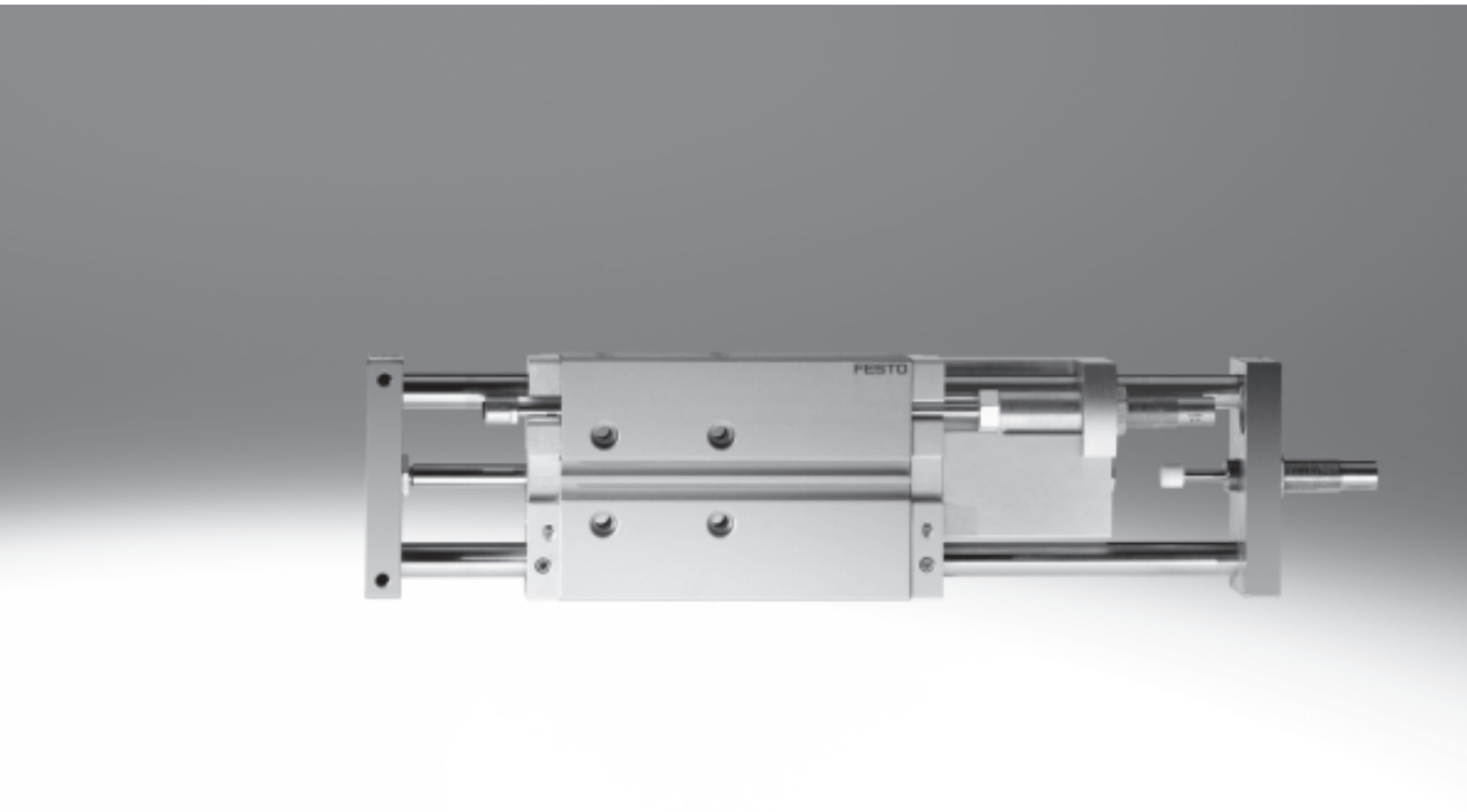
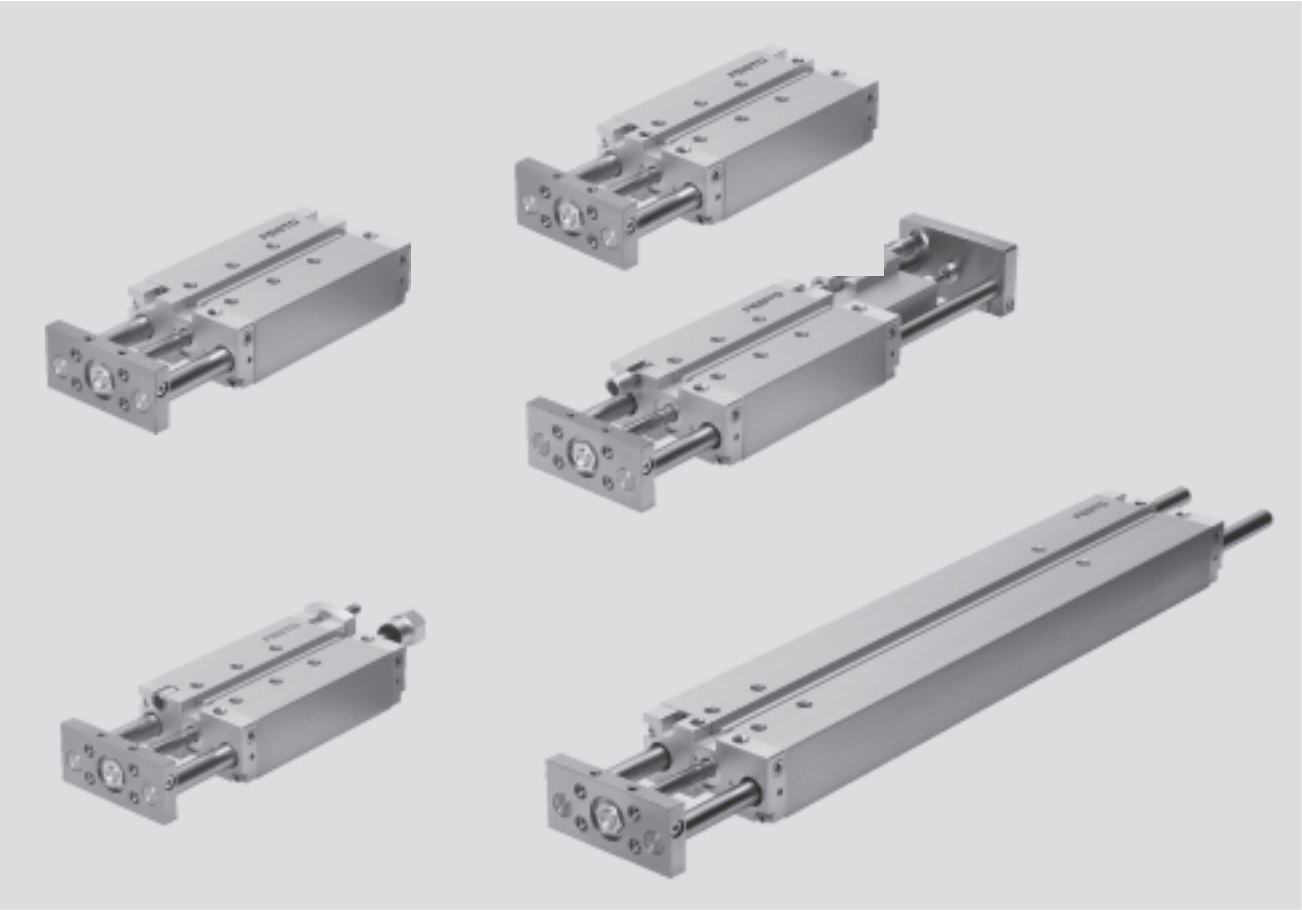
Guided drives DFM-N-B, NPT

FESTO



Guided drives DFM-N-B, NPT

Key features



Drive and guide unit in a single housing

- Minimal space requirement
- Minimal assembly time
- Choice of supply ports
- Wide range of mounting options

Sturdy and precise

- Good protection against torsion
- Rigid construction
- Maintenance-free

High resistance to torques and lateral forces

- With plain-bearing guide:
  It offers high rigidity thanks to its guide rods with large diameter and four plain-bearing bushes
- With recirculating ball bearing guide:
  For applications involving torque loads

Wide choice of variants

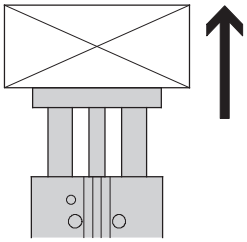
- With heat-resistant seals up to 120 °C
- With adjustable end position
- With shock absorbers
- With pneumatic end-position cushioning
- Long-stroke versions

Guided drives DFM-N-B, NPT

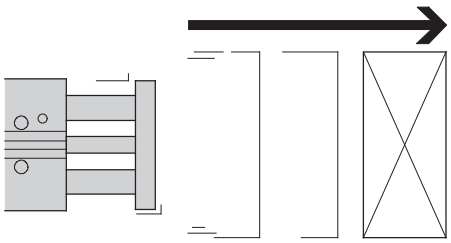
Key features

Use in conveyor systems

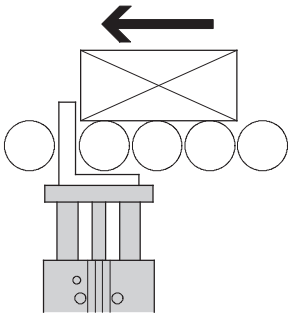
Lifting



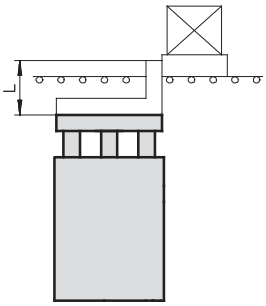
Pushing



Stopping



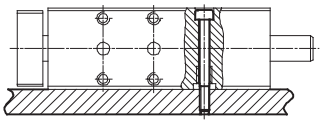
Stopping via stop bracket



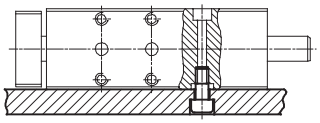
It is recommended to fit a buffer on the workpiece carrier.

Mounting options

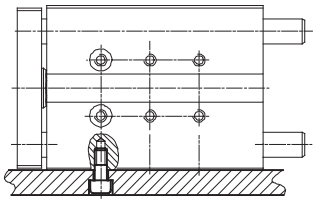
Flat from above



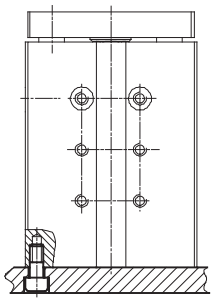
Flat from below



Side from below

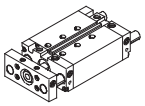
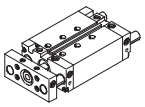


On end



Guided drives DFM-N-B, NPT

Product range overview

Function	Version	Type	Piston ∅ [mm]	Stroke [mm]	Variable stroke [mm]
Double-acting	**DFM-N-B with recirculating ball bearing guide**				
		**DFM-N-B** Single-ended piston rod	12, 16	10, 20, 25, 30, 40, 50, 80, 100, 125, 160, 200	10 ... 200
			20, 25, 32	20, 25, 30, 40, 50, 80, 100, 125, 160, 200, 250, 320, 400	20 ... 400
			40, 50, 63	25, 50, 80, 100, 125, 160, 200, 250, 320, 400	25 ... 400
	DFM-N-B with plain-bearing guide				
		**DFM-N-B** Single-ended piston rod	12, 16	10, 20, 25, 30, 40, 50, 80, 100, 125, 160, 200	10 ... 200
			20, 25, 32	20, 25, 30, 40, 50, 80, 100, 125, 160, 200, 250, 320, 400	20 ... 400
			40, 50, 63	25, 50, 80, 100, 125, 160, 200, 250, 320, 400	25 ... 400

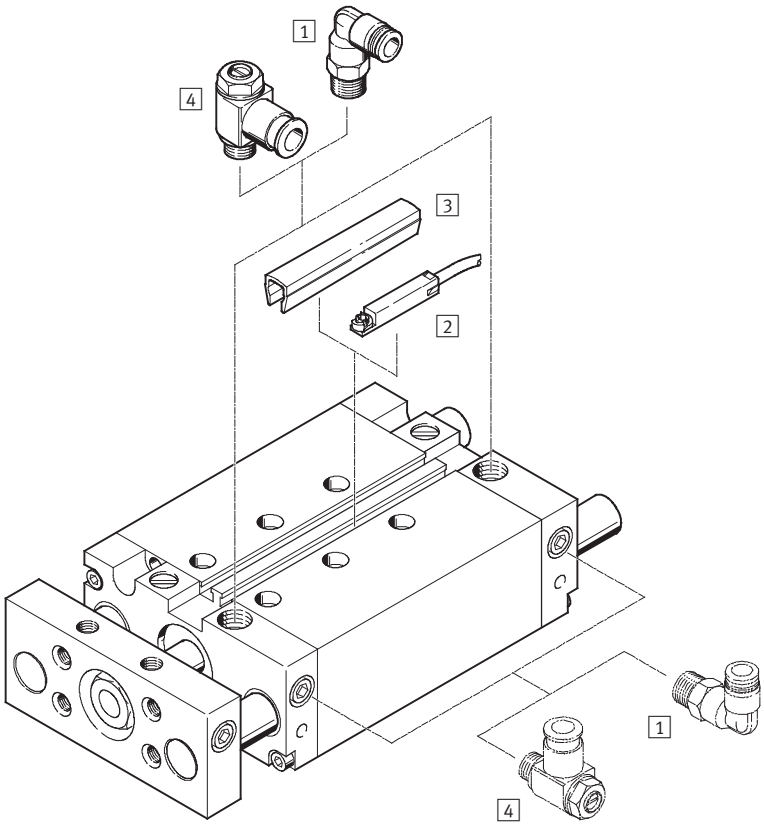
Guided drives DFM-N-B, NPT

Product range overview

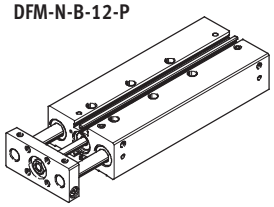
Type	Position sensing	Cushioning			Heat-resistant seals	Precision end-position adjustment		→ Page/Internet
		Not adjustable	Adjustable for heavy loads	Self-adjusting end position adjustable for heavy loads		Advanced end position	Retracted end position	
	A	P	PPV	YSRW	S6	AJ	EJ	
DFM-N-B with recirculating ball bearing guide								
DFM-N-B Single-ended piston rod	■	■	■ ∅ 16 and above	■ ∅ 20 and above	–	■	■ ∅ 20 and above	30
DFM-N-B with plain-bearing guide								
DFM-N-B Single-ended piston rod	■	■	■	–	■	■	■	30

