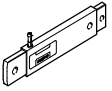
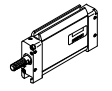
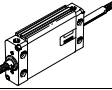
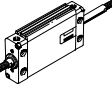
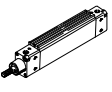
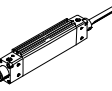
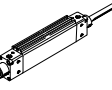




- Extremely flat design
- Protected against torsion thanks to special piston shape
- Compact assembly with block mounting
- Wide variety of mounting options

Flat cylinders EZH/DZF/DZH

Product range overview

Function	Design	Type	Piston Ø [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	1 ... 200	
	32, 40, 50, 63		10, 25, 40, 50, 80, 100, 125, 160, 200, 250, 320	1 ... 320		
		DZF...-S2 Through piston rod	12, 18, 25	-	1 ... 200	
			32, 40, 50, 63	-	1 ... 320	
		DZF...-S20 Through, hollow piston rod	12, 18, 25	-	1 ... 200	
			32, 40, 50, 63	-	1 ... 320	
	Double-acting		DZH			
			DZH Single-ended piston rod	16	25, 40, 50, 80, 100, 125, 160, 200	1 ... 200
20				25, 40, 50, 80, 100, 125, 160, 200, 250, 320	1 ... 320	
25				25, 40, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500	1 ... 500	
32, 40, 50, 63		25, 40, 50, 80, 100, 125, 160, 200, 250, 300		1 ... 1000		
		DZH...-S2 Through piston rod	16	-	1 ... 200	
			20	-	1 ... 320	
			25	-	1 ... 500	
			32, 40, 50, 63	-	1 ... 1000	
		DZH...-S20 Through, hollow piston rod	16	-	1 ... 200	
			20	-	1 ... 320	
			25	-	1 ... 500	

Flat cylinders EZH/DZF/DZH

Product range overview



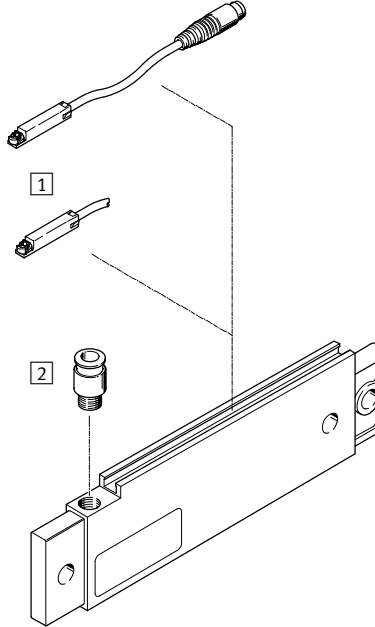
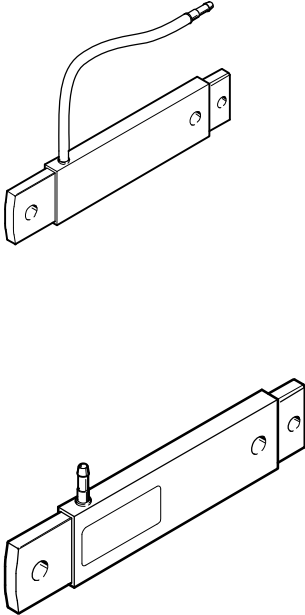
Type	Position sensing	Piston rod		Non-rotating	S6 Heat resistant seals up to 120 °C	→ Page/Internet
		with female thread	with male thread			
EZH Single-ended piston rod	■ for 10x40	-	-	■	-	4
DZF Single-ended piston rod	■	■	■	■	■	8
DZF-...-S2 Through piston rod	■	■	■	■	-	8
DZF-...-S20 Through, hollow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

Flat cylinders EZH

Peripherals overview and type codes

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

Piston area 10x40 mm



Accessories		
	Description	→ Page/Internet
1	Proximity sensor SME/SMT-8	Can be integrated in the cylinder profile barrel 37
2	Push-in fitting QSM-G $\frac{1}{8}$ -...-I, QS-G $\frac{1}{8}$ -...-I	For connecting compressed air tubing with standard external diameters qs

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

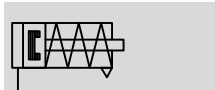
EZH...



Without end-position sensing



EZH...-A-B

For end position sensing



-  Diameter
approx. 3 ... 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	6	12	12	22
Pneumatic connection	Barbed fitting PK-3 for 3 mm plastic tubing					G1/8
Constructional design	Piston, piston rod					
Cushioning	None					
Position sensing	-	-	-	-	-	For proximity sensing
Type of mounting	With transverse bore					
Mounting position	Any					

Operating and environmental conditions						
Piston area	1.5x6.5	2.5x9	2.5x9	5x20	5x20	10x40
Stroke length	10	10	20	25	50	40
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [7:4:4]					
Note on operating/pilot medium	Operation with lubricated medium possible (in which case lubricated operation will always be required)					
Operating pressure [bar]	3.0 ... 6.0	2.8 ... 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 CRC 2 to Festo standard FN 940070

Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

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	3.8	10	10	52	49	205
Theoretical spring return force						
min.	1	3	2.8	8	10.6	18
max.	1.7	4	4.4	10.6	13.6	28

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

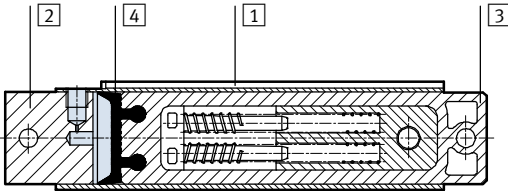
Flat cylinders EZH

Technical data



Materials

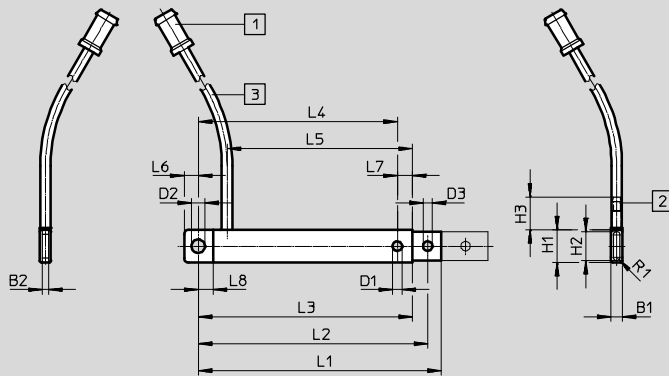
Sectional view



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	Copper-alloy, nickel-plated	Steel, nickel-plated	Polyamide, reinforced		
4 Seal	Polyurethane					
- Note on materials	Contains PWIS (paint-wetting impairment substances)		-			

Dimensions EZH-1,5/6,5-10

Download CAD data → www.festo.com

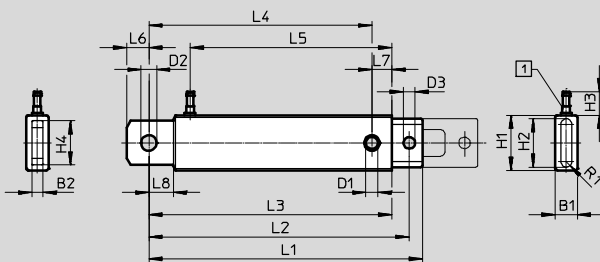


- 1 Barbed fittings for 3 mm plastic tubing
- 2 Barbed fittings for 1.5 mm plastic tubing
- 3 200 mm tubing length

Type	B1	B2	D1	D2	D3	H1	H2	H3	L1	L2	L3	L4	L5	L6	L7	L8	R1
	-0.1		∅	∅	∅				±0.8	±0.9	±0.3	±0.4					
EZH-1,5/6,5-10	2.5	1.4	2.1	3	2.1	7.3	6.45	7.3	54	51	47.6	44.2	41.2	3.1	3.4	3.3	0.725

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

Download CAD data → www.festo.com



- 1 Barbed fittings for 3 mm plastic tubing

Type	B1	B2	D1	D2	D3	H1	H2	H3	H4
			∅	∅	∅				
				H11					
EZH-2,5/9-10	4.9±0.05	2.5	3.1	4	3.1	12	9.9	10.7	9
EZH-2,5/9-20	4.9±0.05	2.5	3.1	4	3.1	12	9.9	10.7	9
EZH-5/20-25	10 _{-0.1}	5	5.5	7	5.2	25	21.9	10.7	20
EZH-5/20-50	10 _{-0.1}	5	5.5	7	5.2	25	21.9	10.7	20

Type	L1	L2	L3	L4	L5	L6	L7	L8	R1
			±0.3	±0.4					
EZH-2,5/9-10	62.4±0.7	58.4±0.8	54	49.5	43.6	4.5	4.5	5.5	1.2
EZH-2,5/9-20	94.5±0.7	90.5±0.8	86.1	81.6	75.5	4.5	4.5	5.5	1.2
EZH-5/20-25	123.9 _{+0.6/-0.8}	117.9 _{+0.7/-0.9}	110	101	91.3	10	9	11	2.45
EZH-5/20-50	195.9 _{+0.6/-0.8}	189.9 _{+0.7/-0.9}	182	173	163.3	10	9	11	2.45

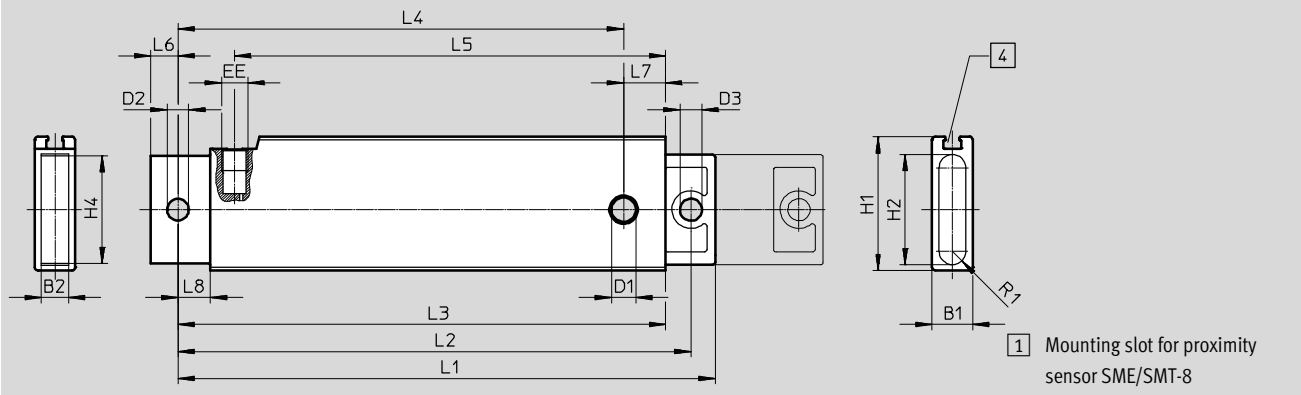
Flat cylinders EZH

Technical data

FESTO

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

Download CAD data → www.festo.com



Type	B1	B2	D1	D2	D3	EE	H1	H2	H4	L1
	-0.3	-0.2	∅	∅ H11	∅				-0.1/-0.3	+0.7/-1.4
EZH-10/40-40-A-B	15	10	8.5	8	8.2	G $\frac{1}{8}$	49.5	40.7	40	198.9

