

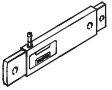
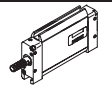
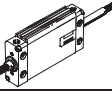
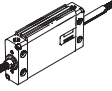
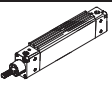
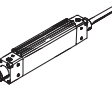
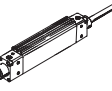


- Extremely flat design
- Protected against torsion thanks to special piston shape
- Compact assembly with block mounting
- Wide variety of mounting options

Flat cylinders EZH/DZF/DZH

Product range overview



Function	Design	Type	Piston \varnothing [mm]	Stroke [mm]
Single-acting		EZH		
		EZH Single-ended piston rod	1.5x6.5	10
			2.5x9	10, 20
			5x20	25, 50
		10x40	40	
Double-acting		DZF		
		DZF Single-ended piston rod	12, 18, 25	10, 25, 40, 50, 80, 100, 125, 160, 200
			32, 40, 50, 63	10, 25, 40, 50, 80, 100, 125, 160, 200, 250, 320
		DZF...S2 Through piston rod	12, 18, 25	-
			32, 40, 50, 63	-
		DZF...S20 Through, hollow piston rod	12, 18, 25	-
32, 40, 50, 63			-	
Double-acting		DZH		
		DZH Single-ended piston rod	16	25, 40, 50, 80, 100, 125, 160, 200
			20	25, 40, 50, 80, 100, 125, 160, 200, 250, 320
			25	25, 40, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500
	32, 40, 50, 63		25, 40, 50, 80, 100, 125, 160, 200, 250, 300	
		DZH...S2 Through piston rod	16	-
			20	-
			25	-
			32, 40, 50, 63	-
		DZH...S20 Through, hollow piston rod	16	-
			20	-
			25	-
			-	

Cylinders with piston rod
Flat cylinders

2.3

Flat cylinders EZH/DZF/DZH

Product range overview



Type	Position sensing	Piston rod		Non-rotating	S6 Heat resistant seals up to 120 °C	→ Page
		with female thread	with male thread			
EZH Single-ended piston rod	■ for 10x40	-	-	■	-	1 / 2.3-4
DZF Single-ended piston rod	■	■	■	■	■	1 / 2.3-8
DZF-...-S2 Through piston rod	■	■	■	■	-	1 / 2.3-8
DZF-...-S20 Through, hollow piston rod	■	-	■	■	-	1 / 2.3-8
DZH Single-ended piston rod	■	-	■	■	■	1 / 2.3-22
DZH-...-S2 Through piston rod	■	-	■	■	-	1 / 2.3-22
DZH-...-S20 Through, hollow piston rod	■	-	■	■	-	1 / 2.3-22

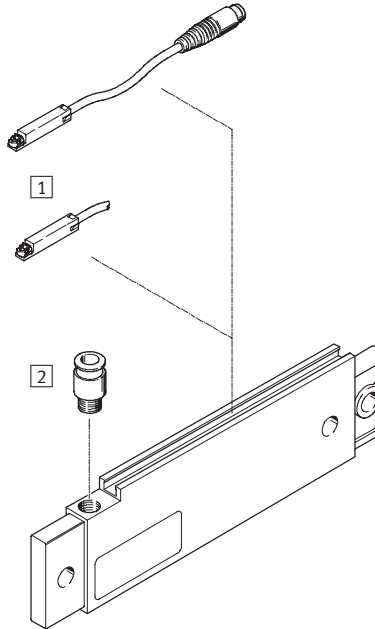
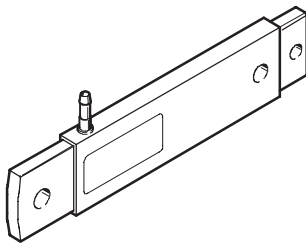
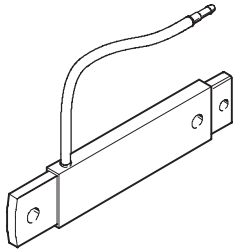
Flat cylinders EZH

Peripherals overview and type codes



Piston area 1.5x6.5/2.5x9/5x20 mm

Piston area 10x40 mm



Cylinders with piston rod
Flat cylinders

2.3

Accessories		
	Brief description	→ Page
1	Proximity sensor SME/SMT-8	Can be integrated in the cylinder profile barrel 1 / 2.3-37
2	Push-in fitting QSM-G1/8-...-I, QS-G1/8-...-I	For connecting compressed air tubing with standard external diameters Volume 3

EZH		2.5x9		20				B	
Type									
Single-acting									
EZH		Flat cylinder							
Piston area [mm]									
Stroke [mm]									
Position sensing									
No position sensing									
A		For proximity sensing							
Generation									
		Series A							
B		Series B							

Flat cylinders EZH

Technical data

FESTO

Function

EZH...

Without end-position sensing




EZH...-A-B


For end position sensing



EZH-5/20-...-B

EZH-10/40-40-A-B

-  - Diameter
approx. 3.6 ... 22 mm

-  - Stroke length
10 ... 50 mm

General technical data						
Piston area	1.5x6.5	2.5x9	2.5x9	5x20	5x20	10x40
Stroke length	10	10	20	25	50	40
Equivalent piston \varnothing	3.6	5.6	5.6	12	12	22
Pneumatic connection	Barbed fitting PK-3 for 3 mm plastic tubing					G $\frac{1}{8}$
Operating medium	Filtered compressed air, lubricated or unlubricated					
Constructional design	Piston Piston rod					
Cushioning	None					
Position sensing	-	-	-	-	-	For proximity sensing
Type of mounting	With transverse bore					
Mounting position	Any					

Operating conditions						
Piston area	1.5x6.5	2.5x9	2.5x9	5x20	5x20	10x40
Stroke length	10	10	20	25	50	40
Operating pressure [bar]	3.0 ... 6.0	2.5 ... 6.0	2.8 ... 6.0	2.5 ... 6.0	2.5 ... 6.0	2.5 ... 6.0
Ambient temperature ¹⁾ [°C]	0 ... +60					
Corrosion resistance class CRC ²⁾	2					

1) Observe operating range of proximity sensors

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

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

Forces [N]						
Piston area	1.5x6.5	2.5x9	2.5x9	5x20	5x20	10x40
Stroke length	10	10	20	25	50	40
Theoretical force at 6 bar, advancing	3.0	7.5	6.0	42.0	38.0	205.0
Spring return force	1.0	3.0	2.8	8.0	10.6	28.0

Flat cylinders EZH

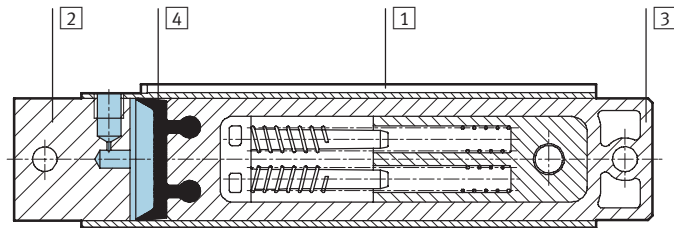
Technical data



Weights [g]						
Piston area	1.5x6.5	2.5x9	2.5x9	5x20	5x20	10x40
Stroke length	10	10	20	25	50	40
Product weight	4	11	17	108	145	242

Materials

Sectional view

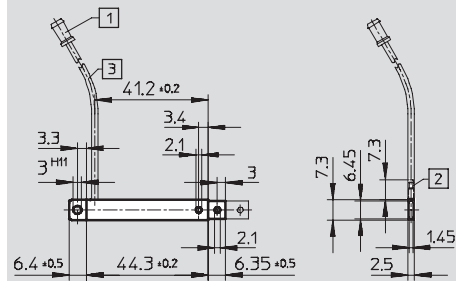


Piston area	1.5x6.5	2.5x9	2.5x9	5x20	5x20	10x40
Stroke length	10	10	20	25	50	40
1 Housing	Aluminium					
2 Cover	Aluminium					
3 Rectangular piston	Polyamide, reinforced	High-alloy steel				Polyamide, reinforced
4 Seal	Polyurethane					

Cylinders with piston rod
Flat cylinders

2.3

Dimensions EZH-1,5/6,5-10 Download CAD data → www.festo.com/en/engineering



- 1 Barbed fittings for 3 mm plastic tubing
- 2 Barbed fittings for 1.5 mm plastic tubing
- 3 200 mm tubing length

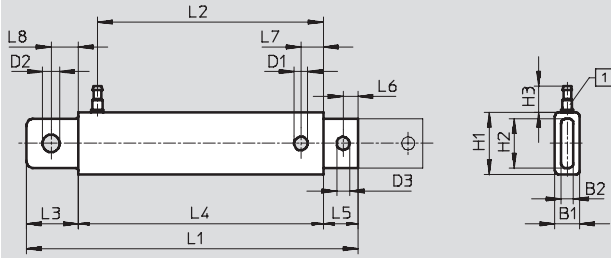
Flat cylinders EZH

Technical data



Dimensions EZH-2,5/9-... and EZH-5/20-...

Download CAD data → www.festo.com/en/engineering



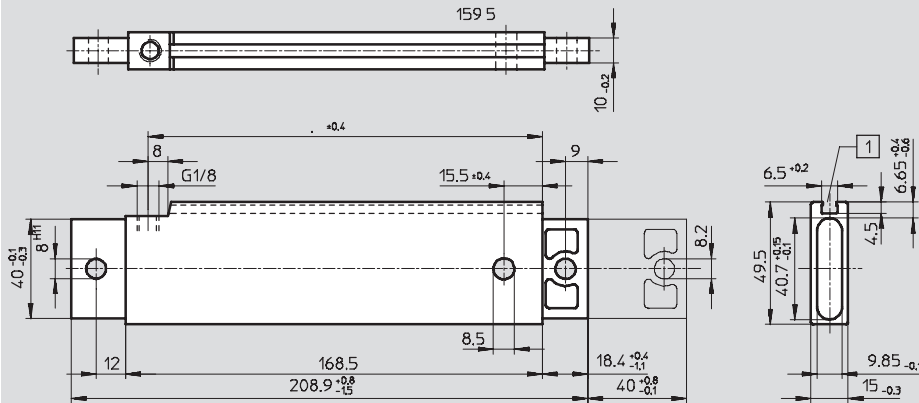
1 Barbed fittings for 3 mm plastic tubing

Type	B1	B2	D1 ∅	D2 ∅	D3 ∅	H1	H2	H3
EZH-2,5/9-10	4.9	2.5	3.1	4	3.1	12	9.9	10.7
EZH-2,5/9-20	4.9	2.4	3.1	4	3.1	12	9.9	10.7
EZH-5/20-25	10	4.9	5.5	7	5.2	25	21.9	10.7
EZH-5/20-50	10	4.9	5.5	7	5.2	25	21.9	10.7

Type	L1	L2	L3	L4 +0.2	L5	L6	L7	L8
EZH-2,5/9-10	67 ^{+0.7/-0.8}	43.6	10 ^{+0.3/-0.5}	48.6	8.4 ^{+0.3/-0.5}	4	4.5	5.5
EZH-2,5/9-20	99 ^{±0.7}	75.5	10 ^{+0.3/-0.5}	80.6	8.4 ^{+0.3/-0.5}	4	4.5	5.5
EZH-5/20-25	133.9 ^{+0.6/-0.8}	91.3	21 ^{+0.3/-0.5}	99	13.9 ^{+0.3/-0.5}	6	9	11
EZH-5/20-50	205.9 ^{+0.8/-1.1}	163.3	21 ^{+0.5/-0.7}	171	13.9 ^{+0.3/-0.6}	6	9	11

