cap.	60
12 Centring pin ¹⁾ ZBS	8, 12	For centring the drive without foot mountings (user-specific).	72
13 Slot nut B	25 ... 63	For mounting attachments.	72

1) Included in the scope of delivery of the drive

Linear drives DGC-N-G, NPT

Type codes

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		DGC	–	N	–	25	–	1000	–	G	–	PPV	–	A
Type														
DGC	Linear drive													
Thread														
N	NPT thread													
Piston Ø [mm]														
Stroke [mm]														
Guide														
G	Basic design													
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													

Linear drives DGC-N-G, NPT

Type codes

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		+ ZUB	-	F			2B	2G		2L	
Accessories											
ZUB	Accessories enclosed separately										
Foot mounting											
F	Foot mounting										
Profile mounting											
...M	Profile mounting										
Moment compensator											
FK	Moment compensator										
Slot nut											
...B	For mounting slot										
Proximity sensor											
...G	With cable, 2.5 m										
...H	With plug										
...I	Contactless with cable, 2.5 m										
...J	Contactless with plug										
Plug socket with cable											
...V	2.5 m										
Slot cover											
...L	For sensor slot										
Manual											
0	Express waiver – no operating instructions to be included										

Linear drives DGC-N-G, NPT

Technical data

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Function

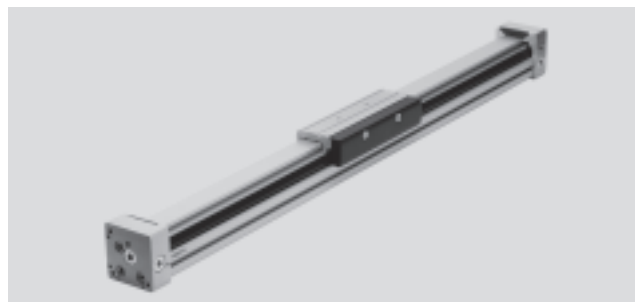


www.festo.com

Wearing parts kits

→ 23

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



General technical data								
Piston Ø	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							
Constructional design	Rodless drive							
Driver principle	Slotted cylinder, mechanically coupled							
Guide	Basic design							
Mounting position	Any							
Cushioning → 15	P	Non-adjustable at either end		–				
	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 with the ISO 1179-1 standard and the ISO 228-1 standard.

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	Filtered compressed air, lubricated or unlubricated							
Ambient temperature ¹⁾ [°C]	+5 ... +60		-10 ... +60					
Corrosion resistance class CRC ²⁾	2							

1) Note operating range of proximity sensors

2) 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.

Force [N] and impact energy [J]								
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 at the end positions	→ 15							

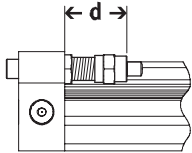
Weight [g]								
Piston Ø	8	12	18	25	32	40	50	63
Basic weight with 0 mm stroke	170	290	546	1,004	2,126	4,121	9,050	14,040
Additional weight per 10 mm stroke	9	12	22	34	54	77	116	150
Moving load	36	65	178	287	508	1,312	2,850	4,330

Linear drives DGC-N-G, NPT

Technical data

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Adjustable end-position range d [mm]



Note

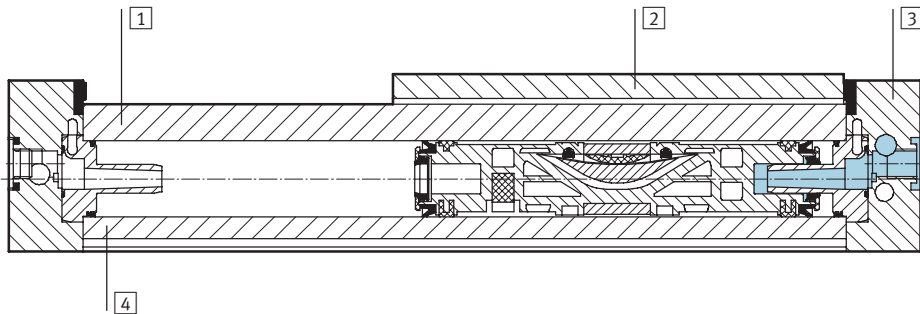
The permissible kinetic energy decreases if the stroke is reduced

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



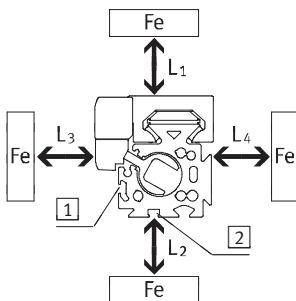
Linear drives		
1	Guide rail	Anodised aluminium
2	Slide	Anodised aluminium
3	End cap	Anodised aluminium
4	Cylinder barrel	Anodised aluminium
–	Piston seal	Polyurethane
–	Sealing band/cover strip	Polyurethane
–	Slide elements	Polyacetal

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

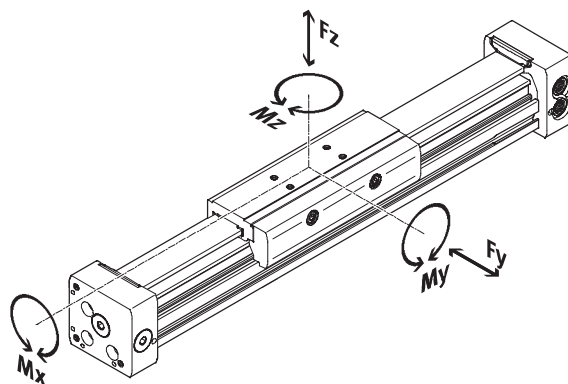
Technical data

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Characteristic load values

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

They 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**

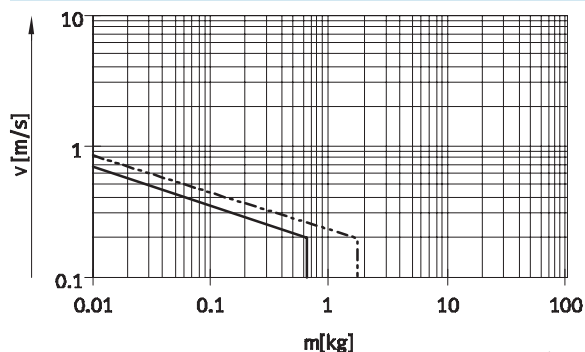
ProDrive
sizing software
→ www.festo.com

Linear drives DGC-N-G, NPT

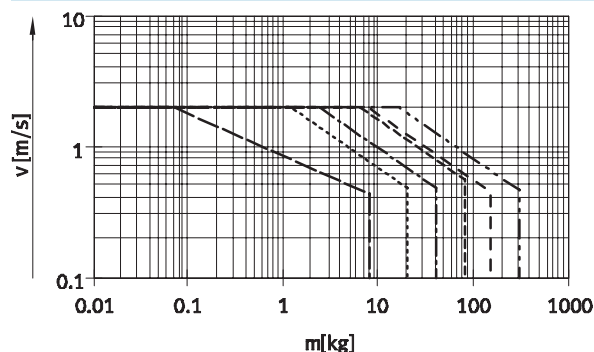
Technical data

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

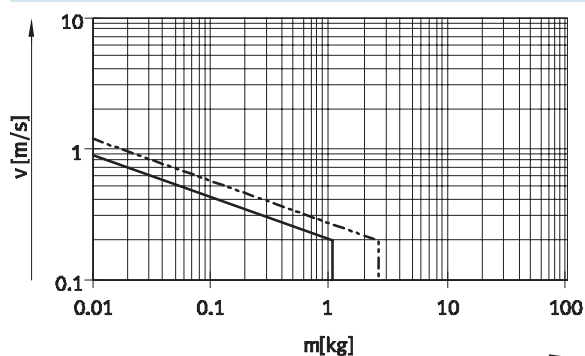
Piston $\varnothing$ 8/12 with P cushioning



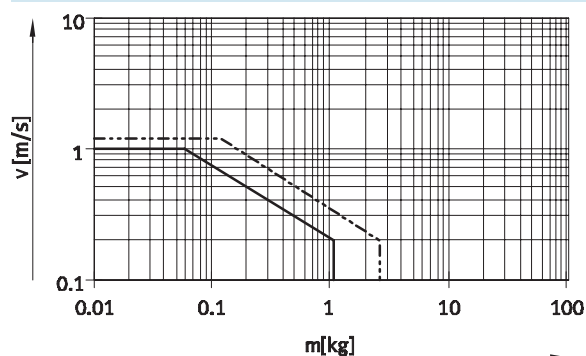
Piston $\varnothing$ 18 ... 63 with PPV cushioning



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. Values fluctuate in practice 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 mass.

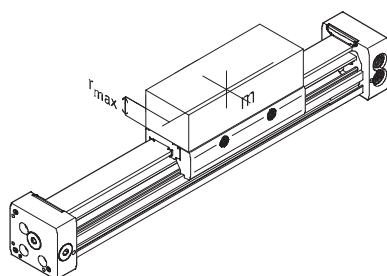


Note

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

Data 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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FESTO

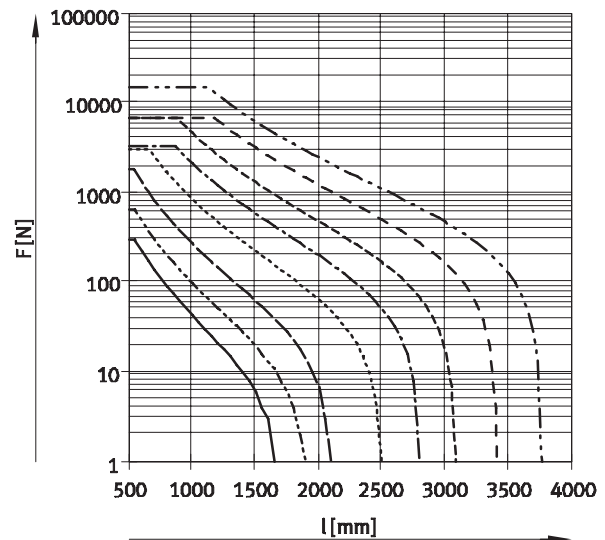
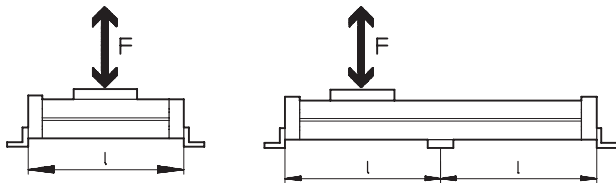
Number of profile mountings MUC as a function of force due to weight F and support span l

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

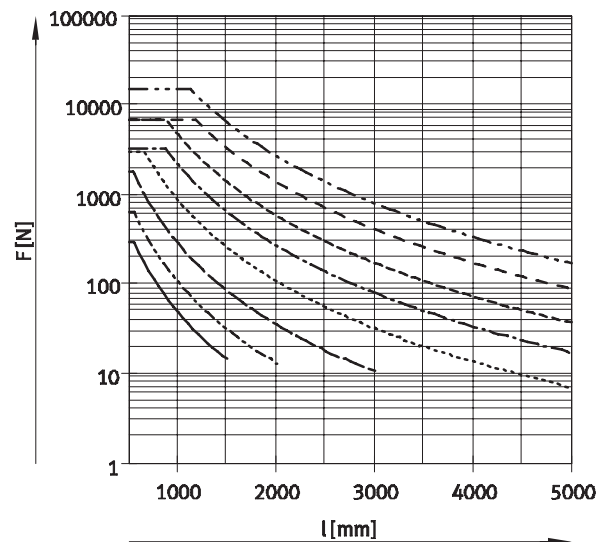
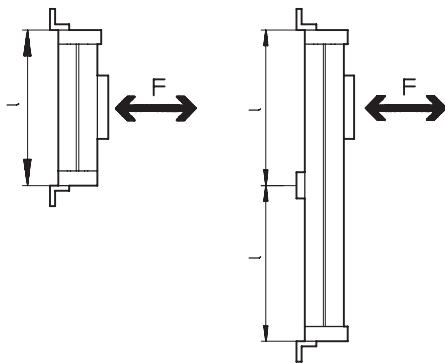
help to determine the maximum permissible support span as a function

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:

$$\begin{aligned}
 l &= \text{stroke length} + L1 \\
 &= 1,500 \text{ mm} + 200 \text{ mm} \\
 &= 1,700 \text{ mm}
 \end{aligned}$$

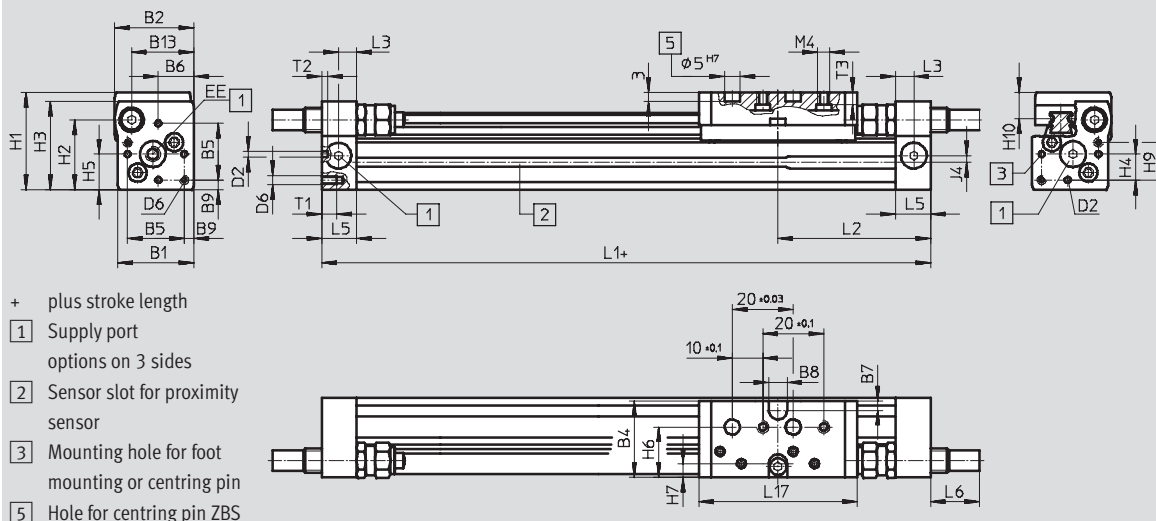
According to the graph, the max. support span for the drive DGC-N-25 with a force of 300 N is 1,300 mm.

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
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	D2	D6	EE ¹⁾
[mm]							±0.05	±0.1		Ø H8		
8	25	26	25.5	18.6	11.7	3	6	3.2	20.5	2	M3	M5
12	30.2	31	30.5	20.6	13.5	3	8	4.8	25	2	M4	M5

Ø	H1	H2	H3	H4	H5	H6	H7	H9	H10	J4	L1	L2
[mm]											+0.5/ -0.4	
8	32	23	29	8.5	11.7	16.5	4.5	12.3	8.7	2.2	100	50.1
12	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			L17	T1	T2	T3	Stroke tolerance
[mm]			P	YSR	YSRW					
8	6	11.5	0	16	16.2	52	5	2	4	0 ... 1.7
12	8	16	0	11.3	12.3	65	6	2	5	

