

# Flat Cylinders DZF - Inch Series

Overview



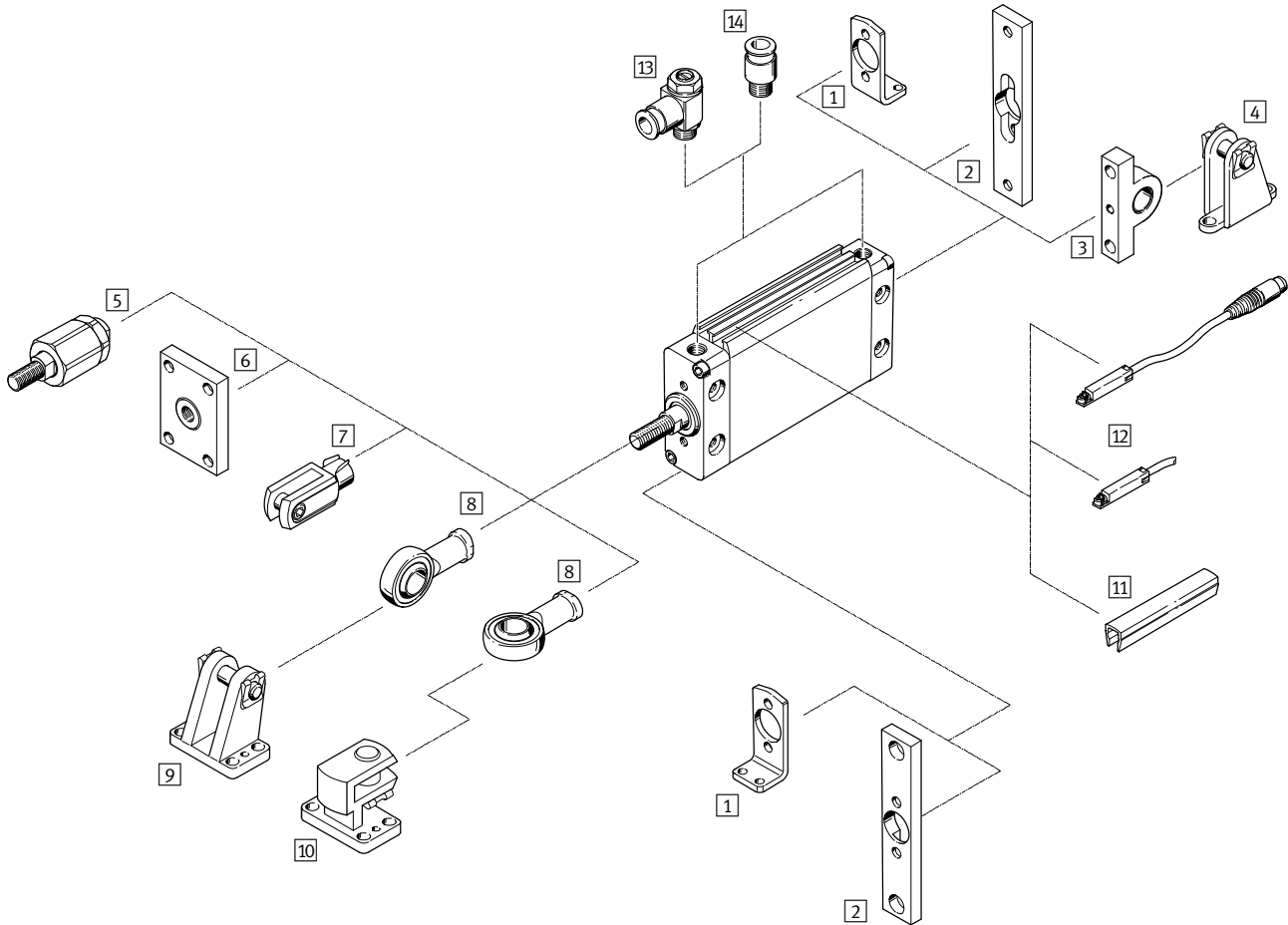
- Non-rotating oval piston
- Piston  $\varnothing$  1/2" to 2-1/2"
- Standard strokes up to 12", variable strokes up to 13"
- Double-acting
- Moment capacity up to 13.3 lbf-in
- Male or female rod thread
- Extensive range of accessories
- Versatile mounting options

Product range overview									
Function	Design	Type	Piston $\varnothing$ [in]	Standard stroke [in]	Variable stroke [in]	Magnet for position sensing (A)	Piston rod		Heat resistant seals up to 302 °F (S6)
							female thread	male thread	
Double-acting flat cylinder		DZF Single-ended piston rod	1/2, 11/16, 1	1/2, 1, 2, 3, 4, 5, 6, 8	0.04 ... 8	■	■	■	■
			1-1/4, 1-5/8, 2, 2-1/2	1/2, 1, 2, 3, 4, 5, 6, 8, 10, 12	0.04... 13				
		DZF-...-S2 Through piston rod	1/2, 11/16, 1	-	0.04 ... 8	■	■	■	-
			1-1/4, 1-5/8, 2, 2-1/2	-	0.04 ... 13				
		DZF-...-S20 Through, hollow piston rod	1/2, 11/16, 1	-	0.04 ... 8	■	■	■	-
			1-1/4, 1-5/8, 2, 2-1/2	-	0.04 ... 13				

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Accessories overview

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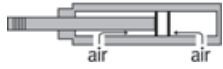
Mounting attachments and accessories	
	Description
1	Foot mounting HZF for bearing and end caps
2	Flange mounting FZF for bearing and end caps
3	Swivel flange SZF for end caps
4	Clevis foot LZF -
5	Self-aligning rod coupler FK for compensating radial and angular deviations
6	Coupling piece KSZ for cylinders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

# Flat cylinders DZF - Inch Series



## Technical Data

Double-acting



Equivalent Piston Diameter 1/2 ...  
2-1/2 inch  
Stroke length 0.4... 13 inch

Options:

- Non-rotating elliptical piston
- Male or female rod thread
- Through piston rod (S2)
- Through, hollow piston rod (S20)
- Heat resistant (S6)



General technical data								
Piston Ø		1/2	11/16	1	1-1/4	1-5/8	2	2-1/2
Pneumatic connection		10-32 UNF	10-32 UNF	10-32 UNF	1/8" NPT	1/8" NPT	1/4" NPT	1/4" NPT
Piston rod thread	female	4-48 UNF	8-36 UNF	10-32 UNF	1/4-28 UNF	5/16-24 UNF	3/8-24 UNF	3/8-24 UNF
	male	10-32 UNF	5/16-24 UNF	3/8-24 UNF	3/8-24 UNF	1/2-20 UNF	5/8-18 UNF	5/8-18 UNF
Operating medium		Filtered compressed air, lubricated or unlubricated						
Constructional design		Piston						
		Piston rod						
Cushioning		Flexible cushioning rings at both ends						
Magnet for position sensing <sup>1)</sup>		Standard						

1) Position sensing via magnetic proximity sensor (ordered separately, see accessories).

Operating pressure [psi]								
Piston Ø		1/2	11/16	1	1-1/4	1-5/8	2	2-1/2
		23 ... 145	15 ... 145					

Ambient conditions		
Variant	Basic version	S6
Ambient temperature <sup>1)</sup> [°F]	0 ... +176	0 ... +302
Corrosion resistance class CRC <sup>2)</sup>	2	2

1) Observe operating range of proximity sensors.  
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 [lbf] and impact energy [ft-lbf]								
Piston Ø		1/2	11/16	1	1-1/4	1-5/8	2	2-1/2
Theoretical force at 90 psi, extending		15.2	36.3	66.1	108.2	168.9	263.9	418.9
	S2/S20	11.4	27.3	55.3	93.0	141.8	221.8	376.8
Theoretical force at 90 psi, retracting		11.4	27.3	55.3	93.0	141.8	221.8	376.8
	S2/S20	11.4	27.3	55.3	93.0	141.8	221.8	376.8
Max. impact energy at endpositions		0.07	0.07	0.07	0.30	0.38	0.47	0.52

Torque [lbf-in] and torsional backlash [°]								
Piston Ø		1/2	11/16	1	1-1/4	1-5/8	2	2-1/2
Max. torque at the piston rod <sup>1)</sup>		0.9	1.8	4.4	7.1	8.9	10.6	13.3
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.

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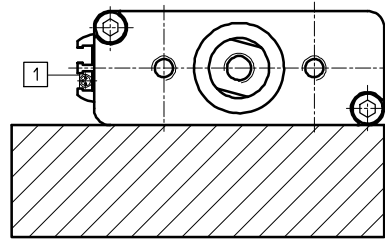
Data sheet



Weights [oz]							
Piston Ø	1/2	11/16	1	1-1/4	1-5/8	2	2-1/2
Product weight at 0 inch stroke	3.4	3.8	5.9	9.6	16.9	30.2	48.7
Additional weight per 1 inch stroke	0.8	1.2	1.6	2.2	3.6	5.7	8.2

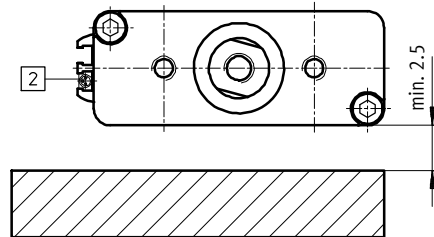
## Safety clearances for reliable switching function

Cylinders mounted to ferritic surfaces



1 SMT-8...

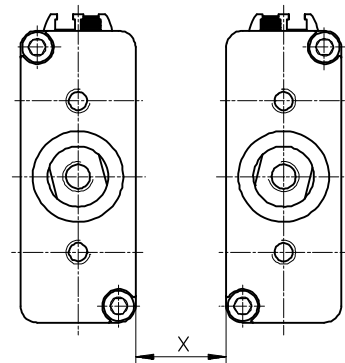
If a proximity sensor SME-8 is used, with piston Ø 1/2 to 1-1/4 inch, a minimum clearance to the ferritic component of 2.5 inch must be maintained. SMT-8 can be used regardless of clearance.



