

Linear drives DGP/DGPL

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Linear drives DGP/DGPL

Selection aid

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General information

- Compact, fitting length relative to stroke
- Highly adaptable, thanks to wide choice of mounting and attachment options
- Adjustable end-position cushioning systems
- Can be combined with the modular system for handling and assembly technology
- Maintenance-free (for up to 5000 km with a recirculating ball bearing guide)
- Wide choice of variants:
 - Clamping unit
 - Extended slide
 - Air connections on both sides
 - Electronic cushioning with SoftStop SPC11

Basic design DGP

- Piston $\varnothing$ 18 ... 80 mm
- Stroke lengths 10 ... 3000 mm
- As a drive for external guides
- For small loads



With plain-bearing guide DGPL-GF-GK/-GV

- Piston $\varnothing$ 18 ... 80 mm
- Stroke lengths 10 ... 3000 mm
- Minimal backlash
- For medium loads and low torques



With recirculating ball bearing guide DGPL-KF-GK/-GV

- Piston $\varnothing$ 18 ... 80 mm
- Stroke lengths 10 ... 3000 mm
- Backlash-free
- Precision, rigid guide
- For high loads and torques



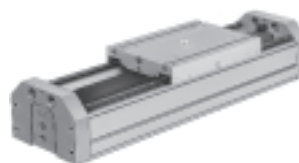
Protected version DGPL-GA

- Piston $\varnothing$ 18 ... 40 mm
- Stroke lengths 10 ... 2000 mm
- Guide and slide are fitted with a cover to protect against the ingress of particles from above and from the side
- Backlash-free
- Precision, rigid guide
- For high loads and torques



With heavy-duty guide DGPL-HD

- Piston $\varnothing$ 18 ... 40 mm
- Stroke lengths 10 ... 2160 mm
- Backlash-free
- Maximum precision



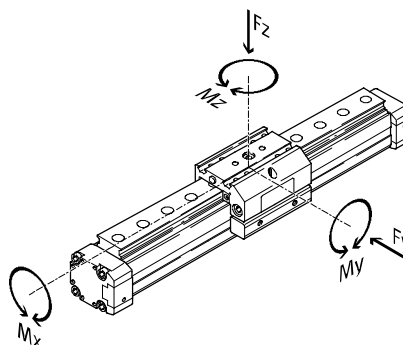
Linear drives DGP/DGPL

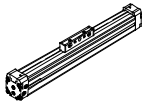
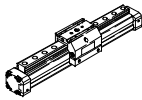
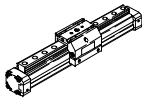
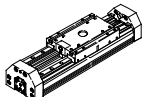
Selection aid

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Guide characteristics

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



Version	Piston Ø	Stroke ¹⁾ [mm]	Theoretical force at 6 bar [N]	Forces and torques					→ Page/Internet
	[mm]			Fy [N]	Fz [N]	Mx [Nm]	My [Nm]	Mz [Nm]	
Basic version without guide DGP									
	18	10 ... 1800	153	–	120	0.5	11	1	6
	25	10 ... 3000	295		330	1	20	3	
	32	10 ... 3000	483		480	2	40	5	
	40	10 ... 3000	754		800	4	60	8	
	50	10 ... 3000	1178		1200	7	120	15	
	63	10 ... 3000	1870		1600	8	120	24	
	80	10 ... 3000	3016		5000	32	750	140	
With plain-bearing guide DGPL-GF									
	18	10 ... 1800	153	330	330	2.2	10	10	22
	25	10 ... 3000	295	430	430	5.4	14	14	
	32	10 ... 3000	483	430	430	8.5	18	18	
	40	10 ... 3000	754	1010	1010	23	34	34	
	50	10 ... 3000	1178	1010	1010	32	52	52	
	63	10 ... 3000	1870	2000	2000	74	140	140	
	80	10 ... 3000	3016	2000	2000	100	230	230	
With recirculating ball bearing guide DGPL-KF									
	18	10 ... 1800	153	930	930	7	23	23	22
	25	10 ... 3000	295	3080	3080	45	85	85	
	32	10 ... 3000	483	3080	3080	63	127	127	
	40	10 ... 3000	754	7300	7300	170	330	330	
	50	10 ... 3000	1178	7300	7300	240	460	460	
	63	10 ... 3000	1870	14050	14050	580	910	910	
	80	10 ... 3000	3016	14050	14050	745	1545	1545	
With heavy-duty guide DGPL-HD									
	HD18	10 ... 1710	153	1820	1820	70	115	112	42
	HD25	10 ... 2160	295	5400	5600	260	415	400	
	HD40	10 ... 2110	754	5400	5600	375	560	540	

1) With effective strokes of over 2000 mm the installation of the drive unit must be with the sealing strip facing down; longer strokes available on request.

- - Note
Piston Ø 8 and 12
Linear drives DGC
→ Internet: dgc

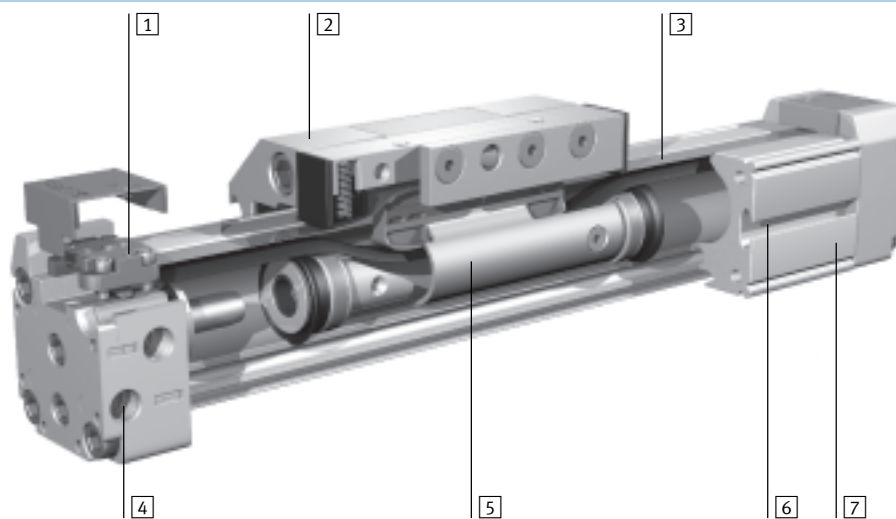
- - Note
Alternative to DGPL-...-GF:
Linear drives DGC-...-GF
→ Internet: dgc

Linear drives DGP/DGPL

Key features

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The technology in detail



- 1 Adjustable end-position cushioning, alternatively:
– Shock absorber
– SoftStop SPC11
- 2 Slide is permanently attached to the driver

- 3 Cover strip protects the drive against the ingress of dirt
- 4 Choice of supply port positions, options on three sides on the end cap

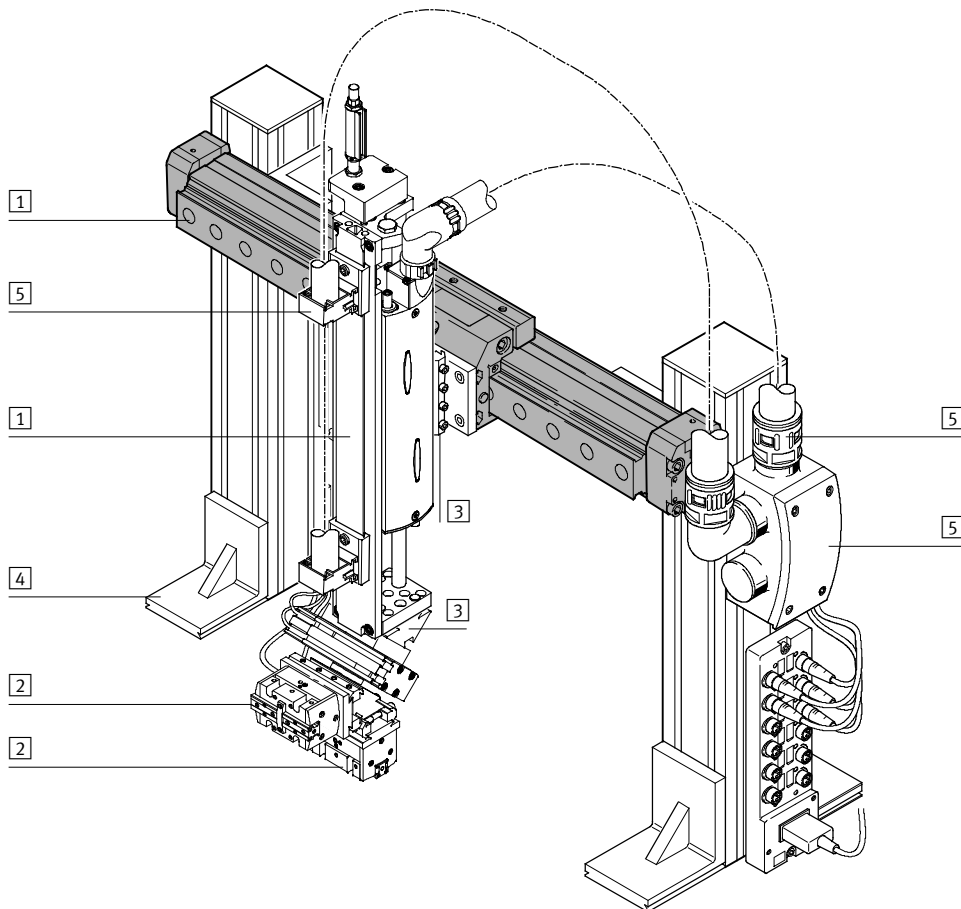
- 5 Piston
- 6 Mounting/sensor slot for integral proximity sensors, additional slot for slot nuts with piston $\varnothing$ 32 and above
- 7 Stable profile

Linear drives DGP/DGPL

Key features

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System product for handling and assembly technology



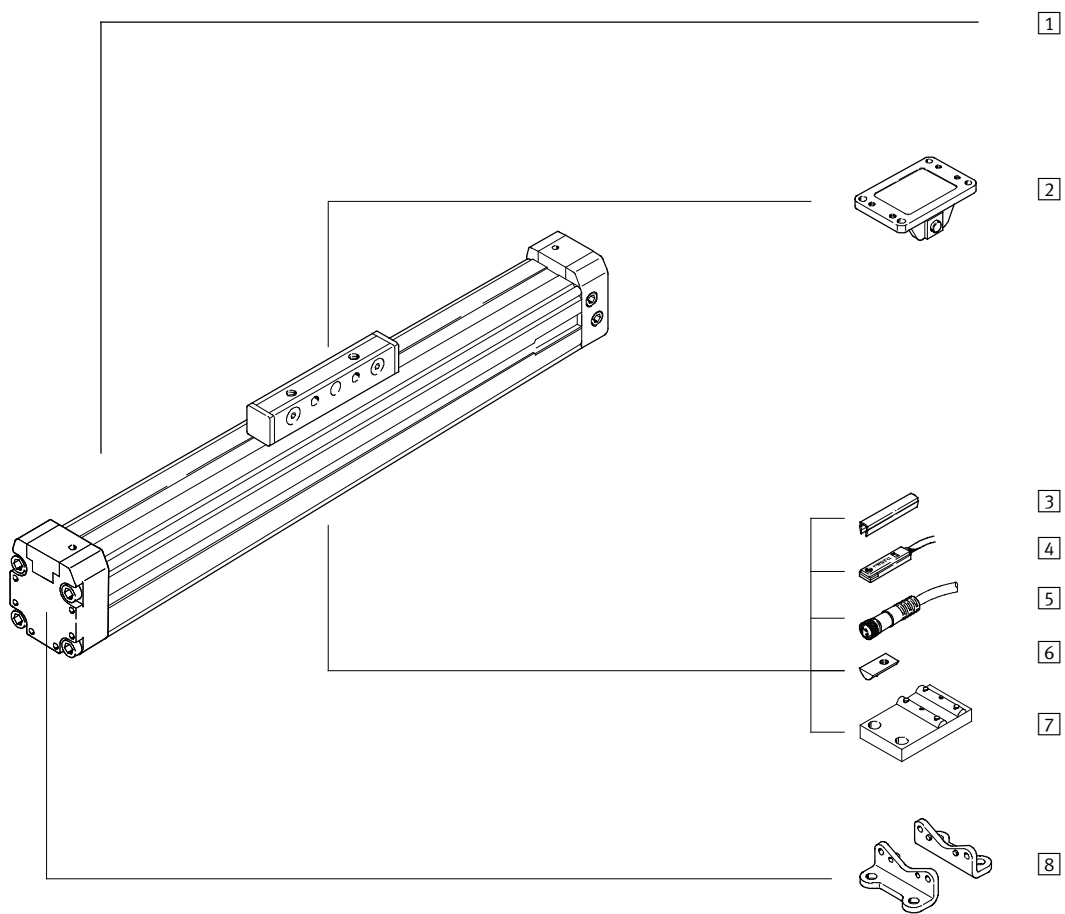
System components and accessories		
	Brief description	→ Page/Internet
1 Linear drives	Wide range of combination options within handling and assembly technology	drive
2 Grippers	Wide range of combination options within handling and assembly technology	gripper
3 Adapters	For combining drives with drives and drives with grippers	adapter kit
4 Basic components	Profiles and profile connectors as well as profile/drive connectors	basic component
5 Installation components	For achieving a clear-cut, safe layout for electrical cables and tubing	installation component
– Axes	Wide range of combination options within handling and assembly technology	axes
– Motors	Servo and stepper motors, with or without gearing	motor

- 1 - Type discontinued
Available up until 2013

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Linear drives DGP

Peripherals overview



- 2 - Type discontinued
Available up until 2013

Linear drives DGP

Peripherals overview

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Variants and accessories			
	Type	Brief description	→ Page/Internet
1	Linear drive DGP	Pneumatic linear drive with driver	8
2	Moment compensator FK	For compensating misalignments when using external guides	57
3	Slot cover B/S	For protecting against dirt and securing proximity sensor cables	60
4	Proximity sensor G/H/I/J/N	For sensing the driver position	62
5	Cable with socket V	For proximity sensors	62
6	Slot nut for profile slot Y	For mounting attachments	60
7	Central support M	For mounting the axis, particularly with long strokes	55
8	Foot mounting F	For mounting the axis	54

- 1 - Type discontinued
Available up until 2013

Linear drives DGP

Type code

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		DGP	-	25	-	500	-	PPV	-	A	-	B	-	GK	-	D2
Type																
DGP	Linear drive															
Piston Ø																
Stroke [mm]																
Cushioning																
PPV	Adjustable end-position cushioning															
Position sensing																
A	Via magnet															
Generation																
B	B series															
Basic design																
GK	Standard driver															
GV	Extended driver															
Supply port/accessories																
D2	Supply port at both ends															
FK	Moment compensator															

Linear drives DGP

Type code

→		+ ZUB	-	2S2B			F	2H	2V
Accessories									
ZUB	Accessories supplied loose								
Slot cover									
...S	Sensor slot								
...B	Mounting slot								
Slot nut									
...Y	For profile barrel								
Central support									
...M	Central support								
Foot mounting									
...F	Foot mounting								
Proximity sensor									
...G	With cable, 2.5 m								
...H	With plug								
...I	Contactless, with cable, 2.5 m								
...J	Contactless, plug								
...N	NC contact with cable, 2.5 m								
Cable with socket									
...V	2.5 m								

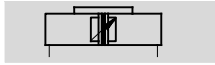
- 1 - Type discontinued
Available up until 2013

Linear drives DGP

Technical data

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Function



www.festo.com

Wearing parts kits

→ 18

- Ø - Diameter
18 ... 80 mm
- I - Stroke length
1 ... 3000 mm



General technical data							
Piston Ø	18	25	32	40	50	63	80
Constructional design	Pneumatic linear drive with driver						
Protection against torsion/guide	Slotted profile barrel						
Mode of operation	Double-acting						
Driver principle	Positive-locking (slot)						
Mounting position	Any						
Pneumatic connection	M5	G1/8		G1/4		G3/8	G1/2
Stroke length [mm]	10 ... 1800	10 ... 3000 ¹⁾					
Cushioning (PPV)	Adjustable at both ends						
Cushioning length [mm]	16	18	20	30			83
Position sensing	Via magnet						

1) With effective strokes of over 2000 mm the installation of the drive unit must be with the sealing strip facing down; longer strokes available on request.

Operating and environmental conditions							
Piston Ø	18	25	32	40	50	63	80
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [7:-:-]						
Note on operating/pilot medium	Operation with lubricated medium possible (in which case lubricated operation will always be required)						
Operating pressure [bar]	2 ... 8			1.5 ... 8			
Ambient temperature ¹⁾ [°C]	-10 ... +60						
ATEX	Specified types → www.festo.com						

1) Note operating range of proximity sensors.

