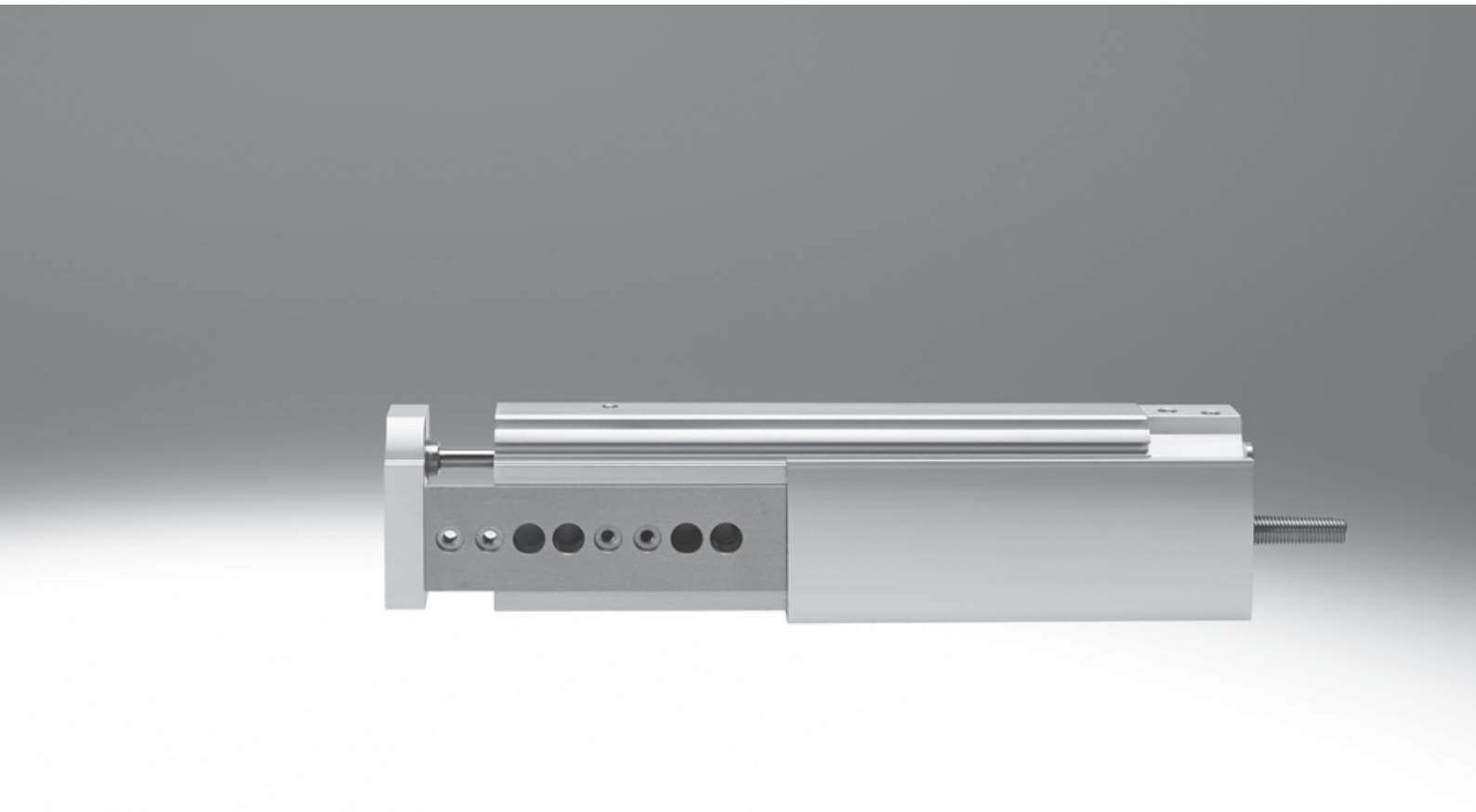
Mini slides DGSL-N, NPT

FESTO



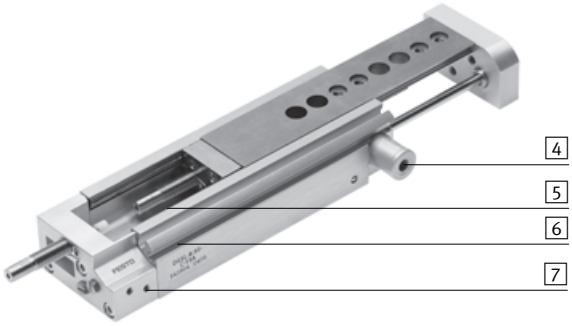
Mini slides DGSL-N, NPT

Key features

General information

- Double-acting drives
- Wide range of options for mounting
- System product for handling and assembly technology
- Highly flexible thanks to wide range of assembly and connection options on:
  - Drive body, slide, yoke plate

The technology in detail



1 Cushioning

- Choice of five cushioning types:
  - Elastic cushioning without metal end position (P)
  - Elastic cushioning without metal end position, short design (E)
  - Elastic cushioning with metal end position (P1)
  - Hydraulic shock absorbers (Y3)
  - Shock absorbers with reducing sleeve (Y11)
- Alternative:
  - Without cushioning (N)

2 Cover

➔ page 40

- The cover stops foreign parts or dirt getting into the guide
- The cover comes in different lengths and can be trimmed as required by the customer

3 Coarse stroke adjustment

➔ page 10

- The end stop for the advanced end position can be adjusted mechanically, for example to shorten the stroke

4 Clamping unit

- Mechanical clamping, for fixing the slide in any position; frictional locking (C)

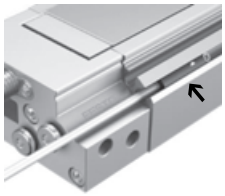
4 End-position locking

- Mechanical locking when the end position is reached, for fixing the slide in the unpressurised, retracted state; positive locking (E3)

5 Innovative guide unit

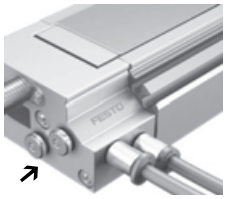
- Wide roller track, which provides extremely high rigidity
- High load capacity
- High precision
- Housing and steel slide form a guide: there are no accumulative tolerances

6 Position sensing



- Proximity sensors can be integrated, so there are no projecting parts
- Two slots for mounting
- Clearly visible from the side and from above

7 Supply ports

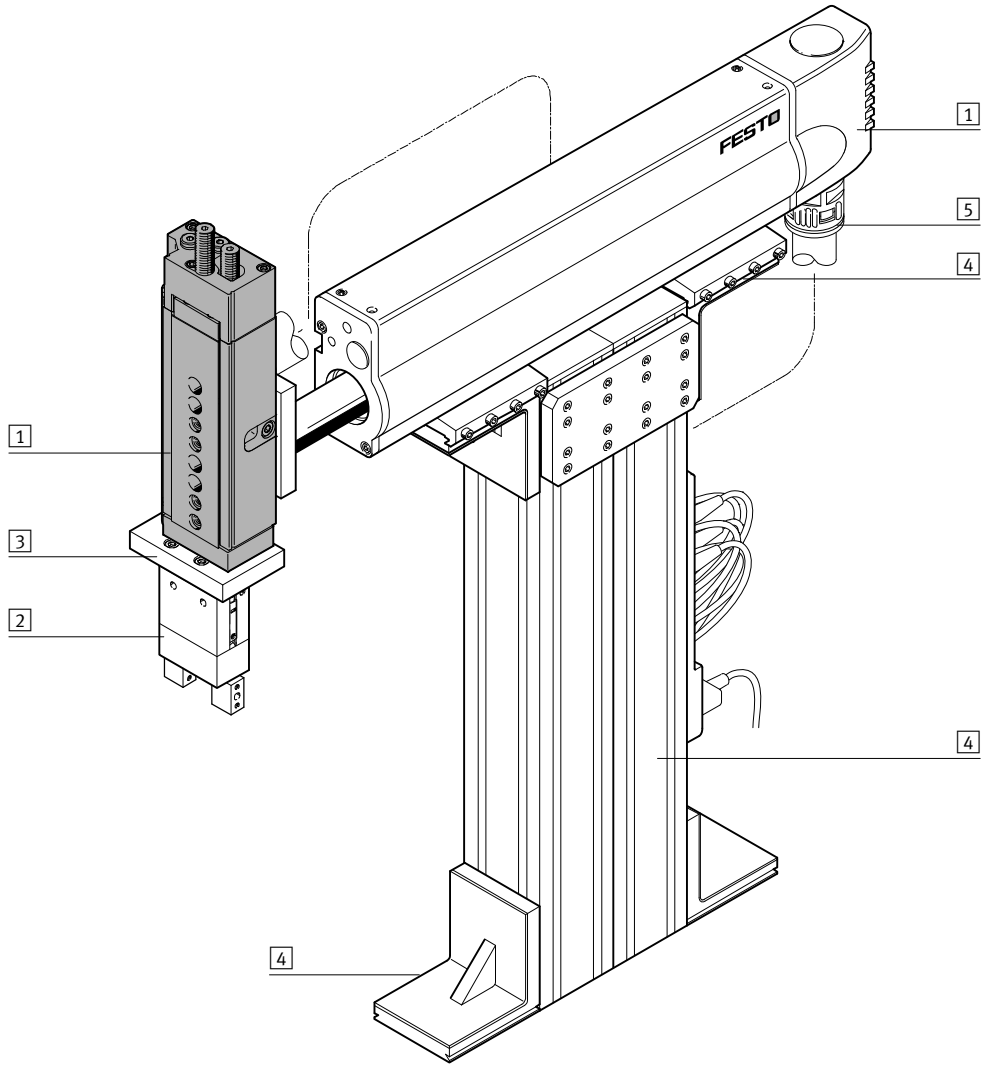


- Choice of two sides:
  - On front face
  - At the side

Mini slides DGSL-N, NPT

System example

System product for handling and assembly technology

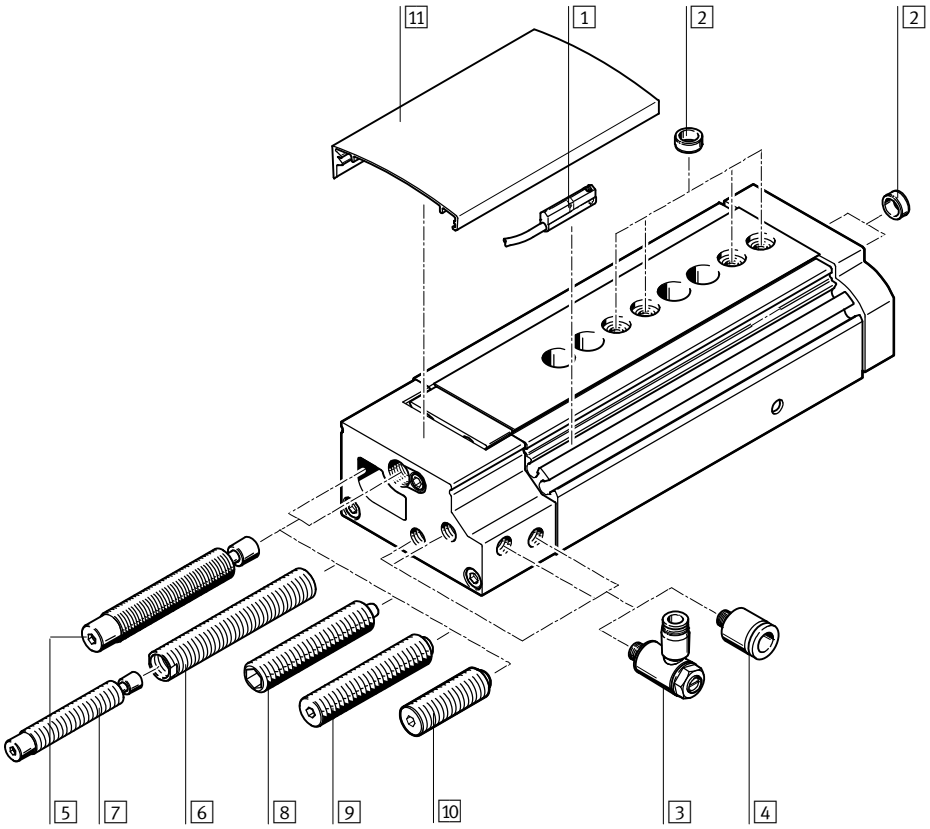


System components and accessories

		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 connections	43
		For 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

Mini slides DGSL-N, NPT

Peripherals overview



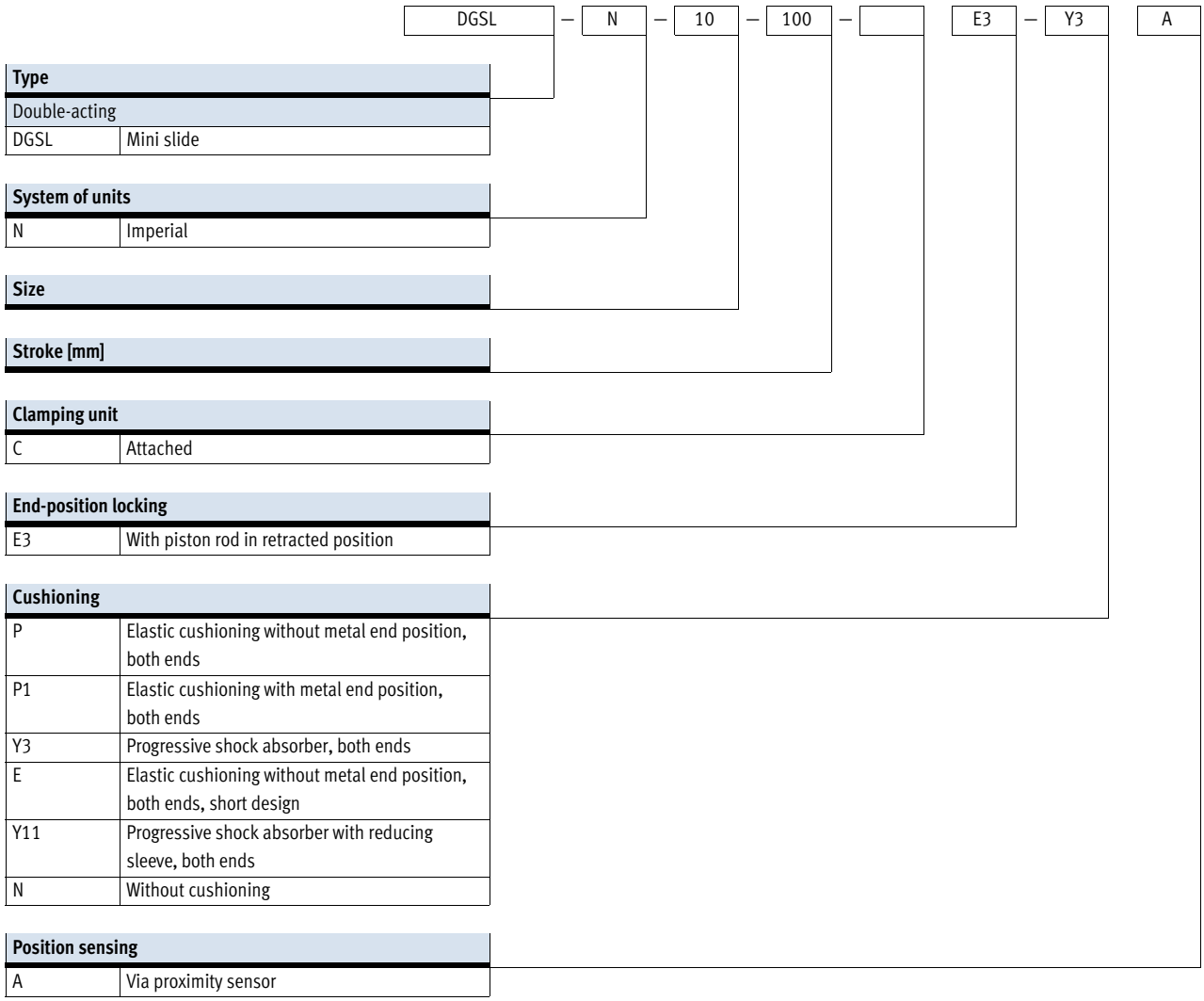
Note

Operation without cushioning components is not permitted.

Accessories			
		Description	**➔ Page/Internet**
1	Proximity sensor SME/SMT-10	For position sensing. Can be integrated in sensor slot, so there are no projecting parts	42
2	Centring sleeve ZBH	For centring loads and attachments (centring sleeves are included in the scope of delivery of the mini slide)	41
3	One-way flow control valve GRLA	For regulating speed	42
4	Push-in fitting QB	For connecting compressed air tubing with standard O.D.	42
5	Cushioning with shock absorber Y3	For large loads and high speed. Ensures precise, metal-to-metal contact after the cushioning	41
6	Reducing sleeve DAYH	For installing a smaller shock absorber. For applications where the cushioning energy lies between the cushioning Y3 and P1	41
7	Shock absorber DYSW	➔ page 12 (shock absorber selection)	41
8	Cushioning with stop P1	Precision metal stop for small loads at low speed	41
9	Cushioning P	• Flexible stop for medium loads at medium speed • (standard design)	41
10	Cushioning E	• Flexible stop for medium loads at medium speed • (short design)	41
11	Cover DADS	• For protection, to stop foreign parts or dirt getting into the guide • The cover can be trimmed as required by the customer	40

Mini slides DGSL-N, NPT

Type codes



Type	
Double-acting	
DGSL	Mini slide

System of units	
N	Imperial

Size

Stroke [mm]

Clamping unit	
C	Attached

End-position locking	
E3	With piston rod in retracted position

Cushioning	
P	Elastic cushioning without metal end position, both ends
P1	Elastic cushioning with metal end position, both ends
Y3	Progressive shock absorber, both ends
E	Elastic cushioning without metal end position, both ends, short design
Y11	Progressive shock absorber with reducing sleeve, both ends
N	Without cushioning

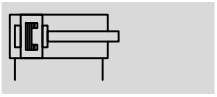
Position sensing	
A	Via proximity sensor

Mini slides DGSL-N, NPT

Technical data

FESTO

Function



- Ø - Size
  10 ... 25

- I - Stroke length
  10 ... 200 mm

Wearing parts kits
➔ page 40

General technical data						
Size		10	12	16	20	25
Pneumatic connection		M5, suitable for 10-32 UNF			1/8 NPT	
Design		Scotch yoke system				
Guide		Ball bearing cage guide				
Type of mounting		Via through-hole				
		Via female thread				
Cushioning						
DGSL-...-P		Flexible cushioning without metal end position, both ends				
DGSL-...-E		Flexible cushioning without metal end position, both ends, short design				
DGSL-...-P1		Flexible cushioning with metal end position, both ends, adjustable				
DGSL-...-Y3		With progressive shock absorber, both ends				
DGSL-...-Y11		Progressive shock absorber with reducing sleeve, both ends				
DGSL-...-N		Without cushioning				
Position sensing		Via proximity sensor				
Mounting position		Any				
Max. advancing speed	[m/s]	0.8				
Max. retracting speed	[m/s]	0.8				
Repetition accuracy						
DGSL-...-P1/Y3	[mm]	±0.01				
DGSL-...-P	[mm]	0.3				

Operating and environmental conditions						
Size		10	12	16	20	25
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:4:4]				
Note on operating/pilot medium		Operation with lubricated medium possible (in which case lubricated operation will always be required)				
Min. operating pressure	[bar]	1.5	1			
Max. operating pressure	[bar]	8				
Ambient temperature[1)]	[°C]	0 ... +60				

1) Note operating range of proximity sensors.