Guided drives DFM-N-B, NPT

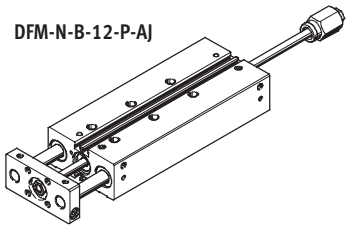
Peripherals overview



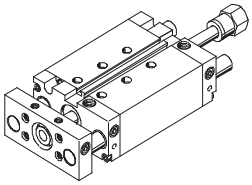
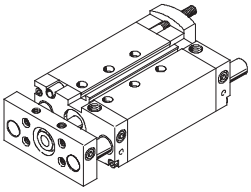
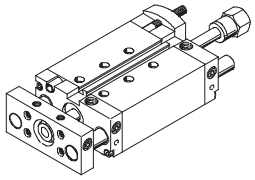
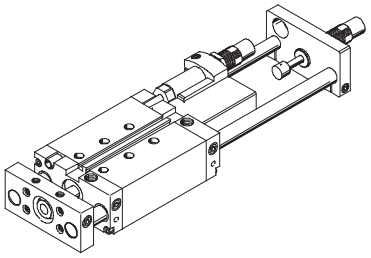
DFM-N-B-12-P



DFM-N-B-12-P-AJ



Variants

AJ	EJ	AJ + EJ	YSRW
			

Accessories

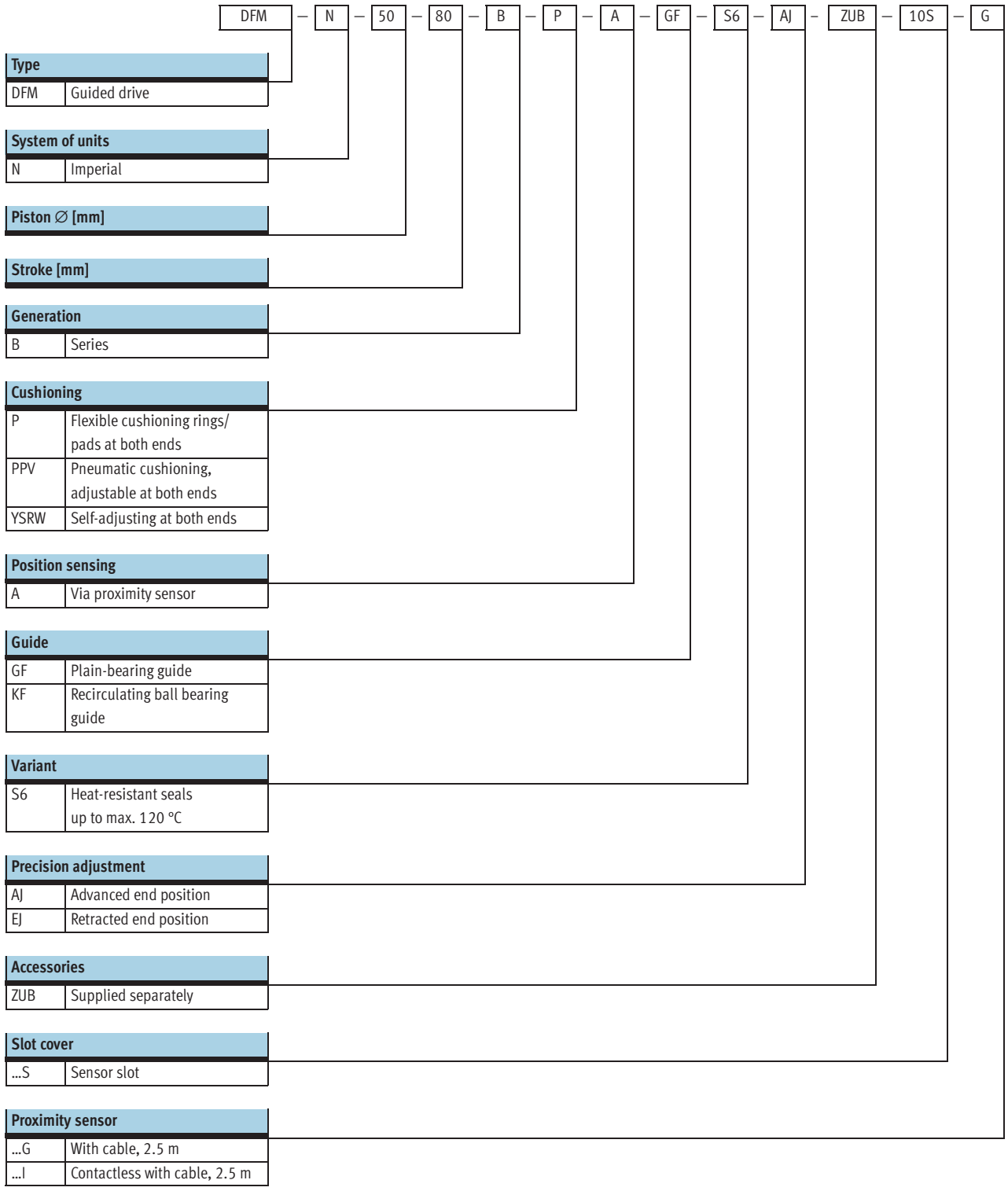
		Brief description	➔ Page/Internet
1	Push-in fitting QS	For connecting compressed air tubing with standard O.D.	quick star
2	Proximity sensor SME-/SMT-8	Can be integrated in the profile barrel	38
3	Slot cover ABP-5-S	For protecting the sensor cable and keeping dirt out of the sensor slots	38
4	One-way flow control valve GRLA	For speed regulation	39
–	Centring sleeves ZBH	4 or 6 pieces included in the scope of delivery	38

Note

Proximity sensors SM...O-8E cannot be used with the DFM-N-B.

Guided drives DFM-N-B, NPT

Type codes



Type	
DFM	Guided drive

System of units	
N	Imperial

Piston ∅ [mm]

Stroke [mm]

Generation	
B	Series

Cushioning	
P	Flexible cushioning rings/ pads at both ends
PPV	Pneumatic cushioning, adjustable at both ends
YSRW	Self-adjusting at both ends

Position sensing	
A	Via proximity sensor

Guide	
GF	Plain-bearing guide
KF	Recirculating ball bearing guide

Variant	
S6	Heat-resistant seals up to max. 120 °C

Precision adjustment	
AJ	Advanced end position
EJ	Retracted end position

Accessories	
ZUB	Supplied separately

Slot cover	
...S	Sensor slot

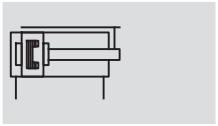
Proximity sensor	
...G	With cable, 2.5 m
...I	Contactless with cable, 2.5 m

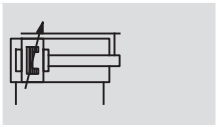
Guided drives DFM-N-B, NPT

Technical data

FESTO

Function

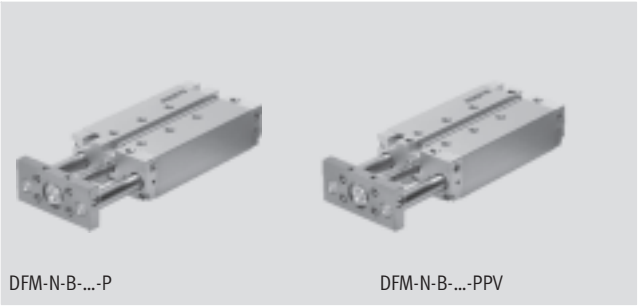




Diameter
12 ... 63 mm

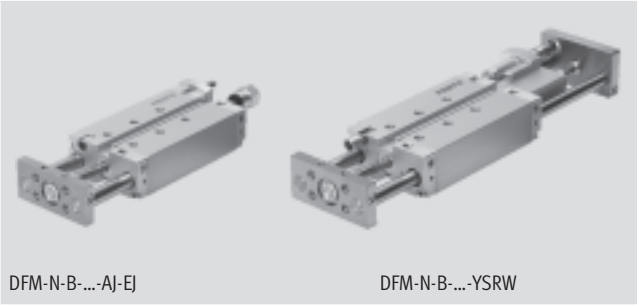
Stroke length
10 ... 400 mm

www.festo.com



DFM-N-B-...-P

DFM-N-B-...-PPV



DFM-N-B-...-AJ-EJ

DFM-N-B-...-YSRW

General technical data									
Piston ∅		12	16	20	25	32	40	50	63
Pneumatic connection		M5 suitable for 10-32 UNF			⅛ NPT			¼ NPT	
Operating medium		Filtered compressed air, lubricated or unlubricated							
Operating pressure	[bar]	2 ... 10	2 ... 10	2 ... 10	1.5 ... 10	1.5 ... 10	1.5 ... 10	1 ... 10	1 ... 10
Design		Piston							
		Piston rod							
		Guide rods with yoke							
Cushioning		Flexible cushioning rings/pads at both ends							
		–	Pneumatic cushioning, adjustable at both ends						
		–	–	Self-adjusting at both ends					
Cushioning length (PPV)	[mm]	–	12	15	15	16	17	19	19
Position sensing		Via proximity sensor							
Type of mounting		Via through-holes							
		Via female thread							
Mounting position		Any							
Protection against torsion/guide		Guide rod with yoke/plain-bearing or recirculating ball bearing guide							
Variant AJ, EJ and YSRW									
Setting range	[mm]	0 ... 10							
Variant YSRW with shock absorber									
Repetition accuracy	[mm]	–	–	Max. 0.05					

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

Ambient conditions					
		Plain-bearing guide GF	Recirculating ball bearing guide KF	YSRW with shock absorber	S6
Ambient temperature[1]	[°C]	–20 ... +80	–5 ... +60	0 ... +60	0 ... +120
Corrosion resistance class CRC[2]		2	–	–	2
ATEX		Specified types ➔ www.festo.com			

1) Note operating range of proximity sensors
2) Corrosion resistance class 2 to Festo standard 940 070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents

Guided drives DFM-N-B, NPT

Technical data

Speed [m/s]								
Piston ∅	12	16	20	25	32	40	50	63
Cushioning P, precision stroke adjustment AJ and EJ								
Maximum speed advancing, retracting	0.8	0.8	0.8	0.8	0.8	0.8	0.6	0.6
Cushioning P, plain-bearing guide GF in combination with S6								
Maximum speed advancing, retracting	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4
Cushioning PPV, YSRW, PPV S6								
Maximum speed advancing, retracting	–	1.5	1.5	1.5	1.5	1.5	1	1

Forces [N]								
Piston ∅	12	16	20	25	32	40	50	63
Cushioning P, PPV, YSRW, precision stroke adjustment EJ								
Theoretical force at 6 bar, advancing	68	121	188	295	482	754	1,178	1,870
Theoretical force at 6 bar, retracting	51	90	141	247	415	686	1,057	1,750
Precision stroke adjustment AJ and AJ+EJ								
Theoretical force at 6 bar, advancing	51	90	141	247	415	686	1,057	1,750
Theoretical force at 6 bar, retracting	51	90	141	247	415	686	1,057	1,750

Guided drives DFM-N-B, NPT

Technical data

Impact energy [J]								
Piston ∅	12	16	20	25	32	40	50	63
Cushioning P								
Max. impact energy in the end positions	0.09	0.15	0.2	0.35	0.40	0.7	1.0	1.3
Max. impact energy in the end positions S6	0.035	0.075	0.1	0.15	0.2	0.35	0.5	0.65
Cushioning YSRW								
Max. energy absorption per stroke	–	–	4	8	12	35	35	70
Max. energy absorption per hour	–	–	21,000	30,000	41,000	68,000	68,000	100,000

Permissible impact velocity:

$$v_{perm.} = \sqrt{\frac{2 \times E_{perm.}}{m_{dead} + m_{load}}}$$

Maximum permissible load:

$$m_{load} = \frac{2 \times E_{perm.}}{v^2} - m_{dead}$$

$v_{perm.}$ Permissible impact velocity
$E_{perm.}$ Max. impact energy
$m_{Intrinsic}$ Moving load (drive)
m_{Load} Moving effective load

- - Note

This data represents the maximum values that can be achieved. The maximum permissible impact energy must be observed.

DFM-N-B with plain-bearing guide GF, cushioning P, PPV								
Stroke	Piston ∅ [mm]							
[mm]	12	16	20	25	32	40	50	63
Product weight [g]								
10	385	621	–	–	–	–	–	–
20	432	680	1,026	1,474	2,163	–	–	–
25	452	706	1,068	1,530	2,238	2,606	4,290	5,568
30	476	736	1,109	1,586	2,337	–	–	–
40	523	795	1,215	1,726	2,489	–	–	–
50	570	854	1,298	1,838	2,640	3,047	5,019	6,457
80	712	1,033	1,572	2,218	3,210	3,663	5,909	7,503
100	803	1,148	1,733	2,435	3,502	3,981	6,376	8,116
125	962	1,352	2,000	2,800	4,018	4,534	7,151	9,050
160	1,128	1,560	2,293	3,193	4,549	5,118	8,017	10,137
200	1,318	1,797	2,628	3,642	5,158	5,786	9,007	11,379
250	–	–	3,237	4,430	6,259	6,962	10,813	13,509
320	–	–	3,823	5,215	7,322	8,129	12,545	15,682
400	–	–	4,493	6,113	8,537	9,462	14,525	18,165
Moving load [g]								
10	201	283	–	–	–	–	–	–
20	216	302	506	715	1,147	–	–	–
25	223	312	520	734	1,176	1,305	2,217	2,640
30	230	322	534	753	1,230	–	–	–
40	245	342	586	823	1,289	–	–	–
50	260	362	615	861	1,347	1,476	2,567	2,990
80	304	423	724	1,022	1,644	1,776	3,002	3,426
100	333	463	781	1,098	1,764	1,893	3,189	3,613
125	420	579	917	1,289	2,059	2,188	3,586	4,009
160	472	649	1,016	1,422	2,264	2,393	3,913	4,336
200	530	730	1,129	1,573	2,499	2,627	4,286	4,710
250	–	–	1,489	2,017	3,164	3,293	5,351	5,774
320	–	–	1,688	2,283	3,574	3,703	6,005	6,428
400	–	–	1,914	2,587	4,042	4,171	6,752	7,176