Forces [N] and impact energy [Nm]							
Piston Ø	18	25	32	40	50	63	80
Theoretical force at 6 bar	153	295	483	754	1178	1870	3016
Impact energy	→ 13						

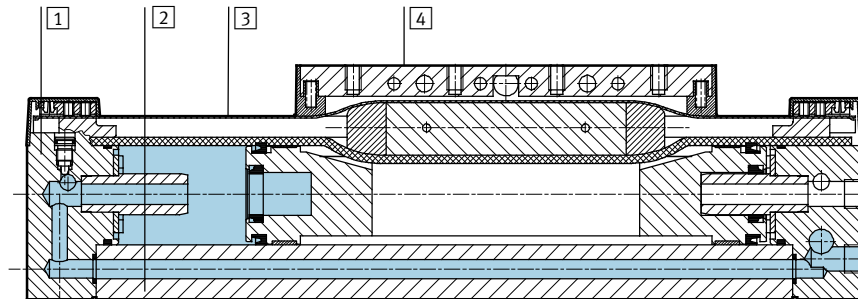
Weights [kg]							
Piston Ø	18	25	32	40	50	63	80
Basic weight with 0 mm stroke	0.46	0.84	1.55	2.65	5.88	9.1	17.3
Additional weight per 10 mm stroke	0.016	0.036	0.041	0.057	0.111	0.148	0.158
Moving load	0.08	0.18	0.32	0.55	1.55	1.76	5.0

Linear drives DGP

Technical data

Materials

Sectional view



Axis	18	25	32	40	50	63	80
1 End cap	Anodised aluminium						
2 Profile	Anodised aluminium						
3 Cover strip	Corrosion resistant steel						Polyurethane
4 Driver	Anodised aluminium						
⊗ Seals	Nitrile rubber, polyurethane						
-							

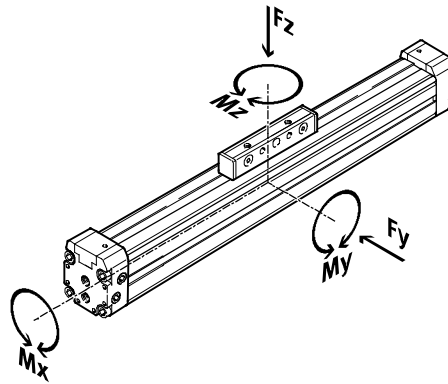
Linear drives DGP

Technical data

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Characteristic load values

The indicated forces and torques refer to the centre line of the internal diameter of the profile barrel. They must not be exceeded in the dynamic range. Special attention must be paid to the cushioning phase.



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

$$0.4 \times \frac{F_z}{F_{z_{\max.}}} + \frac{M_x}{M_{x_{\max.}}} + \frac{M_y}{M_{y_{\max.}}} + 0.2 \times \frac{M_z}{M_{z_{\max.}}} \leq 1$$

$$\frac{F_z}{F_{z_{\max.}}} \leq 1 \quad \frac{M_z}{M_{z_{\max.}}} \leq 1$$

Permissible forces and torques								
Piston Ø		18	25	32	40	50	63	80
Standard driver GK								
F _y max.	[N]	–						
F _z max.	[N]	120	330	480	800	1200	1600	5000
M _x max.	[Nm]	0.5	1	2	4	7	8	32
M _y max.	[Nm]	11	20	40	60	120	120	750
M _z max.	[Nm]	1	3	5	8	15	24	140
Extended driver GV								
F _y max.	[N]	–						
F _z max.	[N]	120	330	480	800	1200	–	–
M _x max.	[Nm]	1	2	4	8	14	16	–
M _y max.	[Nm]	22	40	80	120	240	240	–
M _z max.	[Nm]	2	6	10	16	30	48	–



Note

Sizing software

ProDrive

→ www.festo.com

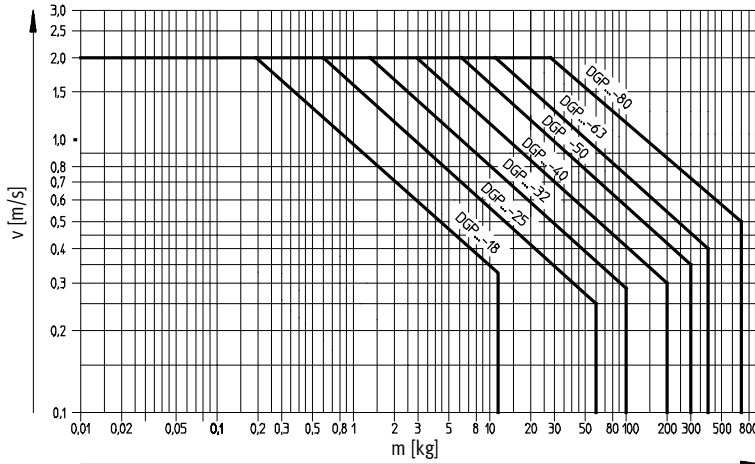
Linear drives DGP

Technical data

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Operating range of the integrated end-position cushioning PPV

Maximum permissible speed v as a function of the moving load m



Note

The data applies to a horizontal mounting position, applied load on top.

m = Applied load + moving load
(→ 10)

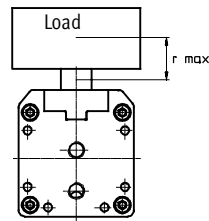
The graph opposite refers to r_{max} .

Pneumatic linear drives

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 externally

cushioned using suitable equipment (shock absorbers, stops, etc), preferably at the centre of gravity of the mass.

with driver DGP



$r_{max} = 20$ mm
for piston $\varnothing 18$ mm

$r_{max} = 50$ mm
for piston $\varnothing 25 \dots 80$ mm
(data for greater load distances on request)

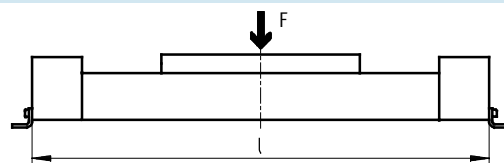
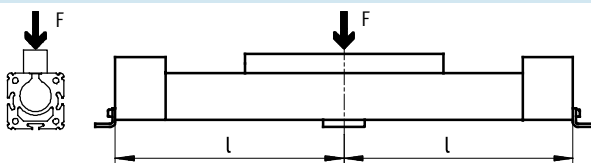
Maximum permissible support span l as a function of the force F

The axis may need to be supported with central supports MUP in order to restrict deflection with long stroke

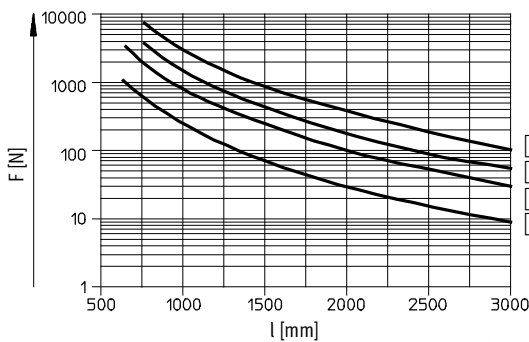
lengths. The following diagrams serve to determine the maximum permissible support span l as a

function of the force F acting upon the axis.

Force on the surface of the slide

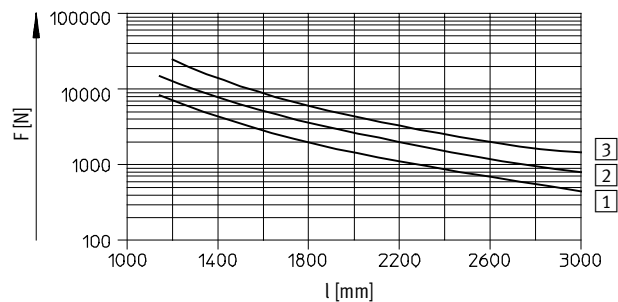


Piston $\varnothing 18 \dots 40$



- | | |
|-------------|-------------|
| 1 DGP...-18 | 3 DGP...-32 |
| 2 DGP...-25 | 4 DGP...-40 |

Piston $\varnothing 50 \dots 80$



- | | |
|-------------|-------------|
| 1 DGP...-50 | 3 DGP...-80 |
| 2 DGP...-63 | |

Linear drives DGP

Technical data

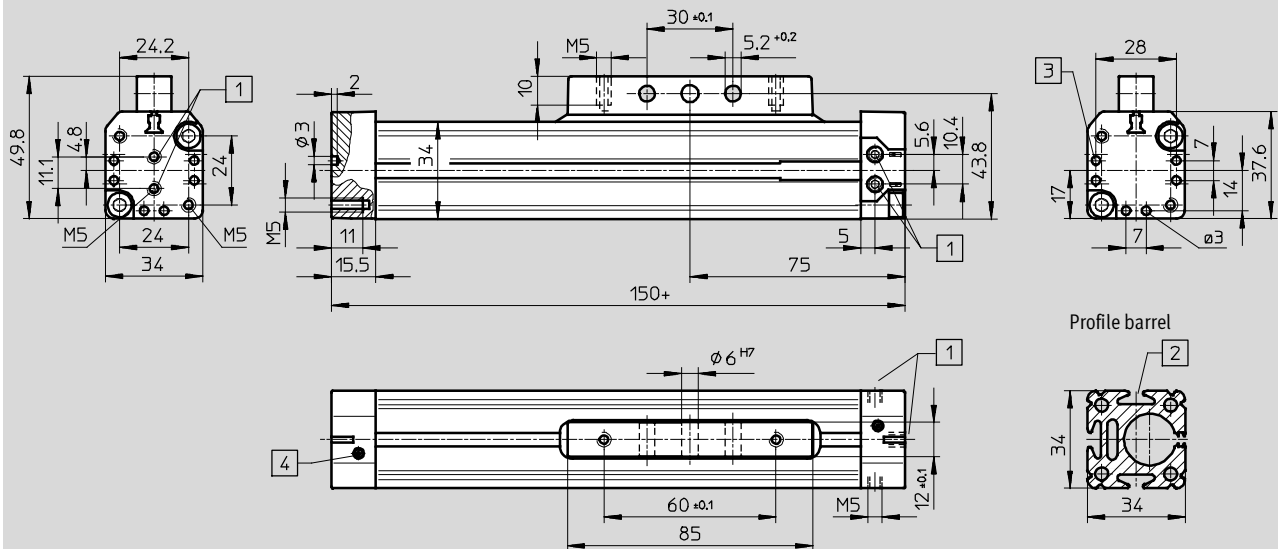
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Dimensions

Download CAD data → www.festo.com

Standard driver GK

Piston Ø 18

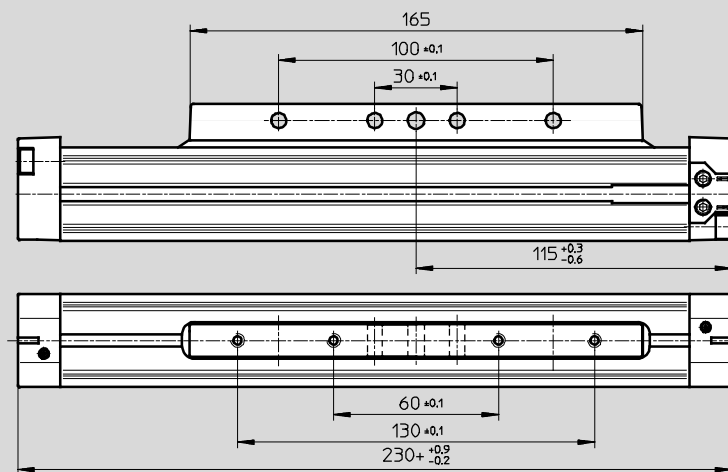


- 1 Supply ports at one end, option of three sides of an end cap (D2 variant: supply port at both ends, option of three sides per end cap)
- 2 Sensor slot for proximity sensor
- 3 Mounting hole for foot mounting HP
- 4 Regulating screw for adjustable end-position cushioning

+ = plus stroke length

Extended driver GV

Piston Ø 18



+ = plus stroke length

Linear drives DGP

Technical data

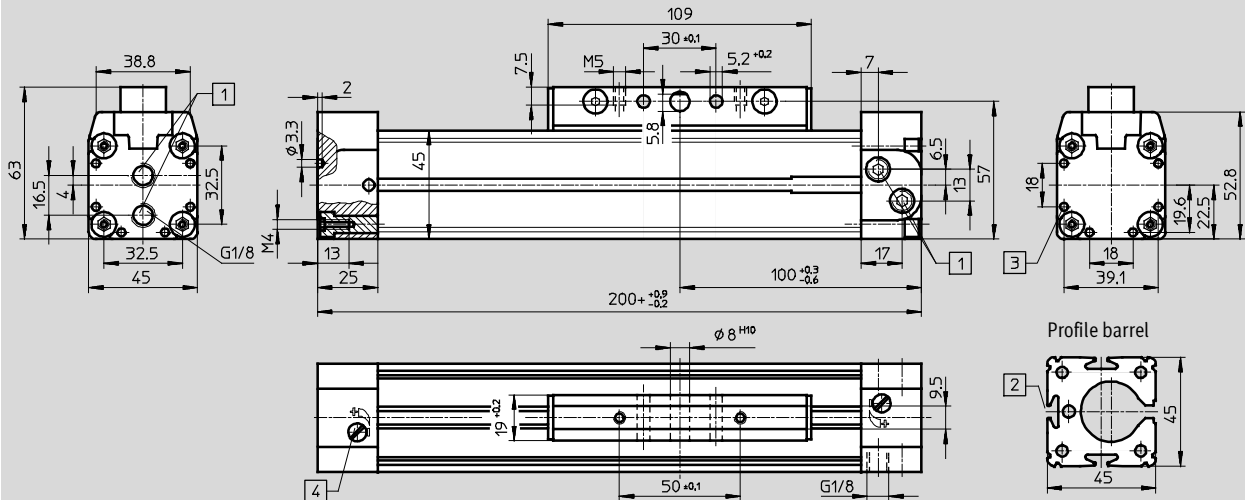
FESTO

Dimensions

Download CAD data → www.festo.com

Standard driver GK

Piston Ø 25

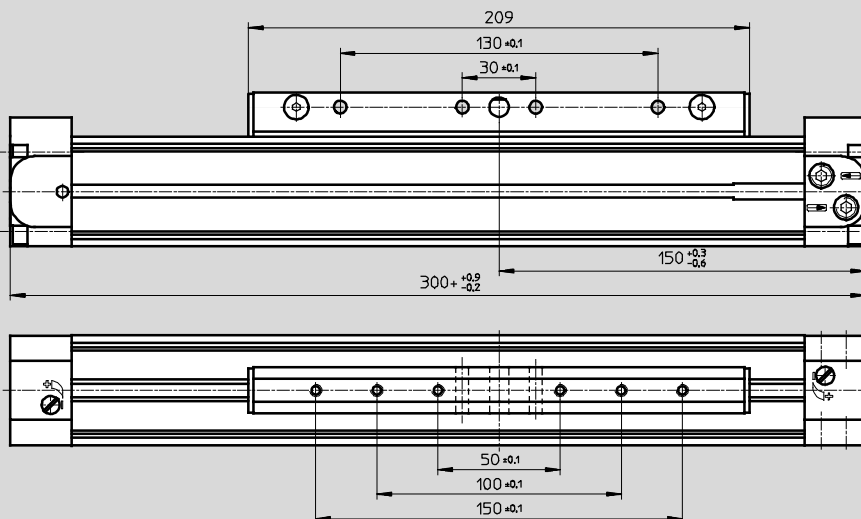


- 1 Supply ports at one end, option of three sides of an end cap (D2 variant: supply port at both ends, option of three sides per end cap)
- 2 Sensor slot for proximity sensor
- 3 Mounting hole for foot mounting HP
- 4 Regulating screw for adjustable end-position cushioning

+ = plus stroke length

Extended driver GV

Piston Ø 25



+ = plus stroke length

Linear drives DGP

Technical data

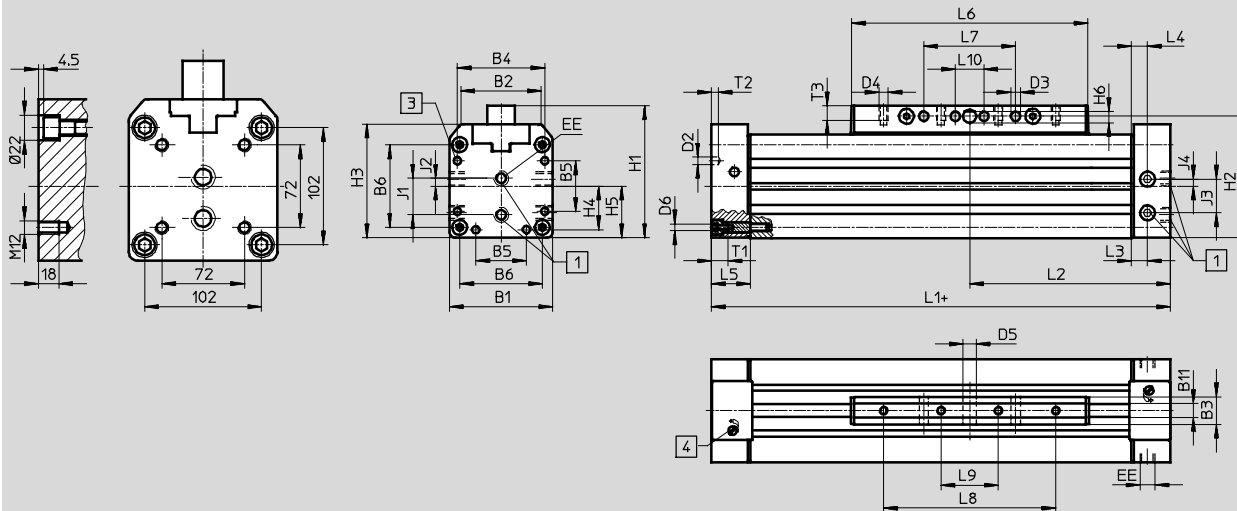
Dimensions

Download CAD data → www.festo.com

Standard driver GK

Piston $\varnothing$ 80

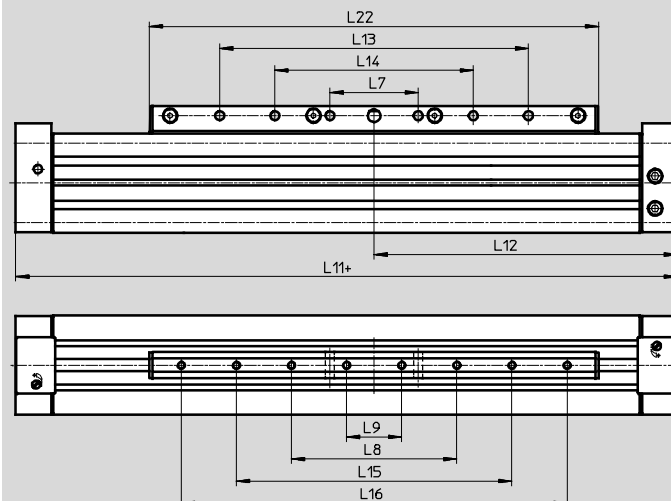
Piston Ø 32 ... 63



- | | |
|--|---|
| <p>1 Supply ports at one end, option of three sides of an end cap (D2 variant: supply port at both ends, option of three sides per end cap)</p> | <p>3 Mounting hole for foot mounting HP</p> |
| | <p>4 Regulating screw for adjustable end-position cushioning</p> |