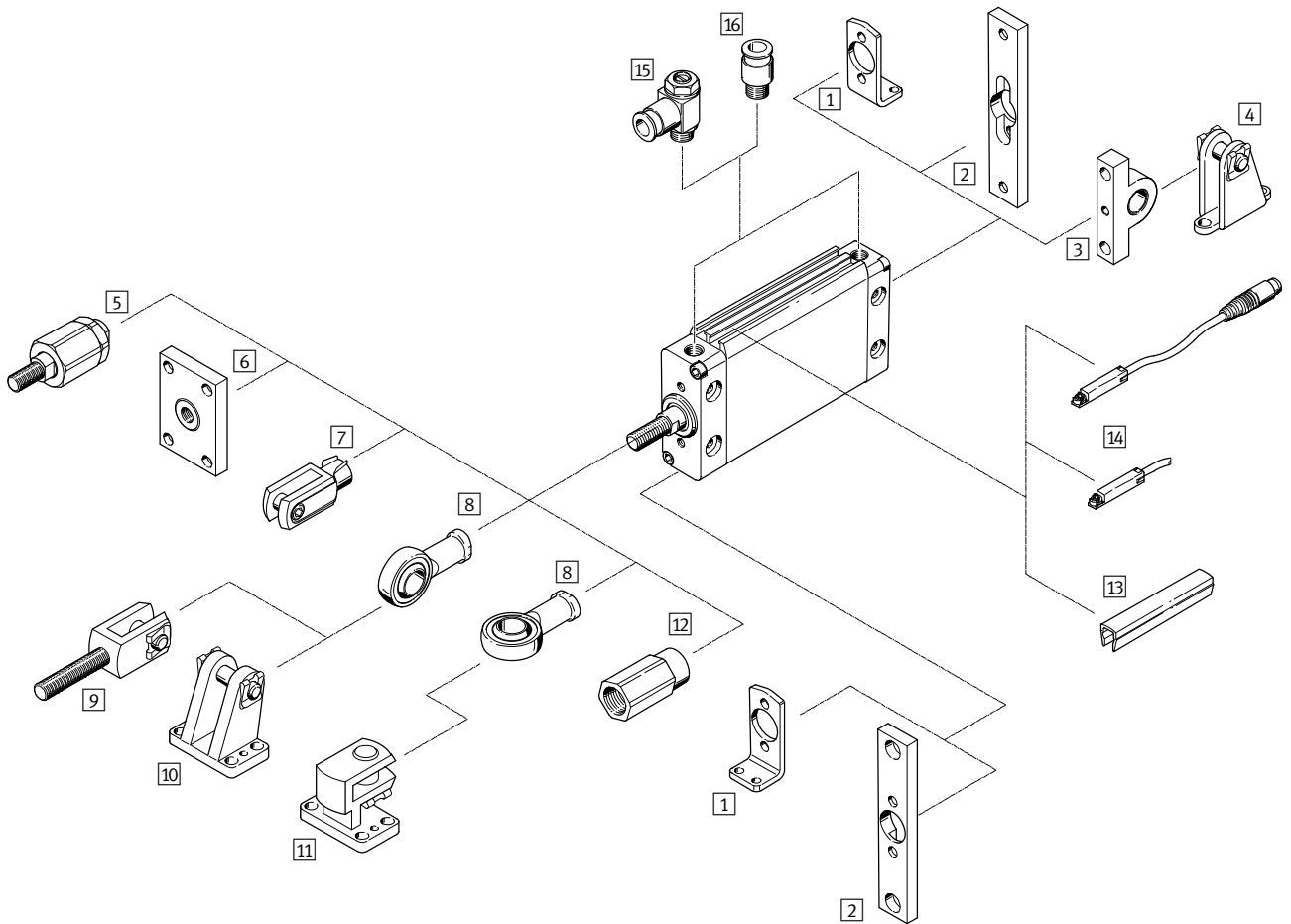
Type	L2	L3	L4	L5	L6	L7	L8	R1
	+0.9/-1.6	±0.4	±0.4					
EZH-10/40-40-A-B	189.9	180.5	165	159.5	10	15.5	12	4.925

Ordering data

Type	Piston area [mm]	Stroke [mm]	Part No.	Type
Without end-position sensing				
	1.5x6.5	10	13009	EZH-1,5/6,5-10
		10	164991	EZH-2,5/9-10-B
	5x20	20	164992	EZH-2,5/9-20-B
		25	164993	EZH-5/20-25-B
		50	164994	EZH-5/20-50-B
For end position sensing				
	10x40	40	164990	EZH-10/40-40-A-B

Flat cylinders DZF

Peripherals overview



Flat cylinders DZF

Peripherals overview

FESTO

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

Flat cylinders DZF

Type codes

DZF – 25 – 100 – – P – A –

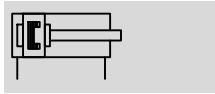
Type	
Double-acting	
DZF	Flat cylinder
Piston Ø [mm]	
Stroke [mm]	
Piston rod thread	
	Female thread
A	Male thread
Cushioning	
P	Flexible cushioning rings/plates at both ends
Position sensing	
A	For proximity sensing
Variant	
S2	Through piston rod
S6	Heat resistant seals up to 120 °C
S20	Through, hollow piston rod

Flat cylinders DZF

Technical data

FESTO

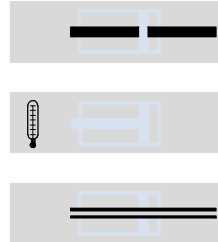
Function



- - Diameter
12 ... 63 mm
- - Stroke length
1 ... 320 mm

- - www.festo.com

Variants



S2

S6

S20



General technical data								
Piston \varnothing		12	18	25	32	40	50	63
Pneumatic connection		M5	M5	M5	G1/8	G1/8	G1/4	G1/4
Piston rod thread	female	M3	M4	M5	M6	M8	M10	M10
	male	M6	M8	M10x1.25	M10x1.25	M12x1.25	M16x1.5	M16x1.5
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 \varnothing		12	18	25	32	40	50	63
		1.6 ... 10	1 ... 10					

Ambient conditions	
Flat cylinder	DZF-... DZF-...-S6
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [7:4:4]
Note on operating/pilot medium	Operation with lubricated medium possible (in which case lubricated operation will always be required)
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 CRC 2 to Festo standard FN 940070

Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

Forces [N] and impact energy [J]								
Piston \varnothing		12	18	25	32	40	50	63
Theoretical force at 6 bar, advancing		68	162	295	483	754	1178	1870
	S2/S20	51	122	247	415	633	990	1682
Theoretical force at 6 bar, retracting		51	122	247	415	633	990	1682
	S2/S20	51	122	247	415	633	990	1682
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

FESTO

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

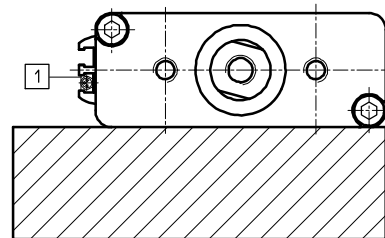
1) The max. torque must also be observed when fitting mounting attachments to the piston rod

Weights [g]							
Piston Ø	12	18	25	32	40	50	63
Product weight at 0 mm stroke	96	107	168	272	480	855	1380
Additional weight per 10 mm stroke	9	13	18	24	40	64	91

Safety clearances for reliable switching function

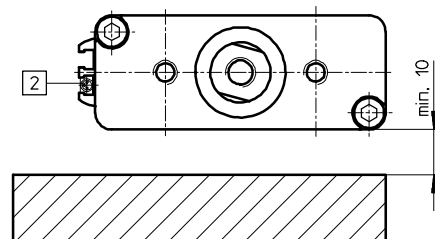
Cylinder – Ferritic components

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



1 SMT-8...

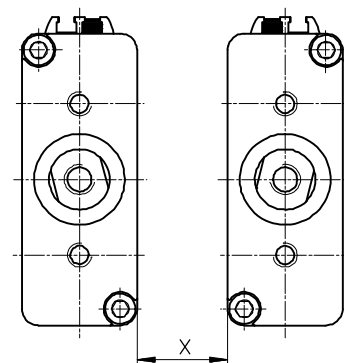
If a proximity sensor SME-8 is used, then with piston Ø 12 to 32 mm, a minimum clearance to the ferritic component of 10 mm must be maintained.



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.



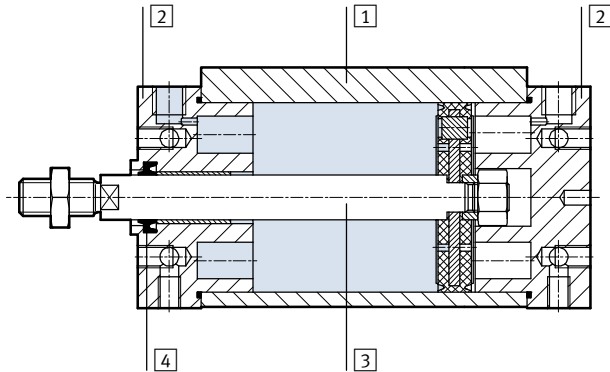
Piston Ø		12	18	25	32	40	50	63
Min. safety clearance X	SMT-8...	35			25	45		80
[mm]	SME-8...	50			45	65		50

Flat cylinders DZF

Technical data

Materials

Sectional view



Flat cylinder	DZF-...	DZF-...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	High-alloy stainless steel Ø 12 ... 25 High-alloy steel Ø 32 ... 63	High-alloy stainless steel High-alloy steel
4 Dynamic seals	Polyurethane	Fluorocarbon rubber

Dimensions

Download CAD data → www.festo.com

Ø 12, 18

1 Mounting slot for proximity sensors

2 Additional air connections, sealed with blanking plugs

3 Max. tightening torque

+ = plus stroke length

Ø	B1	BG	D1	D2	E	EE	G	H1	L1	L2	L3	L4	L5
[mm]				Ø 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

Ø	L6	L7	MM	PL	R	RT	T1	T3	TO	WH	ZJ	≈C1	Max. tightening torque [Nm] +10%
[mm]			Ø									h13	
12	7	3	6	8.5	7.5	M3	7	4	20	7	69	5	0.8/2.9 ¹⁾
18	-	2.5	8	8.5	9	M4	7	6	18	7	69	7	2.9