Piston Ø, forces and impact energy						
Size		10	12	16	20	25
Piston Ø	[mm]	12	16	20	25	32
Theoretical force at 6 bar, advancing	[N]	68	121	188	295	483
Theoretical force at 6 bar, retracting	[N]	51	104	158	247	415
Impact energy in the end positions						
DGSL-...-P/E	[Nm]	0.12	0.25	0.35	0.45	0.55
DGSL-...-P1	[Nm]	0.04	0.06	0.12	0.2	0.25
DGSL-...-Y3	[Nm]	1.3	2.5	4	8	12
1)	[Nm]	0.8	1.3	2.5	4	8

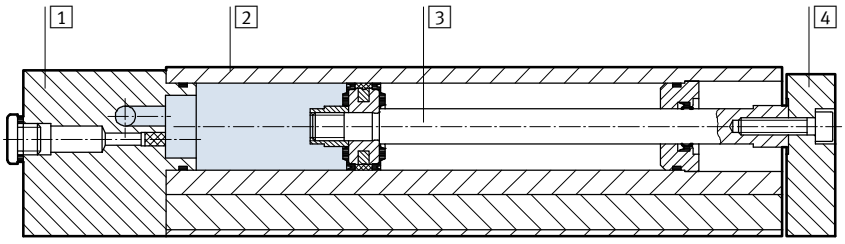
1) With reducing sleeve and next smallest shock absorber.

Weight [g]						
Size	Stroke	10	12	16	20	25
Product weight without cushioning component						
	10	396	604	896	1535	2520
	20	434	660	954	1649	2670
	30	470	711	1008	1746	2824
	40	507	762	1072	1857	2983
	50	548	813	1143	1991	3137
	80	727	1112	1365	2295	4019
	100	813	1229	1712	2921	4519
	150	–	1499	2034	3620	5344
	200	–	–	–	4248	6139
Moving load without cushioning component						
	10	163	256	403	660	998
	20	180	279	432	710	1052
	30	194	299	459	750	1115
	40	208	320	486	801	1181
	50	226	340	519	858	1244
	80	299	456	618	998	1567
	100	334	507	776	1254	1761
	150	–	614	910	1566	2102
	200	–	–	–	1807	2432
Cushioning component						
	P	14	23	45.6	82.4	106
	E	9	12	15	31	40
	P1	12	19.7	39.6	77.3	104
	Y3	11	21	42	67	91
	1)	18	33	52	91	131

1) With reducing sleeve and next smallest shock absorber.

Materials

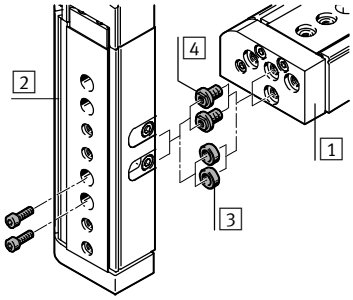
Sectional view

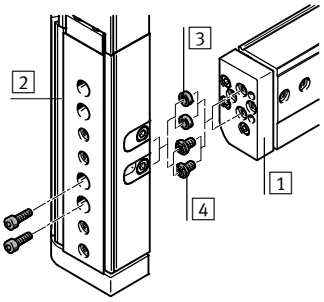


Mini slide		
1	End cap	Anodised aluminium
2	Housing	Anodised aluminium
3	Piston rod	High-alloy steel
4	Yoke plate	Anodised aluminium
–	Guide	Tempered steel
–	Seals	Thermoplastic rubber, hydrogenated nitrile rubber, nitrile rubber
	Note on materials	Free of copper and PTFE

Possible combinations without adapter plate

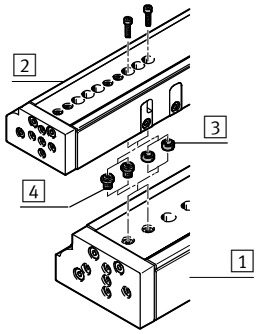
Pick & place





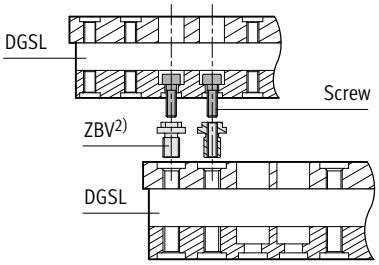
3 Centring sleeve ZBH
4 Connector sleeve ZBV

Piggy-back assembly



3 Centring sleeve ZBH
4 Connector sleeve ZBV

Mounting example with connector sleeve ZBV

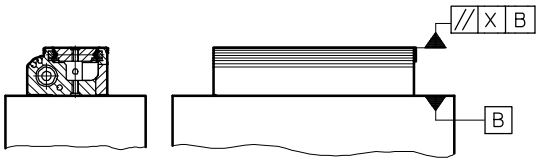


	1 Basic drive					
	Size	10	12	16	20	25
2 Assembly drive	10	2x M4x14 2x ZBH-7[1)]	ZBV-M5-7[2)]	ZBV-M5-7[2)]	–	–
	12	–	2x M5x14 2x ZBH-7[1)]	2x M5x16 2x ZBH-7[1)]	ZBV-M6-9[2)]	ZBV-M6-9[2)]
	16	–	–	2x M5x18 2x ZBH-7[1)]	ZBV-M6-9[2)]	ZBV-M6-9[2)]
	20	–	–	–	2x M6x20 2x ZBH-9[1)]	2x M6x20 2x ZBH-9[1)]
	25	–	–	–	–	2x M6x30 2x ZBH-9[1)]

1) Centring sleeves ZBH are included in the scope of delivery of the mini slide DGSL
2) Connector sleeves ZBV ➔ page 41

Parallelism [mm]

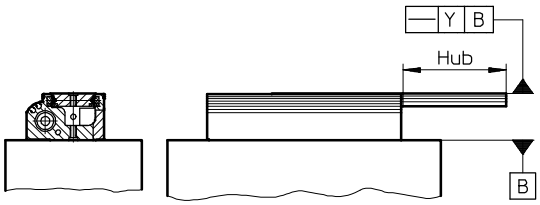
The term parallelism refers to the accuracy of alignment between the mounting surface and the slide surface.



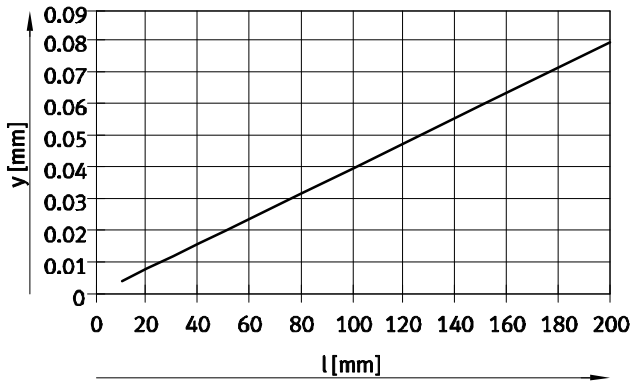
Size	Stroke [mm]	10	12	16	20	25
Parallelism X	10	0.02	0.02	0.02	0.02	0.02
	20	0.02	0.025	0.025	0.025	0.025
	30	0.025	0.025	0.025	0.03	0.03
	40	0.025	0.03	0.03	0.035	0.035
	50	0.03	0.035	0.035	0.04	0.04
	80	0.035	0.04	0.04	0.045	0.045
	100	0.045	0.05	0.05	0.055	0.055
	150	–	0.075	0.075	0.08	0.08
	200	–	–	–	0.08	0.08

Linearity [mm]

The term linearity refers to the accuracy of alignment between the mounting surface and the slide surface as a function of the stroke.



Linear travel accuracy y as a function of stroke length l



Mini slides DGSL-N, NPT

Technical data

Adjustable end-position range

Coarse adjustment of the advanced end position

The mini slide DGSL allows the front fixed stop to be adjusted by removing the cover.

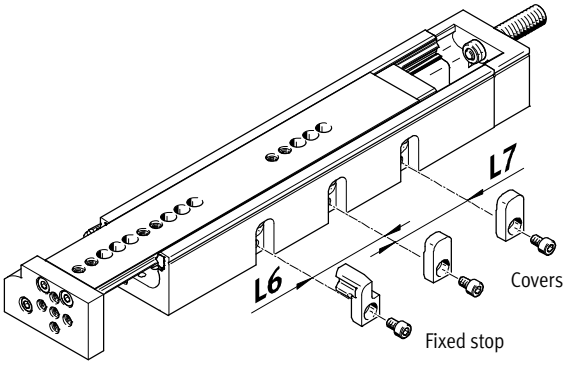
This permits stroke reduction down to the next but one smaller standard stroke through a combination of coarse and precision adjustments.

Advantages:

- Can be flexibly adapted to the application
- Integrated, which means fewer conversion overheads
- Large setting range

Note

Removal of the fixed stops can result in the destruction of the mini slide DGSL.



Size	10		12		16		20		25	
Stroke [mm]	L6	L7	L6	L7	L6	L7	L6	L7	L6	L7
10	–	–	–	–	–	–	–	–	–	–
20	–	–	–	–	–	–	–	–	–	–
30	–	–	–	–	–	–	–	–	–	–
40	–	–	–	–	–	–	–	–	–	–
50	–	–	–	–	–	–	–	–	–	–
80	24	–	29	–	35	–	–	–	55	–
100	24	24	29	–	35	–	44	–	55	–
150	–	–	29	29	35	–	44	–	55	–
200	–	–	–	–	–	–	44	44	55	–

Example:
DGSL-N-12-150-...
Max. stroke = 150 mm

By adjusting the fixed stop by the dimension L6:
Stroke = 150 – 29 = 121 mm

By adjusting the fixed stop by the dimension L6 and L7:
Stroke = 150 – 29 – 29 = 92 mm

The stroke can additionally be reduced by means of precision adjustment:
Stroke = 150 – 29 – 29 – 29 = 63 mm

Precision adjustment of the advanced and retracted end position ➔ page 11

Adjustable end-position range

Precision adjustment of the advanced and retracted end position

Precision adjustment of the required stroke reduction is possible using the cushioning components (on the slide and in the end cap).

Advantages:

- Precision adjustment is precisely fixed by the clamping component
- No readjustment required, position is fully retained under load
- Quick and easy adjustment, only one tool required

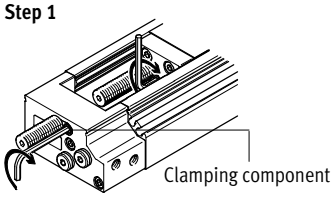
Step 1:
Loosen the clamping component.

Step 2:
Position the slide by hand in the desired end position.

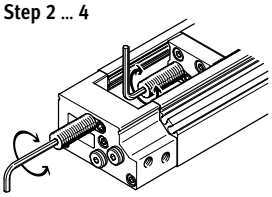
Step 3:
Turn the stop element using an Allen key until the end position is reached.

Step 4:
Tighten the clamping component.

Step 1



Step 2 ... 4

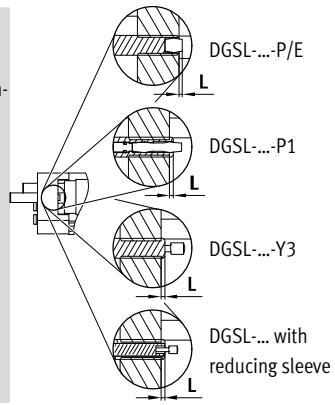


Adjustable end-position range [mm] per end position/stroke reduction						
Size		10	12	16	20	25
Advanced end position						
With cushioning	P	–27.5	–29	–37.5	–50.5	–55
	E	–13	–9	–3.5	–6.5	–11.5
	P1	–27.5	–29	–37.5	–50.5	–55
	Y3	–24	–29	–36.5	–44	–56
	1)	–24	–29	–36.5	–44	–56
Retracted end position						
With cushioning	P	–20	–25.5	–39.5	–49.5	–49
	E	–5.5	–5.5	–5.5	–5.5	–5.5
	P1	–20	–25.5	–39.5	–49.5	–49
	Y3	–15	–25.5	–38.5	–42	–51.5
	1)	–15	–25.5	–38.5	–42	–51.5

1) With reducing sleeve and next smallest shock absorber.

Note

The distance L of the cushioning component (➔ operating instructions) must not be fallen below (factory setting).



Note

The setting range of the advanced and retracted end position is restricted when using the cushioning type “E”.

Shock absorber selection

Effective load m as a function of impact velocity v

The mini slide DGSL allows the shock absorber to be replaced and, in this way, the cushioning behaviour to be influenced (depending on the effective load).

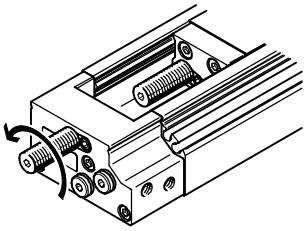
This is done by removing the existing shock absorbers on the DGSL and replacing them with a smaller shock absorber as appropriate to the application (➔ description below).

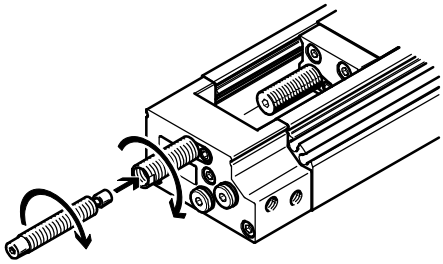
Graphs
for selecting a suitable shock absorber as a function of the mounting position of the mini slide ➔ from page 13.

Ordering data
Shock absorbers DYSW, DYEF and reducing sleeve DAYH ➔ page 41.

With smaller loads:

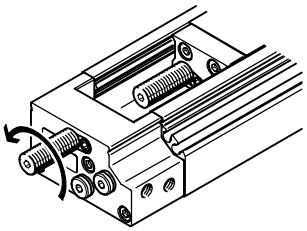
The next smallest shock absorber DYSW can be installed with the help of the reducing sleeve DAYH.

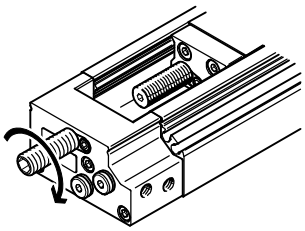




With very small loads:

The shock absorber DYEF can be installed in this case.

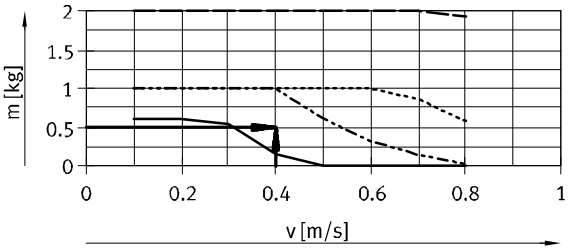




Selection example:

Existing drive:
Mini slide: DGSL-N-10-...-Y3-A

Given:
Effective load: 500 g
Impact velocity: 0.4 m/s
Mounting position: Horizontal



DYEF-M8-Y1F (cushioning P1)
DYEF-M8-Y1 (cushioning P)
DYSW-5-8 (cushioning Y3)
DYSW-4-6 with DAYH-4 (cushioning Y11)

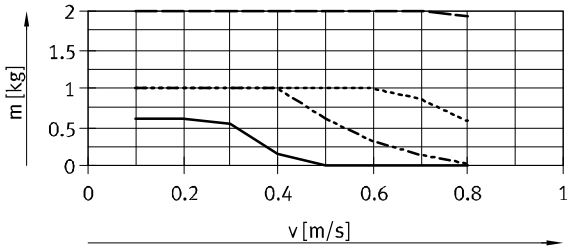
Result:
The first cushioning curve, which is located above the point of intersection, is the most suitable for this case. Due to the low effective load of less than one kilogram, the cushioning characteristics are greatly improved by replacing the shock absorber DYSW-5-8 integrated in the mini slide with the reducing sleeve DAYH-4 and the next smallest shock absorber DYSW-4-6.

Fundamentally, the following applies: shock absorbers must be loaded. Since the shock absorber DYSW-4-6 is more fully utilised in this case, both the service life of the shock absorber and the cushioning characteristics are improved.