+ = plus stroke length

Extended driver GV

Piston $\varnothing$ 32 ... 63

+ = plus stroke length

Linear drives DGP

Technical data

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Profile barrel

Piston Ø 32

Piston Ø 40

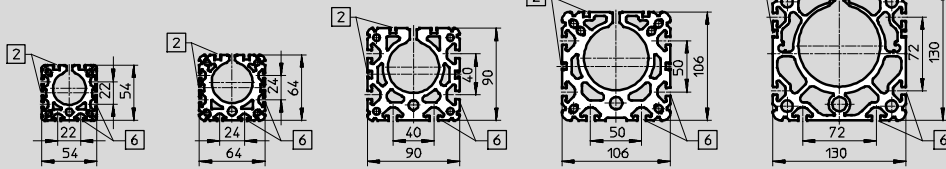
Piston Ø 50

Piston Ø 63

Piston Ø 80

2 Sensor slot for proximity sensor

6 Sensor slot for slot nut NST



Ø [mm]	B1	B2	B3 ±0.2	B4	B5	B6	B11	D2 Ø	D3 Ø ±0.2	D4	D5 Ø H10	D6	EE	H1	H2
32	54	35.8	19	46	21	40	9.5	4.3	5.2	M5	8	M5	G ¹ / ₈	72	66
40	64	45.7	21	53	28	49			6.5	M6	10		G ¹ / ₄	86	78
50	90	69.2	24	76	44	72	12	6.3	8.5	M8	12	M6	G ¹ / ₄	115	106
63	106	84.8		89		83						M8	G ³ / ₈	131	122
80	130	102.5	36	–	–	–	–	–	12.2	M12	20	–	G ¹ / ₂	174	158

Ø [mm]	H3	H4	H5	H6	J1	J2	J3	J4	L1	L2	L3	L4	L5	L6
32	62	23	27	5.8	19	4.2	14	4.7	250	125	17	8.5	31	135
40	71.8	26.5	32	7.7	22	5	21	9.1	300	150	11.5	11.5		171
50	99	36	45	9.7	31.8	6.8	29.3	6	350	175	14	14	34	206
63	115	44.5	53		36	8	31	14	400	200				234
80	140.5	51	65	–			33.3	3.6	520	260	19	19	45	334

Ø [mm]	L7	L8	L9	L10 ±0.15	L11 +0.9/–0.2	L12 +0.3/–0.6	L13 ±0.1	L14 ±0.1	L15 ±0.1	L16 ±0.1	L22	T1	T2	T3
32	50 ±0.1	100 ±0.1	30 ±0.1	–	380	190	180	–	160	230	265	13.2	3	7.5
40	70 ±0.1	130 ±0.1	40 ±0.1		470	235	160	250	220	–	341		4	10.5
50	80 ±0.1	150 ±0.1	50 ±0.1		550	275	280	–	250	350	406	15.2	6	12.5
63	110 ±0.1	190 ±0.1	70 ±0.1		650	325	380		310	430	484	21.2		
80	180 ±0.15	230 ±0.15	115 ±0.15	60	–	–	–		–	–	–	–	–	19

- 1 - Type discontinued
Available up until 2013

Linear drives DGP

Ordering data

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Ordering data – Standard stroke		
Piston Ø	Part No.	Type
25	526 645	DGP-25-250-PPV-A-B
	526 646	DGP-25-400-PPV-A-B
	526 647	DGP-25-500-PPV-A-B
	526 648	DGP-25-1000-PPV-A-B
32	526 653	DGP-32-250-PPV-A-B
	526 654	DGP-32-400-PPV-A-B
	526 655	DGP-32-500-PPV-A-B
	526 656	DGP-32-1000-PPV-A-B
40	526 661	DGP-40-250-PPV-A-B
	526 662	DGP-40-400-PPV-A-B
	526 663	DGP-40-500-PPV-A-B
	526 664	DGP-40-1000-PPV-A-B

Ordering data – Variable stroke		
Piston Ø	Part No.	Type
18	158 971	DGP-18-...-PPV-A-B
25	161 780	DGP-25-...-PPV-A-B
32	161 781	DGP-32-...-PPV-A-B
40	161 782	DGP-40-...-PPV-A-B
50	161 783	DGP-50-...-PPV-A-B
63	161 784	DGP-63-...-PPV-A-B
80	161 785	DGP-80-...-PPV-A-B

Ordering data – Wearing parts kits		
Piston Ø	Part No.	Type
18	384 266	DGP-18-...-PPV-A
25	123 563	DGP-25-...-PPV-A
32	123 564	DGP-32-...-PPV-A
40	123 565	DGP-40-...-PPV-A
50	123 566	DGP-50-...-PPV-A
63	123 567	DGP-63-...-PPV-A
80	123 568	DGP-80-...-PPV-A

Linear drives DGP

Ordering data – Modular products

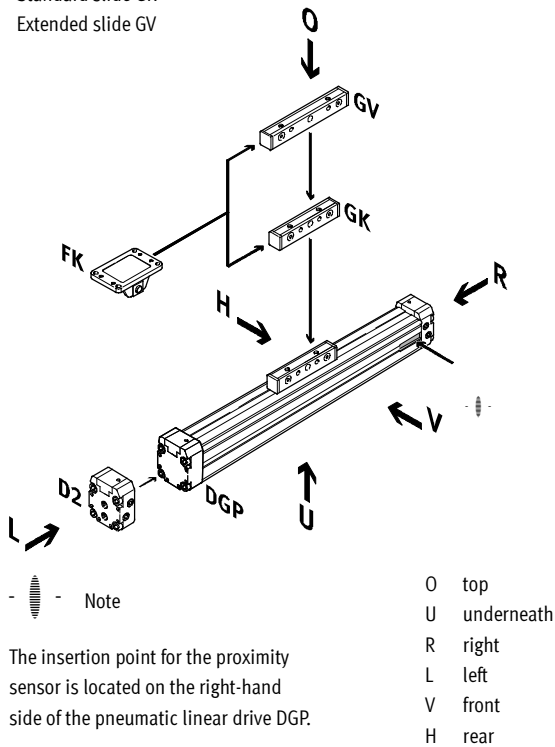
Order code

Mandatory data

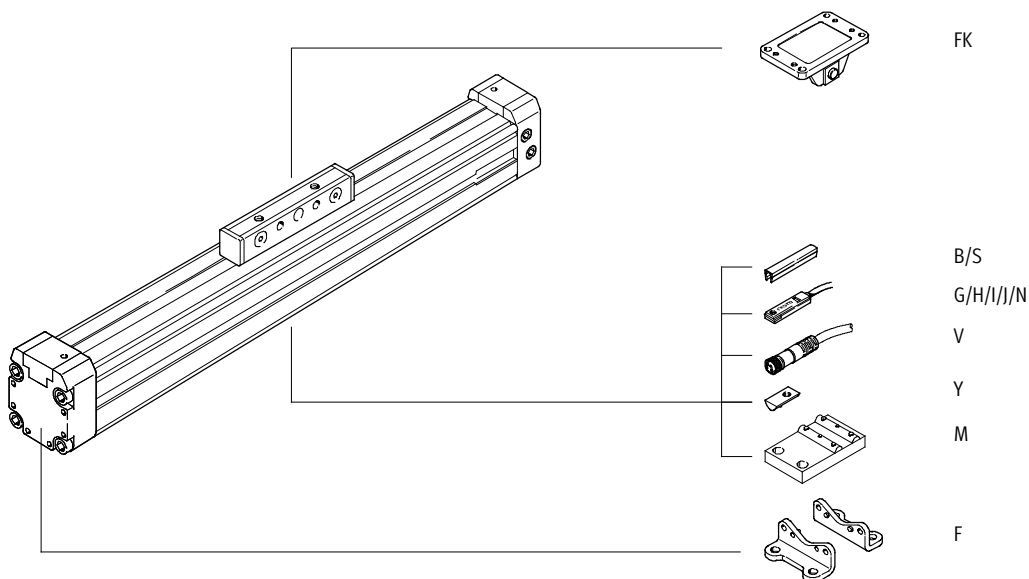
GK	Standard slide
GV	Extended slide
D2	Supply port at both ends
FK	Moment compensator

Standard slide GK

Extended slide GV



Options



- 1 - Type discontinued
Available up until 2013

Linear drives DGP

Ordering data – Modular products

FESTO

M Mandatory data							O Options →	
Module No.	Drive function	Size	Stroke	Cushioning	Position sensing	Generation	Basic design	Supply port/driver
175 133	DGP	18	10 ... 300	PPV	A	B	GK	D2
175 134		25	0				GV	FK
175 135		32						
175 136		40						
175 137		50						
175 138		63						
175 139		80						
Ordering example								
175 134	DGP	- 25	- 500	- PPV	- A	- B	- GV	- D2

Ordering table											
Size		18	25	32	40	50	63	80	Condi- tions	Code	Enter code
M	Module No.	175 133	175 134	175 135	175 136	175 137	175 138	175 139			DGP
	Drive function	Pneumatic linear drive								DGP	
	Size	18	25	32	40	50	63	80		-...	
	Stroke [mm]	10 ... 1800	10 ... 3000						1	-...	
	Cushioning	Pneumatic cushioning adjustable at both ends								-PPV	
	Position sensing	Via magnet								-A	
	Generation	B series								-B	
O ↓	Basic design	Standard piston/slide								-GK	
		Extended piston/slide								-GV	
	Supply port	At both ends								-D2	
	Driver	Moment compensator, assembled for DGP (FKP)								-FK	

1 Stroke With piston diameter 18 and piston/slide extended (-GV):
Restricted stroke 10 ... 1750 mm

Transfer order code

DGP - - - - A - B - - -

- 2 - Type discontinued
Available up until 2013

Linear drives DGP

Ordering data – Modular products

FESTO

Options

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

Ordering table

Size	18	25	32	40	50	63	80	Condi- tions	Code	Enter code
↓ Accessories	Supplied separately								:ZUB-	:ZUB-
Slot cover, 2 pcs., 0.5 m	Sensor slot 1 ... 10								...S	
	Mounting slot – – 1 ... 10								...B	
Slot nut	Profile barrel – – 1 ... 10								...Y	
Central support	1 ... 10								...M	
Foot mounting	1 ... 10								...F	
Proximity sensor, magnetic	with cable, 2.5 m 1 ... 10 (SME-8-K-LED-24)								...G	
	with plug 1 ... 10 (SME-8-S-LED-24)								...H	
Proximity sensor, magnetic, contactless	with cable, 2.5 m 1 ... 10 (SMT-8-PS-K-LED-24)								...I	
	with plug 1 ... 10 (SMT-8-PS-S-LED-24)								...J	
Proximity sensor, magnetic	NC contact 1 ... 10 (SME-8-O-K-LED-24)								...N	
Cable with socket, 2.5 m	with cable, 2.5 m 1 ... 10 (SIM-M8-3GD-2,5-PU)								...V	

Transfer order code

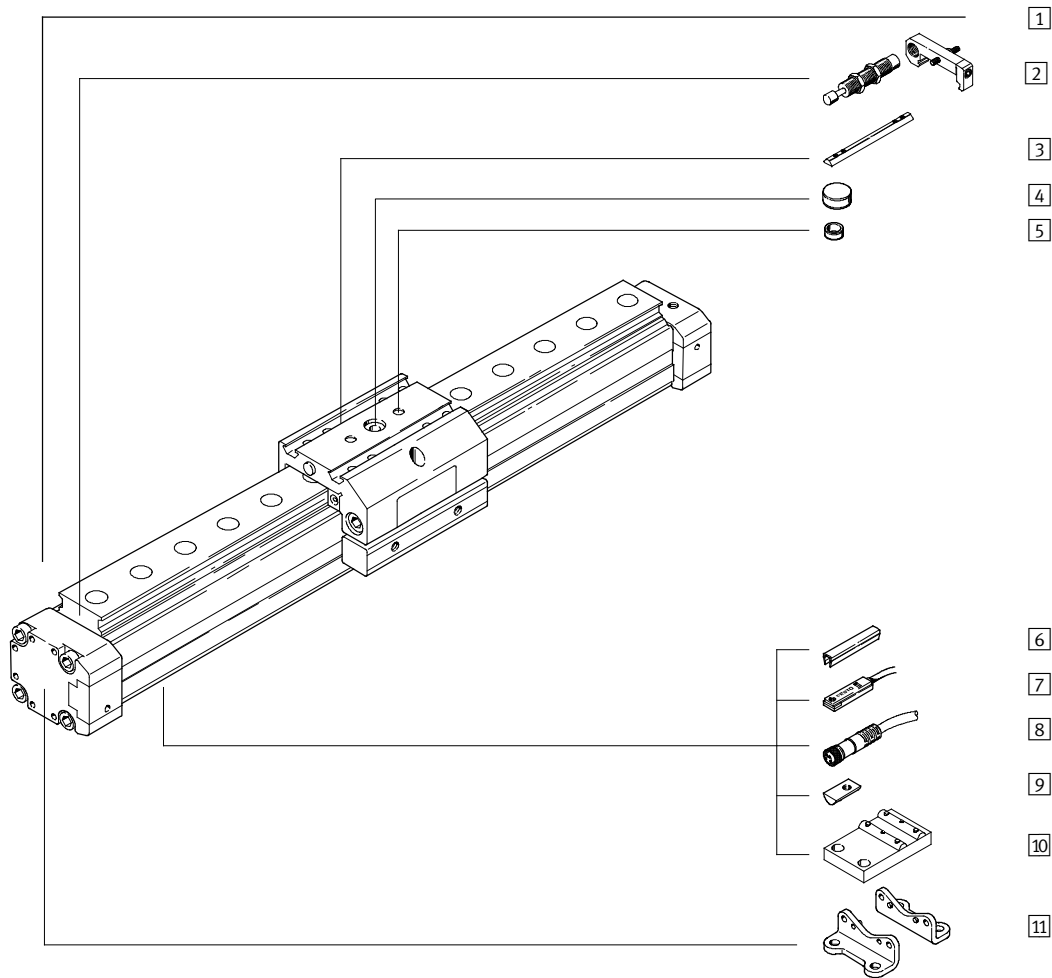
: ZUB –

- 2 - Type discontinued DGPL-...-GF
Available up until 2014

FESTO

Linear drives DGPL, with guide

Peripherals overview



Linear drives DGPL, with guide

Peripherals overview

Variants and accessories					
Type	Brief description	GF/KF	GA	→ Page/Internet	
1 Linear axis DGPL	Pneumatic linear drive with slide	■	■	24	
2 Shock absorber kit C	For slowing higher speeds to a stop	■	—	58	
2 Shock absorber kit E	For slowing higher speeds to a stop	—	■	59	
3 Slot nut for slide X	For mounting loads and attachments on the slide	■	■	60	
4 Central mounting Q	For centring loads and attachments on the slide	■	■	60	
5 Centring pins/sleeves Z	For centring loads and attachments on the slide	■	■	60	
6 Slot cover B/S	For protecting against dirt and securing proximity sensor cables	■	■	60	
7 Proximity sensor G/H/I/J/N	For sensing the slide position	■	■	62	
8 Cable with socket V	For proximity sensors	■	■	62	
9 Slot nut for profile barrel Y	For mounting attachments	■	■	60	
10 Central support M	For mounting the axis	■	■	55	
11 Foot mounting F	For mounting the axis	■	■	54	

Linear drives DGPL, with guide

Type code

		DGPL	-	25	-	500	-	PPV	-	A	-	B	-	KF	-	KU	-	GK	-	SH	-	D2	-	
Type																								
DGPL	Linear drive with slide																							
Piston Ø																								
Stroke [mm]																								
Cushioning																								
PPV	Adjustable end-position cushioning																							
Position sensing																								
A	Via magnet																							
Generation																								
B	B series																							
Guide																								
GF	Plain-bearing guide																							
KF	Recirculating ball bearing guide																							
Clamping unit																								
KU	Underneath																							
Slide																								
GK	Standard slide																							
GV	Extended slide																							
Slide attachment position																								
SH	Slide at rear																							
SV	Slide at front																							
Supply port																								
D2	Supply port at both ends																							
Protected version																								
GA	Protected version																							

Linear drives DGPL, with guide

Type code

→		+ ZUB	-	2S	-		-		-	F				2H	2V	2C
Accessories																
ZUB	Accessories supplied loose															
Slot cover																
...S	Sensor slot															
...B	Mounting slot															
Slot nut																
...Y	For mounting slot															
...X	For slide															
Centring sleeve																
...Z	For slide															
Central support																
...M	Central support															
Central mounting																
...Q	Central mounting															
Foot mounting																
...F	Foot mounting															
Proximity sensor																
...G	With cable, 2.5 m															
...H	With plug															
...I	Contactless with cable, 2.5 m															
...J	Contactless, plug															
...N	NC contact with cable, 2.5 m															
Cable with socket																
...V	2.5 m															
Shock absorber kit																
...C	Plus retainer for GK/GV															
...E	For GA															

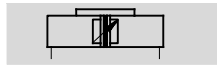
- 1 - Type discontinued DGPL-...-GF
Available up until 2014

Linear drives DGPL, with guide

Technical data

FESTO

Function

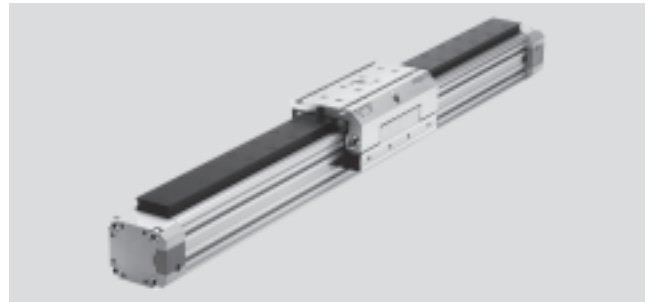


www.festo.com

Wearing parts kits

→ 38

- Ø - Diameter
18 ... 80 mm
- I - Stroke length
1 ... 3000 mm



General technical data							
Piston Ø	18	25	32	40	50	63	80
Constructional design	Pneumatic linear drive with slide						
Protection against torsion/guide	Guide rail with slide and plain-bearing guide GF or recirculating ball bearing guide KF						
Mode of operation	Double-acting						
Driver principle	Positive-locking (slot)						
Mounting position	Any						
Pneumatic connection	M5	G¼		G¼		G¾	G½
Stroke length	[mm]	10 ... 1800	10 ... 3000 ¹⁾				
Cushioning	Adjustable at both ends						
	Self-adjusting at both ends						
Cushioning length (PPV)	[mm]	16	18	20	30		83
Position sensing	Via magnet						
Max. speed	GF	[m/s]	1				
	KF	[m/s]	3				
	GA	[m/s]	–	3		–	

1) With effective strokes of over 2000 mm the installation of the drive unit must be with the sealing strip facing down; longer strokes available on request.