1) For M3/M4

Flat cylinders DZF

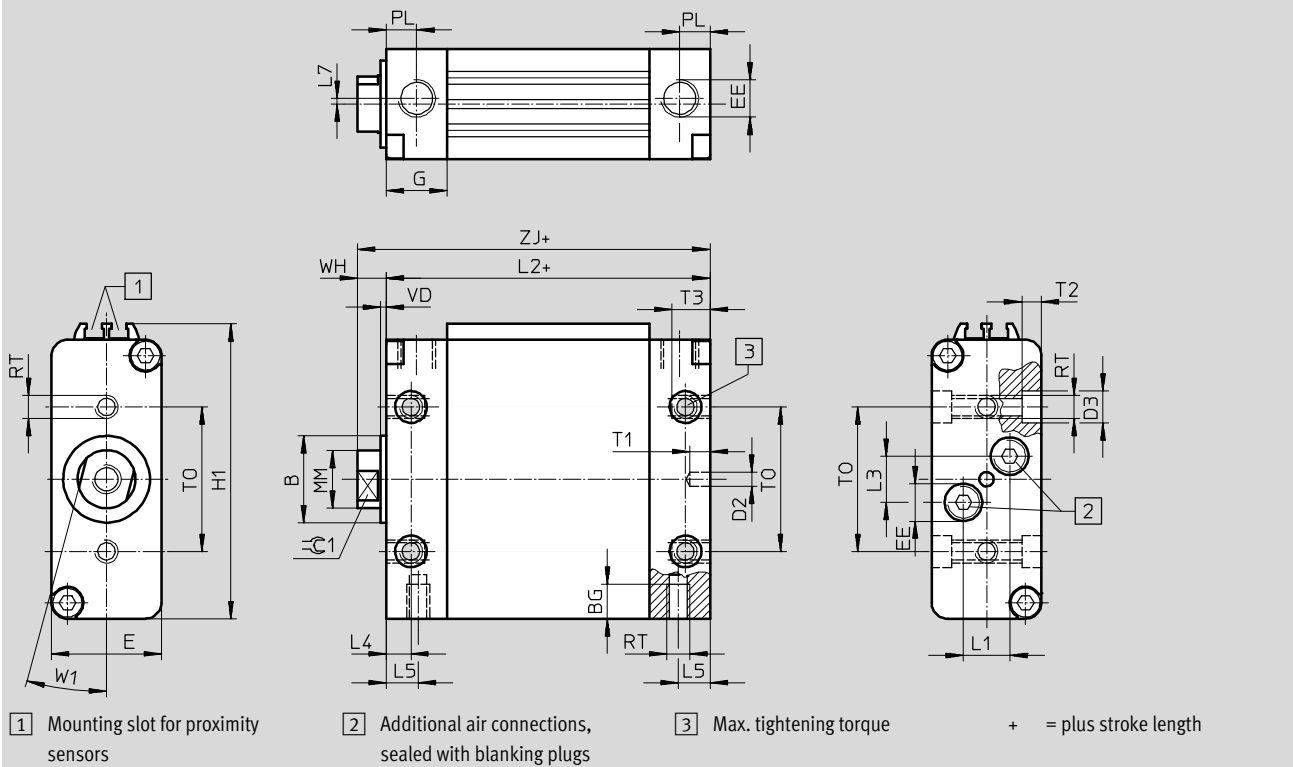
Technical data

FESTO

Dimensions

Download CAD data → www.festo.com

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	G1/8	17	65	7.5	72	14.5	8.5	8.5
40	25	9	4	10	30	G1/8	17	82	7.5	76	14.5	8.5	8.5
50	30	12	5	11	38	G1/4	21	102	16	82	16	8.5	8.5
63	30	14	5	15	50	G1/4	21	126.5	21	82	19	8.5	8.5

Ø	L7	MM	PL	RT	T1	T2	T3	T0	VD	W1	WH	ZJ	∠C1	Max. tightening torque [Nm] +10%
[mm]		Ø								±1			h13	
25	-	10	6	M5	7	4	8	25	2	15°	8	70	9	4
32	1.5	12	8.5	M6	7	4	9	32	2	15°	8	80	10	9.9
40	-	16	8.5	M6	7	5	9	40	2	15°	9	85	13	9.9
50	-	20	10.5	M8	7	6	12	50	2	15°	10	92	17	20
63	-	20	10.5	M10	7	6	14	60	2	15°	10	92	17	35

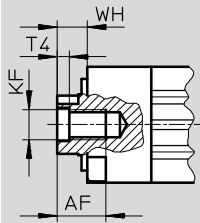
Flat cylinders DZF

Technical data

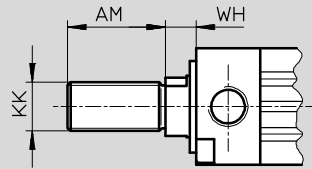
Dimensions – Variants

Download CAD data → www.festo.com

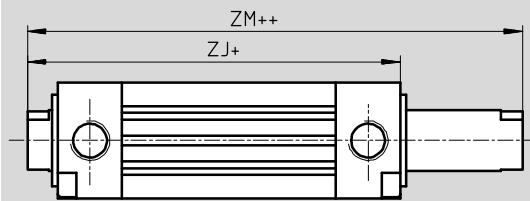
Female thread



Male thread

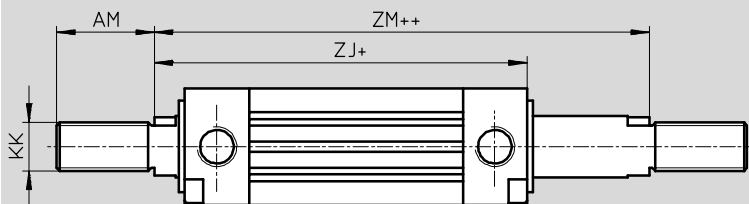


S2 – Through piston rod with female thread



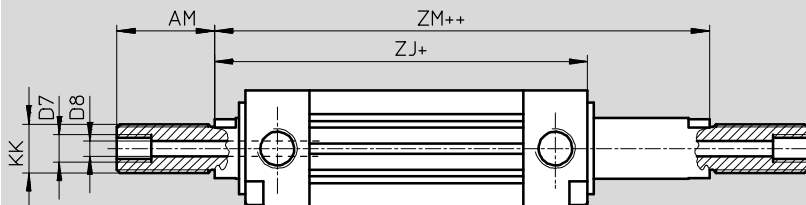
+ = plus stroke length
++ = plus 2x stroke length

S2 – Through piston rod with male thread



+ = plus stroke length
++ = plus 2x stroke length

S20 – Through, hollow piston rod




+ = plus stroke length
++ = plus 2x stroke length

∅	AF	AM	D7	D8	KF	KK	T4	WH	ZJ	ZM
[mm]				∅						
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


Ordering data						
Type	Piston Ø [mm]	Stroke [mm]	Piston rod with female thread		Piston rod with male thread	
			Part No.	Type	Part No.	Type
	12	10	164003	DZF-12-10-P-A	161224	DZF-12-10-A-P-A
		25	164004	DZF-12-25-P-A	161225	DZF-12-25-A-P-A
		40	164005	DZF-12-40-P-A	161226	DZF-12-40-A-P-A
		50	164006	DZF-12-50-P-A	161227	DZF-12-50-A-P-A
		80	164007	DZF-12-80-P-A	161228	DZF-12-80-A-P-A
		100	164008	DZF-12-100-P-A	161229	DZF-12-100-A-P-A
		125	164009	DZF-12-125-P-A	161230	DZF-12-125-A-P-A
		160	164010	DZF-12-160-P-A	161231	DZF-12-160-A-P-A
		200	164011	DZF-12-200-P-A	161232	DZF-12-200-A-P-A
	18	10	164015	DZF-18-10-P-A	161237	DZF-18-10-A-P-A
		25	164016	DZF-18-25-P-A	161238	DZF-18-25-A-P-A
		40	164017	DZF-18-40-P-A	161239	DZF-18-40-A-P-A
		50	164018	DZF-18-50-P-A	161240	DZF-18-50-A-P-A
		80	164019	DZF-18-80-P-A	161241	DZF-18-80-A-P-A
		100	164020	DZF-18-100-P-A	161242	DZF-18-100-A-P-A
		125	164021	DZF-18-125-P-A	161243	DZF-18-125-A-P-A
		160	164022	DZF-18-160-P-A	161244	DZF-18-160-A-P-A
		200	164023	DZF-18-200-P-A	161245	DZF-18-200-A-P-A
	25	10	164027	DZF-25-10-P-A	161250	DZF-25-10-A-P-A ¹⁾
		25	164028	DZF-25-25-P-A	161251	DZF-25-25-A-P-A ¹⁾
		40	164029	DZF-25-40-P-A	161252	DZF-25-40-A-P-A ¹⁾
		50	164030	DZF-25-50-P-A	161253	DZF-25-50-A-P-A ¹⁾
		80	164031	DZF-25-80-P-A	161254	DZF-25-80-A-P-A ¹⁾
		100	164032	DZF-25-100-P-A	161255	DZF-25-100-A-P-A ¹⁾
		125	164033	DZF-25-125-P-A	161256	DZF-25-125-A-P-A ¹⁾
		160	164034	DZF-25-160-P-A	161257	DZF-25-160-A-P-A ¹⁾
		200	164035	DZF-25-200-P-A	161258	DZF-25-200-A-P-A ¹⁾
	32	10	164039	DZF-32-10-P-A	161263	DZF-32-10-A-P-A ¹⁾
		25	164040	DZF-32-25-P-A	161264	DZF-32-25-A-P-A ¹⁾
		40	164041	DZF-32-40-P-A	161265	DZF-32-40-A-P-A ¹⁾
		50	164042	DZF-32-50-P-A	161266	DZF-32-50-A-P-A ¹⁾
		80	164043	DZF-32-80-P-A	161267	DZF-32-80-A-P-A ¹⁾
100		164044	DZF-32-100-P-A	161268	DZF-32-100-A-P-A ¹⁾	
125		164045	DZF-32-125-P-A	161269	DZF-32-125-A-P-A ¹⁾	
160		164046	DZF-32-160-P-A	161270	DZF-32-160-A-P-A ¹⁾	
200		164047	DZF-32-200-P-A	161271	DZF-32-200-A-P-A ¹⁾	
250		164048	DZF-32-250-P-A	161272	DZF-32-250-A-P-A ¹⁾	
320		164049	DZF-32-320-P-A	161273	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						
Type	Piston Ø [mm]	Stroke [mm]	Piston rod with female thread		Piston rod with male thread	
			Part No.	Type	Part No.	Type
	40	10	164053	DZF-40-10-P-A	161278	DZF-40-10-A-P-A ¹⁾
		25	164054	DZF-40-25-P-A	161279	DZF-40-25-A-P-A ¹⁾
		40	164055	DZF-40-40-P-A	161280	DZF-40-40-A-P-A ¹⁾
		50	164056	DZF-40-50-P-A	161281	DZF-40-50-A-P-A ¹⁾
		80	164057	DZF-40-80-P-A	161282	DZF-40-80-A-P-A ¹⁾
		100	164058	DZF-40-100-P-A	161283	DZF-40-100-A-P-A ¹⁾
		125	164059	DZF-40-125-P-A	161284	DZF-40-125-A-P-A ¹⁾
		160	164060	DZF-40-160-P-A	161285	DZF-40-160-A-P-A ¹⁾
		200	164061	DZF-40-200-P-A	161286	DZF-40-200-A-P-A ¹⁾
		250	164062	DZF-40-250-P-A	161287	DZF-40-250-A-P-A ¹⁾
		320	164063	DZF-40-320-P-A	161288	DZF-40-320-A-P-A ¹⁾
	50	10	164067	DZF-50-10-P-A	161293	DZF-50-10-A-P-A ¹⁾
		25	164068	DZF-50-25-P-A	161294	DZF-50-25-A-P-A ¹⁾
		40	164069	DZF-50-40-P-A	161295	DZF-50-40-A-P-A ¹⁾
		50	164070	DZF-50-50-P-A	161296	DZF-50-50-A-P-A ¹⁾
		80	164071	DZF-50-80-P-A	161297	DZF-50-80-A-P-A ¹⁾
		100	164072	DZF-50-100-P-A	161298	DZF-50-100-A-P-A ¹⁾
		125	164073	DZF-50-125-P-A	161299	DZF-50-125-A-P-A ¹⁾
		160	164074	DZF-50-160-P-A	161300	DZF-50-160-A-P-A ¹⁾
		200	164075	DZF-50-200-P-A	161301	DZF-50-200-A-P-A ¹⁾
		250	164076	DZF-50-250-P-A	161302	DZF-50-250-A-P-A ¹⁾
		320	164077	DZF-50-320-P-A	161303	DZF-50-320-A-P-A ¹⁾
	63	10	164081	DZF-63-10-P-A	161308	DZF-63-10-A-P-A ¹⁾
		25	164082	DZF-63-25-P-A	161309	DZF-63-25-A-P-A ¹⁾
		40	164083	DZF-63-40-P-A	161310	DZF-63-40-A-P-A ¹⁾
		50	164084	DZF-63-50-P-A	161311	DZF-63-50-A-P-A ¹⁾
		80	164085	DZF-63-80-P-A	161312	DZF-63-80-A-P-A ¹⁾
		100	164086	DZF-63-100-P-A	161313	DZF-63-100-A-P-A ¹⁾
		125	164087	DZF-63-125-P-A	161314	DZF-63-125-A-P-A ¹⁾
		160	164088	DZF-63-160-P-A	161315	DZF-63-160-A-P-A ¹⁾
		200	164089	DZF-63-200-P-A	161316	DZF-63-200-A-P-A ¹⁾
		250	164090	DZF-63-250-P-A	161317	DZF-63-250-A-P-A ¹⁾
		320	164091	DZF-63-320-P-A	161318	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