Dimensions EZH-10/40-40-A-B

Download CAD data → www.festo.com/en/engineering



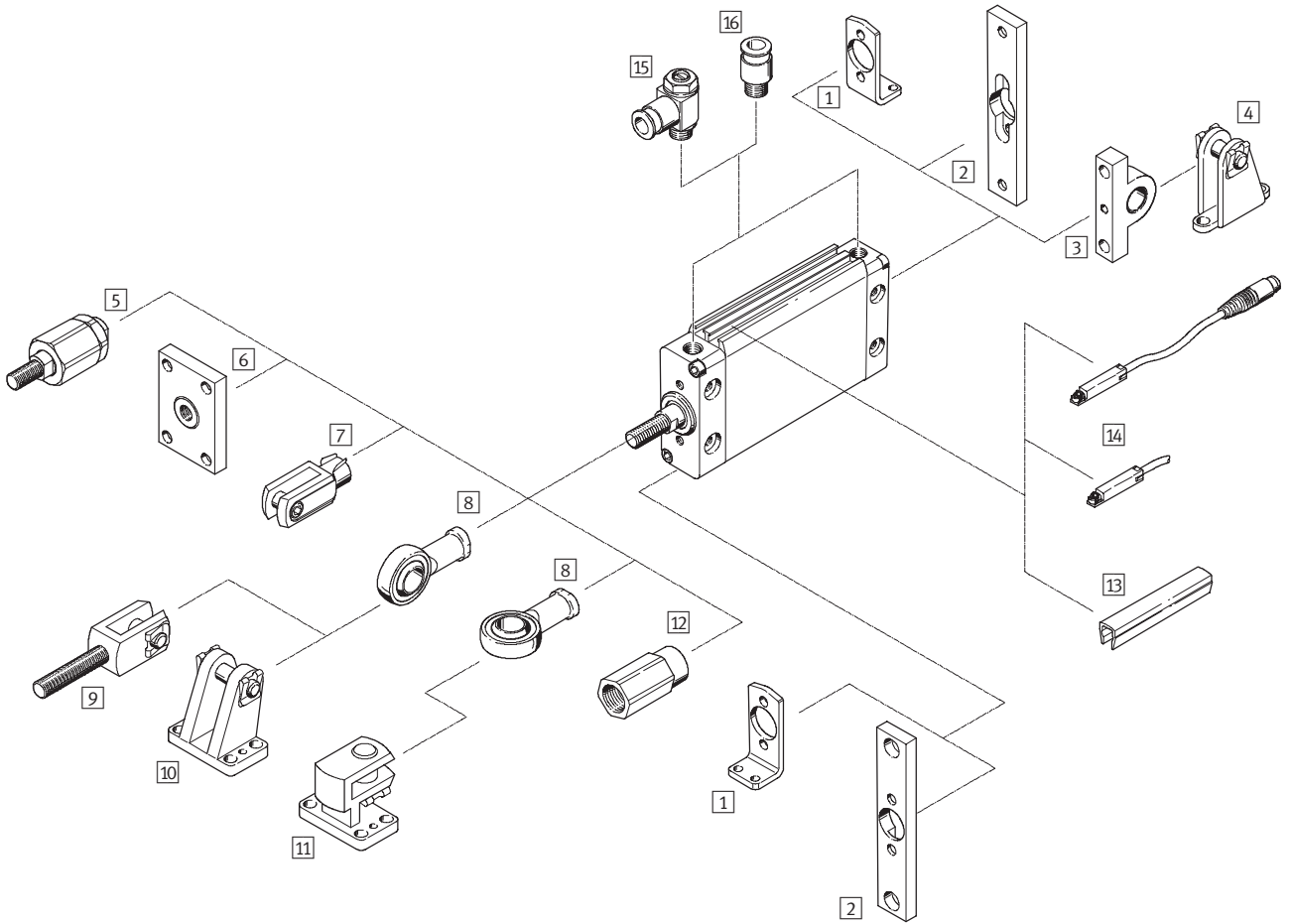
1 Mounting slot for proximity sensor SME/SMT-8

Ordering data

Type	Piston area [mm]	Stroke [mm]	Part No.	Type
Without end-position sensing				
	1.5x6.5	10	13 009	EZH-1,5/6,5-10
	2.5x9	10	164 991	EZH-2,5/9-10-B
		20	164 992	EZH-2,5/9-20-B
	5x20	25	164 993	EZH-5/20-25-B
50		164 994	EZH-5/20-50-B	
For end position sensing				
	10x40	40	164 990	EZH-10/40-40-A-B

Flat cylinders DZF

Peripherals overview



Cylinders with piston rod
Flat cylinders

2.3

Flat cylinders DZF

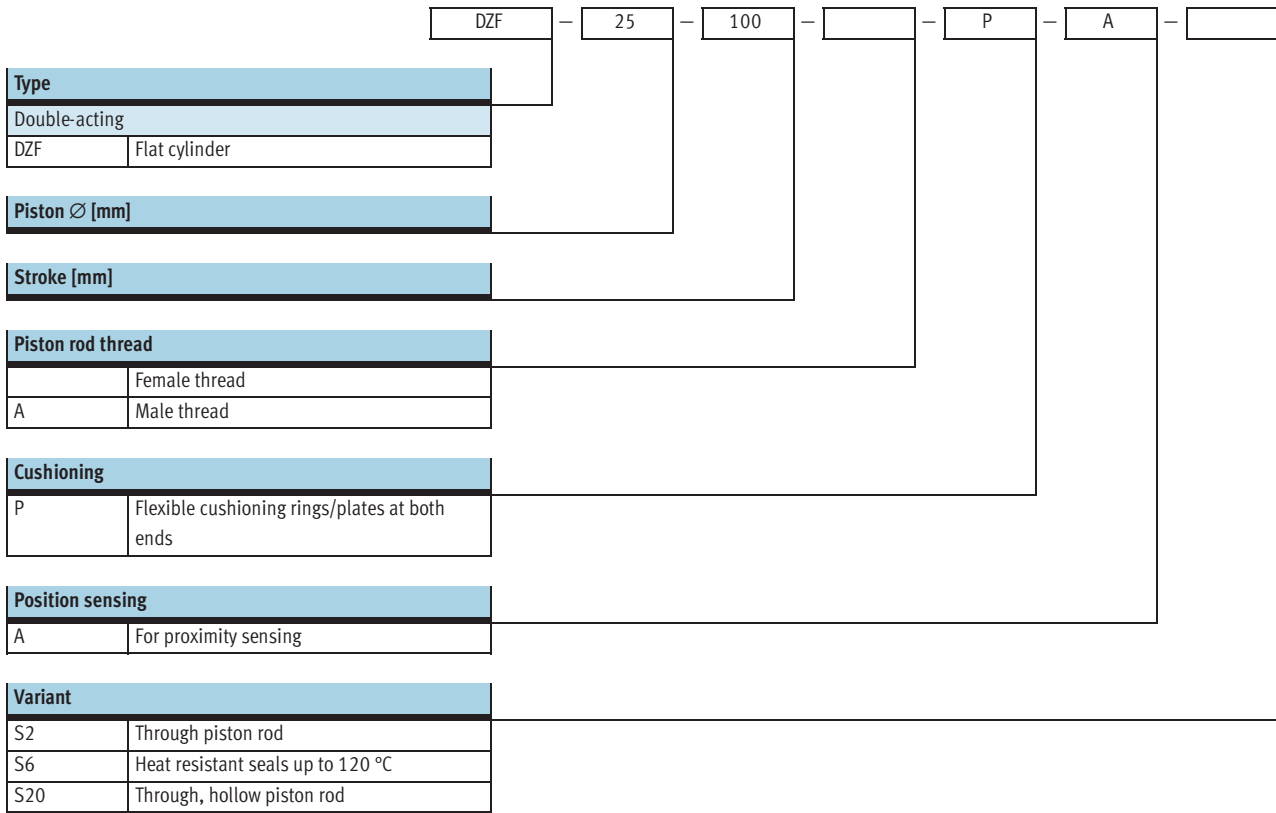
Peripherals overview

FESTO

Mounting attachments and accessories					
	Brief description	Piston Ø 16 ... 40 mm	Piston Ø 50 ... 63 mm	→ Page	
1	Foot mounting HZF	for bearing and end caps	■	■	1 / 2.3-19
2	Flange mounting FZF	for bearing and end caps	■	■	1 / 2.3-19
3	Swivel flange SZF	for end caps	■	■	1 / 2.3-20
4	Clevis foot LZF	–	■	■	1 / 2.3-20
5	Self-aligning rod coupler FK	for compensating radial and angular deviations	■	■	1 / 2.3-21
6	Coupling piece KSZ	for cylinders with a non-rotating piston rod to compensate for radial deviations	■	■	1 / 2.3-21
7	Rod clevis SG	permits a swivelling movement of the cylinder in one plane	■	■	1 / 2.3-21
8	Rod eye SGS	with spherical bearing	■	■	1 / 2.3-21
9	Rod clevis SGA	with male thread	■	■	1 / 2.3-21
10	Clevis foot LBG	–	■	■	1 / 2.3-21
11	Right-angle clevis foot LQG	–	■	■	1 / 2.3-21
12	Adapter AD	for a vacuum generator	■ S20	–	1 / 2.3-21
13	Slot cover ABP-5-S	to protect the sensor cable and keep dirt out of the sensor slots	■	■	1 / 2.3-37
14	Proximity sensor SME/SMT-8	can be integrated in the cylinder profile barrel	■	■	1 / 2.3-37
15	One-way flow control valve GRLA/GRLZ	to regulate speed	■	■	1 / 2.3-38
16	Push-in fitting QS	for connecting compressed air tubing with standard external diameters	■	■	Volume 3

Flat cylinders DZF

Type codes

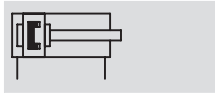


Flat cylinders DZF

Technical data

FESTO

Function



- Diameter
12 ... 63 mm
- Stroke length
10 ... 320 mm

- www.festo.com/en/Spare_parts_service

Variants



S2



S6



S20



General technical data								
Piston Ø		12	18	25	32	40	50	63
Pneumatic connection		M5	M5	M5	G $\frac{1}{8}$	G $\frac{1}{8}$	G $\frac{1}{4}$	G $\frac{1}{4}$
Piston rod thread	female	M3	M4	M5	M6	M8	M10	M10
	male	M6	M8	M10x1.25	M10x1.25	M12x1.25	M16x1.5	M16x1.5
Operating medium	Filtered compressed air, lubricated or unlubricated							
Constructional design	Piston							
	Piston rod							
Cushioning	Flexible cushioning rings/plates at both ends							
Position sensing	For proximity sensing							
Type of mounting	Via through holes							
	With female thread							
	With accessories							
Mounting position	Any							

Operating pressure [bar]									
Piston Ø		12	18	25	32	40	50	63	
		1.6 ... 10		1 ... 10					

Ambient conditions			
Variant	Basic version		S6
Ambient temperature ¹⁾ [°C]	0 ... +80		0 ... +120
Corrosion resistance class CRC ²⁾	2		2

1) Observe operating range of proximity sensors

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

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

Forces [N] and impact energy [J]								
Piston Ø		12	18	25	32	40	50	63
Theoretical force at 6 bar, advancing		68	162	295	483	754	1,178	1,870
	S2/S20	51	122	247	415	633	990	1,682
Theoretical force at 6 bar, retracting		51	122	247	415	633	990	1,682
	S2/S20	51	122	247	415	633	990	1,682
Max. impact energy at end positions		0.09	0.10	0.10	0.40	0.52	0.64	0.70

Flat cylinders DZF

Technical data



Torque [Nm] and torsional backlash [°]							
Piston Ø	12	18	25	32	40	50	63
Max. torque at the piston rod ¹⁾	0.1	0.2	0.5	0.8	1.0	1.2	1.5
Max. torsional backlash of the piston rod	±2.5	±1.2	±1.0	±0.8	±0.6	±0.5	±0.4

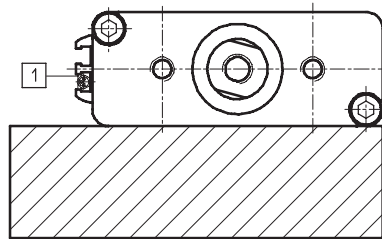
1) The max. torque must also be observed when fitting mounting attachments to the piston rod

Weights [g]							
Piston Ø	12	18	25	32	40	50	63
Product weight at 0 mm stroke	96	107	168	272	480	855	1,380
Additional weight per 10 mm stroke	9	13	18	24	40	64	91

Safety clearances for reliable switching function

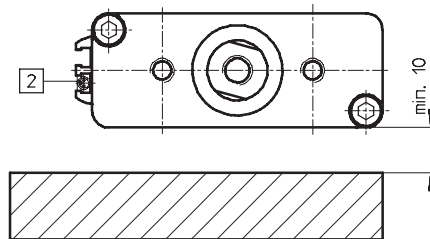
Cylinder – Ferritic components

If the cylinder is mounted on a ferritic component, piston position sensing is possible using proximity sensors SMT-8.



1) SMT-8...

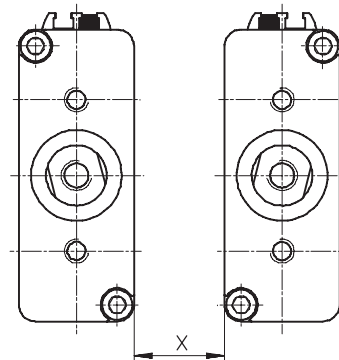
If a proximity sensor SME-8 is used, then with piston Ø 12 to 32 mm, a minimum clearance to the ferritic component of 10 mm must be maintained.



2) SME-8...

Cylinder – Cylinder

Safety clearance X must be maintained when connecting cylinders together in series, as the stray fields of the switching magnets can result in incorrect switching.