Operating and environmental conditions							
Piston Ø	18	25	32	40	50	63	80
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [7:-:-]						
Note on operating/pilot medium	Operation with lubricated medium possible (in which case lubricated operation will always be required)						
Operating pressure [bar]	2 ... 8			1.5 ... 8			
Ambient temperature ¹⁾ [°C]	-10 ... +60						
Corrosion resistance for variant GF CRC ²⁾	2						
ATEX	Specified types → www.festo.com						

1) Note operating range of proximity sensors.

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

Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating agents.

Forces [N] and impact energy [Nm]							
Piston Ø	18	25	32	40	50	63	80
Theoretical force at 6 bar	153	295	483	754	1178	1870	3016
Impact energy	→ 32						

Linear drives DGPL, with guide

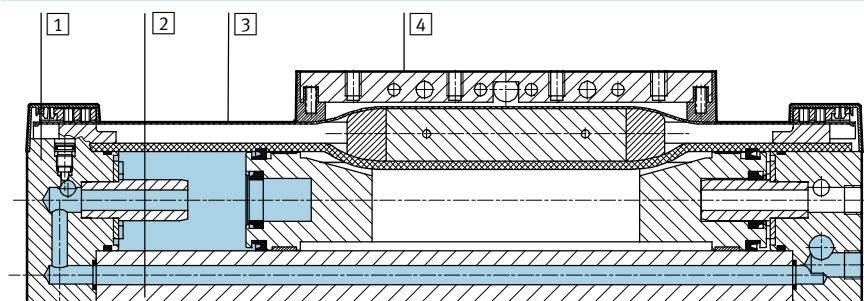
Technical data

FESTO

Weights [kg]		18	25	32	40	50	63	80
Piston Ø								
Basic weight with 0 mm stroke	GF	0.75	1.37	2.39	3.89	8.6	13.54	25.4
	KF	0.83	1.52	2.72	4.48	9.6	15.37	28.7
	GA	–	1.69			–	–	–
Additional weight per 10 mm stroke	GF	0.022	0.042	0.051	0.072	0.132	0.181	0.202
	KF	0.026	0.053	0.069	0.097	0.167	0.236	0.270
	GA	–	26			–	–	–
Moving load	GF	0.23	0.37	0.53	0.96	1.77	2.79	7.10
	KF	0.29	0.43	0.58	1.15	1.96	3.22	7.50
	GA	–	0.91			–	–	–

Materials

Sectional view



Axis	18	25	32	40	50	63	80
1 End cap	Anodised aluminium						
2 Profile	Anodised aluminium						
3 Cover strip	Corrosion resistant steel						Polyurethane
4 Driver	Anodised aluminium						
– Slide	Anodised aluminium						
– Guide rail	GF	Anodised aluminium					
	KF	Steel	Corrosion resistant steel				
– Seals	Nitrile rubber, polyurethane						

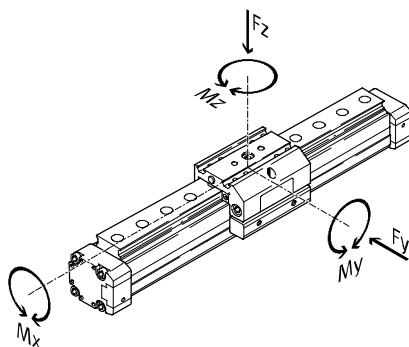
Linear drives DGPL, with guide

Technical data

FESTO

Characteristic load values for drive with plain-bearing guide GF

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



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

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



Note

All values for the GF version refer to a speed of 0.2 m/s.

Permissible forces and torques							
Piston Ø	18	25	32	40	50	63	80
Standard slide GK							
F _y _{max.} [N]	340	430	430	1010	1010	2000	2000
F _z _{max.} [N]	340	430	430	1010	1010	2000	2000
M _x _{max.} [Nm]	2.2	5.4	8.5	23	32	74	100
M _y _{max.} [Nm]	10	14	18	34	52	140	230
M _z _{max.} [Nm]	10	14	18	34	52	140	230
Extended slide GV							
F _y _{max.} [N]	330	400	395	930	870	1780	–
F _z _{max.} [N]	330	400	395	930	870	1780	–
M _x _{max.} [Nm]	2	5	8	21	28	66	–
M _y _{max.} [Nm]	18	25	30	58	83	235	–
M _z _{max.} [Nm]	18	25	30	58	83	235	–



Note

Sizing software
ProDrive
→ www.festo.com

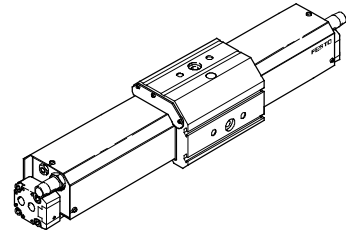
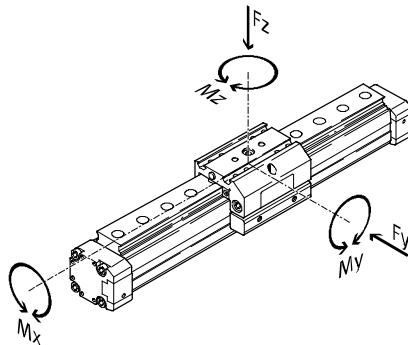
Linear drives DGPL, with guide

Technical data

FESTO

Characteristic load values for axis with recirculating ball bearing guide KF or protected version GA

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



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

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

Permissible forces and torques								
Piston Ø		18	25	32	40	50	63	80
Standard slide GK								
F _y _{max.}	[N]	930	3080	3080	7300	7300	14050	14050
F _z _{max.}	[N]	930	3080	3080	7300	7300	14050	14050
M _x _{max.}	[Nm]	7	45	63	170	240	580	745
M _y _{max.}	[Nm]	23	85	127	330	460	910	1545
M _z _{max.}	[Nm]	23	85	127	330	460	910	1545
Extended slide GV								
F _y _{max.}	[N]	930	3080	3080	7300	7300	14050	–
F _z _{max.}	[N]	930	3080	3080	7300	7300	14050	–
M _x _{max.}	[Nm]	7	45	63	170	240	580	–
M _y _{max.}	[Nm]	45	170	250	660	920	1820	–
M _z _{max.}	[Nm]	45	170	250	660	920	1820	–

Note

The values for standard slide GK and piston Ø 18 ... 40 apply to variant GA.

Linear drives DGPL, with guide

Technical data – Plain-bearing guide

FESTO

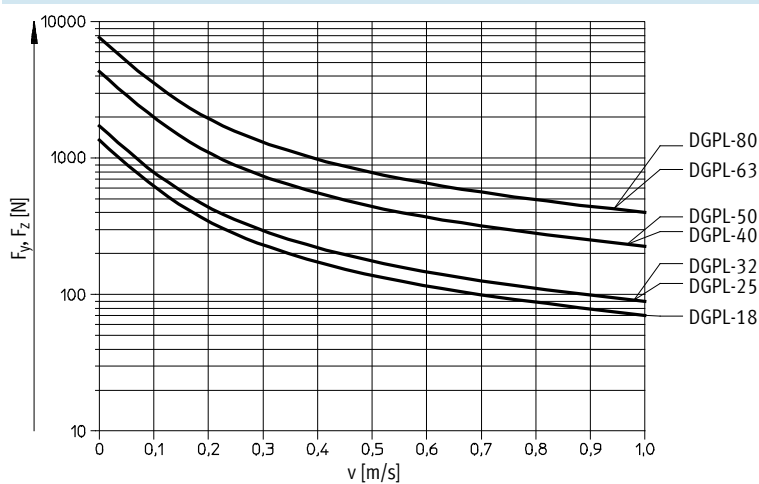
Maximum permissible static and dynamic characteristic load values

Standard slide and plain-bearing guide DGPL-...-GF-GK-S

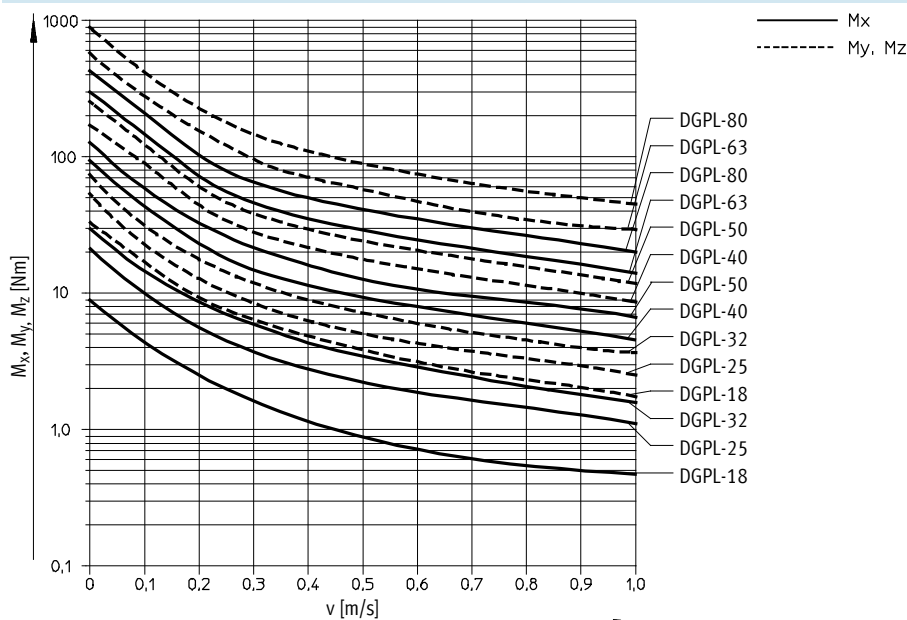
The pneumatic linear drive with plain-bearing guide DGPL-...-GF is designed for a maximum speed of 1 m/s. At higher speeds and vertical application, it is recommended that

pneumatic linear drives with recirculating ball bearing guide DGPL-...-KF are used as an alternative.

Maximum permissible speed v as a function of the force F



Maximum permissible speed v as a function of the permissible torque M



Linear drives DGPL, with guide

Technical data – Plain-bearing guide

FESTO

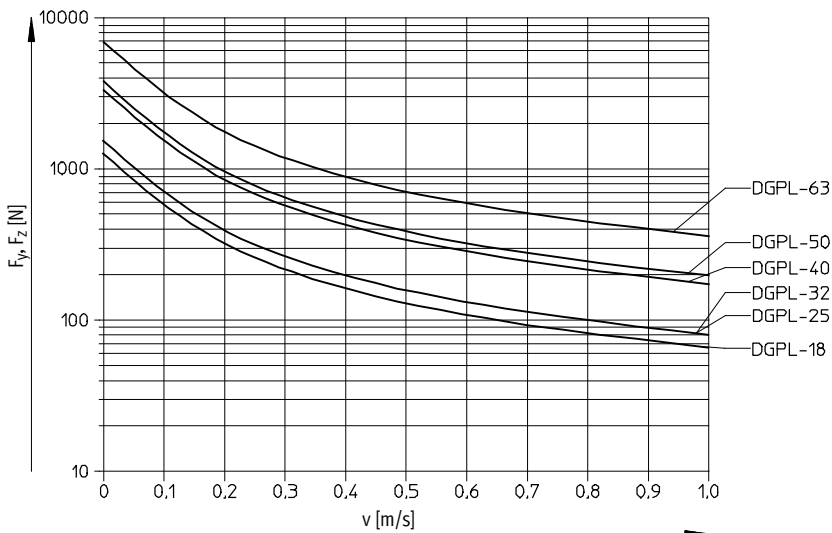
Maximum permissible static and dynamic characteristic load values

Extended slide and plain-bearing guide DGPL-...-GF-GV-S

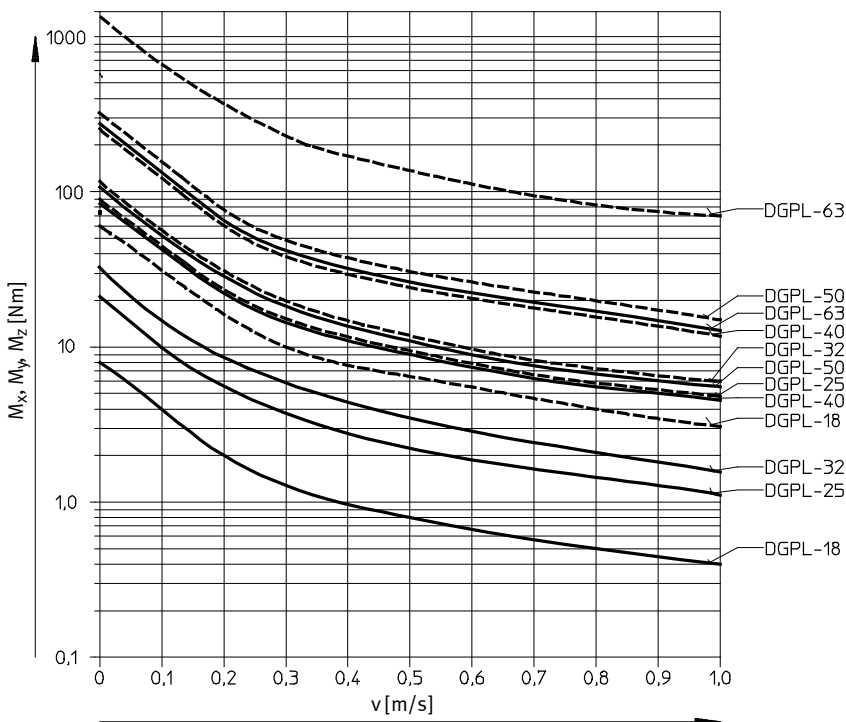
The pneumatic linear drive with plain-bearing guide DGPL-...-GF is designed for a maximum speed of 1 m/s. At higher speeds and vertical application, it is recommended that

pneumatic linear drives with recirculating ball bearing guide DGPL-...-KF are used as an alternative.

Maximum permissible speed in m/s as a function of the force F



Maximum permissible speed in m/s as a function of the permissible torque M



- 1 - Type discontinued DGPL-...-GF Available up until 2014

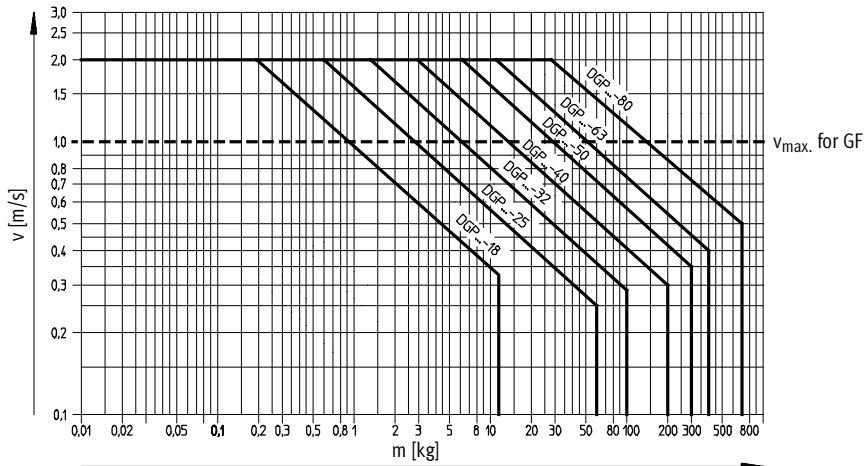
Linear drives DGPL, with guide

Technical data

FESTO

Operating range of the integrated end-position cushioning PPV

Maximum permissible speed v as a function of the moving load M



- - Note

The data applies to a horizontal mounting position, applied load on top.

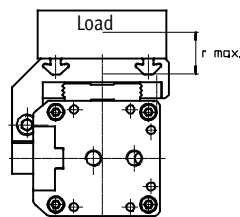
m = Applied load + moving load
→ 27

The graph opposite refers to r_{max} .

Pneumatic linear drives

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 externally cushioned using suitable equipment (shock absorbers, stops, etc), preferably at the centre of gravity of the mass.

with slide DGPL



$r_{max.} = 20 \text{ mm}$
for piston $\varnothing 18 \text{ mm}$

$r_{max.} = 50 \text{ mm}$
for piston $\varnothing 25 \dots 80 \text{ mm}$
(data for greater load distances on request)

- - Note

Evenness of applied loads on pneumatic linear drives with slide DGPL: To avoid distortion or loosening of the guide elements, the

bearing surface of the assembly must maintain a flatness of at least 0.03 mm .

