

Mini slides DGSL-N – Inch Series



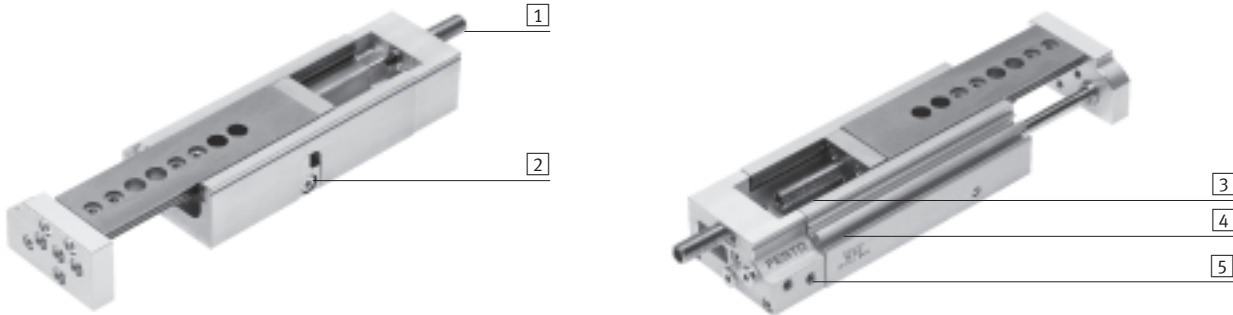
Mini slides DGSL-N – Inch Series

Key features

General information

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

The technology in detail

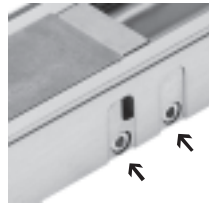


1 Cushioning



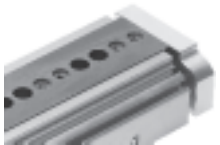
- Choice of three types of cushioning:
 - Flexible cushioning without metal end stop (P)
 - Flexible cushioning with metal end stop (P1)
 - Hydraulic shock absorbers (Y3)

2 Coarse stroke adjustment



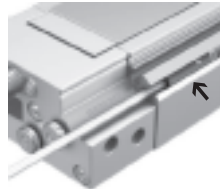
- The end stop for the front end position can be adjusted mechanically, e.g. to shorten the stroke

3 Innovative guide unit



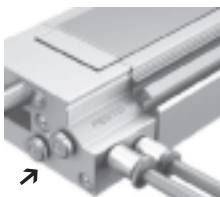
- Wide roller track, which provides extremely high rigidity
- High load capacity
- High precision
- Housing and steel slide form a guide: there are no accumulative tolerances

4 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

5 Compressed air connections



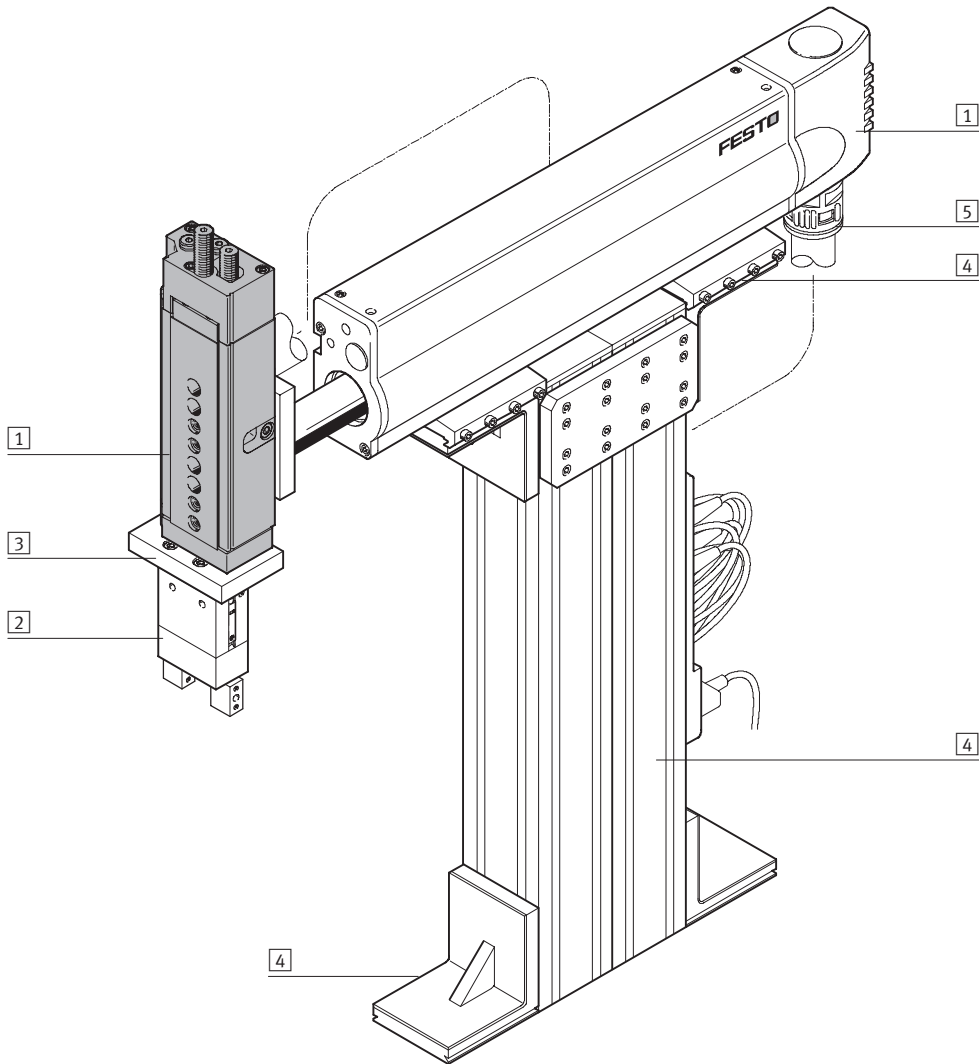
- Options on two sides:
 - On front face
 - At the side

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System example

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System product for handling and assembly technology

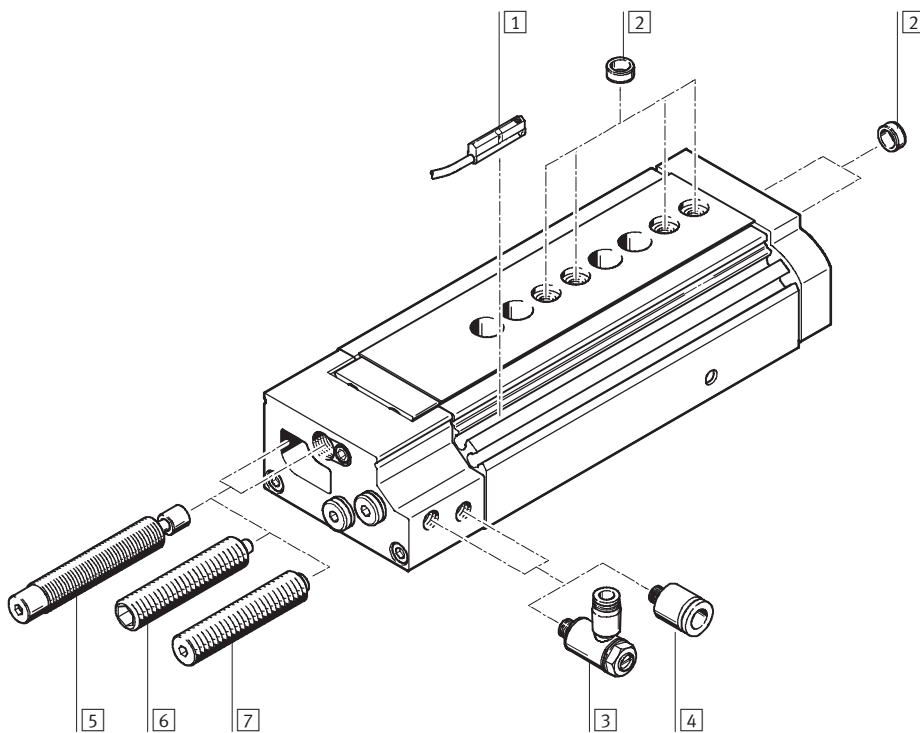


System elements and accessories		
	Brief description	→ Page/Internet
1	Drives	Wide range of combinations possible for handling and assembly technology drive
2	Gripper	Wide range of variations possible for handling and assembly technology gripper
3	Adapter plate	For drive/drive and drive/gripper connections adapter kit
4	Basic components	Profiles and profile connections as well as profile/drive connections basic component
5	Installation components	For achieving a clean, safe layout for electrical cables and tubing installation component
-	Axes	Wide range of combinations possible for handling and assembly technology axes
-	Motors	Servo and stepper motors, with or without gear unit motor

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Peripherals overview

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Note
End stops must not be removed.

Accessories		
	Brief description	→ Page/Internet
1	Proximity sensor SME/SMT-10	36
2	Centring sleeve ZBH	35
3	One-way flow control valve GRLA	35
4	Push-in fitting QB	35
5	Cushioning with shock absorber Y3	35
6	Cushioning with stop P1	35
7	Cushioning P	-

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Type codes

DGSL – N – 10 – 100 – Y3 – A

Type

Double-acting	
DGSL	Mini slide

System of units

N	Imperial
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Size

Stroke [mm]

Cushioning

P	Flexible cushioning, without metal end stop, both ends
P1	Flexible cushioning, with metal end stop, both ends
Y3	Progressive shock absorbers, both ends

Position sensing

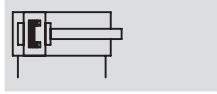
A	Via proximity sensor
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Technical data

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Function



Wearing parts kits

→ 35

⌀ - Size
10 ... 25

— Stroke length
10 ... 200 mm



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

Operating and environmental conditions			10	12	16	20	25
Size			10	12	16	20	25
Operating medium			Dried compressed air, lubricated or unlubricated				
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			10	12	16	20	25
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 at end positions	P	[Nm]	0.12	0.25	0.35	0.45	0.55
	P1	[Nm]	0.04	0.06	0.12	0.2	0.25
	Y3	[Nm]	1.3	2.5	4	8	12

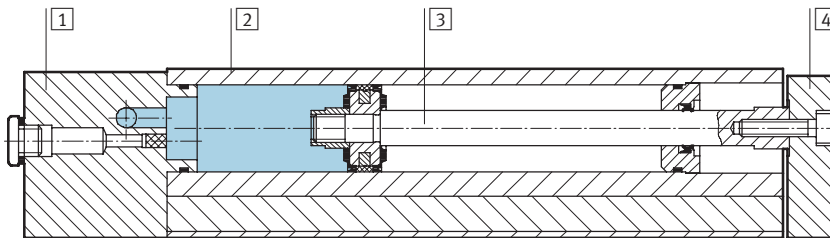
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Technical data

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
	P1	12	19.7	39.6	77.3	104
	Y3	11	21	42	67	91

Materials

Sectional view



Mini slide	
1	Cover 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	

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Technical data



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



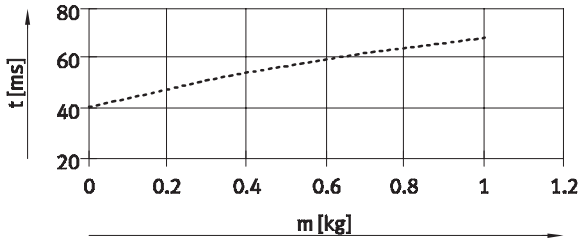
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Vertical mounting position
→ 11