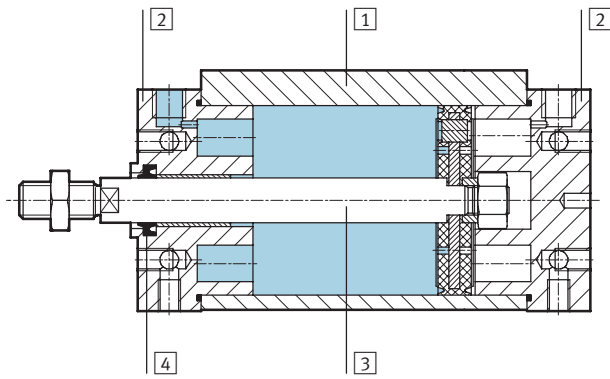


Piston Ø	12	18	25	32	40	50	63
Min. safety clearance X [mm]	SMT-8...	35		25	45		80
	SME-8...	50			45	65	50

Flat cylinders DZF

Technical data

Materials

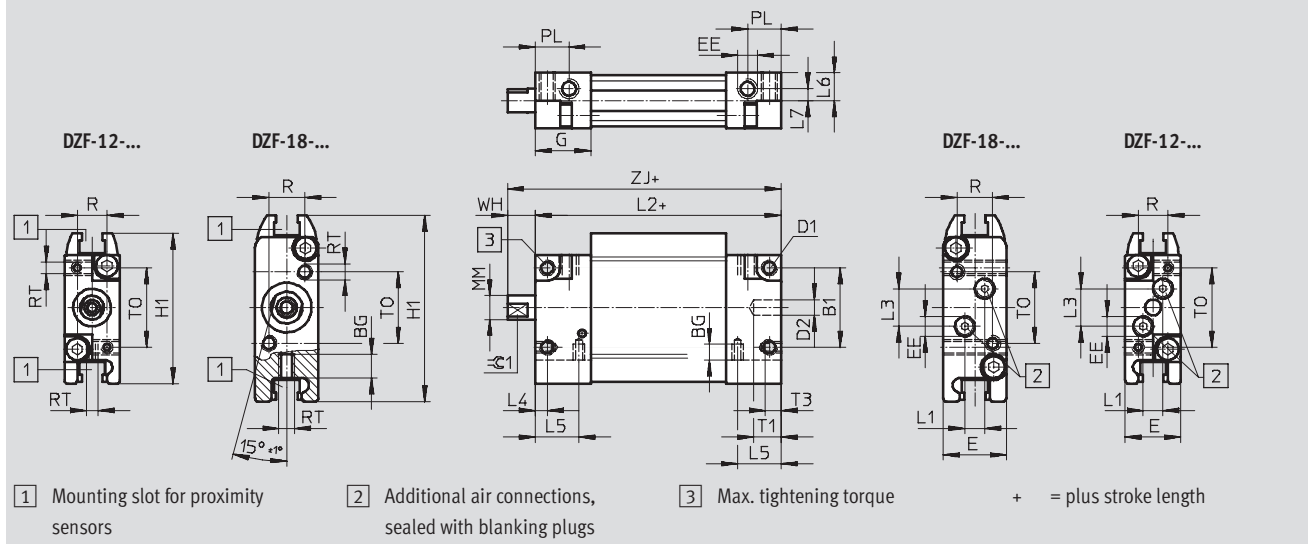


Flat cylinder	Basic version	S6
1 Cylinder barrel	Wrought aluminium alloy, anodised	Wrought aluminium alloy, anodised
2 Bearing end cap	Wrought aluminium alloy	Wrought aluminium alloy
3 Piston rod	∅ 12 ... 25	High-alloy stainless steel
	∅ 32 ... 63	High-alloy steel
4 Dynamic seals	Polyurethane	Fluorocarbon rubber

Dimensions – Basic version

Download CAD data → www.festo.com/en/engineering

∅ 12, 18



∅	B1	BG	D1	D2	E	EE	G	H1	L1	L2	L3	L4	L5
[mm]				∅ H9									
12	20	4	M4	4	14	M5	14	38	5	62	9.5	3	11
18	20	6	M4	4	16	M5	14	47	5	62	9.5	3.5	5

∅	L6	L7	MM	PL	R	RT	T1	T3	T0	WH	ZJ	≈C1	Max. tightening torque
[mm]			∅									h13	[Nm] +10%
12	7	3	6	8.5	7.5	M3	7	4	20	7	69	5	2.9
18	-	-	8	8.5	9	M4	7	6	18	7	69	7	2.9

Flat cylinders DZF

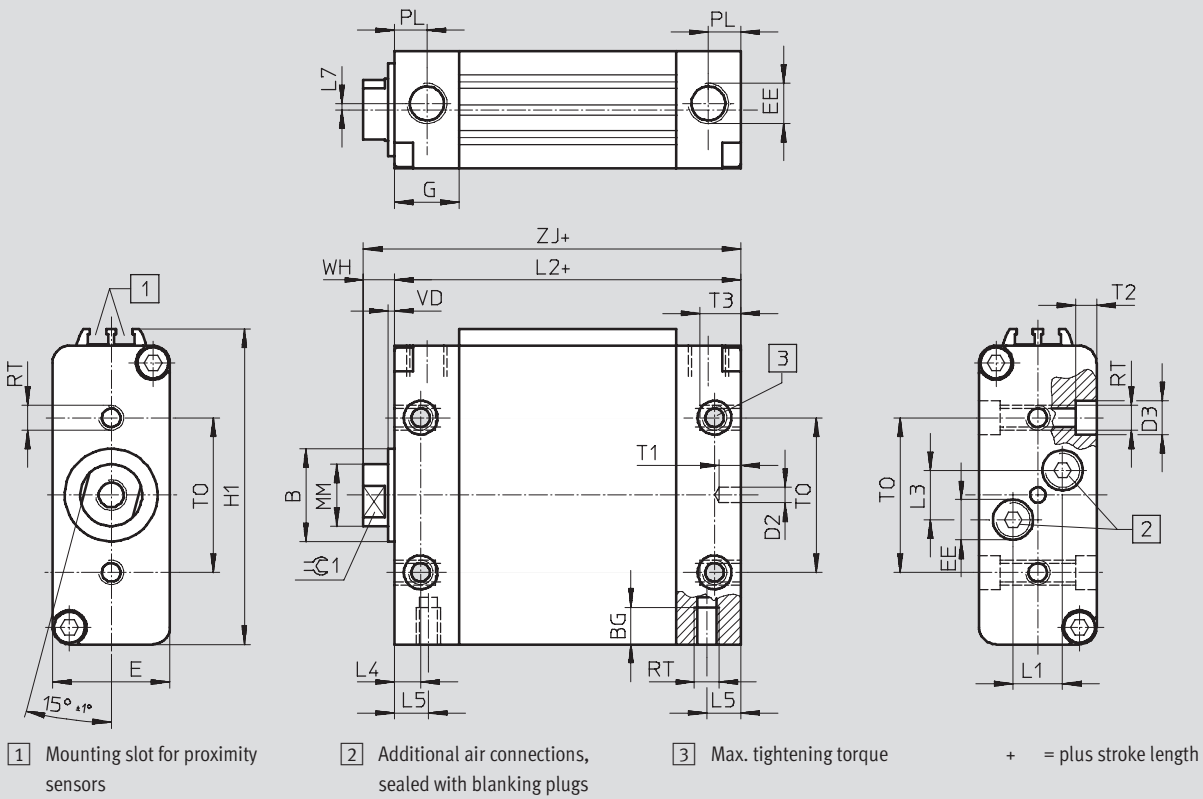
Technical data



Dimensions – Basic version

Download CAD data → www.festo.com/en/engineering

Piston Ø 25 ... 63



Ø	B	BG	D2	D3	E	EE	G	H1	L1	L2	L3	L4	L5
[mm]	Ø h9		Ø H9	Ø									
25	16	8	4	8	20	M5	12	56	6	62	10	5	5
32	20	9	4	10	24	G $\frac{1}{8}$	17	65	7.5	72	14.5	8.5	8.5
40	25	9	4	10	30	G $\frac{1}{8}$	17	82	7.5	76	14.5	8.5	8.5
50	30	12	5	11	38	G $\frac{1}{4}$	21	102	16	82	16	8.5	8.5
63	30	14	5	15	50	G $\frac{1}{4}$	21	126.5	19	82	21	8.5	8.5

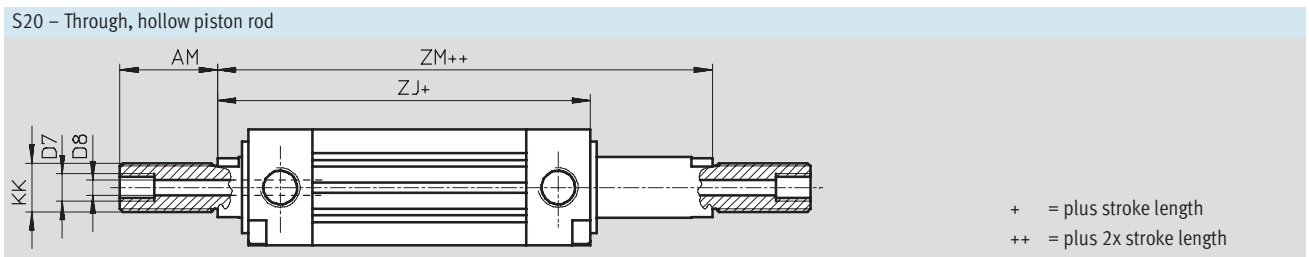
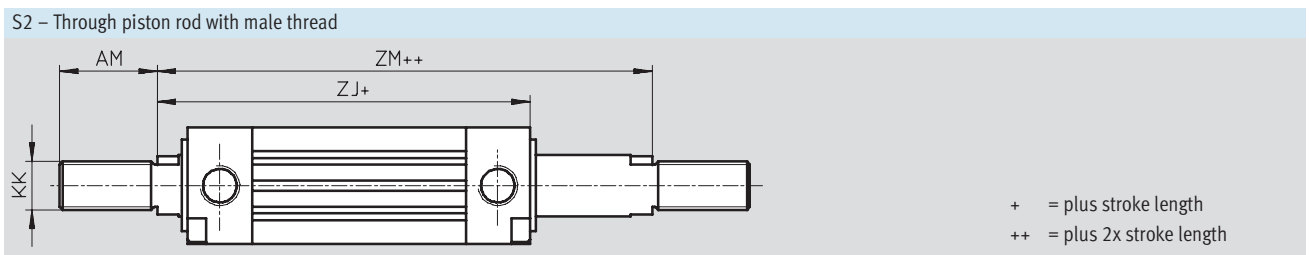
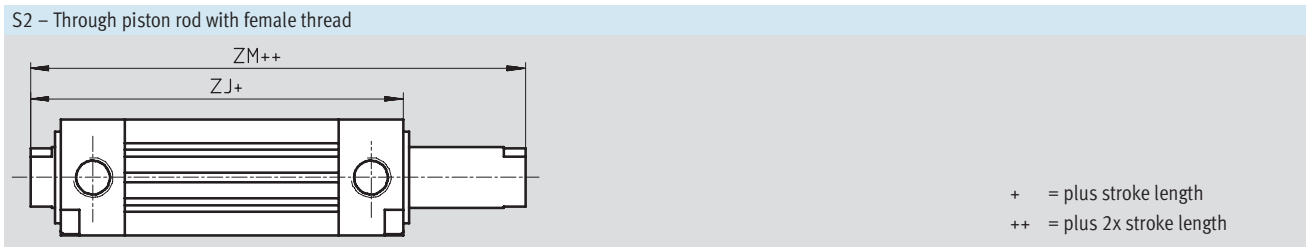
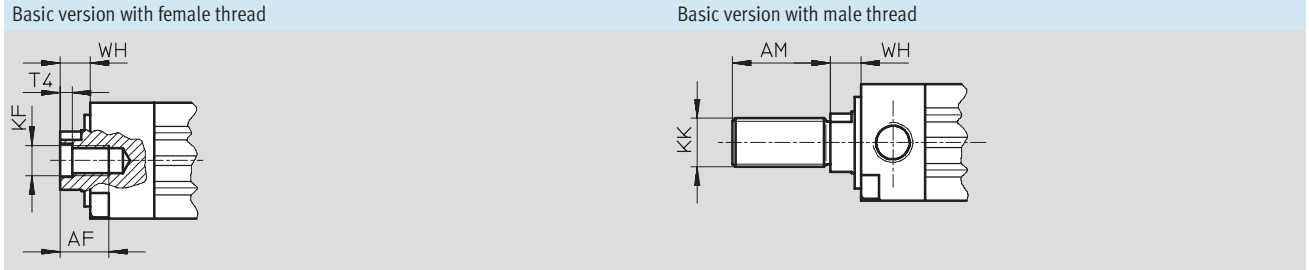
Ø	L7	MM	PL	RT	T1	T2	T3	T0	VD	WH	ZJ	≈C1	Max. tightening torque [Nm] +10%
[mm]		Ø										h13	
25	–	10	6	M5	7	4	8	25	2	8	70	9	4
32	1.5	12	8.5	M6	7	4	9	32	2	8	80	10	9.9
40	–	16	8.5	M6	7	5	9	40	2	9	85	13	9.9
50	–	20	10.5	M8	7	6	12	50	2	10	92	17	20
63	–	20	10.5	M10	7	6	14	60	2	10	92	17	35

Flat cylinders DZF

Technical data



Dimensions – Variants Download CAD data → www.festo.com/en/engineering



∅	AF	AM	D7	D8 ∅	KF	KK	T4	WH	ZJ	ZM
12	8	16	–	1.8	M3	M6	1.5	7	69	76
18	10	20	–	2.8	M4	M8	1.5	7	69	76
25	12	22	–	3.8	M5	M10x1.25	2	8	70	78
32	14	22	–	4.5	M6	M10x1.25	2.6	8	80	88
40	16	24	–	6	M8	M12x1.25	3.3	9	85	94
50	20	32	G1/8	8	M10	M16x1.5	4.7	10	92	102
63	20	32	G1/8	8	M10	M16x1.5	4.7	10	92	102