Shock absorber selection

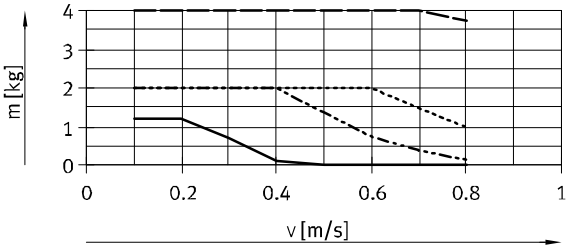
Effective load m as a function of impact velocity v – horizontal mounting position

DGSL-N-10



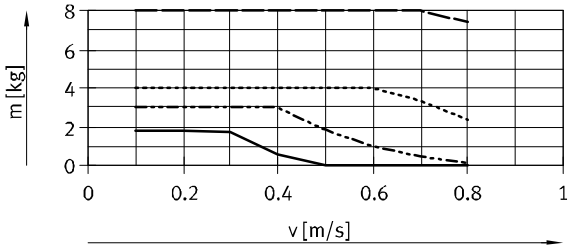
- DYEF-M8-Y1F (cushioning P1)
- DYEF-M8-Y1 (cushioning P)
- DYSW-5-8 (cushioning Y3)
- DYSW-4-6 with DAYH-4 (cushioning Y11)

DGSL-N-12



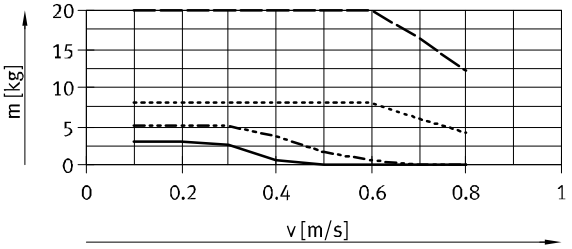
- DYEF-M10-Y1F (cushioning P1)
- DYEF-M10-Y1 (cushioning P)
- DYSW-7-10 (cushioning Y3)
- DYSW-5-8 with DAYH-5 (cushioning Y11)

DGSL-N-16



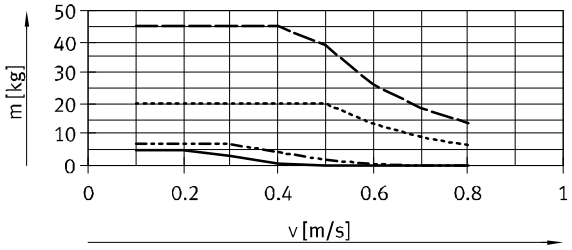
- DYEF-M12-Y1F (cushioning P1)
- DYEF-M12-Y1 (cushioning P)
- DYSW-8-14 (cushioning Y3)
- DYSW-7-10 with DAYH-7 (cushioning Y11)

DGSL-N-20



- DYEF-M14-Y1F (cushioning P1)
- DYEF-M14-Y1 (cushioning P)
- DYSW-10-17 (cushioning Y3)
- DYSW-8-14 with DAYH-8 (cushioning Y11)

DGSL-N-25

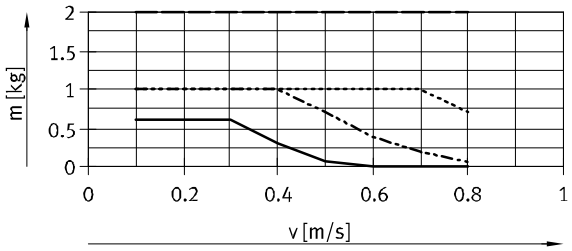


- DYEF-M16-Y1F (cushioning P1)
- DYEF-M16-Y1 (cushioning P)
- DYSW-12-20 (cushioning Y3)
- DYSW-10-17 with DAYH-10 (cushioning Y11)

Shock absorber selection

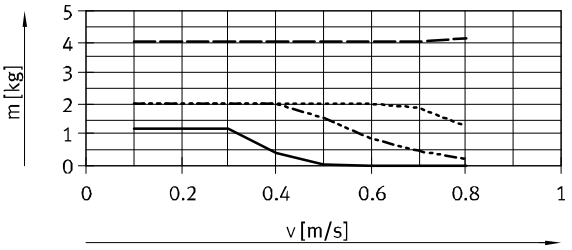
Effective load m as a function of impact velocity v – vertical mounting position, effective load moving upwards

DGSL-N-10



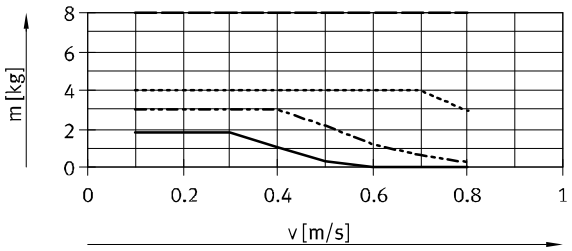
- DYEF-M8-Y1F (cushioning P1)
- DYEF-M8-Y1 (cushioning P)
- DYSW-5-8 (cushioning Y3)
- DYSW-4-6 with DAYH-4 (cushioning Y11)

DGSL-N-12



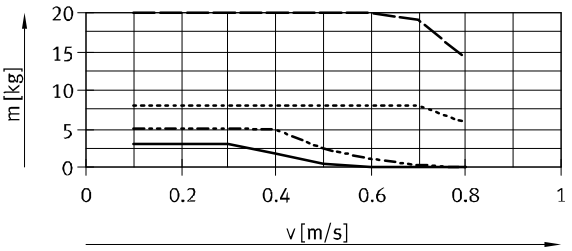
- DYEF-M10-Y1F (cushioning P1)
- DYEF-M10-Y1 (cushioning P)
- DYSW-7-10 (cushioning Y3)
- DYSW-5-8 with DAYH-5 (cushioning Y11)

DGSL-N-16



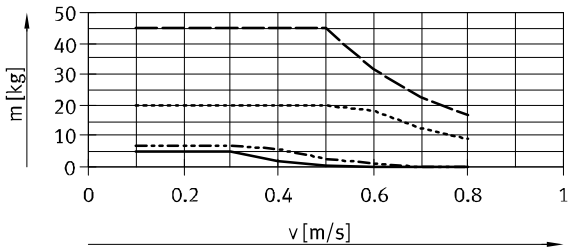
- DYEF-M12-Y1F (cushioning P1)
- DYEF-M12-Y1 (cushioning P)
- DYSW-8-14 (cushioning Y3)
- DYSW-7-10 with DAYH-7 (cushioning Y11)

DGSL-N-20



- DYEF-M14-Y1F (cushioning P1)
- DYEF-M14-Y1 (cushioning P)
- DYSW-10-17 (cushioning Y3)
- DYSW-8-14 with DAYH-8 (cushioning Y11)

DGSL-N-25

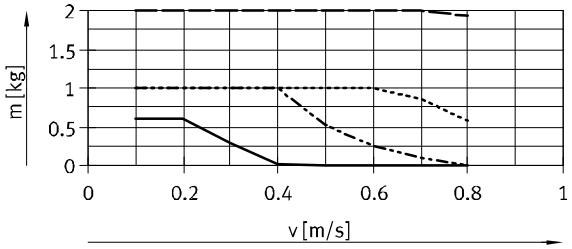


- DYEF-M16-Y1F (cushioning P1)
- DYEF-M16-Y1 (cushioning P)
- DYSW-12-20 (cushioning Y3)
- DYSW-10-17 with DAYH-10 (cushioning Y11)

Shock absorber selection

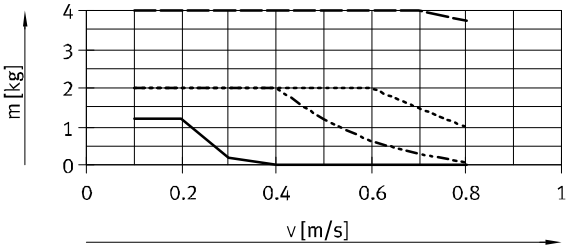
Effective load m as a function of impact velocity v – vertical mounting position, effective load moving downwards

DGSL-N-10



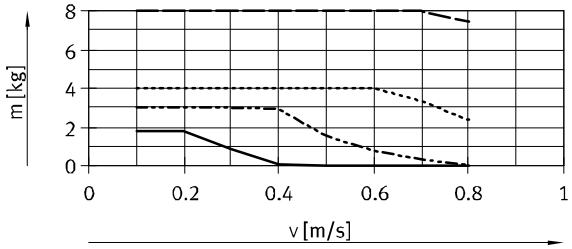
- DYEF-M8-Y1F (cushioning P1)
- DYEF-M8-Y1 (cushioning P)
- DYSW-5-8 (cushioning Y3)
- DYSW-4-6 with DAYH-4 (cushioning Y11)

DGSL-N-12



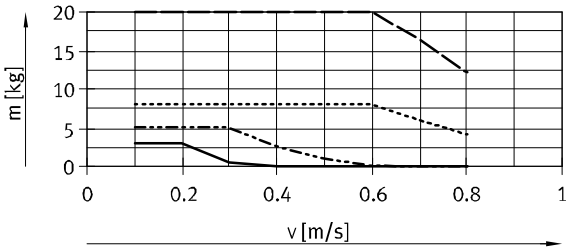
- DYEF-M10-Y1F (cushioning P1)
- DYEF-M10-Y1 (cushioning P)
- DYSW-7-10 (cushioning Y3)
- DYSW-5-8 with DAYH-5 (cushioning Y11)

DGSL-N-16



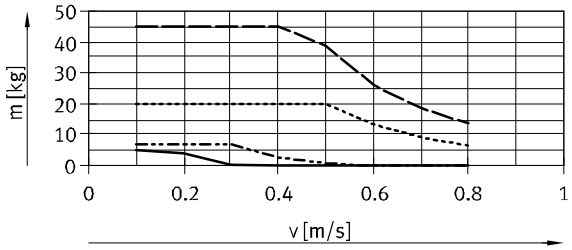
- DYEF-M12-Y1F (cushioning P1)
- DYEF-M12-Y1 (cushioning P)
- DYSW-8-14 (cushioning Y3)
- DYSW-7-10 with DAYH-7 (cushioning Y11)

DGSL-N-20



- DYEF-M14-Y1F (cushioning P1)
- DYEF-M14-Y1 (cushioning P)
- DYSW-10-17 (cushioning Y3)
- DYSW-8-14 with DAYH-8 (cushioning Y11)

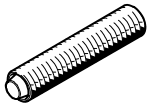
DGSL-N-25



- DYEF-M16-Y1F (cushioning P1)
- DYEF-M16-Y1 (cushioning P)
- DYSW-12-20 (cushioning Y3)
- DYSW-10-17 with DAYH-10 (cushioning Y11)

Shock absorber selection

Travel time t as a function of effective load m and cushioning P/E – horizontal mounting position

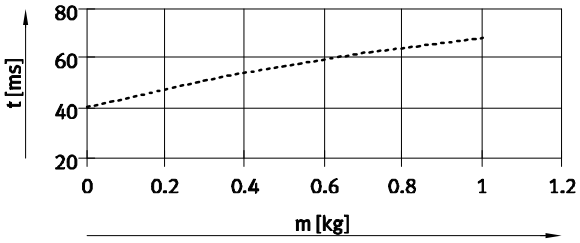


The values in the graphs are determined by calculation.
The travel time as a function of effective load must not be reduced below the values shown, because the kinetic impact or residual energy in the end positions can result in damage to the drive.

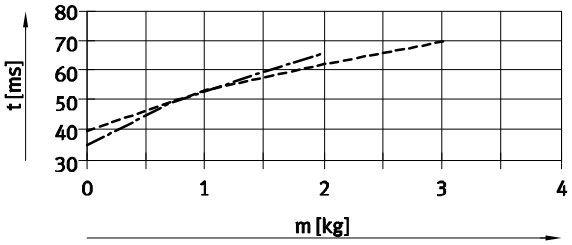
Vertical mounting position
➔ page 19

Advancing

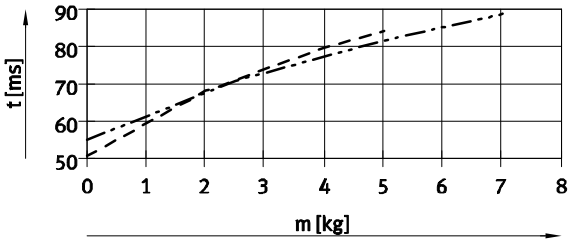
Stroke 10 mm, size 10



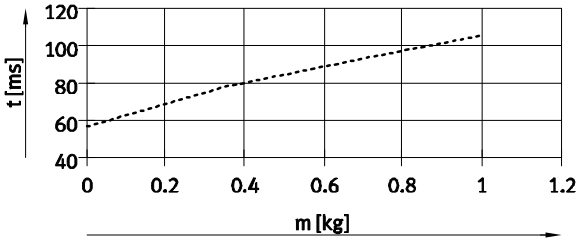
Stroke 10 mm, size 12 ... 16



Stroke 10 mm, size 20 ... 25

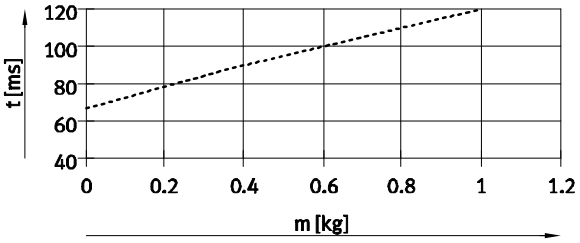


Stroke 30 mm, size 10

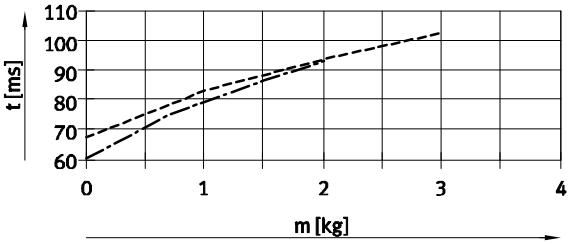


Retracting

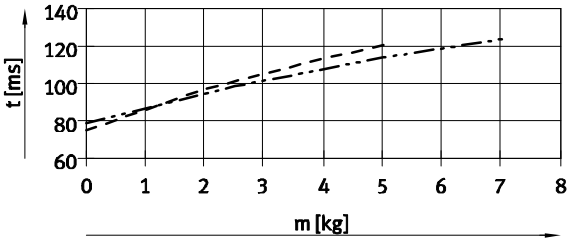
Stroke 10 mm, size 10



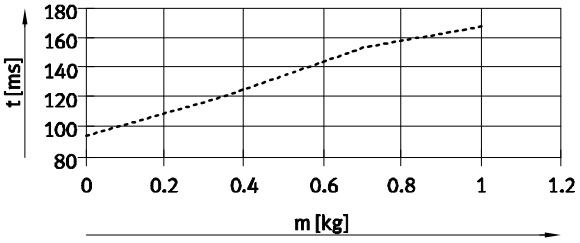
Stroke 10 mm, size 12 ... 16



Stroke 10 mm, size 20 ... 25



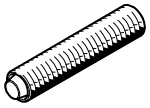
Stroke 30 mm, size 10



DGSL-N-10
DGSL-N-12
DGSL-N-16
DGSL-N-20
DGSL-N-25

Shock absorber selection

Travel time t as a function of effective load m and cushioning P/E – horizontal mounting position

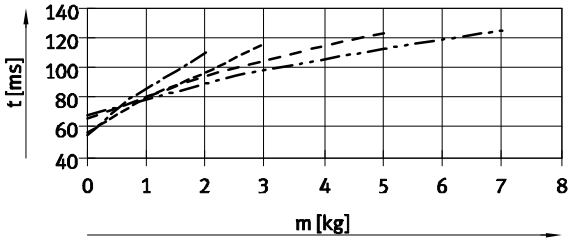


The values in the graphs are determined by calculation.
The travel time as a function of effective load must not be reduced below the values shown, because the kinetic impact or residual energy in the end positions can result in damage to the drive.

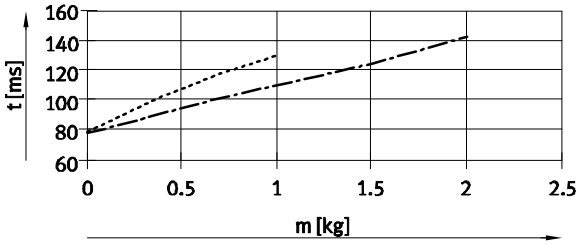
Vertical mounting position
➔ page 19

Advancing

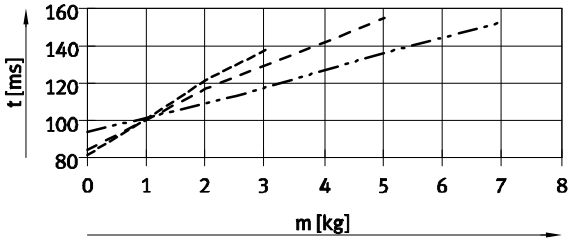
Stroke 30 mm, size 12 ... 25



Stroke 50 mm, size 10 ... 12



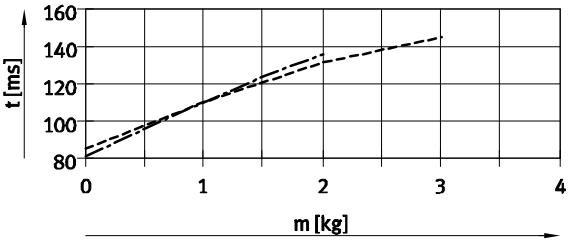
Stroke 50 mm, size 16 ... 25



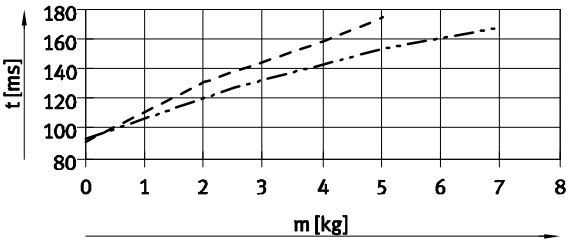
DGSL-N-10
DGSL-N-12
DGSL-N-16
DGSL-N-20
DGSL-N-25

Retracting

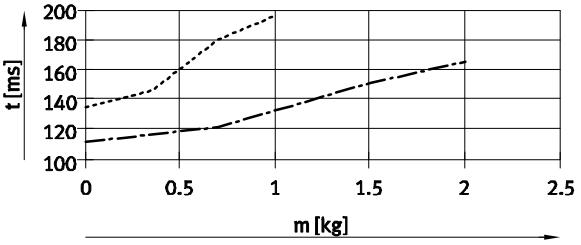
Stroke 30 mm, size 12 ... 16



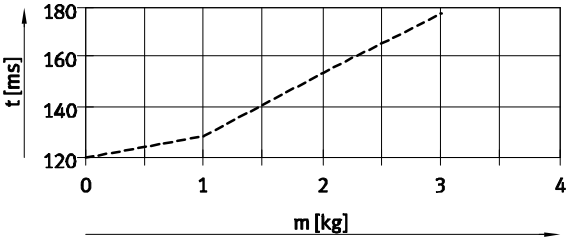
Stroke 30 mm, size 20 ... 25



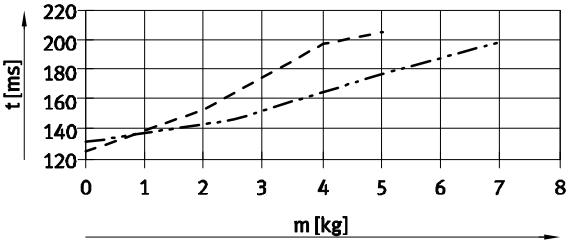
Stroke 50 mm, size 10 ... 12



Stroke 50 mm, size 16



Stroke 50 mm, size 20 ... 25

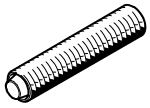


Mini slides DGSL-N, NPT

Technical data

Shock absorber selection

Travel time t as a function of effective load m and cushioning P/E – horizontal mounting position

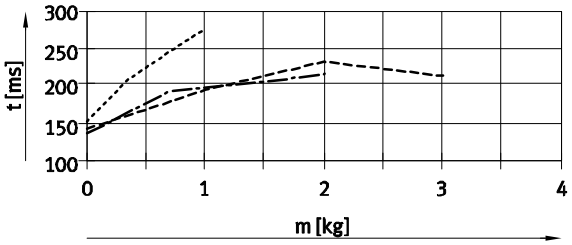


The values in the graphs are determined by calculation.
The travel time as a function of effective load must not be reduced below the values shown, because the kinetic impact or residual energy in the end positions can result in damage to the drive.