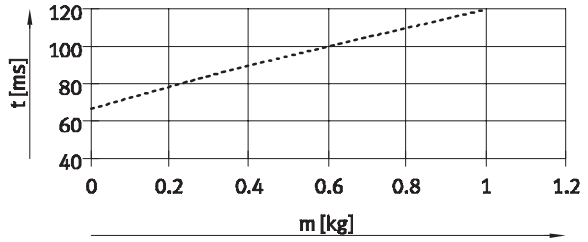
Advancing

Stroke 10 mm, size 10

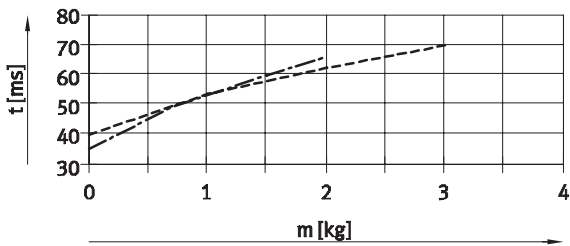


Retracting

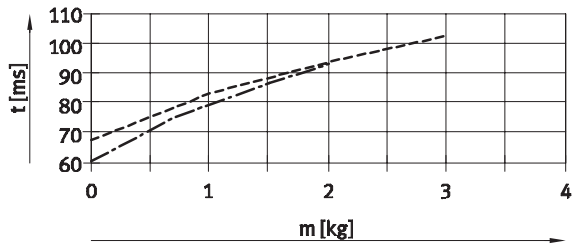
Stroke 10 mm, size 10



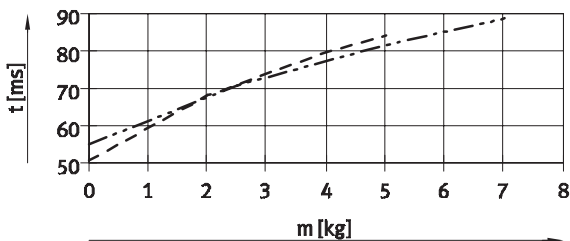
Stroke 10 mm, size 12 ... 16



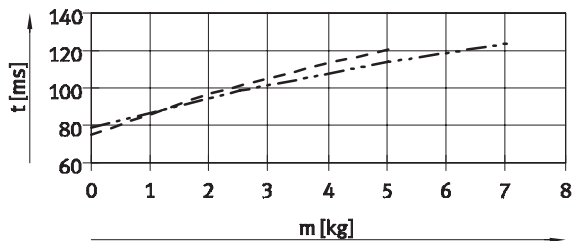
Stroke 10 mm, size 12 ... 16



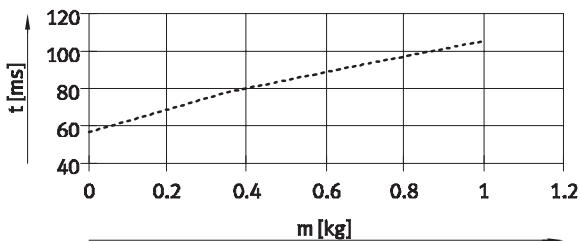
Stroke 10 mm, size 20 ... 25



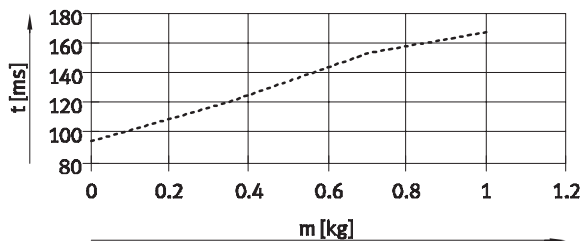
Stroke 10 mm, size 20 ... 25



Stroke 30 mm, size 4 ... 10



Stroke 30 mm, size 4 ... 10

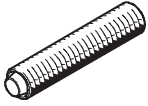


- DGSL-10
- DGSL-12
- DGSL-16
- DGSL-20
- DGSL-25

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Technical data

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



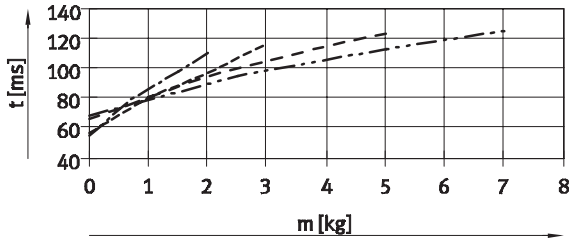
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Vertical mounting position
→ 11

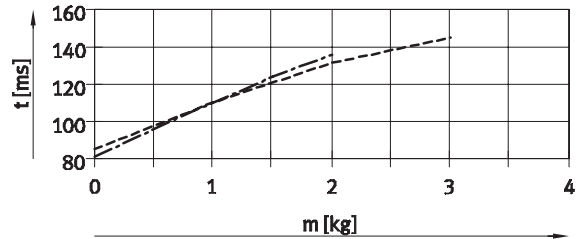
Advancing

Stroke 30 mm, size 12 ... 25

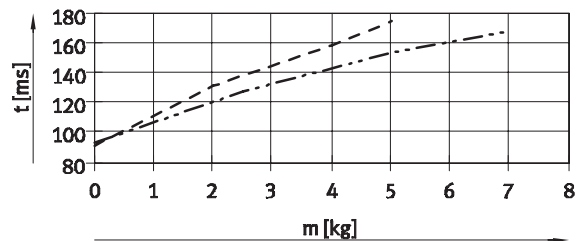


Retracting

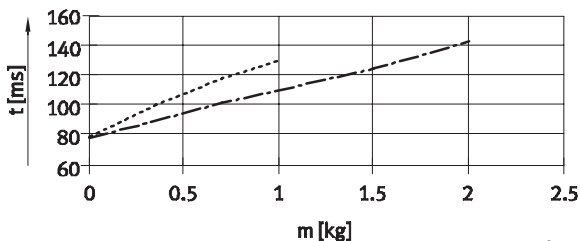
Stroke 30 mm, size 12 ... 16



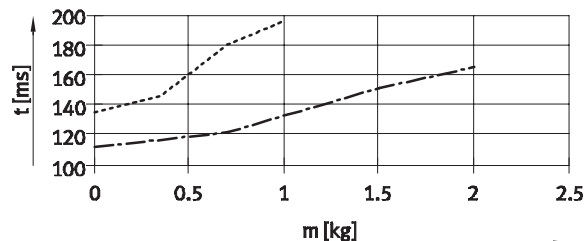
Stroke 30 mm, size 20 ... 25



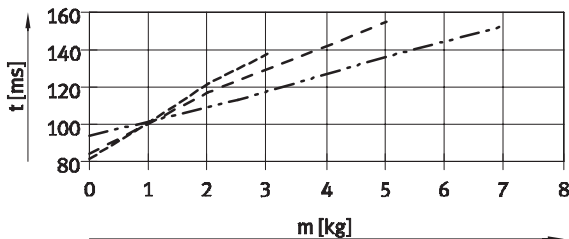
Stroke 50 mm, size 10 ... 12



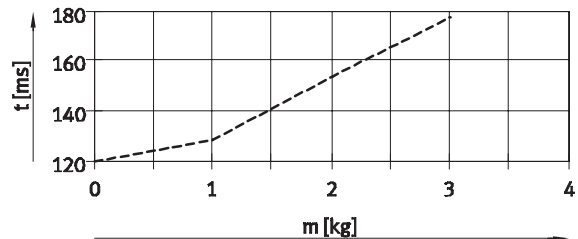
Stroke 50 mm, size 10 ... 12



Stroke 50 mm, size 16 ... 25

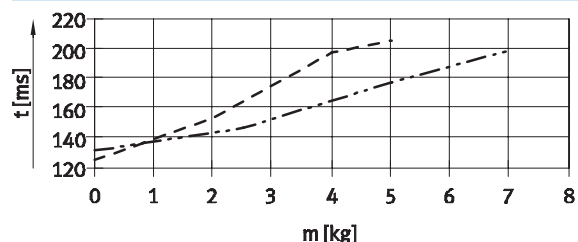


Stroke 50 mm, size 16



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

Stroke 50 mm, size 20 ... 25

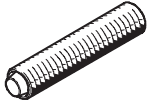


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Technical data

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



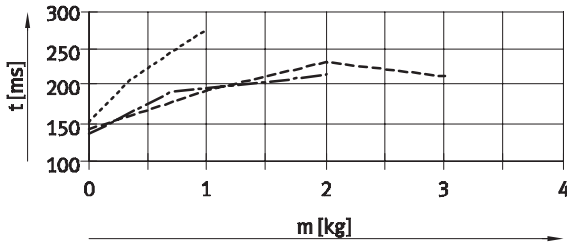
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Vertical mounting position
→ 11

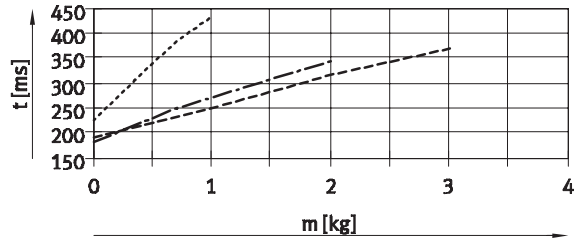
Advancing

Stroke 100 mm, size 10 ... 16

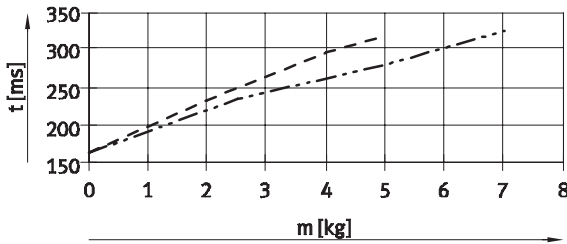


Retracting

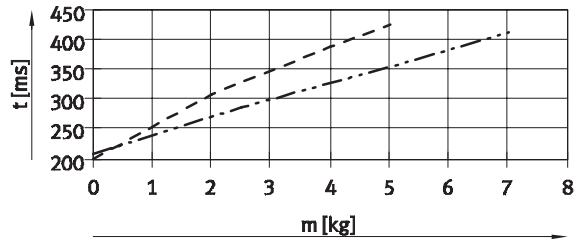
Stroke 100 mm, size 10 ... 16



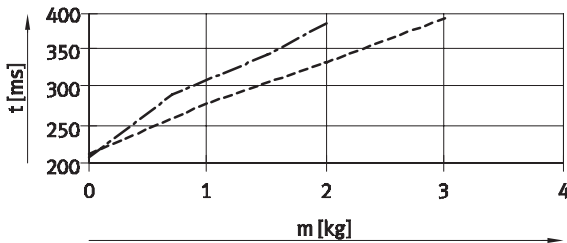
Stroke 100 mm, size 20 ... 25



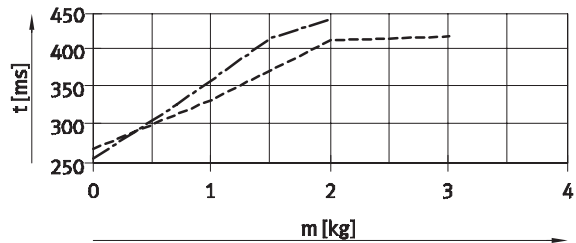
Stroke 100 mm, size 20 ... 25



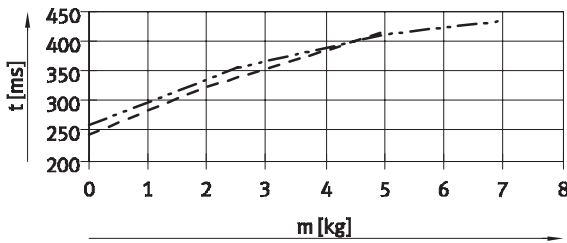
Stroke 150 mm, size 12 ... 16



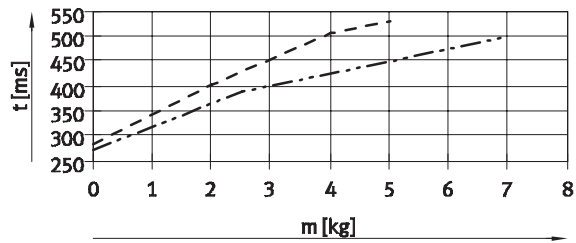
Stroke 150 mm, size 12 ... 16



Stroke 150 mm, size 20 ... 25



Stroke 150 mm, size 20 ... 25

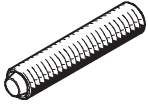


- DGSL-10
- DGSL-12
- DGSL-16
- DGSL-20
- DGSL-25

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Technical data

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



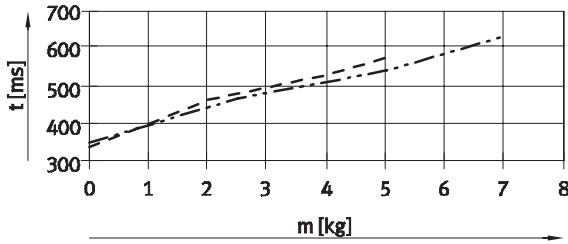
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Vertical mounting position
→ 11