1) Suitable for 10-32 UNF

Profile barrel

Ø 8
Ø 12

1 Sensor slot for proximity sensor

Linear drives DGC-N-G, NPT

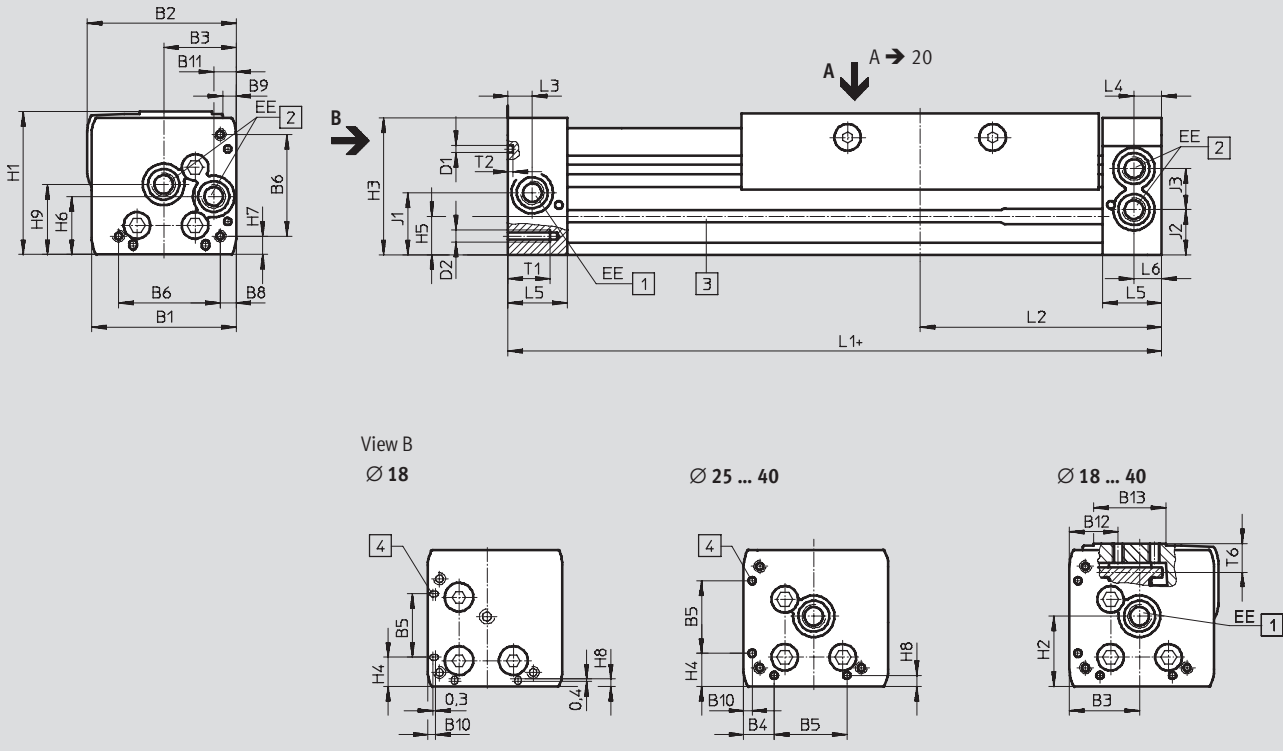
Technical data

FESTO

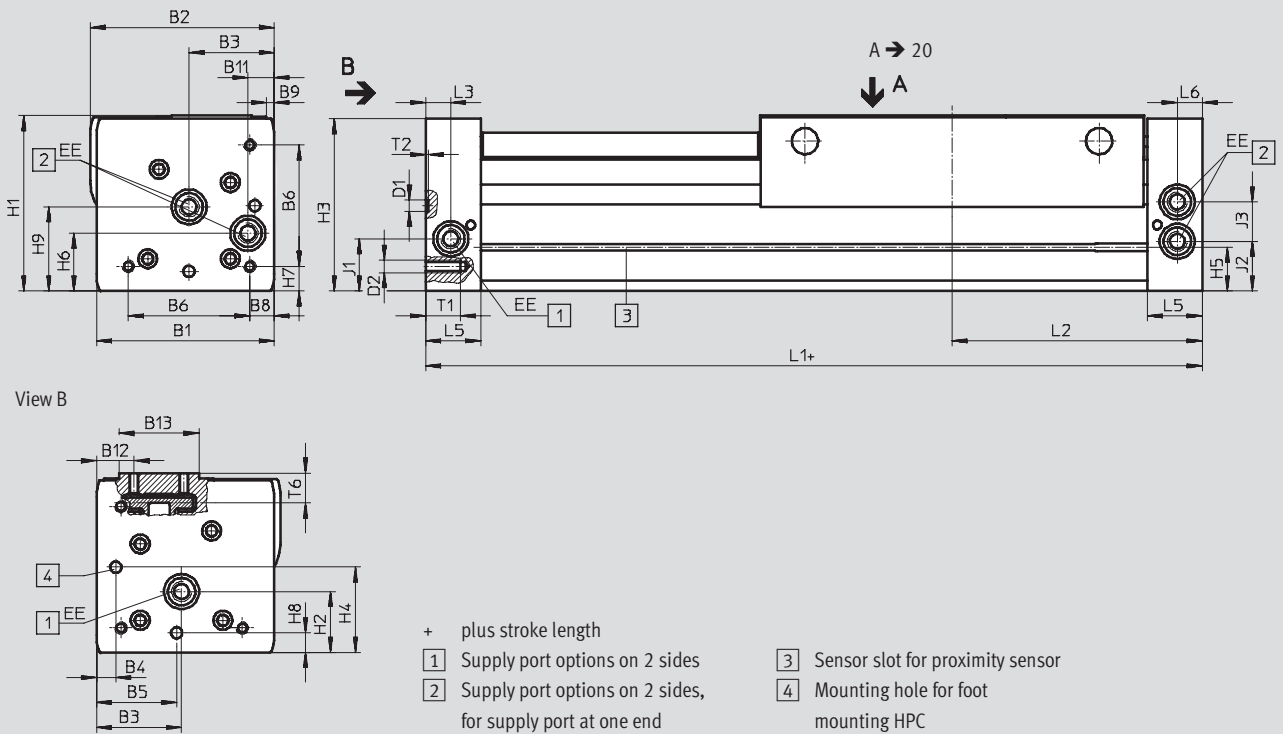
Dimensions

Download CAD data → www.festo.com

Ø 18 ... 40



Ø 50/63



Linear drives DGC-N-G, NPT

Technical data

FESTO

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

Ø [mm]	B10	B11	B12	B13	D1 Ø	D2	EE	H1	H2
18	2.4	5.5	19.3	20	2±0.05	M4	M5 ¹⁾	49.8	23.1
25	3.5	9.3	20.15	30	3±0.05	M5	1/8 NPT	58.5	29
32	14	14.9	20.5	35	3±0.05	M6	1/8 NPT	73	30
40	8	16.5	19.8	45	4±0.05	M6	1/4 NPT	88	41.5
50	–	21	24	64	9H7	M8	1/4 NPT	120	38.5
63	–	21	30	64	9H7	M10	3/8 NPT	140	48.5

Ø [mm]	H3	H4 ±0.2	H5	H6	H7	H8	H9	J1	J2
18	48.3	10.3	13.4	20	5.3	2.4	25.2	20	16.5
25	56.5	13	15.8	24	7	4.5	29	26.1	18.6
32	71.5	5.7	17	27.7	8.5	14	35.2	30	22
40	85	17.2	25	36.5	12.2	8	44	35	26
50	116	52.8	29.3	36	12	8	53	30.5	30.5
63	137.5	68	34.8	46	19.5	15.5	67	41.5	39.5

Ø [mm]	J3	L1 +0.9/–0.2	L2	L3	L4	L5	L6	T1	T2	T6	Stroke tolerance
18	11	150	74.5	5.7	5.8	15	5.5	9	2	10.7	0 ... 2.5
25	17	200	100	10.5	10.6	24.5	10.6	17.5	2	12	
32	18.5	250	124.8	14.5	14.5	30.5	14.5	15	2	13.8	
40	26	300	150	14.6	14.6	33.5	14.6	20	3	16.8	
50	28	350	175	17	–	41	17	24	2.1 ^{+0.2}	20.75	
63	31.5	400	200	20	–	44	20	27.5	2.1 ^{+0.2}	20.75	

1) Suitable for 10-32 UNF

· ¶ · Note: This product conforms with the ISO 1179-1 standard and the ISO 228-1 standard.

Linear drives DGC-N-G, NPT

Technical data

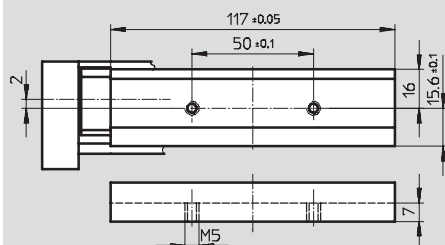
FESTO

Dimensions

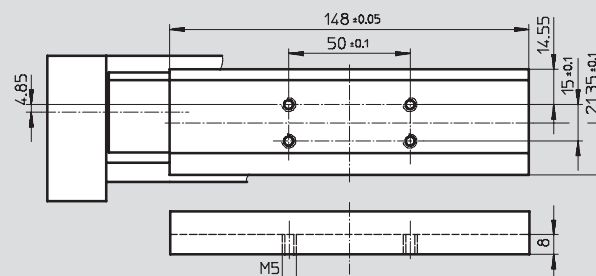
Download CAD data → www.festo.com

Slide – View A

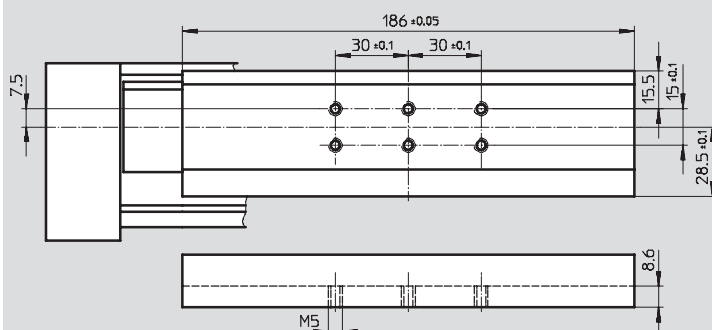
Ø 18



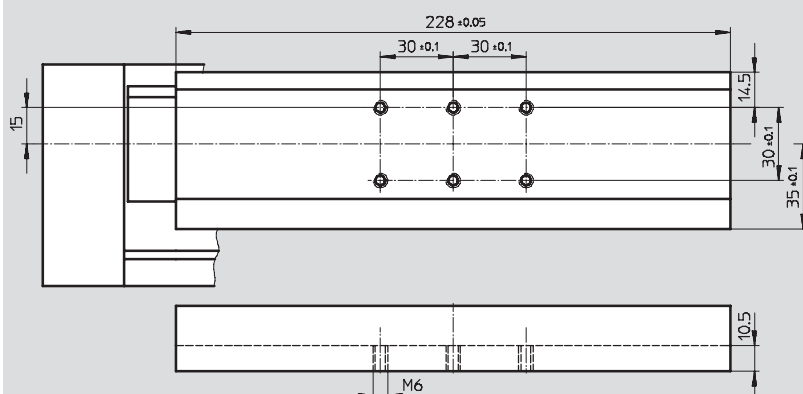
Ø 25



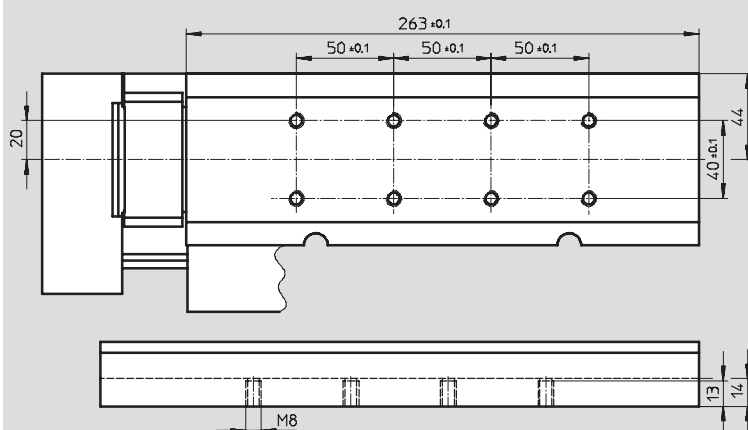
Ø 32



Ø 40



Ø 50



Linear drives DGC-N-G, NPT

Technical data

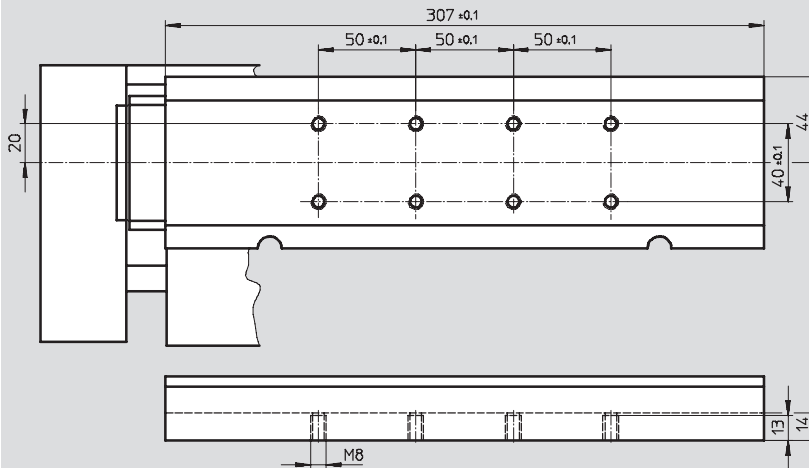
FESTO

Dimensions

Download CAD data → www.festo.com

Slide – View A

Ø 63



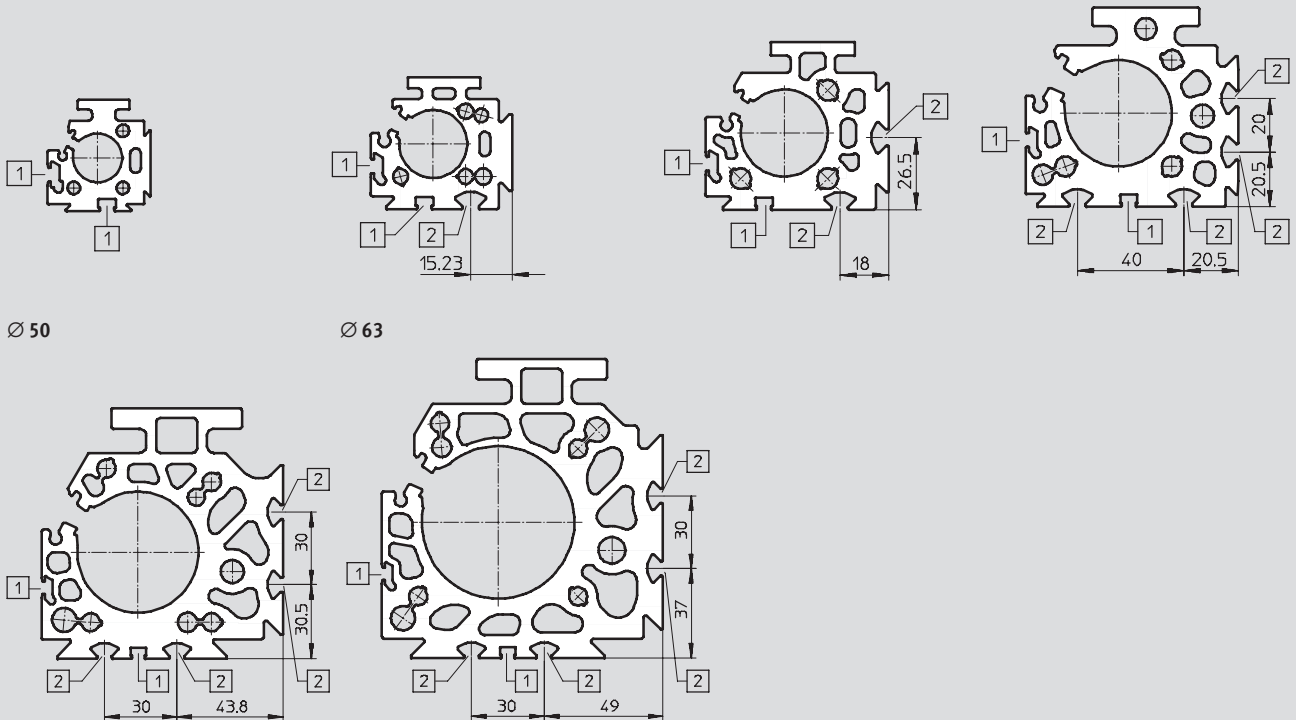
Profile barrel

Ø 18

Ø 25

Ø 32

Ø 40



1 Sensor slot for proximity sensor

2 Mounting slot for slot nut

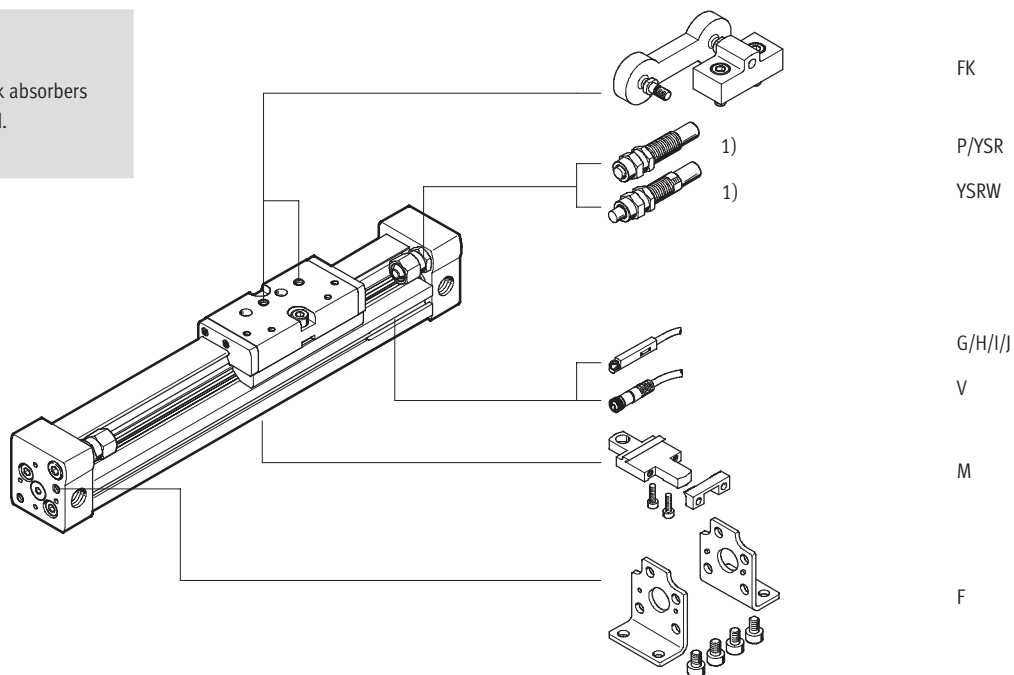
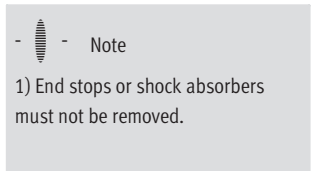
Linear drives DGC-N-G, NPT

Ordering data – Modular products

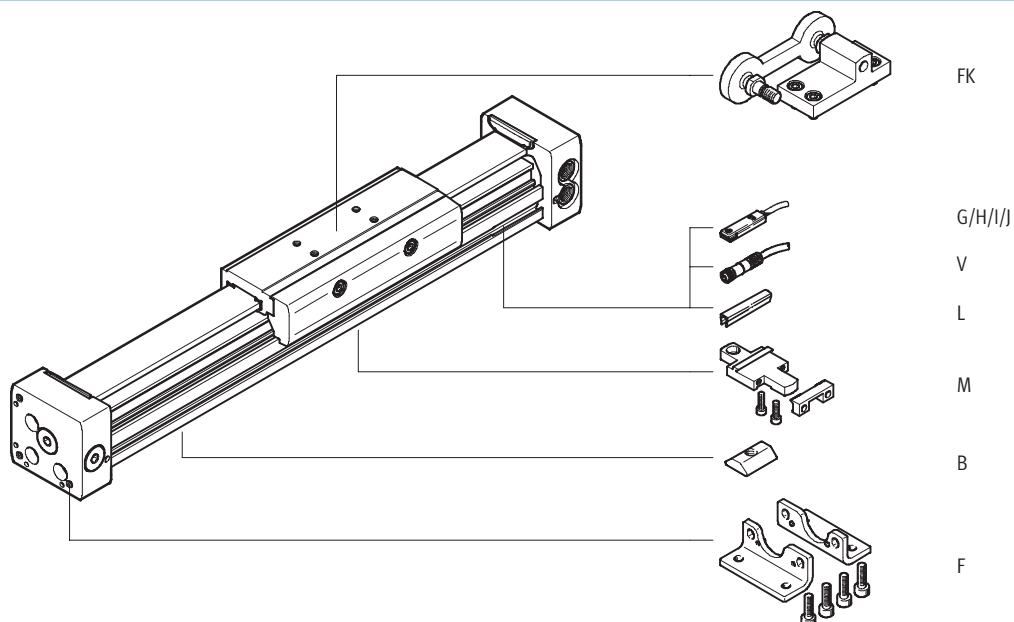
Order code
Mandatory data/options

Mandatory data/options

DGC-N-8/-12



DGC-N-18 ... 63



Linear drives DGC-N-G, NPT

Ordering data – Modular products

FESTO

Ordering table												
Size		8	12	18	25	32	40	50	63	Condi- tions	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