Guided drives DFM-N-B, NPT

Technical data

DFM-N-B with plain-bearing guide GF, cushioning P, PPV, variant S6								
Stroke	Piston ∅ [mm]							
[mm]	12	16	20	25	32	40	50	63
Product weight [g]								
0	283	488	745	1,080	1,594	1,847	3,124	3,992
10	328	548	–	–	–	–	–	–
20	376	607	907	1,298	1,889	–	–	–
25	395	633	949	1,354	1,964	2,257	3,735	4,762
30	419	663	990	1,410	2,063	–	–	–
40	466	722	1,096	1,550	2,215	–	–	–
50	514	781	1,179	1,662	2,366	2,698	4,464	5,651
80	656	959	1,452	2,042	2,936	3,314	5,354	6,696
100	747	1,074	1,614	2,259	3,228	3,632	5,821	7,310
125	905	1,279	1,880	2,624	3,745	4,186	6,596	8,244
160	1,072	1,486	2,173	3,017	4,276	4,770	7,462	9,331
200	1,261	1,724	2,508	3,466	4,884	5,437	8,452	10,573
250	–	–	3,118	4,254	5,985	6,613	10,258	12,703
320	–	–	3,704	5,039	7,048	7,780	11,990	14,876
400	–	–	4,374	5,937	8,264	9,114	19,970	17,359
Moving load [g]								
0	130	188	329	463	755	810	1,428	1,601
10	145	208	–	–	–	–	–	–
20	159	229	386	539	873	–	–	–
25	167	239	400	558	902	956	1,662	1,834
30	174	249	414	577	956	–	–	–
40	188	269	467	647	1,015	–	–	–
50	203	289	495	685	1,073	1,127	2,012	2,184
80	247	349	604	847	1,373	1,427	2,447	2,620
100	276	389	661	922	1,490	1,544	2,634	2,806
125	364	506	797	1,113	1,785	1,840	3,031	3,203
160	415	576	896	1,246	1,990	2,045	3,358	3,530
200	474	657	1,010	1,397	2,225	2,279	3,731	3,904
250	–	–	1,370	1,842	2,890	2,944	4,796	4,968
320	–	–	1,568	2,107	3,300	3,354	5,450	5,622
400	–	–	1,794	2,411	3,768	3,823	6,197	6,370

Guided drives DFM-N-B, NPT

Technical data

DFM-N-B with recirculating ball bearing guide KF, cushioning P, PPV								
Stroke	Piston ∅ [mm]							
[mm]	12	16	20	25	32	40	50	63
Product weight [g]								
10	345	543	–	–	–	–	–	–
20	388	596	935	1,395	1,932	–	–	–
25	405	619	974	1,447	1,998	2,366	3,907	5,185
30	427	647	1,012	1,499	2,079	–	–	–
40	470	700	1,105	1,624	2,213	–	–	–
50	513	754	1,181	1,729	2,346	2,753	4,523	5,961
80	641	916	1,428	2,074	2,817	3,270	5,272	6,865
100	723	1,020	1,577	2,276	3,073	3,552	5,682	7,423
125	852	1,190	1,809	2,599	3,490	4,006	6,327	8,226
160	1,002	1,378	2,079	2,966	3,958	4,526	7,094	9,214
200	1,174	1,593	2,388	3,384	4,494	5,121	7,971	10,343
250	–	–	2,905	4,073	5,369	6,072	9,419	12,115
320	–	–	3,445	4,805	6,305	7,112	10,953	14,091
400	–	–	4,063	5,642	7,376	8,301	12,707	16,347
Moving load [g]								
10	168	239	–	–	–	–	–	–
20	178	254	437	631	933	–	–	–
25	183	261	447	646	954	1,082	1,830	2,254
30	188	268	458	661	990	–	–	–
40	198	283	498	716	1,030	–	–	–
50	208	297	520	746	1,071	1,199	2,067	2,491
80	238	341	602	873	1,271	1,400	2,361	2,785
100	259	370	646	934	1,352	1,481	2,492	2,915
125	316	452	748	1,083	1,548	1,677	2,758	3,182
160	352	503	824	1,189	1,690	1,819	2,986	3,410
200	392	561	911	1,310	1,852	1,981	3,247	3,671
250	–	–	1,180	1,656	2,291	2,420	3,953	4,377
320	–	–	1,332	1,868	2,575	2,703	4,410	4,833
400	–	–	1,505	2,111	2,899	3,027	4,931	5,355

Additional weights with precision stroke adjustment AJ – GF, KF

When using the precision stroke adjustment AJ, the following weight must be taken into account in addition to the load specified from page 10.

Product weight [g] – Precision stroke adjustment AJ (piston rod + stop)

Stroke	Piston ∅ [mm]							
[mm]	12	16	20	25	32	40	50	63
10	55.4	58.8	–	–	–	–	–	–
20	57.6	61	75.6	115.4	185.7	–	–	–
25	58.7	62.1	77.6	118.5	190.2	188.7	350.7	350.5
30	59.9	63.3	79.6	121.6	194.7	–	–	–
40	62.1	65.5	83.6	127.8	203.6	–	–	–
50	64.3	67.7	87.5	134	212.5	211	390.4	390.2
80	71	74.4	99.5	152.6	239.3	237.8	438	437.8
100	75.5	78.9	107.5	165	257.2	255.7	469.8	469.6
125	81.1	84.5	117.3	180.5	279.5	278	509.5	509.3
160	88.9	92.3	131.2	202.5	310.8	309.3	565.1	564.9
200	97.8	101.2	147.1	227	346.5	345	628.6	628.4
250	–	–	167	258.1	391.2	389.7	708.1	707.9
320	–	–	194.8	301.5	453.8	452.3	819.2	819
400	–	–	226.5	351.1	525.2	523.7	946.3	946.1

Moving load [g] – Precision stroke adjustment AJ (piston rod + stop)

Stroke	Piston ∅ [mm]							
[mm]	12	16	20	25	32	40	50	63
10	51.5	52.3	–	–	–	–	–	–
20	53.7	54.5	76	116.6	185.9	–	–	–
25	54.8	55.6	78	119.7	190.4	190	351.7	351.7
30	56	56.8	80	122.8	194.9	–	–	–
40	58.2	59	84	129	203.8	–	–	–
50	60.4	61.2	87.9	135.2	212.7	212.7	391.4	391.4
80	67.1	67.9	99.9	153.8	239.5	239.5	439	439
100	71.6	72.4	107.8	166.2	257.4	257.4	470.8	470.8
125	77.2	78	117.7	181.7	279.7	279.7	510.5	510.5
160	85	85.8	131.6	203.4	311	311	566.1	566.1
200	93.9	94.7	147.5	228.2	346.7	346.7	629.6	629.6
250	–	–	167.4	259.3	391.4	391.4	709.1	709.1
320	–	–	195.2	302.7	454	454	820.2	820.2
400	–	–	226.9	352.3	525.4	525.4	947.3	947.3

Additional weights with precision stroke adjustment EJ – GF, KF

When using the precision stroke adjustment EJ, the following weight must be taken into account in addition to the load specified from page 10.

Product weight [g] – Precision stroke adjustment EJ (piston rod + stop)						
Stroke	Piston ∅ [mm]					
[mm]	20	25	32	40	50	63
20	55.7	117.1	134.1	–	–	–
25	56.4	119.1	136.1	153.9	302.8	354
30	57.2	121	138	–	–	–
40	58.8	125	142	–	–	–
50	60.3	129	146	163.8	318.3	369.5
80	65	140.9	157.9	175.7	336.9	388.1
100	68.1	148.8	165.8	183.6	349.4	400.6
125	71.9	158.8	175.8	193.6	364.9	416.1
160	77.4	172.7	189.7	207.5	386.6	437.8
200	83.6	188.5	205.5	223.3	411.4	462.6
250	91.3	208.4	225.4	243.2	442.4	493.6
320	102.2	236.2	253.2	271	485.9	537.1
400	114.6	268	285	302.8	535.5	586.7

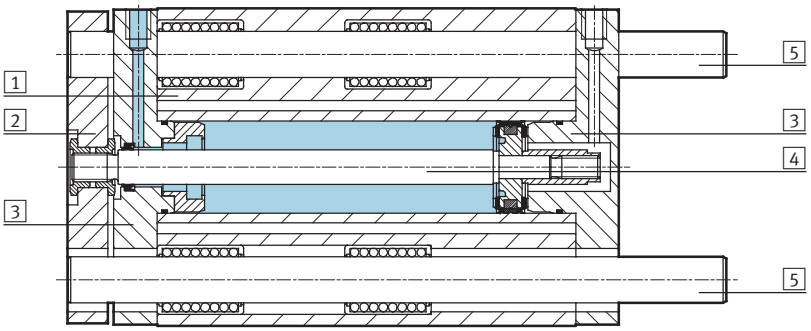
DFM-N-B with recirculating ball bearing guide KF, cushioning YSRW						
Stroke	Piston ∅ [mm]					
[mm]	20	25	32	40	50	63
Product weight [g]						
20	1,684	2,641	3,717	–	–	–
25	1,733	2,707	3,801	4,995	7,594	10,816
30	1,780	2,773	3,884	–	–	–
40	1,874	2,903	4,053	–	–	–
50	1,970	3,035	4,222	5,455	8,275	11,657
80	2,257	3,429	4,720	5,999	9,092	12,629
100	2,444	3,687	5,047	6,352	9,614	13,298
125	2,677	4,008	5,458	6,801	10,294	14,137
160	3,015	4,473	6,050	7,446	11,255	15,319
200	3,401	5,004	6,728	8,183	12,354	16,670
250	3,855	5,641	7,545	9,074	13,700	18,340
320	4,530	6,569	8,730	10,363	15,623	20,704
400	5,302	7,631	10,085	11,837	17,821	23,405
Moving load [g]						
20	874	1,323	1,933	–	–	–
25	894	1,350	1969	2,386	3,735	4,996
30	914	1,378	2,005	–	–	–
40	953	1,432	2,077	–	–	–
50	993	1,487	2,149	2,566	4,021	5,282
80	1,111	1,650	2,365	2,782	4,365	5,625
100	1,190	1,759	2,509	2,926	4,594	5,855
125	1,289	1,896	2,690	3,106	4,880	6,141
160	1,427	2,087	2,942	3,359	5,281	6,542
200	1,585	2,305	3,230	3,647	5,739	7,000
250	1,782	2,578	3,590	4,007	6,312	7,572
320	2,059	2,959	4,095	4,512	7,114	8,374
400	2,375	3,396	4,671	5,088	8,030	9,290

Guided drives DFM-N-B, NPT

Technical data

Materials

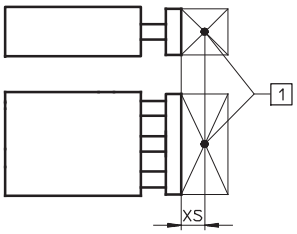
Sectional view



Guided drive	Plain-bearing guide GF	Recirculating ball bearing guide KF	S6
1 Housing	Anodised wrought aluminium alloy	Anodised wrought aluminium alloy	Anodised wrought aluminium alloy
2 Yoke plate	Tempered steel	Tempered steel	Wrought aluminium alloy
3 Bearing and end caps	Anodised wrought aluminium alloy	Anodised wrought aluminium alloy	Anodised wrought aluminium alloy
4 Piston rod	High-alloy stainless steel	High-alloy stainless steel	High-alloy stainless steel
5 Guide rods	High-alloy steel	Tempered steel	High-alloy steel
– Static seals	Nitrile rubber	Nitrile rubber	Fluoro elastomer
– Dynamic seals	Polyurethane	Polyurethane	Fluoro elastomer
– Lubricant	Klüberplex BE 31-102	Klüberplex BE 31-102	Mobiltemp SHC 100
Note on material	–	Free of copper, PTFE and silicone	–

Maximum effective load F [N]

Plain-bearing guide GF and recirculating ball bearing guide KF



1 Centre of gravity of effective load

Piston ∅ [mm]		XS [mm]	Stroke [mm] 10	20	25	30	40	50	80	100	125	160	200	250	320	400
12	GF	25	53	47	45	43	39	36	28	25	23	20	15	–	–	–
	KF		47	42	40	38	35	32	26	23	20	16	13	–	–	–
16	GF	50	95	86	83	79	73	67	55	49	37	30	25	–	–	–
	KF		75	69	66	64	58	56	51	48	30	21	17	–	–	–
20	GF	50	–	99	96	92	110	103	86	77	71	63	55	47	41	35
	KF		–	80	77	75	91	88	80	75	65	56	47	40	34	29
25	GF	50	–	121	116	112	123	115	96	86	86	76	67	53	45	39
	KF		–	88	86	84	100	97	89	85	80	66	56	46	38	32
32	GF	50	–	188	180	173	161	150	166	150	168	146	127	106	91	78
	KF		–	120	118	116	112	109	134	128	144	135	126	135	125	100
40	GF	50	–	–	180	–	–	150	166	150	168	146	127	106	91	78
	KF		–	–	118	–	–	109	134	128	144	135	126	135	125	100
50	GF	50	–	–	257	–	–	216	234	212	229	200	174	145	124	105
	KF		–	–	182	–	–	168	201	193	211	199	188	179	158	130
63	GF	50	–	–	257	–	–	216	234	212	229	200	174	145	124	105
	KF		–	–	182	–	–	168	201	193	211	199	188	179	158	130

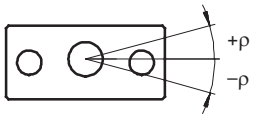
Permissible torque [Nm]

Plain-bearing guide GF and recirculating ball bearing guide KF

Piston ∅ [mm]		Stroke [mm] 10	20	25	30	40	50	80	100	125	160	200	250	320	400
12	GF	1.10	0.95	0.90	0.85	0.80	0.75	0.60	0.50	0.45	0.40	0.30	–	–	–
	KF	0.95	0.85	0.80	0.75	0.70	0.65	0.50	0.45	0.40	0.30	0.25	–	–	–
16	GF	2.20	2.00	1.90	1.80	1.70	1.50	1.30	1.10	0.85	0.70	0.60	–	–	–
	KF	1.70	1.60	1.50	1.45	1.35	1.30	1.20	1.10	0.70	0.50	0.40	–	–	–
20	GF	–	2.90	2.80	2.70	3.20	3.00	2.50	2.20	2.10	1.80	1.60	1.40	1.20	1.00
	KF	–	2.30	2.20	2.15	2.60	2.55	2.30	2.20	1.90	1.60	1.40	1.20	1.00	0.85
25	GF	–	4.15	3.95	3.80	4.20	3.90	3.25	2.90	2.90	2.60	2.30	1.80	1.50	1.30
	KF	–	3.00	2.92	2.85	3.40	3.30	3.02	2.89	2.70	2.20	1.90	1.50	1.30	1.10
32	GF	–	7.30	7.00	6.70	6.20	5.80	6.40	5.80	6.50	5.70	5.00	4.10	3.50	3.00
	KF	–	4.70	4.60	4.55	4.40	4.25	5.25	5.00	5.60	5.25	4.90	5.20	4.80	3.90
40	GF	–	–	7.90	–	–	6.55	7.25	6.55	7.35	6.40	5.55	4.60	4.0	3.40
	KF	–	–	5.20	–	–	4.80	5.90	5.65	6.35	5.95	5.55	5.95	5.50	4.40
50	GF	–	–	14.15	–	–	11.85	12.85	11.65	12.55	11.00	9.60	7.98	6.82	5.78
	KF	–	–	10.00	–	–	9.30	11.00	10.6	11.60	11.00	10.30	9.82	8.67	7.17
63	GF	–	–	15.90	–	–	13.30	14.45	13.10	14.10	12.30	10.70	9.06	7.75	6.56
	KF	–	–	11.30	–	–	10.50	12.50	12.00	13.20	12.40	11.70	11.16	9.85	8.15