Flat cylinders DZF

Technical data

FESTO

Cylinders with piston rod
Flat cylinders

2.3


Ordering data – Basic version						
Type	Piston Ø [mm]	Stroke [mm]	Piston rod with female thread		Piston rod with male thread	
			Part No.	Type	Part No.	Type
	12	10	164 003	DZF-12-10-P-A	161 224	DZF-12-10-A-P-A
		25	164 004	DZF-12-25-P-A	161 225	DZF-12-25-A-P-A
		40	164 005	DZF-12-40-P-A	161 226	DZF-12-40-A-P-A
		50	164 006	DZF-12-50-P-A	161 227	DZF-12-50-A-P-A
		80	164 007	DZF-12-80-P-A	161 228	DZF-12-80-A-P-A
		100	164 008	DZF-12-100-P-A	161 229	DZF-12-100-A-P-A
		125	164 009	DZF-12-125-P-A	161 230	DZF-12-125-A-P-A
		160	164 010	DZF-12-160-P-A	161 231	DZF-12-160-A-P-A
		200	164 011	DZF-12-200-P-A	161 232	DZF-12-200-A-P-A
	18	10	164 015	DZF-18-10-P-A	161 237	DZF-18-10-A-P-A
		25	164 016	DZF-18-25-P-A	161 238	DZF-18-25-A-P-A
		40	164 017	DZF-18-40-P-A	161 239	DZF-18-40-A-P-A
		50	164 018	DZF-18-50-P-A	161 240	DZF-18-50-A-P-A
		80	164 019	DZF-18-80-P-A	161 241	DZF-18-80-A-P-A
		100	164 020	DZF-18-100-P-A	161 242	DZF-18-100-A-P-A
		125	164 021	DZF-18-125-P-A	161 243	DZF-18-125-A-P-A
		160	164 022	DZF-18-160-P-A	161 244	DZF-18-160-A-P-A
		200	164 023	DZF-18-200-P-A	161 245	DZF-18-200-A-P-A
	25	10	164 027	DZF-25-10-P-A	161 250	DZF-25-10-A-P-A ¹⁾
		25	164 028	DZF-25-25-P-A	161 251	DZF-25-25-A-P-A ¹⁾
		40	164 029	DZF-25-40-P-A	161 252	DZF-25-40-A-P-A ¹⁾
		50	164 030	DZF-25-50-P-A	161 253	DZF-25-50-A-P-A ¹⁾
		80	164 031	DZF-25-80-P-A	161 254	DZF-25-80-A-P-A ¹⁾
		100	164 032	DZF-25-100-P-A	161 255	DZF-25-100-A-P-A ¹⁾
		125	164 033	DZF-25-125-P-A	161 256	DZF-25-125-A-P-A ¹⁾
		160	164 034	DZF-25-160-P-A	161 257	DZF-25-160-A-P-A ¹⁾
		200	164 035	DZF-25-200-P-A	161 258	DZF-25-200-A-P-A ¹⁾
	32	10	164 039	DZF-32-10-P-A	161 263	DZF-32-10-A-P-A ¹⁾
		25	164 040	DZF-32-25-P-A	161 264	DZF-32-25-A-P-A ¹⁾
		40	164 041	DZF-32-40-P-A	161 265	DZF-32-40-A-P-A ¹⁾
		50	164 042	DZF-32-50-P-A	161 266	DZF-32-50-A-P-A ¹⁾
		80	164 043	DZF-32-80-P-A	161 267	DZF-32-80-A-P-A ¹⁾
100		164 044	DZF-32-100-P-A	161 268	DZF-32-100-A-P-A ¹⁾	
125		164 045	DZF-32-125-P-A	161 269	DZF-32-125-A-P-A ¹⁾	
160		164 046	DZF-32-160-P-A	161 270	DZF-32-160-A-P-A ¹⁾	
200		164 047	DZF-32-200-P-A	161 271	DZF-32-200-A-P-A ¹⁾	
250		164 048	DZF-32-250-P-A	161 272	DZF-32-250-A-P-A ¹⁾	
320		164 049	DZF-32-320-P-A	161 273	DZF-32-320-A-P-A ¹⁾	

1) The scope of delivery includes a hexagonal nut for the piston rod thread

Flat cylinders DZF

Technical data

FESTO

Ordering data – Basic version						
Type	Piston Ø [mm]	Stroke [mm]	Piston rod with female thread		Piston rod with male thread	
			Part No.	Type	Part No.	Type
	40	10	164 053	DZF-40-10-P-A	161 278	DZF-40-10-A-P-A ¹⁾
		25	164 054	DZF-40-25-P-A	161 279	DZF-40-25-A-P-A ¹⁾
		40	164 055	DZF-40-40-P-A	161 280	DZF-40-40-A-P-A ¹⁾
		50	164 056	DZF-40-50-P-A	161 281	DZF-40-50-A-P-A ¹⁾
		80	164 057	DZF-40-80-P-A	161 282	DZF-40-80-A-P-A ¹⁾
		100	164 058	DZF-40-100-P-A	161 283	DZF-40-100-A-P-A ¹⁾
		125	164 059	DZF-40-125-P-A	161 284	DZF-40-125-A-P-A ¹⁾
		160	164 060	DZF-40-160-P-A	161 285	DZF-40-160-A-P-A ¹⁾
		200	164 061	DZF-40-200-P-A	161 286	DZF-40-200-A-P-A ¹⁾
		250	164 062	DZF-40-250-P-A	161 287	DZF-40-250-A-P-A ¹⁾
	320	164 063	DZF-40-320-P-A	161 288	DZF-40-320-A-P-A ¹⁾	
	50	10	164 067	DZF-50-10-P-A	161 293	DZF-50-10-A-P-A ¹⁾
		25	164 068	DZF-50-25-P-A	161 294	DZF-50-25-A-P-A ¹⁾
		40	164 069	DZF-50-40-P-A	161 295	DZF-50-40-A-P-A ¹⁾
		50	164 070	DZF-50-50-P-A	161 296	DZF-50-50-A-P-A ¹⁾
		80	164 071	DZF-50-80-P-A	161 297	DZF-50-80-A-P-A ¹⁾
		100	164 072	DZF-50-100-P-A	161 298	DZF-50-100-A-P-A ¹⁾
		125	164 073	DZF-50-125-P-A	161 299	DZF-50-125-A-P-A ¹⁾
		160	164 074	DZF-50-160-P-A	161 300	DZF-50-160-A-P-A ¹⁾
		200	164 075	DZF-50-200-P-A	161 301	DZF-50-200-A-P-A ¹⁾
		250	164 076	DZF-50-250-P-A	161 302	DZF-50-250-A-P-A ¹⁾
	320	164 077	DZF-50-320-P-A	161 303	DZF-50-320-A-P-A ¹⁾	
	63	10	164 081	DZF-63-10-P-A	161 308	DZF-63-10-A-P-A ¹⁾
		25	164 082	DZF-63-25-P-A	161 309	DZF-63-25-A-P-A ¹⁾
		40	164 083	DZF-63-40-P-A	161 310	DZF-63-40-A-P-A ¹⁾
		50	164 084	DZF-63-50-P-A	161 311	DZF-63-50-A-P-A ¹⁾
		80	164 085	DZF-63-80-P-A	161 312	DZF-63-80-A-P-A ¹⁾
		100	164 086	DZF-63-100-P-A	161 313	DZF-63-100-A-P-A ¹⁾
		125	164 087	DZF-63-125-P-A	161 314	DZF-63-125-A-P-A ¹⁾
		160	164 088	DZF-63-160-P-A	161 315	DZF-63-160-A-P-A ¹⁾
		200	164 089	DZF-63-200-P-A	161 316	DZF-63-200-A-P-A ¹⁾
		250	164 090	DZF-63-250-P-A	161 317	DZF-63-250-A-P-A ¹⁾
	320	164 091	DZF-63-320-P-A	161 318	DZF-63-320-A-P-A ¹⁾	

1) The scope of delivery includes a hexagonal nut for the piston rod thread





Flat cylinders DZF

Technical data

FESTO

Cylinders with piston rod
Flat cylinders

2.3

Ordering data – Variants						
Type	Piston Ø [mm]	Stroke [mm]	Piston rod with female thread		Piston rod with male thread	
			Part No.	Type	Part No.	Type
Variable stroke						
	12	10 ... 200	164 000	DZF-12-...-P-A	161 220	DZF-12-...-A-P-A
	18	10 ... 200	164 012	DZF-18-...-P-A	161 233	DZF-18-...-A-P-A
	25	10 ... 200	164 024	DZF-25-...-P-A	161 246	DZF-25-...-A-P-A¹⁾
	32	10 ... 320	164 036	DZF-32-...-P-A	161 259	DZF-32-...-A-P-A¹⁾
	40	10 ... 320	164 050	DZF-40-...-P-A	161 274	DZF-40-...-A-P-A¹⁾
	50	10 ... 320	164 064	DZF-50-...-P-A	161 289	DZF-50-...-A-P-A¹⁾
	63	10 ... 320	164 078	DZF-63-...-P-A	161 304	DZF-63-...-A-P-A¹⁾
S2 – Through piston rod						
	12	10 ... 200	164 001	DZF-12-...-P-A-S2	161 221	DZF-12-...-A-P-A-S2
	18	10 ... 200	164 013	DZF-18-...-P-A-S2	161 234	DZF-18-...-A-P-A-S2
	25	10 ... 200	164 025	DZF-25-...-P-A-S2	161 247	DZF-25-...-A-P-A-S2¹⁾
	32	10 ... 320	164 037	DZF-32-...-P-A-S2	161 260	DZF-32-...-A-P-A-S2¹⁾
	40	10 ... 320	164 051	DZF-40-...-P-A-S2	161 275	DZF-40-...-A-P-A-S2¹⁾
	50	10 ... 320	164 065	DZF-50-...-P-A-S2	161 290	DZF-50-...-A-P-A-S2¹⁾
	63	10 ... 320	164 079	DZF-63-...-P-A-S2	161 305	DZF-63-...-A-P-A-S2¹⁾
S6 – Heat resistant seals up to 120 °C						
	12	10 ... 200	164 002	DZF-12-...-P-A-S6	161 223	DZF-12-...-A-P-A-S6
	18	10 ... 200	164 014	DZF-18-...-P-A-S6	161 236	DZF-18-...-A-P-A-S6
	25	10 ... 200	164 026	DZF-25-...-P-A-S6	161 249	DZF-25-...-A-P-A-S6¹⁾
	32	10 ... 320	164 038	DZF-32-...-P-A-S6	161 262	DZF-32-...-A-P-A-S6¹⁾
	40	10 ... 320	164 052	DZF-40-...-P-A-S6	161 277	DZF-40-...-A-P-A-S6¹⁾
	50	10 ... 320	164 066	DZF-50-...-P-A-S6	161 292	DZF-50-...-A-P-A-S6¹⁾
	63	10 ... 320	164 080	DZF-63-...-P-A-S6	161 307	DZF-63-...-A-P-A-S6¹⁾
S20 – Through, hollow piston rod						
	12	10 ... 200	-	-	161 222	DZF-12-...-A-P-A-S20
	18	10 ... 200			161 235	DZF-18-...-A-P-A-S20
	25	10 ... 200			161 248	DZF-25-...-A-P-A-S20¹⁾
	32	10 ... 320			161 261	DZF-32-...-A-P-A-S20¹⁾
	40	10 ... 320			161 276	DZF-40-...-A-P-A-S20¹⁾
	50	10 ... 320			161 291	DZF-50-...-A-P-A-S20¹⁾
	63	10 ... 320			161 306	DZF-63-...-A-P-A-S20¹⁾

1) The scope of delivery includes a hexagonal nut for the piston rod thread

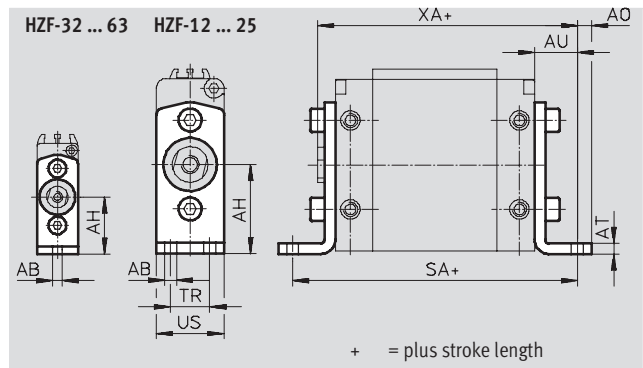
Flat cylinders DZF

Accessories



Foot mounting HZF

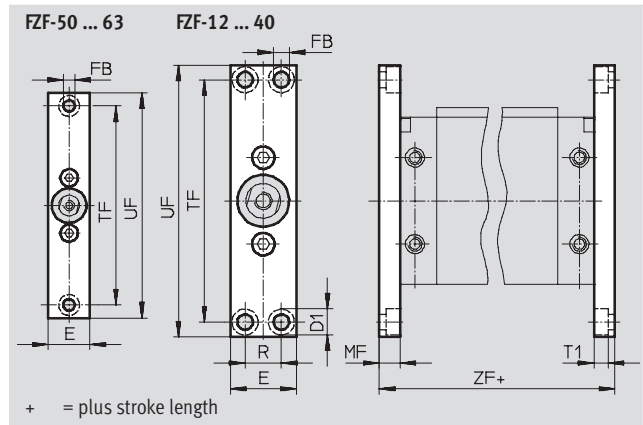
Material:
Steel



Dimensions and ordering data												
For \varnothing	AB \varnothing	AH	AO	AT	AU	SA	TR	US	XA	Weight [g]	Part No.	Type
12	4.5	25	5	2	13	88	-	14	82	8	161 804	HZF-12
18	5.5	29	5	2	17	96	-	16	86	10	161 805	HZF-18
25	5.5	28	7	3	16	94	-	20	86	21	161 806	HZF-25
32	5.5	32	5.5	3	18	108	13	24	98	27	161 807	HZF-32
40	5.5	40	7	4	20	116	16	30	105	57	161 808	HZF-40
50	6.6	50	8	4	24	130	22	38	116	97	161 809	HZF-50
63	9	63	10	4	27	136	30	50	119	167	161 810	HZF-63