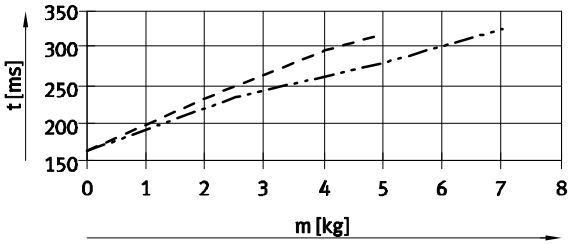
Vertical mounting position
➔ page 19

Advancing

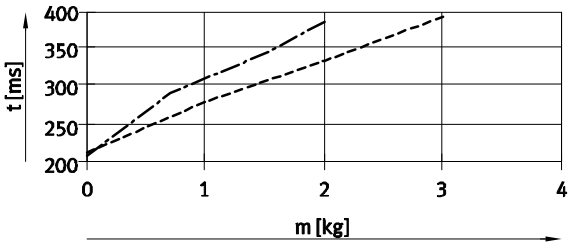
Stroke 100 mm, size 10 ... 16



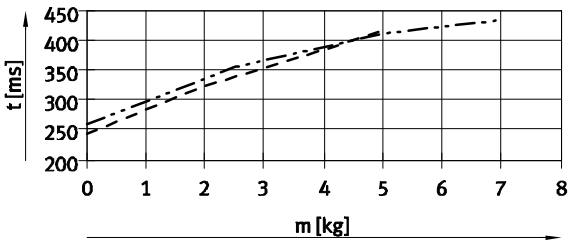
Stroke 100 mm, size 20 ... 25



Stroke 150 mm, size 12 ... 16

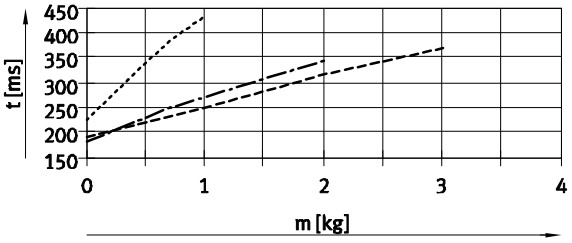


Stroke 150 mm, size 20 ... 25

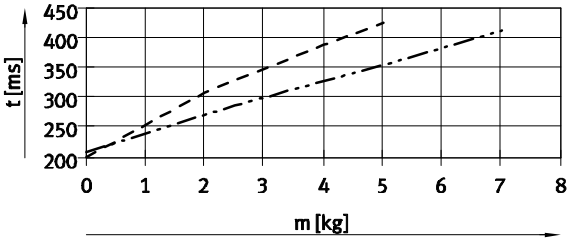


Retracting

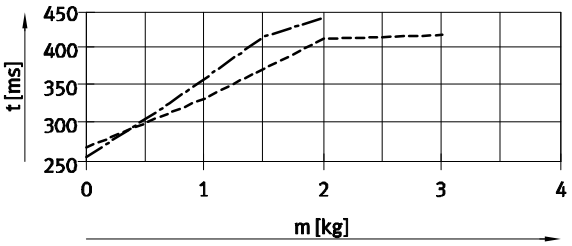
Stroke 100 mm, size 10 ... 16



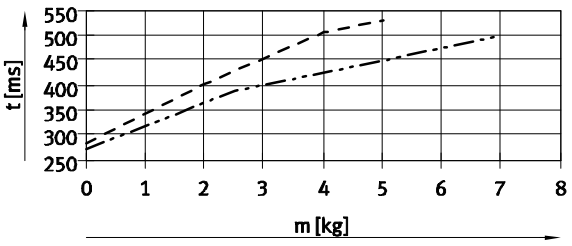
Stroke 100 mm, size 20 ... 25



Stroke 150 mm, size 12 ... 16



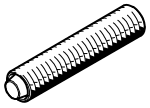
Stroke 150 mm, size 20 ... 25



DGSL-N-10
DGSL-N-12
DGSL-N-16
DGSL-N-20
DGSL-N-25

Shock absorber selection

Travel time t as a function of effective load m and cushioning P/E – horizontal mounting position

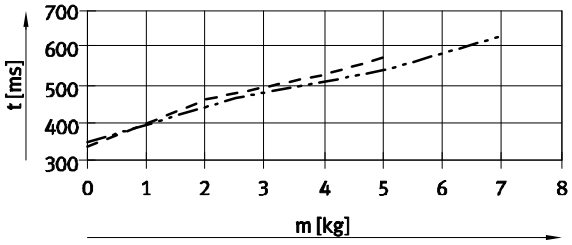


The values in the graphs are determined by calculation.
The travel time as a function of effective load must not be reduced below the values shown, because the kinetic impact or residual energy in the end positions can result in damage to the drive.

Vertical mounting position
➔ page 19

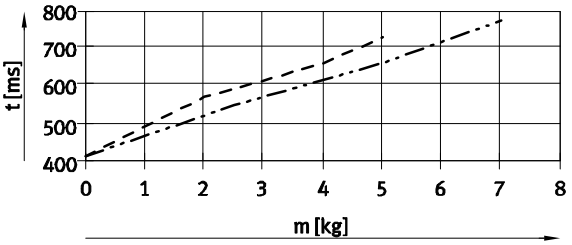
Advancing

Stroke 200 mm, size 20 ... 25



Retracting

Stroke 200 mm, size 20 ... 25



– – – – DGSL-N-20
– — · · — DGSL-N-25

Vertical mounting position

The travel times for a vertical mounting position are calculated by multiplying the data ascertained for horizontal mounting position by a correction factor ka (advancing) and kr (retracting), see adjacent table.

Given:
Stroke = 200 mm
Size = 20
Effective load = 3 kg
Ascertained travel time th (horizontal), see graph:
– Advancing = 500 ms
– Retracting = 600 ms
Calculated travel time tv (vertical):
– Advancing: tv = th x ka
  tv = 500 ms x 0.9 = 450 ms
– Retracting: tv = th x kr
  tv = 600 ms x 1.1 = 660 ms

Stroke [mm]	Size	Advancing (ka)[1)]	Retracting (kr)
10	10	0.95	1.1
	12, 16, 20, 25	0.95	1.2
30	10	0.95	1.1
	12, 16, 20, 25	0.95	1.2
50	10, 12	0.9	1.1
	16, 20, 25	1.1	1.2
100	10, 12, 16, 20, 25	1	1.1
150	12, 16, 20, 25	1	1.1
200	20, 25	0.9	1.1

1) Downward.

Mini slides DGSL-N, NPT

Technical data

Shock absorber selection

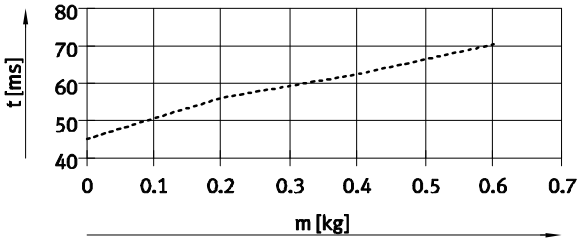
Travel time t as a function of effective load m and cushioning P1 – horizontal mounting position

The values in the graphs are determined by calculation.
The travel time as a function of effective load must not be reduced below the values shown, because the kinetic impact or residual energy in the end positions can result in damage to the drive.

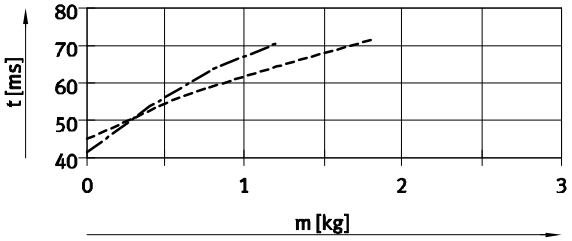
Vertical mounting position
➔ page 23

Advancing

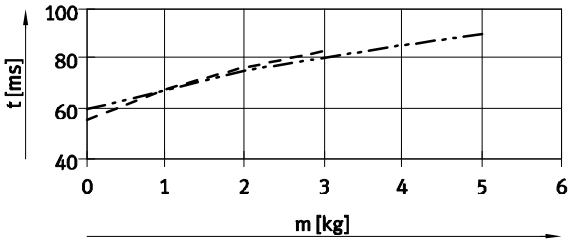
Stroke 10 mm, size 10



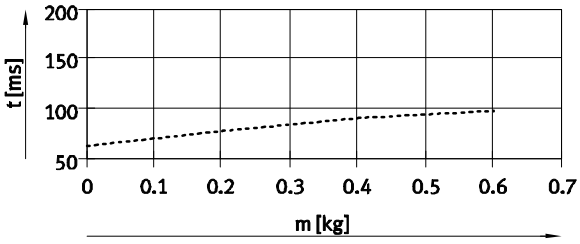
Stroke 10 mm, size 12 ... 16



Stroke 10 mm, size 20 ... 25

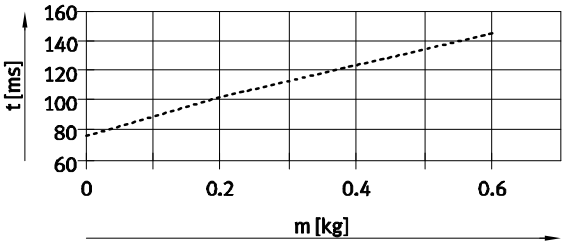


Stroke 30 mm, size 10

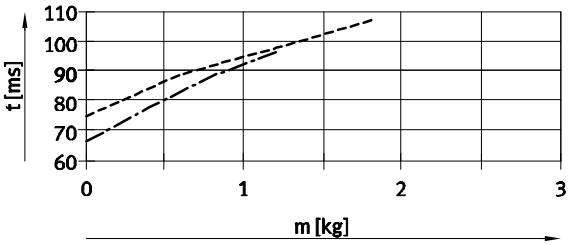


Retracting

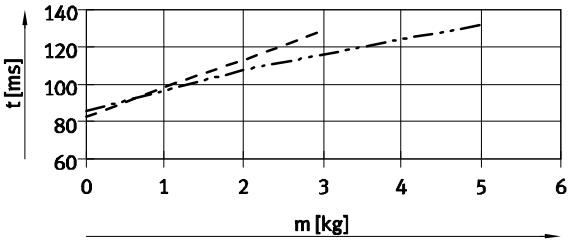
Stroke 10 mm, size 10



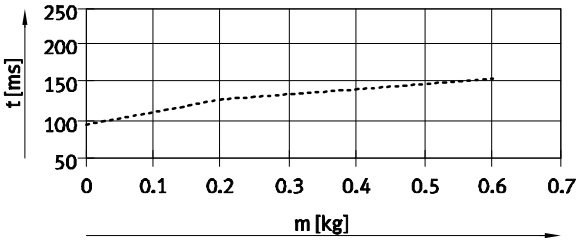
Stroke 10 mm, size 12 ... 16



Stroke 10 mm, size 20 ... 25



Stroke 30 mm, size 10



DGSL-N-10
DGSL-N-12
DGSL-N-16
DGSL-N-20
DGSL-N-25

Shock absorber selection

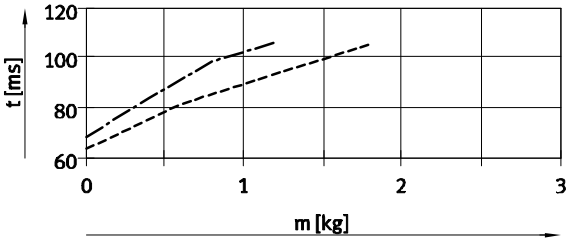
Travel time t as a function of effective load m and cushioning P1 – horizontal mounting position

The values in the graphs are determined by calculation.
The travel time as a function of effective load must not be reduced below the values shown, because the kinetic impact or residual energy in the end positions can result in damage to the drive.

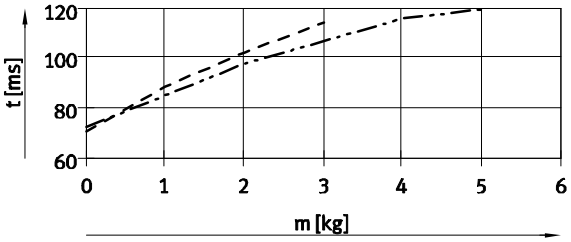
Vertical mounting position
➔ page 23

Advancing

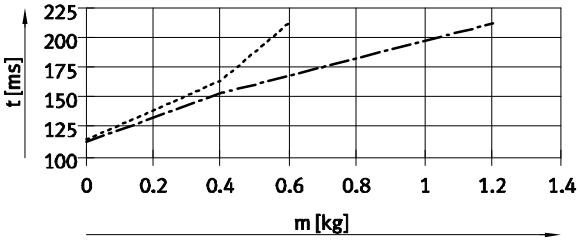
Stroke 30 mm, size 12 ... 16



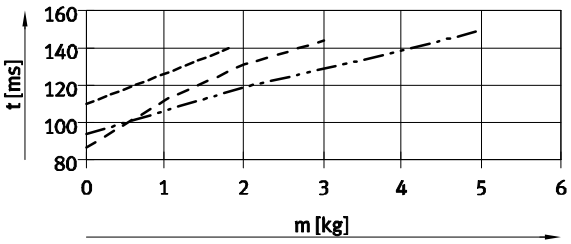
Stroke 30 mm, size 20 ... 25



Stroke 50 mm, size 10 ... 12

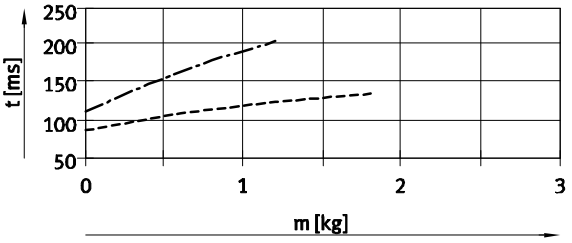


Stroke 50 mm, size 16 ... 25

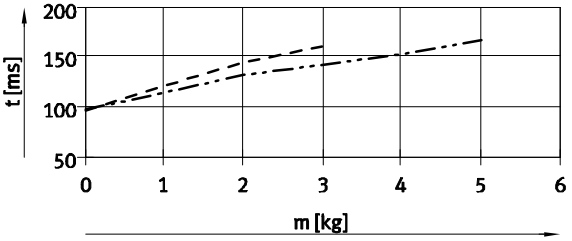


Retracting

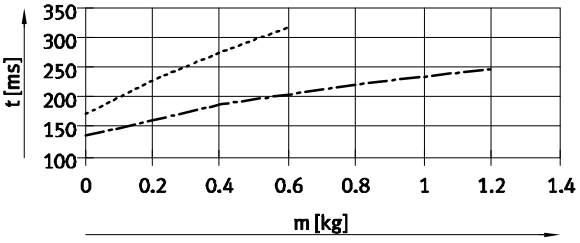
Stroke 30 mm, size 12 ... 16



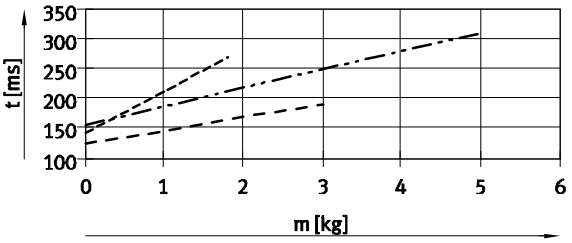
Stroke 30 mm, size 20 ... 25



Stroke 50 mm, size 10 ... 12



Stroke 50 mm, size 16 ... 25



DGSL-N-10
DGSL-N-12
DGSL-N-16
DGSL-N-20
DGSL-N-25

Shock absorber selection

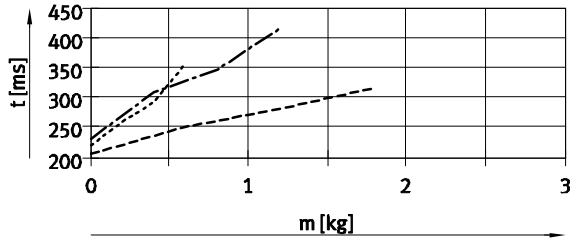
Travel time t as a function of effective load m and cushioning P1 – horizontal mounting position

The values in the graphs are determined by calculation.
The travel time as a function of effective load must not be reduced below the values shown, because the kinetic impact or residual energy in the end positions can result in damage to the drive.

Vertical mounting position
➔ page 23

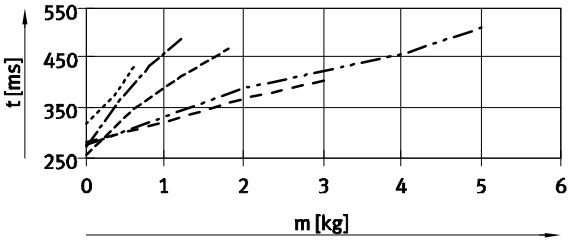
Advancing

Stroke 100 mm, size 10 ... 16

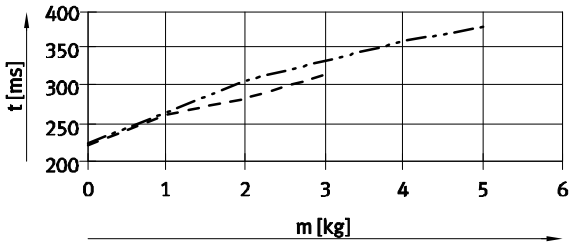


Retracting

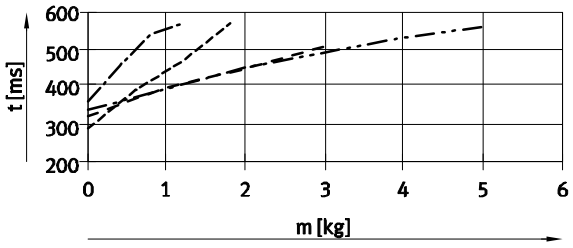
Stroke 100 mm, size 10 ... 25



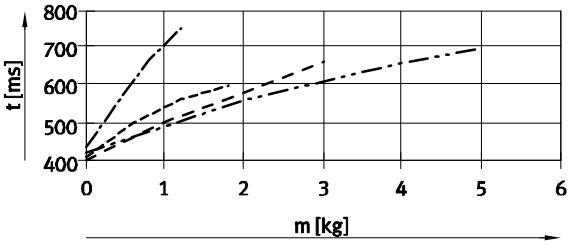
Stroke 100 mm, size 20 ... 25



Stroke 150 mm, size 12 ... 25



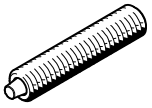
Stroke 150 mm, size 12 ... 25



DGSL-N-10
DGSL-N-12
DGSL-N-16
DGSL-N-20
DGSL-N-25

Shock absorber selection

Travel time t as a function of effective load m and cushioning P1 – horizontal mounting position

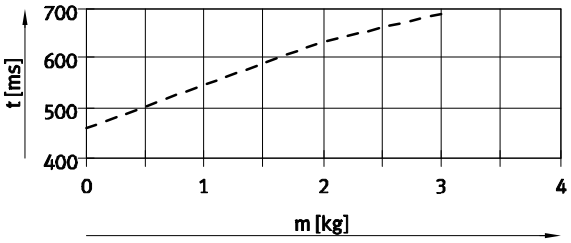


The values in the graphs are determined by calculation.
The travel time as a function of effective load must not be reduced below the values shown, because the kinetic impact or residual energy in the end positions can result in damage to the drive.