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	1 ... 200	164000	DZF-12-...-P-A	161220	DZF-12-...-A-P-A
	18	1 ... 200	164012	DZF-18-...-P-A	161233	DZF-18-...-A-P-A
	25	1 ... 200	164024	DZF-25-...-P-A	161246	DZF-25-...-A-P-A¹⁾
	32	1 ... 320	164036	DZF-32-...-P-A	161259	DZF-32-...-A-P-A¹⁾
	40	1 ... 320	164050	DZF-40-...-P-A	161274	DZF-40-...-A-P-A¹⁾
	50	1 ... 320	164064	DZF-50-...-P-A	161289	DZF-50-...-A-P-A¹⁾
	63	1 ... 320	164078	DZF-63-...-P-A	161304	DZF-63-...-A-P-A¹⁾
S2 – Through piston rod						
	12	1 ... 200	164001	DZF-12-...-P-A-S2	161221	DZF-12-...-A-P-A-S2
	18	1 ... 200	164013	DZF-18-...-P-A-S2	161234	DZF-18-...-A-P-A-S2
	25	1 ... 200	164025	DZF-25-...-P-A-S2	161247	DZF-25-...-A-P-A-S2¹⁾
	32	1 ... 320	164037	DZF-32-...-P-A-S2	161260	DZF-32-...-A-P-A-S2¹⁾
	40	1 ... 320	164051	DZF-40-...-P-A-S2	161275	DZF-40-...-A-P-A-S2¹⁾
	50	1 ... 320	164065	DZF-50-...-P-A-S2	161290	DZF-50-...-A-P-A-S2¹⁾
	63	1 ... 320	164079	DZF-63-...-P-A-S2	161305	DZF-63-...-A-P-A-S2¹⁾
S6 – Heat resistant seals up to 120 °C						
	12	1 ... 200	164002	DZF-12-...-P-A-S6	161223	DZF-12-...-A-P-A-S6
	18	1 ... 200	164014	DZF-18-...-P-A-S6	161236	DZF-18-...-A-P-A-S6
	25	1 ... 200	164026	DZF-25-...-P-A-S6	161249	DZF-25-...-A-P-A-S6¹⁾
	32	1 ... 320	164038	DZF-32-...-P-A-S6	161262	DZF-32-...-A-P-A-S6¹⁾
	40	1 ... 320	164052	DZF-40-...-P-A-S6	161277	DZF-40-...-A-P-A-S6¹⁾
	50	1 ... 320	164066	DZF-50-...-P-A-S6	161292	DZF-50-...-A-P-A-S6¹⁾
	63	1 ... 320	164080	DZF-63-...-P-A-S6	161307	DZF-63-...-A-P-A-S6¹⁾
S20 – Through, hollow piston rod						
	12	1 ... 200	–	–	161222	DZF-12-...-A-P-A-S20
	18	1 ... 200	–	–	161235	DZF-18-...-A-P-A-S20
	25	1 ... 200	–	–	161248	DZF-25-...-A-P-A-S20¹⁾
	32	1 ... 320	–	–	161261	DZF-32-...-A-P-A-S20¹⁾
	40	1 ... 320	–	–	161276	DZF-40-...-A-P-A-S20¹⁾
	50	1 ... 320	–	–	161291	DZF-50-...-A-P-A-S20¹⁾
	63	1 ... 320	–	–	161306	DZF-63-...-A-P-A-S20¹⁾

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

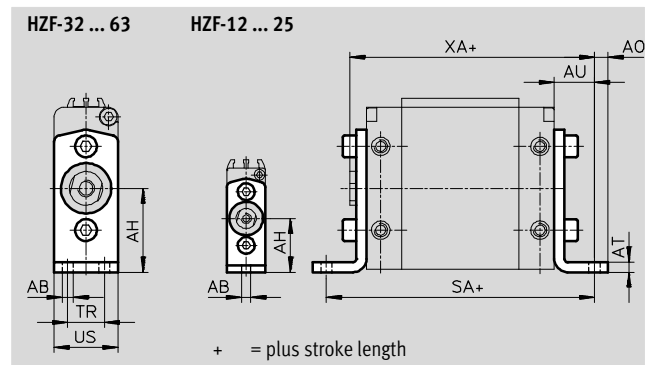
Flat cylinders DZF

Accessories



Foot mounting HZF

Material:
Steel



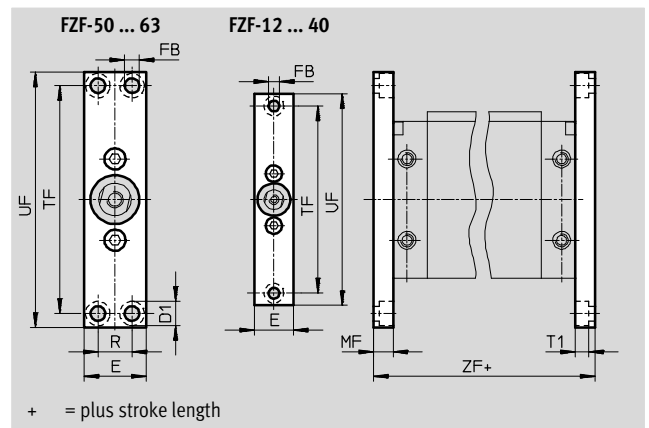
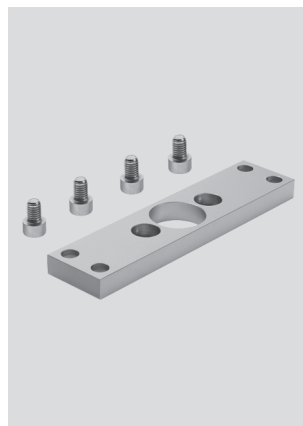
Dimensions and ordering data													
For \varnothing	AB \varnothing	AH	AO	AT	AU	SA	TR	US	XA	CRC ¹⁾	Weight [g]	Part No.	Type
12	4.5	25	5	2	13	88	–	14	82	1	21	161804	HZF-12
18	5.5	29	5	2	17	96	–	16	86	1	30	161805	HZF-18
25	5.5	28	6	3	16	94	–	20	86	1	58	161806	HZF-25
32	5.5	32	5.5	3	18	108	13	24	98	1	82	161807	HZF-32
40	5.5	40	7	4	20	116	16	30	105	1	142	161808	HZF-40
50	6.6	50	8	4	24	130	22	38	116	1	249	161809	HZF-50
63	9	63	10	4	27	136	30	50	119	1	436	161810	HZF-63

1) Corrosion resistance class CRC 1 to Festo standard FN 940070

Low corrosion stress. For dry indoor applications or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

Flange mounting FZF

Material:
Wrought aluminium alloy



Dimensions and ordering data													
For \varnothing	D1 \varnothing	E	FB \varnothing	MF	R	T1	TF	UF	ZF	CRC ¹⁾	Weight [g]	Part No.	Type
12	8	14	4.5	8	–	4.5	75	90	78	2	23	161811	FZF-12
18	8	16	4.5	8	–	4.5	80	94	78	2	28	161812	FZF-18
25	10	20	5.5	10	–	5.7	100	112	82	2	56	161813	FZF-25
32	11	24	6.6	10	–	6.5	115	130	92	2	78	161814	FZF-32
40	11	30	6.6	10	–	6.3	132	146	96	2	109	161815	FZF-40
50	15	38	9	12	21	8.3	140	157	106	2	167	161816	FZF-50
63	15	50	9	15	33	8.3	140	157	112	2	299	161817	FZF-63

1) Corrosion resistance class CRC 2 to Festo standard FN 940070

Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

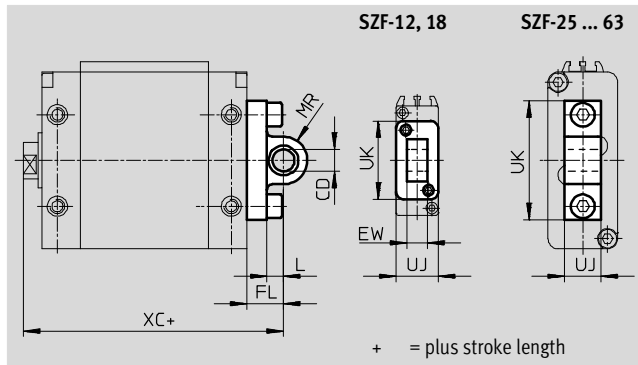
Flat cylinders DZF

Accessories

FESTO

Swivel flange SZF

Material:
High-alloy steel

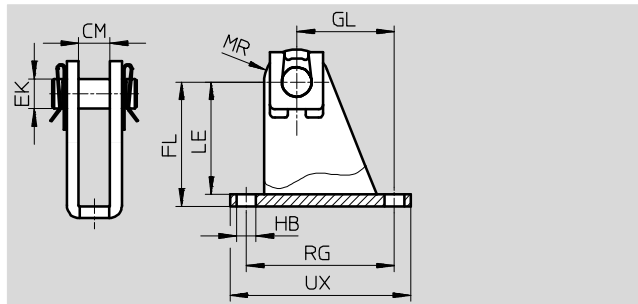


Dimensions and ordering data												
For \varnothing	CD \varnothing H9	EW h12	FL	L	MR	UJ	UK	XC	CRC ¹⁾	Weight [g]	Part No.	Type
12	8	7	16	13	7	14	26	85	2	20	161818	SZF-12
18	8	7	18	15	7	16	26	87	2	25	161819	SZF-18
25	8	–	14	8	7.5	9	37	84	2	25	161820	SZF-25
32	10	–	15	6	10	10.5	44	95	2	45	161821	SZF-32
40	12	–	18	9	13	10.5	52	103	2	65	161822	SZF-40
50	12	–	20	9	13	20	65	112	2	175	161823	SZF-50
63	16	–	24	13	17	25	78	116	2	255	161824	SZF-63