Flange mounting FZF

Material:
Wrought aluminium alloy



Dimensions and ordering data												
For \varnothing	D1 \varnothing	E	FB \varnothing	MF	R	T1	TF	UF	ZF	Weight [g]	Part No.	Type
12	8	14	4.5	8	-	4.5	75	90	78	20	161 811	FZF-12
18	8	16	4.5	8	-	4.5	80	94	78	24	161 812	FZF-18
25	10	20	5.5	10	-	5.7	100	112	82	50	161 813	FZF-25
32	11	24	6.6	10	-	6.5	115	130	92	68	161 814	FZF-32
40	11	30	6.6	10	-	6.3	132	146	96	98	161 815	FZF-40
50	15	38	9	12	21	8.3	140	157	106	147	161 816	FZF-50
63	15	50	9	15	33	8.3	140	157	112	259	161 817	FZF-63

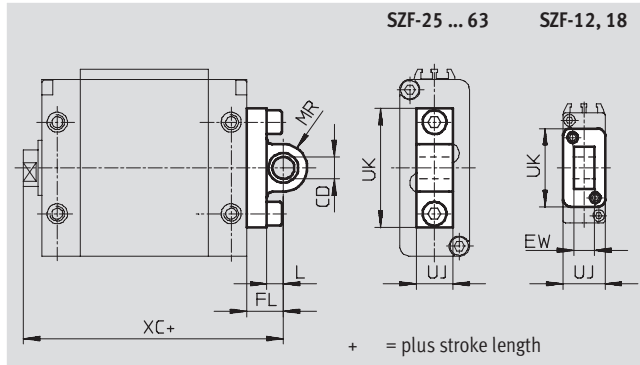
Flat cylinders DZF

Accessories



Swivel flange SZF

Material:
Corrosion resistant cast steel

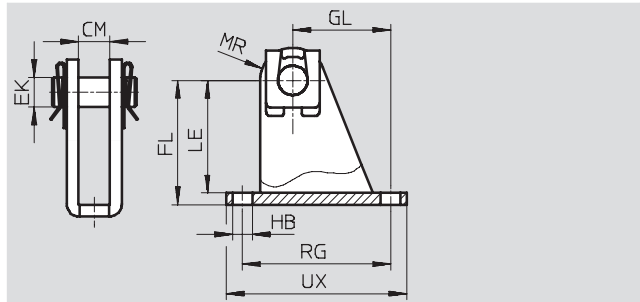


Dimensions and ordering data											
For \varnothing	CD \varnothing H9	EW h12	FL	L	MR	UJ	UK	XC	CRC ¹⁾	Part No.	Type
12	8	7	16	13	7	14	26	85	2	161 818	SZF-12
18	8	7	18	15	7	16	26	87	2	161 819	SZF-18
25	8	-	14	8	7.5	9	37	84	2	161 820	SZF-25
32	10	-	15	6	10	10.5	44	95	2	161 821	SZF-32
40	12	-	18	9	13	10.5	52	103	2	161 822	SZF-40
50	12	-	20	9	13	20	65	112	2	161 823	SZF-50
63	16	-	24	13	17	25	78	116	2	161 824	SZF-63

1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating agents.

Clevis foot LZF

Material:
Steel

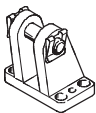
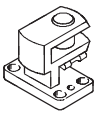






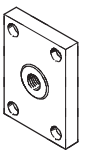

Dimensions and ordering data											
For \varnothing	CM	EK \varnothing H8	FL	GL	HB \varnothing	LE	MR	RG	UX	Part No.	Type
12	7.1 +0.4	8	32 +0.4/-0.2	18	4.5	29	8	30	37	163 962	LZF-12/18
18	7.1 +0.4	8	32 +0.4/-0.2	18	4.5	29	8	30	37	163 962	LZF-12/18
25	9.1 +0.4	8	35 +0.4/-0.2	25.5	5.5	32	9.5	40	49	163 963	LZF-25
32	10.6 +0.4	10	42 +0.4/-0.2	33	6.6	38	11	50	60	163 964	LZF-32
40	10.6 +0.4	12	51 +0.4/-0.2	29.5	6.6	47	14	50	60	163 965	LZF-40
50	20.1 +0.5	12	55 +0.6/-0.2	24	9	50	14	30	46	163 966	LZF-50
63	25.1 +0.5	16	68 +0.6/-0.2	32	11	63	18	40	60	163 967	LZF-63

Flat cylinders DZF

Accessories

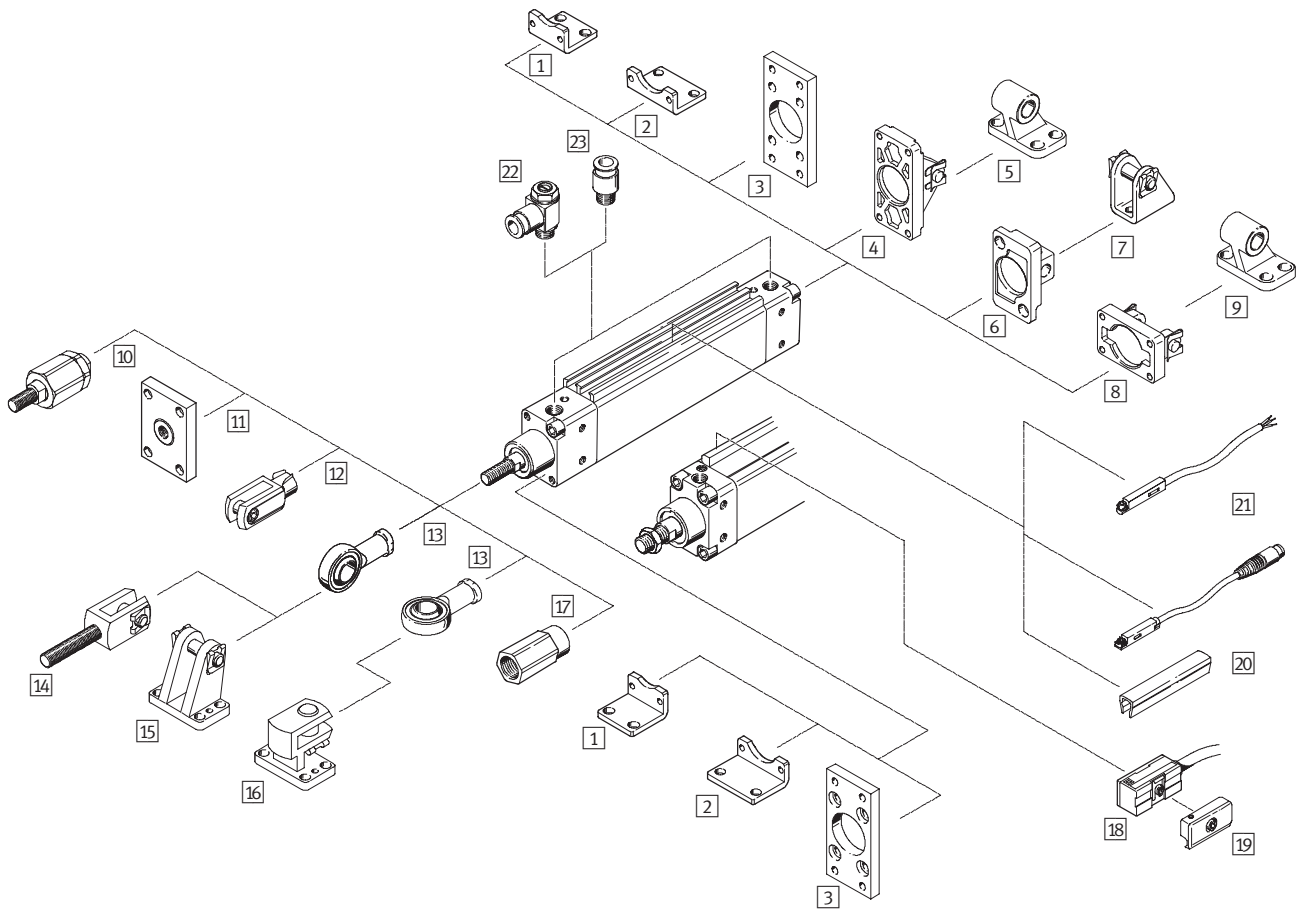
FESTO

Ordering data – Mounting attachments				Technical data → 1 / 10.1-2			
Designation	For Ø	Part No.	Type	Designation	For Ø	Part No.	Type
Clevis foot LBG				Right-angle clevis foot LQG			
	32	31 761	LBG-32		32	31 768	LQG-32
	40	31 762	LBG-40		40	31 769	LQG-40
	50	31 763	LBG-50		50	31 770	LQG-50
	63	31 764	LBG-63		63	31 771	LQG-63

Ordering data – Piston rod attachments				Technical data → 1 / 10.3-2			
Designation	For Ø	Part No.	Type	Designation	For Ø	Part No.	Type
Rod eye SGS				Rod clevis SGA			
	12	9 254	SGS-M6		12	–	–
	18	9 255	SGS-M8		18	–	–
	25	9 261	SGS-M10x1,25		25	32 954	SGA-M10x1,25
	32				32		
	40	9 262	SGS-M12x1,25		40	10 767	SGA-M12x1,25
	50	9 263	SGS-M16x1,5		50	10 768	SGA-M16x1,5
	63				63		
Rod clevis SG				Self-aligning rod coupler FK			
	12	3 110	SG-M6		12	2 061	FK-M6
	18	3 111	SG-M8		18	2 062	FK-M8
	25	6 144	SG-M10x1,25		25	6 140	FK-M10x1,25
	32				32		
	40	6 145	SG-M12x1,25		40	6 141	FK-M12x1,25
	50	6 146	SG-M16x1,5		50	6 142	FK-M16x1,5
	63				63		
Coupling piece KSZ				Adapter AD			
	12	36 123	KSZ-M6		12	157 328	AD-M6-M5
	18	36 124	KSZ-M8			157 329	AD-M6-1/8
	25	36 125	KSZ-M10x1,25			157 330	AD-M6-1/4
	32				18	157 331	AD-M8-1/8
	40	36 126	KSZ-M12x1,25			157 332	AD-M8-1/4
	50	36 127	KSZ-M16x1,5		25	157 333	AD-M10x1,25-1/8
	63				32	157 334	AD-M10x1,25-1/4
					40	160 256	AD-M12x1,25-1/4
						160 257	AD-M12x1,25-3/8