Vertical mounting position
➔ page 23

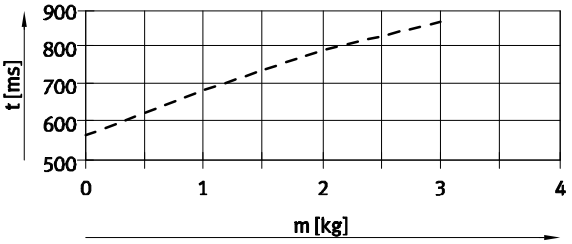
Advancing

Stroke 200 mm, size 20

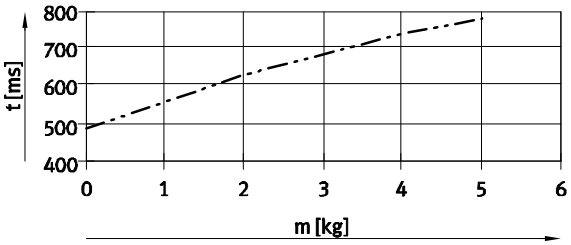


Retracting

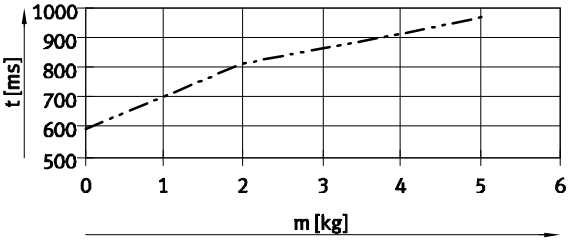
Stroke 200 mm, size 20



Stroke 200 mm, size 25



Stroke 200 mm, size 25



– – – – DGSL-N-20
– — · — DGSL-N-25

Vertical mounting position

The travel times for a vertical mounting position are calculated by multiplying the data ascertained for horizontal mounting position by a correction factor ka (advancing) and kr (retracting), see adjacent table.

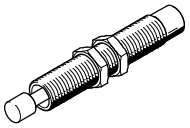
Given:
Stroke = 200 mm
Size = 20
Effective load = 2 kg
Ascertained travel time th (horizontal), see graph:
– Advancing = 640 ms
– Retracting = 780 ms
Calculated travel time tv (vertical):
– Advancing: tv = th x ka
  tv = 640 ms x 0.9 = 576 ms
– Retracting: tv = th x kr
  tv = 780 ms x 1.1 = 858 ms

Stroke [mm]	Size	Advancing (ka)[1)]	Retracting (kr)
10	10	1	1.1
	12, 16, 20, 25	1.1	1.2
30	10	1	1.1
	12, 16, 20, 25	1.1	1.2
50	10, 12	1	1.1
	16, 20, 25	0.9	1.1
100	10, 12, 16, 20, 25	0.95	1.1
150	12, 16, 20, 25	0.95	1.1
200	20, 25	0.9	1.1

1) Downward.

Shock absorber selection

Travel time t as a function of effective load m and cushioning Y3 – horizontal mounting position

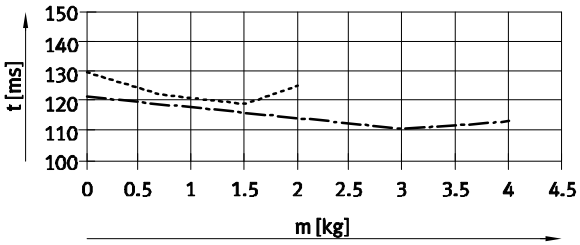


The values in the graphs are determined by calculation.
The travel time as a function of effective load must not be reduced below the values shown, because the kinetic impact or residual energy in the end positions can result in damage to the drive.

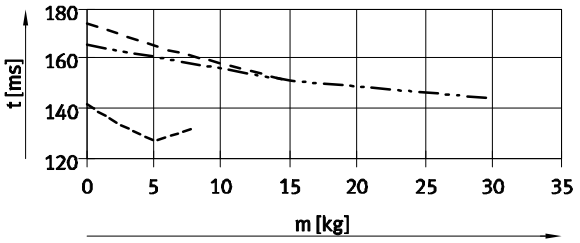
Vertical mounting position
➔ page 25

Advancing

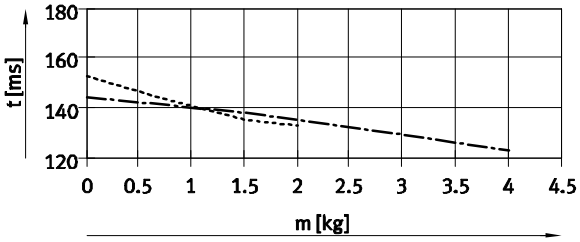
Stroke 30 mm, size 10 ... 12



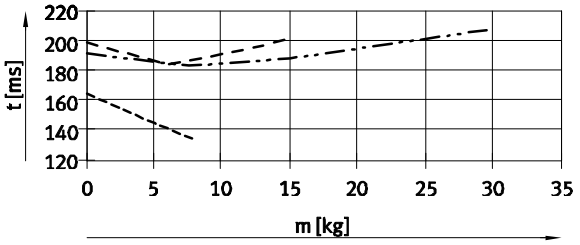
Stroke 30 mm, size 16 ... 25



Stroke 50 mm, size 10 ... 12

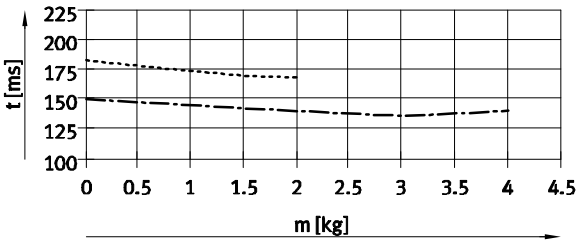


Stroke 50 mm, size 16 ... 25

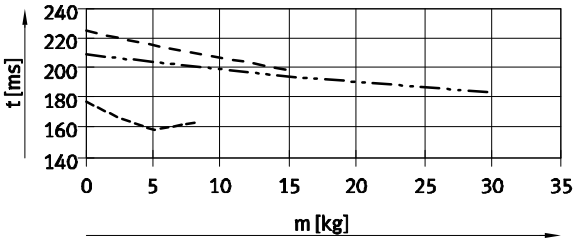


Retracting

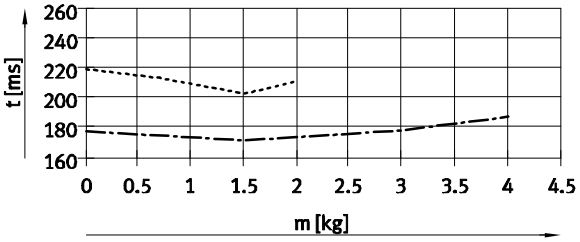
Stroke 30 mm, size 10 ... 12



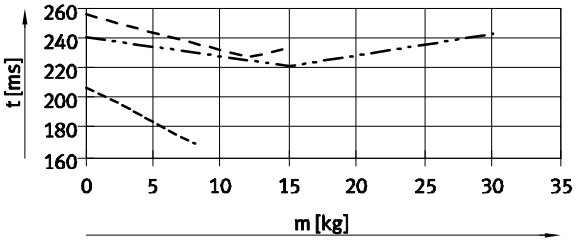
Stroke 30 mm, size 16 ... 25



Stroke 50 mm, size 10 ... 12



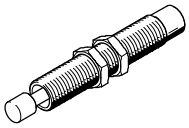
Stroke 50 mm, size 16 ... 25



DGSL-N-10
DGSL-N-12
DGSL-N-16
DGSL-N-20
DGSL-N-25

Shock absorber selection

Travel time t as a function of effective load m and cushioning Y3 – horizontal mounting position

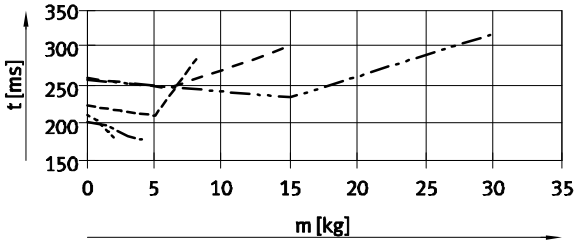


The values in the graphs are determined by calculation.
The travel time as a function of effective load must not be reduced below the values shown, because the kinetic impact or residual energy in the end positions can result in damage to the drive.

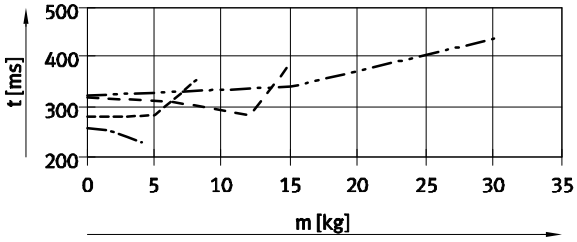
Vertical mounting position
➔ page 25

Advancing

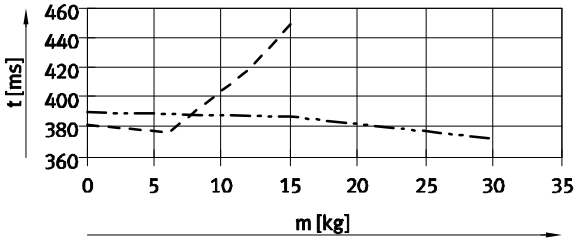
Stroke 100 mm, size 10 ... 25



Stroke 150 mm, size 12 ... 25

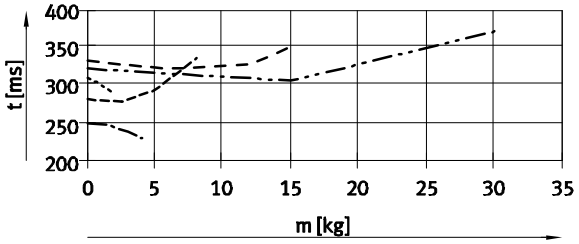


Stroke 200 mm, size 20 ... 25

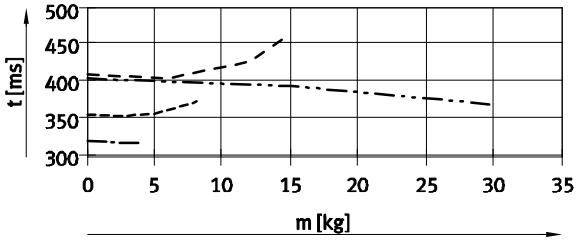


Retracting

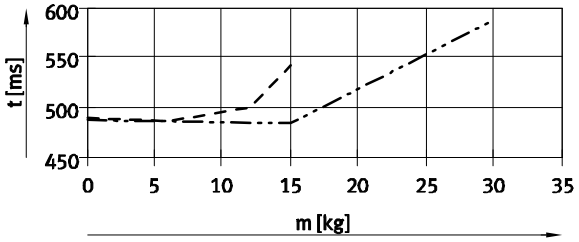
Stroke 100 mm, size 10 ... 25



Stroke 150 mm, size 12 ... 25



Stroke 200 mm, size 20 ... 25



DGSL-N-10
DGSL-N-12
DGSL-N-16
DGSL-N-20
DGSL-N-25

Vertical mounting position

The travel times for a vertical mounting position are calculated by multiplying the data ascertained for horizontal mounting position by a correction factor ka (advancing) and kr (retracting), see adjacent table.

Given:
Stroke = 200 mm
Size = 20
Effective load = 10 kg
Ascertained travel time th (horizontal), see graph:
- Advancing = 405 ms
- Retracting = 490 ms

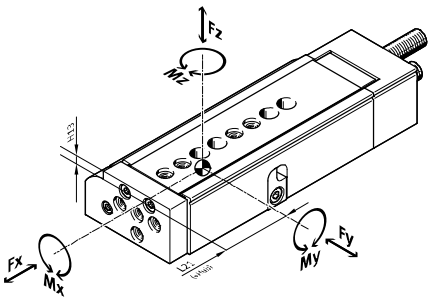
Calculated travel time tv (vertical):
- Advancing: tv = th x ka
  tv = 405 ms x 0.9 = 365 ms
- Retracting: tv = th x kr
  tv = 490 ms x 1.5 = 735 ms

Stroke [mm]	Size	Advancing (ka)[1]	Retracting (kr)
30	10, 12	0.95	1.2
	16, 20, 25	0.9	1.5
50	10, 12	0.9	1.5
	16, 20, 25	0.9	1.5
100	10, 12, 16, 20, 25	0.8	1.5
150	12, 16, 20, 25	0.9	1.5
200	20, 25	0.9	1.5

1) Downward.

Dynamic characteristic load values

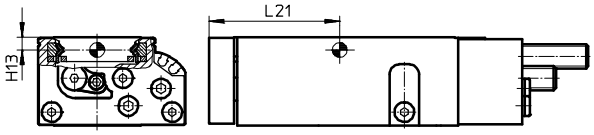
Torques are indicated with reference to the centre of the guide.
These values must not be exceeded during dynamic operation. Special attention must be paid to the cushioning phase.



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

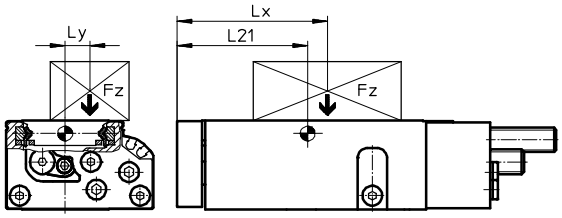
$$\frac{|Fy|}{Fy_{max.}} + \frac{|Fz|}{Fz_{max.}} + \frac{|Mx|}{Mx_{max.}} + \frac{|My|}{My_{max.}} + \frac{|Mz|}{Mz_{max.}} \leq 1$$

Position of the guide centre



Calculation example

Given:



Mini slide	= DGSL-N-10
Stroke length	= 80 mm
Lever arm L_x	= 50 mm
Lever arm L_y	= 30 mm
Load F_z	= 0.8 kg
Acceleration a	= 0 m/s^2

To be calculated:

F_y, F_z, Mx, My, Mz
and
verification of operation
with combined load

Solution:

L21 = 83 mm from table

F_y = 0 N

F_z = m x g
= 0.8 kg x 9.81 m/s^2 = 7.848 N

M_x = m x g x L_y
= 0.8 kg x 9.81 m/s^2 x 30 mm = 0.236 Nm

M_y = m x g x [(L21+stroke)-L_x]
= 0.8 kg x 9.81 m/s^2 x [(83 mm + 80 mm) – 50 mm] = 0.886 Nm

M_z = 0 Nm

Combined load:

$$\frac{|Fy|}{Fy_{max.}} + \frac{|Fz|}{Fz_{max.}} + \frac{|Mx|}{Mx_{max.}} + \frac{|My|}{My_{max.}} + \frac{|Mz|}{Mz_{max.}}$$

$$= 0 + \frac{7.848N}{1200N} + \frac{0.236Nm}{18Nm} + \frac{0.886Nm}{12Nm} + 0 = 0.094 \leq 1$$

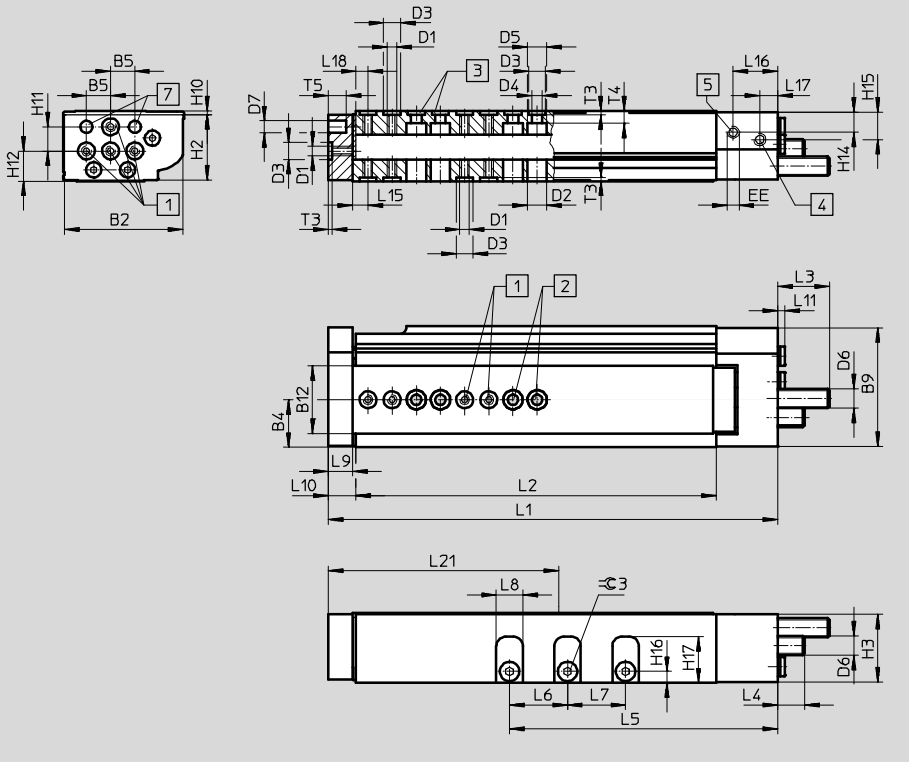
Mini slides DGSL-N, NPT

Technical data

Permissible forces and torques						Geometric characteristics	
Size	Stroke [mm]	Fy_{max} [N]	Fz_{max} [N]	Mx_{max} [Nm]	My_{max}, Mz_{max} [Nm]	H13 [mm]	L21 [mm]
10							
	10	927	927	15	6	4.2	43
	20	1003	1003	15	7		46
	30	1078	1078	15	8		51
	40	1152	1152	15	9		56
	50	1175	1175	18	9		61
	80	1200	1200	18	12		83
	100	1250	1250	18	12		96
12							
	10	942	942	15	8	5.2	44
	20	1006	1006	15	9		49
	30	1075	1075	15	10		54
	40	1142	1142	18	11		59
	50	1200	1200	18	12		64
	80	1280	1280	20	15		88
	100	1340	1340	20	15		98
	150	1400	1400	20	15		124
16							
	10	1769	1769	35	20	6.4	54
	20	2021	2021	35	22		59
	30	2274	2274	35	22		64
	40	2527	2527	40	25		69
	50	2780	2780	40	25		74
	80	2800	2800	50	27		89
	100	2850	2850	50	43		113
	150	2900	2900	50	43		138
20							
	10	2911	2911	60	30	7.55	56
	20	3143	3143	60	30		61
	30	3354	3354	60	30		66
	40	3612	3612	60	40		71
	50	3816	3816	70	50		76
	80	4032	4032	80	50		91
	100	4200	4200	85	80		121
	150	4400	4400	90	80		152
	200	4600	4600	90	80		177
25							
	10	3270	3270	100	60	8.55	64
	20	3744	3744	100	60		69
	30	4205	4205	100	60		74
	40	4643	4643	110	60		79
	50	4650	4650	120	60		84
	80	4700	4700	130	80		112
	100	4750	4750	130	80		129
	150	4800	4800	130	80		154
	200	4800	4800	130	80		179