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

Clevis foot LZF

Material:
Steel

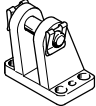
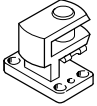






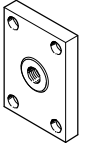

Dimensions and ordering data												
For \varnothing	CM	EK \varnothing H8	FL	GL	HB \varnothing	LE	MR	RG	UX	Weight [g]	Part No.	Type
12	7.1 +0.4	8	32 +0.4/-0.2	18	4.5	29	8	30	37	45	163962	LZF-12/18
18	7.1 +0.4	8	32 +0.4/-0.2	18	4.5	29	8	30	37	45	163962	LZF-12/18
25	9.1 +0.4	8	35 +0.4/-0.2	25.5	5.5	32	9.5	40	49	64	163963	LZF-25
32	10.6 +0.4	10	42 +0.4/-0.2	33	6.6	38	11	50	60	123	163964	LZF-32
40	10.6 +0.4	12	51 +0.4/-0.2	29.5	6.6	47	14	50	60	163	163965	LZF-40
50	20.1 +0.5	12	55 +0.6/-0.2	24	9	50	14	30	46	246	163966	LZF-50
63	25.1 +0.5	16	68 +0.6/-0.2	32	11	63	18	40	60	413	163967	LZF-63

Flat cylinders DZF

Accessories

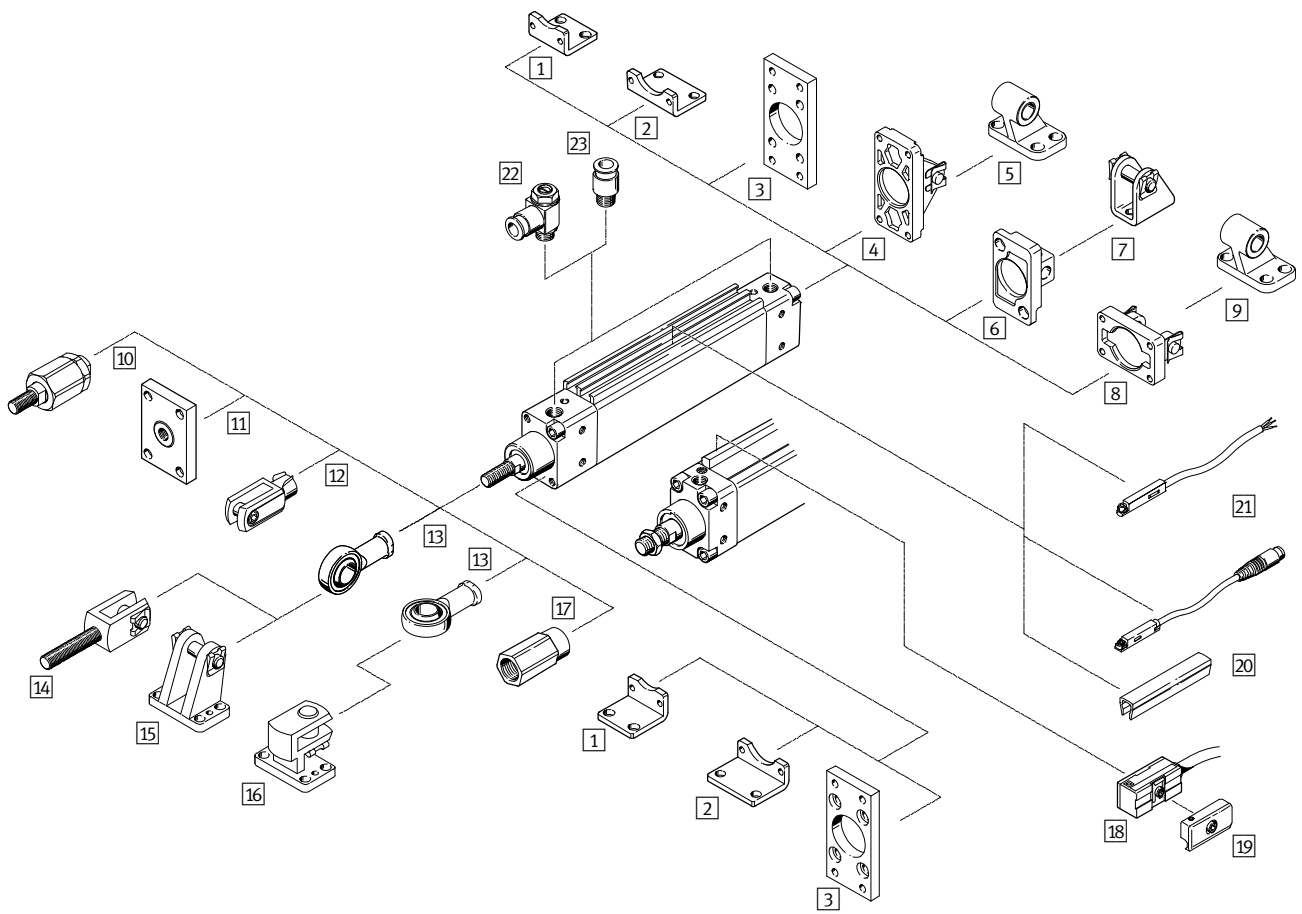
FESTO

Ordering data – Mounting attachments				Technical data → Internet: clevis foot			
Designation	For Ø	Part No.	Type	Designation	For Ø	Part No.	Type
Clevis foot LBG				Right-angle clevis foot LQG			
	32	31761	LBG-32		32	31768	LQG-32
	40	31762	LBG-40		40	31769	LQG-40
	50	31763	LBG-50		50	31770	LQG-50
	63	31764	LBG-63		63	31771	LQG-63

Ordering data – Piston rod attachments				Technical data → Internet: piston-rod attachment			
Designation	For Ø	Part No.	Type	Designation	For Ø	Part No.	Type
Rod eye SGS				Rod clevis SGA			
	12	9254	SGS-M6		12	–	–
	18	9255	SGS-M8		18	–	–
	25	9261	SGS-M10x1,25		25	32954	SGA-M10x1,25
	32						
	40	9262	SGS-M12x1,25		40	10767	SGA-M12x1,25
	50	9263	SGS-M16x1,5		50	10768	SGA-M16x1,5
	63				63		
Rod clevis SG				Self-aligning rod coupler FK			
	12	3110	SG-M6		12	2061	FK-M6
	18	3111	SG-M8		18	2062	FK-M8
	25	6144	SG-M10x1,25		25	6140	FK-M10x1,25
	32						
	40	6145	SG-M12x1,25		40	6141	FK-M12x1,25
	50	6146	SG-M16x1,5		50	6142	FK-M16x1,5
	63				63		
Coupling piece KSZ				Adapter AD			
	12	36123	KSZ-M6		12	157328	AD-M6-M5
	18	36124	KSZ-M8		157329	AD-M6-1/8	
	25	36125	KSZ-M10x1,25		157330	AD-M6-1/4	
	32						
	40	36126	KSZ-M12x1,25		157331	AD-M8-1/8	
	50	36127	KSZ-M16x1,5		157332	AD-M8-1/4	
	63						
			25	157333	AD-M10x1,25-1/8		
			32	157334	AD-M10x1,25-1/4		
			40	160256	AD-M12x1,25-1/4		
				160257	AD-M12x1,25-3/8		

Flat cylinders DZH

Peripherals overview



Flat cylinders DZH

Peripherals overview

FESTO

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

Flat cylinders DZH

Type codes

DZH – 16 – 40 – PPV – A –

Type

Double-acting	
DZH	Flat cylinder

Piston Ø [mm]

Stroke [mm]

Cushioning

PPV	Pneumatic cushioning adjustable at both ends
-----	--

Position sensing

A	For proximity sensing
---	-----------------------

Variant

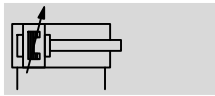
S2	Through piston rod
S6	Heat resistant seals up to 120 °C
S20	Through, hollow piston rod



Flat cylinders DZH


Technical data

FESTO

Function



-  - Diameter
16 ... 63
-  - Stroke length
1 ... 1000

-  - www.festo.com

Wearing parts kits

→ page 30

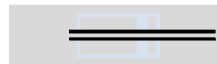
Variants



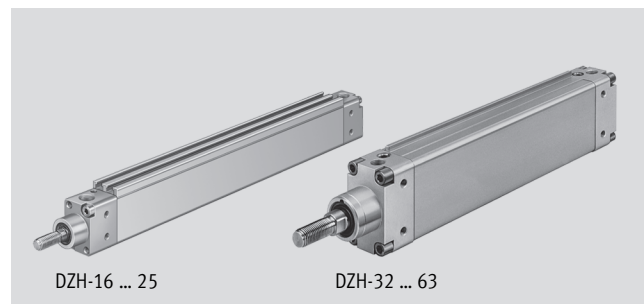
S2



S6



S20



General technical data							
Piston Ø	16	20	25	32	40	50	63
Pneumatic connection	M5	G1/8	G1/8	G1/8	G1/4	G1/4	G3/8
End of piston rod Male thread	M6	M8	M10x1.25	M10x1.25	M12x1.25	M16x1.5	M16x1.5
Constructional design	Piston, piston rod						
Protection against torsion/guide	Oval piston						
Stroke [mm]	1 ... 200	1 ... 320	1 ... 500	1 ... 1000			
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	
Flat cylinder	DZH-... DZH-...-S6
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [7:4:4]
Note on operating/pilot medium	Operation with lubricated medium possible (in which case lubricated operation will always be required)
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 CRC 2 to Festo standard FN 940070

Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

-  - Note

Sizing software
ProPneu
→ www.festo.com

Flat cylinders DZH

Technical data

FESTO

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	1178	1870
	S2/S20	104	158	247	415	633	989	1682
Theoretical force at 6 bar, retracting		104	158	247	415	633	989	1682
	S2/S20	104	158	247	415	633	989	1682
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

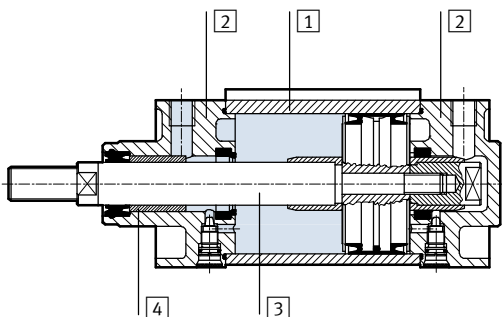
Weights [g]							
Piston Ø	16	20	25	32	40	50	63
Product weight at 0 mm stroke	140	230	330	500	820	1200	1690
Additional weight per 10 mm stroke	11	15	21	30	40	60	80