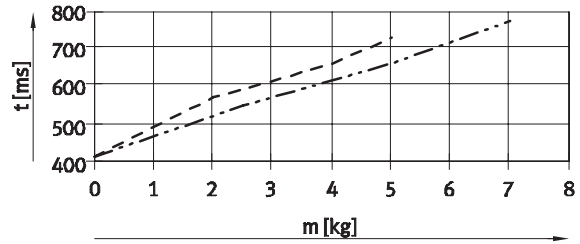
Advancing

Stroke 200 mm, size 20 ... 25



Retracting

Stroke 200 mm, size 20 ... 25



--- DGSL-20
- · - · DGSL-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 k_a (advancing) and k_r (retracting), see adjacent table.

Given:

- Stroke = 200 mm
- Size = 20
- Effective load = 3 kg
- Ascertained travel time t_h (horizontal), see graph:
 - Advancing = 500 ms
 - Retracting = 600 ms

Calculated travel time t_v (vertical):

- Advancing: $t_v = t_h \times k_a$
 $t_v = 500 \text{ ms} \times 0.9 = 450 \text{ ms}$
- Retracting: $t_v = t_h \times k_r$
 $t_v = 600 \text{ ms} \times 1.1 = 660 \text{ ms}$

Stroke [mm]	Size	Advancing (k_a) ¹⁾	Retracting (k_r)
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

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Technical data



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



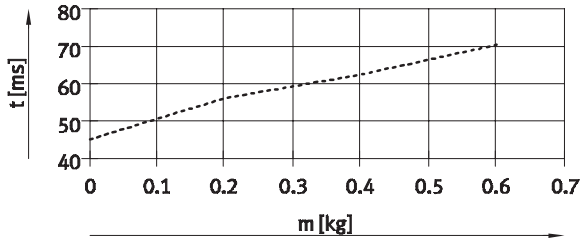
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Vertical mounting position
→ 15

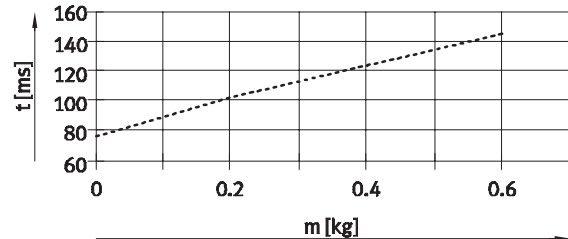
Advancing

Stroke 10 mm, size 10

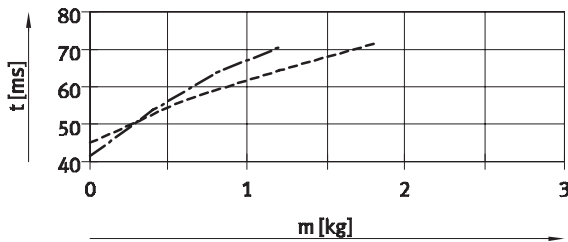


Retracting

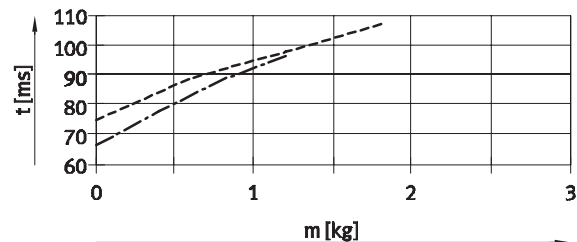
Stroke 10 mm, size 10



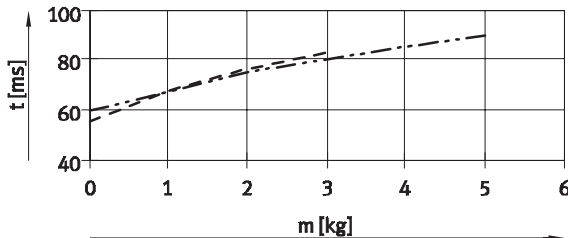
Stroke 10 mm, size 12 ... 16



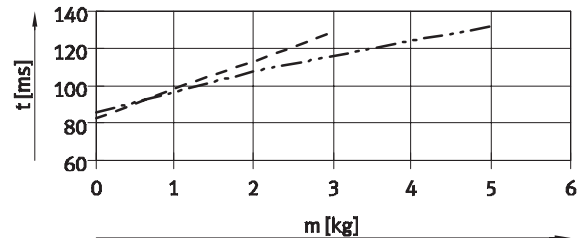
Stroke 10 mm, size 12 ... 16



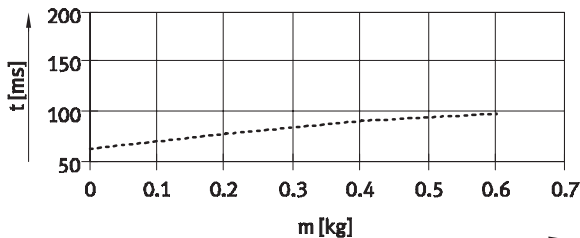
Stroke 10 mm, size 20 ... 25



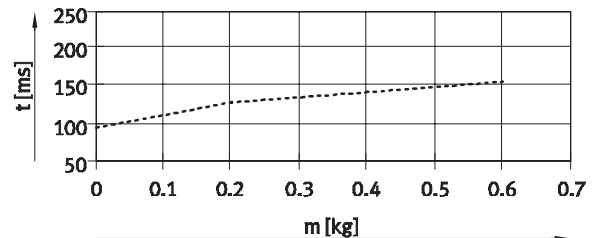
Stroke 10 mm, size 20 ... 25



Stroke 30 mm, size 10



Stroke 30 mm, size 10



- DGSL-10
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- DGSL-25

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Technical data

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



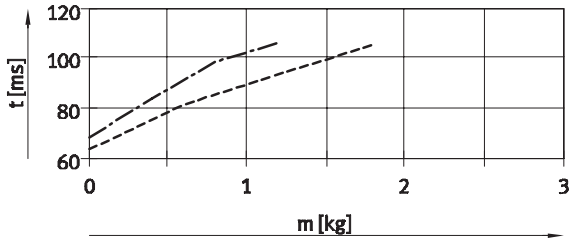
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Vertical mounting position
→ 15

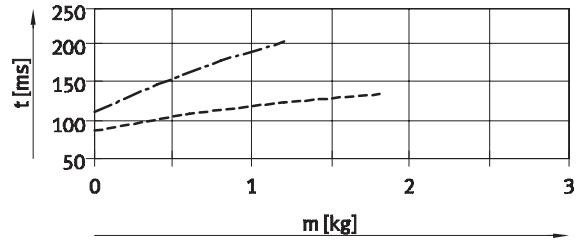
Advancing

Stroke 30 mm, size 12 ... 16

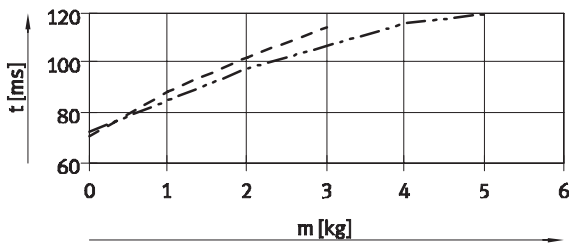


Retracting

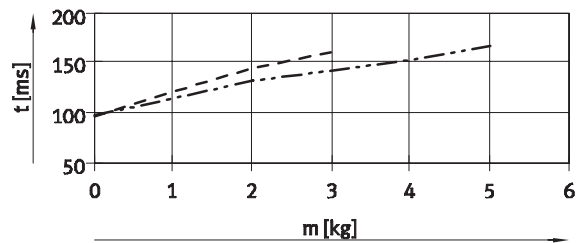
Stroke 30 mm, size 12 ... 16



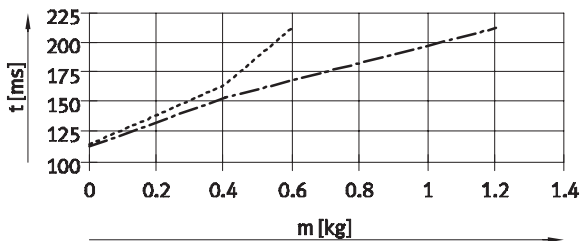
Stroke 30 mm, size 20 ... 25



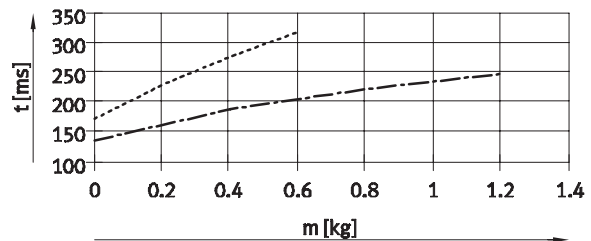
Stroke 30 mm, size 20 ... 25



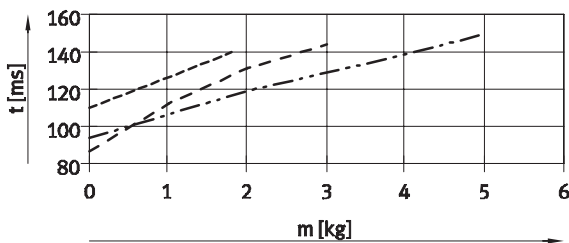
Stroke 50 mm, size 10 ... 12



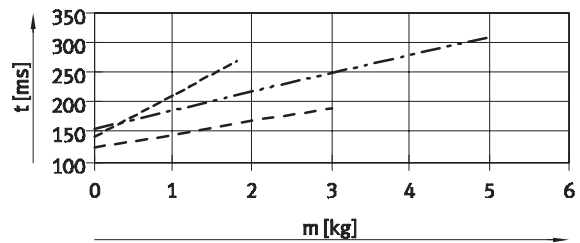
Stroke 50 mm, size 10 ... 12



Stroke 50 mm, size 16 ... 25



Stroke 50 mm, size 16 ... 25



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

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Technical data

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



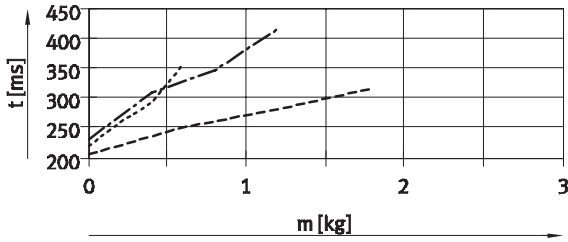
The values in the graphs are determined by calculation. The travel time as a function of effective load must not be reduced below

the values shown, because the kinetic impact or residual energy at the end positions can result in damage to the drive.