Dimensions Download CAD data ➔ **www.festo.com**

Size 10



1 Mounting thread (centring sleeves included in the scope of delivery)
2 Through-holes for mounting the drive
3 Centring holes (centring sleeves included in the scope of delivery)
4 Supply port, advancing
5 Supply port, retracting
6 Slots for proximity sensor SME/SMT-10
7 Centring hole

L10 Distance between outer edge of yoke plate and housing
L15 Distance between centre of centring hole and outer edge of slide
L18 Distance between centre of centring hole and outer edge of housing

General dimensions

Size	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	D1
10	50	49	39.2	19.65	10	6.8	12.35	20.1	49	5	29.2	28	37.7	27	M4

Size	D2 ∅	D3 ∅	D4 ∅	D5 ∅	D6	D7 ∅	EE[1]	H1 ±0.08	H2	H3	H4	H5	H6	H7	H8
10	8	7^{H7}	4.3	8	M8x1	5^{H7}	M5	29	27.1	28	6.8	13.8	15.8	22.8	15.5

Size	H9	H10	H11	H12	H13	H14	H15	H16	H17	H18	H19	T3 +0.1	T4	T5	⌀ 2[1]	⌀ 3
10	0.6	1.4	10	12.5	4.2	8.76	11.76	4.8	19.25	0.4	9	1.6	5	7.5	2.5	3

1) Suitable for 10-32 UNF

Stroke-dependent dimensions

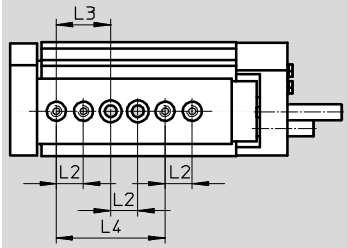
Size	Stroke	L1	L2	L5	L6	L7	L8	L9	L10	L11	L15 ±0.05	L16	L17	L18 ±0.05	L21
10	10	103.1	66	41.3	–	–	11	10	11.6	2.5	6.4	18.5	7.5	5	43
	20	112.8	75.7	51											46
	30	122.8	85.7	61											51
	40	132.8	95.7	71											56
	50	142.8	105.7	81											61
	80	186.2	149.1	111	24										83
	100	206.2	169.1	131	24	24									96

Cushioning-dependent dimensions

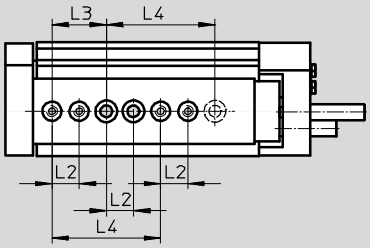
Size	Cushioning	L3 max.	L4 max.	⌯ 1	
				For adjusting the cushioning stroke	For adjusting the end position
10	P	22.8	12.5	–	2.5
	E	8.8	0	–	2.5
	P1	20.5	10.2	2.5	5
	Y3	25.5	14.9	–	2.5
	Y11	30.4	19.9	–	2

Hole pattern for mounting threads and centring holes

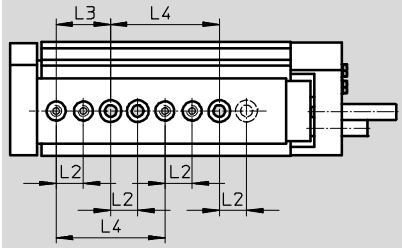
DGSL-N-10-10



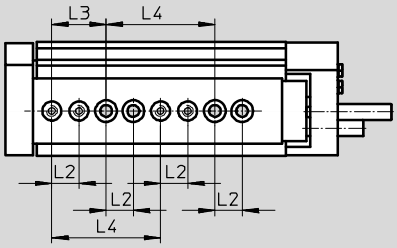
DGSL-N-10-20



DGSL-N-10-30

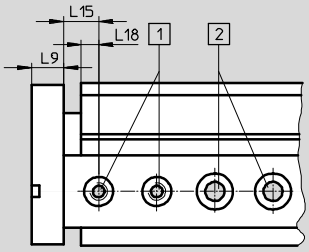


DGSL-N-10-40 ... 100



Distances from yoke plate to mounting threads and centring holes

DGSL-N-10



1 Centring holes with thread
2 Through-holes for mounting the drive

1) Tolerance for centring hole ±0.02
Tolerance for through-hole ±0.1

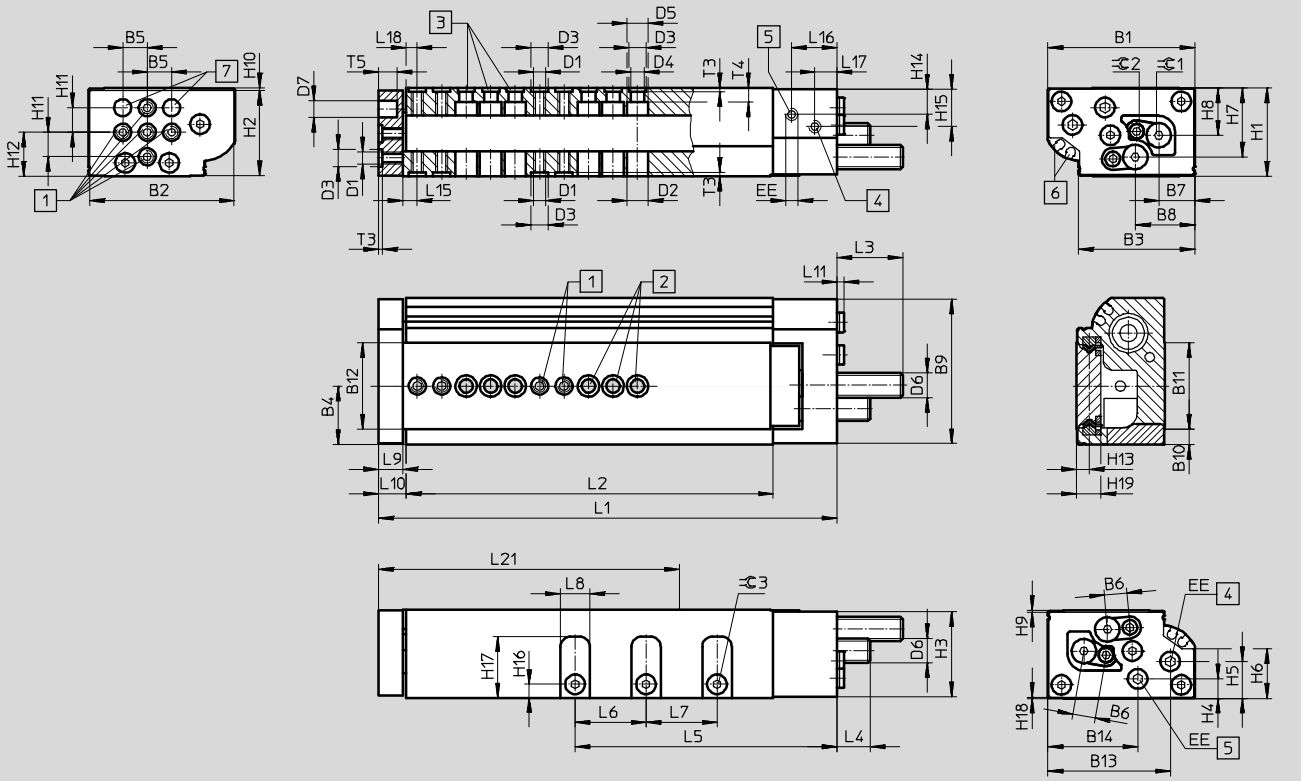
Size	L2[1)]	L3[1)]	L4[1)]	L9	L15 ±0.05	L18
10	10	20	40	10	6.4	5

Mini slides DGSL-N, NPT

Technical data

Dimensions Download CAD data ➔ **www.festo.com**

Size 12/16



1 Mounting thread (centring sleeves included in the scope of delivery)
2 Through-holes for mounting the drive
3 Centring holes (centring sleeves included in the scope of delivery)
4 Supply port, advancing
5 Supply port, retracting
6 Slots for proximity sensor SME/SMT-10
7 Centring hole
L10 Distance between outer edge of yoke plate and housing
L15 Distance between centre of centring hole and outer edge of slide
L18 Distance between centre of centring hole and outer edge of housing

General dimensions

Size	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	D1
12	60	59	47.6	24	10	9.2	14.7	24.3	59	6.45	35.25	35.2	50	36.7	M5
16	66	65	53.5	26.7	10	11.1	16.7	27.5	65	7.75	37.9	38	50.4	36.7	M5

Size	D2 ∅	D3 ∅	D4 ∅	D5 ∅	D6	D7 ∅	EE[1)]	H1 ±0.08	H2	H3	H4	H5	H6	H7	H8
12	9	7^{H7}	5.5	9	M10x1	8^{H7}	M5	36	34.8	34.7	8	15.1	20.35	28.2	19.3
16	9	7^{H7}	5.5	9	M12x1	8^{H7}	M5	40	38	39	8.5	16.7	20.6	31.7	20.8

Size	H9	H10	H11	H12	H13	H14	H15	H16	H17	H18	H19	T3 +0.1	T4	T5	C 2	C 3
12	0.8	0.95	10	17.9	5.2	10.75	15.75	5.5	24.9	0.5	10	1.6	5.6	7.5	3	3
16	0.5	1.5	10	20	6.4	10.5	16.7	7	26.6	0.5	12.5	1.6	6.1	9	4	4

1) Suitable for 10-32 UNF

Stroke-dependent dimensions

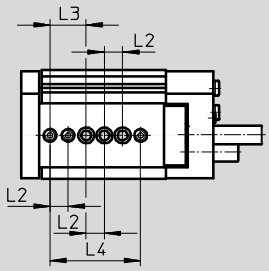
Size	Stroke	L1	L2	L5	L6	L7	L8	L9	L10	L11	L15 ±0.05	L16	L17	L18 ±0.05	L21
12	10	106.2	68.6	42.4	–	–	12	10	11.6	2.5	5.8	18.5	9	4.5	44
	20	116.2	78.6	52.4											49
	30	126.2	88.6	62.4											54
	40	136.2	98.6	72.4											59
	50	146.2	108.6	82.4											64
	80	197.6	160	112.4	29										88
	100	217.6	180	132.4											98
	150	267.6	230	182.4		29									124
16	10	124.1	82.5	45	–	–	14	12	13.6	2.5	6.8	21	10	5.5	54
	20	134.6	93	54.6											59
	30	144.6	103	64.6											64
	40	154.6	113	74.6											69
	50	164.6	123	84.6											74
	80	194.6	153	114.6	35										89
	100	243.6	202	134.6											113
	150	293.6	252	184.6											138

Cushioning-dependent dimensions

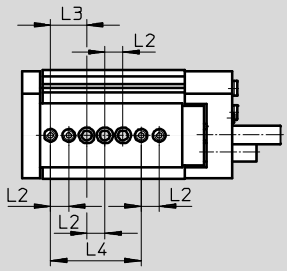
Size	Cushioning	L3 max.	L4 max.	⫧ 1	
				For adjusting the cushioning stroke	For adjusting the end position
12	P	28.1	14.9	–	3
	E	8.8	0	–	3
	P1	26	12.8	3	6
	Y3	36.9	23.7	–	3
	Y11	42.2	18.7	–	2.5
16	P	42.3	26.1	–	4
	E	8.8	0	–	4
	P1	40	23.8	4	8
	Y3	51.9	35.7	–	4
	Y11	55.4	38.9	–	3

Hole pattern for mounting threads and centring holes

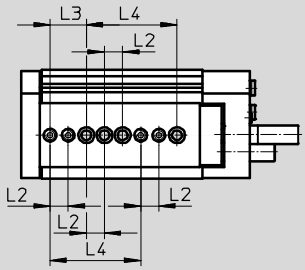
DGSL-N-12-10



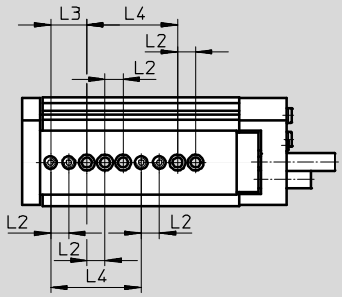
DGSL-N-12-20



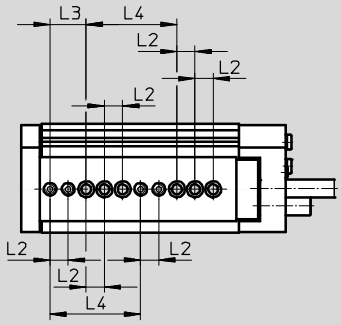
DGSL-N-12-30



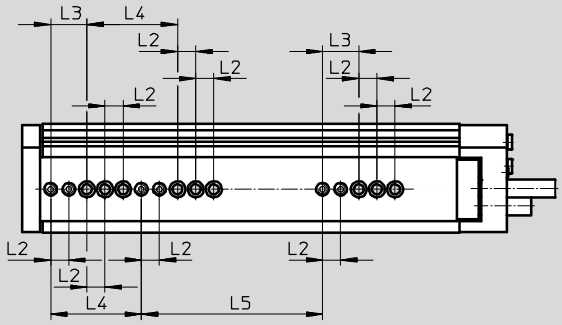
DGSL-N-12-40



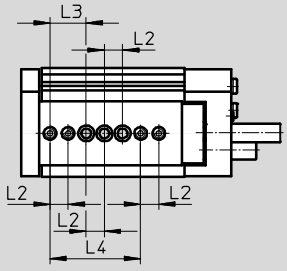
DGSL-N-12-50 ... 100



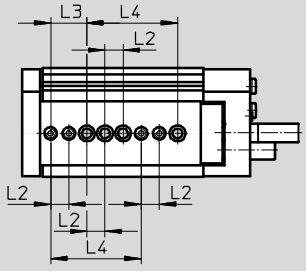
DGSL-N-12-150



DGSL-N-16-10

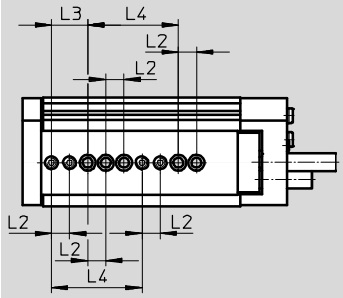


DGSL-N-16-20

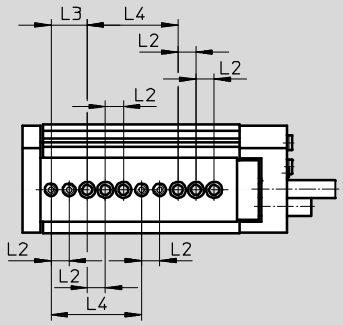


Hole pattern for mounting threads and centring holes

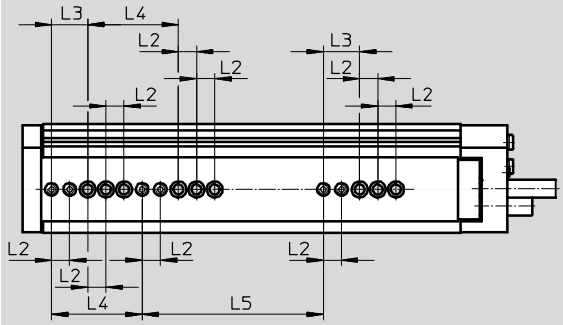
DGSL-N-16-30



DGSL-N-16-40 ... 100

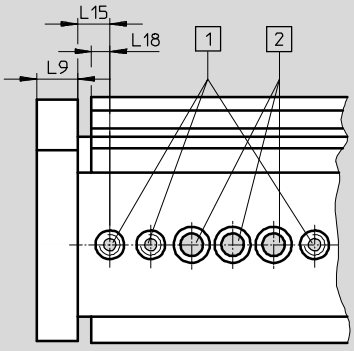


DGSL-N-16-150



Distances from yoke plate to mounting threads and centring holes

DGSL-N-12/16



[1] Centring holes with thread
[2] Through-holes for mounting the drive

1) Tolerance for centring hole ±0.02
Tolerance for through-hole ±0.1

Size	L2[1)]	L3[1)]	L4[1)]	L5 ±0.03	L9	L15 ±0.05	L18
12	10	20	50	100	10	5.8	4.5
16	10	20	50	100	12	6.8	5.5