Torsional backlash ρ

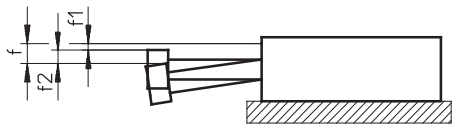
Plain-bearing guide GF and recirculating ball bearing guide KF in retracted state, without load



Piston ∅		12	16	20	25	32	40	50	63
Torsional backlash [°]	GF	0.09	0.09	0.07	0.07	0.06	0.06	0.05	0.05
	KF	0.08	0.08	0.07	0.07	0.05	0.05	0.05	0.05

Deflection of piston rod – Plain-bearing guide GF

Mean deflection f1 due to bearing backlash as a function of stroke l



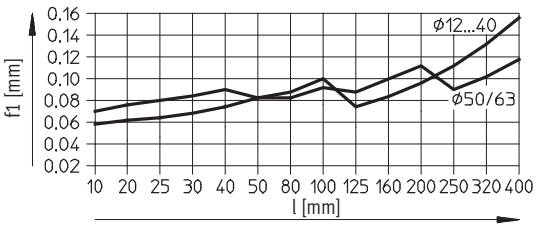
f = f1 + f2

f = Total deflection of piston rod

f1 = Deflection due to bearing backlash

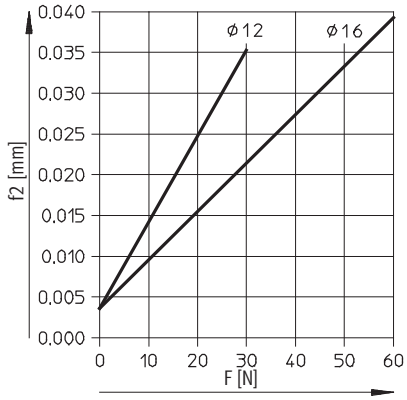
f2 = Deflection due to lateral force

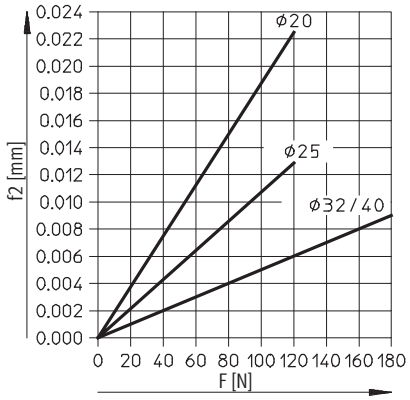
DFM-N-GF with 2 bearings per guide rod

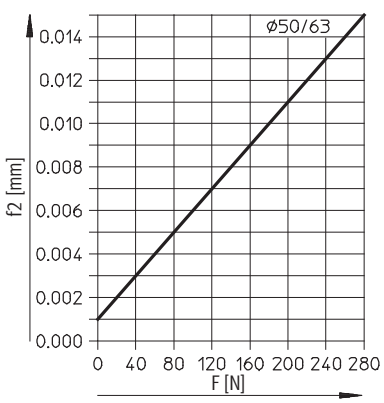


Deflection f2 due to lateral force F as a function of stroke with plain-bearing guide GF

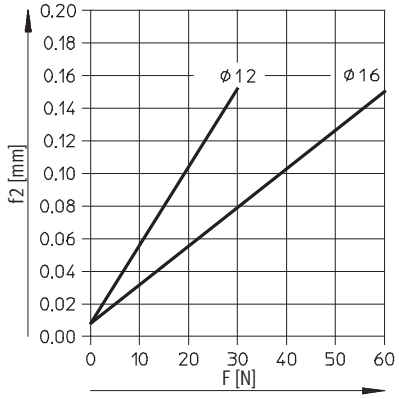
Stroke 50 mm

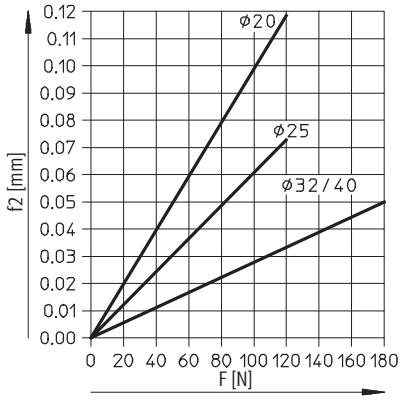


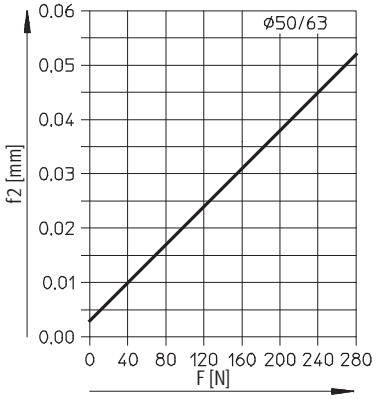




Stroke 100 mm



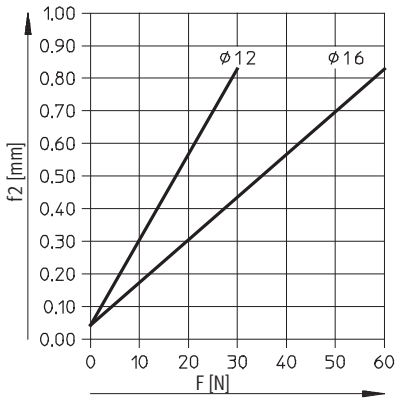


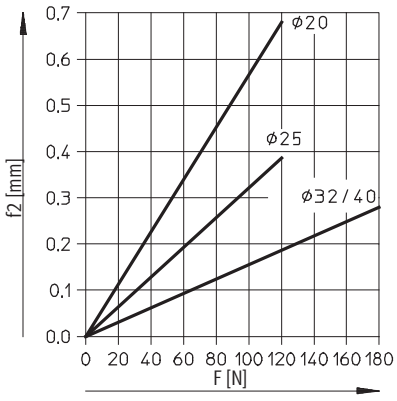


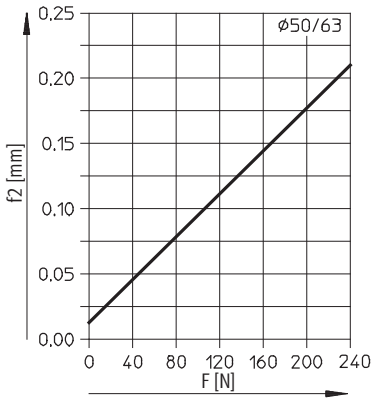
Deflection of piston rod – Plain-bearing guide GF

Deflection f2 due to lateral force F as a function of stroke with plain-bearing guide GF

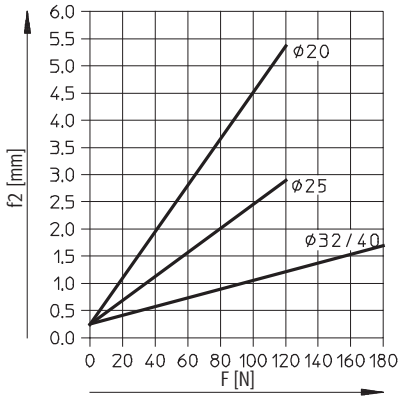
Stroke 200 mm

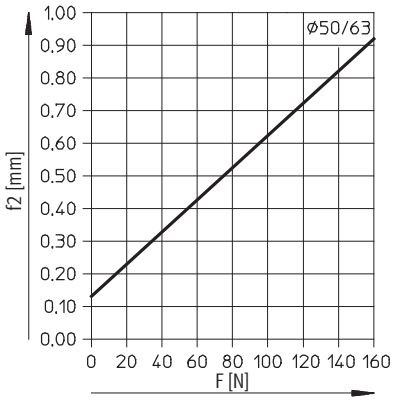






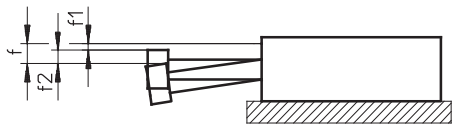
Stroke 400 mm





Deflection of piston rod – Recirculating ball bearing guide KF

Mean deflection f1 due to bearing backlash as a function of stroke l



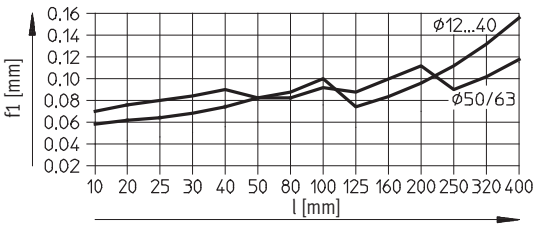
f = f1 + f2

f = Total deflection of piston rod

f1 = Deflection due to bearing backlash

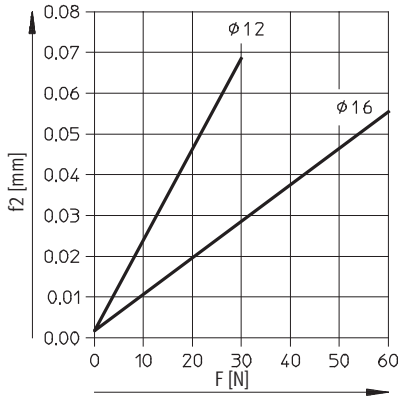
f2 = Deflection due to lateral force

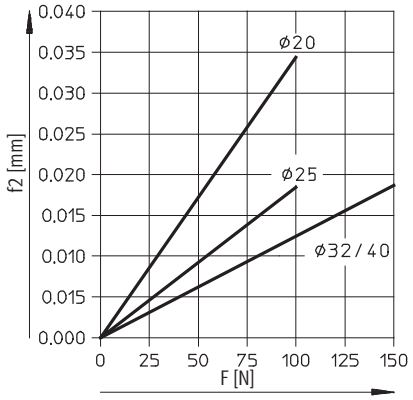
DFM-N-KF with 2 bearings per guide rod

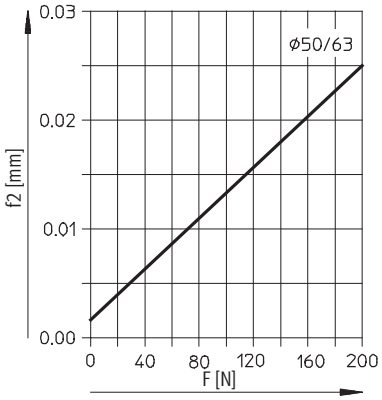


Deflection f2 due to lateral force F as a function of stroke with recirculating ball bearing guide KF

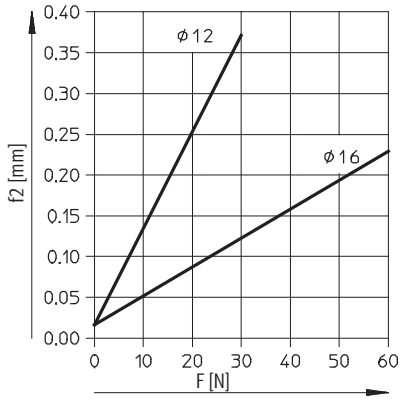
Stroke 50 mm

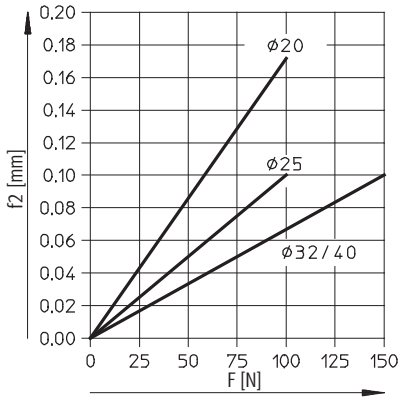


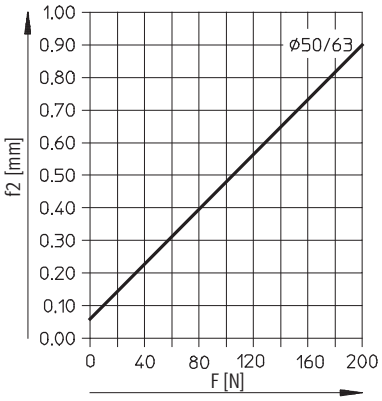




Stroke 100 mm



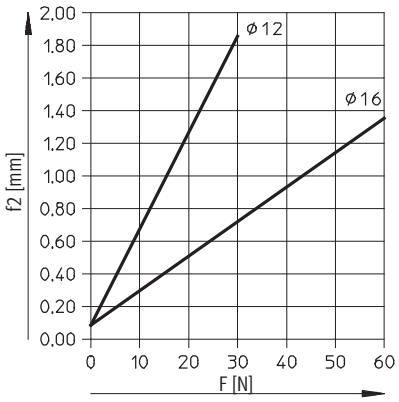


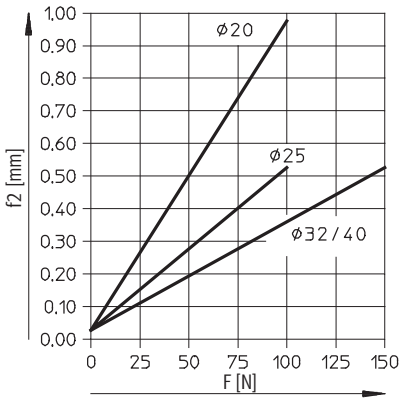


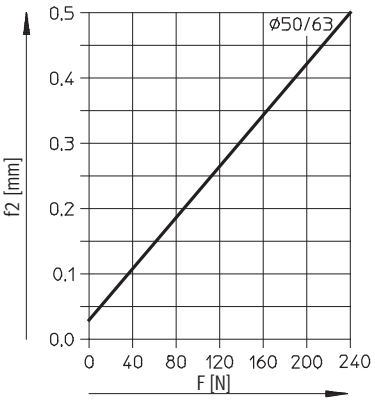
Deflection of piston rod – Recirculating ball bearing guide KF

Deflection f2 due to lateral force F as a function of stroke with recirculating ball bearing guide KF