Vertical mounting position
→ 15

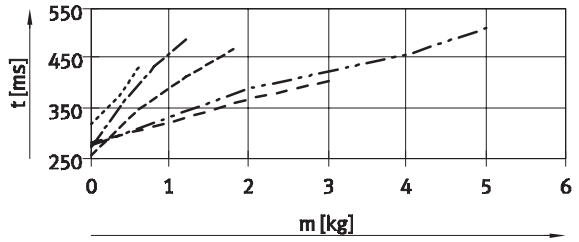
Advancing

Stroke 100 mm, size 10 ... 16

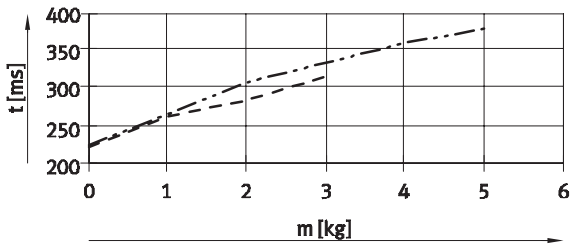


Retracting

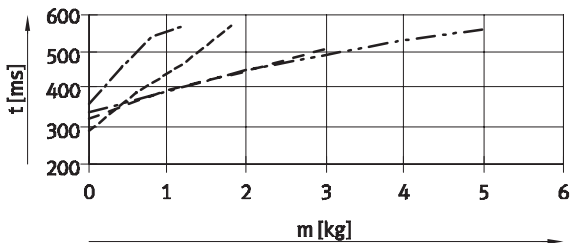
Stroke 100 mm, size 10 ... 25



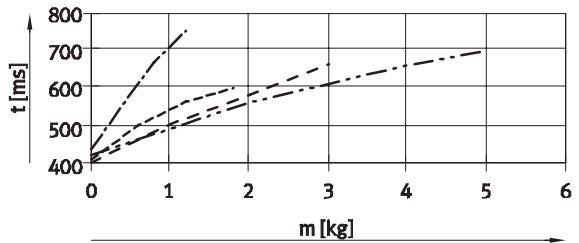
Stroke 100 mm, size 20 ... 25



Stroke 150 mm, size 12 ... 25



Stroke 150 mm, size 12 ... 25



- DGSL-10
- · - · - DGSL-12
- DGSL-16
- DGSL-20
- DGSL-25

Mini slides DGSL-N – Inch Series

Technical data

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



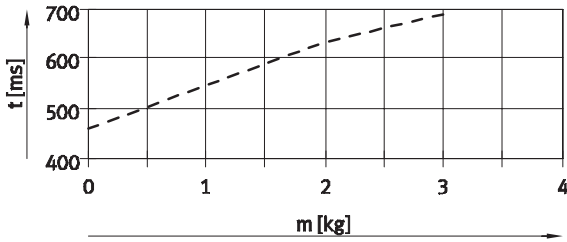
The values in the graphs are determined by calculation. The travel time as a function of effective load must not be reduced below

the values shown, because the kinetic impact or residual energy at the end positions can result in damage to the drive.

Vertical mounting position
→ 15

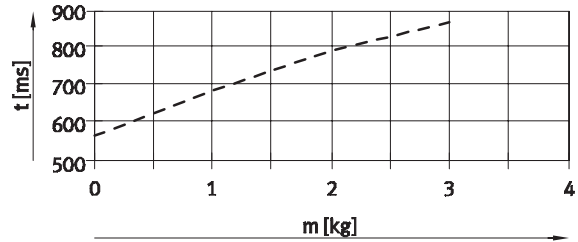
Advancing

Stroke 200 mm, size 20

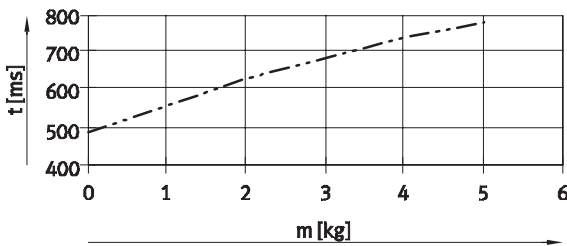


Retracting

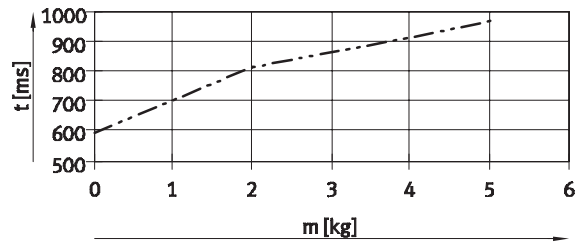
Stroke 200 mm, size 20



Stroke 200 mm, size 25



Stroke 200 mm, size 25



- DGSL-20
- DGSL-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 k_a (advancing) and k_r (retracting), see adjacent table.

Given:

Stroke = 200 mm

Size = 20

Effective load = 2 kg

Ascertained travel time t_h (horizontal), see graph:

- Advancing = 640 ms
- Retracting = 780 ms

Calculated travel time t_v (vertical):

- Advancing: $t_v = t_h \times k_a$
 $t_v = 640 \text{ ms} \times 0.9 = 576 \text{ ms}$
- Retracting: $t_v = t_h \times k_r$
 $t_v = 780 \text{ ms} \times 1.1 = 858 \text{ ms}$

Stroke [mm]	Size	Advancing (k_a) ¹⁾	Retracting (k_r)
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

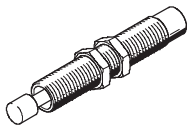
1) Downward

Mini slides DGSL-N – Inch Series

Technical data

FESTO

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

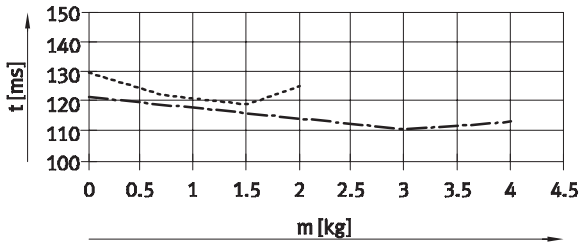


The values in the graphs are determined by calculation. The travel time as a function of effective load must not be reduced below

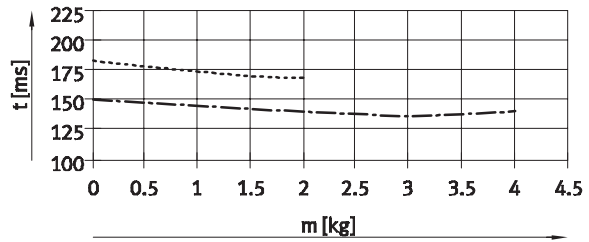
the values shown, because the kinetic impact or residual energy at the end positions can result in damage to the drive.

Vertical mounting position
→ 18

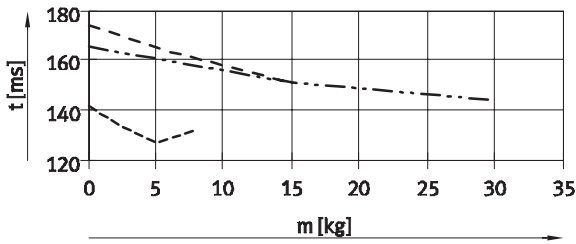
Advancing Stroke 30 mm, size 10 ... 12



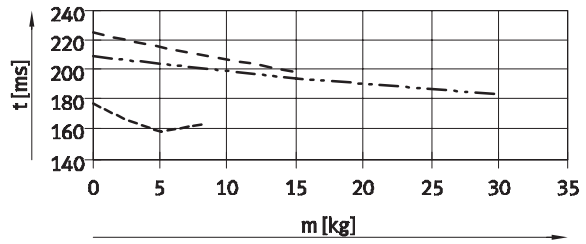
Retracting Stroke 30 mm, size 10 ... 12



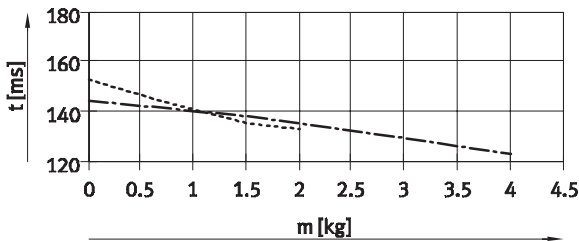
Stroke 30 mm, size 16 ... 25



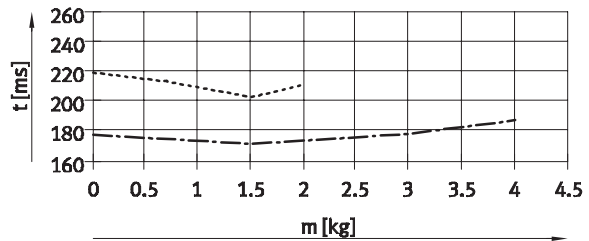
Stroke 30 mm, size 16 ... 25



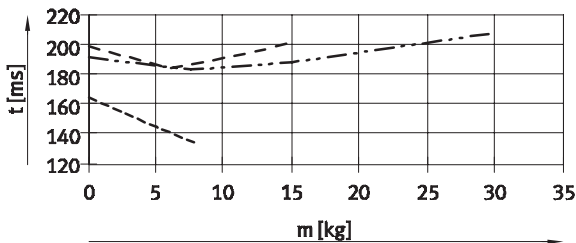
Stroke 50 mm, size 10 ... 12



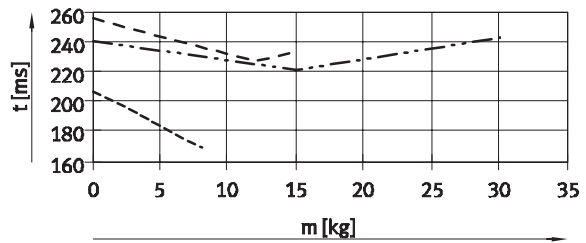
Stroke 50 mm, size 10 ... 12



Stroke 50 mm, size 16 ... 25



Stroke 50 mm, size 16 ... 25

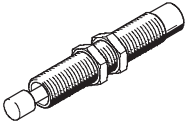


- DGSL-10
- DGSL-12
- DGSL-16
- DGSL-20
- DGSL-25

Mini slides DGSL-N – Inch Series

Technical data

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



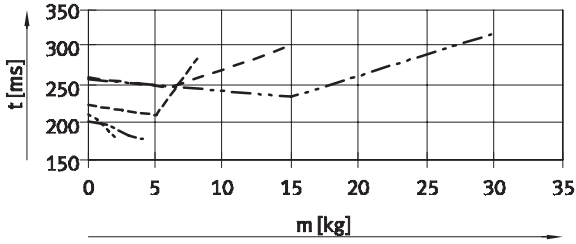
The values in the graphs are determined by calculation. The travel time as a function of effective load must not be reduced below

the values shown, because the kinetic impact or residual energy at the end positions can result in damage to the drive.