Flat cylinders DZH

Peripherals overview



Cylinders with piston rod
Flat cylinders

2.3

Flat cylinders DZH

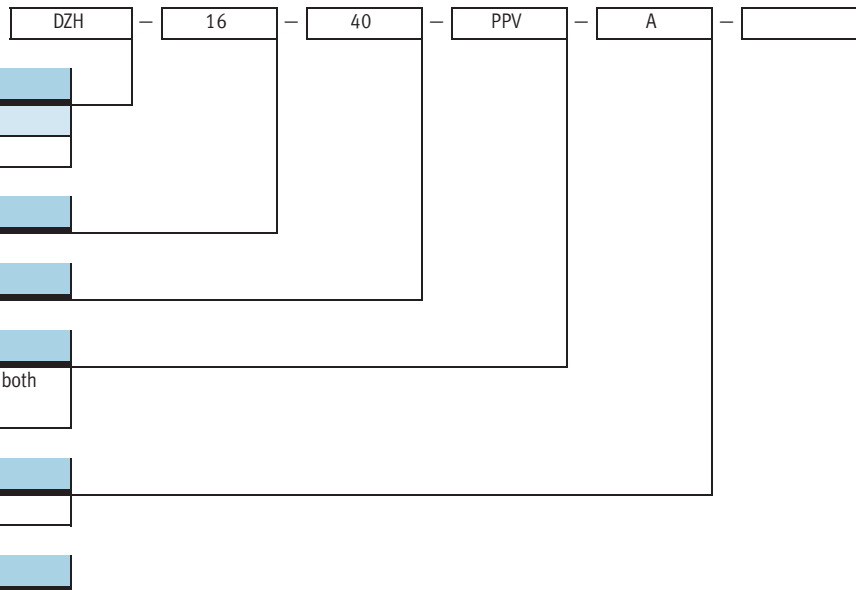
Peripherals overview

FESTO

Mounting attachments and accessories						
	Brief description	Piston Ø 16 ... 20	Piston Ø 25	Piston Ø 32 ... 63	→ Page	
1	Foot mounting, narrow HZS	for bearing and end caps	■	■	■	1 / 2.3-31
2	Foot mounting, wide HZB	for bearing and end caps	■	■	■	1 / 2.3-32
3	Flange mounting FZS	for bearing and end caps	■	■	■	1 / 2.3-31
4	Swivel flange, narrow SZS	for end caps	-	-	■	1 / 2.3-33
5	Clevis foot LBZB/LBZS	-	-	■	■	1 / 2.3-34
6	Swivel flange, narrow SZSB	for end caps	■	■	-	1 / 2.3-32
7	Clevis foot LBN	-	■	■	-	1 / 2.3-35
8	Swivel flange, wide SZB	for end caps	-	-	■	1 / 2.3-33
9	Clevis foot LN	-	-	■	■	1 / 2.3-35
10	Self-aligning rod coupler FK	for compensating radial and angular deviations	■	■	■	1 / 2.3-35
11	Coupling piece KSZ	for cylinders with a non-rotating piston rod to compensate for radial deviations	■	■	■	1 / 2.3-35
12	Rod clevis SG	permits a swivelling movement of the cylinder in one plane	■	■	■	1 / 2.3-35
13	Rod eye SGS	with spherical bearing	■	■	■	1 / 2.3-35
14	Rod clevis SGA	with male thread	■	■	■	1 / 2.3-35
15	Clevis foot LBG	-	■	■	■	1 / 2.3-35
16	Right-angle clevis foot LQG	-	■	■	■	1 / 2.3-35
17	Adapter AD	for the vacuum generator	■ S20	■ S20	-	1 / 2.3-35
18	Proximity sensors SMEO-1/SMT0-1/SMPO-1	-	-	-	■	1 / 2.3-36
19	Mounting kit SMB-1	-	-	-	■	1 / 2.3-36
20	Slot cover ABP-5-S	to protect the sensor cable and keep dirt out of the sensor slots	■	■	-	1 / 2.3-37
21	Proximity sensors SME/SMT-8	can be integrated in the cylinder profile barrel	■	■	-	1 / 2.3-37
22	One-way flow control valve GRLA/GRLZ	to regulate speed	■	■	■	1 / 2.3-38
23	Push-in fitting QS	for connecting compressed air tubing with standard external diameters	■	■	■	Volume 3

Flat cylinders DZH

Type codes



Type	
Double-acting	
DZH	Flat cylinder

Piston Ø [mm]
16

Stroke [mm]
40

Cushioning	
PPV	Pneumatic cushioning adjustable at both ends

Position sensing	
A	For proximity sensing

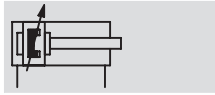
Variant	
S2	Through piston rod
S6	Heat resistant seals up to 120 °C
S20	Through, hollow piston rod

Flat cylinders DZH

Technical data

FESTO

Function

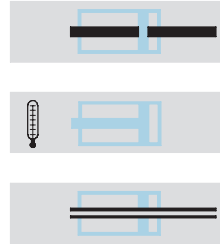


- - Diameter
16 ... 63
- - Stroke length
10 ... 1,000

- - www.festo.com/en/Spare_parts_service

Wearing parts kits
→ 1 / 2.3-30

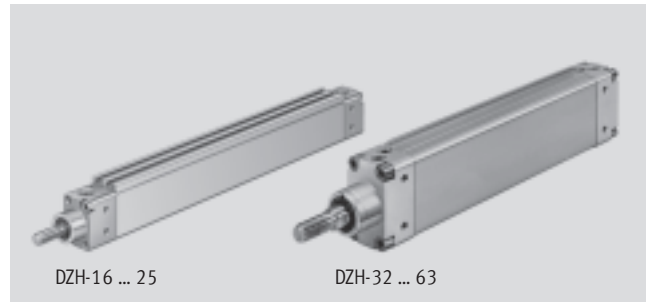
Variants



S2

S6

S20



DZH-16 ... 25

DZH-32 ... 63

General technical data							
Piston Ø	16	20	25	32	40	50	63
Pneumatic connection	M5	G $\frac{1}{8}$	G $\frac{1}{8}$	G $\frac{1}{8}$	G $\frac{1}{4}$	G $\frac{1}{4}$	G $\frac{3}{8}$
End of piston rod Male thread	M6	M8	M10x1.25	M10x1.25	M12x1.25	M16x1.5	M16x1.5
Operating medium	Filtered compressed air, lubricated or unlubricated						
Constructional design	Piston						
	Piston rod						
Protection against torsion/guide	Oval piston						
Cushioning	Pneumatic cushioning adjustable at both ends						
Cushioning length [mm]	14	17	17	19	21	23	23
Position sensing	For proximity sensing						
Type of mounting	With female thread						
	With accessories						
Mounting position	Any						


Operating pressure [bar]							
Piston Ø	16	20	25	32	40	50	63
	1.0 ... 10			0.6 ... 10			

Ambient conditions		
Variant	Basic version	S6
Ambient temperature ¹⁾ [°C]	-20 ... +80	0 ... +120
Corrosion resistance class CRC ²⁾	2	2

1) Observe operating range of proximity sensors

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

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


Pneumatic sizing using ProPneu
www.festo.com/en/engineering

Flat cylinders DZH

Technical data



Forces [N] and torques [Nm]							
Piston Ø	16	20	25	32	40	50	63
Theoretical force at 6 bar, advancing		121	188	295	483	754	1,178
	S2/S20	104	158	247	415	633	989
Theoretical force at 6 bar, retracting		104	158	247	415	633	989
	S2/S20	104	158	247	415	633	989
Max. torque at the piston rod ¹⁾	0.5	0.6	0.8	1.0	1.2	1.7	2.0

1) The max. torque must also be observed when fitting mounting attachments to the piston rod

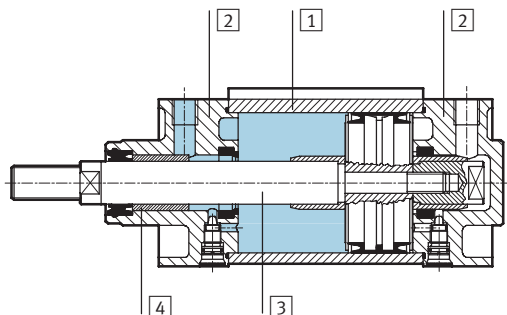
Weights [g]							
Piston Ø	16	20	25	32	40	50	63
Product weight at 0 mm stroke	140	230	330	500	820	1,200	1,690
Additional weight per 10 mm stroke	11	15	21	30	40	60	80

Minimum stroke length [mm] for contactless position sensing with one proximity sensor				
Piston Ø	32	40	50	63
SMEO-1/SMT0-1				
Plug	10			
Cable				

Minimum stroke length [mm] for contactless position sensing with two proximity sensors					
Piston Ø	32	40	50	63	
SMEO-1					
Plug	outlet towards caps	86	87	90	91
	outlet towards center	46	48	49	50
Cable	outlet towards caps	63	64	67	68
	outlet towards center	48	50	51	53
SMT0-1					
Plug	outlet towards caps	105	107	106	107
	outlet towards center	not possible as the plug would cover the pneumatic port			
Cable	outlet towards caps	82	84	85	86
	outlet towards center	19	21	20	22

Materials

Sectional view



Flat cylinder	Basic version	S6
1) Cylinder barrel	Anodised aluminium	Anodised aluminium
2) Bearing end cap	Aluminium	Aluminium
3) Piston rod	Ø 16 ... 25	Stainless steel
	Ø 32 ... 63	High-alloy steel
4) Dynamic seals	Polyurethane	Fluorocarbon rubber

Flat cylinders DZH

Technical data



Dimensions Download CAD data → www.festo.com/en/engineering
Basic version

1 Socket head screw with female thread
2 Regulating screw for adjustable end-position cushioning

3 $\varnothing 16 \dots 25$: Mounting slot for proximity sensors
 $\varnothing 32 \dots 63$: Mounting rail for proximity sensor

+ = plus stroke length

\varnothing [mm]	AM	B \varnothing f8	BG	D1	D8 \varnothing	E	EE	G	H1	J2	J3	KK	L1	L2	L3
16	16	16	5.5	M4	2.3	20	M5	20.5	35.5	-0.7	2.8	M6	12	78.5 ±0.5	12
20	20	20	5.5	M4	3.2	23	G $\frac{1}{8}$	25	39.5	-0.7	5	M8	14	90.5 ±0.5	15
25	22	22	7	M5	3.8	26	G $\frac{1}{8}$	26	44.5	-0.3	4.2	M10x1.25	14	92.5 ±0.5	18
32	22	30	13	M6	-	36	G $\frac{1}{8}$	27	53.3	-	3	M10x1.25	16	94 ±0.7	18
40	24	35	13	M6	-	40	G $\frac{1}{4}$	33	66.3	-	6	M12x1.25	20	105 ±0.7	32
50	32	40	15	M8	-	46	G $\frac{1}{4}$	32.5	82.3	2.5	3	M16x1.5	25	106 ±0.7	44
63	32	42	15	M10	-	54	G $\frac{3}{8}$	36.5	108.3	4	5	M16x1.5	28	115 ±0.7	64

\varnothing [mm]	L5	L7	MM \varnothing	PL	RT	T1	TG	TO	UO	VA	VD	WH ± 1	ZJ	ZM	$\approx C1$	$\approx C3$
16	12	8.5	6	7.5	M4	5.5	12	23	31	2.5	12	17.5	96	114.4 ±0.4	5	4
20	15	10.5	8	9.3	M4	5.5	15	27	35	2.5	14	18.5	109	128 ±0.4	7	4
25	16	10	10	10.5	M5	7	16.5	30.5	40	2.5	14	20.5	113	134 ±0.4	9	5
32	13	10.2	12	9	M5	9	24.5	36.5	48	4	16	26	120	147.1 ±0.5	10	6
40	16.5	13.2	16	11	M5	9	28	50	62	5.5	20	30	135	165.3 ±0.5	13	6
50	21	14	20	10.5	M6	10	33	65	78	5	17	37.5	143.5	181.5 ±0.5	17	6
63	22.5	14.5	20	12.5	M6	12	40	90	104	6	20	40	155	195.3 ±0.5	17	6

- Note
The maximum permissible torque must not be exceeded when additional components are screwed onto the piston rod. Counterhold by means of the spanner flats $\approx C1$.

Cylinders with piston rod
Flat cylinders

2.3

Flat cylinders DZH

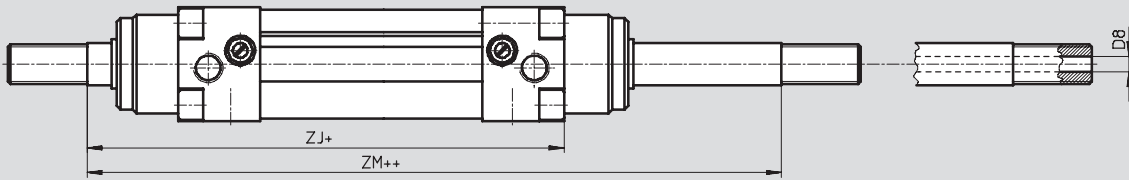
Technical data



Dimensions

Download CAD data → www.festo.com/en/engineering

Variant S2 – Through piston rod, S20 – Through, hollow piston rod



+ = plus stroke length


++ = plus 2x stroke length

∅	D8	ZJ	ZM
[mm]	∅		
16	2,3	96	114,4 ±0,4
20	3,2	109	128 ±0,4
25	3,8	113	134 ±0,4
32	-	120	147,1 ±0,5
40	-	135	165,3 ±0,5
50	-	143,5	181,5 ±0,5
63	-	155	195,3 ±0,5