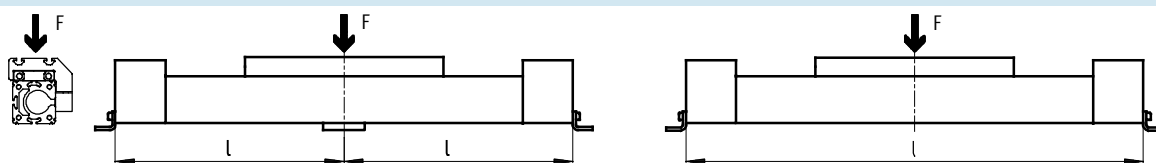
Linear drives DGPL, with guide

Technical data

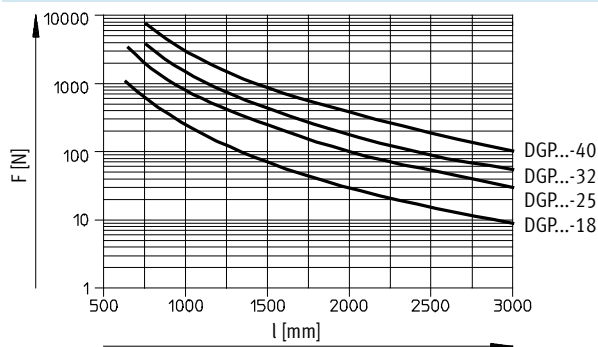
Maximum permissible support span l as a function of the force F

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

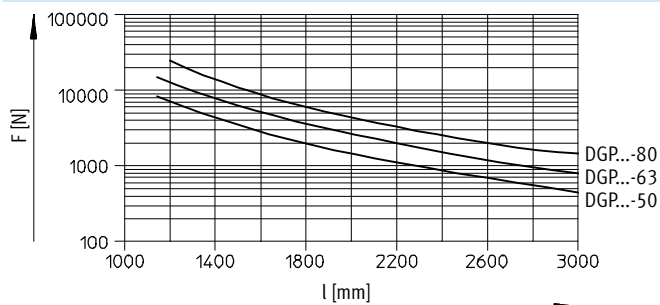
Force on the surface of the slide



Piston $\varnothing 18 \dots 40$



Piston $\varnothing 50 \dots 80$



- 1 - Type discontinued DGPL-...-GF
Available up until 2014

Linear drives DGPL, with guide

Technical data

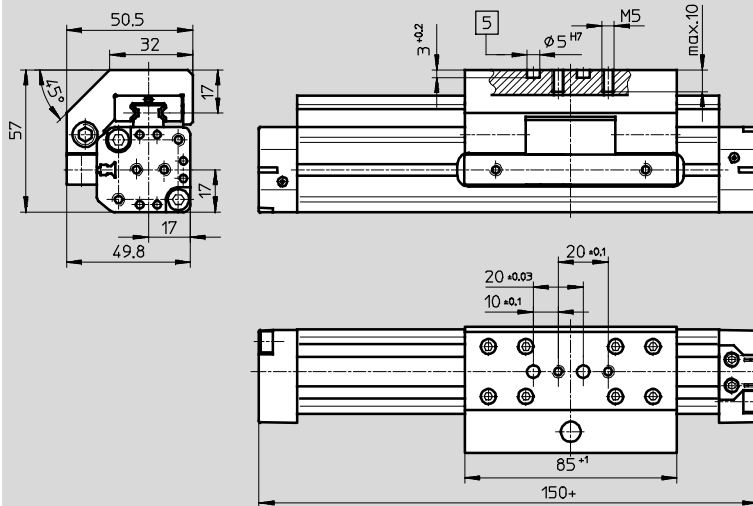
FESTO

Dimensions

Download CAD data → www.festo.com

Standard slide GK

Piston Ø 18



5 Holes for centring pin
 ZBS 5

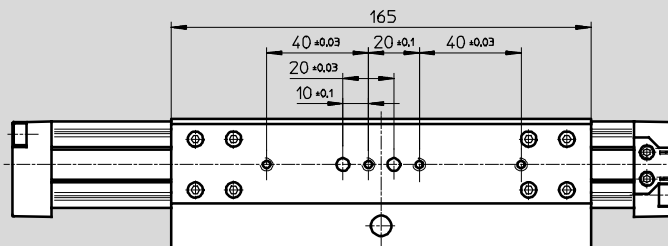
+ = plus stroke length

Basic dimensions

→ 14

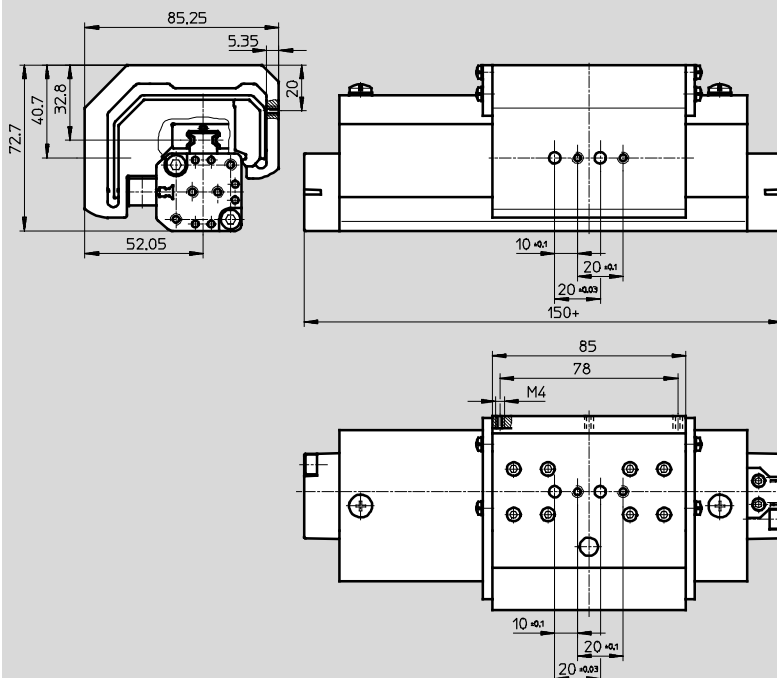
Extended slide GV

Piston Ø 18



Protected version GA

Piston Ø 18



Linear drives DGPL, with guide

Technical data

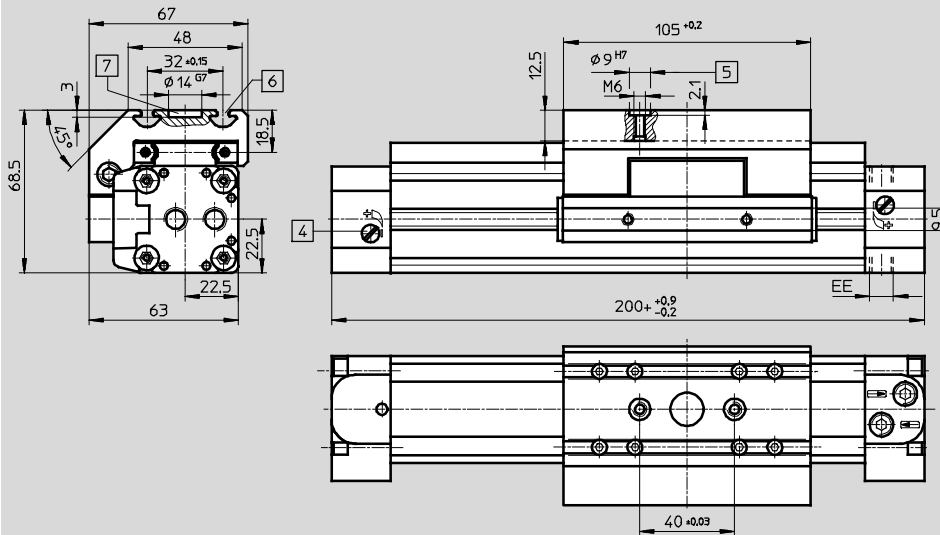
FESTO

Dimensions

Download CAD data → www.festo.com

Standard slide GK

Piston Ø 25



- 4 Regulating screw for adjustable end-position cushioning
- 5 Hole for centring sleeve ZBH-9
- 6 Mounting slot for slot nut NSTL-25
- 7 Hole for central mounting SLZZ

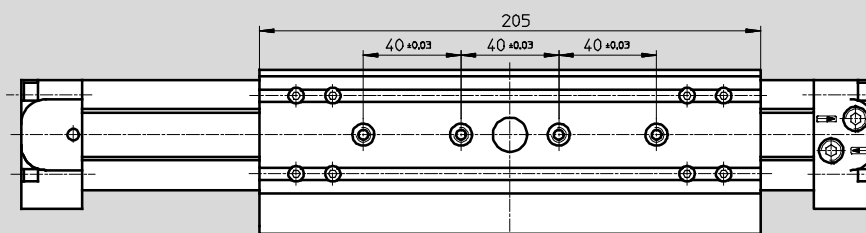
+ = plus stroke length

Basic dimensions

→ 15

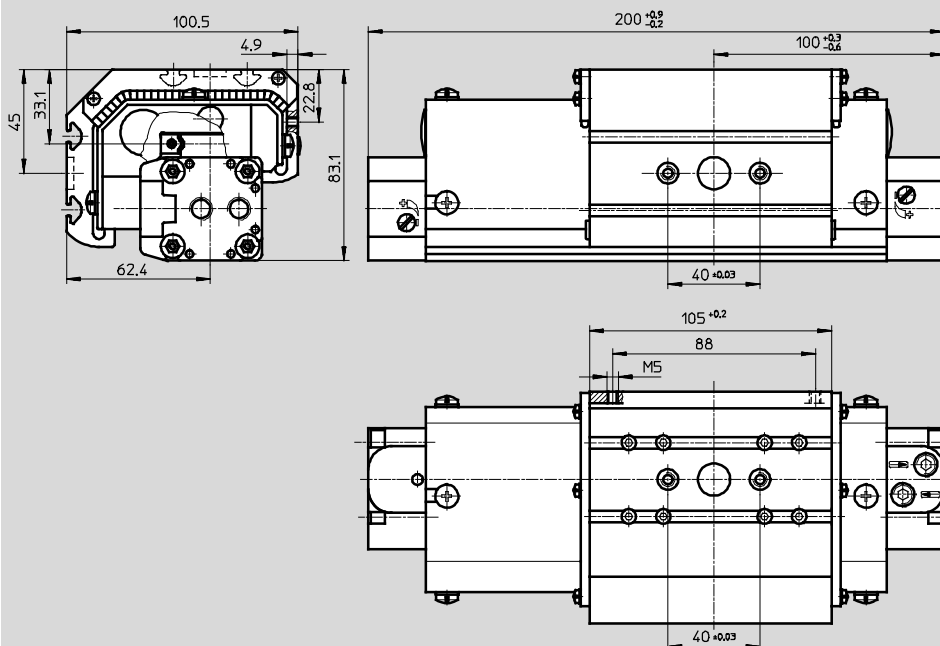
Extended slide GV

Piston Ø 25



Protected version GA

Piston Ø 25



- 1 - Type discontinued DGPL-...-GF
Available up until 2014

Linear drives DGPL, with guide

Technical data

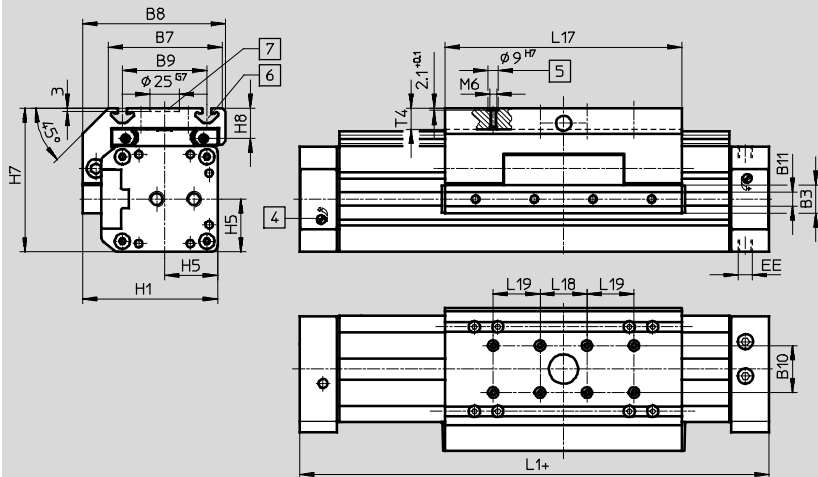
FESTO

Dimensions

Download CAD data → www.festo.com

Standard slide GK

Piston Ø 32 ... 80



- 4 Regulating screw for adjustable end-position cushioning
- 5 Hole for centring sleeve ZBH-9
- 6 Mounting slot for slot nut NSTL
- 7 Hole for central mounting SLZZ

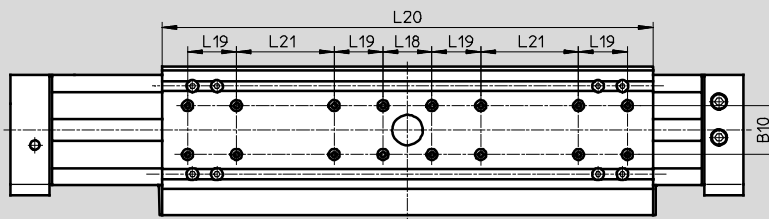
+ = plus stroke length

Basic dimensions

→ 16

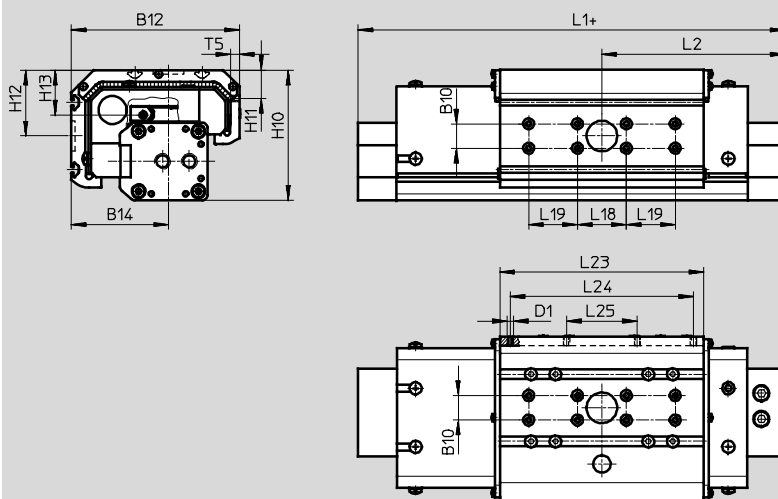
Extended slide GV

Piston Ø 32 ... 63



Protected version GA

Piston Ø 32 ... 40



Linear drives DGPL, with guide

Technical data

FESTO

Ø [mm]	B3 +0.2	B7	B8	B9	B10 ±0.03	B11	B12	B14	D1	EE
32	19	63	79	47 ±0.15	20	9.5	112.1	67.6	–	G $\frac{1}{8}$
40	21	78.5	96.5	55 ±0.2			137.6	79.6	M5	G $\frac{1}{4}$
50	24	97	122	72 ±0.2	40	12	–	–	–	G $\frac{3}{8}$
63		121	142	90 ±0.25						
80	36	151.5	188	112 ±0.5/–0.2		–				G $\frac{1}{2}$

Ø [mm]	H1	H5	H7	H8	H10	H11	H12	H13	L1	L2
32	72	27	77.5	18.5	93.1	–	49.5	34.1	250	125
40	86	32	90.5	20	106.6	23.1	54	36.1	300	150
50	115	45	122.5	26	–	–	–	–	350	175
63	131	53	144.5	30					400	200
80	174	65	175	36.5					520	260

Ø [mm]	L17	L18 ±0.03	L19 ±0.03	L20	L21 ±0.1	L23	L24	L25	T4 max.	T5
32	131 ±0.2	40	–	261	40	131	–	–	12.5	–
40	167 ±0.2		40	337		167	150	58		7
50	202 ±0.2			402	80	–	–	–	18.5	–
63	230 ±0.2			480	120				20.5	
80	320 –0.3			–	–				27	

- 1 - Type discontinued DGPL-...-GF
Available up until 2014

FESTO

Linear drives DGPL, with guide

Ordering data

Ordering data – Standard stroke		
Piston Ø	Part No.	Type
25	526 649	DGPL-25-250-PPV-A-B-KF
	526 650	DGPL-25-400-PPV-A-B-KF
	526 651	DGPL-25-500-PPV-A-B-KF
	526 652	DGPL-25-1000-PPV-A-B-KF
32	526 657	DGPL-32-250-PPV-A-B-KF
	526 658	DGPL-32-400-PPV-A-B-KF
	526 659	DGPL-32-500-PPV-A-B-KF
	526 660	DGPL-32-1000-PPV-A-B-KF
40	526 665	DGPL-40-250-PPV-A-B-KF
	526 666	DGPL-40-400-PPV-A-B-KF
	526 667	DGPL-40-500-PPV-A-B-KF
	526 668	DGPL-40-1000-PPV-A-B-KF

Ordering data – Variable stroke for plain-bearing guide GF		
Piston Ø	Part No.	Type
18	161 974	DGPL-18-...-PPV-A-GF-B
25	161 786	DGPL-25-...-PPV-A-GF-B
32	161 787	DGPL-32-...-PPV-A-GF-B
40	161 788	DGPL-40-...-PPV-A-GF-B
50	161 789	DGPL-50-...-PPV-A-GF-B
63	161 790	DGPL-63-...-PPV-A-GF-B
80	161 791	DGPL-80-...-PPV-A-GF-B