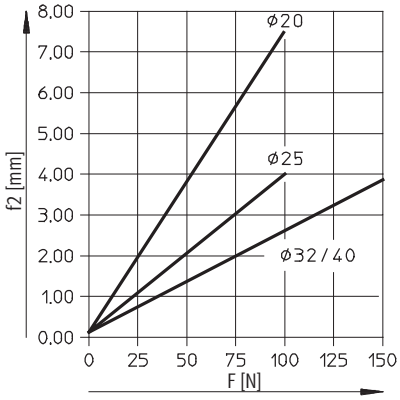
Stroke 200 mm

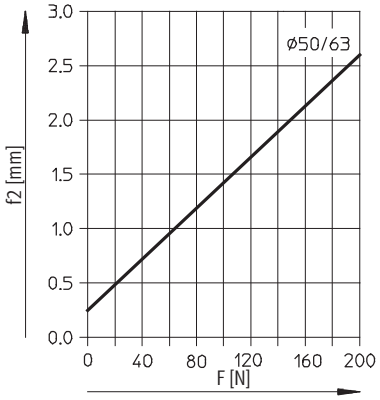




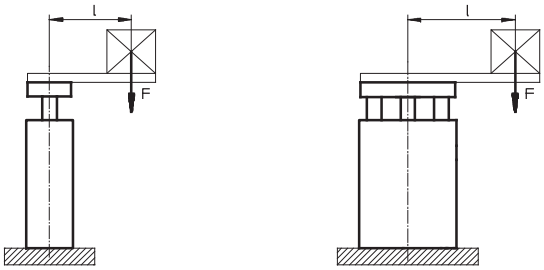


Stroke 400 mm





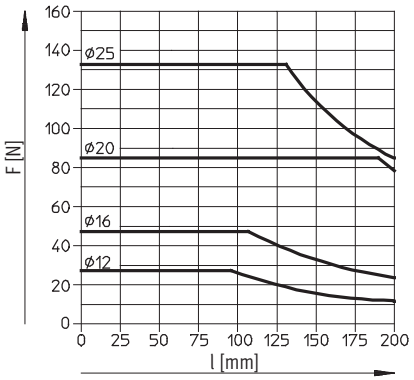
Used as a lifting cylinder



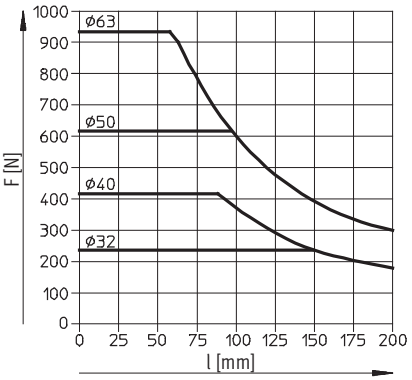
F = Longitudinal force [N]
L = Lever arm [mm]

Permissible load with plain-bearing guide GF

Stroke 40 ... 400 mm

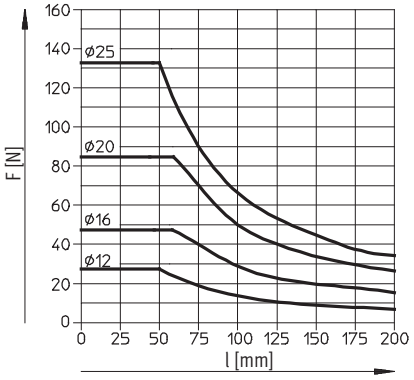


Stroke 250 ... 400 mm

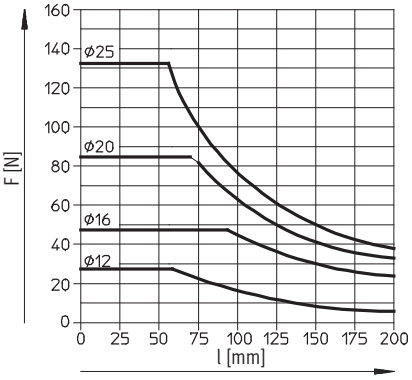


Permissible load with recirculating ball bearing guide KF

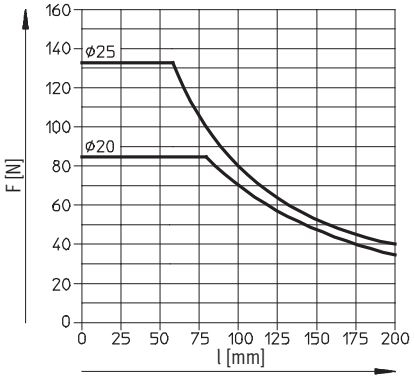
Stroke 40 ... 100 mm



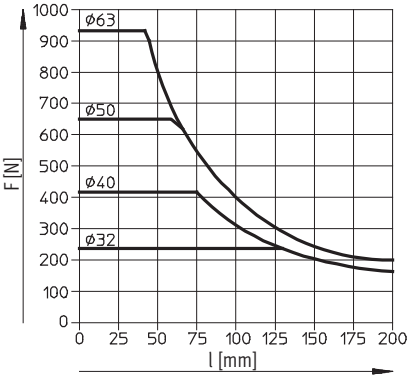
Stroke 125 ... 200 mm



Stroke 250 ... 400 mm



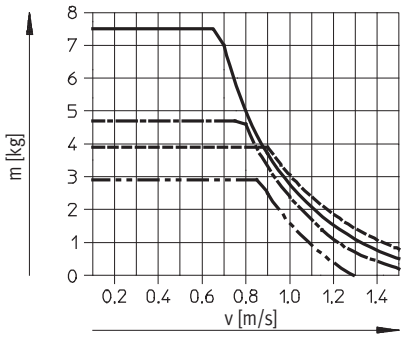
Stroke 200 ... 400 mm



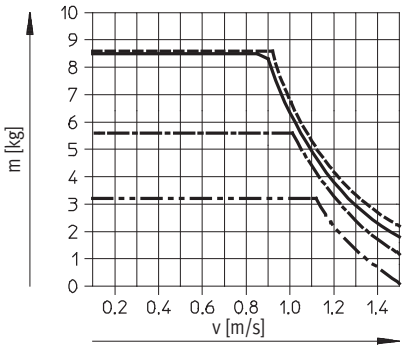
Permissible load m as a function of permissible speed v

Horizontal operation, cushioning YSRW

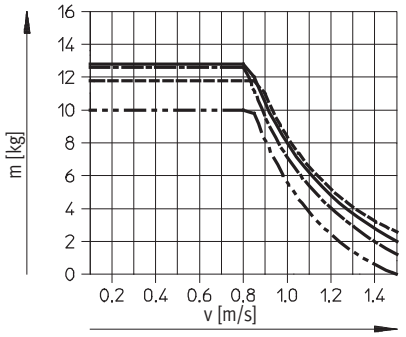
DFM-N-20-...-B-YSRW



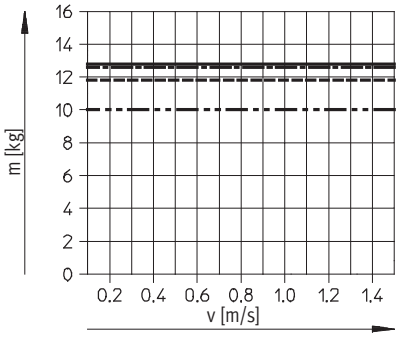
DFM-N-25-...-B-YSRW



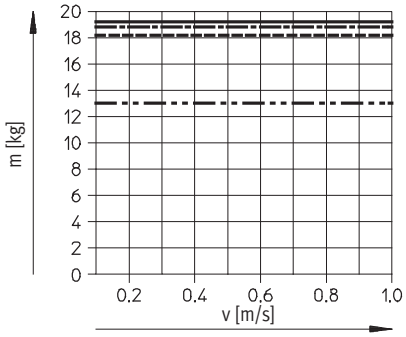
DFM-N-32-...-B-YSRW



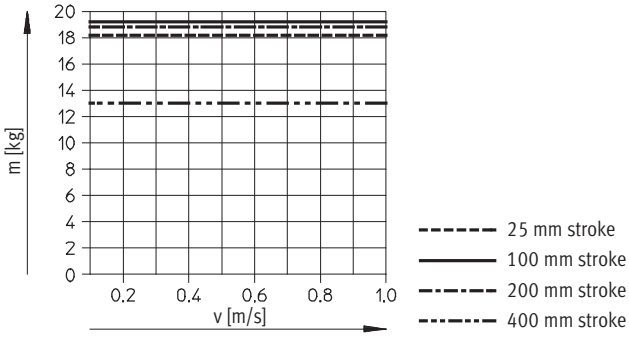
DFM-N-40-...-B-YSRW



DFM-N-50-...-B-YSRW



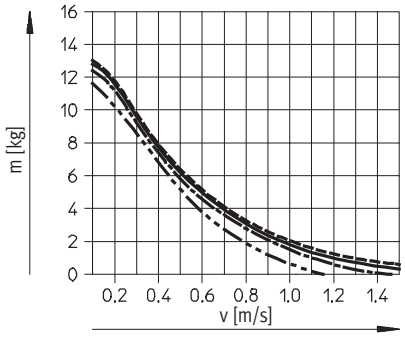
DFM-N-63-...-B-YSRW



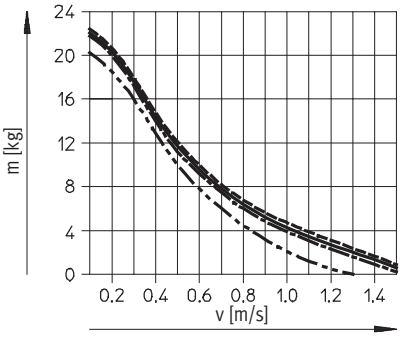
Permissible load m as a function of permissible speed v

Vertical operation, cushioning YSRW

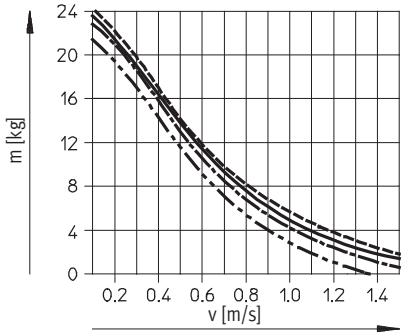
DFM-N-20-...-B-YSRW



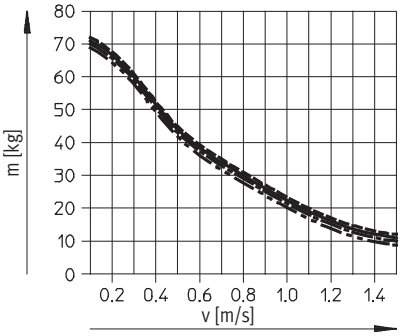
DFM-N-25-...-B-YSRW



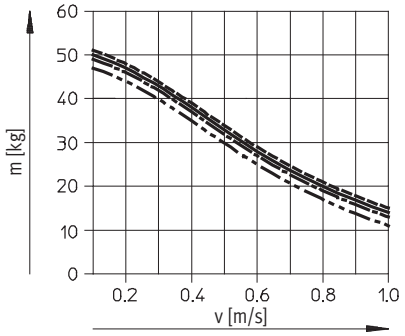
DFM-N-32-...-B-YSRW



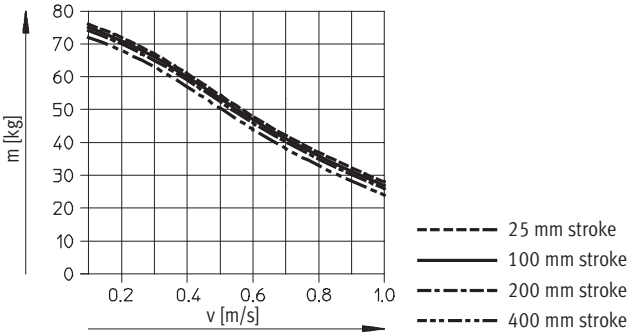
DFM-N-40-...-B-YSRW



DFM-N-50-...-B-YSRW



DFM-N-63-...-B-YSRW

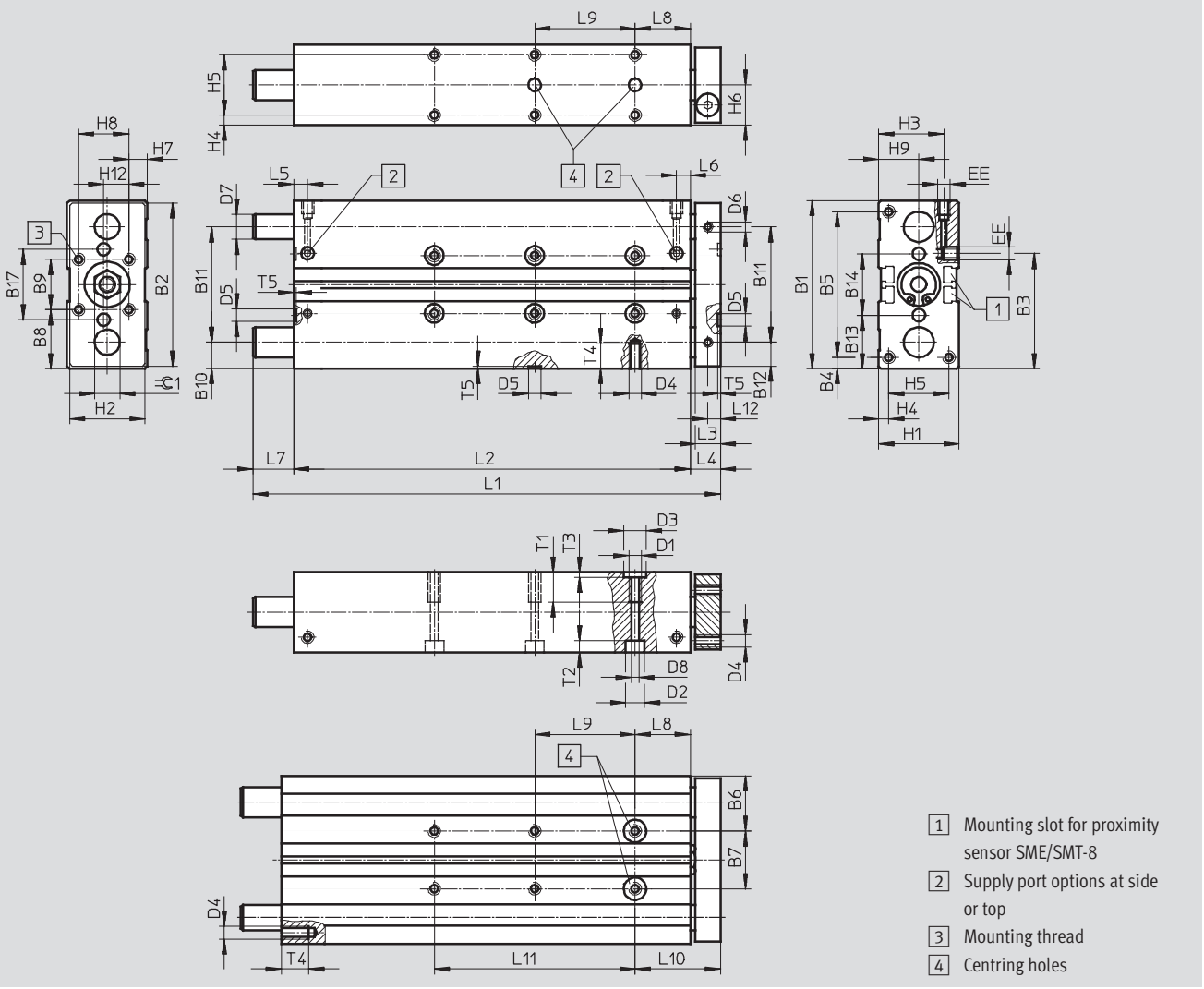


Guided drives DFM-N-B, NPT

Technical data

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

∅ 12, 16 mm



∅ [mm]	B1	B2	B3	B4	B5	B6	B7 ±0.02[1]	B8	B9	B10	B11	B12	B13	B14 ±0.02[1]	B17	D1
12	60	58	40.7	4.5	51	20.5	19	20	20	9.5	41	8.5	19.5	21	25	M5
16	67	65	45	4.5	58	22	23	23.5	20	10.5	46	9.5	21.3	24.4	28	M5