Vertical mounting position
→ 18

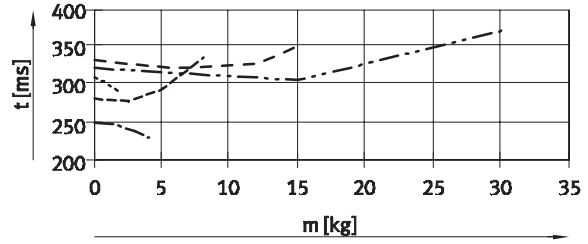
Advancing

Stroke 100 mm, size 10 ... 25

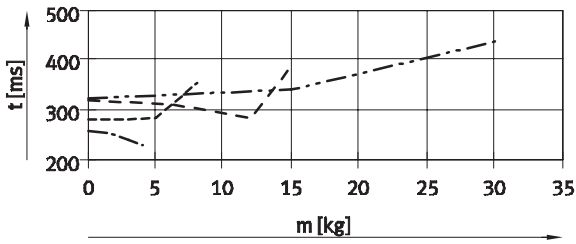


Retracting

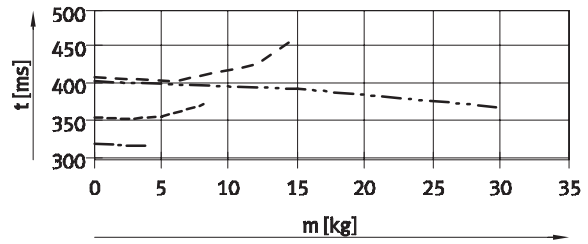
Stroke 100 mm, size 10 ... 25



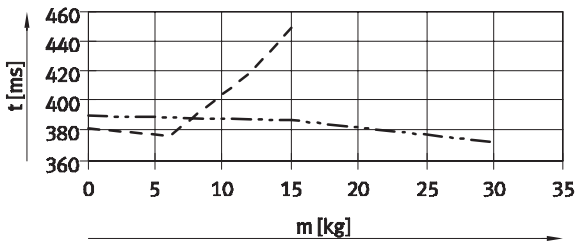
Stroke 150 mm, size 12 ... 25



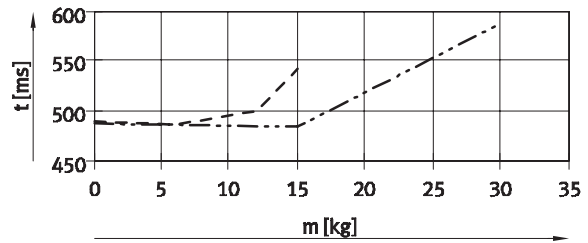
Stroke 150 mm, size 12 ... 25



Stroke 200 mm, size 20 ... 25



Stroke 200 mm, size 20 ... 25



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

Mini slides DGSL-N – Inch Series

Technical data

Travel time t as a function of the effective load m and the cushioning Y3 – 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: $tv = th \times ka$

$$tv = 405 \text{ ms} \times 0.9 = 365 \text{ ms}$$

– Retracting: $tv = th \times kr$

$$tv = 490 \text{ ms} \times 1.5 = 735 \text{ ms}$$

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

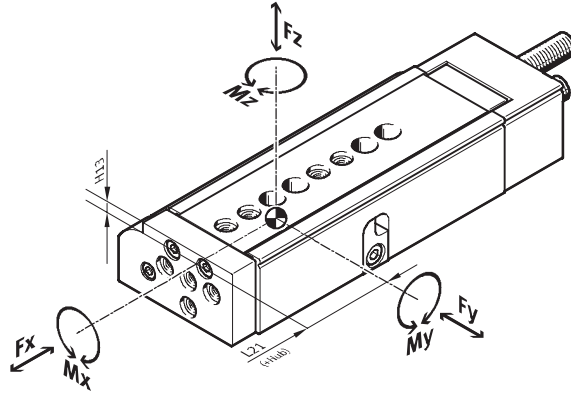
1) Downward

Mini slides DGSL-N – Inch Series

Technical data

Dynamic specific load values

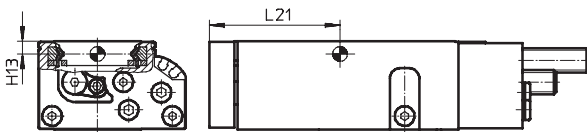
Torques are indicated with reference to the centre of the guide.
They must not be exceeded in operational use. Special attention must be paid to the cushioning phase.



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

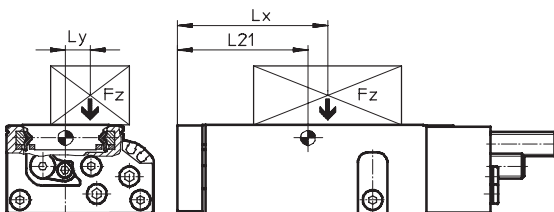
$$\frac{|F_{y1}|}{F_{y\max.}} + \frac{|F_{z1}|}{F_{z\max.}} + \frac{|M_{x1}|}{M_{x\max.}} + \frac{|M_{y1}|}{M_{y\max.}} + \frac{|M_{z1}|}{M_{z\max.}} \leq 1$$

Position of the guide centre



Calculation example

Given:



To be calculated:

Mini slide	= DGSL-10	F_y, F_z, M_x, M_y, M_z
Stroke length	= 80 mm	and
Lever arm L_x	= 50 mm	verification of operation with
Lever arm L_y	= 30 mm	combined load
Weight F_z	= 0.8 kg	
Acceleration a	= 0 m/s ²	

Solution:

$L_{21} = 83$ mm from table

$F_y = 0$ N

$F_z = m \times g$
 $= 0.8 \text{ kg} \times 9.81 \text{ m/s}^2 = 7.848 \text{ N}$

$M_x = m \times g \times L_y$
 $= 0.8 \text{ kg} \times 9.81 \text{ m/s}^2 \times 30 \text{ mm} = 0.236 \text{ Nm}$

$M_y = m \times g \times [(L_{21} + \text{stroke}) - L_x]$
 $= 0.8 \text{ kg} \times 9.81 \text{ m/s}^2 \times [(83 \text{ mm} + 80 \text{ mm}) - 50 \text{ mm}] = 0.886 \text{ Nm}$

$M_z = 0$ Nm

Combined load:

$$\frac{|F_{y1}|}{F_{y\max.}} + \frac{|F_{z1}|}{F_{z\max.}} + \frac{|M_{x1}|}{M_{x\max.}} + \frac{|M_{y1}|}{M_{y\max.}} + \frac{|M_{z1}|}{M_{z\max.}}$$

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

Forces and torques

→ 20

Mini slides DGSL-N – Inch Series



Technical data

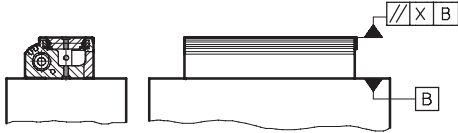
Permissible forces and torques						Geometric characteristics	
Size	Stroke [mm]	F _y max [N]	F _z max [N]	M _x max [Nm]	M _y max, M _z max [Nm]	H13 [mm]	L21 [mm]
10							
	10	927	927	15	6	4.2	43
	20	1003	1003	15	7		46
	30	1078	1078	15	8		51
	40	1152	1152	15	9		56
	50	1175	1175	18	9		61
	80	1200	1200	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

Mini slides DGSL-N – Inch Series

Technical data

Parallelism [mm]

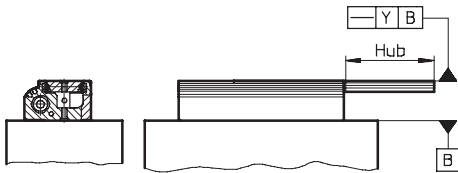
The term parallelism refers to the accuracy of alignment between the mounting surface and the slide surface.



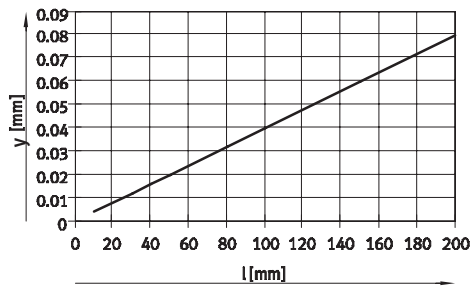
Size	Stroke [mm]	10	12	16	20	25
Parallelism X	10	0.02	0.02	0.02	0.02	0.02
	20	0.02	0.025	0.025	0.025	0.025
	30	0.025	0.025	0.025	0.03	0.03
	40	0.025	0.03	0.03	0.035	0.035
	50	0.03	0.035	0.035	0.04	0.04
	80	0.035	0.04	0.04	0.045	0.045
	100	0.045	0.05	0.05	0.055	0.055
	150	–	0.075	0.075	0.08	0.08
	200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



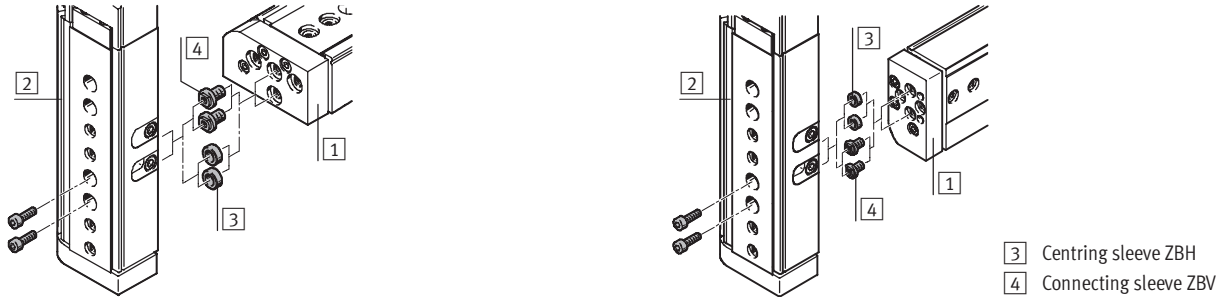
Mini slides DGSL-N – Inch Series

Technical data

FESTO

Possible combinations without adapter plate

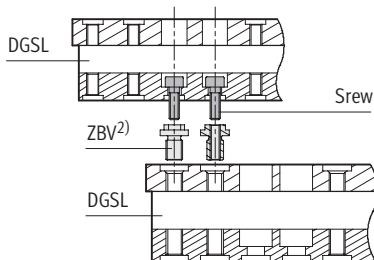
Pick & place



Piggy-back assembly



Example of mounting with connecting 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) Connecting sleeves ZBV → 35

Mini slides DGSL-N – Inch Series

Technical data

Adjustable end position range

Coarse adjustment of the front end position

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

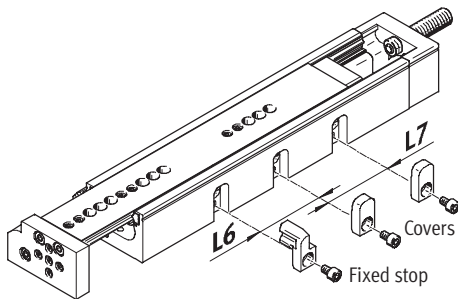
This permits stroke reduction down to the next but one smaller standard stroke through a combination of coarse and precision adjustments.

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 stroke [mm]	10		12		16		20		25	
	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 setting the fixed stop by the dimensions L6:
Stroke = 150 - 29 = 121 mm

By setting the fixed stop by the dimensions 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 front and rear 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

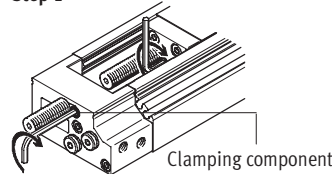
Step 1:
Loosen the clamping component.

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

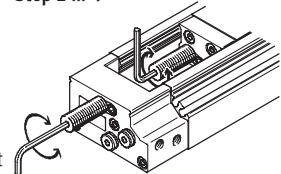
Step 3:
Turn the end-stop component using an Allen key until the end position is reached.

Step 4:
Tighten the clamping component.

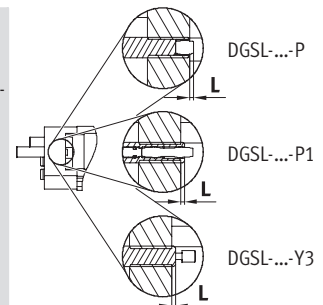
Step 1



Step 2 ... 4



Note
The distance L of the cushioning component (→ operating instructions) must not fall short (factory setting).