2 SME-8...

## Cylinder to cylinder spacing

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		1/2	11/16	1	1-1/4	1-5/8	2	2-1/2
Min. safety clearance X [in]	SMT-8...	1.4			1.0	1.8		3.1
	SME-8...	2.0			1.8	2.6		2.0

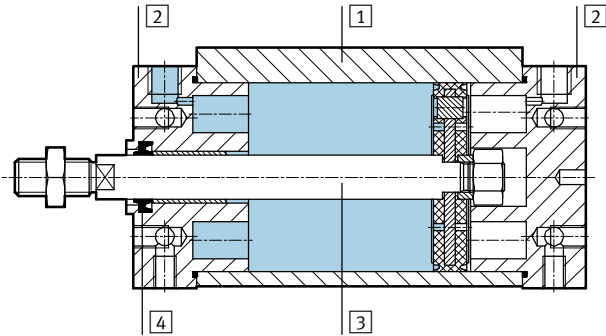
# Flat cylinders DZF - Inch Series

Data sheet



## Materials

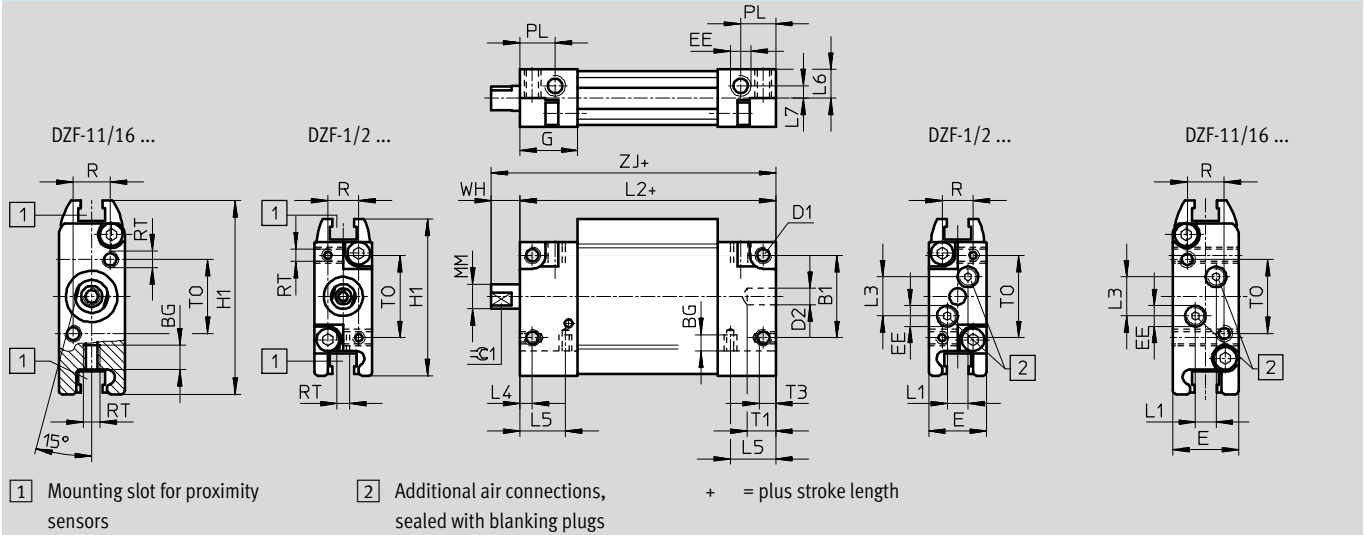
Sectional view



Cylinder	Basic version	S6
1 Cylinder barrel	Wrought aluminum alloy, anodized	Wrought aluminum alloy, anodized
2 Bearing end cap	Wrought aluminum alloy	Wrought aluminum alloy
3 Piston rod	$\varnothing 1/2 \dots 1$ High-alloy stainless steel $\varnothing 1-1/4 \dots 2-1/2$ High-alloy steel	High-alloy stainless steel High-alloy steel
4 Dynamic seals	Polyurethane	Fluorocarbon rubber

## Dimensions – Basic version

Piston  $\varnothing 1/2, 11/16$



$\varnothing$ [in]	B1	BG	D1	D2 $\varnothing$	E	EE	G	H1	L1	L2	L3	L4	L5
1/2	0.8	0.15	8-32 UNC	0.15	0.6	10-32 UNF	0.6	1.5	0.2	2.4	0.37	0.12	0.4
11/16	0.8	0.24	8-32 UNC	0.15	0.6	10-32 UNF	0.6	1.9	0.2	2.4	0.37	0.14	0.2

$\varnothing$ [in]	L6	L7	MM $\varnothing$	PL	R	RT	T1	T3	TO	WH	ZJ	$\approx C1$ [mm]
1/2	0.28	0.12	0.24	0.33	0.30	4-48 UNF	0.28	0.16	0.8	0.28	2.7	5
11/16	-	-	0.31	0.33	0.35	8-32 UNC	0.28	0.24	0.7	0.28	2.7	7

Dimensions are in inches, unless otherwise noted.

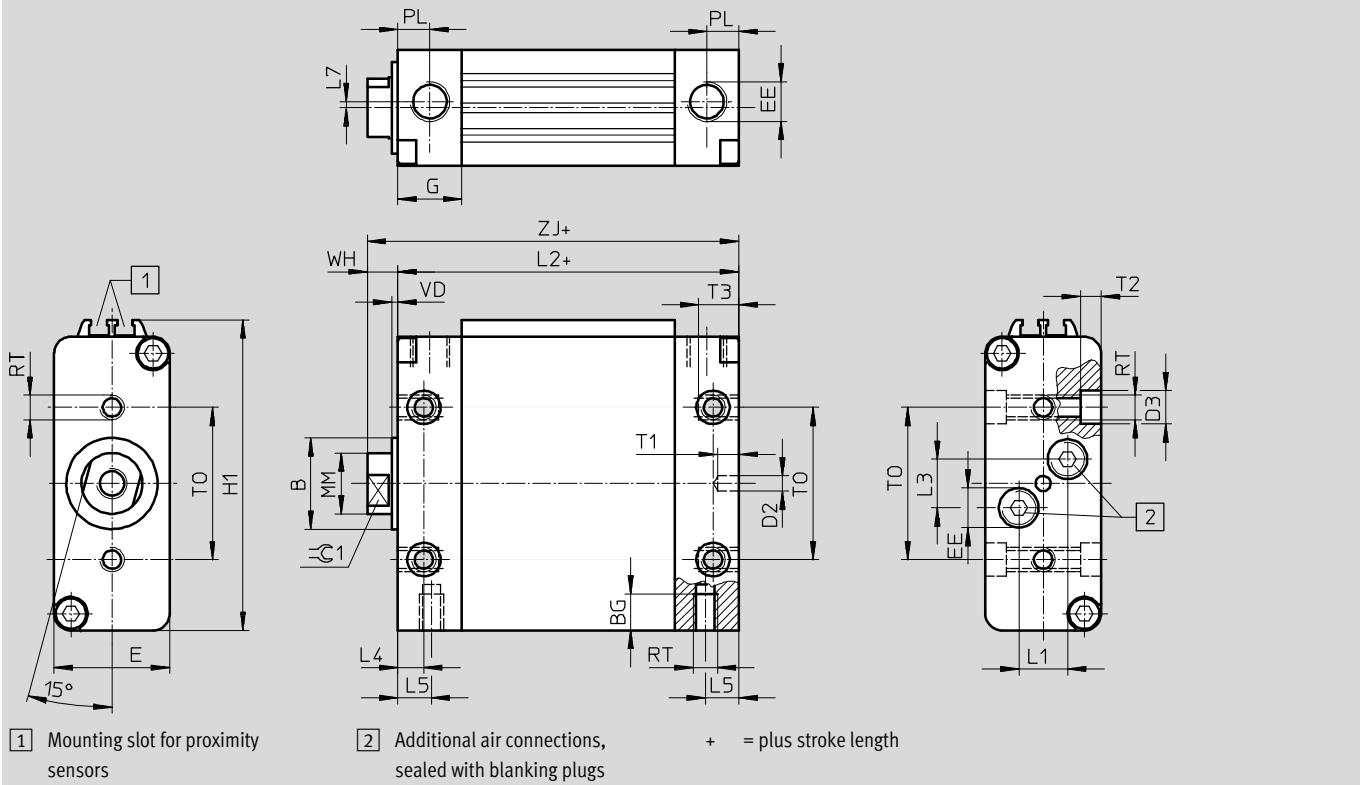
# Flat cylinders DZF - Inch Series

Data sheet



## Dimensions – Basic version

Piston  $\varnothing$  1 ...2-1/2



$\varnothing$ [in]	B $\varnothing$	BG	D2 $\varnothing$	D3 $\varnothing$	E	EE	G	H1	L1	L2	L3	L4
1	0.6	0.3	0.2	0.3	0.8	10-32 UNF	0.5	2.2	0.2	2.4	0.4	0.2
1-1/4	0.8	0.4	0.2	0.4	0.9	1/8" NPT	0.7	2.6	0.3	2.8	0.6	0.3
1-5/8	1.0	0.4	0.2	0.4	1.2	1/8" NPT	0.7	3.2	0.3	3.0	0.6	0.3
2	1.2	0.5	0.2	0.4	1.5	1/4" NPT	0.8	4.0	0.6	3.2	0.6	0.3
2-1/2	1.2	0.6	0.2	0.6	2.0	1/4" NPT	0.8	5.0	0.7	3.2	0.8	0.3

$\varnothing$ [in]	L5	L7	MM $\varnothing$	PL	RT	T1	T2	T3	T0	VD	WH	ZJ	$\approx$ 1 [mm]
1	0.2	-	0.4	0.2	10-24 UNC	0.3	0.2	0.3	1.0	0.1	0.3	2.8	9
1-1/4	0.3	0.1	0.5	0.3	1/4-20 UNC	0.3	0.2	0.4	1.3	0.1	0.3	3.1	10
1-5/8	0.3	-	0.6	0.3	1/4-20 UNC	0.3	0.2	0.4	1.6	0.1	0.4	3.3	13
2	0.3	-	0.8	0.4	5/16-18 UNC	0.3	0.2	0.5	2.0	0.1	0.4	3.6	17
2-1/2	0.3	-	0.8	0.4	3/8-16 UNC	0.3	0.2	0.6	2.4	0.1	0.4	3.6	17

Dimensions are in inches, unless otherwise noted.