∅ [mm]	D2 ∅	D3 ∅ H7	D4	D5 ∅ H7	D6 ∅	D7 ∅ GF	D7 ∅ KF	D8 ∅ H7	EE[2]	H1	H2	H3	H4	H5	H6	H7
12	8	9	M4	5	M4	10_{h8}	8_{h6}	4.3	M5	28	26	24	4	20	14	4
16	7.5	9	M5	5	M4	12_{h8}	10_{h6}	4.3	M5	32	30	26.5	4	24	16	7.4

∅ [mm]	H8	H9	H12	L2	L3	L4	L5	L6	L8	L10	L12	T1	T2	T3	T4	T5	⌯1
12	20	14	10	40	10	13	14.8	11.2	21	34	5	10	9.4	2.1	8	1.2	10
16	20	16	10	58	10	12	9.8	9.3	22	34	5	12	4.6	2.1	10	1.2	10

1) Tolerance between centring holes
2) Suitable for 10-32 UNF

Guided drives DFM-N-B, NPT

Technical data

Stroke	Piston ∅ [mm]									
	12					16				
[mm]	L1	L2	L7	L9 ±0.02[1)]	L11	L1	L2	L7	L9 ±0.02[1)]	L11
10	74	50	11	–	–	80	68	–	–	–
20	84	60	11	–	–	90	78	–	–	–
25	89	65	11	20	–	95	83	–	20	–
30	94	70	11	20	–	100	88	–	20	–
40	104	80	11	20	–	110	98	–	20	–
50	114	90	11	40	–	120	108	–	40	–
80	144	120	11	40	–	150	138	–	40	–
100	164	140	11	40	80	170	158	–	40	80
125	230	165	52	40	80	229	183	34	40	80
160	265	200	52	40	120	264	218	34	40	120
200	305	240	52	40	160	304	258	34	40	160

1) Tolerance between centring holes

- Note

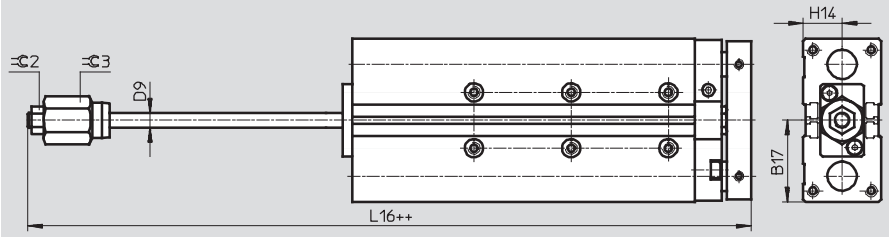
If the guide rods project beyond the housing when the unit is in its retracted end position (➔ dimension L7), a recess must be provided in the mounting surface if the unit is to be mounted against a surface in order to allow the guide rods to move freely.

When using a variable stroke, the dimensions L1, L2, L7, L9 and L11 correspond to the next longest standard stroke.

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

AJ – Precision stroke adjustment, advanced end position

∅ 12, 16 mm

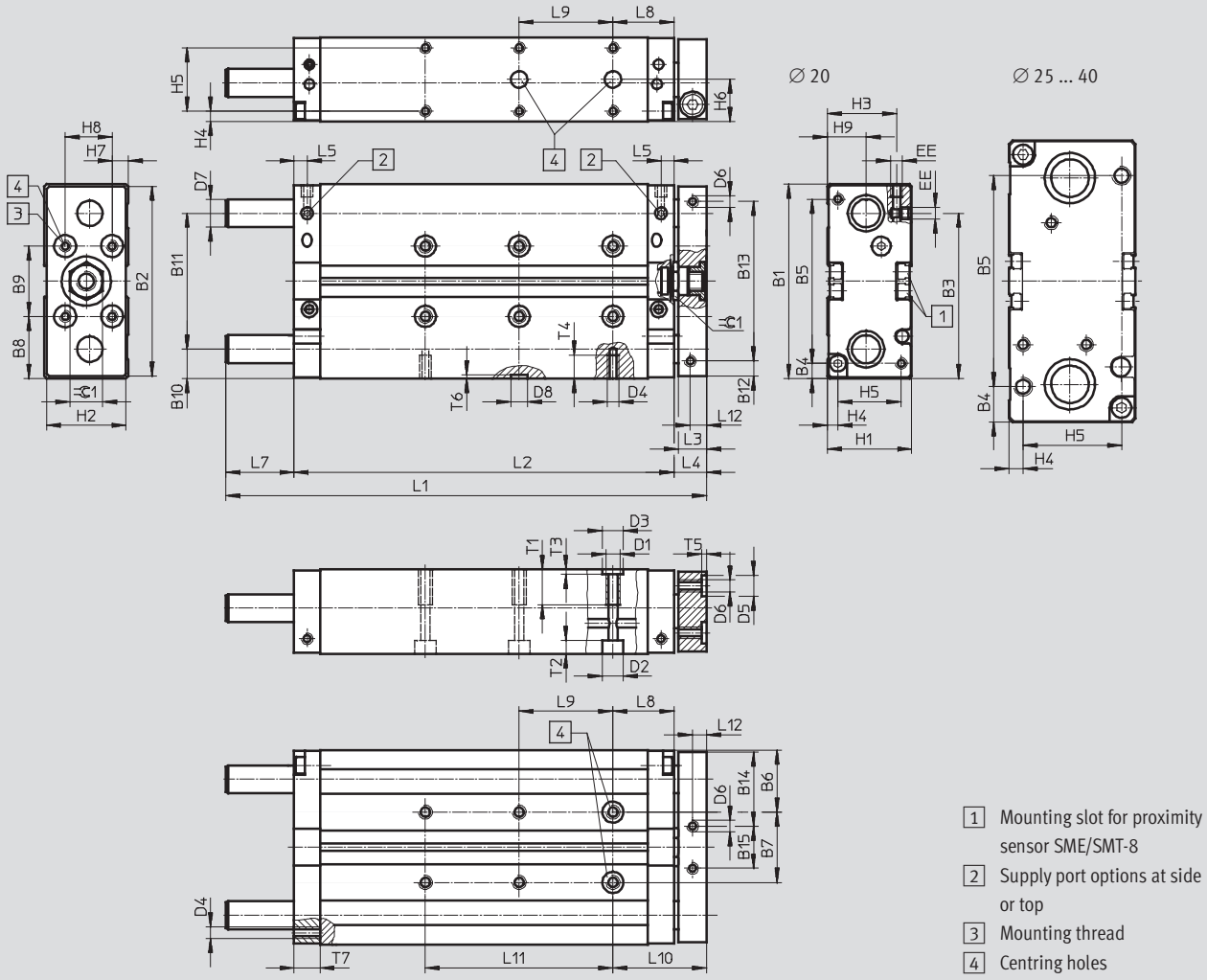


++ = plus 2x stroke length

∅ [mm]	B17	D9 ∅	H14	L16	⫧2	⫧3
12	30.5	6	14	90.6	10	17
16	33.5	6	16	107.9	10	17

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

∅ 20 ... 40 mm



Guided drives DFM-N-B, NPT

Technical data

∅ [mm]	B1	B2	B3	B4	B5	B6	B7 ±0.02[1]	B8	B9 ±0.02[1]	B10	B11	B12	B13	B14	B15	D1
20	83	81	70.5	6.5	70	26.5	30	26.5	30	12.5	58	6.5	68	31.5	18	M6
25	95	93	67	15.5	64	30	35	27.5	40	13.5	68	12.5	68	32.5	28	M6
32	110	108	77	20	70	33.5	43	35	40	16	78	15	78	41	26	M8
40	120	118	86	15	90	34.5	51	35	50	16	88	15	88	41	36	M8

∅ [mm]	D2 ∅	D3 ∅ H7	D4	D5 ∅ H7	D6 ∅	D7 ∅ GF	D7 ∅ KF	D8 ∅ H7	EE	H1	H2	H3	H4	H5	H6	H7
20	9	9	M5	9	M5	14	12	7	M5[2]	36	34	29.5	4.5	27	18	7
25	9	9	M6	9	M6	16	14	7	⅛ NPT	44	42	34.8	4.5	35	22	12
32	11	12	M6	9	M6	20	16	9	⅛ NPT	49	47	39	6	37	24.5	8.5
40	11	12	M8	9	M6	20	16	9	⅛ NPT	54	52	41.5	6	42	27	10

∅ [mm]	H8	H9	L3	L4	L5	L8	L10	L12	T1	T2	T3	T4	T5	T6	T7	⌀1
20	20	16.5	12	14	5.5	26	40	6	12	5.7	2.1	10	2.1	1.6	11	14
25	20	19	12	14	8.5	26	40	6	15	5.7	2.1	12	2.1	1.6	15	17
32	30	21	14	16	8.5	29	45	7	20	6.8	2.6	11	2.1	2.1	15	17
40	30	26	14	16	8.5	29	45	7	20	6.8	2.6	16	2.1	2.1	15	17

Stroke	Piston ∅ [mm]																			
	20					25					32					40				
[mm]	L1	L2	L7	L9 ±0.02[1]	L11	L1	L2	L7	L9 ±0.02[1]	L11	L1	L2	L7	L9 ±0.02[1]	L11	L1	L2	L7	L9 ±0.02[1]	L11
20	105	82	9	20	–	111	90	7	20	–	118	95	7	20	–	–	96	–	–	–
25	110	87				116	95				123	100				123	101	6	20	
30	115	92				121	100				133	105	12			–	106	–	–	–
40	135	102	19			141	110	17			143	115				–	116			
50	145	112		40		151	120		40		153	125		40		153	126	11	40	
80	185	142	29		80	196	150	32		80	208	155	37		80	208	156	36		80
100	205	162				216	170				228	175				228	176			
125	257	187	56			271	195	62			283	200	67			283	201	66		
160	292	222			120	306	230			120	318	235			120	318	236			120
200	332	262			160	346	270			160	358	275			160	358	276			160
250	472	312			200	476	320			200	483	325			200	483	326			200
320	542	382	146		240	546	390	142		240	553	395	142		240	553	396	141		240
400	622	462			320	626	470			320	633	475			320	633	476			320

1) Tolerance between centring holes
2) Suitable for 10-32 UNF
Note: This product conforms to ISO 1179-1 and to ISO 228-1

Note

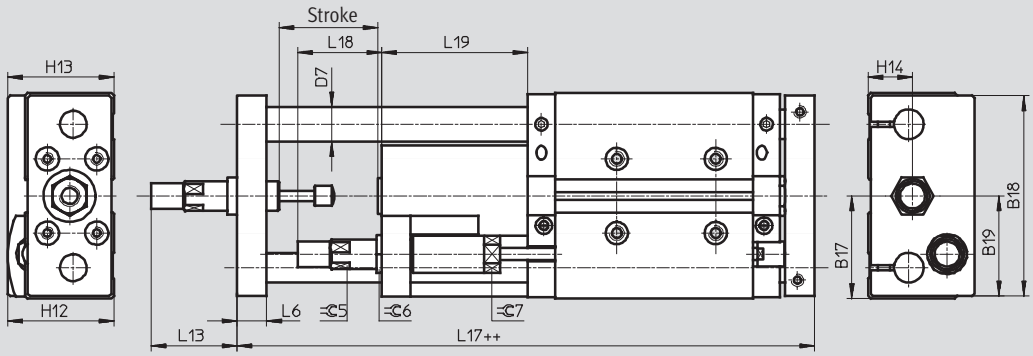
If the guide rods project beyond the housing when the unit is in its retracted end position (➔ dimension L7), a recess must be provided in the mounting surface if the unit is to be mounted against a surface in order to allow the guide rods to move freely.

When using a variable stroke, the dimensions L1, L2, L7, L9 and L11 correspond to the next longest standard stroke.

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

YSRW – Self-adjusting cushioning

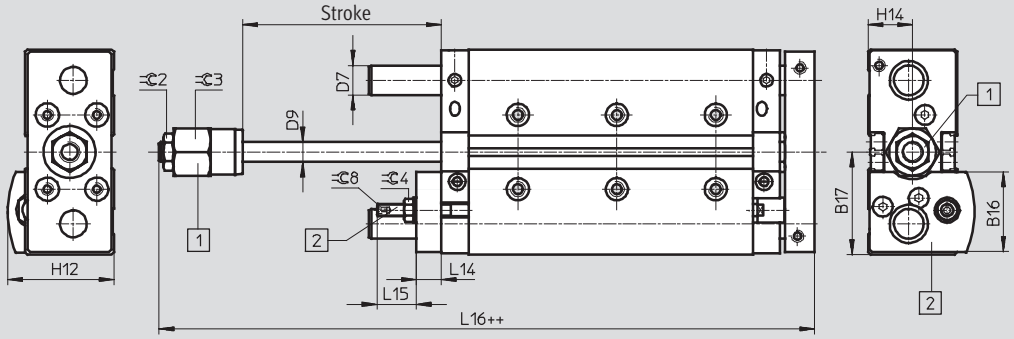
∅ 20 ... 40 mm



++ = plus 2x stroke length

AJ/EJ – Precision stroke adjustment, advanced end position and retracted end position

∅ 20 ... 40 mm



1 Variant AJ

2 Variant EJ

++ = plus 2x stroke length

Guided drives DFM-N-B, NPT

Technical data

∅ [mm]	B16	B17	B18	B19	D7 ∅		D9 ∅	H12	H13	H14	L6	L13	L14
					GF	KF							
20	32.5	41.5	81	40.5	14	12	8	43	43	18	12	36.5	10
25	38.6	47.5	90	45	16	14	10	49.5	50.5	22	14	43	12
32	43.4	55	105	52.5	20	16	12	56.5	56	24.5	16	52	12
40	46.2	60	116	58	20	16	12	62.5	63.5	27	16	72	12