Adjustable end position range [mm] per end position / stroke reduction		10	12	16	20	25
Front end position						
With cushioning	P	-27.5	-29	-37.5	-50.5	-55
	P1	-27.5	-29	-37.5	-50.5	-55
	Y3	-24	-29	-36.5	-44	-56
Rear end position						
With cushioning	P	-20	-25.5	-39.5	-49.5	-49
	P1	-20	-25.5	-39.5	-49.5	-49
	Y3	-15	-25.5	-38.5	-42	-51.5

Mini slides DGSL-N – Inch Series

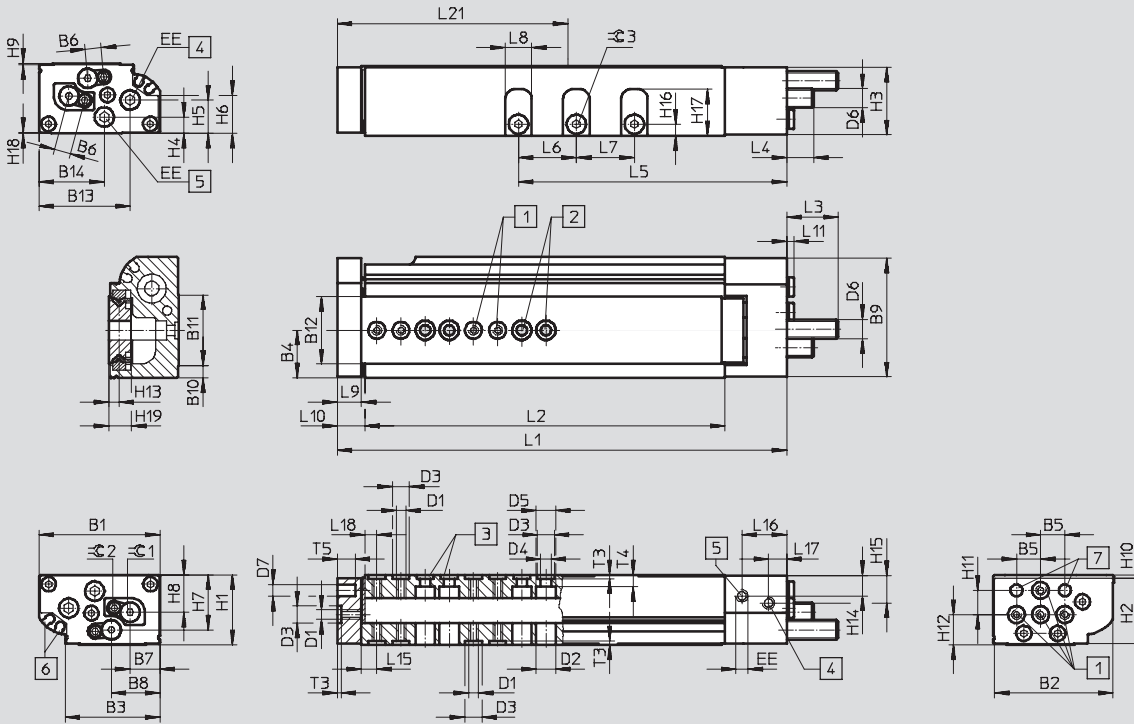
Technical data



Dimensions

Download CAD data → www.festo.com

Size 10



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

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	H2	H3	H4	H5	H6	H7	H8	
10	8	7 ^{H7}	4.3	8	M8x1	5 ^{H7}	M5	±0.08	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	T4	T5	∠2	∠3	
10	0.6	1.4	10	12.5	4.2	8.75	11.75	4.8	19.25	0.4	9	+0.1	1.6	5	7.5	2.5	3

1) Suitable for 10-32 UNF

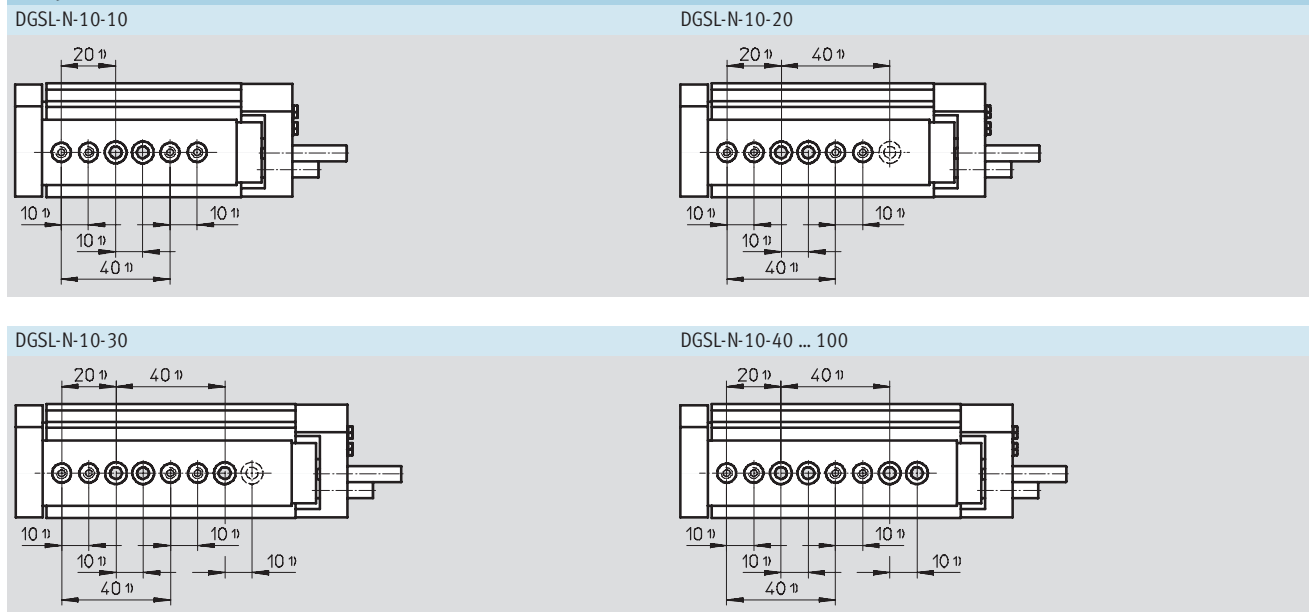
Mini slides DGSL-N – Inch Series

Technical data

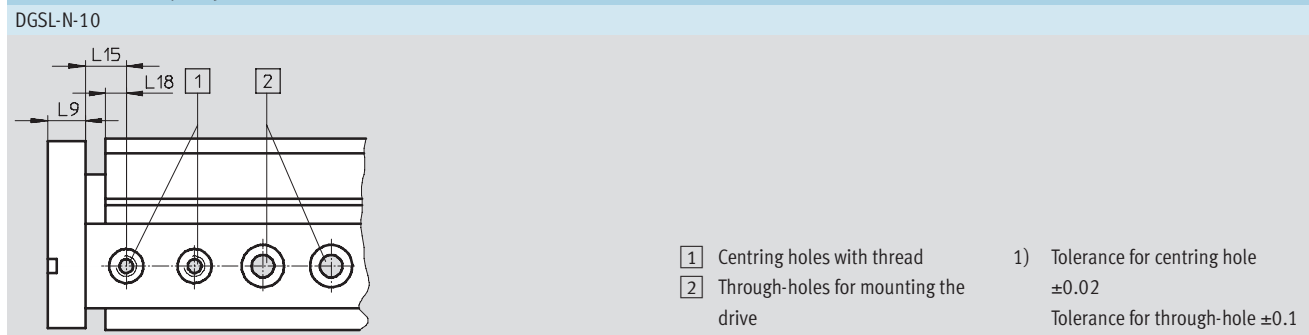
Stroke-dependent dimensions															
Size	Stroke	L1	L2	L5	L6	L7	L8	L9	L10	L11	L15 ±0.05	L16	L17	L18 ±0.05	L21
10	10	103.1	66	41.3	-	-	11	10	11.6	2.5	6.4	18.5	7.5	5	43
	20	112.8	75.7	51											46
	30	122.8	85.7	61											51
	40	132.8	95.7	71											56
	50	142.8	105.7	81											61
	80	186.2	149.1	111											24
	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
	P1	20.5	10.2	2.5	5
	Y3	25.5	14.9	-	2.5

Hole pattern for mounting threads and centring holes



Distances from the yoke plate to the mounting threads and centring holes



Size	L9	L15 ±0.05	L18
10	10	6.4	5

Mini slides DGSL-N – Inch Series

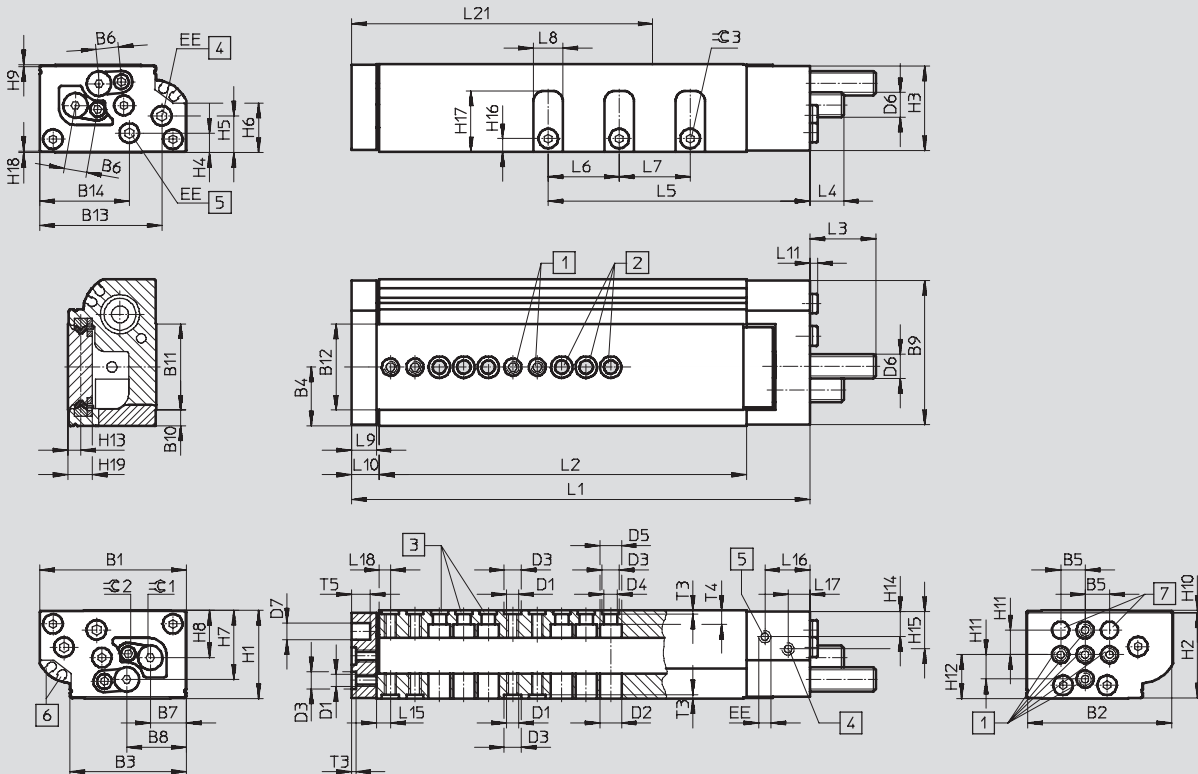
Technical data

FESTO

Dimensions

Download CAD data → www.festo.com

Size 12/16



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

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	6.4	35.35	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	H2	H3	H4	H5	H6	H7	H8
	∅	∅	∅	∅		∅		±0.08							
12	8.8	7 ^{H7}	5.5	8.8	M10x1	8 ^{H7}	M5	36	34.8	34.7	8	15.1	20.35	28.2	19.3
16	8.8	7 ^{H7}	5.5	9.2	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	T4	T5	∅ 2	∅ 3
												+0.1				
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	12.4	1.6	6.1	9	4	4