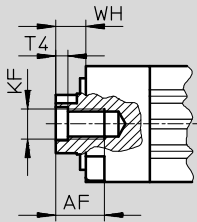
# Flat cylinders DZF - Inch Series

Data sheet

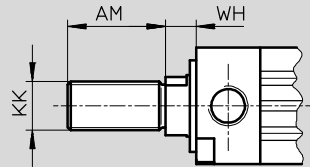


## Dimensions – Options

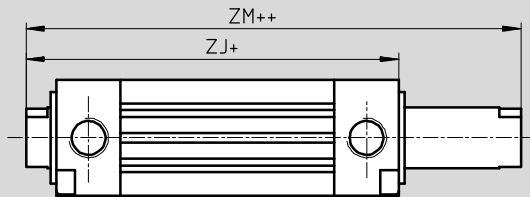
Basic version with female thread



Basic version with male thread

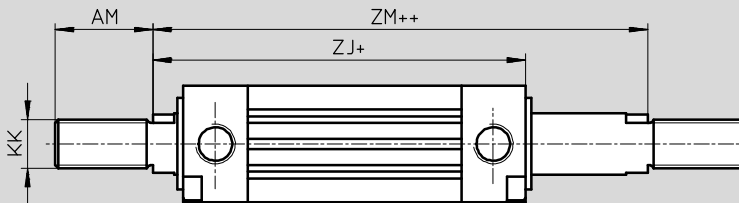


S2 – Through piston rod with female thread



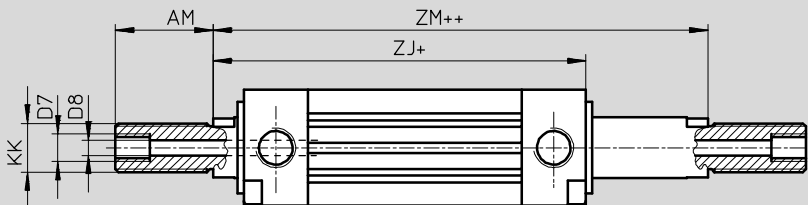
+ = plus stroke length  
++ = plus 2x stroke length

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

∅ [in]	AF	AM	D7	D8 ∅	KF	KK	T4	WH	ZJ	ZM
1/2	0.3	0.6	-	0.07	4-48 UNF	10-32 UNF	0.06	0.3	2.7	3.0
11/16	0.4	0.8	-	0.11	8-36 UNF	5/16-24 UNF	0.06	0.3	2.7	3.0
1	0.5	0.9	-	0.15	10-32 UNF	3/8-24 UNF	0.08	0.3	2.8	3.1
1-1/4	0.6	0.9	-	0.18	1/4-28 UNF	3/8-24 UNF	0.10	0.3	3.1	3.5
1-5/8	0.6	0.9	-	0.2	5/16-24 UNF	1/2-20 UNF	0.13	0.4	3.3	3.7
2	0.8	1.3	1/4-18 NPT	0.3	3/8-24 UNF	5/8-18 UNF	0.19	0.4	3.6	4.0
2-1/2	0.8	1.3	1/4-18 NPT	0.3	3/8-24 UNF	5/8-18 UNF	0.19	0.4	3.6	4.0

Dimensions are in inches, unless otherwise noted.

# Flat cylinders DZF - Inch Series



Ordering Data

M Mandatory data						O Options	
Function	Piston Ø	Stroke	Piston rod thread	Cushioning	Magnet for position sensing	Type of piston rod	Temperature Resistant
DZF	1/2 1 1/16 1 1 1/4 1 5/8 2 2 1/2	0.40 ... 13	A	P	A	S2 S20	S6
<b>DZF</b>	- <b>1 1/4</b>	- <b>10</b>	-	- <b>P</b>	- <b>A</b>	- <b>S6</b>	

Ordering table											
Size	1/2	1 1/16	1	1 1/4	1 5/8	2	2 1/2	Conditions	Code	Enter code	
M Function	Flat, double-acting cylinder								<b>DZF</b>		DZF
Piston Ø	[in] 1/2	1 1/16	1	1 1/4	1 5/8	2	2 1/2		-...		
Stroke	[in] 0.4 ... 13								-...		
Piston rod thread	Female thread								-		
	Male thread								-A		
Cushioning	Flexible cushioning rings at both ends								-P		-P
Magnet for position sensing	For use with magnetic proximity sensor								-A		-A
O Type of piston rod	Through piston rod								-S2		
	Through, hollow piston rod								-S20		
Temperature-resistant	Heat-resistant seals up to max. 302 °F								<sup>1</sup> -S6		

<sup>1</sup> Not in combination with S2 or S20

Transfer order code

**DZF** -  -  -  - **P** - **A** -



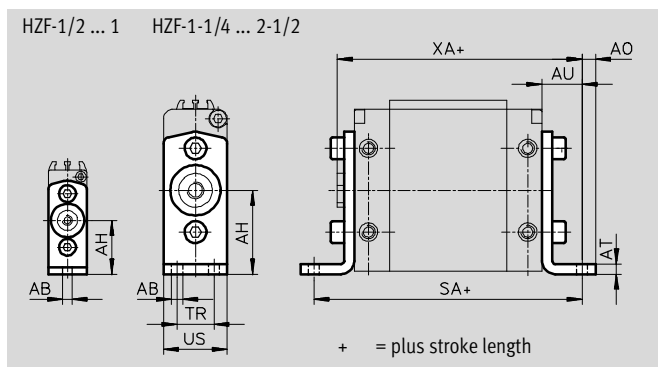
# Flat cylinders DZF - Inch Series

Accessories



## Foot mounting HZF

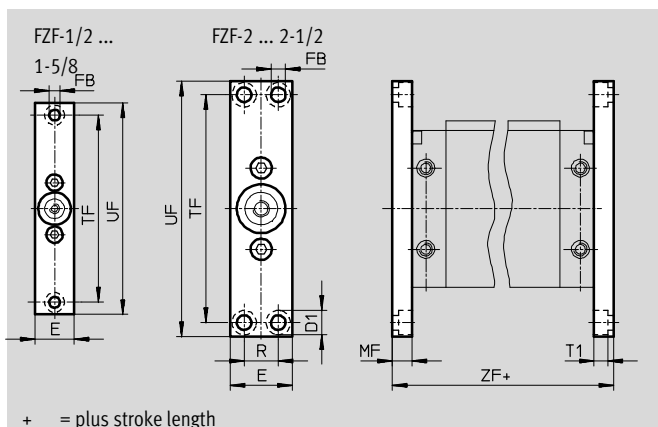
Material:  
Steel



Dimensions and ordering data												
For $\varnothing$ [in]	AB $\varnothing$	AH	AO	AT	AU	SA	TR	US	XA	Weight [oz]	Part No.	Type
1/2	0.18	1.0	0.2	0.1	0.5	3.5	-	0.6	3.2	0.28	546560	HZF-1/2"
11/16	0.22	1.1	0.2	0.1	0.7	3.8	-	0.6	3.4	0.35	546561	HZF-11/16"
1	0.22	1.1	0.3	0.1	0.6	3.7	-	0.8	3.4	0.74	546562	HZF-1"
1-1/4	0.22	1.3	0.2	0.1	0.7	4.3	0.5	0.9	3.9	0.95	546563	HZF-1 1/4"
1-5/8	0.22	1.6	0.3	0.2	0.8	4.6	0.6	1.2	4.1	2.01	546564	HZF-1 5/8"
2	0.26	2.0	0.3	0.2	0.9	5.1	0.9	1.5	4.6	3.42	546565	HZF-2"
2-1/2	0.35	2.5	0.4	0.2	1.1	5.4	1.2	2.0	4.7	5.89	546566	HZF-2 1/2"

## Flange mounting FZF

Material:  
Wrought aluminum alloy



Dimensions and ordering data												
For $\varnothing$ [in]	D1 $\varnothing$	E	FB $\varnothing$	MF	R	T1	TF	UF	ZF	Weight [oz]	Part No.	Type
1/2	0.3	0.6	0.18	0.3	-	0.18	3.0	3.5	3.1	0.71	546553	FZF-1/2"
11/16	0.3	0.6	0.18	0.3	-	0.18	3.1	3.7	3.1	0.85	546554	FZF-11/16"
1	0.4	0.8	0.22	0.4	-	0.22	3.9	4.4	3.2	1.76	546555	FZF-1"
1-1/4	0.4	0.9	0.26	0.4	-	0.26	4.5	5.1	3.6	2.40	546556	FZF-1 1/4"
1-5/8	0.4	1.2	0.26	0.4	-	0.25	5.2	5.7	3.8	3.46	546557	FZF-1 5/8"
2	0.6	1.5	0.35	0.5	0.8	0.33	5.5	6.2	4.2	5.19	546558	FZF-2"
2-1/2	0.6	2.0	0.35	0.6	1.3	0.33	5.5	6.2	4.4	9.14	546559	FZF-2 1/2"

Dimensions are in inches, unless otherwise noted.

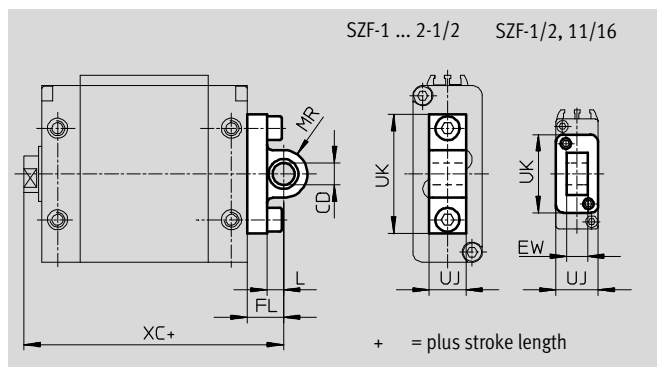
# Flat cylinders DZF - Inch Series

Accessories



## Swivel flange SZF

Material:  
Corrosion resistant cast steel

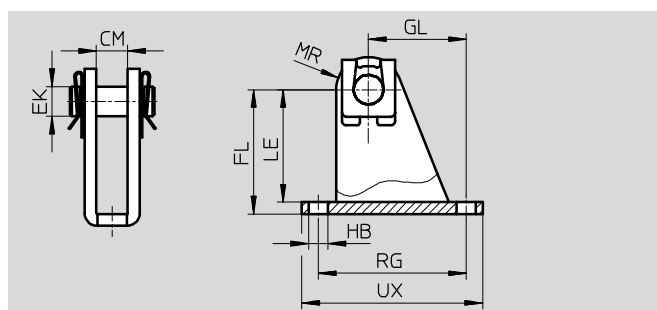


Dimensions and ordering data											
For $\varnothing$ [in]	CD $\varnothing$	EW	FL	L	MR	UJ	UK	XC	CRC <sup>1)</sup>	Part No.	Type
1/2	0.3	0.3	0.6	0.5	0.3	0.6	1.0	3.3	2	546567	SZF-1/2"
11/16	0.3	0.3	0.7	0.6	0.3	0.6	1.0	3.4	2	546568	SZF-11/16"
1	0.3	-	0.6	0.3	0.3	0.4	1.5	3.3	2	546569	SZF-1"
1-1/4	0.4	-	0.6	0.2	0.4	0.4	1.7	3.7	2	546570	SZF-1 1/4"
1-5/8	0.5	-	0.7	0.4	0.5	0.4	2.0	4.1	2	546571	SZF-1 5/8"
2	0.5	-	0.8	0.4	0.5	0.8	2.6	4.4	2	546572	SZF-2"
2-1/2	0.6	-	0.9	0.5	0.7	1.0	3.1	4.6	2	546573	SZF-2 1/2"

1) Corrosion resistance class 2 according to Festo standard 940 070  
Components with moderate corrosion resistance for use in normal industrial environments subjected to contact with coolants or lubricating agents.