DGC - **N** - - - **G** - - **A** **ZUB** - -

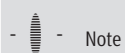
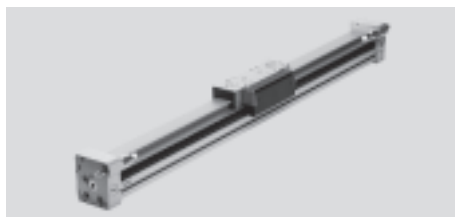
Ordering data – Wearing parts kits

Piston Ø	Part No.	Type	Piston Ø	Part No.	Type
8	665 333	DGC-8-G	32	684 488	DGC-32
12	665 334	DGC-12-G	40	684 489	DGC-40
18	684 486	DGC-18	50	719 825	DGC-50
25	684 487	DGC-25	63	719 826	DGC-63

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

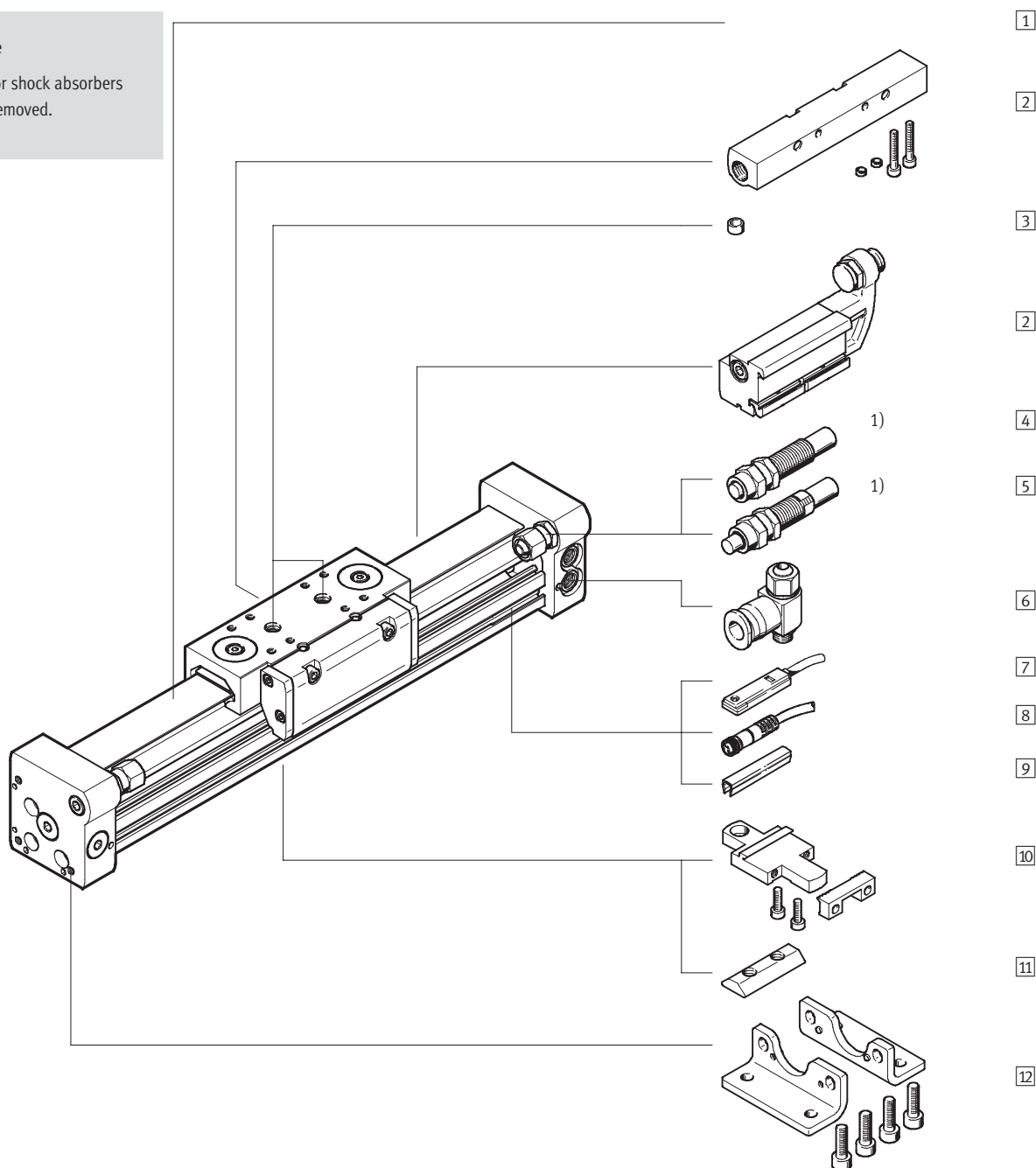
Peripherals overview

FESTO



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 Ø	Brief description	→ Page/Internet
1 Linear drive DGC-N-GF	18 ... 63	Linear drive without accessories, plain-bearing guide.	28
2 Mechanical end-position limiter YWZ	18 ... 63	For variable end-position adjustment, e.g. for format adjustments.	68
3 Centring pin/sleeve ¹⁾ ZBS/ZBH	18 ... 63	For centring loads and attachments on the slide.	72
– 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.	72
7 Proximity sensor G/H/I/J	18 ... 63	For sensing the slide position.	73
8 Plug socket with cable V	18 ... 63	For proximity sensor.	74
9 Slot cover L	18 ... 63	For protecting against ingress of dirt and securing proximity sensor cables.	72
10 Profile mounting M	18 ... 63	Simple and precise mounting option via dovetail connection.	64
11 Slot nut B	25 ... 63	For mounting attachments.	72
12 Foot mounting F	18 ... 63	For mounting on end cap.	60

1) Included in the scope of delivery of the drive

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

FESTO

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

FESTO

Type codes

→		+ ZUB	-	F		2B	2G		2L		
Accessories											
ZUB	Accessories enclosed separately										
Foot mounting											
F	Foot mounting										
Profile mounting											
...M	Profile mounting										
Slot nut											
...B	For mounting slot										
Proximity sensor											
...G	With cable, 2.5 m										
...H	With plug										
...I	Contactless with cable, 2.5 m										
...J	Contactless with plug										
Plug socket with cable											
...V	2.5 m										
Slot cover											
...L	For sensor slot										
Mechanical end-position limiter											
YWZ1	Variable end position, at one end										
YWZ2	Variable end position, at both ends										
Manual											
0	Express waiver – no operating instructions to be included										

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

Technical data

Function

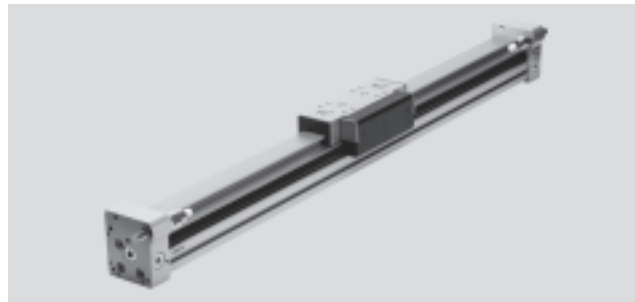


www.festo.com

Wearing parts kits

→ 39

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



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					
Constructional design	Rodless drive					
Driver principle	Slotted cylinder, mechanically coupled					
Guide	Plain-bearing guide					
Mounting position	Any					
Cushioning	PPV	Adjustable at both ends				
→ 31	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 with the ISO 1179-1 standard and the ISO 228-1 standard.

Operating and environmental conditions						
Piston Ø	18	25	32	40	50	63
Operating pressure [bar]	2 ... 8			1.5 ... 8		
Operating medium	Filtered compressed air, lubricated or unlubricated					
Ambient temperature ¹⁾ [°C]	-10 ... +60					
Corrosion resistance class CRC ²⁾	2					

1) Note operating range of proximity sensors

2) 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.

Force [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 at the end positions	→ 31					

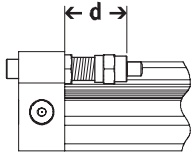
Weight [g]						
Piston Ø	18	25	32	40	50	63
Basic weight with 0 mm stroke	763	1,609	2,532	5,252	10,065	16,308
Additional weight per 10 mm stroke	23	35	55	76	117	180
Moving load	267	526	824	1,725	3,319	5,226

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

Technical data

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Adjustable end-position range d [mm]



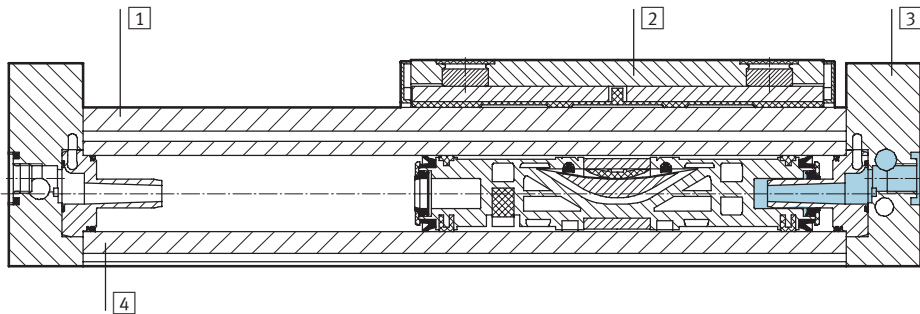
Note
The permissible kinetic energy decreases if the stroke is reduced

with PPV adjustable cushioning at both ends.

Piston Ø	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



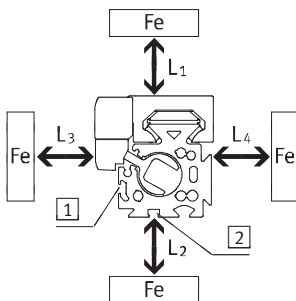
Linear drives		
1	Guide rail	Anodised aluminium
2	Slide	Anodised aluminium
3	End cap	Anodised aluminium
4	Cylinder barrel	Anodised aluminium
–	Piston seal	Polyurethane
–	Sealing band/cover strip	Polyurethane
–	Slide elements	Polyacetal

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-GF, with plain-bearing guide, NPT

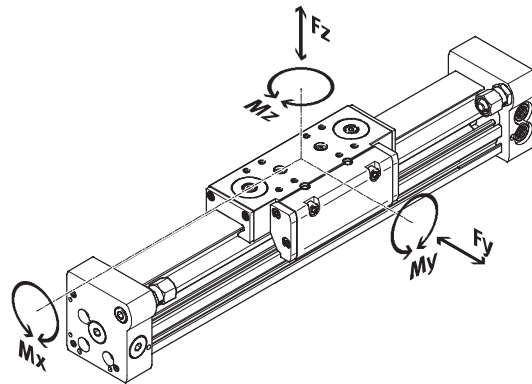
Technical data

FESTO

Characteristic load values

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

They 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 referred to a speed of travel 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

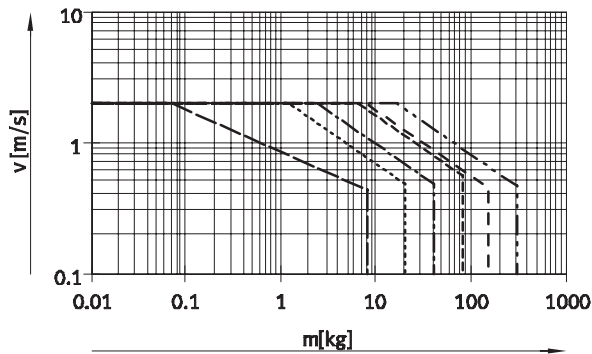
 Note

ProDrive
sizing software
→ www.festo.com

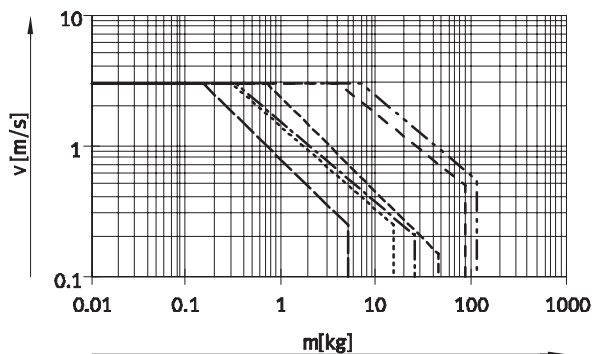
Linear drives DGC-N-GF, with plain-bearing guide, NPT

Technical data

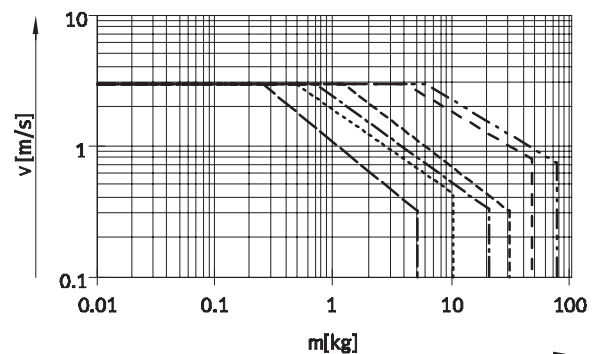
Maximum permissible piston speed v as a function of effective load m With PPV cushioning



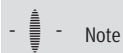
With YSR cushioning



With YSRW cushioning



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



Note

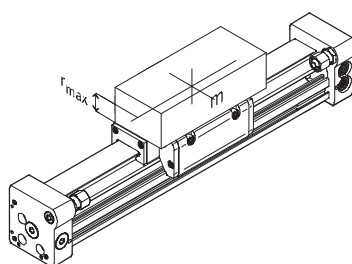
This data represents the maximum values that can be achieved. Values fluctuate in practice relative to the

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 mass.



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

FESTO

Technical data

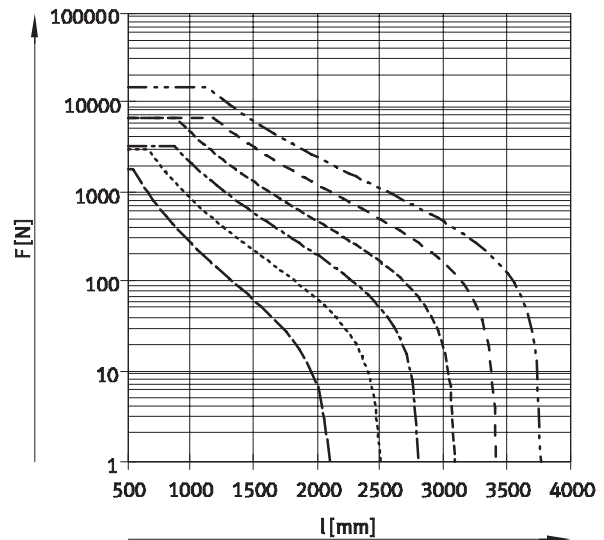
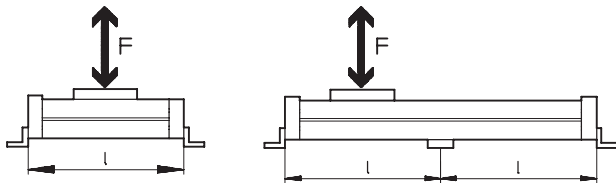
Number of profile mountings MUC as a function of force due to weight F and support span l

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

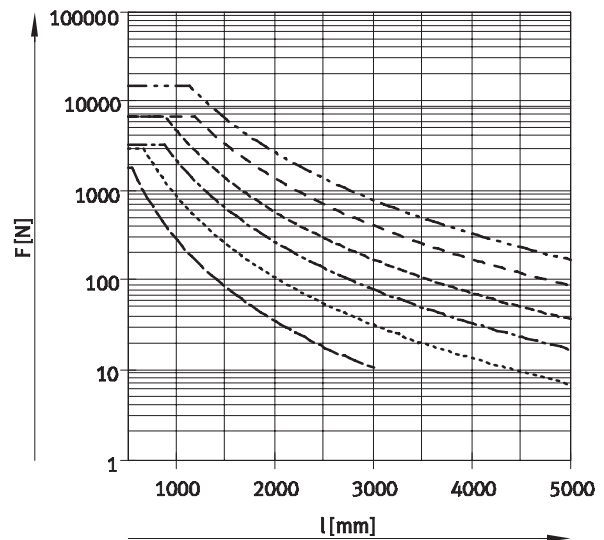
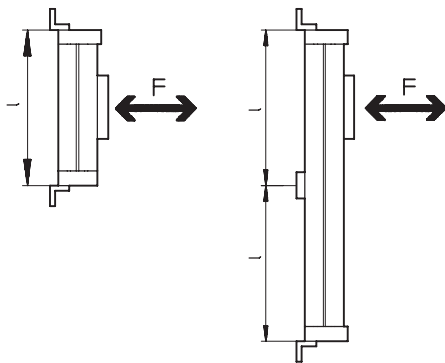
help to determine the maximum permissible support span as a function

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

Horizontal mounting position



Vertical mounting position



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

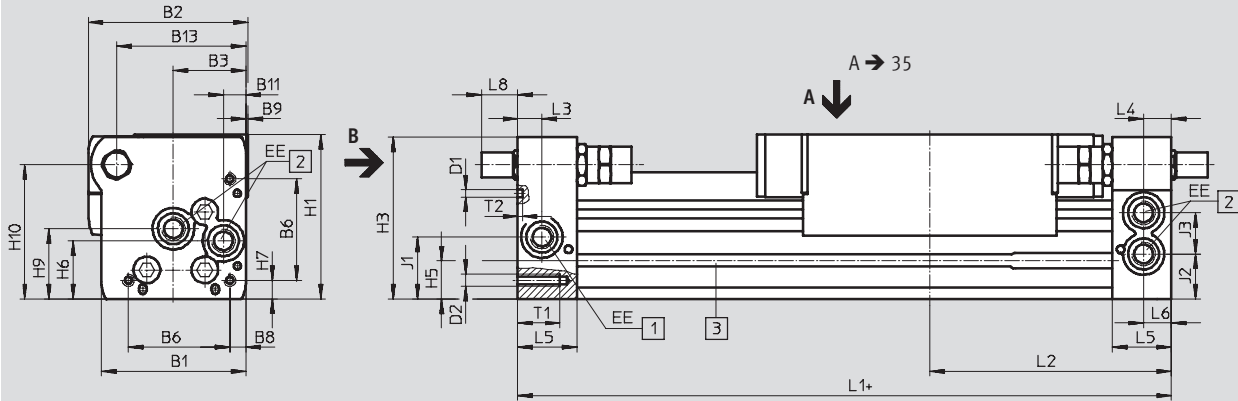
Technical data

FESTO

Dimensions

Download CAD data → www.festo.com

Ø 18 ... 40

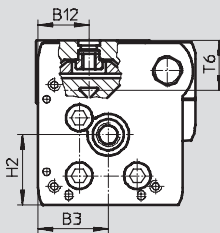
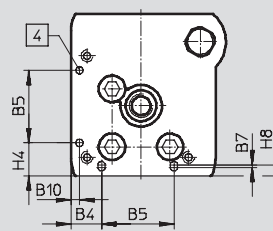
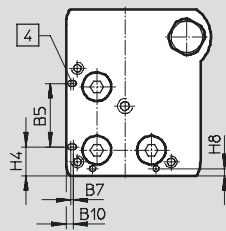


View B
Ø 18

Ø 25 ... 40

Ø 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



Ø	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

Ø	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

Ø	J3	L1	L2	L3	L4	L5	L6	L8			T1	T2	T6	Stroke tolerance
[mm]		+0.9/–0.2						PPV	YSR	YSRW				
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 with the ISO 1179-1 standard and the ISO 228-1 standard.