Ordering data – Variable stroke for recirculating ball bearing guide KF		
Piston Ø	Part No.	Type
18	161 977	DGPL-18-...-PPV-A-KF-B
25	161 792	DGPL-25-...-PPV-A-KF-B
32	161 793	DGPL-32-...-PPV-A-KF-B
40	161 794	DGPL-40-...-PPV-A-KF-B
50	161 795	DGPL-50-...-PPV-A-KF-B
63	161 796	DGPL-63-...-PPV-A-KF-B
80	161 797	DGPL-80-...-PPV-A-KF-B

Ordering data – Wearing parts kits		
Piston Ø	Part No.	Type
18	384 266	DGPL-18-...-PPV-A
25	123 563	DGPL-25-...-PPV-A
32	123 564	DGPL-32-...-PPV-A
40	123 565	DGPL-40-...-PPV-A
50	123 566	DGPL-50-...-PPV-A
63	123 567	DGPL-63-...-PPV-A
80	123 568	DGPL-80-...-PPV-A

 Note

Piston Ø 8 and 12
 Linear drives DGC

→ Internet: dgc

Linear drives DGPL, with guide

Ordering data – Modular products

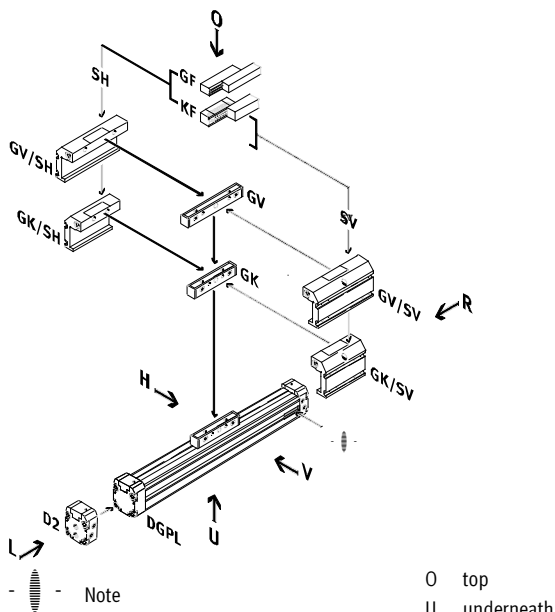
Order code

Mandatory data

GK	Standard slide	D2	Supply port
GV	Extended slide		
SH	Slide at rear		
SV	Slide at front		

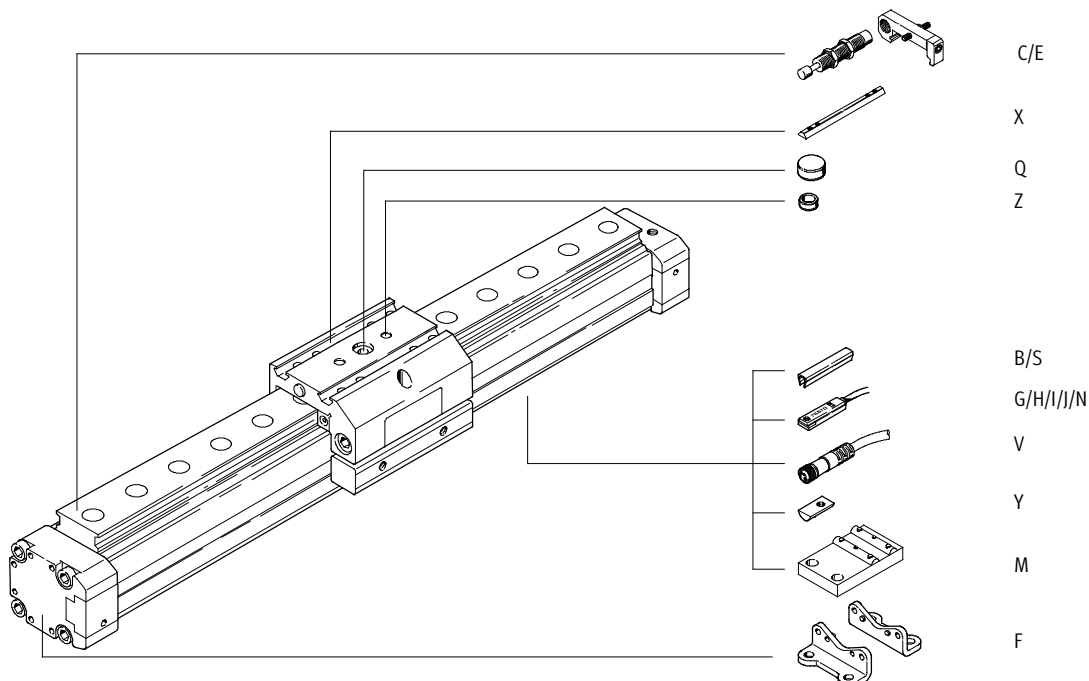
Standard slide GK

Extended slide GV



The insertion point for the proximity sensor is located on the right-hand side of the pneumatic linear drive DGPL.

Options



- 1 - Type discontinued DGPL-...-GF
Available up until 2014

Linear drives DGPL, with guide

Ordering data – Modular products

FESTO

Mandatory data								Options		
Module No.	Drive function	Size	Stroke	Cushioning	Position sensing	Generation	Guide	Basic design	Slide attachment position	Supply port
175 133	DGPL	18	10 ...	P	A	B	GF	GK	SV	D2
175 134		25	3000	PPV			KF	GV	SH	
175 135		32								
175 136		40								
175 137		50								
175 138		63								
175 139		80								
Ordering example										
175 138	DGPL	- 63	- 800	- PPV	- A	- B	- KF	- GK	- SH	- D2

Ordering table										
Size	18	25	32	40	50	63	80	Condi- tions	Code	Enter code
M Module No.	175 133	175 134	175 135	175 136	175 137	175 138	175 139			
Drive function	Pneumatic linear drive								DGPL	DGPL
Size	18	25	32	40	50	63	80		-...	
Stroke [mm]	10 ... 1800	10 ... 3000						1	-...	
Cushioning	Pneumatic cushioning adjustable at both ends								-PPV	
Position sensing	Via magnet								-A	-A
Generation	B series								-B	-B
Guide	Plain-bearing guide								-GF	
	Recirculating ball bearing guide								-KF	
O Basic design	Standard piston/slide								-GK	
	Extended piston/slide							-	-GV	
Slide attachment position	At rear								-SH	
	At front								-SV	
Supply port	At both ends								-D2	

1 **Stroke** With piston diameter 18 and piston/slide extended (-GV):
 Restricted stroke 10 ... 1750 mm

Transfer order code

DGPL - - - - A - B - - - - -

Linear drives DGPL, with guide

Ordering data – Modular products

FESTO

Options										
Protected version	Accessories	Slot cover	Slot nut	Centring sleeve	Central support	Central mounting	Foot mounting	Proximity sensor	Cable with socket	Shock absorber kit
GA	ZUB	...S ...B	...X ...Y	...Z	...M	...Q	...F	...G ...H ...I ...J ...N	...V	...C ...E
-	: ZUB	- 2S2B	5Y2X	20Z		Q	F	2G		2C

Ordering table													
Size		18	25	32	40	50	63	80	Condi- tions	Code	Enter code		
↓ [0]	Protected version		Protected roller bearing design for harsh environment				–	–	–	[2]	-GA		
	Accessories		Supplied separately								:ZUB-		:ZUB-
	Slot cover, 2 pcs., 0.5 m	Sensor slot	1 ... 10								...S		
		Mounting slot	–	–	1 ... 10					...B			
	Slot nut	Slide	–	1 ... 10					...X				
		Mounting slot	–	–	1 ... 10					...Y			
	Centring sleeve (pack of 10)		10, 20, 30, 40, 50, 60, 70, 80, 90								...Z		
	Central support		1 ... 10								...M		
	Central mounting		–	1 ... 10					...Q				
	Foot mounting		1 ... 10								...F		
	Proximity sensor, magnetic	with cable, 2.5 m	1 ... 10 (SME-8-K-LED-24)								...G		
		with plug	1 ... 10 (SME-8-S-LED-24)								...H		
	Proximity sensor, magnetic, contactless	with cable, 2.5 m	1 ... 10 (SMT-8-PS-K-LED-24)								...I		
		with plug	1 ... 10 (SMT-8-PS-S-LED-24)								...J		
	Proximity sensor, magnetic	NC contact with cable, 2.5 m	1 ... 10 (SME-8-O-K-LED-24)								...N		
Cable with socket, 2.5 m		1 ... 10 (SIM-M8-3GD-2,5-PU)								...V			
Shock absorber kit		1 ... 10								...C			
		1 ... 10					–	–	–	[3]	...E		

2 GA Only with recirculating ball bearing guide KF.

3 E Only with protected version GA.

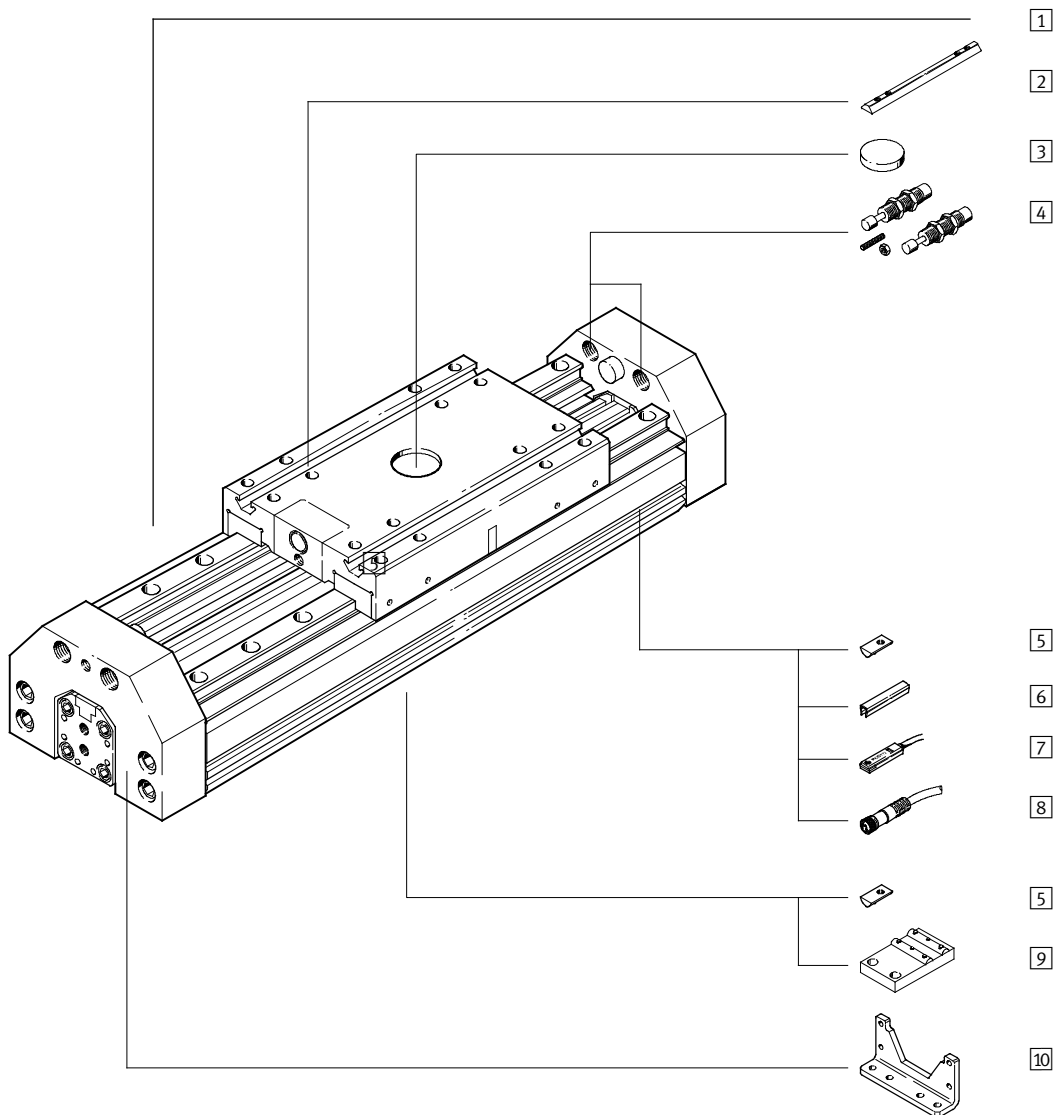
Transfer order code

- : ZUB -

Linear drives DGPL-HD, with heavy-duty guide

Peripherals overview

FESTO



Linear drives DGPL-HD, with heavy-duty guide

Peripherals overview

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Variants and accessories		
Type	Brief description	→ Page/Internet
1 Linear axis DGPL-HD	Pneumatic linear drive with heavy-duty guide	44
2 Slot nut for slide X	For mounting loads and attachments on the slide	61
3 Central mounting Q	For centring loads and attachments on the slide	61
4 Shock absorber kit D	For slowing higher speeds to a stop	59
5 Slot nut for side mounting slot Y	For mounting attachments	61
6 Slot cover B/S	For protecting against ingress of dirt	61
7 Proximity sensor G/H/I/J/N	For sensing the slide position	62
8 Cable with socket V	For proximity sensors	62
5 Slot nut for mounting slot underneath U	For mounting attachments	61
9 Central support M	For mounting the axis	56
10 Foot mounting F	For mounting the axis	56

Linear drives DGP-HD, with heavy-duty guide

FESTO

Type code

	DGPL	-	25	-	500	-	PPV	-	A	-	B	-	GK	-	D2
Type															
DGPL	Linear drive with heavy-duty guide														
Piston Ø															
Stroke [mm]															
Cushioning															
PPV	Adjustable end-position cushioning														
Position sensing															
A	Via magnet														
Generation															
B	B series														
Basic design															
GK	Standard slide														
Supply port															
D2	Supply port at both ends														

Linear drives DGP-HD, with heavy-duty guide

FESTO

Type code

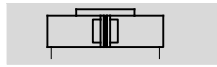
		+ ZUB	-	2S	-		-	F			2H	2V	2D
Accessories													
ZUB	Accessories supplied loose												
Slot cover													
...S	Sensor slot												
...B	Mounting slot												
Slot nut													
...Y	For side mounting slot												
...X	For slide												
...U	For mounting slot underneath												
Central support													
...M	Central support												
Central mounting													
...Q	Central mounting												
Foot mounting													
...F	Foot mounting												
Proximity sensor													
...G	With cable, 2.5 m												
...H	With plug												
...I	Contactless with cable, 2.5 m												
...J	Contactless, plug												
...N	NC contact with cable, 2.5 m												
Cable with socket													
...V	2.5 m												
Shock absorber kit													
...D	For heavy-duty guide												

Linear drives DGPL-HD, with heavy-duty guide

FESTO

Technical data

Function

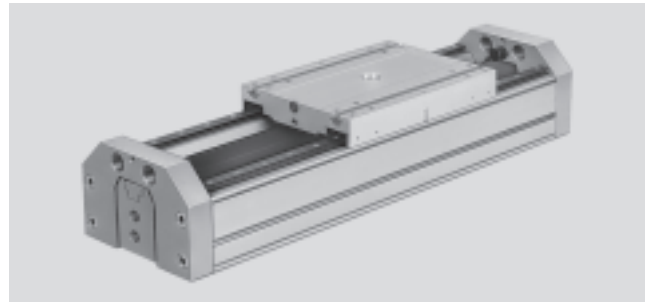


www.festo.com

Wearing parts kits

→ 51

- Ø - Diameter
18 ... 40 mm
- I - Stroke length
10 ... 2160 mm



General technical data						
Piston Ø	18-HD18	18-HD25	25-HD25	25-HD40	32-HD40	40-HD40
Constructional design	Pneumatic linear drive with heavy-duty guide					
Protection against torsion/guide	Slotted profile barrel/recirculating ball bearing guide					
Mode of operation	Double-acting					
Driver principle	Positive-locking (slot)					
Mounting position	Any					
Pneumatic connection	M5		G ¹ / ₈			G ¹ / ₄
Stroke length [mm]	10 ... 1710	10 ... 1640	10 ... 2160	10 ... 2110		
Cushioning P	Non-adjustable at both ends					
	Self-adjusting at both ends					
Cushioning length [mm]	–					
Position sensing	Via magnet					
Max. speed [m/s]	3					

Operating and environmental conditions						
Piston Ø	18-HD18	18-HD25	25-HD25	25-HD40	32-HD40	40-HD40
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [7:-:-]					
Note on operating/pilot medium	Operation with lubricated medium possible (in which case lubricated operation will always be required)					
Operating pressure [bar]	2 ... 8					1.5 ... 8
Ambient temperature ¹⁾ [°C]	-10 ... +60					

1) Note operating range of proximity sensors.