## Clevis foot LZF

Material:  
Steel



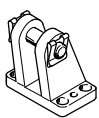
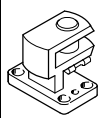
Dimensions and ordering data											
For $\varnothing$ [in]	CM	EK $\varnothing$	FL	GL	HB $\varnothing$	LE	MR	RG	UX	Part No.	Type
1/2	0.28	0.3	1.3	0.7	0.2	1.1	0.3	1.2	1.5	163962	LZF-12/18
11/16	0.28	0.3	1.3	0.7	0.2	1.1	0.3	1.2	1.5	163962	LZF-12/18
1	0.36	0.3	1.4	1.0	0.2	1.3	0.4	1.6	1.9	163963	LZF-25
1-1/4	0.42	0.4	1.7	1.3	0.3	1.5	0.4	2.0	2.4	163964	LZF-32
1-5/8	0.42	0.5	2.0	1.2	0.3	1.9	0.6	2.0	2.4	163965	LZF-40
2	0.79	0.5	2.2	0.9	0.4	2.0	0.6	1.2	1.8	163966	LZF-50
2-1/2	0.99	0.6	2.7	1.3	0.4	2.5	0.7	1.6	2.4	163967	LZF-63





Dimensions are in inches, unless otherwise noted.



# Flat cylinders DZF - Inch Series




Accessories



Ordering data – Mounting attachments							
Designation	For Ø [in]	Part No.	Type	Designation	For Ø [in]	Part No.	Type
<b>Clevis foot LBG</b>				<b>Right-angle clevis foot LQG</b>			
	1-1/4	31761	LBG-32		1-1/4	31768	LQG-32
	1-5/8	31762	LBG-40		1-5/8	31769	LQG-40
	2	31763	LBG-50		2	31770	LQG-50
	2-1/2	31764	LBG-63		2-1/2	31771	LQG-63

Ordering data – Piston rod attachments							
Designation	For Ø [in]	Part No.	Type	Designation	For Ø [in]	Part No.	Type
<b>Rod eye SGS</b>				<b>Coupling piece KSZ</b>			
	1/2	532694	SGS-10-32		1/2	–	
	11/16	13002871	SGS-5/16-24		11/16		
	1, 1-1/4	532696	SGS-3/8-24		1, 1-1/4	36129	KSZ-3/8-24-UNF
	1-5/8	532697	SGS-1/2-20		1-5/8	36130	KSZ-1/2-20-UNF
	2, 2-1/2	532698	SGS-5/8-18		2, 2-1/2	36131	KSZ-5/8-18-UNF
<b>Rod clevis SG</b>				<b>Self-aligning rod coupler FK</b>			
	1/2	13005667	SG-10-32		1/2	532703	FK-10-32
	11/16	11129	SG-5/16"-24		11/16	532704	FK-5/16-24
	1, 1-1/4	546540	SG-3/8"-24-B		1, 1-1/4	532705	FK-3/8-24
	1-5/8	546545	SG-1/2-20-B		1-5/8	532706	FK-1/2-20
	2, 2-1/2	546575	SG-5/8-18-B		2, 2-1/2	532707	FK-5/8-18

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	
<b>N/O contact</b>							
	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	
		NPN	Plug M12x1, 3-pin	0.3	574337	SMT-8M-A-PS-24V-E-0,3-M12	
			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		
<b>N/C contact</b>							
	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	
<b>N/O contact</b>							
	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	
			Cable, 2-wire	5.0	543 863	SME-8M-DS-24V-K-5,0-OE	
			Plug M8x1, 3-pin	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	
			Plug M8x1, 3-pin	0.3	150 857	SME-8-S-LED-24	
<b>N/C contact</b>							
	Insertable in the slot lengthwise, flush with the cylinder profile	Contacting	Cable, 3-wire	7.5	160 251	SME-8-O-K-LED-24	

# Flat cylinders DZF - Inch Series

Accessories



Ordering data – Connecting cables			Technical data → <a href="http://www.festo.com/catalogue/nebu">www.festo.com/catalogue/nebu</a>		
	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
			5.0	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
			5.0	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
			5.0	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
			5.0	541370	NEBU-M12W5-K-5-LE3

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

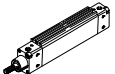
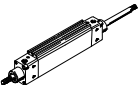
Ordering data – One-way flow control valves				
	Connection		Part No.	Type
	Thread	For tubing OD		
<b>For exhaust air</b>				
	10-32 UNF	5/32	165008	GRLA-10-32-UNF-QS-5/32-U
		1/4	192753	GRLA-10-32-UNF-QS-1/4-U
	1/8" NPT	5/32	165009	GRLA-1/8-NPT-QS-5/32-U
		3/16	190941	GRLA-1/8-NPT-QS-3/16-U
		1/4	165010	GRLA-1/8-NPT-QS-1/4-U
		5/16	165013	GRLA-1/8-NPT-QS-5/16-U
	1/4" NPT	3/16	190944	GRLA-1/4-NPT-QS-3/16-U
		1/4	165011	GRLA-1/4-NPT-QS-1/4-U
		5/16	165014	GRLA-1/4-NPT-QS-5/16-U
		3/8	190947	GRLA-1/4-NPT-QS-3/8-U
	3/8" NPT	1/4	165012	GRLA-3/8-NPT-QS-1/4-U
		5/16	165015	GRLA-3/8-NPT-QS-5/16-U
3/8		190950	GRLA-3/8-NPT-QS-3/8-U	
		1/2	190951	GRLA-3/8-NPT-QS-1/2-U
<b>For supply air</b>				
	10-32 UNF	–	151576	GRLZ-10-UNF-B
		–	151579	GRLZ-10-UNF-RS-B
		3/16	151577	GRLZ-10-UNF-3/16-B
		1/4	151578	GRLZ-10-UNF-1/4-B
	1/8" NPT	–	151561	GRLZ-1/8-NPT-B
		–	151564	GRLZ-1/8-NPT-RS-B
		1/4	151562	GRLZ-1/8-NPT-1/4-B

# Flat Cylinders DZH - Inch Series

Overview

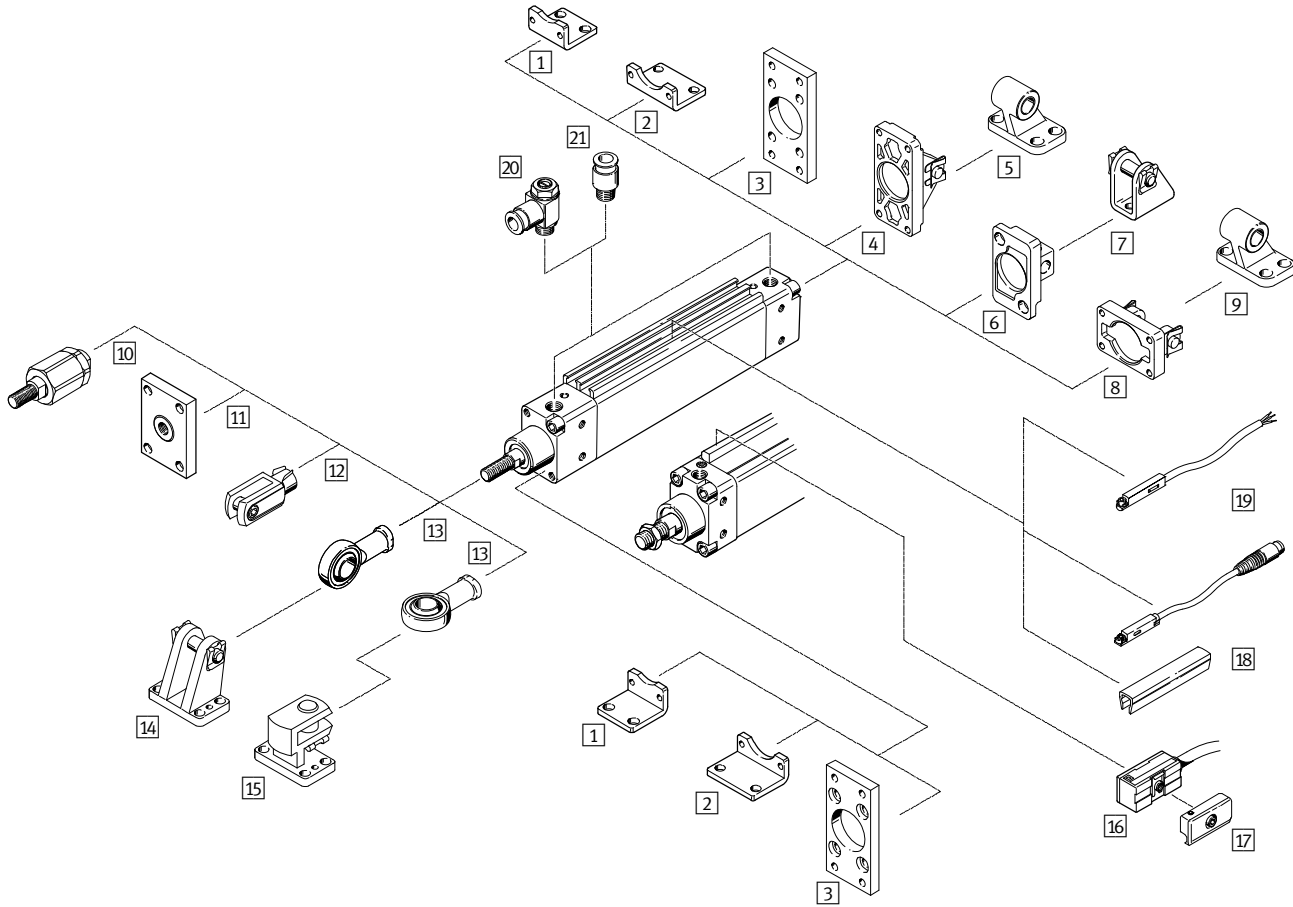


- Non-rotating oval piston
- Piston  $\varnothing$  5/8" to 2-1/2"
- Strokes up to 40"
- Double-acting
- Moment capacity up to 2.2 lbf-in
- Extensive range of accessories
- Versatile mounting options

Product range overview								
Function	Design	Type	Piston $\varnothing$	Variable stroke	Standard stroke	Magnet for position sensing (A)	Piston rod	Heat resistant seals up to 302 °F (S6)
			[in]	[in]	[in]		male thread	
Double-acting flat cylinder		DZH Single-ended piston rod	5/8	0.04 ... 8	1, 2, 3, 4, 5, 6, 8	■	■	■
			3/4	0.04... 13	1, 2, 3, 4, 5, 6, 8, 10, 12			
			1, 1-1/4, 1-5/8, 2, 2-1/2	0.04... 40	1, 2, 3, 4, 5, 6, 8, 10, 12			
		DZH-...-S2 Through piston rod	5/8	0.04... 8	-	■	■	-
			3/4	0.04... 13	-			
			1, 1-1/4, 1-5/8, 2, 2-1/2	0.04... 40	-			