Minimum stroke length [mm] for contactless position sensing with one proximity sensor							
Piston Ø	32	40	50	63			
SMEO-1/SMTO-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		
SMTO-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	DZH...	DZH...-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
Note on materials	RoHS-compliant	

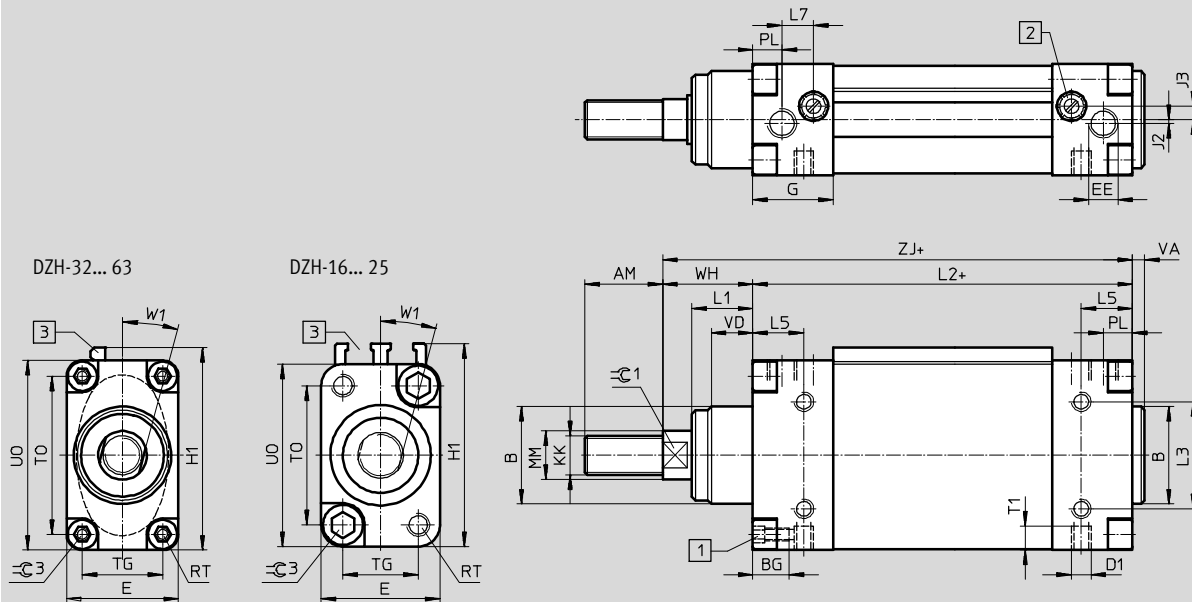
Flat cylinders DZH

Technical data

FESTO

Dimensions

Download CAD data → www.festo.com



- 1 Socket head screw with female thread
 - 2 Regulating screw for adjustable end-position cushioning
 - 3 Ø 16 ... 25: Mounting slot for proximity sensors
Ø 32 ... 63: Mounting rail for proximity sensor
- + = plus stroke length

Ø	AM	B	BG	D1	D8	E	EE	G	H1	J2	J3	KK	L1	L2	L3	L5
[mm]		Ø f10			Ø											
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	12
20	20	20	5.5	M4	3.2	23	G1/8	25	39.5	-0.7	5	M8	14	90.5 ±0.5	15	15
25	22	22	7	M5	3.8	26	G1/8	26	44.5	-0.3	4.2	M10x1.25	14	92.5 ±0.5	18	16
32	22	30	13	M6	-	36	G1/8	27	53.3	-	3	M10x1.25	16	94 ±0.7	18	13
40	24	35	13	M6	-	40	G1/4	33	66.3	-	6	M12x1.25	20	105 ±0.7	32	16.5
50	32	40	15	M8	-	46	G1/4	32.5	82.3	2.5	3	M16x1.5	25	106 ±0.7	44	21
63	32	42	15	M10	-	54	G3/8	36.5	108.3	4	5	M16x1.5	28	115 ±0.7	64	22.5

Ø	L7	MM	PL	RT	T1	TG	TO	U0	VA	VD	WH	W1	ZJ	ZM	⊖C1	⊖C3
[mm]		Ø									±1					
16	8.5	6	7.5	M4	5.5	12	23	31	2.5	12	17.5	15°	96	114.4 ±0.4	5	4
20	10.5	8	9.3	M4	5.5	15	27	35	2.5	14	18.5	15°	109	128 ±0.4	7	4
25	10	10	10.5	M5	7	16.5	30.5	40	2.5	14	20.5	15°	113	134 ±0.4	9	5
32	10.2	12	9	M5	9	24.5	36.5	48	4	16	26	15°	120	147.1 ±0.5	10	6
40	13.2	16	11	M5	9	28	50	62	5.5	20	30	15°	135	165.3 ±0.5	13	6
50	14	20	10.5	M6	10	33	65	78	5	17	37.5	15°	143.5	181.5 ±0.5	17	6
63	14.5	20	12.5	M6	12	40	90	104	6	20	40	15°	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 ⊖C1.

Flat cylinders DZH

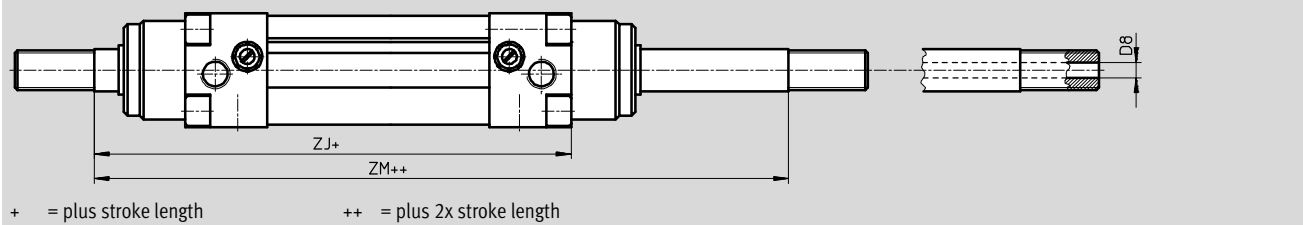
Technical data

FESTO

Dimensions

Download CAD data → www.festo.com

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




∅	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

FESTO





Ordering data						
Type	Stroke [mm]	Part No.	Type	Stroke [mm]	Part No.	Type
	Piston Ø 16 mm			Piston Ø 20 mm		
	25	151145	DZH-16-25-PPV-A	25	151134	DZH-20-25-PPV-A
	40	151146	DZH-16-40-PPV-A	40	151135	DZH-20-40-PPV-A
	50	151147	DZH-16-50-PPV-A	50	151136	DZH-20-50-PPV-A
	80	151148	DZH-16-80-PPV-A	80	151137	DZH-20-80-PPV-A
	100	151149	DZH-16-100-PPV-A	100	151138	DZH-20-100-PPV-A
	125	151150	DZH-16-125-PPV-A	125	151139	DZH-20-125-PPV-A
	160	151151	DZH-16-160-PPV-A	160	151140	DZH-20-160-PPV-A
	200	151152	DZH-16-200-PPV-A	200	151141	DZH-20-200-PPV-A
	250	-	-	250	151142	DZH-20-250-PPV-A
300	-	-	300	-	-	
320	-	-	320	151143	DZH-20-320-PPV-A	
Piston Ø 25 mm			Piston Ø 32 mm			
25	151121	DZH-25-25-PPV-A ¹⁾	25	14041	DZH-32-25-PPV-A ¹⁾	
40	151122	DZH-25-40-PPV-A ¹⁾	40	14042	DZH-32-40-PPV-A ¹⁾	
50	151123	DZH-25-50-PPV-A ¹⁾	50	14043	DZH-32-50-PPV-A ¹⁾	
80	151124	DZH-25-80-PPV-A ¹⁾	80	14044	DZH-32-80-PPV-A ¹⁾	
100	151125	DZH-25-100-PPV-A ¹⁾	100	14045	DZH-32-100-PPV-A ¹⁾	
125	151126	DZH-25-125-PPV-A ¹⁾	125	14046	DZH-32-125-PPV-A ¹⁾	
160	151127	DZH-25-160-PPV-A ¹⁾	160	14047	DZH-32-160-PPV-A ¹⁾	
200	151128	DZH-25-200-PPV-A ¹⁾	200	14048	DZH-32-200-PPV-A ¹⁾	
250	151129	DZH-25-250-PPV-A ¹⁾	250	14049	DZH-32-250-PPV-A ¹⁾	
300	-	-	300	14050	DZH-32-300-PPV-A ¹⁾	
320	151130	DZH-25-320-PPV-A ¹⁾	320	-	-	
400	151131	DZH-25-400-PPV-A ¹⁾	400	-	-	
500	151132	DZH-25-500-PPV-A ¹⁾	500	-	-	
Piston Ø 40 mm			Piston Ø 50 mm			
25	14052	DZH-40-25-PPV-A ¹⁾	25	14063	DZH-50-25-PPV-A ¹⁾	
40	14053	DZH-40-40-PPV-A ¹⁾	40	14064	DZH-50-40-PPV-A ¹⁾	
50	14054	DZH-40-50-PPV-A ¹⁾	50	14065	DZH-50-50-PPV-A ¹⁾	
80	14055	DZH-40-80-PPV-A ¹⁾	80	14066	DZH-50-80-PPV-A ¹⁾	
100	14056	DZH-40-100-PPV-A ¹⁾	100	14067	DZH-50-100-PPV-A ¹⁾	
125	14057	DZH-40-125-PPV-A ¹⁾	125	14068	DZH-50-125-PPV-A ¹⁾	
160	14058	DZH-40-160-PPV-A ¹⁾	160	14069	DZH-50-160-PPV-A ¹⁾	
200	14059	DZH-40-200-PPV-A ¹⁾	200	14070	DZH-50-200-PPV-A ¹⁾	
250	14060	DZH-40-250-PPV-A ¹⁾	250	14071	DZH-50-250-PPV-A ¹⁾	
300	14061	DZH-40-300-PPV-A ¹⁾	300	14072	DZH-50-300-PPV-A ¹⁾	
Piston Ø 63 mm						
25	14074	DZH-63-25-PPV-A ¹⁾				
40	14075	DZH-63-40-PPV-A ¹⁾				
50	14076	DZH-63-50-PPV-A ¹⁾				
80	14077	DZH-63-80-PPV-A ¹⁾				
100	14078	DZH-63-100-PPV-A ¹⁾				
125	14079	DZH-63-125-PPV-A ¹⁾				
160	14080	DZH-63-160-PPV-A ¹⁾				
200	14081	DZH-63-200-PPV-A ¹⁾				
250	14082	DZH-63-250-PPV-A ¹⁾				
300	14083	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	1 ... 200	150295	DZH-16-...-PPV-A
	20	1 ... 320	150294	DZH-20-...-PPV-A
	25	1 ... 500	150293	DZH-25-...-PPV-A¹⁾
	32	1 ... 1,000	14040	DZH-32-...-PPV-A¹⁾
	40	1 ... 1,000	14051	DZH-40-...-PPV-A¹⁾
	50	1 ... 1,000	14062	DZH-50-...-PPV-A¹⁾
	63	1 ... 1,000	14073	DZH-63-...-PPV-A¹⁾
S2 – Through piston rod				
	16	1 ... 200	151155	DZH-16-...-PPV-A-S2
	20	1 ... 320	151154	DZH-20-...-PPV-A-S2
	25	1 ... 500	151153	DZH-25-...-PPV-A-S2¹⁾
	32	1 ... 1000	151772	DZH-32-...-PPV-A-S2¹⁾
	40	1 ... 1000	151773	DZH-40-...-PPV-A-S2¹⁾
	50	1 ... 1000	151774	DZH-50-...-PPV-A-S2¹⁾
	63	1 ... 1000	151775	DZH-63-...-PPV-A-S2¹⁾
S6 – Heat resistant seals up to 120 °C				
	16	1 ... 200	151156	DZH-16-...-PPV-A-S6
	20	1 ... 320	151157	DZH-20-...-PPV-A-S6
	25	1 ... 500	151158	DZH-25-...-PPV-A-S6¹⁾
	32	1 ... 1000	16531	DZH-32-...-PPV-A-S6¹⁾
	40	1 ... 1000	16532	DZH-40-...-PPV-A-S6¹⁾
	50	1 ... 1000	16533	DZH-50-...-PPV-A-S6¹⁾
	63	1 ... 1000	16534	DZH-63-...-PPV-A-S6¹⁾
S20 – Through, hollow piston rod				
	16	1 ... 200	158379	DZH-16-...-PPV-A-S20
	20	1 ... 320	158380	DZH-20-...-PPV-A-S20
	25	1 ... 500	158381	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	121125	DZH-16-PPV-A
20	121126	DZH-20-PPV-A
25	121127	DZH-25-PPV-A
32	108706	DZH-32-PPV-A
40	108707	DZH-40-PPV-A
50	108708	DZH-50-PPV-A
63	108709	DZH-63-PPV-A