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

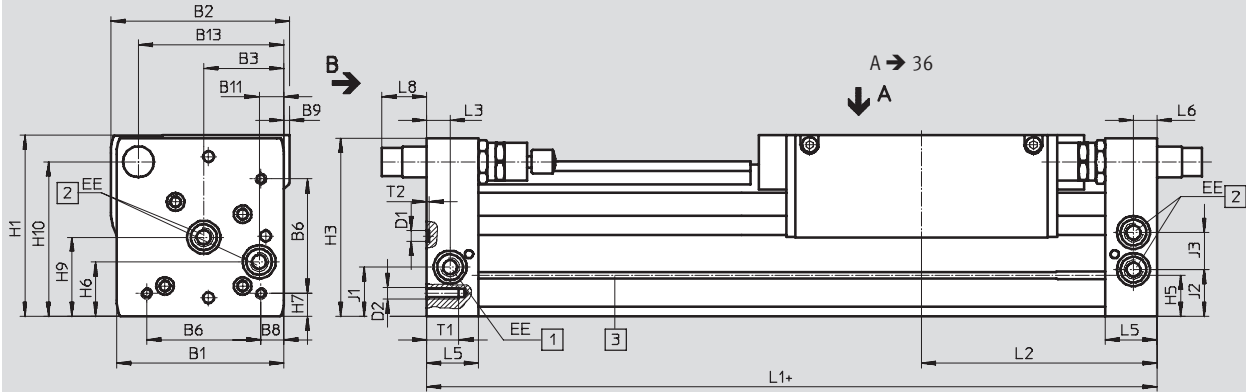
Technical data

FESTO

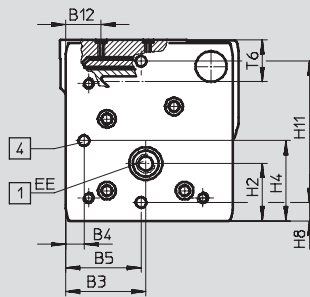
Dimensions

Download CAD data → www.festo.com

Ø 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

Ø	B1	B2	B3	B4	B5	B6	B8	B9	B11	B12	B13	D1	D2
[mm]					±0.05							Ø 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	

Ø	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

Ø	J2	J3	L1	L2	L3	L5	L6	L8			T1	T2	T6	Stroke tolerance
[mm]			+0.9/–0.2					PPV	YSR	YSRW		+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 with the ISO 1179-1 standard and the ISO 228-1 standard.

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

Technical data

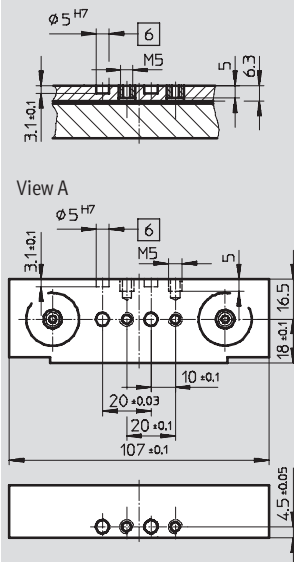
FESTO

Dimensions

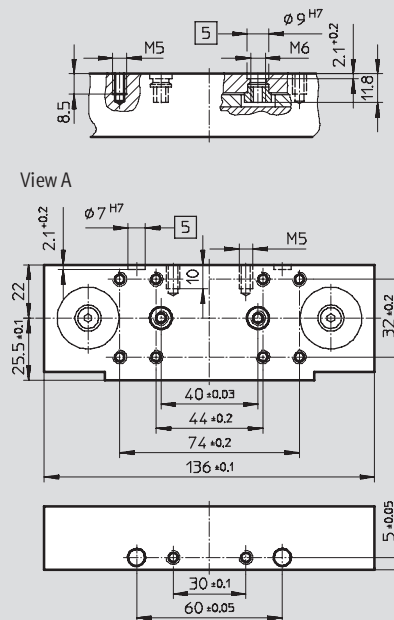
Download CAD data → www.festo.com

Slide

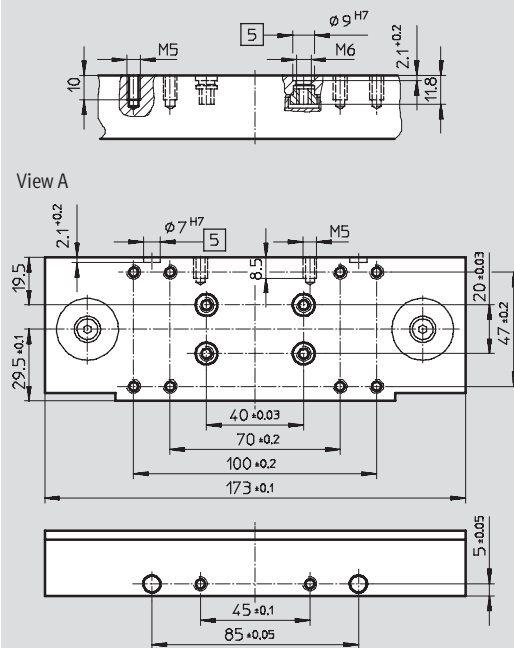
Ø 18



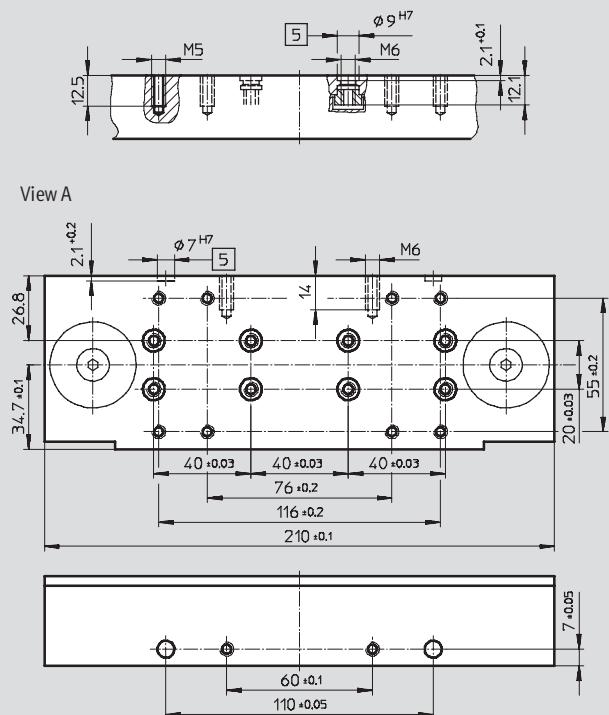
Ø 25



Ø 32



Ø 40



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

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

Technical data

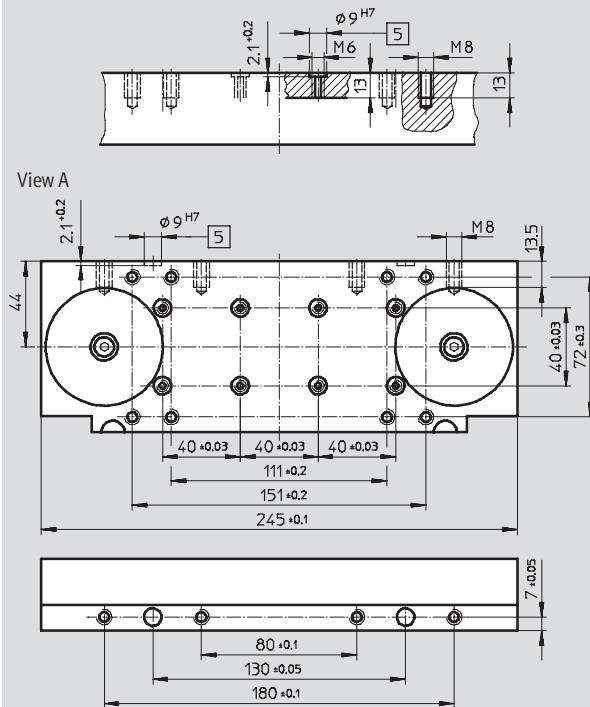
FESTO

Dimensions

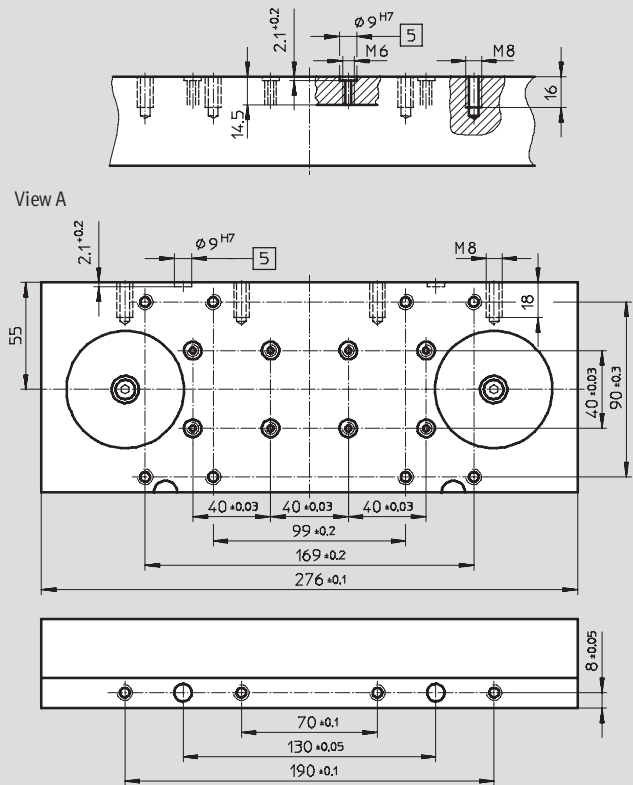
Download CAD data → www.festo.com

Slide

Ø 50



Ø 63



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

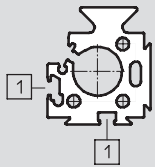
Linear drives DGC-N-GF, with plain-bearing guide, NPT

Technical data

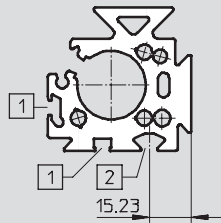
FESTO

Profile barrel

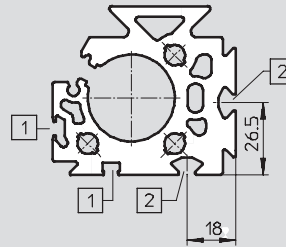
Ø 18



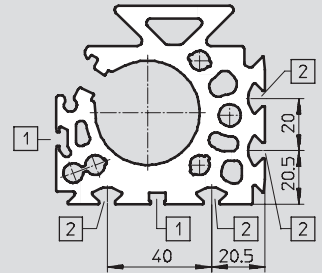
Ø 25



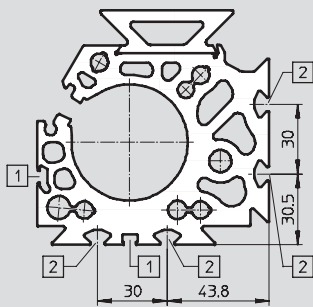
Ø 32



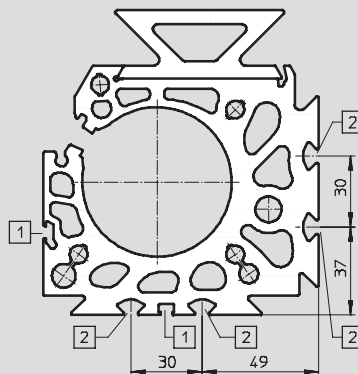
Ø 40



Ø 50



Ø 63



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

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

Ordering data – Modular products

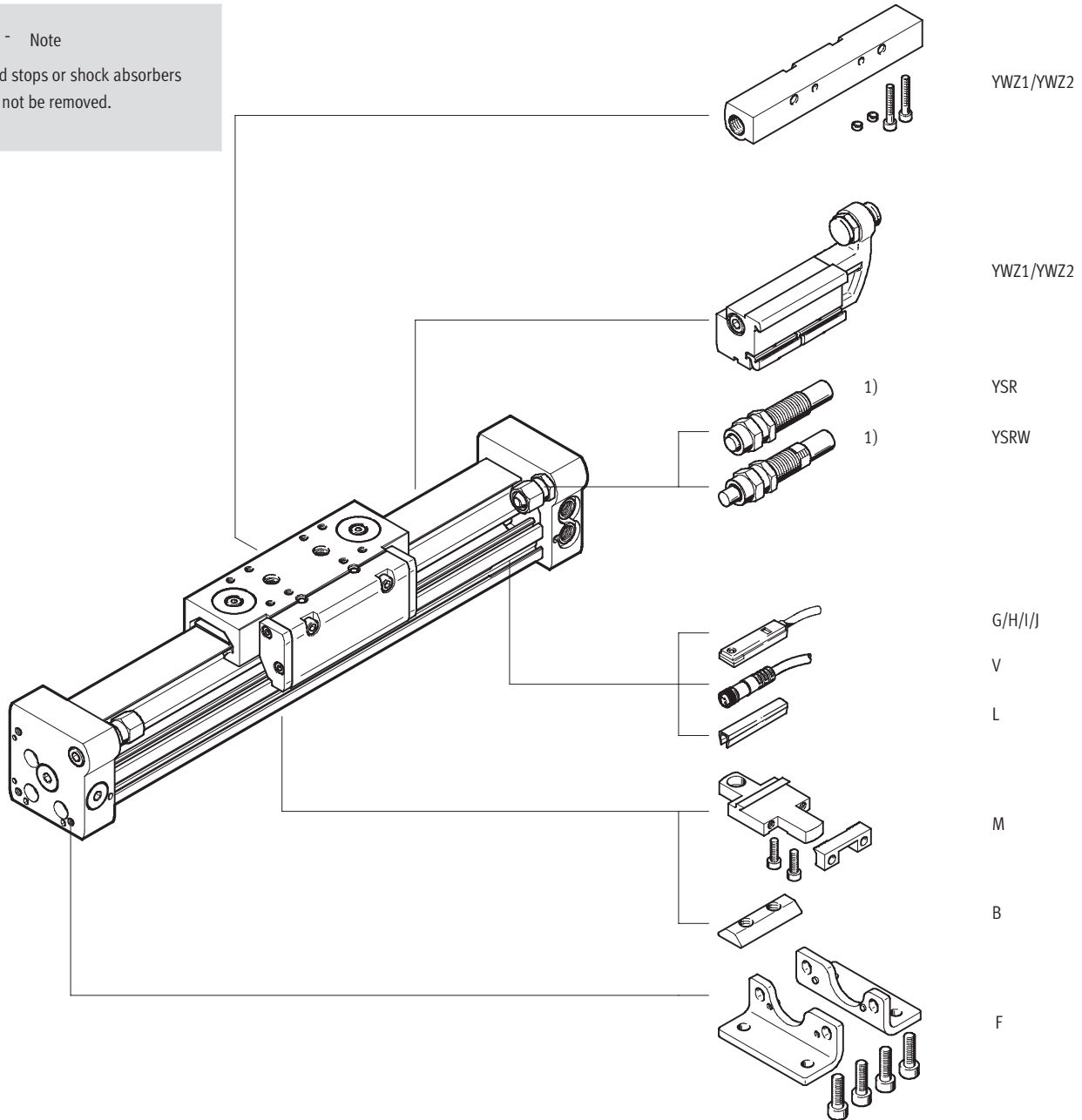
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Order code