# Flat cylinders DZH - Inch Series

Accessories overview

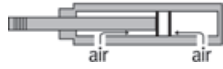


Mounting attachments and accessories		Description	Piston $\varnothing$ 5/8" ... 1"	1-1/4" ... 2-1/2"
1	Foot mounting, narrow HZS	for bearing and end caps	■	■
2	Foot mounting, wide HZB	for bearing and end caps	■	■
3	Flange mounting FZS	for bearing and end caps	■	■
4	Swivel flange, narrow SZS	for end caps	-	■
5	Clevis foot LBZB/LBZS	-	-	■
6	Swivel flange, narrow SZSB	for end caps	■	-
7	Clevis foot LBN	-	■	-
8	Swivel flange, wide SZB	for end caps	-	■
9	Clevis foot LN	-	-	■
10	Self-aligning rod coupler FK	for compensating radial and angular deviations	■	■
11	Coupling piece KSZ	for cylinders with a non-rotating piston rod to compensate for radial deviations	■	■
12	Rod clevis SG	permits a swivelling movement of the cylinder in one plane	■	■
13	Rod eye SGS	with spherical bearing	■	■
14	Clevis foot LBG	-	■	■
15	Right-angle clevis foot LQG	-	■	■
16	Proximity sensors SMxO-1	-	-	■
17	Mounting kit SMB-1	-	-	■
18	Slot cover ABP-5-S	to protect the sensor cable and keep dirt out of the sensor slots	■	-
19	Proximity sensors SME/SMT-8	can be integrated in the cylinder profile barrel	■	-
20	One-way flow control valve GRLx	to regulate speed	■	■
21	Push-in fitting QS	for connecting compressed air tubing with standard external diameters	■	■

# Flat cylinders DZH - Inch Series

## Technical Data

Double-acting



Equivalent Piston Diameter

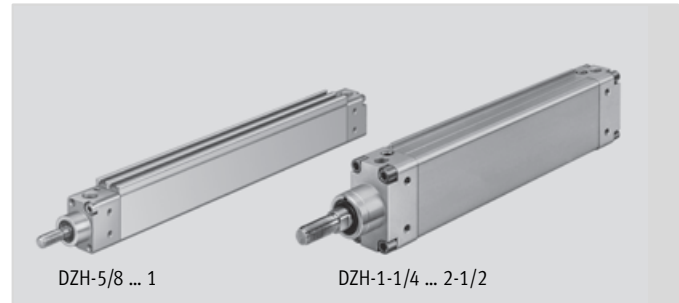
5/8 ... 2-1/2 inch

Stroke length

0.4 ... 40 inch

Options:

- Non rotating
- Through piston rod (S2)
- Heat resistant variant (S6)



DZH-5/8 ... 1

DZH-1-1/4 ... 2-1/2

Design								
Piston Ø	5/8	3/4	1	1-1/4	1-5/8	2	2-1/2	
Pneumatic connection	10-32 UNF	1/8" NPT	1/8" NPT	1/8" NPT	1/4" NPT	1/4" NPT	3/8" NPT	
End of piston rod Male thread	10-32 UNF	5/16-24 UNF	3/8-24 UNF	3/8-24 UNF	1/2-20 UNF	5/8-18 UNF	5/8-18 UNF	
Operating medium	Filtered compressed air, lubricated or unlubricated							
Constructional design	Piston							
	Piston rod							
Protection against torsion	Oval piston							
Cushioning	Adjustable air cushioning at both ends							
Cushioning length [in]	0.55	0.67	0.67	0.75	0.83	0.91	0.23	
Magnet for position sensing <sup>1)</sup>	Standard							

1) Position sensing via magnetic proximity sensor (ordered separately, see accessories).

Operating pressure [psi]									
Piston Ø	5/8	3/4	1	1-1/4	1-5/8	2	2-1/2		
	14.5 ... 145			9 ... 145					

Ambient conditions		
Variant	Basic version	S6
Ambient temperature <sup>1)</sup> [°F]	-4 ... +176	32 ... +302
Corrosion resistance class CRC <sup>2)</sup>	2	2

1) Observe operating range of proximity sensors.

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

Components with moderate corrosion resistance for use in normal industrial environments subjected to contact with coolants or lubricating agents.

Forces [lbf] and torques [ft-lbf]								
Piston Ø	5/8	3/4	1	1-1/4	1-5/8	2	2-1/2	
Theoretical force at 90 psi, extending		27.2	42.3	66.3	108.6	169.5	264.8	420.4
	S2	23.4	35.5	55.5	93.3	142.3	222.3	378.1
Theoretical force at 90 psi, retracting		23.4	35.5	55.5	93.3	142.3	222.3	378.1
	S2	23.4	35.5	55.5	93.3	142.3	222.3	378.1
Max. torque at the piston rod <sup>1)</sup>	0.55	0.66	0.89	1.11	1.33	1.88	2.21	

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

Weights [oz]								
Piston Ø	5/8	3/4	1	1-1/4	1-5/8	2	2-1/2	
Product weight at 0 inch stroke	4.9	8.1	11.6	17.6	29.0	42.3	59.6	
Additional weight per 1 inch stroke	1.0	1.3	1.9	2.7	3.6	5.4	7.1	

# Flat cylinders DZH - Inch Series

Data sheet

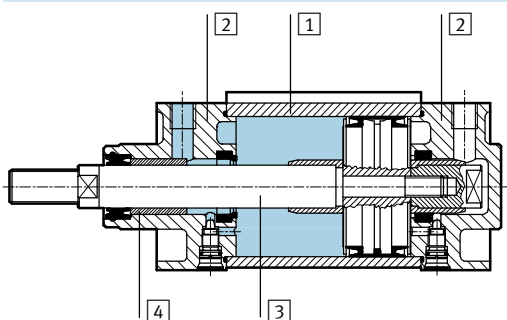


Minimum stroke length [inch] for magnetic position sensing with one proximity sensor				
Piston $\varnothing$	1-1/4	1-5/8	2	2-1/2
SMEO-1/SMT0-1				
Plug	0.4			
Cable				

Minimum stroke length [inch] for magnetic position sensing with two proximity sensors					
Piston $\varnothing$	1-1/4	1-5/8	2	2-1/2	
SMEO-1					
Plug	outlet towards caps	3.4	3.4	3.5	3.6
	outlet towards center	1.8	1.9	1.9	2.0
Cable	outlet towards caps	2.5	2.5	2.6	2.7
	outlet towards center	1.9	2.0	2.0	2.1
SMT0-1					
Plug	outlet towards caps	4.1	4.2	4.2	4.2
	outlet towards center	not possible as the plug would cover the pneumatic port			
Cable	outlet towards caps	3.2	3.3	3.3	3.4
	outlet towards center	0.7	0.8	0.8	0.9

## Materials

Sectional view



Cylinder	Basic version	S6
1 Cylinder barrel	Anodized aluminum	Anodized aluminum
2 Bearing end cap	Aluminum	Aluminum
3 Piston rod	$\varnothing$ 5/8 ... 1	Stainless steel
	$\varnothing$ 1-1/4 ... 2-1/2	High-alloy steel
4 Dynamic seals	Polyurethane	Fluorocarbon rubber



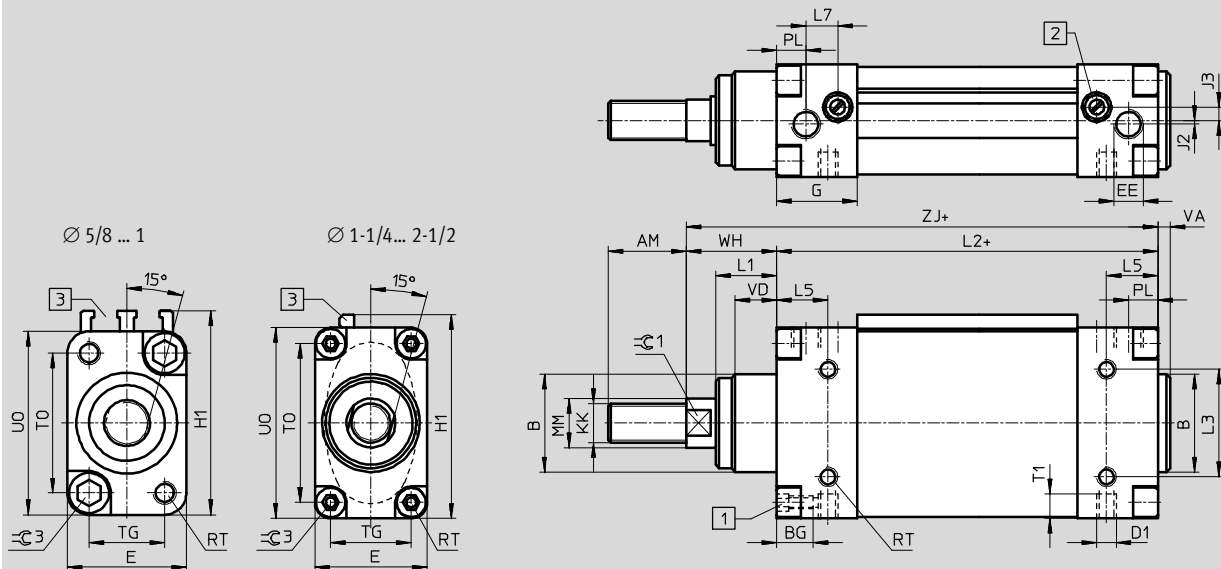
# Flat cylinders DZH - Inch Series

Data sheet



## Dimensions

Basic version



- [1] Socket head screw with female thread
- [2] Regulating screw for adjustable end-position cushioning
- [3]  $\varnothing 5/8 \dots 1$ : Mounting slot for proximity sensors  
 $\varnothing 1-1/4 \dots 2-1/2$ : Mounting rail for proximity sensor

+ = plus stroke length

$\varnothing$ [in]	AM	B $\varnothing$	BG	D1	D8 $\varnothing$	E	EE	G	H1	J2	J3	KK	L1	L2	L3
5/8	0.6	0.6	0.2	8-32 UNC	0.1	0.8	10-32 UNF	0.8	1.4	-0.03	0.1	10-32 UNF	0.5	3.1	0.5
3/4	0.8	0.8	0.2	8-32 UNC	0.1	0.9	1/8" NPT	1.0	1.6	-0.03	0.2	5/16-24 UNF	0.6	3.6	0.6
1	0.9	0.9	0.3	10-24 UNC	0.1	1.0	1/8" NPT	1.0	1.8	-0.01	0.2	3/8-24 UNF	0.6	3.6	0.7
1-1/4	0.9	1.2	0.5	1/4-20 UNC	-	1.4	1/8" NPT	1.1	2.1	-	0.1	3/8-24 UNF	0.6	3.7	0.7
1-5/8	0.9	1.4	0.5	1/4-20 UNC	-	1.6	1/4" NPT	1.3	2.6	-	0.2	1/2-20 UNF	0.8	4.1	1.3
2	1.3	1.6	0.6	5/16-18 UNC	-	1.8	1/4" NPT	1.3	3.2	0.10	0.1	5/8-18 UNF	1.0	4.2	1.7
2-1/2	1.3	1.7	0.6	3/8-16 UNC	-	2.1	3/8" NPT	1.4	4.3	0.16	0.2	5/8-18 UNF	1.1	4.5	2.5