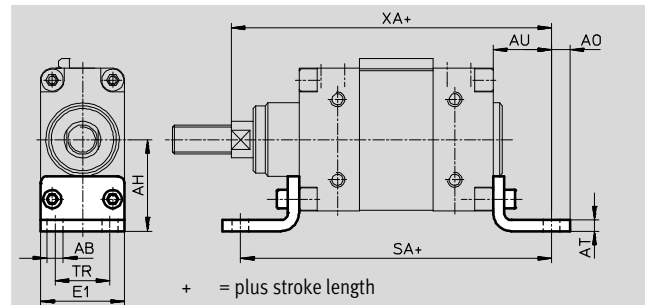
Flat cylinders DZH

Accessories



Foot mounting HZS, narrow

Material:
Steel

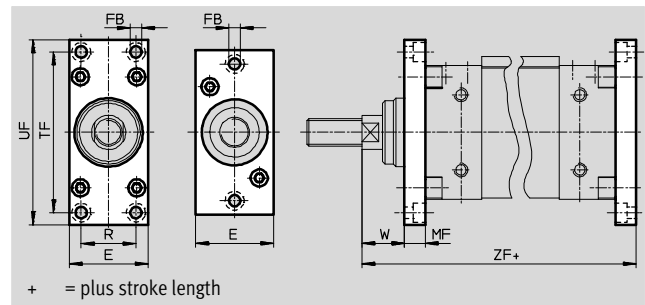
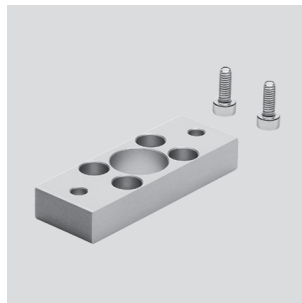


Dimensions and ordering data													
For \varnothing	AB \varnothing	AH	AO	AT	AU	E1	SA	TR	XA	CRC ¹⁾	Weight [g]	Part No.	Type
16	4.5	24.5	4	4	21	20	120.5	12	117	1	61	151933	HZS-16
20	4.5	27.5	4	4	21	23	132.5	15	130	1	72	151932	HZS-20
25	5.5	30	5	4	25	26	142.5	16.5	138	1	99	151931	HZS-25
32	7	32	8	4	24	36	142	24	144	1	114	14879	HZS-32
40	9	40	10	5	28	40	161	25	163	1	175	14880	HZS-40
50	9	50	10	6	32	46	170	30	175.5	1	283	14881	HZS-50
63	9	62	15	6	35	54	185	38	190	1	381	14882	HZS-63

1) Corrosion resistance class CRC 1 to Festo standard FN 940070
Low corrosion stress. For dry indoor applications or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

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	27	151930	FZS-16	
20	24	4.8	10	–	54	70	8.5	119	2	35	151929	FZS-20	
25	27	5.8	10	–	60	75	10.5	123	2	43	151928	FZS-25	
32	36	5.8	10	24	62	75	16	130	2	59	14887	FZS-32	
40	40	5.8	10	28	78	90	20	145	2	76	14888	FZS-40	
50	46	6.8	12	32	94	108	25.5	155.5	2	132	14889	FZS-50	
63	54	6.8	15	40	120	134	25	170	2	248	14890	FZS-63	

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

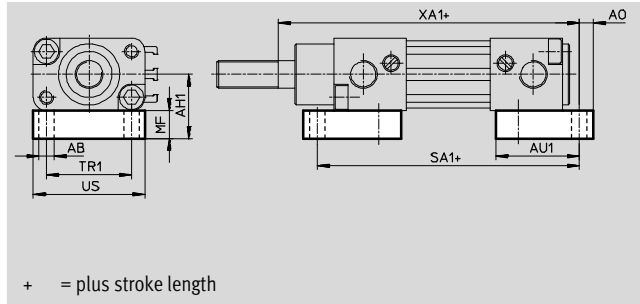
Flat cylinders DZH

Accessories



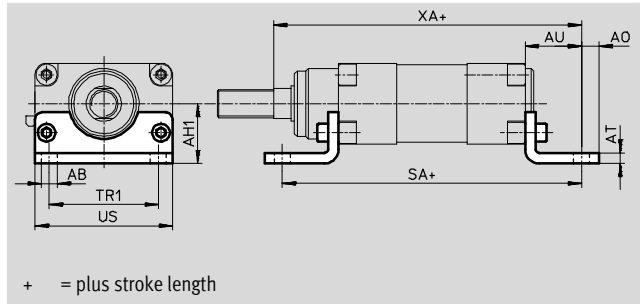
Foot mounting HZB, wide for piston \varnothing 16 ... 25 mm

Material:
Wrought aluminium alloy



for piston \varnothing 32 ... 63 mm

Material:
Steel

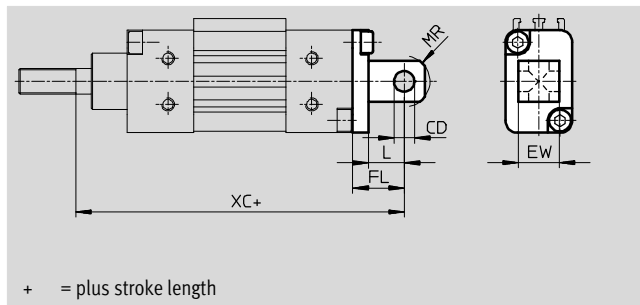
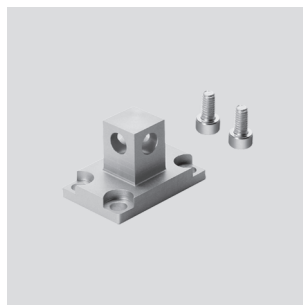


Dimensions and ordering data																	
For \varnothing	AB \varnothing	AH1	AO	AT	AU	AU1	MF	SA	SA1	TR1	US	XA	XA1	CRC ¹⁾	Weight [g]	Part No.	Type
16	4.5	20	4	-	-	23	10	-	88.5	23	30	-	101	2	48	151936	HZB-16
20	4.5	21.5	4	-	-	26	10	-	100.5	27	35	-	114	2	62	151935	HZB-20
25	5.5	23	5	-	-	30	10	-	104.5	30.5	40	-	119	2	85	151934	HZB-25
32	7	26	8	4	24	-	-	142	-	32	48	144	-	1	139	14875	HZB-32
40	9	29	10	5	28	-	-	161	-	46	62	163	-	1	243	14876	HZB-40
50	9	34	10	6	32	-	-	170	-	62	78	175.5	-	1	426	14877	HZB-50
63	9	38	15	6	35	-	-	185	-	88	104	190	-	1	673	14878	HZB-63

- 1) Corrosion resistance class CRC 1 to Festo standard FN 940070
Low corrosion stress. For dry indoor applications or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).
Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

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

Material:
High-alloy stainless steel
Free of copper and PTFE
RoHS-compliant



Dimensions and ordering data									
For \varnothing	CD \varnothing H8	EW	FL	L	XC	CRC ¹⁾	Weight [g]	Part No.	Type
16	4	8	14	8	110	2	27	151927	SZSB-16
20	6	12	16	10	125	2	39	151926	SZSB-20
25	8	16	20	14	133	2	66	151925	SZSB-25

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

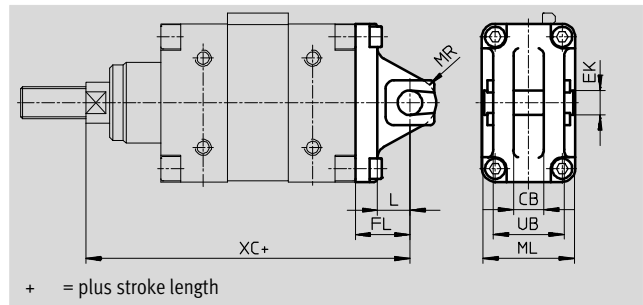
Flat cylinders DZH

Accessories



Swivel flange SZS, narrow for piston Ø 32 ... 63 mm

Material:
Die-cast aluminium
Free of copper and PTFE

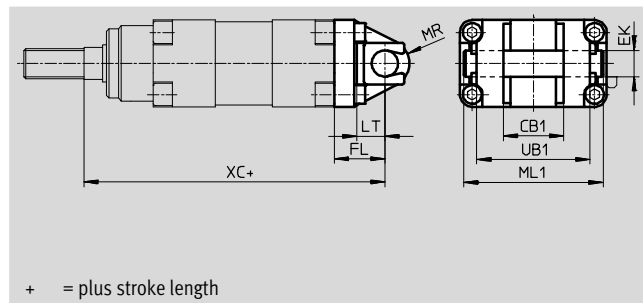


Dimensions and ordering data												
For Ø	CB	EK Ø	FL	L	ML	MR	UB	XC	CRC ¹⁾	Weight [g]	Part No.	Type
	+0.2	e8					±0.1					
32	9.4	10	22	13.5	35.6	11	25.8	142	2	79	14883	SZS-32
40	12.4	12	25	15.5	39.6	13	28.8	160	2	117	14884	SZS-40
50	14.4	12	27	15.5	45.6	13	34.8	170.5	2	167	14885	SZS-50
63	16.4	16	35	22.4	53.6	17	40.8	190	2	333	14886	SZS-63