1) Suitable for 10-32 UNF

Mini slides DGSL-N – Inch Series

Technical data

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	29										64
	80	197.6	160	117											88
	100	217.6	180	137											98
	150	267.6	230	187											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	35										74
	80	194.6	153	114.6											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
	P1	26	12.8	3	6
	Y3	36.9	23.7	-	3
16	P	42.3	26.1	-	4
	P1	40	23.8	4	8
	Y3	51.9	35.7	-	4

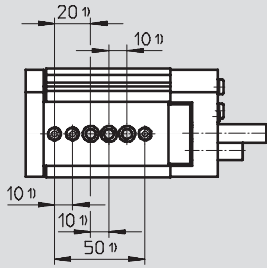
Mini slides DGSL-N – Inch Series

Technical data

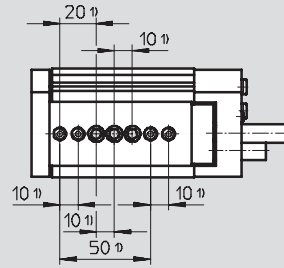
FESTO

Hole pattern for mounting threads and centring holes

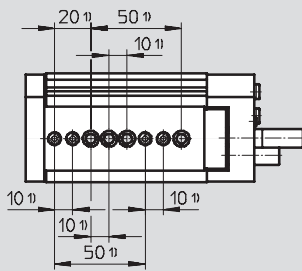
DGSL-N-12-10



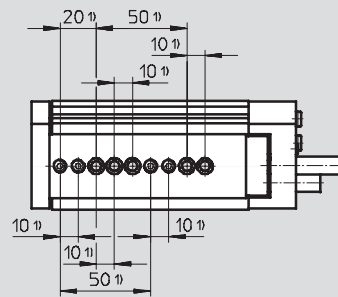
DGSL-N-12-20



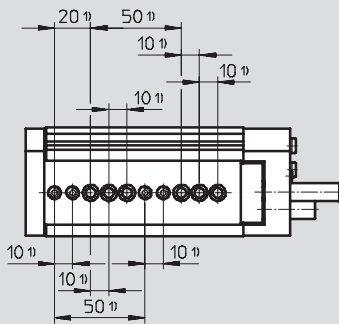
DGSL-N-12-30



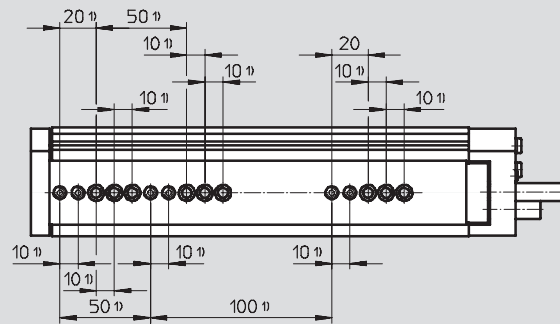
DGSL-N-12-40



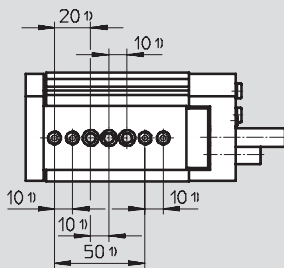
DGSL-N-12-50 ... 100



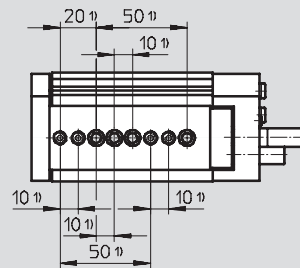
DGSL-N-12-150



DGSL-N-16-10



DGSL-N-16-20

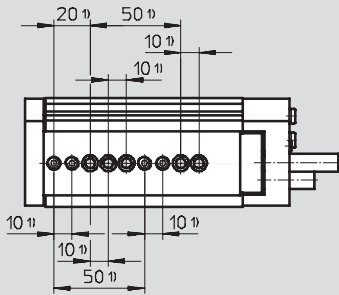


Mini slides DGSL-N – Inch Series

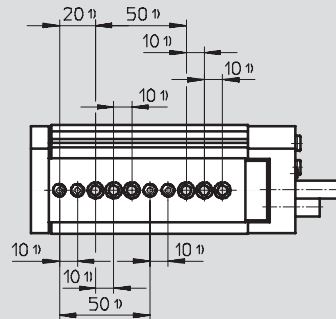
Technical data

Hole pattern for mounting threads and centring holes

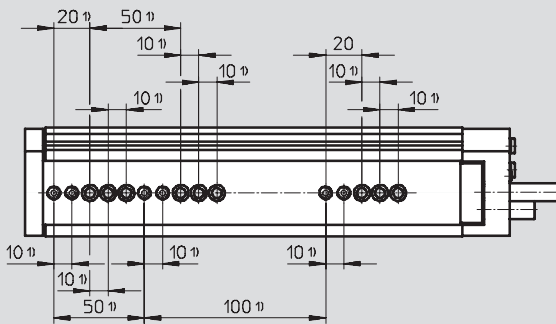
DGSL-N-16-30



DGSL-N-16-40 ... 100

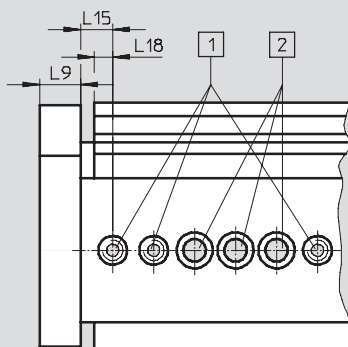


DGSL-N-16-150



Distances from the yoke plate to the 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	L9	L15 ± 0.05	L18
12	10	5.8	4.5
16	12	6.8	5.5

Mini slides DGSL-N – Inch Series

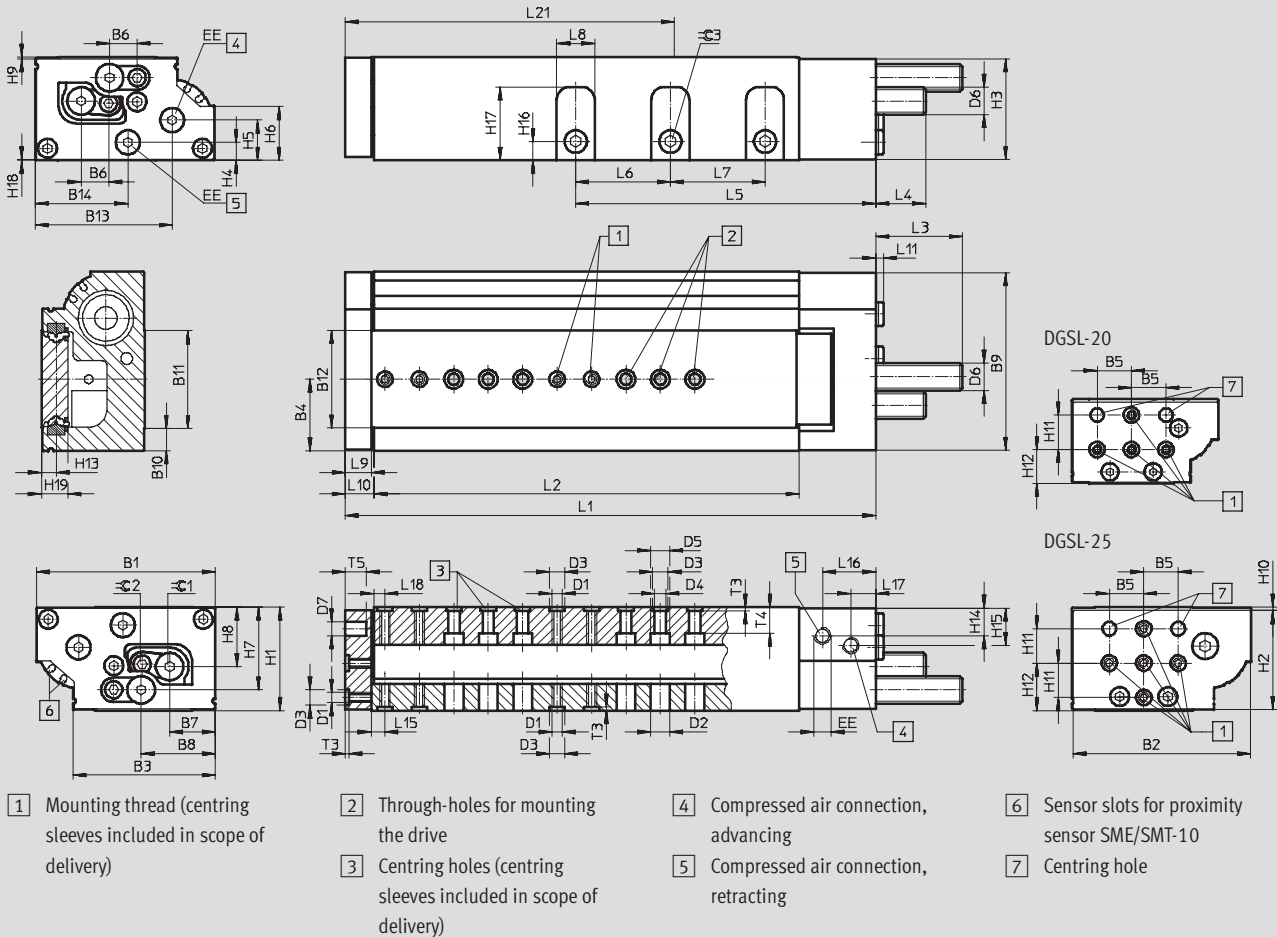
Technical data



Dimensions

Download CAD data → www.festo.com

Size 20/25



General dimensions

Size	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	D1
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
25	104	103	82.6	41.6	20	16.2	26.6	43.1	103	13.25	56.5	56.7	79.4	53.7	M6

Size	D2	D3	D4	D5	D6	D7	EE	H1	H2	H3	H4	H5	H6	H7	H8
	∅	∅	∅	∅		∅		±0.08							
20	11	9 ^{H7}	6.6	11	M14x1	8 ^{H7}	1/8 NPT	49	46.5	47.7	10.3	20.6	23.2	38.2	26.1
25	11	9 ^{H7}	6.6	11	M16x1	8 ^{H7}	1/8 NPT	60	57.5	58.5	10.5	23.4	31.2	48	34.5

Size	H9	H10	H11	H12	H13	H14	H15	H16	H17	H18	H19	T3	T4	T5	∅ 2	∅ 3
												+0.1				
20	0.5	2	20	19.6	7.55	14.7	14.7	10	33.3	0.8	14.5	2.1	8.8	10	4	5
25	1	2	20	27.5	8.55	16.6	22.2	11	42.7	0.5	15.5	2.1	15.1	12	5	6

Mini slides DGSL-N – Inch Series

Technical data

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	29.3	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	44	121								
	150	333.2	276.6	199.1			152								
	200	383.2	326.6	252.1			177								
25	10	157.1	96	63.7	–	–	22	15	16.6	4.6	8	30.9	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
	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
	P1	50.1	28.9	4	8
	Y3	55.5	34.3	–	4
25	P	51.9	30.5	–	5
	P1	49.6	28.2	5	10
	Y3	65.2	43.8	–	5