Mandatory data/options

 Note

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



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

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Ordering data – Modular products

Ordering table										
Size	18	25	32	40	50	63	Condi- tions	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							...G		
	Plug M8							...H		
Proximity sensor, contactless, PNP	Cable 2.5 m							...I		
	Plug M8							...J		
Plug socket with cable	M8, 2.5 m							...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

	DGC	-	N	-		-		-	GF	-		-	A		ZUB	-		-	
--	-----	---	---	---	--	---	--	---	----	---	--	---	---	--	-----	---	--	---	--

Ordering data – Wearing parts kits						
Piston Ø	Part No.	Type		Piston Ø	Part No.	Type
18	684 486	DGC-18		40	684 489	DGC-40
25	684 487	DGC-25		50	719 825	DGC-50
32	684 488	DGC-32		63	719 826	DGC-63

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

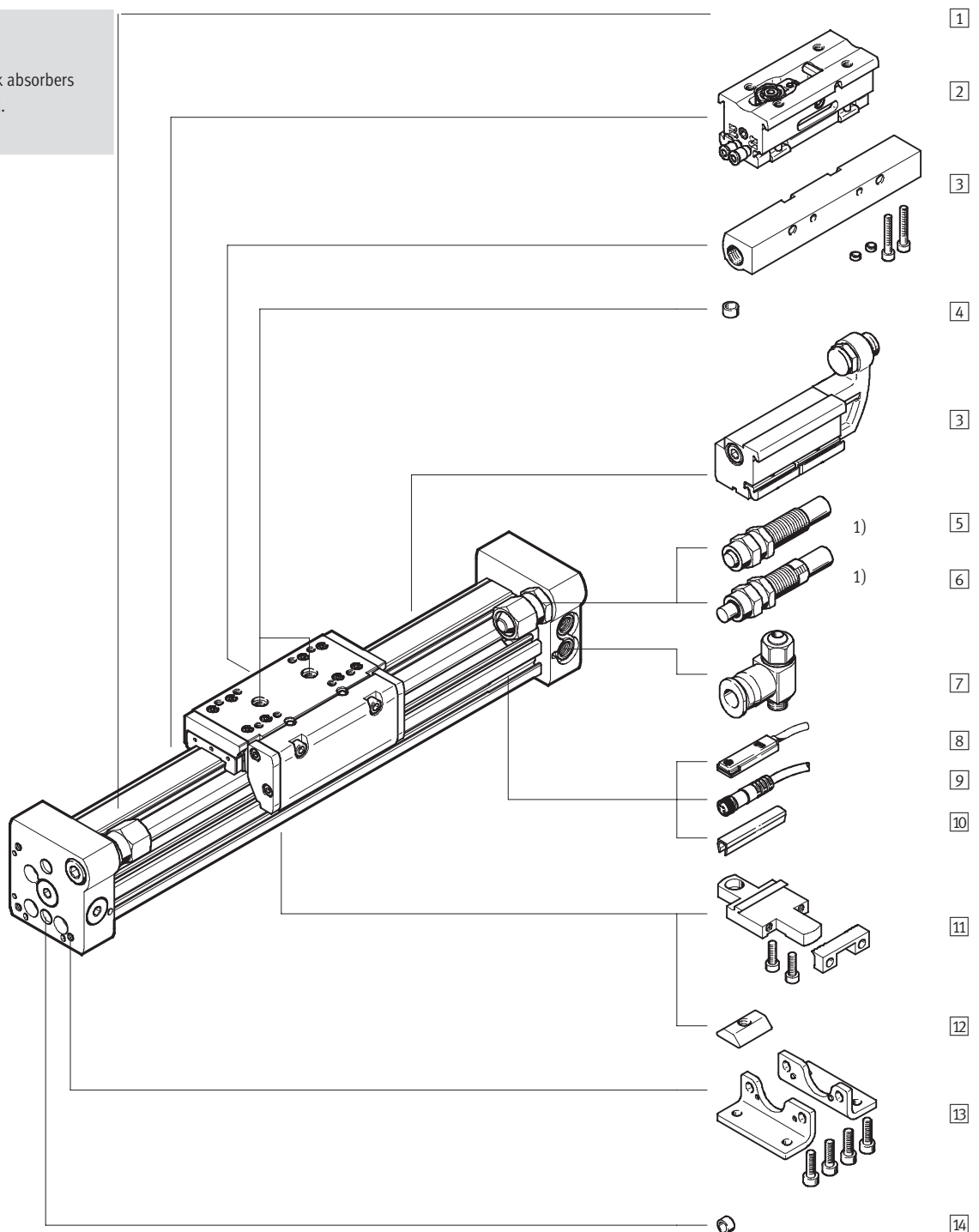
Peripherals overview

FESTO



 - Note

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



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

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Peripherals overview

Variants and accessories			
Type	For piston Ø	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.	70
3 Mechanical end-position limiter YWZ	18 ... 63	For variable end-position adjustment, e.g. for format adjustments.	68
4 Centring pin/sleeve ¹⁾ ZBS/ZBH	8 ... 63	For centring loads and attachments on the slide.	72
– Cushioning P	8, 12	Non-adjustable, flexible cushioning. Used only at low speeds.	58
– Cushioning PPV	18 ... 63	Adjustable pneumatic end-position cushioning. Used at medium speeds.	58
5 Shock absorber YSR	8 ... 63	Self-adjusting hydraulic shock absorber with spring return and linear cushioning characteristic.	58
6 Shock absorber YSRW	8 ... 63	Self-adjusting hydraulic shock absorber with spring return and progressive cushioning characteristic.	58
7 One-way flow control valve GRLA	8 ... 63	For regulating speed.	72
8 Proximity sensor G/H/I/J	8 ... 63	For sensing the slide position.	73
9 Plug socket with cable V	8 ... 63	For proximity sensor.	74
10 Slot cover L	18 ... 63	For protecting against ingress of dirt and securing proximity sensor cables.	72
11 Profile mounting M	8 ... 63	Simple and precise mounting option via dovetail connection.	64
12 Slot nut B	25 ... 63	For mounting attachments.	72
13 Foot mounting F	8 ... 63	For mounting on end cap.	60
14 Centring pin/sleeve ¹⁾ ZBS/ZBH	8 ... 63	For centring the drive without foot mountings (user-specific).	72

1) Included in the scope of delivery of the drive

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

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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	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																		
Slide																			
GP	Protected recirculating ball bearing guide																		
Additional slide																			
KL	Additional slide at left																		
KR	Additional slide at right																		

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

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Type codes

		+ ZUB	- F		2B	2G	2V				
Accessories											
ZUB	Accessories enclosed separately										
Foot mounting											
F	Foot mounting										
Profile mounting											
...M	Profile mounting										
Slot nut											
...B	For mounting slot										
Proximity sensor											
...G	With cable, 2.5 m										
...H	With plug										
...I	Contactless with cable, 2.5 m										
...J	Contactless with plug										
Plug socket with cable											
...V	2.5 m										
Slot cover											
...L	For sensor slot										
Mechanical end-position limiter											
YWZ1	Variable end position, at one end										
YWZ2	Variable end position, at both ends										
Intermediate position module											
Z1	1 intermediate position										
Z2	2 intermediate positions										
Z3	3 intermediate positions										
Manual											
0	Express waiver – no operating instructions to be included										

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

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Technical data

Function



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Wearing parts kits
→ 58

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



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								
Constructional design	Rodless drive								
Driver 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 with the ISO 1179-1 standard and the ISO 228-1 standard.

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	Filtered compressed air, lubricated or unlubricated							
Ambient temperature ¹⁾ [°C]	−10 ... +60							
Corrosion resistance class CRC ²⁾	1							

1) Note operating range of proximity sensors

2) 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.

Force [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 at the end positions	→ 47							

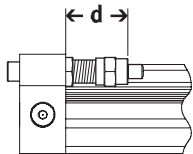
Linear drives DGC-N-KF, with recirculating ball bearing guide, NPT

FESTO

Technical data

Weight [g]								
Piston Ø	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

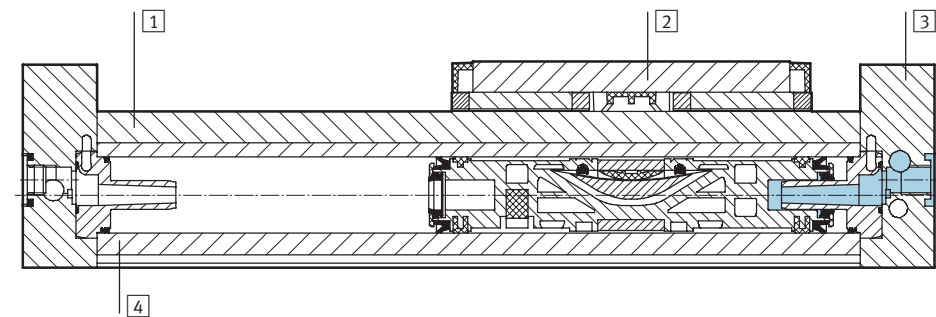
The permissible kinetic energy decreases if the stroke is reduced

with PPV adjustable cushioning at both ends.

Piston Ø	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 strip	Polyurethane
–	Note on materials	Free of copper, PTFE and silicone

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

Technical data

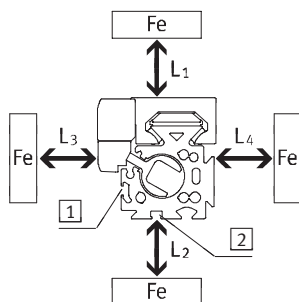
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Influence of ferritic materials on proximity sensors

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]).

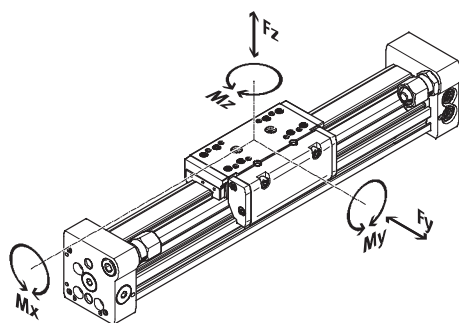


Piston Ø		8	12	18	25	32	40	50	63
Distance L1	[1] [mm]	0	0	0	0	0	0	0	0
	[2] [mm]	–	–	0	0	0	0	0	0
Distance L2	[1] [mm]	20	10	10	10	0	0	0	0
	[2] [mm]	–	–	25	25	25	25	25	25
Distance L3	[1] [mm]	30	25	25	25	25	25	25	25
	[2] [mm]	–	–	10	10	0	0	0	0
Distance L4	[1] [mm]	0	0	0	0	0	0	0	0
	[2] [mm]	–	–	0	0	0	0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

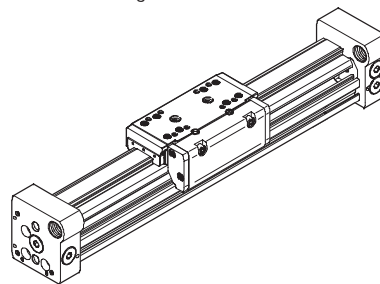
Characteristic load values for linear drive with recirculating ball bearing guide and guide

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

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



GP – Protected guide



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

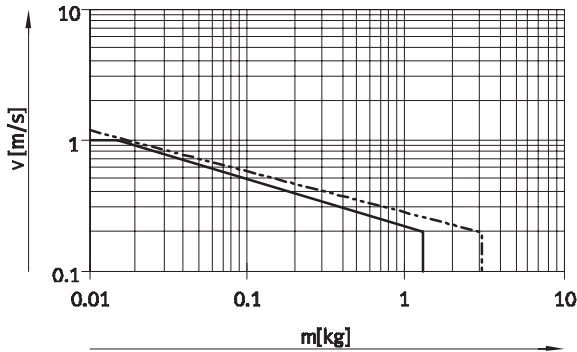
Linear drives DGC-N-KF, with recirculating ball bearing guide, NPT

Technical data

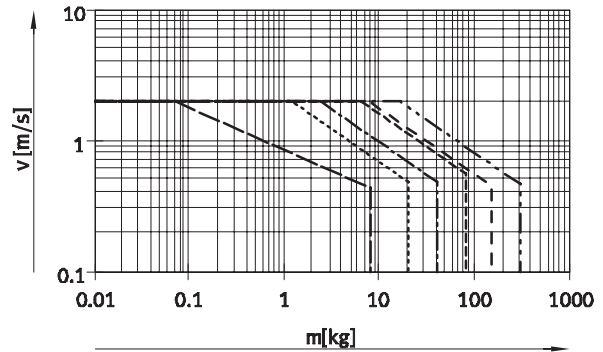
FESTO

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

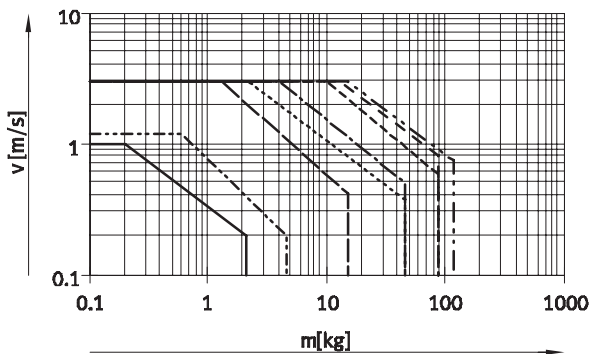
Piston $\varnothing$ 8/12 with P cushioning



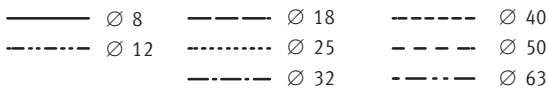
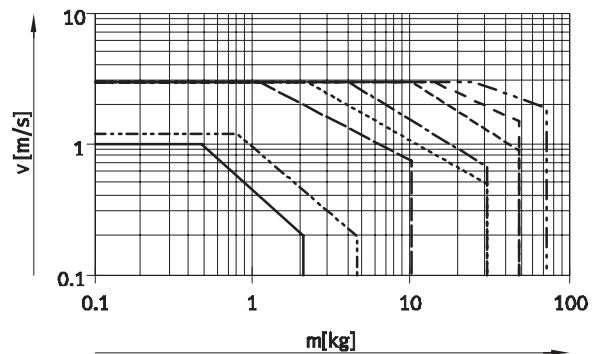
Piston $\varnothing$ 18 ... 63 with PPV cushioning



Piston $\varnothing$ 8 ... 63 with YSR cushioning



Piston $\varnothing$ 8 ... 63 with YSRW cushioning



This data represents the maximum values that can be achieved. Values fluctuate in practice 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

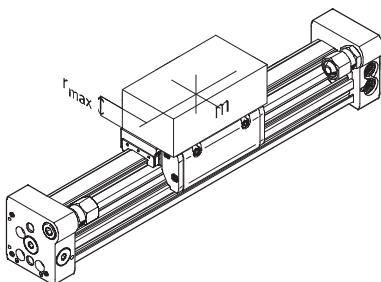
load to be moved must be cushioned using suitable equipment (shock absorbers, stops, etc.), preferably at the centre of gravity of the mass.



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

The data applies 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

FESTO

Technical data

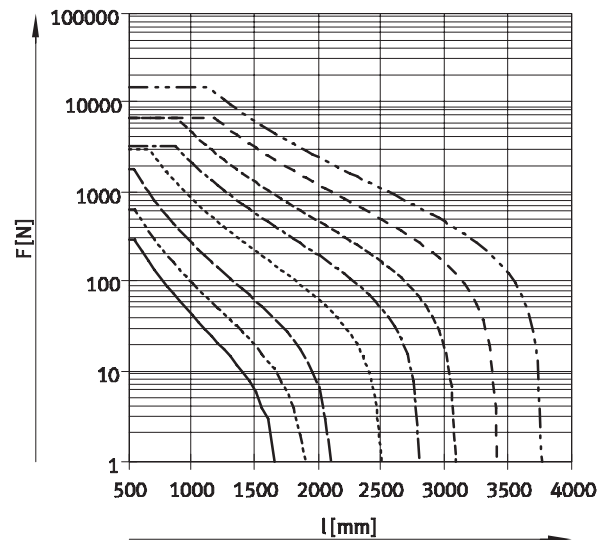
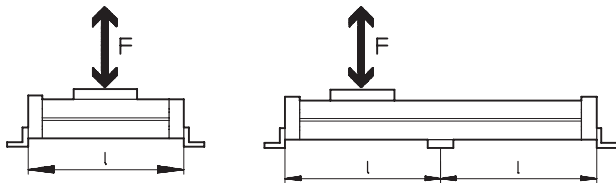
Number of profile mountings MUC as a function of force due to weight F and support span l

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

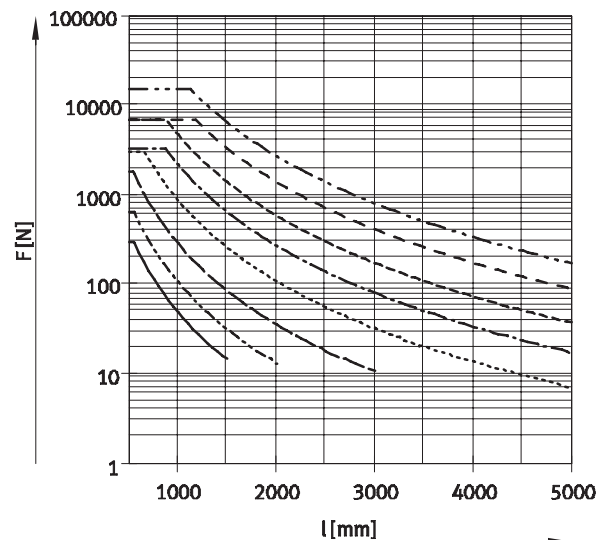
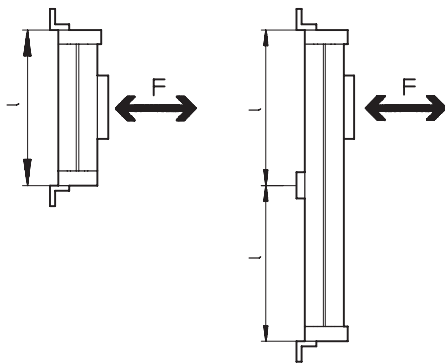
help to determine the maximum permissible support span as a function