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

Swivel flange SZB, wide for piston Ø 32 ... 63 mm

Material:
High-alloy stainless steel



Dimensions and ordering data												
For Ø	CB1	EK Ø	FL	LT	ML1	MR	UB1	XC	CRC ¹⁾	Weight [g]	Part No.	Type
	H14	e8										
32	16	10	22	14	47	11	36 _{-0.7}	142	2	172	30798	SZB-32
40	28	12	25	15.5	61	13	52 ₋₁	160	2	288	30799	SZB-40
50	32	12	27	16	77	13	60 ₋₁	170.5	2	430	30629	SZB-50
63	40	16	35	23	103	17	70 ₋₁	190	2	679	30630	SZB-63

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

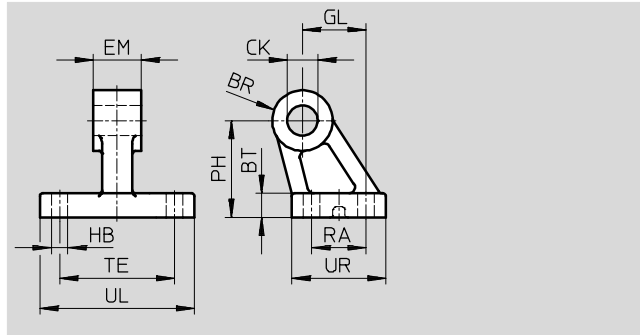
Flat cylinders DZH

Accessories



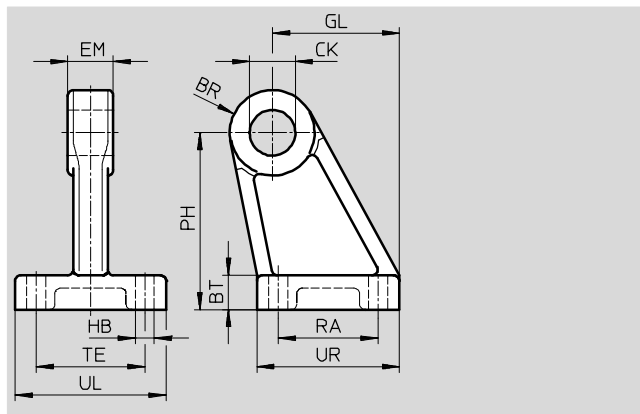
Clevis foot LBZB for piston \varnothing 32 mm

Material:
Tempered steel
Free of copper and PTFE
RoHS-compliant



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

Material:
Special steel casting
Free of copper and PTFE
RoHS-compliant



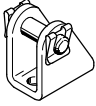

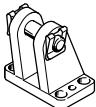
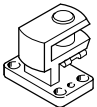
Dimensions and ordering data															
For \varnothing	BR	BT	CK \varnothing	EM	GL	HB \varnothing	PH	RA	TE	UL	UR	CRC ¹⁾	Weight [g]	Part No.	Type
LBZB															
32	10	8	10 ^{H9}	15.8	21	5.5	32	18	38	41	31	2	131	33842	LBZB-32
LBZS															
32	10	8	10 ^{H8}	9	21	5.5	33.5	18	24	35	31	2	92	33843	LBZS-32
40	11	10	12 ^{H8}	12	24	5.5	40	22	28	39	35	2	138	33844	LBZS-40
50	13	12	12 ^{H8}	14	33	6.6	51.5	30	30	45	45	2	244	33845	LBZS-50
63	15	12	16 ^{H8}	16	37	6.6	62	35	38	53	51	2	321	33846	LBZS-63





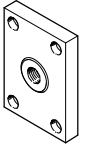

1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial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

Flat cylinders DZH

Accessories

FESTO


Ordering data – Mounting attachments				Technical data → Internet: clevis foot			
Designation	For Ø	Part No.	Type	Designation	For Ø	Part No.	Type
Clevis foot LBN				Clevis foot LN			
	16	6058	LBN-12/16		32	5147	LN-32
	20	6059	LBN-20/25		40	5148	LN-40
	25				50	5149	LN-50
			63		5150	LN-63	
Clevis foot LBG				Right-angle clevis foot LQG			
	32	31761	LBG-32		32	31768	LQG-32
	40	31762	LBG-40		40	31769	LQG-40
	50	31763	LBG-50		50	31770	LQG-50
	63	31764	LBG-63		63	31771	LQG-63


Ordering data – Piston rod attachments				Technical data → Internet: piston-rod attachment			
Designation	For Ø	Part No.	Type	Designation	For Ø	Part No.	Type
Rod eye SGS				Rod clevis SGA			
	16	9254	SGS-M6		16	–	–
	20	9255	SGS-M8		20	–	–
	25	9261	SGS-M10x1,25		25	32954	SGA-M10x1,25
	32				32		
	40	9262	SGS-M12x1,25		40	10767	SGA-M12x1,25
	50	9263	SGS-M16x1,5		50	10768	SGA-M16x1,5
63			63				
Rod clevis SG				Self-aligning rod coupler FK			
	16	3110	SG-M6		16	2061	FK-M6
	20	3111	SG-M8		20	2062	FK-M8
	25	6144	SG-M10x1,25		25	6140	FK-M10x1,25
	32				32		
	40	6145	SG-M12x1,25		40	6141	FK-M12x1,25
	50	6146	SG-M16x1,5		50	6142	FK-M16x1,5
63			63				
Coupling piece KSZ				Adapter AD			
	16	36123	KSZ-M6		16	157328	AD-M6-M5
	20	36124	KSZ-M8		157329	AD-M6-1/8	
	25	36125	KSZ-M10x1,25		157330	AD-M6-1/4	
	32				20	157331	AD-M8-1/8
	40	36126	KSZ-M12x1,25		157332	AD-M8-1/4	
	50	36127	KSZ-M16x1,5		25	157333	AD-M10x1,25-1/8
63			157334	AD-M10x1,25-1/4			


Flat cylinders DZH


Accessories

FESTO

Ordering data – Block-shaped proximity sensors, magneto-resistive						Technical data → Internet: smto	
	Mounting	Switch output	Electrical connection		Cable length [m]	Part No.	Type
			Cables	M8 plug			
NO contact							
	With accessories	PNP	3 wires	–	2.5	151683	SMTO-1-PS-K-LED-24-C
			–	3-pin	–	151685	SMTO-1-PS-S-LED-24-C
		NPN	3 wires	–	2.5	151684	SMTO-1-NS-K-LED-24-C
			–	3-pin	–	151686	SMTO-1-NS-S-LED-24-C

Ordering data – Block-shaped proximity sensors, magnetic reed						Technical data → Internet: smeo	
	Mounting	Electrical connection		Cable length [m]	Part No.	Type	
		Cables	M8 plug				
NO contact							
	With accessories	3 wires	–	2.5	30459	SMEO-1-LED-24-B	
		3 wires	–	5.0	151672	SMEO-1-LED-24-K5-B	
		–	3-pin	–	150848	SMEO-1-S-LED-24-B	

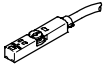
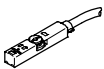
Ordering data – Block-shaped proximity sensor, pneumatic					Technical data → Internet: smpo	
	Mounting	Pneumatic connection		Part No.	Type	
3/2-way valve, normally closed						
	With accessories	Barbed fitting for tubing ID of 3 mm		31008	SMPO-1-H-B	

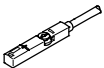


Ordering data – Mounting kit				Technical data → Internet: smb	
	Mounting	Part No.	Type		
	for cylinder with tie rod \varnothing 6 mm or DUO rail mounting profile	11886	SMB-1		


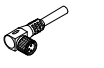
Flat cylinders EZH/DZF/DZH

Accessories

FESTO

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

Ordering data – Proximity sensors for T-slot, magnetic reed						Technical data → Internet: sme		
	Type of mounting	Switch output	Electrical connection	Cable length [m]	Part No.	Type		
N/O contact								
	Insertable in the slot from above, flush with cylinder profile	Contacting	Cable, 3-wire	2.5	543862	SME-8M-DS-24V-K-2,5-OE		
				5.0	543863	SME-8M-DS-24V-K-5,0-OE		
			Plug M8x1, 3-pin	Cable, 2-wire	2.5	543872	SME-8M-ZS-24V-K-2,5-OE	
				0.3	543861	SME-8M-DS-24V-K-0,3-M8D		
	Insertable in the slot lengthwise, flush with the cylinder profile	Contacting	Cable, 3-wire	2.5	150855	SME-8-K-LED-24		
			Plug M8x1, 3-pin	0.3	150857	SME-8-S-LED-24		
N/C contact								
	Insertable in the slot lengthwise, flush with the cylinder profile	Contacting	Cable, 3-wire	7.5	160251	SME-8-0-K-LED-24		



Ordering data – Connecting cables					Technical data → Internet: nebu	
	Electrical connection, left	Electrical connection, right	Cable length [m]	Part No.	Type	
	Straight socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	541333	NEBU-M8G3-K-2.5-LE3	
			5	541334	NEBU-M8G3-K-5-LE3	
	Straight socket, M12x1, 5-pin	Cable, open end, 3-wire	2.5	541363	NEBU-M12G5-K-2.5-LE3	
			5	541364	NEBU-M12G5-K-5-LE3	
	Angled socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	541338	NEBU-M8W3-K-2.5-LE3	
			5	541341	NEBU-M8W3-K-5-LE3	
	Angled socket, M12x1, 5-pin	Cable, open end, 3-wire	2.5	541367	NEBU-M12W5-K-2.5-LE3	
			5	541370	NEBU-M12W5-K-5-LE3	

Ordering data – Slot cover for T-slot					
	Mounting	Length	Part No.	Type	
	inserted from above	2x 0.5 m	151680	ABP-5-S	

Flat cylinders EZH/DZF/DZH

Accessories



Ordering data – One-way flow control valves				Technical data → Internet: grl			
	Connection		Material	Part No.	Type		
	Thread	For tubing OD					
for exhaust air							
	M5	3	Metal design	193137	GRLA-M5-QS-3-D		
		4		193138	GRLA-M5-QS-4-D		
		6		193139	GRLA-M5-QS-6-D		
	G1/8	3		193142	GRLA-1/8-QS-3-D		
		4		193143	GRLA-1/8-QS-4-D		
		6		193144	GRLA-1/8-QS-6-D		
		8		193145	GRLA-1/8-QS-8-D		
	G1/4	6		193146	GRLA-1/4-QS-6-D		
		8		193147	GRLA-1/4-QS-8-D		
		10		193148	GRLA-1/4-QS-10-D		
	G3/8	6		193149	GRLA-3/8-QS-6-D		
		8		193150	GRLA-3/8-QS-8-D		
		10		193151	GRLA-3/8-QS-10-D		
	for supply air						
		M5		3	Metal design	193153	GRLZ-M5-QS-3-D
4			193154	GRLZ-M5-QS-4-D			
6			193155	GRLZ-M5-QS-6-D			
G1/8		3	193156	GRLZ-1/8-QS-3-D			
		4	193157	GRLZ-1/8-QS-4-D			
		6	193158	GRLZ-1/8-QS-6-D			
		8	193159	GRLZ-1/8-QS-8-D			

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