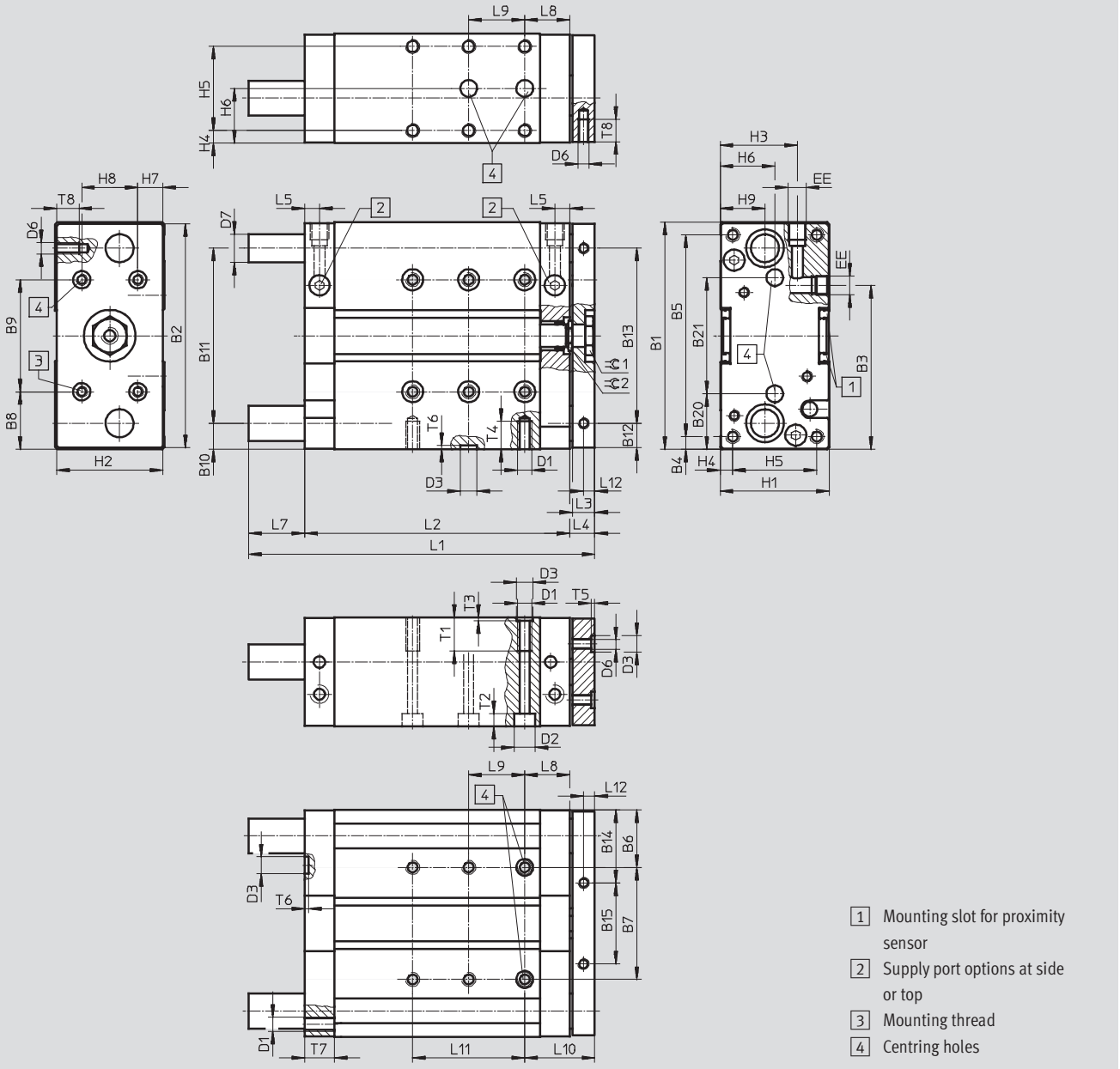
∅ [mm]	L15	L16	L17	L18	L19	⌀2	⌀3	⌀4	⌀5	⌀6	⌀7	⌀8
20	16	110	153.5	34	59	13	19	8	11	15	13	2.5
25	23.5	119.5	176.5	37.5	71	17	24	13	13	17	16	4
32	18.5	129.5	190.5	48.5	76	17	30	13	15	17	19	4
40	18.5	132	209.5	55.5	95	17	30	13	20	22	27	4

Guided drives DFM-N-B, NPT

Technical data

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

∅ 50 ... 63 mm



1 Mounting slot for proximity sensor
2 Supply port options at side or top
3 Mounting thread
4 Centring holes

Guided drives DFM-N-B, NPT

Technical data

∅ [mm]	B1	B2	B3	B4	B5	B6	B7 ±0.02[1]	B8	B9 ±0.02[1]	B10	B11	B12	B13	B14	B15	B20
50	148	146	104.5	19	110	42	64	44	60	19	110	18	110	52	42	40
63	162	160	117	9	144	41	80	41	80	18.5	125	17.5	125	51	58	39.5

∅ [mm]	B21 ±0.02[1]	D1	D2 ∅	D3 ∅ H7	D6 ∅	D7 ∅ GF	D7 ∅ KF	EE[2]	H1	H2	H3	H4	H5	H6	H7	H8
50	68	M8	11	12	M8	25	20	¼ NPT	64	62	48.5	7	50	32	12	40
63	83	M10	15	12	M8	25	20	¼ NPT	78	76	55	9	60	39	19	40

∅ [mm]	H9	L3	L4	L5	L8	L10	L12	T1	T2	T3	T4	T5	T6	T7	T8	⌀1	⌀2
50	29	16	18	10.5	32	50	8	20	9.8	2.6	16	2.6	2.6	21	16	24	19
63	32	16	18	10.5	32	50	8	24	9	2.6	20	2.6	2.6	21	16	24	19

Stroke [mm]	Piston ∅ [mm] 50 L1	L2	L7	L9 ±0.02[1]	L11	63 L1	L2	L7	L9 ±0.02[1]	L11
25	137	113	6	20	–	137	114	5	20	–
50	177	138	21	40		177	139	20	40	
80	227	168	41			227	169	40		80
100	247	188			80	247	189			
125	293	213	62			293	214	61		120
160	328	248			120	328	249			160
200	368	288			160	368	289			200
250	495	338	139		200	495	339	138		240
320	565	408			240	565	409			320
400	645	488			320	645	489			

1) Tolerance between centring holes
2) Suitable for 10-32 UNF
Note: This product conforms to ISO 1179-1 and to ISO 228-1

Note

Since the guide rods project beyond the housing when the unit is in its retracted end position (➔ dimension L7), a recess must be provided in the mounting surface if the unit is to be mounted against a surface in order to allow the guide rods to move freely.

When using a variable stroke, the dimensions L1, L2, L7, L9 and L11 correspond to the next longest standard stroke.

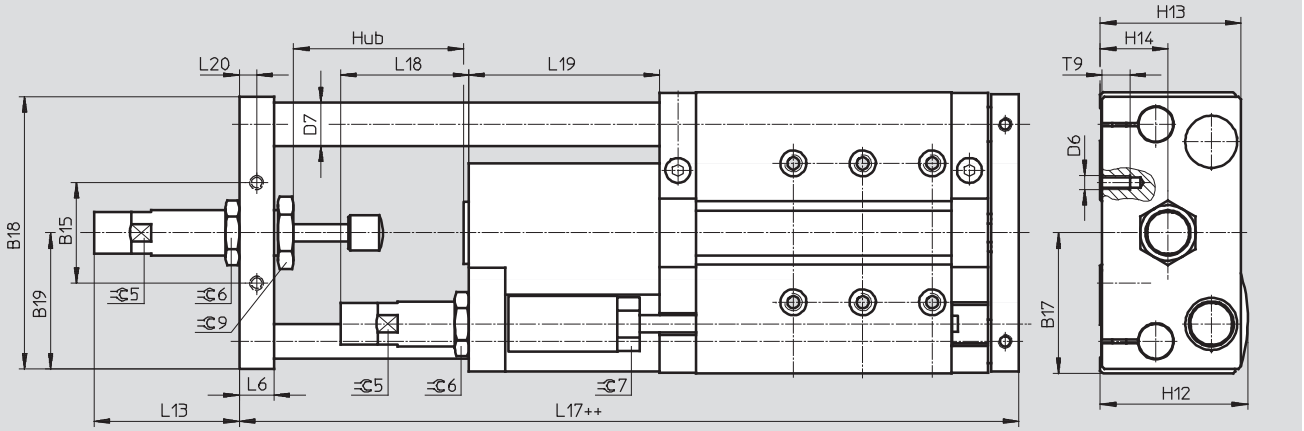
Guided drives DFM-N-B, NPT

Technical data

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

YSRW – Self-adjusting cushioning

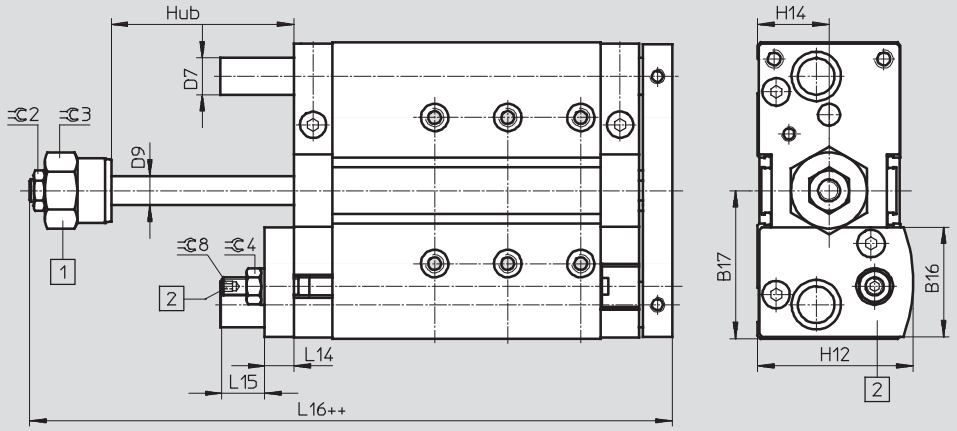
∅ 50 ... 63 mm



++ = plus 2x stroke length

AJ/EJ – Precision stroke adjustment, advanced end position and retracted end position

∅ 50 ... 63 mm



1 Variant AJ

2 Variant EJ

++ = plus 2x stroke length

∅ [mm]	B15	B16	B17	B18	B19	D6	D7 ∅ GF	D7 ∅ KF	D9 ∅	H12	H13	H14	L6	L13	L14
50	42	57.6	74	157	72	M8	25	20	16	74	71	32	16	67.6	16
63	58	60	81	144	78.5	M8	25	20	16	81	81	39	20	83.3	16

∅ [mm]	L15	L16	L17	L18	L19	L20	T9	⌀2	⌀3	⌀4	⌀5	⌀6	⌀7	⌀8	⌀9
50	24.5	152.1	226.4	58.5	93	8	16	19	36	17	20	27	22	5	30
63	23.5	151.8	249.2	74	110	10	16	19	36	17	24	32	27	5	36

Guided drives DFM-N-B, NPT

Ordering data – Standard types

FESTO

Ordering data – Plain-bearing guide GF

	Part No.	Type		Part No.	Type		Part No.	Type
Stroke [mm]	∅ 12 mm			∅ 16 mm			∅ 20 mm	
10	**570 547**	**DFM-N-12-10-B-P-A-GF**		**570 555**	**DFM-N-16-10-B-P-A-GF**		–	–
20	**570 548**	**DFM-N-12-20-B-P-A-GF**		**570 556**	**DFM-N-16-20-B-P-A-GF**		**570 563**	**DFM-N-20-20-B-P-A-GF**
25	**570 549**	**DFM-N-12-25-B-P-A-GF**		**570 557**	**DFM-N-16-25-B-P-A-GF**		**570 564**	**DFM-N-20-25-B-P-A-GF**
30	**570 550**	**DFM-N-12-30-B-P-A-GF**		**570 558**	**DFM-N-16-30-B-P-A-GF**		**570 565**	**DFM-N-20-30-B-P-A-GF**
40	**570 551**	**DFM-N-12-40-B-P-A-GF**		**570 559**	**DFM-N-16-40-B-P-A-GF**		**570 566**	**DFM-N-20-40-B-P-A-GF**
50	**570 552**	**DFM-N-12-50-B-P-A-GF**		**570 560**	**DFM-N-16-50-B-P-A-GF**		**570 567**	**DFM-N-20-50-B-P-A-GF**
80	**570 553**	**DFM-N-12-80-B-P-A-GF**		**570 561**	**DFM-N-16-80-B-P-A-GF**		**570 568**	**DFM-N-20-80-B-P-A-GF**
100	**570 554**	**DFM-N-12-100-B-P-A-GF**		**570 562**	**DFM-N-16-100-B-P-A-GF**		**570 569**	**DFM-N-20-100-B-P-A-GF**
125	–	–		–	–		–	–
160	–	–		–	–		–	–
200	–	–		–	–		–	–
Stroke [mm]	∅ 25 mm			∅ 32 mm			∅ 40 mm	
10	–	–		–	–		–	–
20	**570 570**	**DFM-N-25-20-B-P-A-GF**		**570 577**	**DFM-N-32-20-B-P-A-GF**		–	–
25	**570 571**	**DFM-N-25-25P-A-GF**		**570 578**	**DFM-N-32-25-B-P-A-GF**		**570 587**	**DFM-N-40-25-B-P-A-GF**
30	**570 572**	**DFM-N-25-30-B-P-A-GF**		**570 579**	**DFM-N-32-30-B-P-A-GF**		–	–
40	**570 573**	**DFM-N-25-40-B-P-A-GF**		**570 580**	**DFM-N-32-40-B-P-A-GF**		–	–
50	**570 574**	**DFM-N-25-50-B-P-A-GF**		**570 581**	**DFM-N-32-50-B-P-A-GF**		**570 588**	**DFM-N-40-50-B-P-A-GF**
80	**570 575**	**DFM-N-25-80-B-P-A-GF**		**570 582**	**DFM-N-32-80-B-P-A-GF**		**570 589**	**DFM-N-40-80-B-P-A-GF**
100	**570 576**	**DFM-N-25-100-B-P-A-GF**		**570 583**	**DFM-N-32-100-B-P-A-GF**		**570 590**	**DFM-N-40-100-B-P-A-GF**
125	–	–		**570 584**	**DFM-N-32-125-B-P-A-GF**		**570 591**	**DFM-N-40-125-B-P-A-GF**
160	–	–		**570 585**	**DFM-N-32-160-B-P-A-GF**		**570 592**	**DFM-N-40-160-B-P-A-GF**
200	–	–		**570 586**	**DFM-N-32-200-B-P-A-GF**		**570 593**	**DFM-N-40-200-B-P-A-GF**
Stroke [mm]	∅ 50 mm			∅ 63 mm				
10	–	–		–	–			
20	–	–		–	–			
25	**570 594**	**DFM-N-50-25-B-P-A-GF**		**570 601**	**DFM-N-63-25-B-P-A-GF**			
30	**–**	–		–	–			
40	**–**	–		–	–			
50	**570 595**	**DFM-N-50-50-B-P-A-GF**		**570 602**	**DFM-N-63-50-B-P-A-GF**			
80	**570 596**	**DFM-N-50-80-B-P-A-GF**		**570 603**	**DFM-N-63-80-B-P-A-GF**			
100	**570 597**	**DFM-N-50-100-B-P-A-GF**		**570 604**	**DFM-N-63-100-B-P-A-GF**			
125	**570 598**	**DFM-N-50-125-B-P-A-GF**		**570 605**	**DFM-N-63-125-B-P-A-GF**			
160	**570 599**	**DFM-N-50-160-B-P-A-GF**		**570 606**	**DFM-N-63-160-B-P-A-GF**			
200	**570 600**	**DFM-N-50-200-B-P-A-GF**		**570 607**	**DFM-N-63-200-B-P-A-GF**			