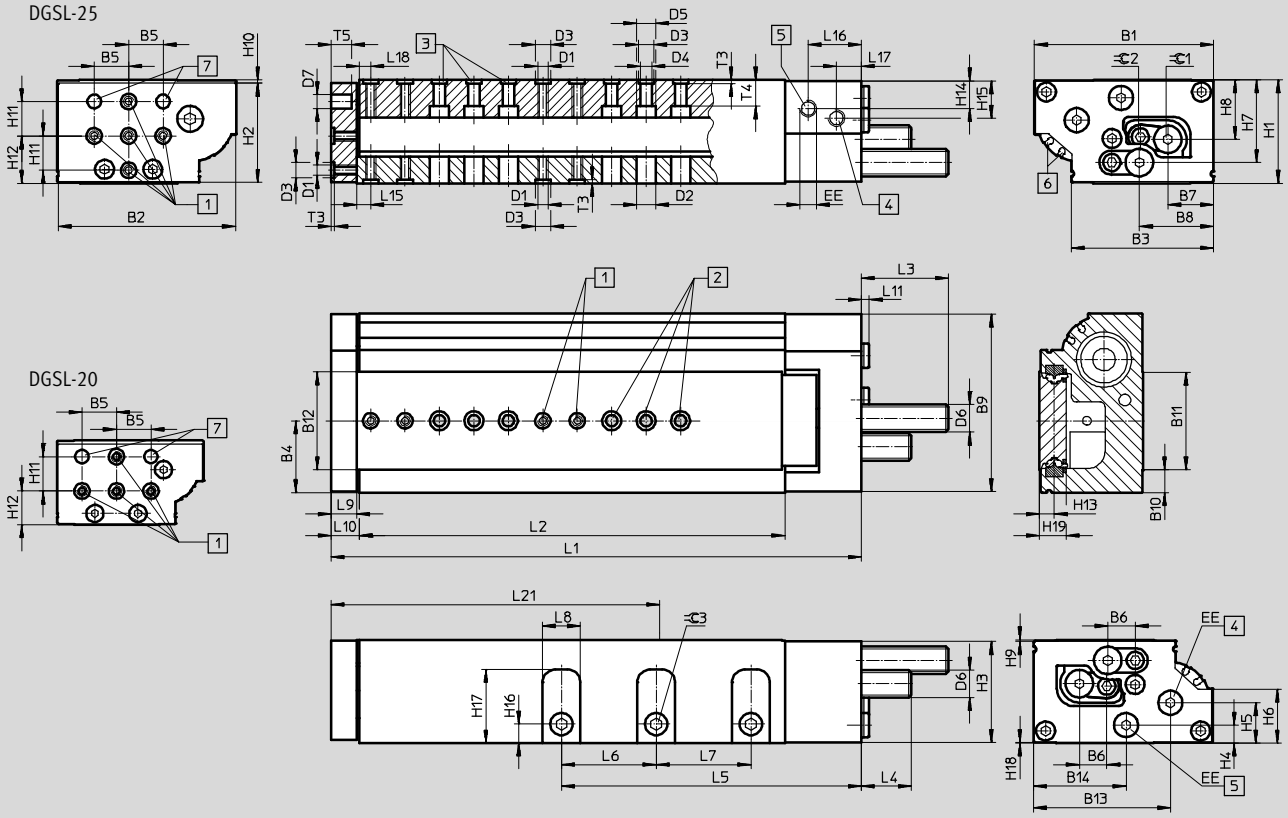
Mini slides DGSL-N, NPT

Technical data

Dimensions Download CAD data ➔ **www.festo.com**

Size 20/25

DGSL-25



DGSL-20

1 Mounting thread (centring sleeves included in the scope of delivery)
2 Through-holes for mounting the drive
3 Centring holes (centring sleeves included in the scope of delivery)
4 Supply port, advancing
5 Supply port, retracting
6 Slots for proximity sensor SME/SMT-10
7 Centring hole
L10 Distance between outer edge of yoke plate and housing
L15 Distance between centre of centring hole and outer edge of slide
L18 Distance between centre of centring hole and outer edge of housing

General dimensions

Size	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	D1	D2
20	85	84	68.85	34.5	20	14	21.4	36.35	83.4	10	48.9	49.2	64.1	48.6	M6	11.2
25	104	103	82.6	41.6	20	16.2	26.4	43.05	103	13.25	56.5	56.7	79.35	53.65	M6	11.2

Size	D3 ∅	D4 ∅	D5 ∅	D6	D7 ∅	EE	H1 ±0.08	H2	H3	H4	H5	H6	H7	H8
20	9^{H7}	6.6	11	M14x1	8^{H7}	1/8NPT	49	46.5	47.7	10.3	20.6	23.2	38.2	26.1
25	9^{H7}	6.6	11	M16x1	8^{H7}	1/8 NPT	60	57.5	58.5	10.45	23.35	31.15	47.95	34.5

Size	H9	H10	H11	H12	H13	H14	H15	H16	H17	H18	H19	T3 +0.1	T4	T5	C 2	C 3
20	0.5	2	20	19.6	7.55	14.7	14.7	10	33.3	0.8	14.6	2.1	8.6	10	4	5
25	1	2	20	27.5	8.55	16.55	21.15	11	42.7	0.45	15.6	2.1	15	12	5	6

Stroke-dependent dimensions

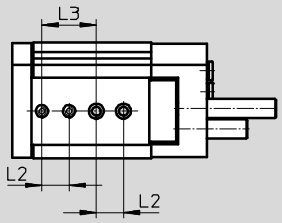
Size	Stroke	L1	L2	L5	L6	L7	L8	L9	L10	L11	L15 ±0.05	L16	L17	L18 ±0.05	L21
20	10	141.2	84.6	59.1	–	–	17	14	15.6	4.6	7.8	30.5	12	6.5	56
	20	151.2	94.6	69.1											61
	30	161.2	104.6	79.1											66
	40	171.2	114.6	89.1											71
	50	183.2	126.6	99.1											76
	80	211.2	154.6	129.1											91
	100	270.2	213.6	149.1	44										121
	150	333.2	276.6	199.1											152
	200	383.2	326.6	252.1		44									177
25	10	157.1	96	63.7	–	–	22	15	16.6	4.6	8	32.3	14.5	6.5	64
	20	167.1	106	72.2											69
	30	177.1	116	82.2											74
	40	187.1	126	92.2											79
	50	197.1	136	102.2											84
	80	253.1	192	132.2	55										112
	100	286.1	225	152.2											129
	150	338.1	277	202.2											154
	200	388.1	327	254.2											179

Cushioning-dependent dimensions

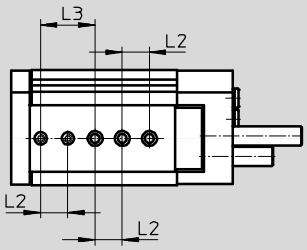
Size	Cushioning	L3 max.	L4 max.	⫧ 1	
				For adjusting the cushioning stroke	For adjusting the end position
20	P	52.4	31.2	–	4
	E	8.8	0	–	4
	P1	50.1	28.9	4	8
	Y3	55.5	34.3	–	4
	Y11	67.4	45.9	–	4
25	P	51.9	30.5	–	5
	E	8.8	0	–	5
	P1	49.6	28.2	5	10
	Y3	65.2	43.8	–	5
	Y11	78.4	56.9	–	4

Hole pattern for mounting threads and centring holes

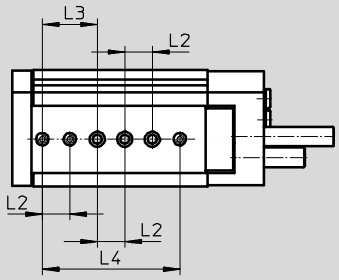
DGSL-N-20-10/20



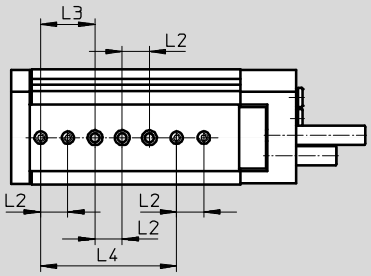
DGSL-N-20-30/40



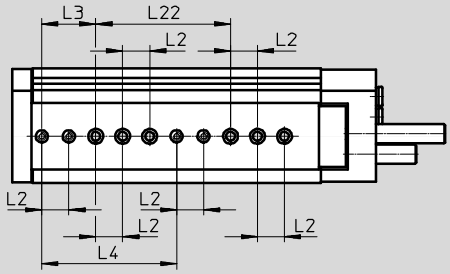
DGSL-N-20-50



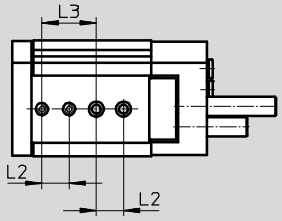
DGSL-N-20-80



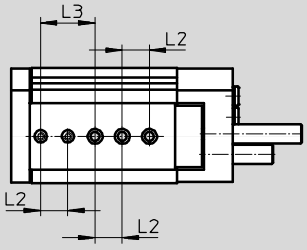
DGSL-N-20-100 ... 200



DGSL-N-25-10

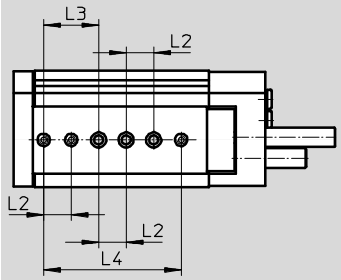


DGSL-N-25-20

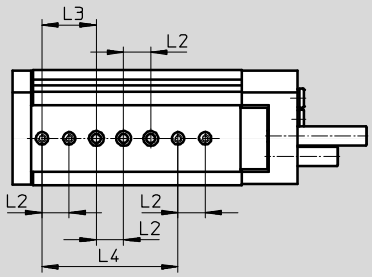


Hole pattern for mounting threads and centring holes

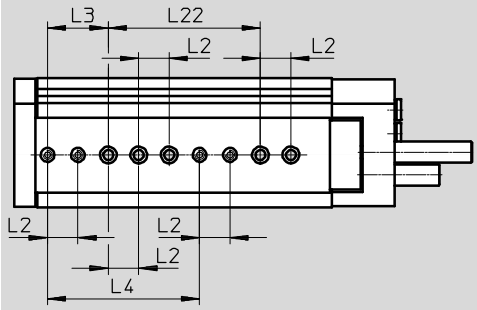
DGSL-N-25-30/40



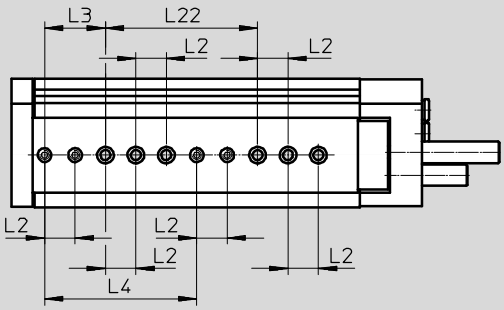
DGSL-N-25-50



DGSL-N-25-80

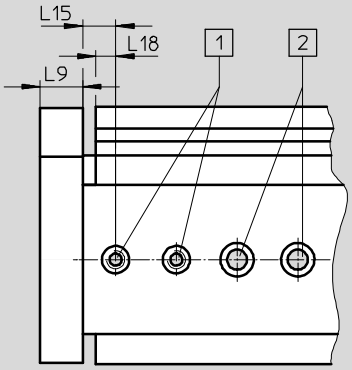


DGSL-N-25-100 ... 200



Distances from yoke plate to mounting threads and centring holes

DGSL-N-20/25



1 Centring holes with thread
2 Through-holes for mounting the drive

Size	L2[1)]	L3[1)]	L4	L9	L15 ±0.05	L18	L22
20	20	40	100[1)]	14	7.8	6.5	100±0.03
25	20	40	100±0.03	15	8	6.5	100[1)]

1) Tolerance for centring hole ±0,02
Tolerance for through-hole ±0,1

Mini slides DGSL-N, NPT

Technical data

FESTO

Ordering data

Size	Stroke [mm]	Part No.	Type
With cushioning P			
10	10	**566258**	**DGSL-N-10-10-PA**
	20	**566259**	**DGSL-N-10-20-PA**
	30	**566260**	**DGSL-N-10-30-PA**
	40	**566261**	**DGSL-N-10-40-PA**
	50	**566262**	**DGSL-N-10-50-PA**
	80	**566263**	**DGSL-N-10-80-PA**
	100	**566264**	**DGSL-N-10-100-PA**
12	10	**566265**	**DGSL-N-12-10-PA**
	20	**566266**	**DGSL-N-12-20-PA**
	30	**566267**	**DGSL-N-12-30-PA**
	40	**566268**	**DGSL-N-12-40-PA**
	50	**566269**	**DGSL-N-12-50-PA**
	80	**566270**	**DGSL-N-12-80-PA**
	100	**566271**	**DGSL-N-12-100-PA**
	150	**566272**	**DGSL-N-12-150-PA**
16	10	**566273**	**DGSL-N-16-10-PA**
	20	**566274**	**DGSL-N-16-20-PA**
	30	**566275**	**DGSL-N-16-30-PA**
	40	**566276**	**DGSL-N-16-40-PA**
	50	**566277**	**DGSL-N-16-50-PA**
	80	**566278**	**DGSL-N-16-80-PA**
	100	**566279**	**DGSL-N-16-100-PA**
	150	**566280**	**DGSL-N-16-150-PA**
20	10	**566281**	**DGSL-N-20-10-PA**
	20	**566282**	**DGSL-N-20-20-PA**
	30	**566283**	**DGSL-N-20-30-PA**
	40	**566284**	**DGSL-N-20-40-PA**
	50	**566285**	**DGSL-N-20-50-PA**
	80	**566286**	**DGSL-N-20-80-PA**
	100	**566287**	**DGSL-N-20-100-PA**
	150	**566288**	**DGSL-N-20-150-PA**
	200	**566289**	**DGSL-N-20-200-PA**
25	10	**566290**	**DGSL-N-25-10-PA**
	20	**566291**	**DGSL-N-25-20-PA**
	30	**566292**	**DGSL-N-25-30-PA**
	40	**566293**	**DGSL-N-25-40-PA**
	50	**566294**	**DGSL-N-25-50-PA**
	80	**566295**	**DGSL-N-25-80-PA**
	100	**566296**	**DGSL-N-25-100-PA**
	150	**566297**	**DGSL-N-25-150-PA**
	200	**566298**	**DGSL-N-25-200-PA**

Size	Stroke [mm]	Part No.	Type
With cushioning E			
10	10	**570213**	**DGSL-N-10-10-EA**
	20	**570214**	**DGSL-N-10-20-EA**
	30	**570215**	**DGSL-N-10-30-EA**
	40	**570216**	**DGSL-N-10-40-EA**
	50	**570217**	**DGSL-N-10-50-EA**
	80	**570218**	**DGSL-N-10-80-EA**
	100	**570219**	**DGSL-N-10-100-EA**
12	10	**570220**	**DGSL-N-12-10-EA**
	20	**570221**	**DGSL-N-12-20-EA**
	30	**570222**	**DGSL-N-12-30-EA**
	40	**570223**	**DGSL-N-12-40-EA**
	50	**570224**	**DGSL-N-12-50-EA**
	80	**570225**	**DGSL-N-12-80-EA**
	100	**570226**	**DGSL-N-12-100-EA**
	150	**570227**	**DGSL-N-12-150-EA**
16	10	**570228**	**DGSL-N-16-10-EA**
	20	**570229**	**DGSL-N-16-20-EA**
	30	**570230**	**DGSL-N-16-30-EA**
	40	**570231**	**DGSL-N-16-40-EA**
	50	**570232**	**DGSL-N-16-50-EA**
	80	**570233**	**DGSL-N-16-80-EA**
	100	**570234**	**DGSL-N-16-100-EA**
	150	**570235**	**DGSL-N-16-150-EA**
20	10	**570236**	**DGSL-N-20-10-EA**
	20	**570237**	**DGSL-N-20-20-EA**
	30	**570238**	**DGSL-N-20-30-EA**
	40	**570239**	**DGSL-N-20-40-EA**
	50	**570240**	**DGSL-N-20-50-EA**
	80	**570241**	**DGSL-N-20-80-EA**
	100	**570242**	**DGSL-N-20-100-EA**
	150	**570243**	**DGSL-N-20-150-EA**
	200	**570244**	**DGSL-N-20-200-EA**
25	10	**570245**	**DGSL-N-25-10-EA**
	20	**570246**	**DGSL-N-25-20-EA**
	30	**570247**	**DGSL-N-25-30-EA**
	40	**570248**	**DGSL-N-25-40-EA**
	50	**570249**	**DGSL-N-25-50-EA**
	80	**570250**	**DGSL-N-25-80-EA**
	100	**570251**	**DGSL-N-25-100-EA**
	150	**570252**	**DGSL-N-25-150-EA**
	200	**570253**	**DGSL-N-25-200-EA**

Ordering data

Size	Stroke [mm]	Part No.	Type
With cushioning P1			
10	10	**566299**	**DGSL-N-10-10-P1A**
	20	**566300**	**DGSL-N-10-20-P1A**
	30	**566301**	**DGSL-N-10-30-P1A**
	40	**566302**	**DGSL-N-10-40-P1A**
	50	**566303**	**DGSL-N-10-50-P1A**
	80	**566304**	**DGSL-N-10-80-P1A**
	100	**566305**	**DGSL-N-10-100-P1A**
12	10	**566306**	**DGSL-N-12-10-P1A**
	20	**566307**	**DGSL-N-12-20-P1A**
	30	**566308**	**DGSL-N-12-30-P1A**
	40	**566309**	**DGSL-N-12-40-P1A**
	50	**566310**	**DGSL-N-12-50-P1A**
	80	**566311**	**DGSL-N-12-80-P1A**
	100	**566312**	**DGSL-N-12-100-P1A**
	150	**566313**	**DGSL-N-12-150-P1A**
16	10	**566314**	**DGSL-N-16-10-P1A**
	20	**566315**	**DGSL-N-16-20-P1A**
	30	**566316**	**DGSL-N-16-30-P1A**
	40	**566317**	**DGSL-N-16-40-P1A**
	50	**566318**	**DGSL-N-16-50-P1A**
	80	**566319**	**DGSL-N-16-80-P1A**
	100	**566320**	**DGSL-N-16-100-P1A**
	150	**566321**	**DGSL-N-16-150-P1A**
20	10	**566322**	**DGSL-N-20-10-P1A**
	20	**566323**	**DGSL-N-20-20-P1A**
	30	**566324**	**DGSL-N-20-30-P1A**
	40	**566325**	**DGSL-N-20-40-P1A**
	50	**566326**	**DGSL-N-20-50-P1A**
	80	**566327**	**DGSL-N-20-80-P1A**
	100	**566328**	**DGSL-N-20-100-P1A**
	150	**566329**	**DGSL-N-20-150-P1A**
	200	**566330**	**DGSL-N-20-200-P1A**
25	10	**566331**	**DGSL-N-25-10-P1A**
	20	**566332**	**DGSL-N-25-20-P1A**
	30	**566333**	**DGSL-N-25-30-P1A**
	40	**566334**	**DGSL-N-25-40-P1A**
	50	**566335**	**DGSL-N-25-50-P1A**
	80	**566336**	**DGSL-N-25-80-P1A**
	100	**566337**	**DGSL-N-25-100-P1A**
	150	**566338**	**DGSL-N-25-150-P1A**
	200	**566339**	**DGSL-N-25-200-P1A**