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:

$$\begin{aligned}
 l &= \text{stroke length} + L1 \\
 &= 1,500 \text{ mm} + 200 \text{ mm} \\
 &= 1,700 \text{ mm}
 \end{aligned}$$

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

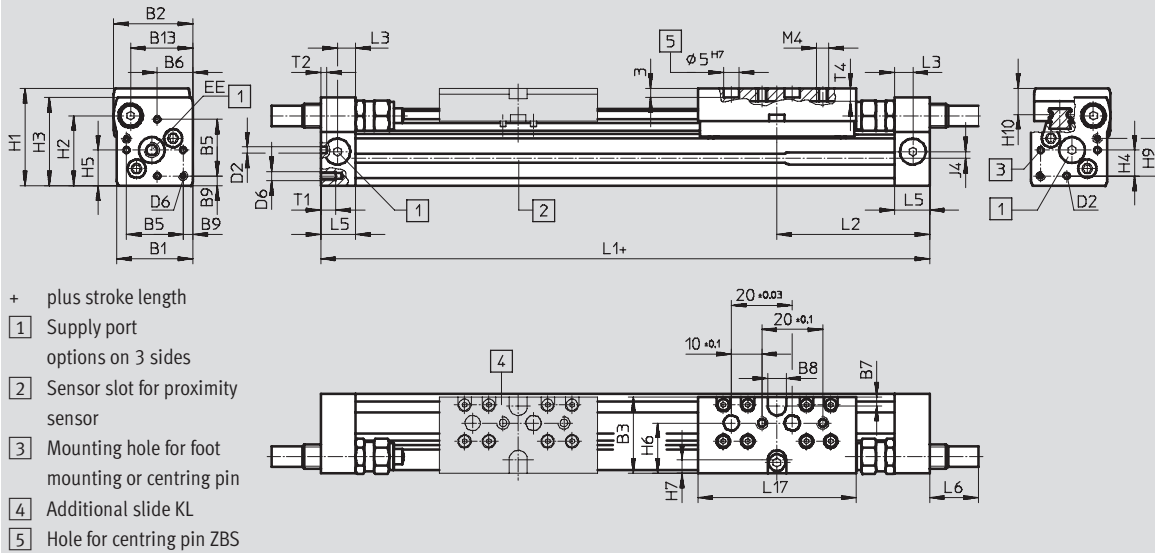
Technical data

FESTO

Dimensions

Download CAD data → www.festo.com

Ø 8 and 12



Ø	B1	B2	B3	B5	B6	B7	B8	B9	B13	D2	D6	EE ¹⁾
[mm]							±0.05	±0.1		Ø H8		
8	25	26	25	18.6	11.7	3	6	3.2	20.5	2	M3	M5
12	30.2	31	31	20.6	13.5	3	8	4.8	25	2	M4	M5

Ø	H1	H2	H3	H4	H5	H6	H7	H9	H10	J4	L1	L2
[mm]											+0.5/ -0.4	
8	32	23	29	8.5	11.7	16.5	4.5	12.3	8.7	2.2	100	50.1
12	37.5	28.5	34.5	8.7	13.5	20.5	5	14.7	9.8	3	125	62.1

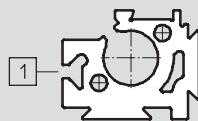
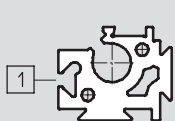
Ø	L3	L5	L6			L17	T1	T2	T4	Stroke tolerance
			P	YSR	YSRW					
8	6	11.5	0	16	16.2	52	5	2	4.3	0 ... 1.7
12	8	16	0	11.3	12.3	65	6	2	5	

1) Suitable for 10-32 UNF

Profile barrel

Ø 8

Ø 12



1 Sensor slot for proximity sensor

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

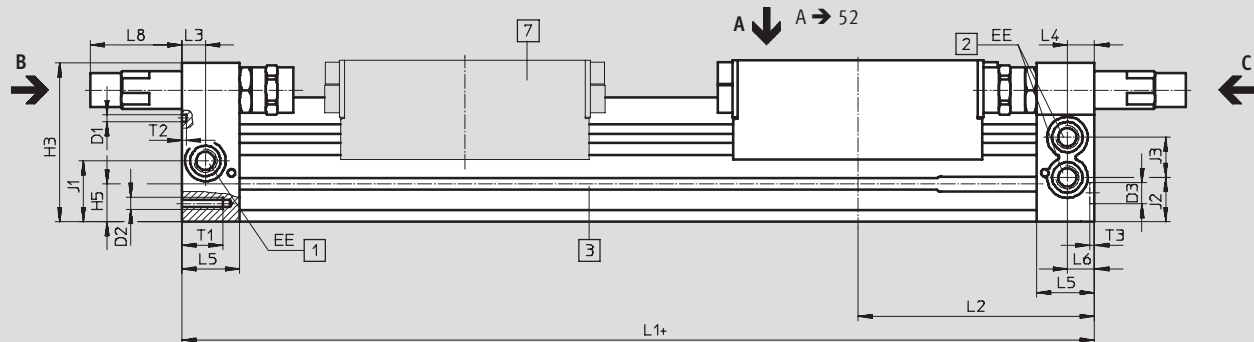
Technical data

FESTO

Dimensions

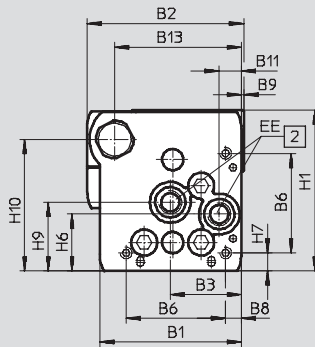
Download CAD data → www.festo.com

Ø 18 ... 40



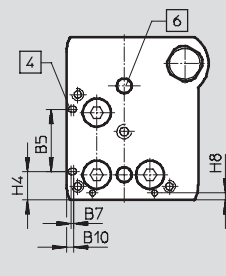
View C

Ø 18 ... 40

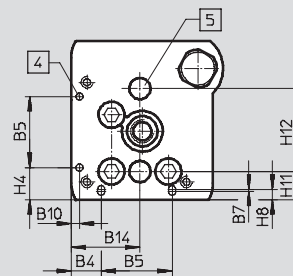


View B

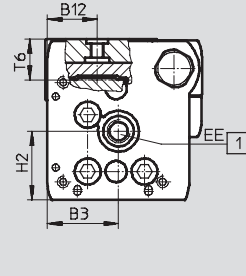
Ø 18



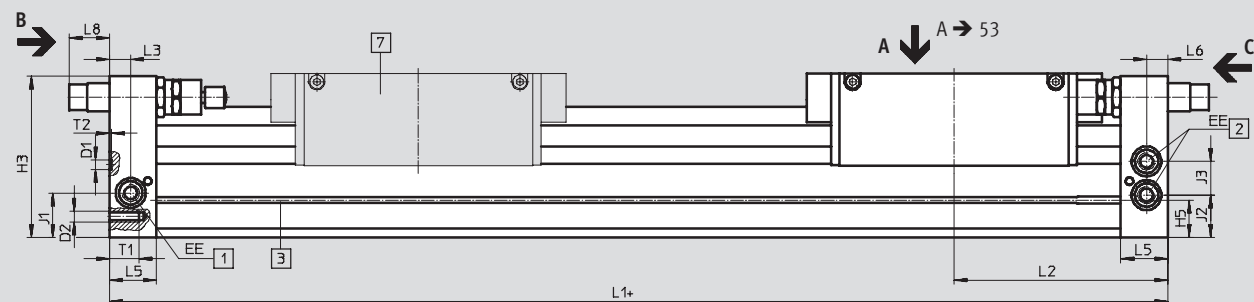
Ø 25 ... 40



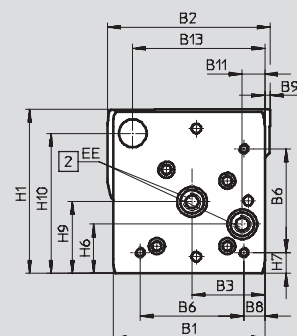
Ø 18 ... 40



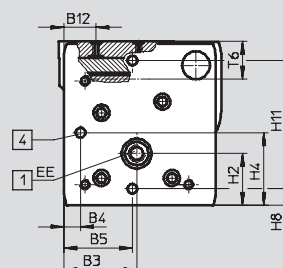
Ø 50/63



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
- [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

FESTO

Technical data

Ø [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

Ø [mm]	B13	B14	D1 Ø	D2	D3 Ø 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	30	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	–	9H7	M8	–	1/4 NPT	124.5	38.5	122.5	52.8	29.3	36
63	123.5	–	9H7	M10	–	3/8 NPT	153.5	48.5	151	68	34.8	46

Ø [mm]	H7	H8	H9	H10	H11	H12 ±0.05	J1	J2	J3	L1	
										KF +0.9/–0.2	KF-GP +0.9/–0.2
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	–

Ø [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 with the ISO 1179-1 standard and the ISO 228-1 standard.

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

Technical data

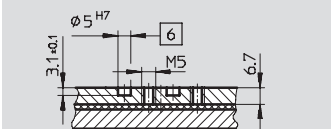
FESTO

Dimensions

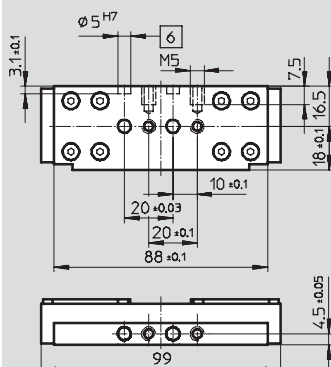
Download CAD data → www.festo.com

Slide

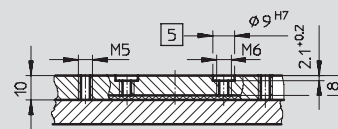
Ø 18



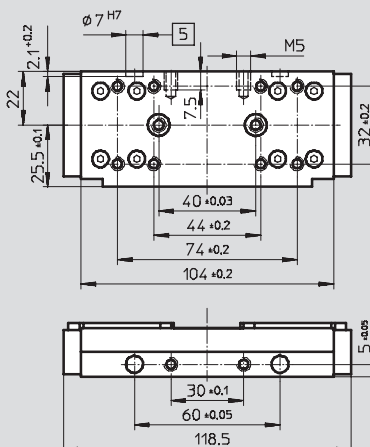
View A



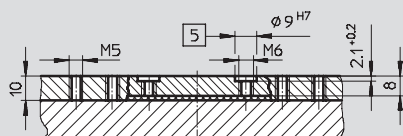
Ø 25



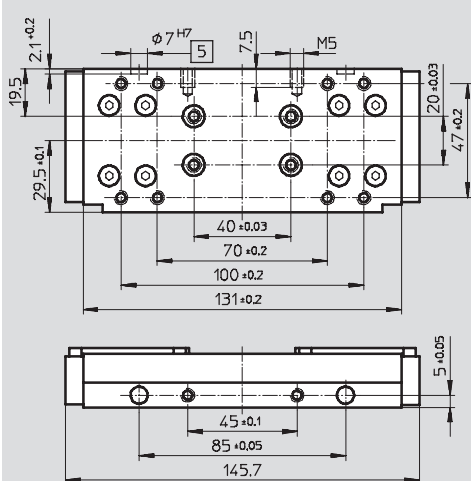
View A



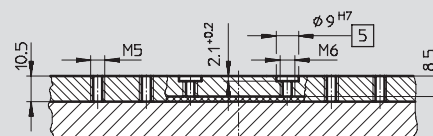
Ø 32



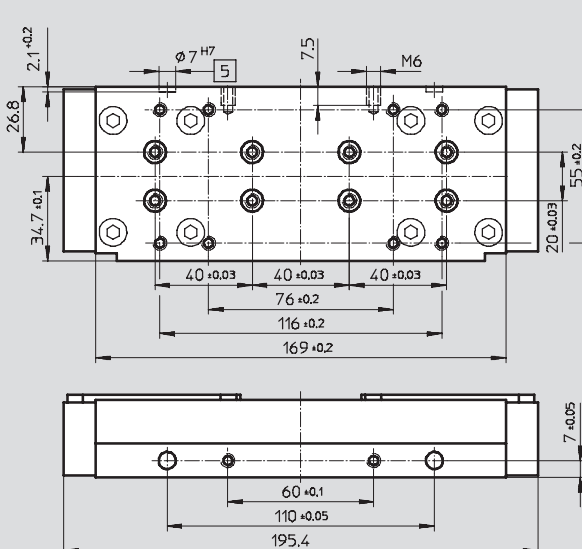
View A



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

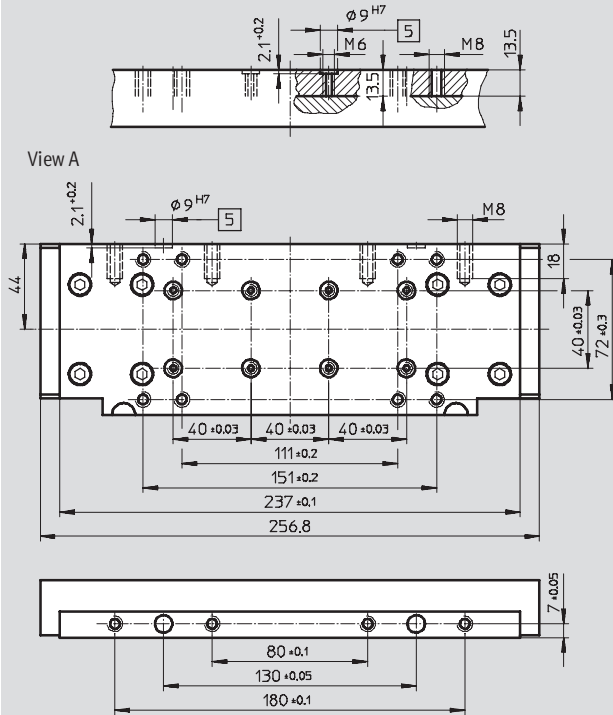
FESTO

Dimensions

Download CAD data → www.festo.com

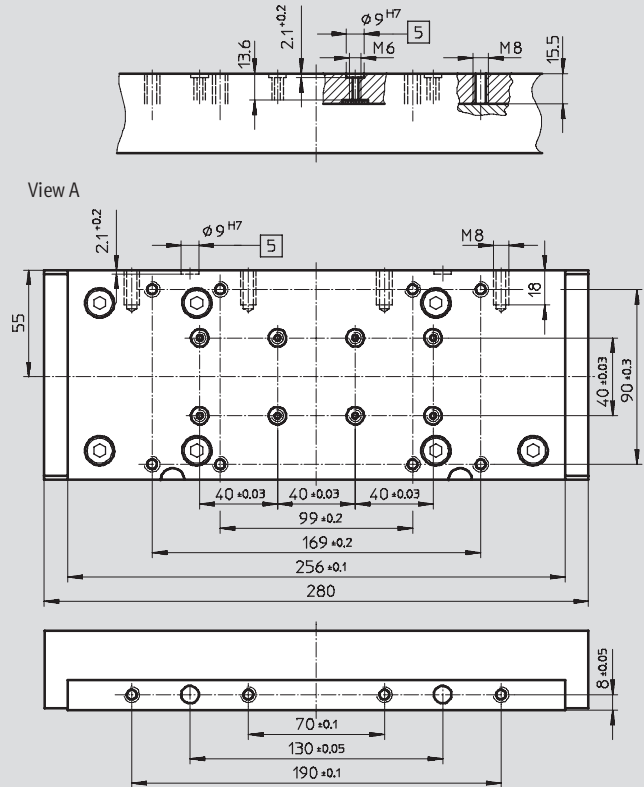
Slide

Ø 50



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

Ø 63



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

FESTO

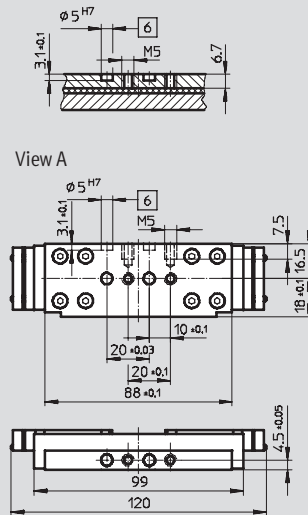
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Dimensions