Guided drives DFM-N-B, with plain-bearing guide GF, NPT

Ordering data – Modular products

FESTO

M Mandatory data →

Module No.	Function	Thread	Piston ∅	Stroke	Generation	Cushioning	Position sensing	Guide
529 119	DFM	N	12	10 ... 400	B	P	A	GF
529 120			16			PPV		
532 316			20					
532 317			25					
532 318			32					
532 319			40					
534 769			50					
534 770			63					
Ordering example								
532 319	**DFM**	**N**	**40**	**350**	**B**	**PPV**	**A**	**GF**

Ordering table

	Size		12	16	20	25	32	40	50	63	Condi-tions	Code		Enter code
M	Module No.		**529 119**	**529 120**	**532 316**	**532 317**	**532 318**	**532 319**	**534 769**	**534 770**				
	Function		Guided drive									**DFM**		DFM
	Thread		NPT thread									**N**		-N
	Piston ∅	[mm]	12	16	20	25	32	40	50	63		**-...**		
	Stroke	[mm]	10	10	–	–	–	–	–	–		**-...**		
			20	20	20	20	20	–	–	–		**-...**		
			25	25	25	25	25	25	25	25		**-...**		
			30	30	30	30	30	–	–	–		**-...**		
			40	40	40	40	40	–	–	–		**-...**		
			50	50	50	50	50	50	50	50		**-...**		
			80	80	80	80	80	80	80	80		**-...**		
			100	100	100	100	100	100	100	100		**-...**		
			125	125	125	125	125	125	125	125		**-...**		
			160	160	160	160	160	160	160	160		**-...**		
			200	200	200	200	200	200	200	200		**-...**		
			–	–	250	250	250	250	250	250		**-...**		
			–	–	320	320	320	320	320	320		**-...**		
			–	–	400	400	400	400	400	400		**-...**		
	Variable stroke	[mm]	10 ... 200		20 ... 400			25 ... 400			1	**-...**		
	Generation		B series									**-B**		-B
	Cushioning		Flexible cushioning rings/pads at both ends									**-P**		
			–	Pneumatic cushioning, adjustable at both ends							2	**-PPV**		
	Position sensing		Via proximity sensor									**-A**		-A
↓	Guide		Plain-bearing guide									**-GF**		-GF

1 ... Not with precision adjustment AJ

2 **PPV** Not with precision adjustment AJ, EJ

Transfer order code

	DFM	–	**N**	–		–		–	**B**	–		–	**A**	–	**GF**

➔ 0 **Options**

	Temperature resistance		Precision adjustment advanced		Precision adjustment retracted		Acces-sories		Slot cover for sensor slot		Proximity sensor with cable		Proximity sensor, contactless with cable
	S6		AJ		EJ		ZUB		...S		...G		...I
–	**S6**	–		–			**ZUB**	–	**10S**		**1G**		**1I**

Ordering table

Size			12	16	20	25	32	40	50	63	Condi-tions	Code		Enter code
0	Temperature resistance		Heat-resistant seals up to max. 120 °C								3	**S6**		
	Precision adjustment advanced		Precision adjustment into the end positions, advanced									**-AJ**		
	Precision adjustment retracted		–	–	Precision adjustment into the end positions, retracted							**-EJ**		
	Accessories		Supplied separately									**ZUB-**		ZUB-
	Slot cover for sensor slot		1 ... 10									**...S**		
	Proximity sensor	With cable, 2.5 m	1 ... 10									**...G**		
		Contactless with cable, 2.5 m	1 ... 10									**...I**		

3 **S6** Not with precision adjustment AJ, EJ

Transfer order code

–		–		–		**ZUB**	–			

Guided drives DFM-B, with recirculating ball bearing guide KF, NPT

Ordering data – Modular products

FESTO

M Mandatory data →

Module No.	Function	Thread	Piston ∅	Stroke	Generation	Cushioning	Position sensing	Guide
529 119	DFM	N	12	10 ... 400	B	P	A	KF
529 120			16			PPV		
532 316			20			YSRW		
532 317			25					
532 318			32					
532 319			40					
534 769			50					
534 770			63					
Ordering example								
532 319	**DFM**	**N**	**40**	**400**	**B**	**P**	**A**	**KF**

Ordering table

Size		12	16	20	25	32	40	50	63	Conditions	Code	Enter code
M	Module No.	**529 119**	**529 120**	**532 316**	**532 317**	**532 318**	**532 319**	**534 769**	**534 770**			
	Function	Guided drive									**DFM**	DFM
	Thread	NPT thread									**N**	-N
	Piston ∅ [mm]	12	16	20	25	32	40	50	63		**-...**	
	Stroke [mm]	10	10	–	–	–	–	–	–		**-...**	
		20	20	20	20	20	–	–	–		**-...**	
		25	25	25	25	25	25	25	25		**-...**	
		30	30	30	30	30	–	–	–		**-...**	
		40	40	40	40	40	–	–	–		**-...**	
		50	50	50	50	50	50	50	50		**-...**	
		80	80	80	80	80	80	80	80		**-...**	
		100	100	100	100	100	100	100	100		**-...**	
		125	125	125	125	125	125	125	125		**-...**	
		160	160	160	160	160	160	160	160		**-...**	
		200	200	200	200	200	200	200	200		**-...**	
		–	–	250	250	250	250	250	250		**-...**	
		–	–	320	320	320	320	320	320		**-...**	
		–	–	400	400	400	400	400	400		**-...**	
	Variable stroke [mm]	10 ... 200		20 ... 400			25 ... 400			1	**-...**	
	Generation	B series									**-B**	-B
	Cushioning	Flexible cushioning rings/pads at both ends									**-P**	
		–	Pneumatic cushioning, adjustable at both ends							2	**-PPV**	
		–	–	Shock absorber, self-adjusting, progressive						3	**-YSRW**	
	Position sensing	Via proximity sensor									**-A**	-A
↓	Guide	Recirculating ball bearing guide									**-KF**	-KF

1 ... Not with precision adjustment AJ, cushioning YSRW

2 **PPV** Not with precision adjustment AJ, EJ

3 **YSRW** Not with precision adjustment AJ, EJ, since already integrated

Transfer order code

	DFM	–	N	–		–		–	B	–		–	A	–	KF

➔ 0 **Options**

	Precision adjustment advanced		**Precision adjustment retracted**		**Acces-sories**		**Slot cover for sensor slot**	**Proximity sensor with cable**	**Proximity sensor, contactless with cable**
	AJ		EJ		ZUB		...S	...G	...I
–	**AJ**	–	**EJ**		**ZUB**	–	**10S**	**1G**	**1I**

Ordering table

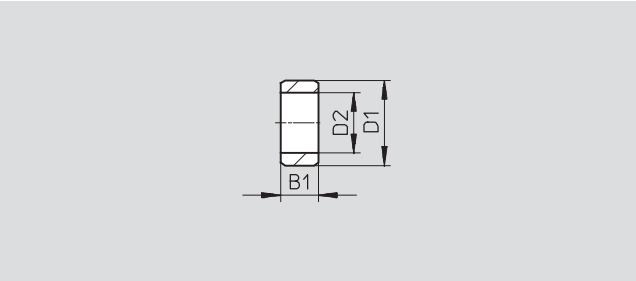
Size		12	16	20	25	32	40	50	63	Condi-tions	Code		Enter code
0 Precision adjustment advanced		Precision adjustment into the end positions, advanced									**-AJ**		
Precision adjustment retracted		–	–	Precision adjustment into the end positions, retracted							**-EJ**		
Accessories		Supplied separately									**ZUB-**		ZUB-
Slot cover for sensor slot		1 ... 10									**...S**		
Proximity sensor	With cable, 2.5 m	1 ... 10									**...G**		
	Contactless with cable, 2.5 m	1 ... 10									**...I**		

Transfer order code

–		–		**ZUB**	–					

Centring sleeve ZBH

Material:
High-alloy steel

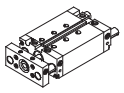


Dimensions and ordering data (repeat order)

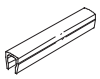
B1 −0.2	D1 ∅ h7	D2 ∅	CRC[1]	Weight [g]	Part No.	Type	PU[2]
2.4	5	3.2	2	1	**189 652**	**ZBH-5**	**10**
3	7	5.3	2	1	**186 717**	**ZBH-7**	**10**
4	9	6.4	2	1	**150 927**	**ZBH-9**	**10**
5	12	10.3	2	1	**189 653**	**ZBH-12**	**10**

1) Corrosion resistance class 2 to Festo standard 940 070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents
2) Packaging unit

Centring sleeves included in the scope of delivery

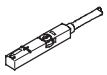
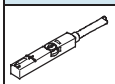
DFM-N-B	Piston ∅ [mm]	Centring sleeves	
		For housing	For yoke plate
	12	**2x ZBH-5, 2x ZBH-9**	**2x ZBH-5**
	16	**2x ZBH-5, 2x ZBH-9**	**2x ZBH-5**
	20	**2x ZBH-7, 2x ZBH-9**	**2x ZBH-9**
	25	**2x ZBH-7, 2x ZBH-9**	**2x ZBH-9**
	32	**2x ZBH-9, 2x ZBH-12**	**2x ZBH-9**
	40	**2x ZBH-9, 2x ZBH-12**	**2x ZBH-9**
	50	**2x ZBH-12**	**2x ZBH-12**
	63	**2x ZBH-12**	**2x ZBH-12**

Ordering data – Slot cover for T-slot

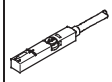
	Assembly	Length	Part No.	Type
	Insertable from above	2x 0.5 m	**151 680**	**ABP-5-S**

Ordering data – Proximity sensors for T-slot, magneto-resistive

Technical data ➔ Internet: smt

	Type of mounting	Switching output	Electrical connection	Cable length [m]	Part No.	Type
N/O contact						
	Insertable in the slot from above, flush with the cylinder profile	PNP	Cable, 3-wire	2.5	**543 867**	**SMT-8M-PS-24V-K-2,5-OE**
			Plug M8x1, 3-pin	0.3	**543 866**	**SMT-8M-PS-24V-K-0,3-M8D**
			Plug M12x1, 3-pin	0.3	**543 869**	**SMT-8M-PS-24V-K-0,3-M12**
		NPN	Cable, 3-wire	2.5	**543 870**	**SMT-8M-NS-24V-K-2,5-OE**
			Plug M8x1, 3-pin	0.3	**543 871**	**SMT-8M-NS-24V-K-0,3-M8D**
	Insertable in the slot lengthwise, flush with the cylinder profile	PNP	Cable, 3-wire	2.5	**175 436**	**SMT-8-PS-K-LED-24-B**
			Plug M8x1, 3-pin	0.3	**175 484**	**SMT-8-PS-S-LED-24-B**
N/C contact						
	Insertable in the slot from above, flush with the cylinder profile	PNP	Cable, 3-wire	7.5	**543 873**	**SMT-8M-PO-24V-K7,5-OE**

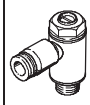
Ordering data – Proximity sensors for T-slot, magnetic reed — Technical data ➔ Internet: sme

	Type of mounting	Switching output	Electrical connection	Cable length [m]	Part No.	Type
N/O contact						
	Insertable in the slot from above, flush with the cylinder profile	Contacting	Cable, 3-wire	2.5	**543 862**	**SME-8M-DS-24V-K-2,5-OE**
				5.0	**543 863**	**SME-8M-DS-24V-K-5,0-OE**
			Cable, 2-wire	2.5	**543 872**	**SME-8M-ZS-24V-K-2,5-OE**
			Plug M8x1, 3-pin	0.3	**543 861**	**SME-8M-DS-24V-K-0,3-M8D**
	Insertable in the slot lengthwise, flush with the cylinder profile	Contacting	Cable, 3-wire	2.5	**150 855**	**SME-8-K-LED-24**
			Plug M8x1, 3-pin	0.3	**150 857**	**SME-8-S-LED-24**
N/C contact						
	Insertable in the slot from above, flush with the cylinder profile	Contacting	Cable, 3-wire	7.5	**546 799**	**SME-8M-DO-24V-K-7,5-OE**

Ordering data – Connecting cables — Technical data ➔ Internet: nebu

	Electrical connection, left	Electrical connection, right	Cable length [m]	Part No.	Type
	Straight socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	**541 333**	**NEBU-M8G3-K-2.5-LE3**
			5	**541 334**	**NEBU-M8G3-K-5-LE3**
	Straight socket, M12x1, 5-pin	Cable, open end, 3-wire	2.5	**541 363**	**NEBU-M12G5-K-2.5-LE3**
			5	**541 364**	**NEBU-M12G5-K-5-LE3**
	Angled socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	**541 338**	**NEBU-M8W3-K-2.5-LE3**
			5	**541 341**	**NEBU-M8W3-K-5-LE3**
	Angled socket, M12x1, 5-pin	Cable, open end, 3-wire	2.5	**541 367**	**NEBU-M12W5-K-2.5-LE3**
			5	**541 370**	**NEBU-M12W5-K-5-LE3**

Ordering data – One-way flow control valves — Technical data ➔ Internet: grla

	Connection		Material	Part No.	Type
	Thread	For tubing O.D. [inch]			
	M5[1]	1/8	Plastic design[2]	**564 839**	**GRLA-10-32-UNF-QB-1/8-U**
		5/32	Metal design[3]	**165 008**	**GRLA-10-32-UNF-QS-5/32-U**
		1/4		**192 753**	**GRLA-10-32-UNF-QS-1/4-U**
	1/8 NPT	5/32		**165 009**	**GRLA-1/8-NPT-QS-5/32-U**
		1/4		**165 010**	**GRLA-1/8-NPT-QS-1/4-U**
		5/16		**165 013**	**GRLA-1/8-NPT-QS-5/16-U**
	1/4 NPT	1/4		**165 011**	**GRLA-1/4-NPT-QS-1/4-U**
		5/16		**165 014**	**GRLA-1/4-NPT-QS-5/16-U**
		3/8		**190 947**	**GRLA-1/4-NPT-QS-3/8-U**

1) Suitable for 10-32 UNF
2) Operating pressure range –0.95 ... +8 bar
3) Operating pressure range 1 ... 9 bar