Size	Stroke [mm]	Part No.	Type
With cushioning Y3			
10	10	–	
	20	–	
	30	**566340**	**DGSL-N-10-30-Y3A**
	40	**566341**	**DGSL-N-10-40-Y3A**
	50	**566342**	**DGSL-N-10-50-Y3A**
	80	**566343**	**DGSL-N-10-80-Y3A**
	100	**566344**	**DGSL-N-10-100-Y3A**
12	10	–	
	20	–	
	30	**566345**	**DGSL-N-12-30-Y3A**
	40	**566346**	**DGSL-N-12-40-Y3A**
	50	**566347**	**DGSL-N-12-50-Y3A**
	80	**566348**	**DGSL-N-12-80-Y3A**
	100	**566349**	**DGSL-N-12-100-Y3A**
	150	**566350**	**DGSL-N-12-150-Y3A**
16	10	–	
	20	–	
	30	**566351**	**DGSL-N-16-30-Y3A**
	40	**566352**	**DGSL-N-16-40-Y3A**
	50	**566353**	**DGSL-N-16-50-Y3A**
	80	**566354**	**DGSL-N-16-80-Y3A**
	100	**566355**	**DGSL-N-16-100-Y3A**
	150	**566356**	**DGSL-N-16-150-Y3A**
20	10	–	
	20	–	
	30	**566357**	**DGSL-N-20-30-Y3A**
	40	**566358**	**DGSL-N-20-40-Y3A**
	50	**566359**	**DGSL-N-20-50-Y3A**
	80	**566360**	**DGSL-N-20-80-Y3A**
	100	**566361**	**DGSL-N-20-100-Y3A**
	150	**566362**	**DGSL-N-20-150-Y3A**
	200	**566363**	**DGSL-N-20-200-Y3A**
25	10	–	
	20	–	
	30	**566364**	**DGSL-N-25-30-Y3A**
	40	**566365**	**DGSL-N-25-40-Y3A**
	50	**566366**	**DGSL-N-25-50-Y3A**
	80	**566367**	**DGSL-N-25-80-Y3A**
	100	**566368**	**DGSL-N-25-100-Y3A**
	150	**566369**	**DGSL-N-25-150-Y3A**
	200	**566370**	**DGSL-N-25-200-Y3A**

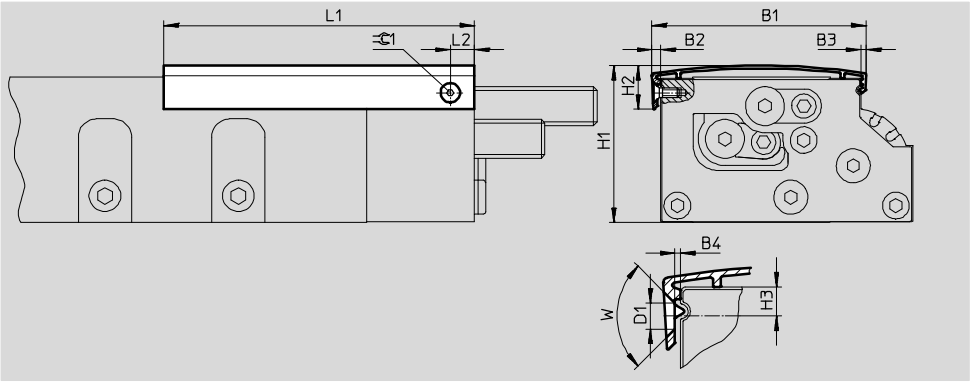
Mini slides DGSL-N, NPT

Wearing parts kits and accessories

Ordering data – Wearing parts kits		
Size	Part No.	Type
10	**713746**	**DGSL-10-...**
12	**713747**	**DGSL-12-...**
16	**713748**	**DGSL-16-...**
20	**713749**	**DGSL-20-...**
25	**713750**	**DGSL-25-...**

Cover DADS

Materials:
Anodised aluminium
Free of copper, PTFE and silicone
RoHS-compliant



Dimensions and ordering data																
For size	Length [mm]	B1	B2	B3	B4	D1	H1	H2	H3	L1	L2	W	⌀1	Weight [g]	Part No.	Type
10	50	43.6	2.8	2.2	1.2	3.4	32	12	3.4	70	10	90°	2	11	**1162400**	**DADS-AB-G6-10-50**
	100									120				18	**1090689**	**DADS-AB-G6-10-100**
	500									500				75	**1212479**	**DADS-AB-G6-10-500**
12	50	51.7	2.7	2	0.5	3.4	38.8	12.8	4.25	72	10	90°	2	12	**1162406**	**DADS-AB-G6-12-50**
	150									170				28	**1090732**	**DADS-AB-G6-12-150**
	500									500				82	**1212480**	**DADS-AB-G6-12-500**
16	50	60	4.3	3.1	2.25	3.4	43.7	15.2	5	73	10	90°	2	21	**1162410**	**DADS-AB-G6-16-50**
	150									173				49	**1066591**	**DADS-AB-G6-16-150**
	500									500				141	**1212503**	**DADS-AB-G6-16-500**
20	50	74.8	3.6	2.8	1.2	4.4	53.2	18.9	6.5	74	10	90°	2.5	28	**1162412**	**DADS-AB-G6-20-50**
	100									124				46	**1162415**	**DADS-AB-G6-20-100**
	200									224				83	**1090823**	**DADS-AB-G6-20-200**
	500									500				184	**1212521**	**DADS-AB-G6-20-500**
25	50	88.4	3.5	2.7	0.7	4.4	64.7	18.3	6	78	10	90°	2.5	34	**1162417**	**DADS-AB-G6-25-50**
	100									128				55	**1162419**	**DADS-AB-G6-25-100**
	200									228				98	**1090895**	**DADS-AB-G6-25-200**
	500									500				213	**1212523**	**DADS-AB-G6-25-500**

Note

With the 500 mm covers, the mounting hole must be made by the customer.

The cover can be trimmed as required by the customer.

Ordering data

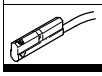
	For size	Description	Order code	Part No.	Type	PU[1]
Centring sleeve ZBH					Technical data ➔ Internet: zbh	
	10, 12, 16	For centring loads and attachments (the scope of delivery of the mini slide includes six centring sleeves)	–	**186717**	**ZBH-7**	10
	20, 25			**150927**	**ZBH-9**	
Connector sleeve ZBV					Technical data ➔ Internet: zbv	
	10	• For connecting two mini slides DGSL • Sizing information refers to the y axis	–	**548802**	**ZBV-M4-7**	3
	12, 16			**548803**	**ZBV-M5-7**	
	20, 25			**548804**	**ZBV-M6-9**	
Shock absorber DYEF-...-Y1					Technical data ➔ Internet: dyef	
	10	Flexible cushioning, without metal stop	P	**1179834**	**DYEF-M8-Y1**	1
	12			**1179837**	**DYEF-M10-Y1**	
	16			**1179840**	**DYEF-M12-Y1**	
	20			**1179863**	**DYEF-M14-Y1**	
	25			**1179879**	**DYEF-M16-Y1**	
Shock absorber DYEF-S-...-Y1					Technical data ➔ Internet: dyef	
	10	Flexible cushioning, without metal stop, short design	E	**1152536**	**DYEF-S-M8-Y1**	1
	12			**1152959**	**DYEF-S-M10-Y1**	
	16			**1153004**	**DYEF-S-M12-Y1**	
	20			**1153017**	**DYEF-S-M14-Y1**	
	25			**1153023**	**DYEF-S-M16-Y1**	
Shock absorber DYEF-...-Y1F					Technical data ➔ Internet: dyef	
	10	Flexible cushioning, with metal stop	P1	**548373**	**DYEF-M8-Y1F**	1
	12			**548374**	**DYEF-M10-Y1F**	
	16			**548375**	**DYEF-M12-Y1F**	
	20			**548376**	**DYEF-M14-Y1F**	
	25			**548377**	**DYEF-M16-Y1F**	
Shock absorber DYSW					Technical data ➔ Internet: dysw	
	–	Progressive shock absorber, both ends	Y3	**548070**	**DYSW-4-6-Y1F**	1
	10			**548071**	**DYSW-5-8-Y1F**	
	12			**548072**	**DYSW-7-10-Y1F**	
	16			**548073**	**DYSW-8-14-Y1F**	
	20			**548074**	**DYSW-10-17-Y1F**	
	25			**548075**	**DYSW-12-20-Y1F**	
Reducing sleeve DAYH						
	10	For DYSW-4-6	–	**1165476**	**DAYH-4**	1
	12	For DYSW-5-8		**1165480**	**DAYH-5**	
	16	For DYSW-7-10		**1165484**	**DAYH-7**	
	20	For DYSW-8-14		**1165488**	**DAYH-8**	
	25	For DYSW-10-17		**1165491**	**DAYH-10**	

1) Packaging unit

Ordering data					
	For size	Description	Part No.	Type	PU[1]
One-way flow control valve GRLA				Technical data ➔ Internet: grla	
	10, 12, 16	For regulating speed	**564840**	**GRLA-10-32-UNF-QB-5/32-U**	1
	20, 25		**534658**	**GRLA-1/8-QB-1/4-U**	
Push-in fitting QB				Technical data ➔ Internet: quick star	
	10, 12, 16	For connecting compressed air tubing with standard O.D.	**533267**	**QB-10-32-UNF-5/32-U**	10
	20, 25		**533273**	**QB-1/8-1/4-U**	

1) Packaging unit

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 the slot from above	PNP	Cable, 3-wire, in-line	2.5	**551373**	**SMT-10M-PS-24V-E-2,5-L-OE**
			Plug M8x1, 3-pin, in-line	0.3	**551375**	**SMT-10M-PS-24V-E-0,3-L-M8D**
			Plug M8x1, 3-pin, angled	0.3	**551376**	**SMT-10M-PS-24V-E-0,3-Q-M8D**

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 the slot from above	Contacting	Plug M8x1, 3-pin, in-line	0.3	**551367**	**SME-10M-DS-24V-E-0,3-L-M8D**
			Cable, 3-wire, in-line	2.5	**551365**	**SME-10M-DS-24V-E-2,5-L-OE**
			Cable, 2-wire, in-line	2.5	**551369**	**SME-10F-ZS-24V-E-2,5L-OE**
	Insertable in the slot lengthwise	Contacting	Plug M8x1, 3-pin, in-line	0.3	**173212**	**SME-10-SL-LED-24**
			Cable, 3-wire, in-line	2.5	**173210**	**SME-10-KL-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	**541333**	**NEBU-M8G3-K-2.5-LE3**
			5	**541334**	**NEBU-M8G3-K-5-LE3**
	Angled socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	**541338**	**NEBU-M8W3-K-2.5-LE3**
			5	**541341**	**NEBU-M8W3-K-5-LE3**

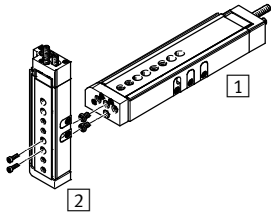
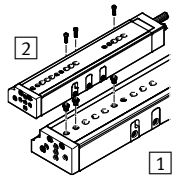
Adapter kit

Material:
Wrought aluminium alloy
Free of copper and PTFE
RoHS-compliant

- Note
The kit includes the individual mounting interface as well as the necessary mounting material.

Permissible drive/drive combinations with adapter kit

Download CAD data ➔ **www.festo.com**

Combination	1 Drive	2 Drive	Adapter kit				
	Size	Size	CRC[1]	Part No.	Type	Quantity required	PU[2]
DGSL/DGSL	DGSL	DGSL					
	10	10	2	–	**M4x14 DIN 912**[3]	2	–
				186717	**ZBH-7**[4]	2	10
	12, 16	10		**548803**	**ZBV-M5-7**	1	3
	12	12		–	**M5x14 DIN 912**[3]	2	–
				186717	**ZBH-7**[4]	2	10
	16	12		–	**M5x16 DIN 912**[3]	2	–
				186717	**ZBH-7**[4]	2	10
	16	16		–	**M5x18 DIN 912**[3]	2	–
				**186717**	**ZBH-7**[4]	2	10
	20, 25	12, 16		**548804**	**ZBV-M6-9**	1	3
	20, 25	20		–	**M6x20 DIN 912**[3]	2	–
				150927	**ZBH-9**[4]	2	10
	25	25		–	**M6x30 DIN 912**[3]	2	–
				150927	**ZBH-9**[4]	2	10

1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.
2) Packaging unit quantity
3) The screws listed are not included in the scope of delivery of the drives
4) The centring sleeves are included in the scope of delivery of the drives

Mini slides DGSL-N, NPT

Accessories

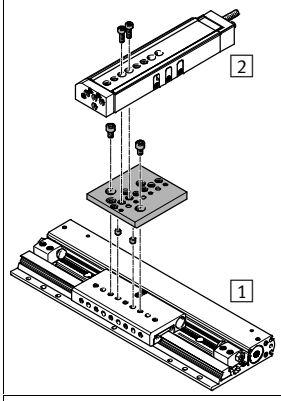
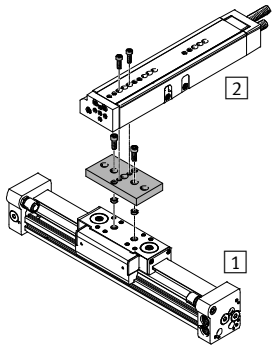
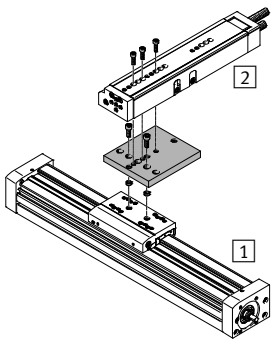
Adapter kit
HAPS, HMSV

Material:
Wrought aluminium alloy
Free of copper and PTFE
RoHS-compliant

Note
The kit includes the individual mounting interface as well as the necessary mounting material.

Permissible drive/drive combinations with adapter kit

Download CAD data ➔ **www.festo.com**

Combination	1 Drive	2 Drive	Adapter kit				
	Size	Size	CRC[1]	Part No.	Type	Quantity required	PU[2]
SLG/DGSL	SLG	DGSL	HAPS				
	12	10	2	**189533**	**HAPS-11**	1	1
	18	10, 12		**189534**	**HAPS-12**	1	1
DGC/DGSL	DGC	DGSL	HMSV				
	18	10	2	**548778**	**HMSV-48**	1	1
	18	12, 16		**189657**	**HMSV-41**	1	1
	25	12, 16, 20, 25		**548781**	**HMSV-51**	1	1
	32, 40	20, 25		**548780**	**HMSV-50**	1	1
DGE/DGSL	DGE-...	DGSL	HMSV				
	25	12, 16, 20, 25	2	**548781**	**HMSV-51**	1	1
	40	20, 25		**548780**	**HMSV-50**	1	1

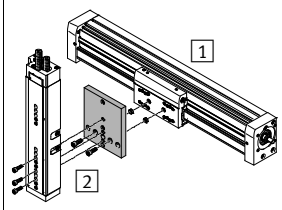
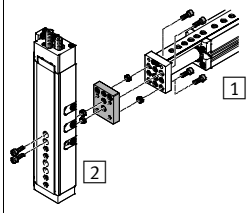
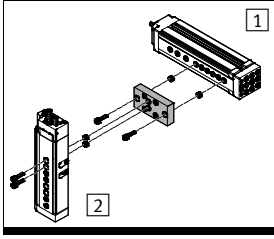
1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

Adapter kit
HMSV

Material:
Wrought aluminium alloy
Free of copper and PTFE
RoHS-compliant

- Note
The kit includes the individual mounting interface as well as the necessary mounting material.

Permissible drive/drive combinations with adapter kit Download CAD data ➔ **www.festo.com**

Combination	1 Drive	2 Drive	Adapter kit				
	Size	Size	CRC[1]	Part No.	Type	Quantity required	PU[2]
EGC/DGSL	EGC	DGSL	HMSV				
	70	10	2	**548778**	**HMSV-48**	1	1
	70	12, 16		**189657**	**HMSV-41**	1	1
	80	12, 16, 20, 25		**548781**	**HMSV-51**	1	1
	120	20, 25		**548780**	**HMSV-50**	1	1
EGSL/DGSL	EGSL	DGSL	HMSV				
	35	10	2	**1088262**	**HMSV-70**	1	–
	45, 55	10		**548803**	**ZBV-M5-7**	1	3
	45	12, 16		**–**	**M5x14 DIN 912**[3]	2	–
				186717	**ZBH-7**[4]	2	10
	55	12, 16		**–**	**M5x12 DIN 912**[3]	2	–
				186717	**ZBH-7**[4]	2	10
	75	12, 16		**548804**	**ZBV-M6-9**	1	3
	75	20		**–**	**M6x20 DIN 912**[3]	2	–
				150927	**ZBH-9**[4]	2	10
	35	10	2	**1088327**	**HMSV-73**	1	–

1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.
2) Packaging unit quantity
3) The screws listed are not included in the scope of delivery of the drives
4) The centring sleeves are included in the scope of delivery of the drives

Festo - Your Partner in Automation

1 Festo Inc.

5300 Explorer Drive
Mississauga, ON L4W 5G4
Canada

Festo Customer Interaction Center
Tel: 1 877 463 3786
Fax: 1 877 393 3786
Email: customer.service.ca@festo.com

2 Festo Pneumatic

Av. Ceylán 3,
Col. Tequesquináhuac
54020 Tlalnepantla,
Estado de México

Multinational Contact Center
01 800 337 8669

ventas.mexico@festo.com

3 Festo Corporation

1377 Motor Parkway
Suite 310
Islandia, NY 11749

4 Regional Service Center

7777 Columbia Road
Mason, OH 45040

Festo Customer Interaction Center
1 800 993 3786
1 800 963 3786
customer.service.us@festo.com

Connect with us

www.festo.com/socialmedia

www.festo.com

Subject to change