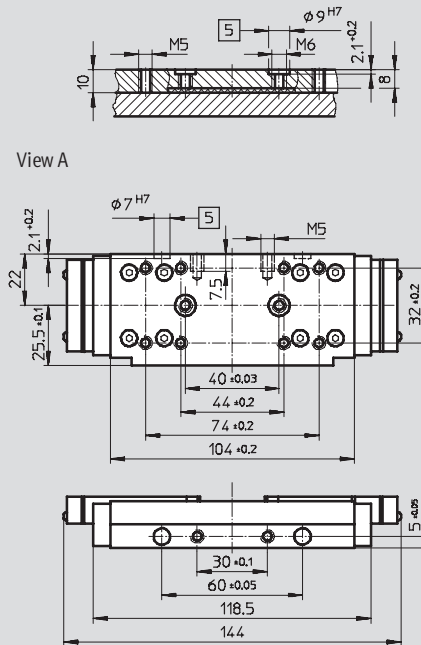
Download CAD data → www.festo.com

Slide, variant GP – Protected recirculating ball bearing guide

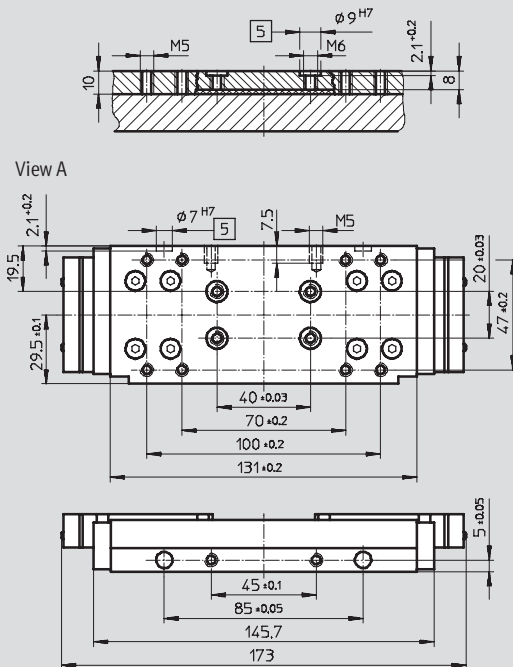
Ø 18



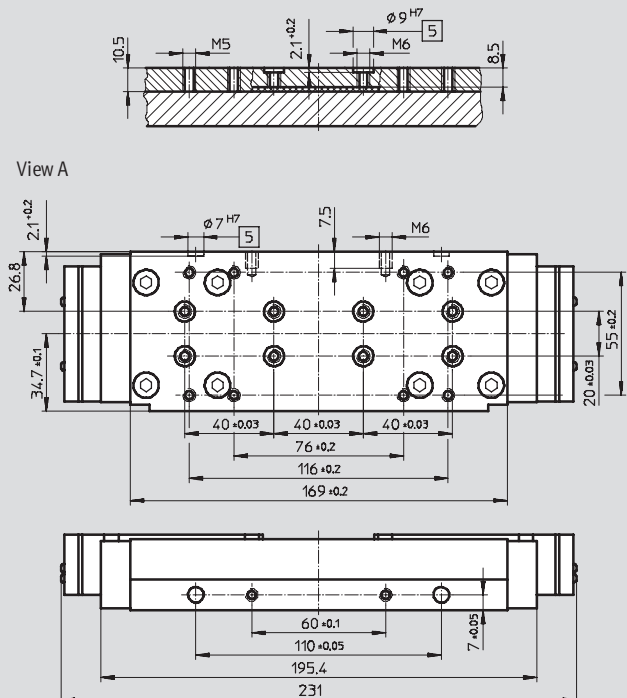
Ø 25



Ø 32



Ø 40



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

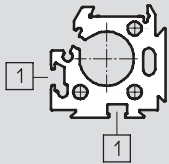
Linear drives DGC-N-KF, with recirculating ball bearing guide, NPT

Technical data

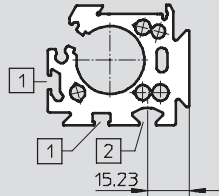
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Profile barrel

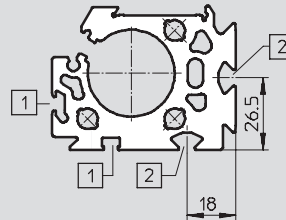
Ø 18



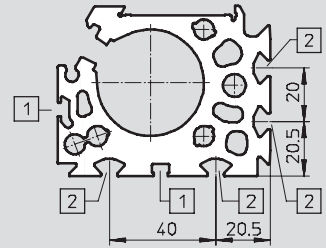
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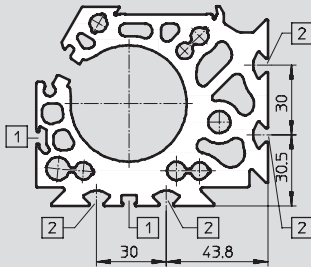
Ø 32



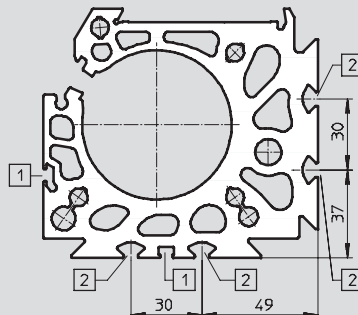
Ø 40



Ø 50



Ø 63



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

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

Ordering data – Modular products

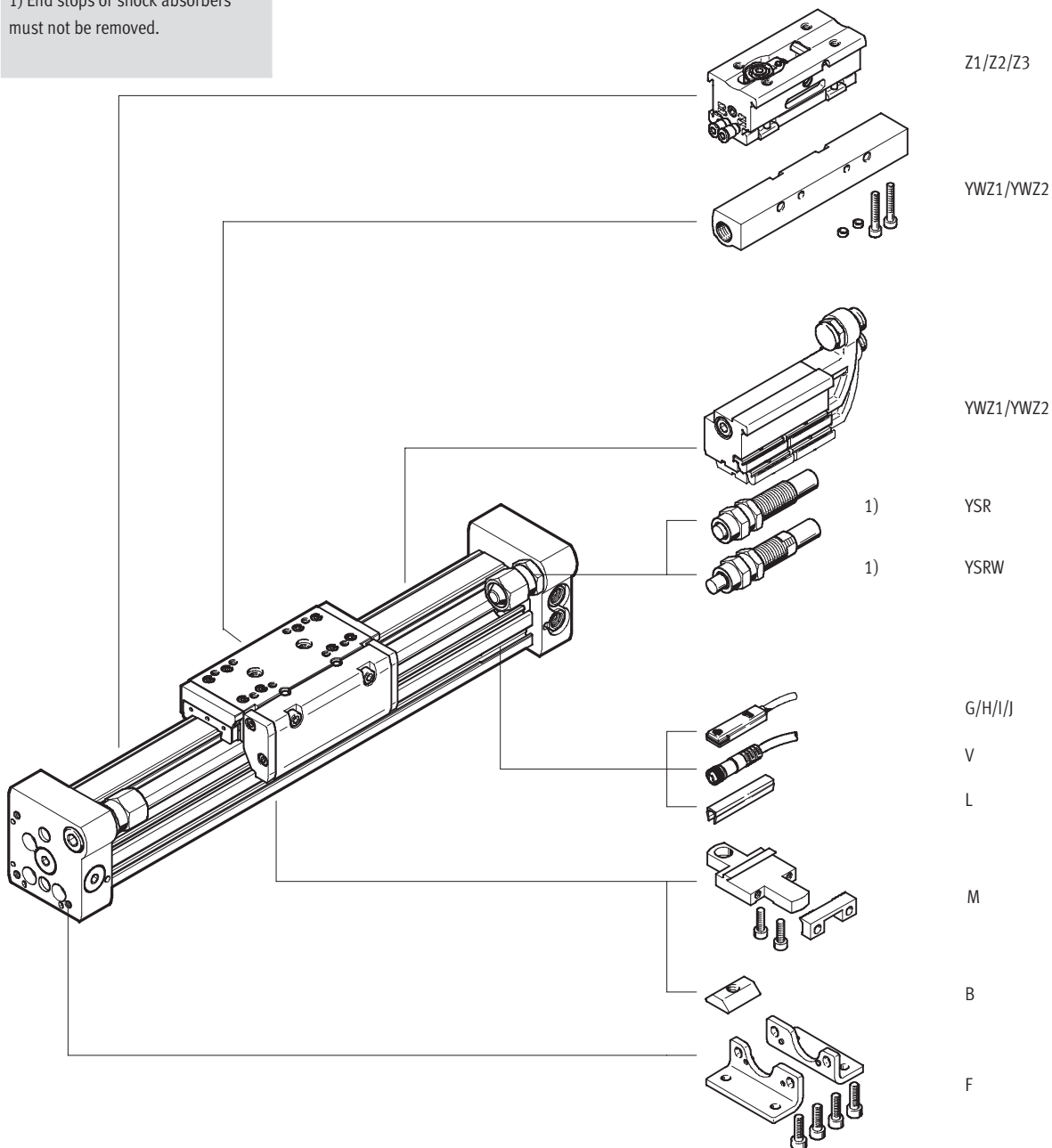
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Order code

Mandatory data/options

 Note

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



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

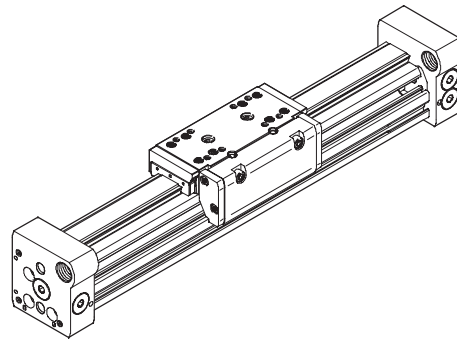
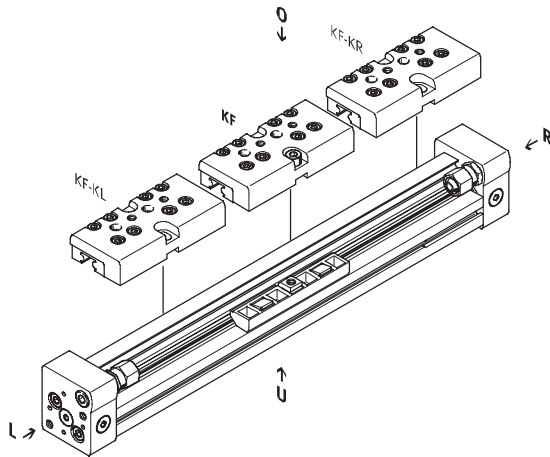
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Ordering data – Modular products

Order code

KL/KR – With additional slide

GP – With protected recirculating ball bearing guide



Effective stroke reduction when ordering an additional slide KL or KR

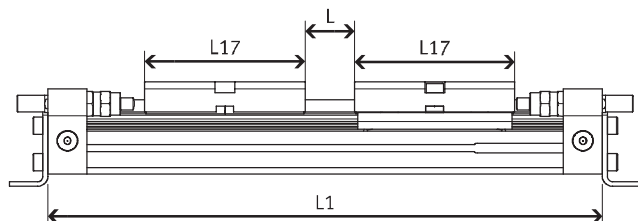
With a guide axis DGC with additional slide, the effective stroke is reduced by the length of the additional slide and the distance between both slides.

Given:

DGC-N-12-500-...

L = 20 mm

L17 = 65 mm



Ø [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
 $415 \text{ mm} = 500 \text{ mm} - 20 \text{ mm} - 65 \text{ mm}$

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

FESTO

Ordering data – Modular products

Ordering table													
Size		8	12	18	25	32	40	50	63	Condi- tions	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	Flexible 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

DGC

-

N

-

-

-

KF

-

-

A

-

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

FESTO

Ordering data – Modular products

Ordering table													
Size		8	12	18	25	32	40	50	63	Condi- tions	Code	Enter code	
0	Slide	–	–	Protected recirculating ball bearing guide				–	–	1	-GP		
	Additional slide at left	Additional slide, standard, at left								2	-KL		
	Additional slide at right	Additional slide, standard, at 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	
	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							3	YWZ1	
		–	–	Variable end position, at both ends							3	YWZ2	
	Intermediate position module	–	–	–	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
Not with additional slide at left KL or additional slide at right KR
- [2] KL, 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

Transfer order code

– – – **ZUB** – – –

Ordering data – Wearing parts kits							
Piston Ø	Part No.	Type		Piston Ø	Part No.	Type	
8	665 335	DGC-8-KF		32	684 488	DGC-32	
12	665 336	DGC-12-KF		40	684 489	DGC-40	
18	684 486	DGC-18		50	719 825	DGC-50	
25	684 487	DGC-25		63	719 826	DGC-63	

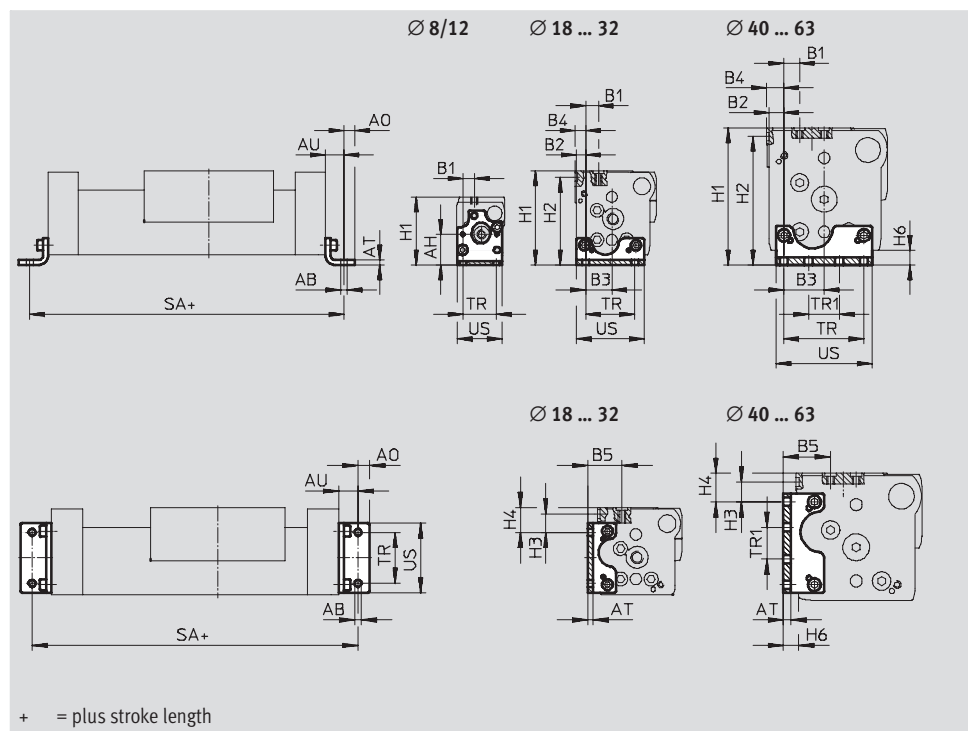
Linear drives DGC-N, NPT

Accessories

FESTO

Foot mounting HPC
(order code: F)

Material:
Galvanised steel



Dimensions and ordering data

For Ø	AB	AH	AO	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		+0.9/–0.2	±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

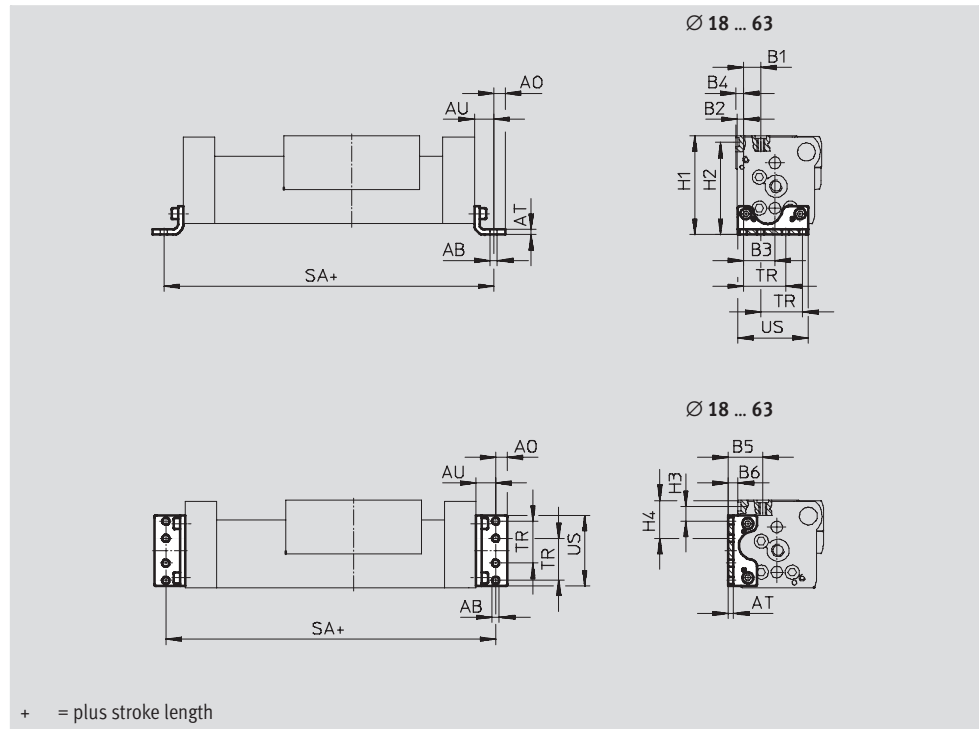
Accessories

Foot mounting HPC-S

(when replacing linear drive DGPL with linear drive DGC-N-GF/-KF)

Material:

Galvanised steel



Dimensions and ordering data										
For Ø	AB	AO	AT	AU	B1	B2	B3	B4	B5	B6
[mm]	Ø									
18	5.5	4.75	3	13.25	12	3.5	15.6	4.5	24	7.5
25	5.5	6	3	13	16.25	4.75	24.25	5.75	29.5	7.5
32	6.6	7	4	17	9	9	29.5	10.5	27	7.5
50	9	11	8	25	12.5	11.5	48.5	11.5	38	14
63	11	13.5	8	28	17.5	12.5	55.5	17.5	37	2

For Ø	H1	H2	H3	H4	SA	TR	US	Weight	Part No.	Type
[mm]						±0.1		[g]		
18	64	59.5	15.9	28	176.5+0.9/-0.2	24	40	54	535 600	HPC-18-S
25	75.5	70.5	11.45	29.75	226+0.9/-0.2	32.5	55	89	535 601	HPC-25-S
32	87.5	82.5	8	31.5	284+0.9/-0.2	38	68	180	538 413	HPC-32-S
50	138.5	131.5	23.4	48	400+1.7/-0.2	65	102	754	545 238	HPC-50-S
63	160.5	152.5	22	66	456+1.7/-0.2	75	133	1,138	545 239	HPC-63-S