Forces [N]						
Piston Ø	18-HD18	18-HD25	25-HD25	25-HD40	32-HD40	40-HD40
Theoretical force at 6 bar	153		295		483	754

Weights [kg]						
Piston Ø	18-HD18	18-HD25	25-HD25	25-HD40	32-HD40	40-HD40
Basic weight with 0 mm stroke	3.7	4.4	5.1	13.9	14.4	15.4
Additional weight per 10 mm stroke	0.089	0.133	0.152	0.212	0.217	0.233
Moving load	0.530	1.86	1.96	3.48	3.615	3.850

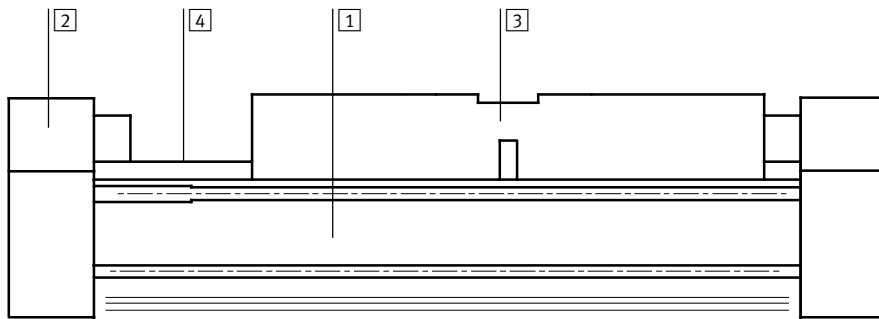
Linear drives DGPL-HD, with heavy-duty guide

Technical data

FESTO

Materials

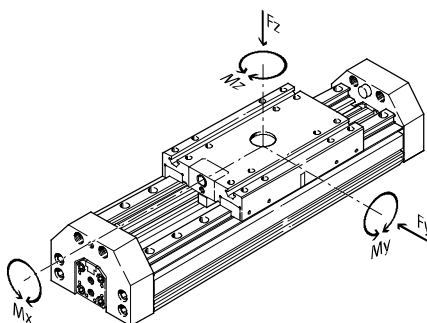
Sectional view



Axis		
1	Profile	Anodised aluminium
2	End cap	Anodised aluminium
3	Slide	Anodised aluminium
4	Guide rail	Steel
	Seals	Nitrile rubber, polyurethane
-		

Characteristic load values for drive with heavy-duty guide HD

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



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

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

Permissible forces and torques				
Piston Ø		HD-18	HD25	HD-40
F _y _{max.}	[N]	1820	5400	5400
F _z _{max.}	[N]	1820	5600	5600
M _x _{max.}	[Nm]	70	260	375
M _y _{max.}	[Nm]	115	415	560
M _z _{max.}	[Nm]	112	400	540

Linear drives DGPL-HD, with heavy-duty guide

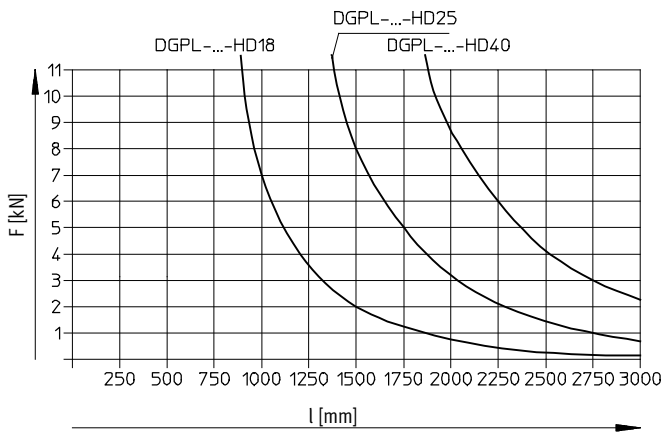
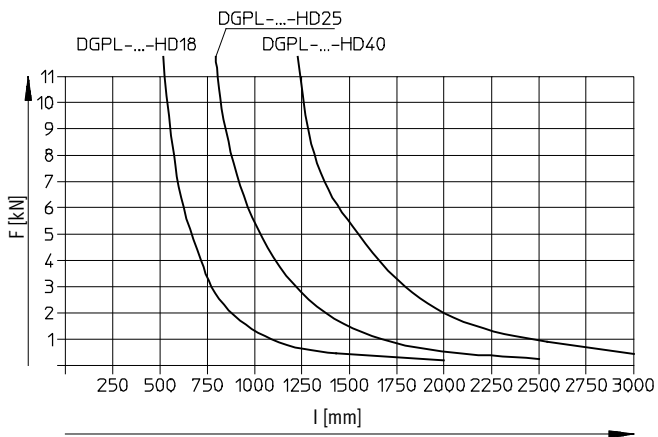
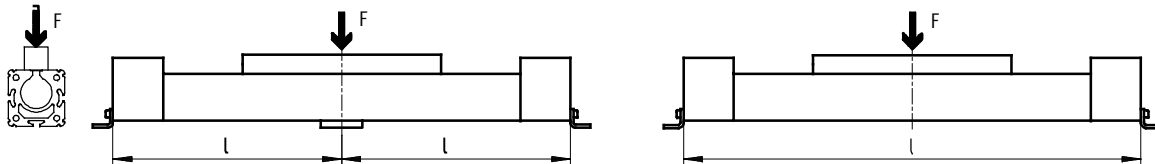
Technical data

FESTO

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

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

Force on the surface of the slide



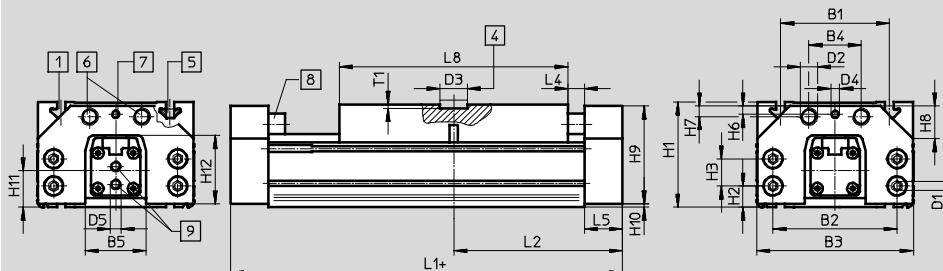
Linear drives DGPL-HD, with heavy-duty guide

Technical data

FESTO

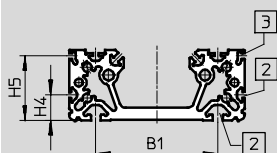
Dimensions

Download CAD data → www.festo.com



- | | | | |
|------------------------------------|--|---|------------------------|
| 1 Mounting slot for slot nut NSTH | 5 Slot nut NSTH | 8 Rubber buffer | + = plus stroke length |
| 2 Mounting slot for slot nut NST | 6 Thread for shock absorber YHD or YSR-...-C | 9 Supply port at one end (D2 variant: supply port at both ends) | |
| 3 Sensor slot for proximity sensor | 7 Thread for threaded pin (shock absorber kit) | | |
| 4 Central mounting SLZZ | | | |

Profile



Heavy-duty guide [mm]	B1	B2 ±0.2	B3	B4	B5	D1	D2	D3 Ø G7	D4	D5	H1	H2	H3	H4
18-HD18	80 ±0.3	85	116	40	36	M5	M12x1	25	M6	M5	70	12.8	19.5 ±0.1	15
18-HD25	100 ±0.3	114	144	48	56 ±0.5	M8	M16x1		M8	G1/8	93.5	18.5	25 ±0.2	22
25-HD25														
25-HD40	140 ±0.35	156	185	54	68		M22x1.5				124.5	21	48 ±0.2	36
32-HD40														
40-HD40										G1/4				

Heavy-duty guide [mm]	H5	H6	H7	H8	H9	H10	H11	H12	L1	L2	L4	L5	L8	T1
18-HD18	43.3	5.9	8.7	20x45°	68	0.8	25.5	49	240	120	15	25	160	3.5
18-HD25	53.8	9	9.8	30x45°	90	2	33	63	310	155		35	210	
25-HD25														
25-HD40	83.8	5.5	15.5	34x45°	120		59	89	354	177		32	260	4
32-HD40							54.4							
40-HD40							47.5							

Linear drives DGPL-HD, with heavy-duty guide

Ordering data – Modular products

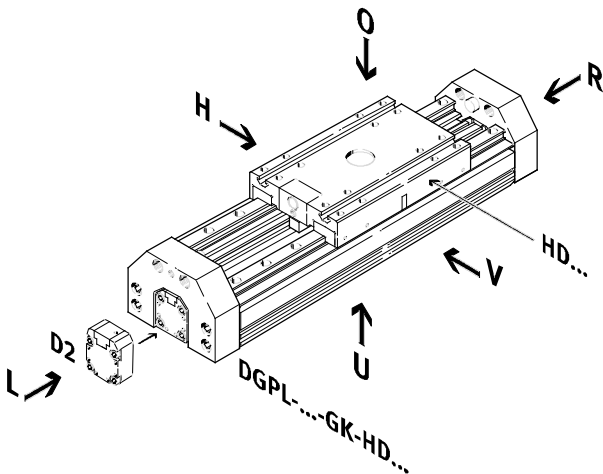
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Order code

Mandatory data

GK Standard slide
D2 Supply port

With heavy-duty guide HD



-  - Note

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

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

Ordering data – Wearing parts kits		
Piston Ø	Part No.	Type
18	384 266	DGP-18-...-PPV-A
25	123 563	DGP-25-...-PPV-A
32	123 564	DGP-32-...-PPV-A
40	123 565	DGP-40-...-PPV-A
50	123 566	DGP-50-...-PPV-A
63	123 567	DGP-63-...-PPV-A
80	123 568	DGP-80-...-PPV-A

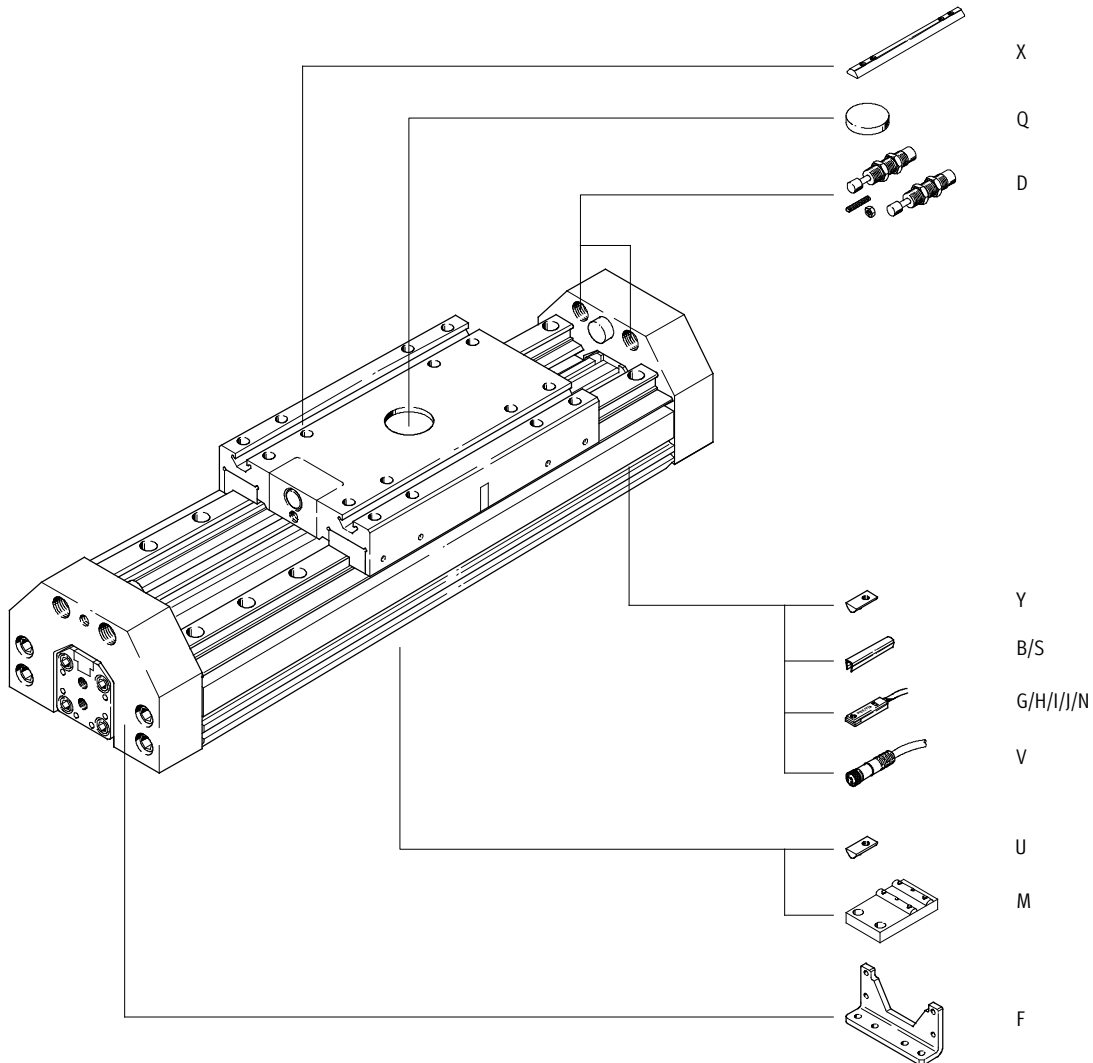
Linear drives DGPL-HD, with heavy-duty guide

Ordering data – Modular products

FESTO

Order code

Options



Linear drives DGPL-HD, with heavy-duty guide

FESTO

Ordering data – Modular products

M Mandatory data						O Options →		
Module No.	Drive function	Size	Stroke	Cushioning	Position sensing	Guide	Basic design	Supply port
175 133	DGPL	18	10 ... 2160	PPV	A	HD18	GK	D2
175 134		25				HD25		
175 135		32				HD40		
175 136		40						
Ordering example								
175 134	DGPL	25	800	PPV	A	HD25	GK	D2

Ordering table								
Size	18	25	32	40	Condi- tions	Code	Enter code	
M Module No.	175 133	175 134	175 135	175 136				
Drive function	Pneumatic linear drive with heavy-duty guide					DGPL	DGPL	
Size	18	25	32	40		-...		
Stroke [mm]	HD18	10 ... 1710	–	–		-...		
	HD25	10 ... 1650	10 ... 2160	–		-...		
	HD40	–	10 ... 2110	–		-...		
Cushioning	Pneumatic cushioning adjustable at both ends					-PPV	-PPV	
Position sensing	Via magnet					-A	-A	
Guide Heavy-duty guide HD	HD18	–	–	–		-HD18		
	HD25	–	–	–		-HD25		
	–	HD40	–	–		-HD40		
O Basic design	Standard piston/slide					-GK		
↓ Supply port	At both ends					-D2		

Transfer order code

DGPL
 - - - PPV
 - A
 - - - -

Linear drives DGPL-HD, with heavy-duty guide

FESTO

Ordering data – Modular products

Options								
Accessories	Slot cover	Slot nut	Central support	Central mounting	Foot mounting	Proximity sensor, magnetic	Cable with socket	Shock absorber kit
ZUB	...S ...B	...X ...Y ...U	...M	...Q	...F	...G ...H ...I ...J ...N	...V	...D
: ZUB	- 2S2B	2X5Y5U		2Q	F	2G		2D

Ordering table								
Size	18	25	32	40	Condi- tions	Code	Enter code	
↓ Accessories	Supplied separately					:ZUB-	:ZUB-	
0 Slot cover, 2 pcs., 0.5 m	Sensor slot	1 ... 10				...S		
	Mounting slot	1 ... 10				...B		
Slot nut	Slide	1 ... 10				...X		
	Mounting slot	1 ... 10				...Y		
	Mounting slot under- neath	1 ... 10				...U		
Central support		1 ... 10				...M		
Central mounting		1 ... 10				...Q		
Foot mounting		1 ... 10				...F		
Proximity sensor, magnetic	with cable, 2.5 m	1 ... 10 (SME-8-K-LED-24)				...G		
	with plug	1 ... 10 (SME-8-S-LED-24)				...H		
Proximity sensor, magnetic, contactless	with cable, 2.5 m	1 ... 10 (SMT-8-PS-K-LED-24)				...I		
	with plug	1 ... 10 (SMT-8-PS-S-LED-24)				...J		
Proximity sensor, magnetic	NC contact with cable, 2.5 m	1 ... 10 (SME-8-O-K-LED-24)				...N		
Cable with socket, 2.5 m		1 ... 10 (SIM-M8-3GD-2,5-PU)				...V		
Shock absorber kit		1 ... 10				...D		

Transfer order code

: ZUB - [] [] [] [] [] [] [] [] []

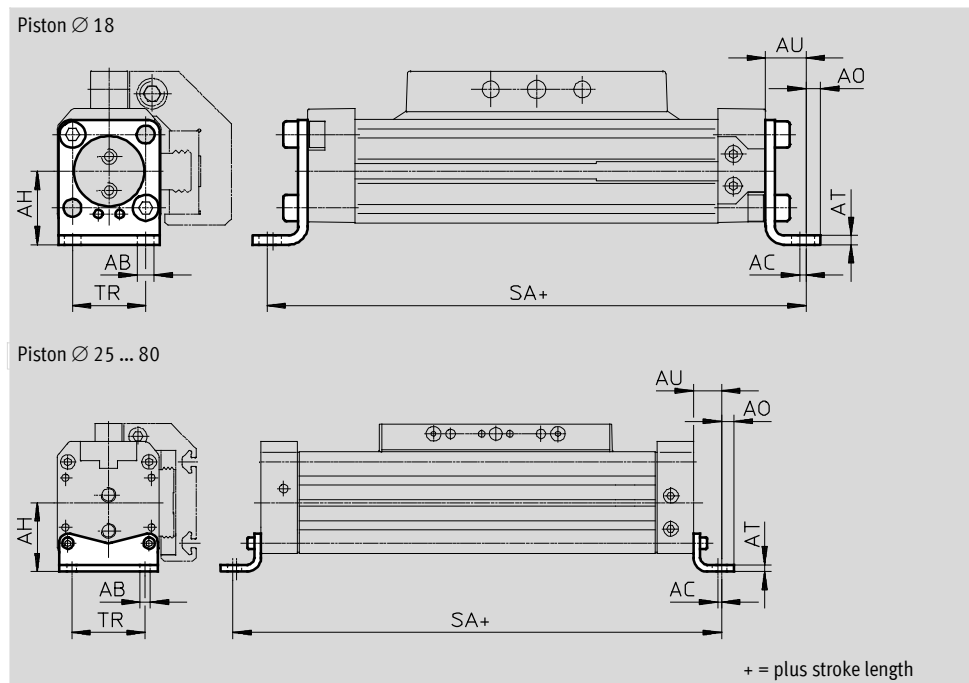
Linear drives DGP/DGPL

Accessories

FESTO

Foot mounting HP (order code F)