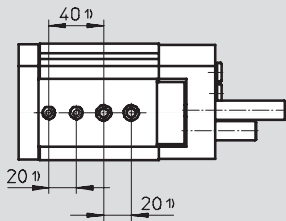
Mini slides DGSL-N – Inch Series

Technical data

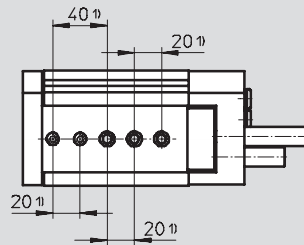
FESTO

Hole pattern for mounting threads and centring holes

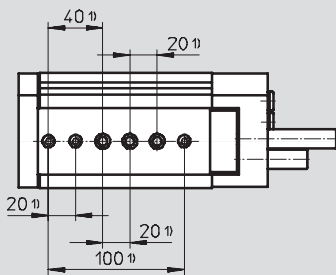
DGSL-N-20-10/20



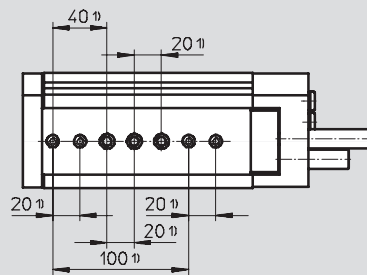
DGSL-N-20-30/40



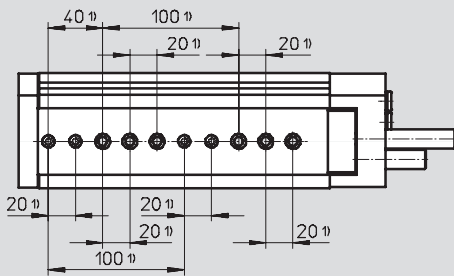
DGSL-N-20-50



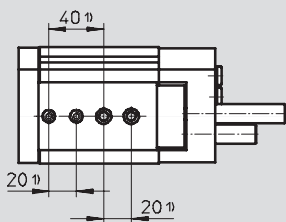
DGSL-N-20-80



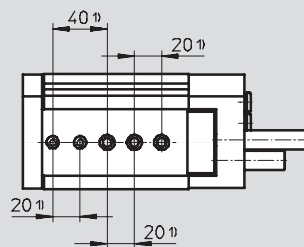
DGSL-N-20-100 ... 200



DGSL-N-25-10



DGSL-N-25-20

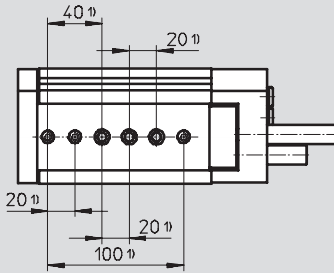


Mini slides DGSL-N – Inch Series

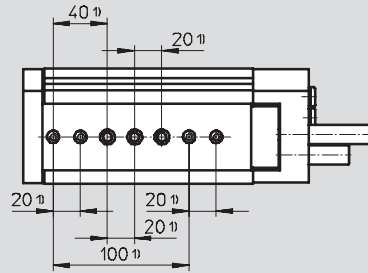
Technical data

Hole pattern for mounting threads and centring holes

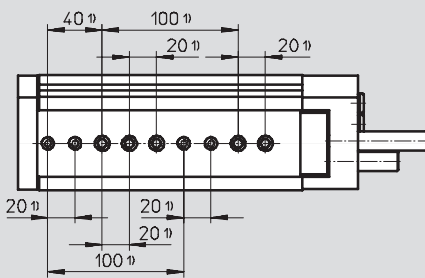
DGSL-N-25-30/40



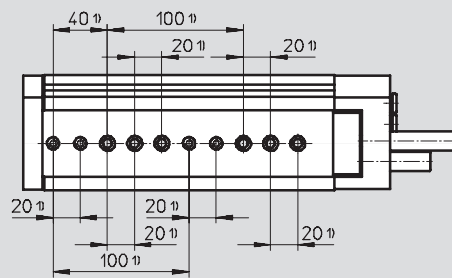
DGSL-N-25-50



DGSL-N-25-80

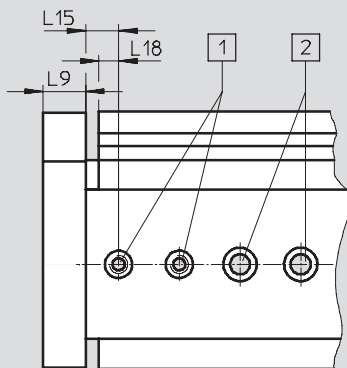


DGSL-N-25-100 ... 200



Distances from the yoke plate to the mounting threads and centring holes

DGSL-N-20/25



- 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	L9	L15 ± 0.05	L18
20	14	7.8	6.5
25	15	8	6.5

Mini slides DGSL-N – Inch Series







Technical data

Ordering data						
Size	Stroke [mm]	Part No.	Type	Part No.	Type	Part No. Type
With cushioning P				With cushioning P1		With cushioning Y3
10	10	566258	DGSL-N-10-10-PA	566299	DGSL-N-10-10-P1A	–
	20	566259	DGSL-N-10-20-PA	566300	DGSL-N-10-20-P1A	–
	30	566260	DGSL-N-10-30-PA	566301	DGSL-N-10-30-P1A	566340 DGSL-N-10-30-Y3A
	40	566261	DGSL-N-10-40-PA	566302	DGSL-N-10-40-P1A	566341 DGSL-N-10-40-Y3A
	50	566262	DGSL-N-10-50-PA	566303	DGSL-N-10-50-P1A	566342 DGSL-N-10-50-Y3A
	80	566263	DGSL-N-10-80-PA	566304	DGSL-N-10-80-P1A	566343 DGSL-N-10-80-Y3A
	100	566264	DGSL-N-10-100-PA	566305	DGSL-N-10-100-P1A	566344 DGSL-N-10-100-Y3A
12	10	566265	DGSL-N-12-10-PA	566306	DGSL-N-12-10-P1A	–
	20	566266	DGSL-N-12-20-PA	566307	DGSL-N-12-20-P1A	–
	30	566267	DGSL-N-12-30-PA	566308	DGSL-N-12-30-P1A	566345 DGSL-N-12-30-Y3A
	40	566268	DGSL-N-12-40-PA	566309	DGSL-N-12-40-P1A	566346 DGSL-N-12-40-Y3A
	50	566269	DGSL-N-12-50-PA	566310	DGSL-N-12-50-P1A	566347 DGSL-N-12-50-Y3A
	80	566270	DGSL-N-12-80-PA	566311	DGSL-N-12-80-P1A	566348 DGSL-N-12-80-Y3A
	100	566271	DGSL-N-12-100-PA	566312	DGSL-N-12-100-P1A	566349 DGSL-N-12-100-Y3A
16	10	566272	DGSL-N-12-150-PA	566313	DGSL-N-12-150-P1A	566350 DGSL-N-12-150-Y3A
	10	566273	DGSL-N-16-10-PA	566314	DGSL-N-16-10-P1A	–
	20	566274	DGSL-N-16-20-PA	566315	DGSL-N-16-20-P1A	–
	30	566275	DGSL-N-16-30-PA	566316	DGSL-N-16-30-P1A	566351 DGSL-N-16-30-Y3A
	40	566276	DGSL-N-16-40-PA	566317	DGSL-N-16-40-P1A	566352 DGSL-N-16-40-Y3A
	50	566277	DGSL-N-16-50-PA	566318	DGSL-N-16-50-P1A	566353 DGSL-N-16-50-Y3A
	80	566278	DGSL-N-16-80-PA	566319	DGSL-N-16-80-P1A	566354 DGSL-N-16-80-Y3A
20	100	566279	DGSL-N-16-100-PA	566320	DGSL-N-16-100-P1A	566355 DGSL-N-16-100-Y3A
	150	566280	DGSL-N-16-150-PA	566321	DGSL-N-16-150-P1A	566356 DGSL-N-16-150-Y3A
	10	566281	DGSL-N-20-10-PA	566322	DGSL-N-20-10-P1A	–
	20	566282	DGSL-N-20-20-PA	566323	DGSL-N-20-20-P1A	–
	30	566283	DGSL-N-20-30-PA	566324	DGSL-N-20-30-P1A	566357 DGSL-N-20-30-Y3A
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25	80	566286	DGSL-N-20-80-PA	566327	DGSL-N-20-80-P1A	566360 DGSL-N-20-80-Y3A
	100	566287	DGSL-N-20-100-PA	566328	DGSL-N-20-100-P1A	566361 DGSL-N-20-100-Y3A
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	200	566289	DGSL-N-20-200-PA	566330	DGSL-N-20-200-P1A	566363 DGSL-N-20-200-Y3A
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	20	566291	DGSL-N-25-20-PA	566332	DGSL-N-25-20-P1A	–
	30	566292	DGSL-N-25-30-PA	566333	DGSL-N-25-30-P1A	566364 DGSL-N-25-30-Y3A
25	40	566293	DGSL-N-25-40-PA	566334	DGSL-N-25-40-P1A	566365 DGSL-N-25-40-Y3A
	50	566294	DGSL-N-25-50-PA	566335	DGSL-N-25-50-P1A	566366 DGSL-N-25-50-Y3A
	80	566295	DGSL-N-25-80-PA	566336	DGSL-N-25-80-P1A	566367 DGSL-N-25-80-Y3A
	100	566296	DGSL-N-25-100-PA	566337	DGSL-N-25-100-P1A	566368 DGSL-N-25-100-Y3A
	150	566297	DGSL-N-25-150-PA	566338	DGSL-N-25-150-P1A	566369 DGSL-N-25-150-Y3A
	200	566298	DGSL-N-25-200-PA	566339	DGSL-N-25-200-P1A	566370 DGSL-N-25-200-Y3A

Mini slides DGSL-N – Inch Series

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-...



Ordering data						
	For size	Brief 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	
Connecting sleeve ZBV Technical data → Internet: zbv						
	10	<ul style="list-style-type: none"> For connecting mini slide DGSL with mini slide 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 DYE F 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						
	10	Progressive shock absorbers, both ends	Y3	548071	DYSW-5-8-Y1F	1
	12			548072	DYSW-7-10-Y1F	
	16			548073	DYSW-8-14-Y1F	
	20			548074	DYSW-10-17-Y1F	
	25			548075	DYSW-12-20-Y1F	
One-way flow control valve GRLA Technical data → Internet: grla						
	10, 12, 16	<ul style="list-style-type: none"> For speed regulation Only one GRLA-M3-QS-3 can be mounted onto the front of size 4 slides 	-	165008	GRLA-10-32-UNF-QS-5/32-U	1
	20, 25			165010	GRLA-1/8-NPT-QS-1/4-U	
Push-in fitting QB Technical data → Internet: qsm						
	10, 12, 16	For connecting compressed air tubing with standard external diameters	-	533267	QB-10-32-UNF-5/32-U	10
	20, 25			533273	QB-1/8-1/4-U	



1) Packaging unit quantity



Mini slides DGSL-N – Inch Series

FESTO

Accessories

Ordering data – Proximity sensors for C-slot, magneto-resistive					Technical data → Internet: smt	
	Type of mounting	Switch output	Electrical connection, connection direction	Cable length [m]	Part No.	Type
N/O contact						
	Insertable in the slot from above, flush with cylinder profile	PNP	Cable, 3-wire, in-line	2.5	525915	SMT-10F-PS-24V-K2,5L-OE
			Plug M8x1, 3-pin, in-line	0.3	525916	SMT-10F-PS-24V-K0,3L-M8D
			Plug M8x1, 3-pin, lateral	0.3	526675	SMT-10F-PS-24V-K0,3Q-M8D
	Insertable in the slot lengthwise	PNP	Plug M8x1, 3-pin, in-line	0.3	173220	SMT-10-PS-SL-LED-24
			Cable, 3-wire, in-line	2.5	173218	SMT-10-PS-KL-LED-24

Ordering data – Proximity sensors for C-slot, magnetic reed					Technical data → Internet: sme	
	Type of mounting	Switch output	Electrical connection, connection direction	Cable length [m]	Part No.	Type
N/O contact						
	Insertable in the slot from above, flush with cylinder profile	Contacting	Plug M8x1, 3-pin, in-line	0.3	525914	SME-10F-DS-24V-K0,3L-M8D
			Cable, 3-wire, in-line	2.5	525913	SME-10F-DS-24V-K2,5L-OE
			Cable, 2-wire, in-line	2.5	526672	SME-10F-ZS-24V-K2,5L-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