Linear drives DGC-N, NPT

Accessories

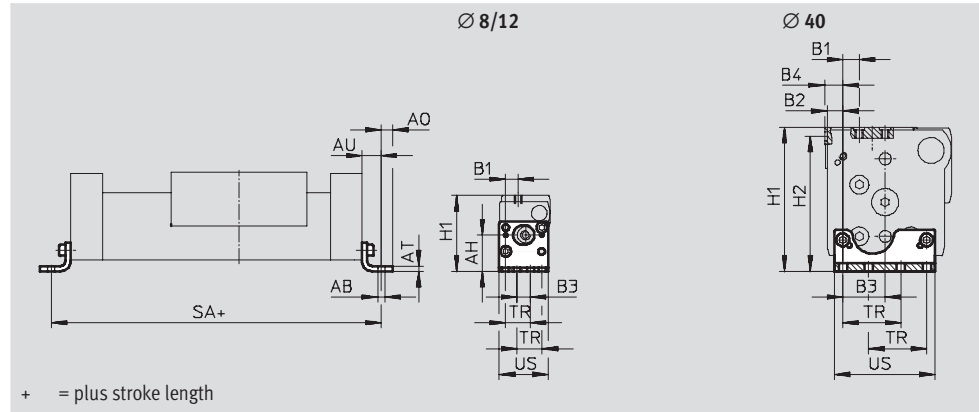
FESTO

Foot mounting HPC-SO

(when replacing linear drive DGPL
with linear drive DGC-N-GF/-KF)

Material:

Galvanised steel



Dimensions and ordering data

For Ø	AB Ø	AH	AO	AT	AU	B1	B2	B3
[mm]								
8	3.4	18.7	3	2	9	6.5	–	7
12	3.4	23.5	3	2	9	9.3	–	9.4
40	6.6	–	8.5	5	17.5	12.5	12.3	32.7

For Ø	B4	H1	H2	SA	TR	US	Weight	Part No.	Type
[mm]				+0.9/–0.2	±0.1		[g]		
8	–	39	–	118	13	25.4	25	529 346	HPC-8-SO
12	–	47.5	–	143	18.6	33.8	42	529 348	HPC-12-SO
40	14.3	104.5	97.5	335	45	78	264	536 745	HPC-40-SO

Linear drives DGC-N, NPT

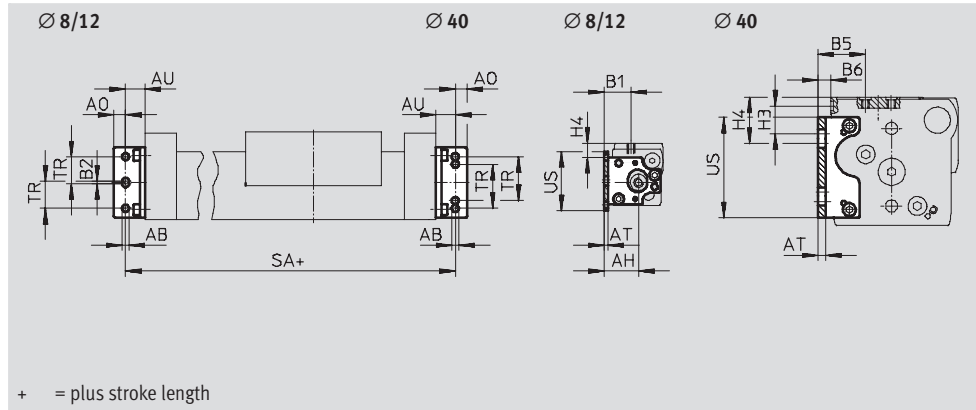
Accessories

Foot mounting HPC-SH

(when replacing linear drive DGPL with linear drive DGC-N-GF/-KF)

Material:

Galvanised steel



Dimensions and ordering data								
For Ø	AB Ø	AH	AO	AT	AU	B1	B2	B5
[mm]								
8	3.4	17.8	3	2	9	13.8	1.5	–
12	3.4	21.1	3	2	9	16.5	1.4	–
40	6.6	–	8.5	5	17.5	–	–	36

For Ø	B6	H3	H4	SA	TR	US	Weight	Part No.	Type
[mm]				+0.9/–0.2	±0.1		[g]		
8	–	–	7.25	118	13	30.5	25	529 347	HPC-8-SH
12	–	–	4.5	143	18.6	41.8	41	529 349	HPC-12-SH
40	9.2	21.6	36	335	45	78	275	536 746	HPC-40-SH

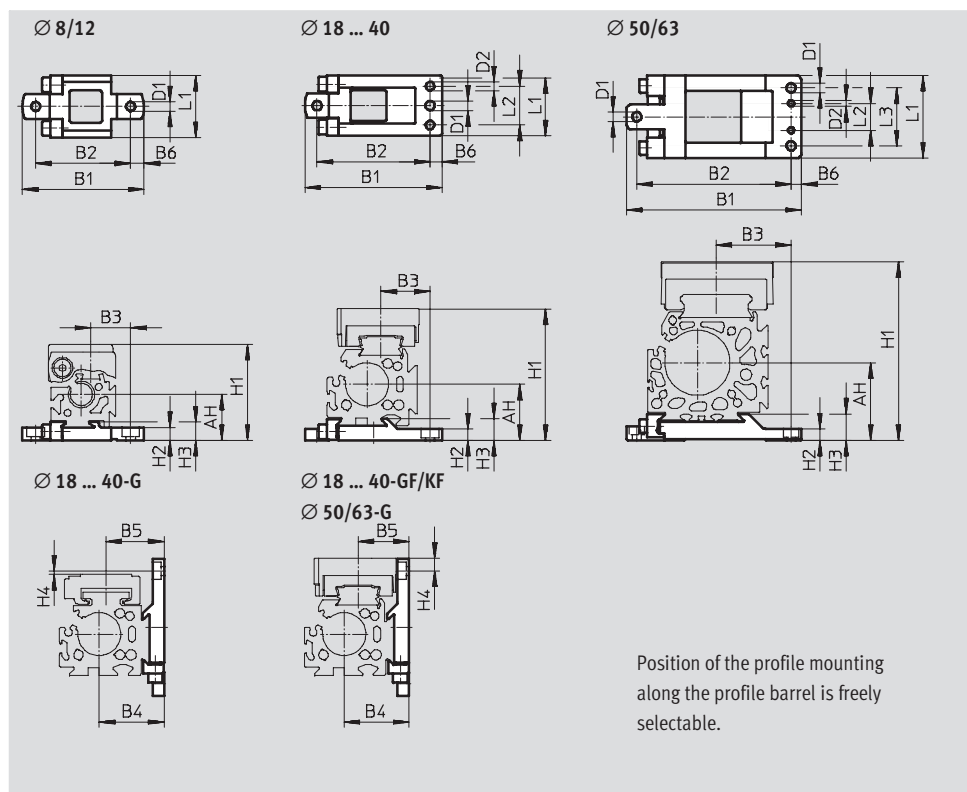
Linear drives DGC-N, NPT

Accessories

FESTO

Profile mounting MUC
(order code: M)

Material:
High-alloy steel



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 Ø H13	D2 Ø H7	H1	
[mm]	G	GF/KF				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

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

For Ø	L2	L3	Weight	Part No.	Type
[mm]	$\pm$ 0.05	$\pm$ 0.2	[g]		
8	–	–	28	526 384	MUC-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

FESTO

Moment compensator FKC

(order code: FK)

for DGC-N-G

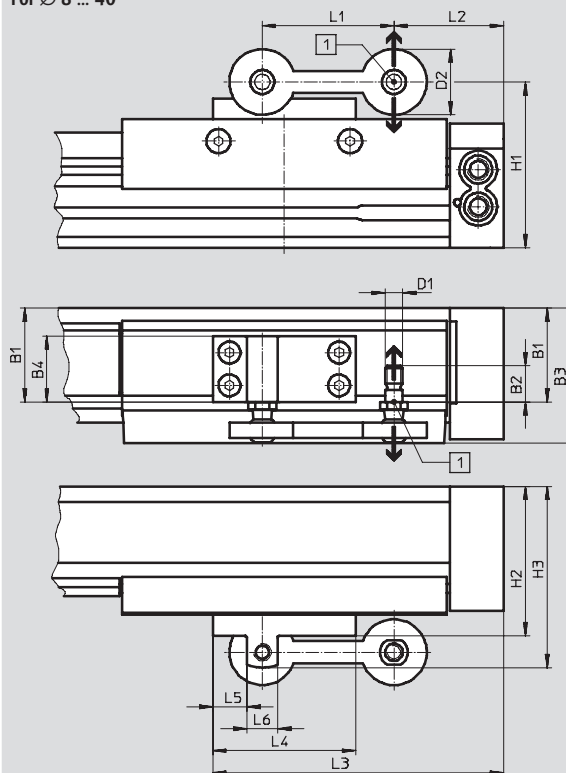
Materials:

Plate: Wrought aluminium alloy

Link: Polyamide

Ball pin: High-alloy steel

For $\varnothing 8 \dots 40$

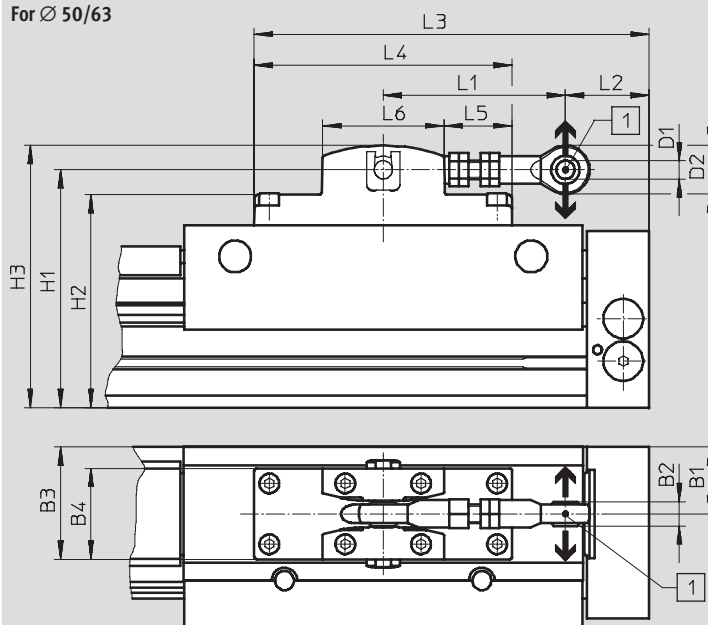


 Note

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	Max. offset between linear drive and external guide	Max. permissible load in direction of force		Ambient temperature
[mm]	[mm]	[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	B1	B2	B3	B4	D1	D2	H1	H2	H3	L1
[mm]										
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	L2	L3	L4	L5	L6	CRC ¹⁾	Weight	Part No.	Type
[mm]							[g]		
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

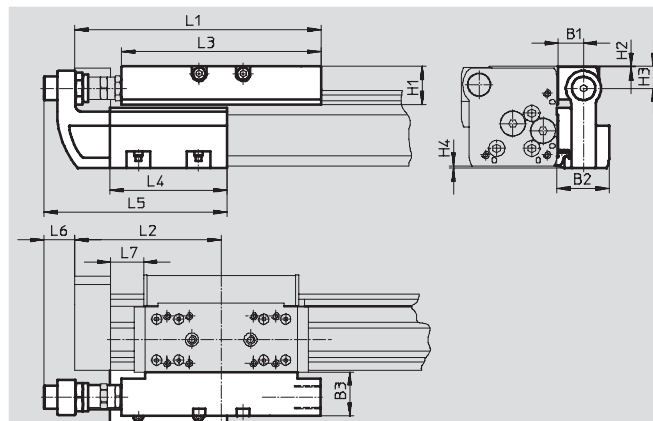
FESTO

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 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.

Dimensions								
For Ø [mm]		B1	B2	B3	H1	H2	H3	H4
18	GF	16	34.5	29	20.7	0.2	12.5	0.7
	KF							
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			2
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	128	74.5	107	80	118.5	23.5	14.5
	KF							
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							

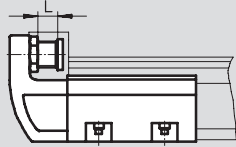
Linear drives DGC-N, NPT

Accessories

FESTO

Technical data and ordering codes

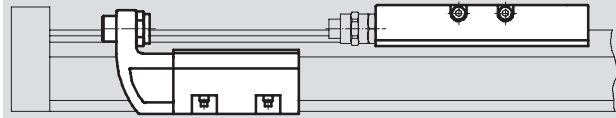
Precision adjustment



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	-10 ... +80	2	140	541 725	DADP-DGC-18-GF
	KF			130	541 729	DADP-DGC-18-KF
25	GF			205	541 726	DADP-DGC-25-GF
	KF			180	541 730	DADP-DGC-25-KF
32	GF			225	541 727	DADP-DGC-32-GF
	KF			215	541 731	DADP-DGC-32-KF
40	GF			380	541 728	DADP-DGC-40-GF
	KF			460	541 732	DADP-DGC-40-KF
50	GF			890	545 244	DADP-DGC-50
	KF					
63	GF			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

FESTO

Intermediate position module DADM-DGC

(order code: Z1, Z2 or Z3)

for DGC-N-KF

Materials:

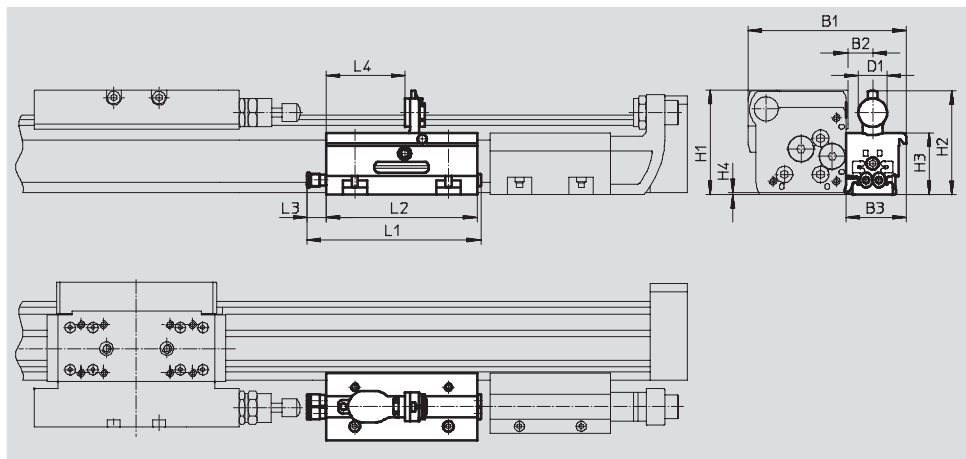
Housing: Anodised aluminium

Stop screw, nut: Galvanised steel

Clamp, lever:

High-alloy steel

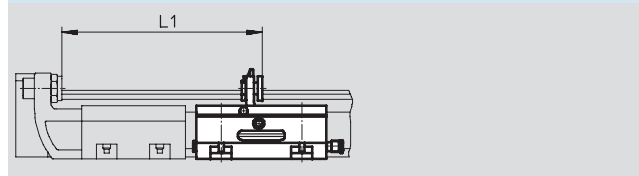
Free of copper and PTFE



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

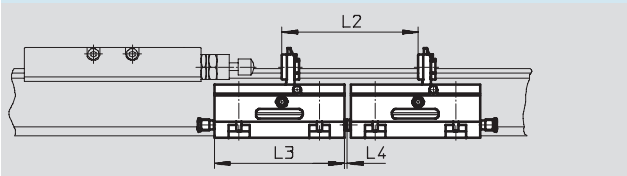
Minimum distance

between end stop and intermediate position



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

between two intermediate positions



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.

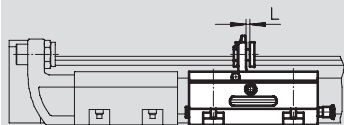
- The projection (dimension H4) must be observed when using the drive in combination with the intermediate position module DADM-DGC. Mounting via foot mountings HP or profile mountings MUC is recommended in this case.

- The stop lever positions can be sensed via proximity sensors SME/SMT-10 → 73.

Linear drives DGC-N, NPT

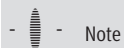
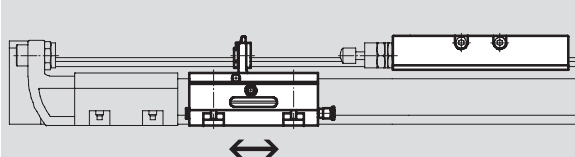
Accessories

Precision adjustment L



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

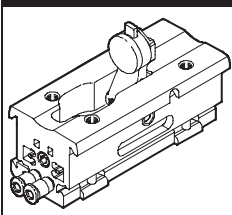


The intermediate position module DADM-DGC can be mounted at any position along the stroke.

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

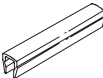
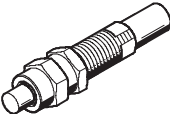
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

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						
	8 ... 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	For DGC with plain-bearing guide		540 353	YSRW-DGC-40/50	
	63			543 069	YSRW-DGC-63	
	18			540 347	YSRW-DGC-18-KF	
	25			540 349	YSRW-DGC-25-KF	
	32			540 351	YSRW-DGC-32-KF	
	40			540 353	YSRW-DGC-40/50	
	50					
	63			543 069	YSRW-DGC-63	
	One-way flow control valve GRLA Technical data → Internet: grla					
	8 ... 18	Metal design	–	165 008	GRLA-10-32-UNF-QS-5/32-U	1
				192 753	GRLA-10-32-UNF-QS-1/4-U	
	25, 32			165 009	GRLA-1/8-NPT-QS-5/32-U	
				165 010	GRLA-1/8-NPT-QS-1/4-U	
	40, 50			165 011	GRLA-1/4-NPT-QS-1/4-U	
			165 014	GRLA-1/4-NPT-QS-5/16-U		
			190 947	GRLA-1/4-NPT-QS-3/8-U		
	63		165 012	GRLA-3/8-NPT-QS-1/4-U		
		165 015	GRLA-3/8-NPT-QS-5/16-U			
		190 950	GRLA-3/8-NPT-QS-3/8-U			

1) Packaging unit quantity

Linear drives DGC-N, NPT

Accessories

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 Ø 18 ... 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