Flat cylinders DZH

Technical data

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Ordering data – Basic version						
Type	Stroke [mm]	Part No.	Type	Stroke [mm]	Part No.	Type
	Piston Ø16 mm			Piston Ø20 mm		
	25	151 145	DZH-16-25-PPV-A	25	151 134	DZH-20-25-PPV-A
	40	151 146	DZH-16-40-PPV-A	40	151 135	DZH-20-40-PPV-A
	50	151 147	DZH-16-50-PPV-A	50	151 136	DZH-20-50-PPV-A
	80	151 148	DZH-16-80-PPV-A	80	151 137	DZH-20-80-PPV-A
	100	151 149	DZH-16-100-PPV-A	100	151 138	DZH-20-100-PPV-A
	125	151 150	DZH-16-125-PPV-A	125	151 139	DZH-20-125-PPV-A
	160	151 151	DZH-16-160-PPV-A	160	151 140	DZH-20-160-PPV-A
	200	151 152	DZH-16-200-PPV-A	200	151 141	DZH-20-200-PPV-A
	250	–	–	250	151 142	DZH-20-250-PPV-A
	300	–	–	300	–	–
	320	–	–	320	151 143	DZH-20-320-PPV-A
	Piston Ø25 mm			Piston Ø32 mm		
	25	151 121	DZH-25-25-PPV-A ¹⁾	25	14 041	DZH-32-25-PPV-A ¹⁾
	40	151 122	DZH-25-40-PPV-A ¹⁾	40	14 042	DZH-32-40-PPV-A ¹⁾
	50	151 123	DZH-25-50-PPV-A ¹⁾	50	14 043	DZH-32-50-PPV-A ¹⁾
	80	151 124	DZH-25-80-PPV-A ¹⁾	80	14 044	DZH-32-80-PPV-A ¹⁾
	100	151 125	DZH-25-100-PPV-A ¹⁾	100	14 045	DZH-32-100-PPV-A ¹⁾
	125	151 126	DZH-25-125-PPV-A ¹⁾	125	14 046	DZH-32-125-PPV-A ¹⁾
	160	151 127	DZH-25-160-PPV-A ¹⁾	160	14 047	DZH-32-160-PPV-A ¹⁾
	200	151 128	DZH-25-200-PPV-A ¹⁾	200	14 048	DZH-32-200-PPV-A ¹⁾
	250	151 129	DZH-25-250-PPV-A ¹⁾	250	14 049	DZH-32-250-PPV-A ¹⁾
	300	–	–	300	14 050	DZH-32-300-PPV-A ¹⁾
	320	151 130	DZH-25-320-PPV-A ¹⁾	320	–	–
	400	151 131	DZH-25-400-PPV-A ¹⁾	400	–	–
	500	151 132	DZH-25-500-PPV-A ¹⁾	500	–	–
	Piston Ø40 mm			Piston Ø50 mm		
	25	14 052	DZH-40-25-PPV-A ¹⁾	25	14 063	DZH-50-25-PPV-A ¹⁾
	40	14 053	DZH-40-40-PPV-A ¹⁾	40	14 064	DZH-50-40-PPV-A ¹⁾
	50	14 054	DZH-40-50-PPV-A ¹⁾	50	14 065	DZH-50-50-PPV-A ¹⁾
	80	14 055	DZH-40-80-PPV-A ¹⁾	80	14 066	DZH-50-80-PPV-A ¹⁾
	100	14 056	DZH-40-100-PPV-A ¹⁾	100	14 067	DZH-50-100-PPV-A ¹⁾
125	14 057	DZH-40-125-PPV-A ¹⁾	125	14 068	DZH-50-125-PPV-A ¹⁾	
160	14 058	DZH-40-160-PPV-A ¹⁾	160	14 069	DZH-50-160-PPV-A ¹⁾	
200	14 059	DZH-40-200-PPV-A ¹⁾	200	14 070	DZH-50-200-PPV-A ¹⁾	
250	14 060	DZH-40-250-PPV-A ¹⁾	250	14 071	DZH-50-250-PPV-A ¹⁾	
300	14 061	DZH-40-300-PPV-A ¹⁾	300	14 072	DZH-50-300-PPV-A ¹⁾	
Piston Ø63 mm						
25	14 074	DZH-63-25-PPV-A ¹⁾				
40	14 075	DZH-63-40-PPV-A ¹⁾				
50	14 076	DZH-63-50-PPV-A ¹⁾				
80	14 077	DZH-63-80-PPV-A ¹⁾				
100	14 078	DZH-63-100-PPV-A ¹⁾				
125	14 079	DZH-63-125-PPV-A ¹⁾				
160	14 080	DZH-63-160-PPV-A ¹⁾				
200	14 081	DZH-63-200-PPV-A ¹⁾				
250	14 082	DZH-63-250-PPV-A ¹⁾				
300	14 083	DZH-63-300-PPV-A ¹⁾				

1) The scope of delivery includes a hexagonal nut for the piston rod thread

Flat cylinders DZH

Technical data

FESTO

Ordering data – Variants				
Type	Piston Ø [mm]	Stroke [mm]	Part No.	Type
Variable stroke				
	16	10 ... 200	150 295	DZH-16-...-PPV-A
	20	10 ... 320	150 294	DZH-20-...-PPV-A
	25	10 ... 500	150 293	DZH-25-...-PPV-A¹⁾
	32	10 ... 1,000	14 040	DZH-32-...-PPV-A¹⁾
	40	10 ... 1,000	14 051	DZH-40-...-PPV-A¹⁾
	50	10 ... 1,000	14 062	DZH-50-...-PPV-A¹⁾
	63	10 ... 1,000	14 073	DZH-63-...-PPV-A¹⁾
S2 – Through piston rod				
	16	10 ... 200	151 155	DZH-16-...-PPV-A-S2
	20	10 ... 320	151 154	DZH-20-...-PPV-A-S2
	25	10 ... 500	151 153	DZH-25-...-PPV-A-S2¹⁾
	32	10 ... 1,000	151 772	DZH-32-...-PPV-A-S2¹⁾
	40	10 ... 1,000	151 773	DZH-40-...-PPV-A-S2¹⁾
	50	10 ... 1,000	151 774	DZH-50-...-PPV-A-S2¹⁾
	63	10 ... 1,000	151 775	DZH-63-...-PPV-A-S2¹⁾
S6 – Heat resistant seals up to 120 °C				
	16	10 ... 200	151 156	DZH-16-...-PPV-A-S6
	20	10 ... 320	151 157	DZH-20-...-PPV-A-S6
	25	10 ... 500	151 158	DZH-25-...-PPV-A-S6¹⁾
	32	10 ... 1,000	16 531	DZH-32-...-PPV-A-S6¹⁾
	40	10 ... 1,000	16 532	DZH-40-...-PPV-A-S6¹⁾
	50	10 ... 1,000	16 533	DZH-50-...-PPV-A-S6¹⁾
	63	10 ... 1,000	16 534	DZH-63-...-PPV-A-S6¹⁾
S20 – Through, hollow piston rod				
	16	10 ... 200	158 379	DZH-16-...-PPV-A-S20
	20	10 ... 320	158 380	DZH-20-...-PPV-A-S20
	25	10 ... 500	158 381	DZH-25-...-PPV-A-S20¹⁾

1) The scope of delivery includes a hexagonal nut for the piston rod thread

Ordering data – Wearing parts kits		
Piston Ø	Part No.	Type
16	121 125	DZH-16-PPV-A
20	121 126	DZH-20-PPV-A
25	121 127	DZH-25-PPV-A
32	108 706	DZH-32-PPV-A
40	108 707	DZH-40-PPV-A
50	108 708	DZH-50-PPV-A
63	108 709	DZH-63-PPV-A

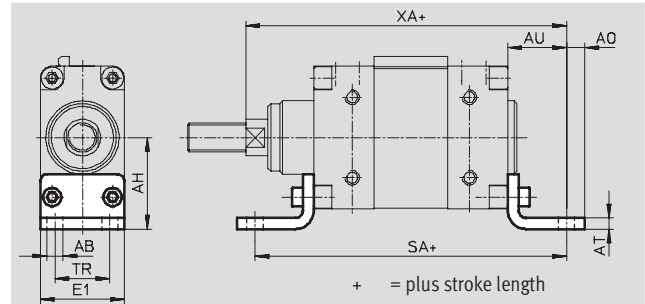
Flat cylinders DZH

Accessories



Foot mounting HZS, narrow

Material:
Steel
Free of copper, PTFE and silicone



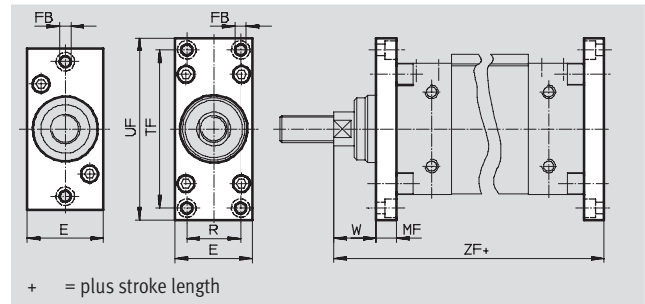
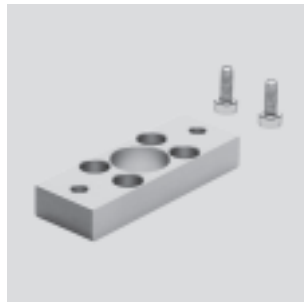
Dimensions and ordering data													
For \varnothing	AB \varnothing	AH	AO	AT	AU	E1	SA	TR	XA	CRC ¹⁾	Weight [g]	Part No.	Type
16	4.5	24.5	4	4	21	20	120.5	12	117	2	60	151 933	HZS-16
20	4.5	27.5	4	4	21	23	132.5	15	130	2	70	151 932	HZS-20
25	5.5	30	5	4	25	26	142.5	16.5	138	2	90	151 931	HZS-25
32	7	32	8	4	24	36	142	24	144	2	105	14 879	HZS-32
40	9	40	10	5	28	40	161	25	163	2	165	14 880	HZS-40
50	9	50	10	6	32	46	170	30	175.5	2	270	14 881	HZS-50
63	9	62	15	6	35	54	185	38	190	2	365	14 882	HZS-63

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

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

Flange mounting FZS

Material:
Wrought aluminium alloy



Dimensions and ordering data													
For \varnothing	E	FB \varnothing	MF	R	TF	UF	W	ZF	CRC ¹⁾	Weight [g]	Part No.	Type	
16	21	4.8	10	–	48	60	7.5	106	2	30	151 930	FZS-16	
20	24	4.8	10	–	54	70	8.5	119	2	40	151 929	FZS-20	
25	27	5.8	10	–	60	75	10.5	123	2	50	151 928	FZS-25	
32	36	5.8	10	24	62	75	16	130	2	60	14 887	FZS-32	
40	40	5.8	10	28	78	90	20	145	2	80	14 888	FZS-40	
50	46	6.8	12	32	94	108	25.5	155.5	2	135	14 889	FZS-50	
63	54	6.8	15	40	120	134	25	170	2	260	14 890	FZS-63	

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

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

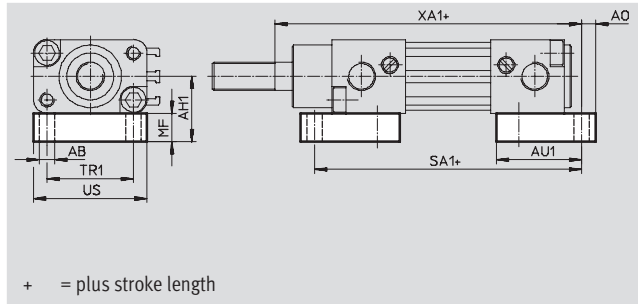
Flat cylinders DZH

Accessories



Foot mounting HZB, wide for piston Ø 16 ... 25 mm

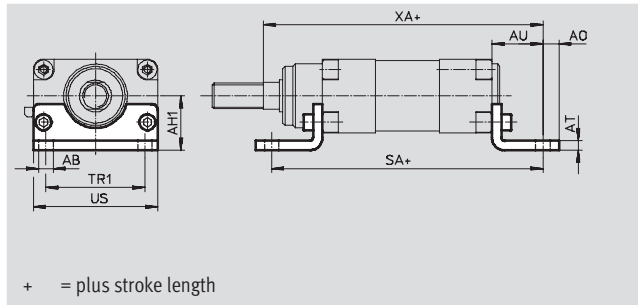
Material:
Wrought aluminium alloy



+ = plus stroke length

for piston Ø 32 ... 63 mm

Material:
Steel



+ = plus stroke length

Cylinders with piston rod
Flat cylinders

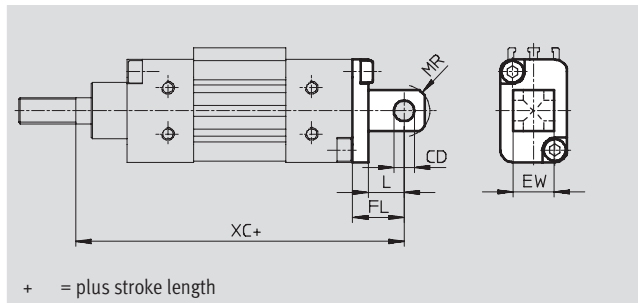
2.3

Dimensions and ordering data																	
For Ø	AB Ø	AH1	AO	AT	AU	AU1	MF	SA	SA1	TR1	US	XA	XA1	CRC ¹⁾	Weight [g]	Part No.	Type
16	4.5	20	4	-	-	23	10	-	88.5	23	30	-	101	2	50	151 936	HZB-16
20	4.5	21.5	4	-	-	26	10	-	100.5	27	35	-	114	2	60	151 935	HZB-20
25	5.5	23	5	-	-	30	10	-	104.5	30.5	40	-	119	2	80	151 934	HZB-25
32	7	26	8	4	24	-	-	142	-	32	48	144	-	2	130	14 875	HZB-32
40	9	29	10	5	28	-	-	161	-	46	62	163	-	2	235	14 876	HZB-40
50	9	34	10	6	32	-	-	170	-	62	78	175.5	-	2	410	14 877	HZB-50
63	9	38	15	6	35	-	-	185	-	88	104	190	-	2	640	14 878	HZB-63

1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating agents.