$\varnothing$ [in]	L5	L7	MM $\varnothing$	PL	RT	T1	TG	TO	UO	VA	VD	WH	ZJ	ZM	$\approx \varnothing 1$ [mm]	$\approx \varnothing 3$ [mm]
5/8	0.47	0.33	0.2	0.30	M4	0.2	0.5	0.9	1.2	0.1	0.5	0.7	3.8	4.5	5	4
3/4	0.59	0.41	0.3	0.37	M4	0.2	0.6	1.1	1.4	0.1	0.6	0.7	4.3	5.0	7	4
1	0.63	0.39	0.4	0.41	M5	0.3	0.6	1.2	1.6	0.1	0.6	0.8	4.4	5.3	9	5
1-1/4	0.51	0.40	0.5	0.35	M5	0.4	1.0	1.4	1.9	0.2	0.6	1.0	4.7	5.8	10	6
1-5/8	0.65	0.52	0.6	0.43	M5	0.4	1.1	2.0	2.4	0.2	0.8	1.2	5.3	6.5	13	6
2	0.83	0.55	0.8	0.41	M6	0.4	1.3	2.6	3.1	0.2	0.7	1.5	5.6	7.1	17	6
2-1/2	0.89	0.57	0.8	0.49	M6	0.5	1.6	3.5	4.1	0.2	0.8	1.6	6.1	7.7	17	6

### Note

The maximum permissible torque must not be exceeded when attaching components onto the piston rod. Counterhold by means of the wrench flats  $\approx \varnothing 1$ .

Dimensions are in inches, unless otherwise noted.

2015/04 – Subject to change – DZF/DZH

→ Internet: [www.festo.com/catalog/...](http://www.festo.com/catalog/...)

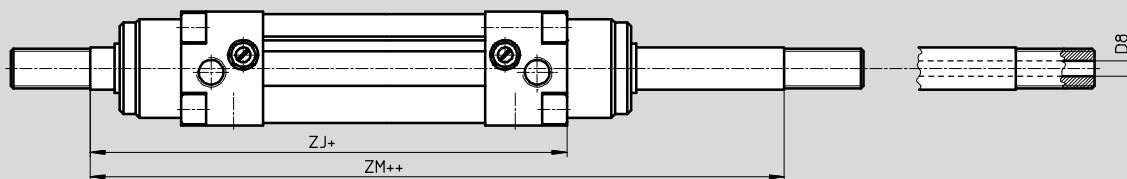
# Flat cylinders DZH - Inch Series

Data sheet



## Dimensions

Variant S2 – Through piston rod



+ = plus stroke length

++ = plus 2x stroke length

Ø [in]	D8 Ø	ZJ	ZM
5/8	0.09	3.8	4.5
3/4	0.13	4.3	5.0
1	0.15	4.4	5.3
1-1/4	-	4.7	5.8
1-5/8	-	5.3	6.5
2	-	5.6	7.1
2-1/2	-	6.1	7.7

Dimensions are in inches, unless otherwise noted.

# Flat cylinders DZH - Inch Series

Ordering Data



M Mandatory data					O Options	
Function	Piston Ø	Stroke	Cushioning	Magnet for position sensing	Type of piston rod	Temperature Resistant
DZH	5/8 3/4 1 1 1/4 1 5/8 2 2 1/2	0.04 ... 40	PPV	A	S2	S6
<b>DZH</b>	- <b>1 5/8</b>	- <b>10</b>	- <b>PPV</b>	- <b>A</b>	- <b>S6</b>	

Ordering table										
Size	5/8	3/4	1	1 1/4	1 5/8	2	2 1/2	Conditions	Code	Enter code
M Function	Flat, double-acting cylinder								<b>DZH</b>	DZH
Piston Ø [in]	5/8	3/4	1	1 1/4	1 5/8	2	2 1/2		-...	
Stroke [in]	0.04 ... 40								-...	
Cushioning	Adjustable air cushioning at both ends								<b>-PPV</b>	-PPV
Magnet for position sensing	For use with magnetic proximity sensor								<b>-A</b>	-A
O Type of piston rod	Through piston rod								<b>-S2</b>	
Temperature resistant	Heat-resistant seals up to max. 302 °F							<b>1</b>	<b>-S6</b>	

**1** Not in combination with S2

Transfer order code

**DZH** -  -  - **PPV** - **A** -

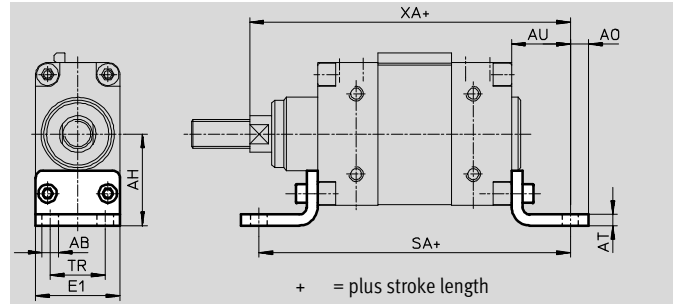
# Flat cylinders DZH - Inch Series

Accessories



## Foot mounting HZS, narrow

Material:  
Steel  
Free of copper, PTFE and silicone

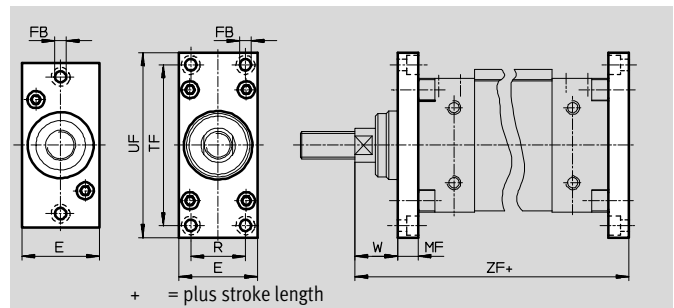


Dimensions and ordering data													
For $\varnothing$ [in]	AB $\varnothing$	AH	AO	AT	AU	E1	SA	TR	XA	CRC <sup>1)</sup>	Weight [oz]	Part No.	Type
5/8	0.2	1.0	0.2	0.2	0.8	0.8	4.7	0.5	4.6	2	2.1	151933	HZS-16
3/4	0.2	1.1	0.2	0.2	0.8	0.9	5.2	0.6	5.1	2	2.5	151932	HZS-20
1	0.2	1.2	0.2	0.2	1.0	1.0	5.6	0.6	5.4	2	3.2	151931	HZS-25
1-1/4	0.3	1.3	0.3	0.2	0.9	1.4	5.6	0.9	5.7	2	3.7	14879	HZS-32
1-5/8	0.4	1.6	0.4	0.2	1.1	1.6	6.3	1.0	6.4	2	5.8	14880	HZS-40
2	0.4	2.0	0.4	0.2	1.3	1.8	6.7	1.2	6.9	2	9.5	14881	HZS-50
2-1/2	0.4	2.4	0.6	0.2	1.4	2.1	7.3	1.5	7.5	2	12.9	14882	HZS-63

1) Corrosion resistance class 2 according to Festo standard 940 070  
Components with moderate corrosion resistance for use in normal industrial environments subjected to contact with coolants or lubricating agents.

## Flange mounting FZS

Material:  
Wrought aluminum alloy



Dimensions and ordering data												
For $\varnothing$ [in]	E	FB $\varnothing$	MF	R	TF	UF	W	ZF	CRC <sup>1)</sup>	Weight [oz]	Part No.	Type
5/8	0.8	0.19	0.4	–	1.9	2.4	0.3	4.2	2	1.1	151930	FZS-16
3/4	0.9	0.19	0.4	–	2.1	2.8	0.3	4.7	2	1.4	151929	FZS-20
1	1.1	0.23	0.4	–	2.4	3.0	0.4	4.8	2	1.8	151928	FZS-25
1-1/4	1.4	0.23	0.4	0.9	2.4	3.0	0.6	5.1	2	2.1	14887	FZS-32
1-5/8	1.6	0.23	0.4	1.1	3.1	3.5	0.8	5.7	2	2.8	14888	FZS-40
2	1.8	0.27	0.5	1.3	3.7	4.3	1.0	6.1	2	4.8	14889	FZS-50
2-1/2	2.1	0.27	0.6	1.6	4.7	5.3	1.0	6.7	2	9.2	14890	FZS-63

1) Corrosion resistance class 2 according to Festo standard 940 070  
Components with moderate corrosion resistance for use in normal industrial environments subjected to contact with coolants or lubricating agents.

All dimensions are in inches, unless otherwise noted.

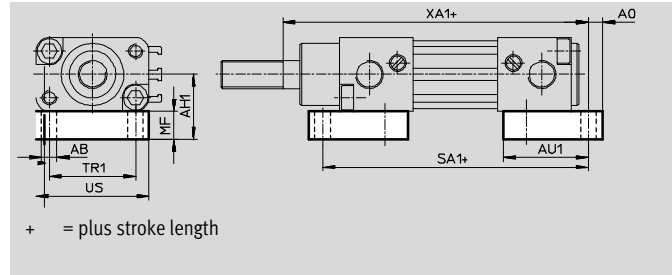
# Flat cylinders DZH - Inch Series

Accessories



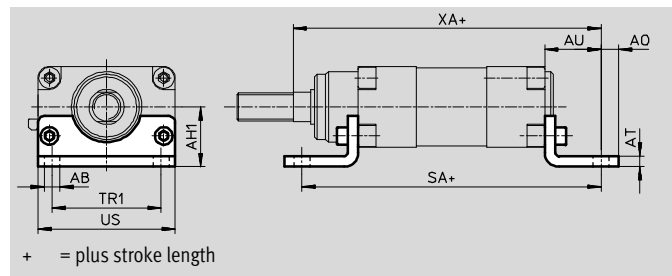
## Foot mounting HZB, wide for piston $\varnothing$ 5/8 ... 1 inch