Material:
Galvanised steel
Free of copper, PTFE and silicone



Dimensions and ordering data											
For Ø	AB Ø	AC	AH	AO	AT	AU	SA		TR	Weight	Part No. Type
[mm]							GK	GV		[g]	
18	5.5	2	24	4.8	3	13.2	176.5	256.4	24	59	158 472 HP-18
25	5.5	2	29.5	6	3	13	226	326	32.5	61	150 731 HP-25
32	6.6	2	37	7	4	17	284	414	38	117	150 732 HP-32
40	6.6	2	46	8.5	5	17.5	335	505	45	188	150 733 HP-40
50	9	3	61	11	6	25	400	600	65	243	150 734 HP-50
63	11	3	69	13.5	6	28	456	706	75	305	150 735 HP-63
80	13	3	85	12	8	28	576	–	72	620	158 453 HP-80

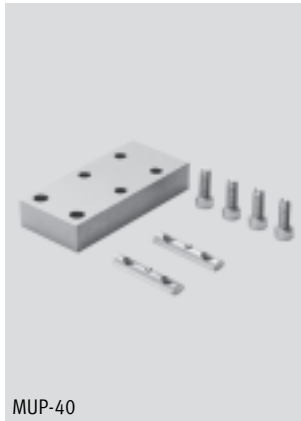
Linear drives DGP/DGPL

Accessories

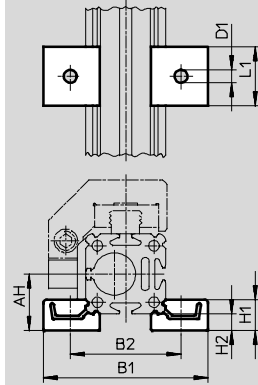
FESTO

Central support MUP (order code M)

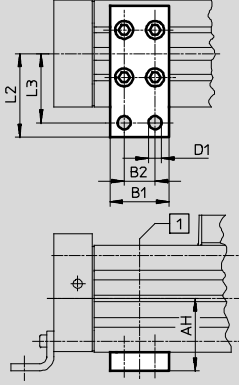
Material:
Galvanised steel
Free of copper, PTFE and silicone



Piston Ø 18 and 25



Piston Ø 32 ... 63



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

Dimensions and ordering data												
For Ø	AH	B1	B2	D1 Ø	H1	H2	L1	L2	L3	Weight [g]	Part No.	Type
[mm]												
18	24	70.5	47	5.5	13	7	25	–	–	29	150 736	MUP-18/25
25	29.5	81	58	5.5	13	7	25	–	–	33	150 736	MUP-18/25
32	37	35	22	6.6	–	–	–	41.5	35	89	150 737	MUP-32
40	46	35	22	6.6	–	–	–	47	40	126	150 738	MUP-40
50	61	50	26	11	–	–	–	70	58	241	150 739	MUP-50
63	69	50	26	11	–	–	–	77	65	340	150 800	MUP-63
80	85	50	26	11	–	–	–	88	76	590	158 455	MUP-80

Linear drives DGP/DGPL

Accessories

FESTO

Foot mounting HHP

for heavy-duty guide

(order code F)

Material:

Galvanised steel



Central support MUP

for heavy-duty guide

(order code M)

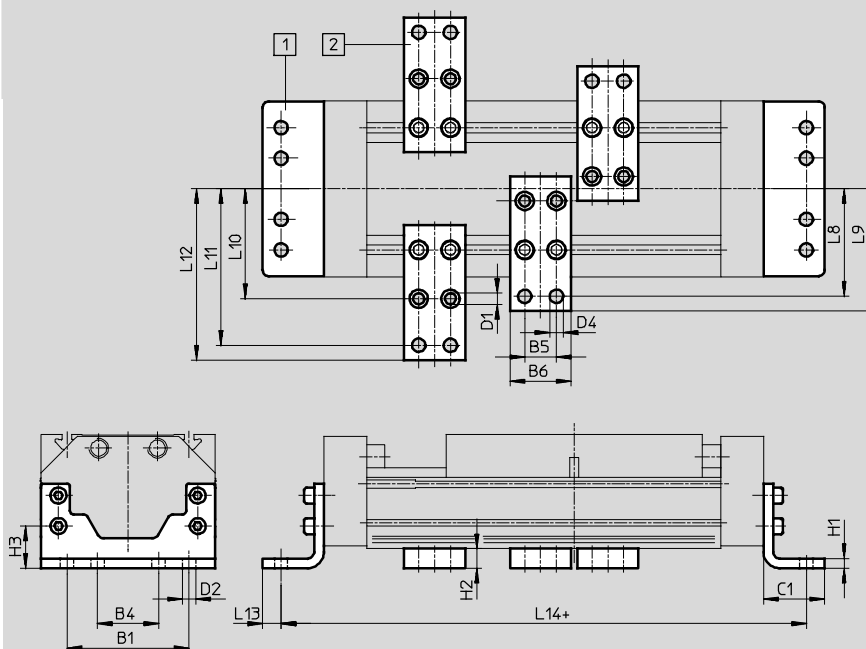
Material:

Galvanised steel

Free of copper, PTFE and silicone



DGPL-...-HD18/-HD25/-HD40



- 1 Foot mounting HHP
- 2 Central support MUP

+ = plus stroke length

Dimensions and ordering data

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

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

Linear drives DGP/DGPL

Accessories

FESTO

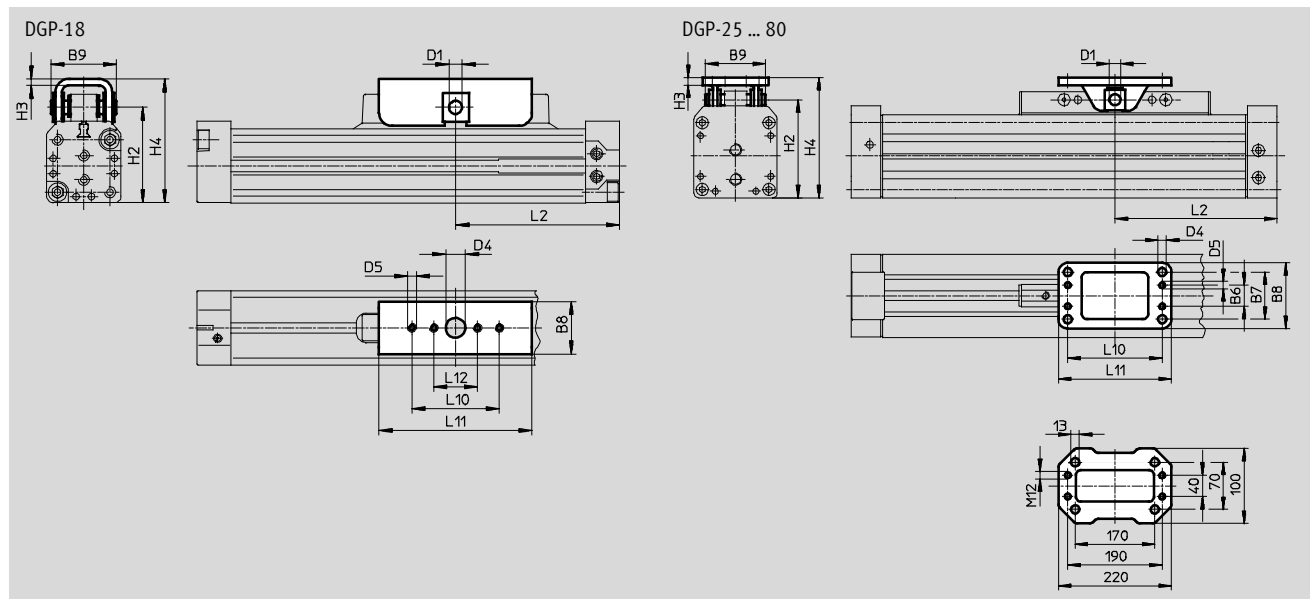
Moment compensator FKP

for DGP

(order code FK)

Material:

Galvanised steel



Dimensions and ordering data															
For Ø	B6	B7	B8	B9	D1 Ø	D4 Ø	D5	H2	H3	H4	L2	L10	L11	L12	Part No. Type
[mm]															
18	–	–	26	30	6	9	M4	43.8	3	57.8	75	40	70	20	158 474 FKP-18
25	20	40	54	50	8	5.5	M5	57	5	75	100	66	80	–	150 801 FKP-25/32
32	20	40	54	50	8	5.5	M5	66	5	84	125	66	80	–	150 801 FKP-25/32
40	24	44	58	60	10	6.5	M6	78	6	99	150	76	90	–	150 802 FKP-40
50	23	51	71	63	12	9	M8	106	8	130	175	102	122	–	150 803 FKP-50/63
63	23	51	71	63	12	9	M8	122	8	146	200	102	122	–	150 803 FKP-50/63
80	–	–	–	94	20	–	–	158	13	194.5	258	–	–	–	158 457 FKP-80/100

Linear drives DGP/DGPL

Accessories

FESTO

Shock absorber YSR-...-C

for DGPL

(order code C)

Material:

Housing: galvanised steel; piston rod:
high-alloy steel,

seals: nitrile rubber, polyurethane

Free of copper, PTFE and silicone



Note

Shock absorber YSRW with
progressive characteristics

→ Internet: ysrw

Ordering data		Part No.	Type
For Ø [mm]	Weight [g]		
18	50	34 571	YSR-8-8-C
25	70	34 572	YSR-12-12-C
32	70	34 572	YSR-12-12-C
40	140	34 573	YSR-16-20-C
50	140	34 573	YSR-16-20-C
63	240	34 574	YSR-20-25-C
80	240	34 574	YSR-20-25-C

Shock absorber retainer KYP

for DGPL

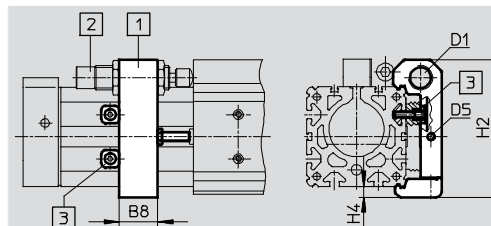
(order code C)

Material:

Retainer: Aluminium

Sleeve: Corrosion resistant steel

Shock absorber not included in scope
of delivery.



1 Shock absorber retainer KYP
(if the retainer is in contact with
the end cap, i.e. cap serves to
secure position, the entire stroke
length can be utilised)

2 Shock absorber YSR-...-C
3 Position retainer
(included in scope of delivery)
either behind or underneath the
shock absorber retainer KYP

Dimensions and ordering data							Part No.	Type
For Ø	B8	D1	D5	H2	H4	Weight [g]		
18	14	M12x1	M4	50.5	4.5	65	158 907	KYP-18
25	19	M16x1	M5	69.5	6	95	158 908	KYP-25
32	25	M16x1	M5	80	8	130	158 909	KYP-32
40	32	M22x1.5	M5	102	8	209	158 910	KYP-40
50	35	M22x1.5	M8	124	10	415	158 911	KYP-50
63	44	M26x1.5	M10	152.5	11.5	609	158 912	KYP-63
80	44	M26x1.5	M10	179.5	11.5	774	158 913	KYP-80

Linear drives DGP/DGPL

FESTO

Accessories

Shock absorber DG-GA

in end position

for DGPL

protected version GA

(order code E)

Material:

Housing: galvanised steel; piston rod:

high-alloy steel,

seals: nitrile rubber, polyurethane

Free of copper, PTFE and silicone



Note

Entire stroke can be used.

Ordering data			
For Ø	Weight [g]	Part No.	Type
25	70	192 875	DG-GA-25-YSR
32	93	192 876	DG-GA-32-YSR
40	140	192 877	DG-GA-40-YSR

Shock absorber kit YHD

for heavy-duty guide

(order code D)

Material:

Housing: Galvanised steel

Seals: TPE-U(PU) NBR

Free of copper, PTFE and silicone



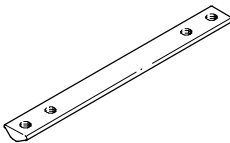
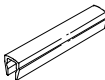
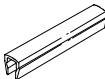
Ordering data			
For size	Weight [g]	Part No.	Type
18	203	174 544	YHD-18
25	293	174 545	YHD-25
40	515	174 546	YHD-40

Ordering data – One-way flow control valves				Technical data → Internet: grla	
	Connection		Material	Part No.	Type
	Thread	For tubing OD			
	M5	3	Metal design	193 137	GRLA-M5-QS-3-D
		4		193 138	GRLA-M5-QS-4-D
	G1/8	4		193 143	GRLA-1/8-QS-4-D
		6		193 144	GRLA-1/8-QS-6-D
	G1/4	6		193 146	GRLA-1/4-QS-6-D
		8		193 147	GRLA-1/4-QS-8-D
	G3/8	8		193 150	GRLA-3/8-QS-8-D
		10		193 151	GRLA-3/8-QS-10-D
	G1/2	12		193 152	GRLA-1/2-QS-12-D

Linear drives DGP/DGPL

Accessories

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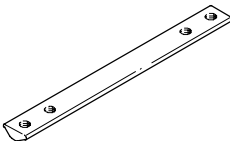
Ordering data for DGP/DGPL				Technical data → Internet: mounting attachment		
	For Ø [mm]	Remarks	Order code	Part No.	Type	PU ¹⁾
Slot nut NST						
	25	For mounting slot	Y	526 091	NST-HMV-M4	1
	32, 40			150 914	NST-5-M5	1
	50, 63, 80			150 915	NST-8-M6	1
Slot nut NSTL						
	25	For slide	X	158 410	NSTL-25	1
	32			158 411	NSTL-32	1
	40			158 412	NSTL-40	1
	50			158 413	NSTL-50	1
	63			158 414	NSTL-63	1
	80			161 356	NSTL-80	1
Centring pin/sleeve ZBS/ZBH						
	18	For slide	Z	150 928	ZBS-5	10
	25 ... 80			150 927	ZBH-9	10
Central mounting SLZZ						
	25	For slide	Q	150 900	SLZZ-16/10	1
	32, 40			150 901	SLZZ-25/16	
	50 ... 80			150 904	SLZZ-50/40	1
Slot cover ABP						
	32, 40	For mounting slot each 0.5 m	B	151 681	ABP-5	2
	50, 63, 80			151 682	ABP-8	
Slot cover ABP-S						
	18 ... 80	For sensor slot each 0.5 m	S	563 360	ABP-5-S1	2

1) Packaging unit quantity

Linear drives DGP/DGPL

Accessories

FESTO

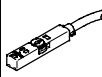
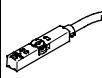
Ordering data for heavy-duty guide DGPL-HD				Technical data → Internet: mounting attachment		
	For heavy-duty guide [mm]	Remarks	Order code	Part No.	Type	PU ¹⁾
Slot nut NST						
	18, 25	For profile barrel at side	Y	150 914	NST-5-M5	1
	40			150 915	NST-8-M6	1
	18	For profile barrel underneath	U	150 914	NST-5-M5	1
	25, 40			150 915	NST-8-M6	1
Slot nut NSTH						
	18	For slide	X	161 020	NSTH-18	1
	25			161 021	NSTH-25	1
	40			161 022	NSTH-40	1
Central mounting SLZZ						
	18 ... 40	For slide	Q	150 901	SLZZ-25/16	1
Slot cover ABP						
	18, 25 underneath	For mounting slot at side and underneath each 0.5 m	B	151 681	ABP-5	2
	25 at side, 40			151 682	ABP-8	
Slot cover ABP-S						
	18 ... 40	For sensor slot each 0.5 m	S	151 680	ABP-5-S	2

1) Packaging unit quantity

Linear drives DGP/DGPL

Accessories

FESTO

Ordering data – Proximity sensors for T-slot, magneto-resistive						Technical data → Internet: smt	
	Type of mounting	Switch output	Electrical connection	Cable length [m]	Part No.	Type	
N/O contact							
	Insertable in the slot from above, flush with cylinder profile, short design	PNP	Cable, 3-wire	2.5	574335	SMT-8M-A-PS-24V-E-2,5-OE	
			Plug M8x1, 3-pin	0.3	574334	SMT-8M-A-PS-24V-E-0,3-M8D	
			Plug M12x1, 3-pin	0.3	574337	SMT-8M-A-PS-24V-E-0,3-M12	
		NPN	Cable, 3-wire	2.5	574338	SMT-8M-A-NS-24V-E-2,5-OE	
			Plug M8x1, 3-pin	0.3	574339	SMT-8M-A-NS-24V-E-0,3-M8D	
N/C contact							
	Insertable in the slot from above, flush with cylinder profile, short design	PNP	Cable, 3-wire	7.5	574340	SMT-8M-A-PO-24V-E-7,5-OE	

Ordering data – Proximity sensors for T-slot, magnetic reed					Technical data → Internet: sme	
	Type of mounting	Switch output	Electrical connection	Cable length [m]	Part No.	Type
N/O contact						
	Insertable in the 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, 3-wire	2.5	543 872	SME-8M-ZS-24V-K-2,5-OE
				Plug M8x1, 3-pin	0.3	543 861
	Insertable in the slot lengthwise, flush with the cylinder profile	Contacting	Cable, 3-wire	2.5	150 855	SME-8-K-LED-24
			Plug M8x1, 3-pin	0.3	150 857	SME-8-S-LED-24
N/C contact						
	Insertable in the slot lengthwise, flush with the cylinder profile	Contacting	Cable, 3-wire	7.5	160 251	SME-8-O-K-LED-24

Ordering data – 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
			2.5	541 338	NEBU-M8W3-K-2.5-LE3
	Angled socket, M8x1, 3-pin	Cable, open end, 3-wire	5	541 341	NEBU-M8W3-K-5-LE3
			2.5	541 367	NEBU-M12W5-K-2.5-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