Swivel flange SZSB, narrow/wide for piston Ø 16 ... 25 mm

Material:
High-alloy stainless steel



+ = plus stroke length

Dimensions and ordering data							
For Ø	CD Ø H8	EW	FL	L	XC	Weight [g]	Part No. Type
16	4	8	14	8	110	10	151 927 SZSB-16
20	6	12	16	10	125	20	151 926 SZSB-20
25	8	16	20	14	133	40	151 925 SZSB-25

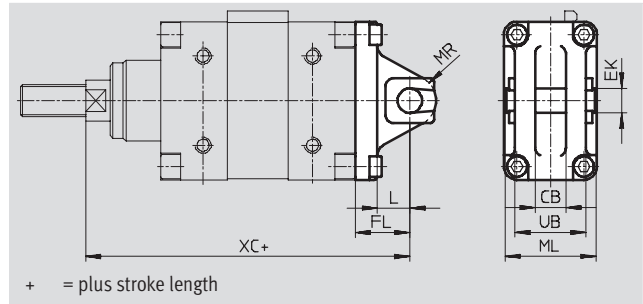
Flat cylinders DZH

Accessories



Swivel flange SZS, narrow for piston \varnothing 32 ... 63 mm

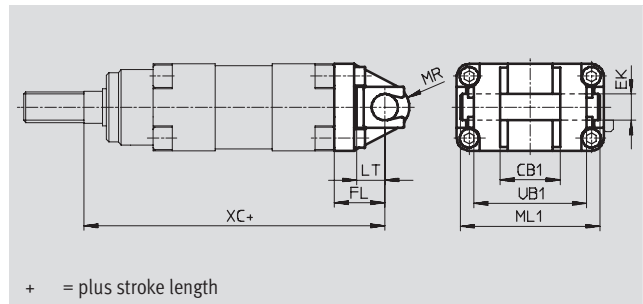
Material:
Die-cast aluminium



Dimensions and ordering data											
For \varnothing	CB	EK \varnothing e8	FL	L	ML	MR	UB ± 0.1	XC	Weight [g]	Part No.	Type
32	9.4	10	22	13.5	35.6	11	25.8	142	80	14 883	SZS-32
40	12.4	12	25	15.5	39.6	13	28.8	160	120	14 884	SZS-40
50	14.4	12	27	15.5	45.6	13	34.8	170.5	170	14 885	SZS-50
63	16.4	16	35	22.4	53.6	17	40.8	190	320	14 886	SZS-63

Swivel flange SZB, wide for piston \varnothing 32 ... 63 mm

Material:
High-alloy stainless steel



Dimensions and ordering data											
For \varnothing	CB1 H14	EK \varnothing e8	FL	LT	ML1	MR	UB1	XC	Weight [g]	Part No.	Type
32	16	10	22	14	47	11	36 _{-0.7}	142	170	30 798	SZB-32
40	28	12	25	15.5	61	13	52 ₋₁	160	280	30 799	SZB-40
50	32	12	27	16	77	13	60 ₋₁	170.5	410	30 629	SZB-50
63	40	16	35	23	103	17	70 ₋₁	190	660	30 630	SZB-63

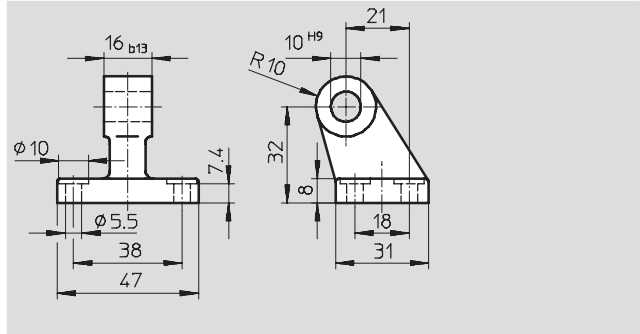
Flat cylinders DZH

Accessories



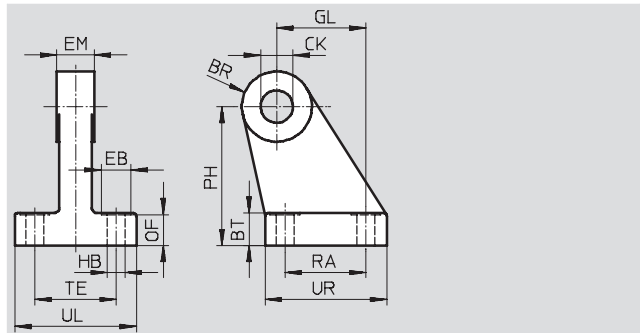
Clevis foot LBZB for piston \varnothing 32 mm

Material:
High-alloy stainless steel



Clevis foot LBZS for piston \varnothing 32 ... 63 mm

Material:
High-alloy stainless steel



Cylinders with piston rod
Flat cylinders


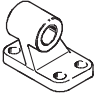
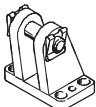
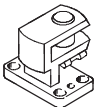
2.3





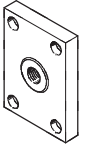

Dimensions and ordering data																
For \varnothing	BR	BT	CK \varnothing H9	EB \varnothing	EM b13	GL	HB \varnothing	OF	PH	RA	TE	UL	UR	Weight [g]	Part No.	Type
LBZB																
32	Dimensions → shown above														33 842	LBZB-32
LBZS																
32	10	8	10	10	9	21	5.5	7.4	33.5	18	24	35	31	90	33 843	LBZS-32
40	11	10	12	10	12	24	5.5	9.4	40	22	28	39	35	135	33 844	LBZS-40
50	13	12	12	11	14	33	6.6	11.4	51.5	30	30	45	45	235	33 845	LBZS-50
63	15	12	16	11	16	37	6.6	11.3	62	35	38	53	51	305	33 846	LBZS-63

Flat cylinders DZH

Accessories

FESTO

Ordering data – Mounting attachments				Technical data → 1 / 10.1-2			
Designation	For Ø	Part No.	Type	Designation	For Ø	Part No.	Type
Clevis foot LBN				Clevis foot LN			
	16	6 058	LBN-12/16		32	5 147	LN-32
	20	6 059	LBN-20/25		40	5 148	LN-40
	25				50	5 149	LN-50
			63		5 150	LN-63	
Clevis foot LBG				Right-angle clevis foot LQG			
	32	31 761	LBG-32		32	31 768	LQG-32
	40	31 762	LBG-40		40	31 769	LQG-40
	50	31 763	LBG-50		50	31 770	LQG-50
	63	31 764	LBG-63		63	31 771	LQG-63

Ordering data – Piston rod attachments				Technical data → 1 / 10.3-2			
Designation	For Ø	Part No.	Type	Designation	For Ø	Part No.	Type
Rod eye SGS				Rod clevis SGA			
	16	9 254	SGS-M6		16	–	–
	20	9 255	SGS-M8		20	–	–
	25	9 261	SGS-M10x1,25		25	32 954	SGA-M10x1,25
	32				32		
	40	9 262	SGS-M12x1,25		40	10 767	SGA-M12x1,25
	50	9 263	SGS-M16x1,5		50	10 768	SGA-M16x1,5
	63				63		
Rod clevis SG				Self-aligning rod coupler FK			
	16	3 110	SG-M6		16	2 061	FK-M6
	20	3 111	SG-M8		20	2 062	FK-M8
	25	6 144	SG-M10x1,25		25	6 140	FK-M10x1,25
	32				32		
	40	6 145	SG-M12x1,25		40	6 141	FK-M12x1,25
	50	6 146	SG-M16x1,5		50	6 142	FK-M16x1,5
	63				63		
Coupling piece KSZ				Adapter AD			
	16	36 123	KSZ-M6		16	157 328	AD-M6-M5
	20	36 124	KSZ-M8		16	157 329	AD-M6-1/8
	25	36 125	KSZ-M10x1,25		16	157 330	AD-M6-1/4
	32				20	157 331	AD-M8-1/8
	40	36 126	KSZ-M12x1,25		20	157 332	AD-M8-1/4
	50	36 127	KSZ-M16x1,5		25	157 333	AD-M10x1,25-1/8
	63				25	157 334	AD-M10x1,25-1/4

Cylinders with piston rod
Flat cylinders

2.3


Flat cylinders DZH


Accessories





Cylinders with piston rod
Flat cylinders

2.3

Ordering data – Block-shaped proximity sensors, magneto-resistive						Technical data → www.festo.com/catalogue/sm	
Mounting	Switch output	Electrical connection		Cable length [m]	Part No.	Type	
		Cables	M8 plug				
NO contact							
	With accessories	PNP	3 wires	–	2.5	151 683	SMTO-1-PS-K-LED-24-C
			–	3-pin	–	151 685	SMTO-1-PS-S-LED-24-C
	NPN	3 wires	–	2.5	151 684	SMTO-1-NS-K-LED-24-C	
		–	3-pin	–	151 686	SMTO-1-NS-S-LED-24-C	

Ordering data – Block-shaped proximity sensors, magnetic reed						Technical data → www.festo.com/catalogue/sm	
Mounting	Electrical connection		Cable length [m]	Part No.	Type		
	Cables	M8 plug					
NO contact							
	With accessories	3 wires	–	2.5	30 459	SMEO-1-LED-24-B	
		3 wires	–	5.0	151 672	SMEO-1-LED-24-K5-B	
		–	3-pin	–	150 848	SMEO-1-S-LED-24-B	

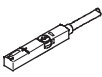

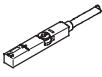
Ordering data – Block-shaped proximity sensor, pneumatic				Technical data → www.festo.com/catalogue/sm	
Mounting	Pneumatic connection		Part No.	Type	
3/2-way valve, normally closed					
	With accessories	Barbed fitting for tubing ID of 3 mm		31 008	SMPO-1-H-B

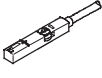


Ordering data – Mounting kit			Technical data → www.festo.com/catalogue/smb	
Mounting	Part No.	Type		
	for cylinder with tie rod \varnothing 6 mm or DUO rail mounting profile		11 886	SMB-1



Flat cylinders EZH/DZF/DZH


Accessories

FESTO

Ordering data – Proximity sensors for T-slot, magneto-resistive					Technical data → www.festo.com/catalogue/sm	
	Type of mounting	Switch output	Electrical connection	Cable length [m]	Part No.	Type
N/O contact						
	Insertable in the slot from above, flush with cylinder profile	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 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 → www.festo.com/catalogue/sm		
	Type of mounting	Switch output	Electrical connection	Cable length [m]	Part No.	Type	
N/O contact							
	Insertable in the slot from above, flush with cylinder profile	Contacting	Cable, 3-wire	2.5	543 862	SME-8M-DS-24V-K-2,5-OE	
				5.0	543 863	SME-8M-DS-24V-K-5,0-OE	
			Plug M8x1, 3-pin	Cable, 3-wire	2.5	543 872	SME-8M-ZS-24V-K-2,5-OE
				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	
				0.3	150 857	SME-8-S-LED-24	
N/C contact							
	Insertable in the slot lengthwise, flush with the cylinder profile	Contacting	Cable, 3-wire	7.5	160 251	SME-8-0-K-LED-24	



Ordering data – Connecting cables				Technical data → www.festo.com/catalogue/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 – Slot cover for T-slot				
	Mounting	Length	Part No.	Type
	inserted from above	2x 0.5 m	151 680	ABP-5-S

Flat cylinders EZH/DZF/DZH

Accessories

FESTO

Ordering data – One-way flow control valves				Technical data → Volume 2	
	Connection		Material	Part No.	Type
	Thread	For tubing OD			
for exhaust air					
	M5	3	Metal design	193 137	GRLA-M5-QS-3-D
		4		193 138	GRLA-M5-QS-4-D
		6		193 139	GRLA-M5-QS-6-D
	G1/8	3		193 142	GRLA-1/8-QS-3-D
		4		193 143	GRLA-1/8-QS-4-D
		6		193 144	GRLA-1/8-QS-6-D
		8		193 145	GRLA-1/8-QS-8-D
		10		193 146	GRLA-1/4-QS-6-D
	G1/4	6		193 147	GRLA-1/4-QS-8-D
		8		193 148	GRLA-1/4-QS-10-D
		10		193 149	GRLA-3/8-QS-6-D
	G3/8	6		193 150	GRLA-3/8-QS-8-D
		8		193 151	GRLA-3/8-QS-10-D
		10			
	for supply air				
	M5	3	Metal design	193 153	GRLZ-M5-QS-3-D
		4		193 154	GRLZ-M5-QS-4-D
		6		193 155	GRLZ-M5-QS-6-D
	G1/8	3		193 156	GRLZ-1/8-QS-3-D
		4		193 157	GRLZ-1/8-QS-4-D
		6		193 158	GRLZ-1/8-QS-6-D
		8		193 159	GRLZ-1/8-QS-8-D

Cylinders with piston rod
Flat cylinders

2.3