Material:  
Wrought aluminum alloy



## for piston $\varnothing$ 1-1/4 ... 2-1/2 inch

Material:  
Steel

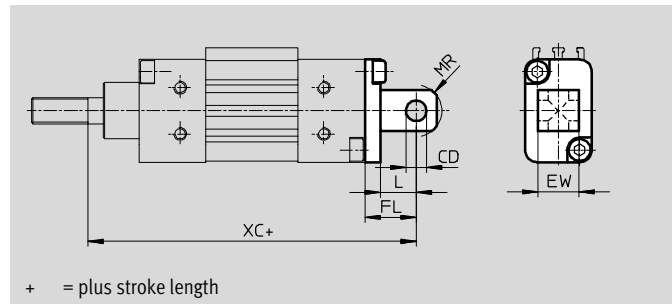


Dimensions and ordering data																	
For $\varnothing$ [in]	AB $\varnothing$	AH1	AO	AT	AU	AU1	MF	SA	SA1	TR1	US	XA	XA1	CRC <sup>1)</sup>	Weight [oz]	Part No.	Type
5/8	0.2	0.8	0.2	-	-	0.9	0.4	-	3.5	0.9	1.2	-	4.0	2	1.8	151936	HZB-16
3/4	0.2	0.8	0.2	-	-	1.0	0.4	-	4.0	1.1	1.4	-	4.5	2	2.1	151935	HZB-20
1	0.2	0.9	0.2	-	-	1.2	0.4	-	4.1	1.2	1.6	-	4.7	2	2.8	151934	HZB-25
1-1/4	0.3	1.0	0.3	0.2	0.9	-	-	5.6	-	1.3	1.9	5.7	-	2	4.6	14875	HZB-32
1-5/8	0.4	1.1	0.4	0.2	1.1	-	-	6.3	-	1.8	2.4	6.4	-	2	8.3	14876	HZB-40
2	0.4	1.3	0.4	0.2	1.3	-	-	6.7	-	2.4	3.1	6.9	-	2	14.5	14877	HZB-50
2-1/2	0.4	1.5	0.6	0.2	1.4	-	-	7.3	-	3.5	4.1	7.5	-	2	22.6	14878	HZB-63

1) Corrosion resistance class 2 according to Festo standard 940 070  
Components with moderate corrosion resistance for use in normal industrial environments subjected to contact with coolants or lubricating agents.

## Swivel flange SZSB, narrow/wide for piston $\varnothing$ 5/8 ... 1 inch

Material:  
High-alloy stainless steel



Dimensions and ordering data								
For $\varnothing$ [in]	CD $\varnothing$	EW	FL	L	XC	Weight [oz]	Part No.	Type
5/8	0.16	0.3	0.6	0.3	4.3	0.35	151927	SZSB-16
3/4	0.24	0.5	0.6	0.4	4.9	0.71	151926	SZSB-20
1	0.31	0.6	0.8	0.6	5.2	1.41	151925	SZSB-25

All dimensions are in inches, unless otherwise noted.

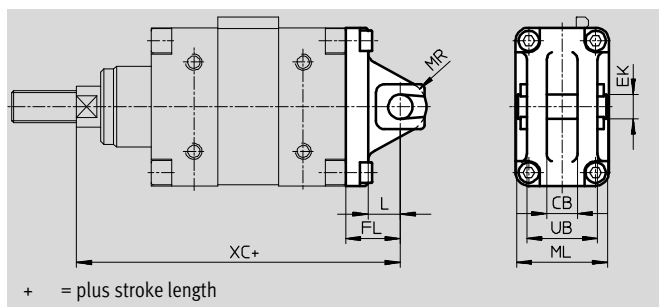
# Flat cylinders DZH - Inch Series

Accessories



## Swivel flange SZS, narrow for piston $\varnothing$ 1-1/4 ... 2-1/2 inch

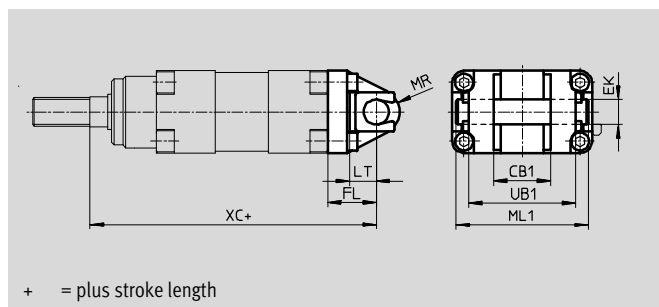
Material:  
Die-cast aluminum



Dimensions and ordering data											
For $\varnothing$ [in]	CB	EK $\varnothing$	FL	L	ML	MR	UB	XC	Weight [oz]	Part No.	Type
1-1/4	0.37	0.4	0.9	0.53	1.40	0.4	1.02	5.6	2.8	14883	SZS-32
1-5/8	0.49	0.5	1.0	0.61	1.56	0.5	1.13	6.3	4.2	14884	SZS-40
1	0.57	0.5	1.1	0.61	1.80	0.5	1.37	6.7	6.0	14885	SZS-50
2-1/2	0.65	0.6	1.4	0.88	2.11	0.7	1.61	7.5	11.3	14886	SZS-63

## Swivel flange SZB, wide for piston $\varnothing$ 1-1/4 ... 2-1/2 inch

Material:  
High-alloy stainless steel



Dimensions and ordering data											
For $\varnothing$ [in]	CB1	EK $\varnothing$	FL	LT	ML1	MR	UB1	XC	Weight [oz]	Part No.	Type
1-1/4	0.6	0.4	0.9	0.6	1.9	0.4	1.4	5.6	6.0	30798	SZB-32
1-5/8	1.1	0.5	1.0	0.6	2.4	0.5	2.0	6.3	9.9	30799	SZB-40
2	1.3	0.5	1.1	0.6	3.0	0.5	2.4	6.7	14.5	30629	SZB-50
2-1/2	1.6	0.6	1.4	0.9	4.1	0.7	2.8	7.5	23.3	30630	SZB-63

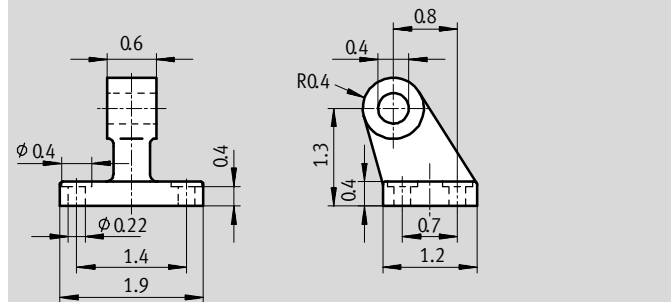
All dimensions are in inches, unless otherwise noted.

# Flat cylinders DZH - Inch Series

Accessories

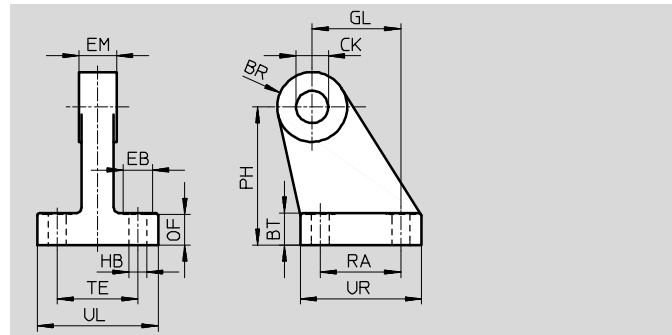
## Clevis foot LBZB for piston $\varnothing$ 1-1/4 inch

Material:  
High-alloy stainless steel



## Clevis foot LBZS for piston $\varnothing$ 1-1/4 ... 2-1/2 inch

Material:  
High-alloy stainless steel



Dimensions and ordering data															Part No.	Type
For $\varnothing$ [in]	BR	BT	CK	EB	EM	GL	HB	OF	PH	RA	TE	UL	UR	Weight [oz]		
LBZB																
1-1/4	Dimensions → shown above													33842	LBZB-32	
LBZS																
1-1/4	0.4	0.3	0.4	0.4	0.4	0.8	0.22	0.29	1.3	0.7	0.9	1.4	1.2	3.2	33843	LBZS-32
1-5/8	0.4	0.4	0.5	0.4	0.4	0.9	0.22	0.37	1.6	0.9	1.1	1.5	1.4	4.8	33844	LBZS-40
2	0.5	0.5	0.5	0.4	0.5	1.3	0.26	0.45	2.0	1.2	1.2	1.8	1.8	8.3	33845	LBZS-50
2-1/2	0.6	0.5	0.6	0.4	0.6	1.5	0.26	0.44	2.4	1.4	1.5	2.1	2.0	10.8	33846	LBZS-63


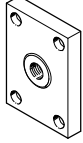


All dimensions are in inches, unless otherwise noted.


Ordering data – Mounting attachments				Ordering data – Mounting attachments			
Designation	For $\varnothing$ [in]	Part No.	Type	Designation	For $\varnothing$ [in]	Part No.	Type
Clevis foot LBN				Clevis foot LN			
	5/8	6058	LBN-12/16		1-1/4	5147	LN-32
	3/4	6059	LBN-20/25		1-5/8	5148	LN-40
	1				2	5149	LN-50
			2-1/2		5150	LN-63	
Clevis foot LBG				Right-angle clevis foot LQG			
	1-1/4	31761	LBG-32		1-1/4	31768	LQG-32
	1-5/8	31762	LBG-40		1-5/8	31769	LQG-40
	2	31763	LBG-50		2	31770	LQG-50
	2-1/2	31764	LBG-63		2-1/2	31771	LQG-63


# Flat cylinders DZH - Inch Series


Accessories


FESTO

Ordering data – Piston rod attachments				Ordering data – Piston rod attachments			
Designation	For Ø [in]	Part No.	Type	Designation	For Ø [in]	Part No.	Type
<b>Rod eye SGS</b>				<b>Coupling piece KSZ</b>			
	5/8	532694	SGS-10-32		5/8	–	
	3/4	13002871	SGS-5/16-24		3/4		
	1	532696	SGS-3/8-24		1	36129	KSZ-3/8-24-UNF
	1-1/4				1-1/4		
	1-5/8	532697	SGS-1/2-20		1-5/8	36130	KSZ-1/2-20-UNF
	2	532698	SGS-5/8-18		2	36131	KSZ-5/8-18-UNF
	2-1/2				2-1/2		
<b>Rod clevis SG</b>				<b>Self-aligning rod coupler FK</b>			
	5/8	13005667	SG-10-32		5/8	532703	FK-10-32
	3/4	11129	SG-5/16"-24		3/4	532704	FK-5/16-24
	1	546540	SG-3/8"-24-B		1	532705	FK-3/8-24
	1-1/4				1-1/4		
	1-5/8	546545	SG-1/2-20-B		1-5/8	532706	FK-1/2-20
	2	546575	SG-5/8-18-B		2	532707	FK-5/8-18
	2-1/2				2-1/2		

Ordering data – Block-shaped proximity sensor, magneto-resistive							
	Mounting	Switch output	Electrical connection		Cable length [ft]	Part No.	Type
			Cables	M8 plug			
<b>NO contact</b>							
	With mounting kit	PNP	3 wires	–	8.2	151 683	SMT0-1-PS-K-LED-24-C
			–	3-pin	–	151 685	SMT0-1-PS-S-LED-24-C
		NPN	3 wires	–	8.2	151 684	SMT0-1-NS-K-LED-24-C
			–	3-pin	–	151 686	SMT0-1-NS-S-LED-24-C

Ordering data – Block-shaped proximity sensor, magnetic reed						
	Mounting	Electrical connection		Cable length [ft]	Part No.	Type
		Cables	M8 plug			
<b>NO contact</b>						
	With mounting kit	3 wires	–	8.2	30459	SME0-1-LED-24-B
		3 wires	–	16.4	151672	SME0-1-LED-24-K5-B
		–	3-pin	–	150848	SME0-1-S-LED-24-B

Ordering data – Block-shaped proximity sensor, pneumatic					
	Mounting	Pneumatic connection		Part No.	Type
<b>3/2-way valve, normally closed</b>					
	With mounting kit	Barbed fitting for tubing ID of 0.1 inch		31008	SMPO-1-H-B



Ordering data – Mounting kit			
	Mounting	Part No.	Type
	for cylinder with tie rod Ø 0.2 inch or DUO rail mounting profile	11886	SMB-1








# Flat cylinders DZH - Inch Series

Accessories

**FESTO**

Ordering data – Proximity sensors for T-slot, magneto-resistive						Technical data → Internet: smt	
	Type of mounting	Switch out-put	Electrical connection	Cable length [m]	Part No.	Type	
<b>N/O contact</b>							
	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	
<b>N/C contact</b>							
	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 out-put	Electrical connection	Cable length [m]	Part No.	Type	
<b>N/O contact</b>							
	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	
			Cable, 2-wire	2.5	543 872	SME-8M-ZS-24V-K-2,5-OE	
				Plug M8x1, 3-pin	0.3	543 861	SME-8M-DS-24V-K-0,3-M8D
	Insertable in the slot lengthwise, flush with the cylinder profile	Contacting	Cable, 3-wire	2.5	150 855	SME-8-K-LED-24	
			Plug M8x1, 3-pin	0.3	150 857	SME-8-S-LED-24	
<b>N/C contact</b>							
	Insertable in the slot lengthwise, flush with the cylinder profile	Contacting	Cable, 3-wire	7.5	160 251	SME-8-O-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	541333	NEBU-M8G3-K-2.5-LE3	
			5.0	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	
			5.0	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	
			5.0	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	
			5.0	541370	NEBU-M12W5-K-5-LE3	

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

# Flat cylinders DZH - Inch Series

Accessories



Ordering data – One-way flow control valves				
	Connection		Part No.	Type
	Thread	For tubing OD		
<b>For exhaust air</b>				
	10-32 UNF	5/32	165008	GRLA-10-32-UNF-QS-5/32-U
		1/4	192753	GRLA-10-32-UNF-QS-1/4-U
	1/8" NPT	5/32	165009	GRLA-1/8-NPT-QS-5/32-U
		3/16	190941	GRLA-1/8-NPT-QS-3/16-U
		1/4	165010	GRLA-1/8-NPT-QS-1/4-U
		5/16	165013	GRLA-1/8-NPT-QS-5/16-U
		3/16	190944	GRLA-1/4-NPT-QS-3/16-U
	1/4" NPT	1/4	165011	GRLA-1/4-NPT-QS-1/4-U
		5/16	165014	GRLA-1/4-NPT-QS-5/16-U
		3/8	190947	GRLA-1/4-NPT-QS-3/8-U
		1/4	165012	GRLA-3/8-NPT-QS-1/4-U
	3/8" NPT	5/16	165015	GRLA-3/8-NPT-QS-5/16-U
		3/8	190950	GRLA-3/8-NPT-QS-3/8-U
		1/2	190951	GRLA-3/8-NPT-QS-1/2-U
<b>For supply air</b>				
	10-32 UNF	-	151576	GRLZ-10-UNF-B
		-	151579	GRLZ-10-UNF-RS-B
		3/16	151577	GRLZ-10-UNF-3/16-B
		1/4	151578	GRLZ-10-UNF-1/4-B
	1/8" NPT	-	151561	GRLZ-1/8-NPT-B
		-	151564	GRLZ-1/8-NPT-RS-B
		1/4	151562	GRLZ-1/8-NPT-1/4-B

## Product Range and Company Overview

### A Complete Suite and Company Overview

Our experienced engineers provide complete support at every stage of your development process, including: conceptualization, analysis, engineering, design, assembly, documentation, validation, and production.



**Custom Automation Components**  
Complete custom engineered solutions



**Custom Control Cabinets**  
Comprehensive engineering support and on-site services



**Complete Systems**  
Shipment, stocking and storage services

### The Broadest Range of Automation Components

With a comprehensive line of more than 30,000 automation components, Festo is capable of solving the most complex automation requirements.



**Electromechanical**  
Electromechanical actuators, motors, controllers & drivers



**Pneumatics**  
Pneumatic linear and rotary actuators, valves, and air supply



**PLCs and I/O Devices**  
PLC's, operator interfaces, sensors and I/O devices

### Supporting Advanced Automation... As No One Else Can!

Festo is a leading global manufacturer of pneumatic and electromechanical systems, components and controls for industrial automation, with more than 16,000 employees in 60 national headquarters serving more than 180 countries. For more than 80 years, Festo has continuously elevated the state of manufacturing with innovations and optimized motion control solutions that deliver higher performing, more profitable automated manufacturing and processing equipment. Our dedication to the advancement of automation extends beyond technology to the education and development of current and future automation and robotics designers with simulation tools, teaching programs, and on-site services.

### Quality Assurance, ISO 9001 and ISO 14001 Certifications

Festo Corporation is committed to supply all Festo products and services that will meet or exceed our customers' requirements in product quality, delivery, customer service and satisfaction.

To meet this commitment, we strive to ensure a consistent, integrated, and systematic approach to management that will meet or exceed the requirements of the ISO 9001 standard for Quality Management and the ISO 14001 standard for Environmental Management.

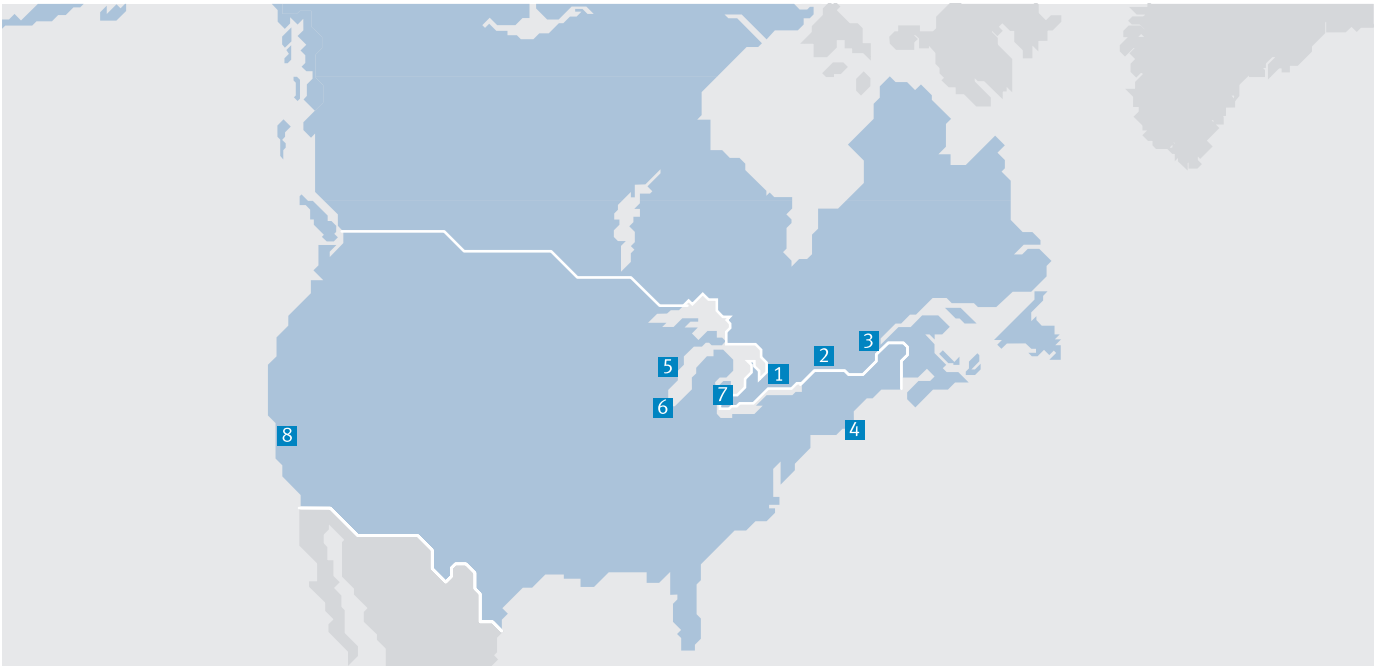


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# Festo North America



**1 Festo Canada  
Headquarters  
Festo Inc.**  
5300 Explorer Drive  
Mississauga, ON  
L4W 5G4

**2 Montréal**  
5600, Trans-Canada  
Pointe-Claire, QC  
H9R 1B6

**3 Québec City**  
2930, rue Watt#117  
Québec, QC  
G1X 4G3



**4 Festo United States  
Headquarters  
Festo Corporation**  
395 Moreland Road  
Hauppauge, NY  
11788

**5 Appleton**  
North 922 Tower View Drive, Suite N  
Greenville, WI  
54942

**7 Detroit**  
1441 West Long Lake Road  
Troy, MI  
48098

**6 Chicago**  
85 W Algonquin - Suite 340  
Arlington Heights, IL  
60005

**8 Silicon Valley**  
4935 Southfront Road, Suite F  
Livermore, CA  
94550

## Festo Regional Contact Center

### Canadian Customers

Commercial Support:  
Tel: 1 877 GO FESTO (1 877 463 3786)  
Fax: 1 877 FX FESTO (1 877 393 3786)  
Email: festo.canada@ca.festo.com

Technical Support:  
Tel: 1 866 GO FESTO (1 866 463 3786)  
Fax: 1 877 FX FESTO (1 877 393 3786)  
Email: technical.support@ca.festo.com

### USA Customers

Commercial Support:  
Tel: 1 800 99 FESTO (1 800 993 3786)  
Fax: 1 800 96 FESTO (1 800 963 3786)  
Email: customer.service@us.festo.com

Technical Support:  
Tel: 1 866 GO FESTO (1 866 463 3786)  
Fax: 1 800 96 FESTO (1 800 963 3786)  
Email: product.support@us.festo.com