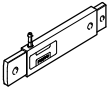
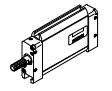
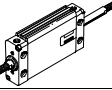
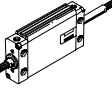
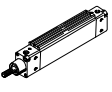
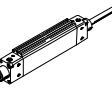
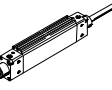




- Extremely flat design
- Protected against torsion thanks to special piston shape
- Compact assembly with block mounting
- Wide variety of mounting options

Flat cylinders EZH/DZF/DZH

Product range overview

| Function | Design | Type | Piston Ø [mm] | Stroke [mm] | |
|---------------|---|--|------------------|--|------------|
| Single-acting |  | EZH Single-ended piston rod | 1.5x6.5 | 10 | |
| | | | 2.5x9 | 10, 20 | |
| | | | 5x20 | 25, 50 | |
| | | | 10x40 | 40 | |
| Double-acting |  | 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 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

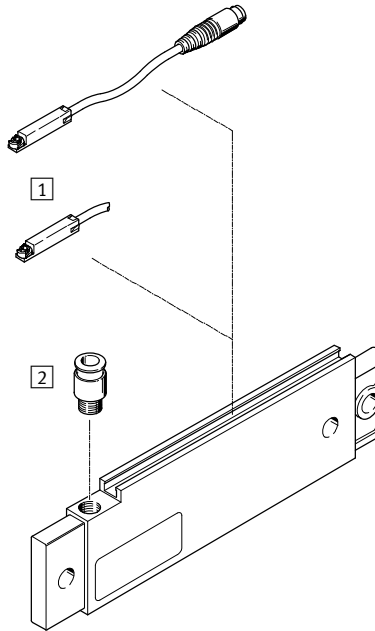
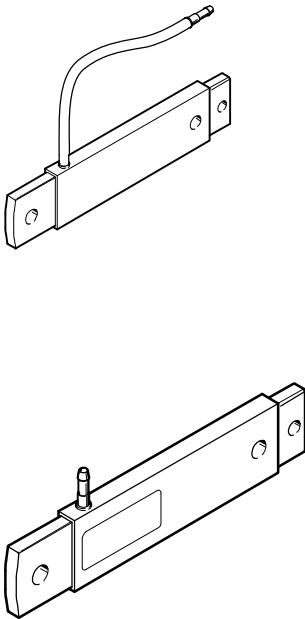
| Type | Position sensing | Piston rod | | Non-rotating | S6 Heat resistant seals up to 120 °C | → Page/Internet |
|---|------------------|-----------------------|---------------------|--------------|--|-----------------|
| | | with female thread | with male thread | | | |
| EZH Single-ended piston rod | ■ 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

Function

EZH...



Without end-position sensing



EZH...-A-B

For end position sensing



-  Diameter approx. 3.6 ... 22 mm
-  Stroke length 10 ... 50 mm



| General technical data | | | | | | |
|---------------------------------|---|-------|-------|------|------|-----------------------|
| Piston area | 1.5x6.5 | 2.5x9 | 2.5x9 | 5x20 | 5x20 | 10x40 |
| Stroke length | 10 | 10 | 20 | 25 | 50 | 40 |
| Equivalent piston \varnothing | 3.6 | 5.6 | 5.6 | 12 | 12 | 22 |
| Pneumatic connection | Barbed fitting PK-3 for 3 mm plastic tubing | | | | | G $\frac{1}{8}$ |
| 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 |

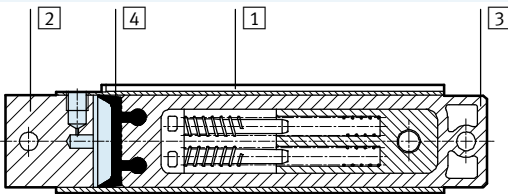
Flat cylinders EZH

Technical data



Materials

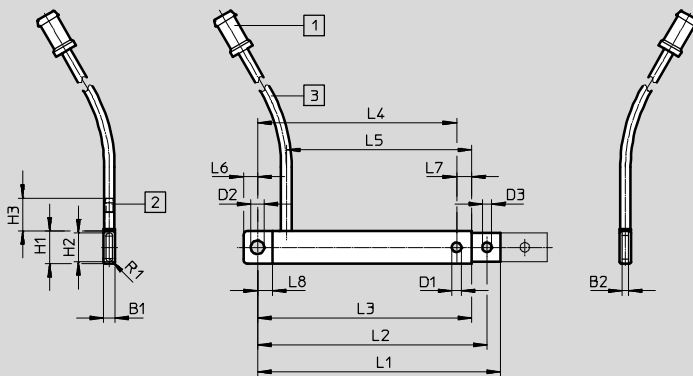
Sectional view



| | | | | | | |
|----------------------|---|-------|------------------|------|-----------------------|-------|
| 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 | | High-alloy steel | | 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

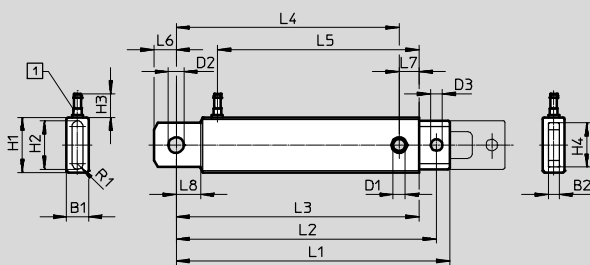


- 1 Barbed fittings for 3 mm plastic tubing
- 2 Barbed fittings for 1.5 mm plastic tubing
- 3 200 mm tubing length

| 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 |

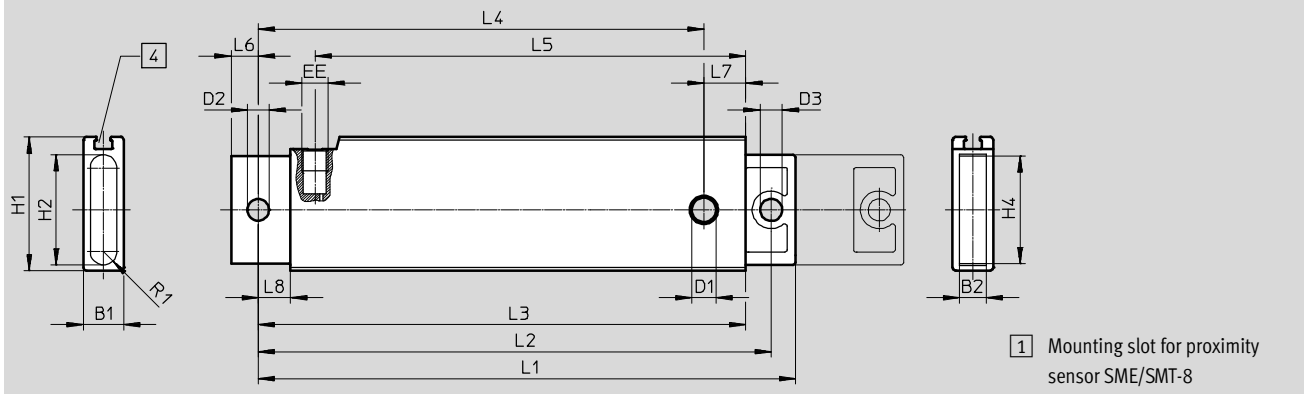
Flat cylinders EZH

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 | G1/8 | 49.5 | 40.7 | 40 | 198.9 |

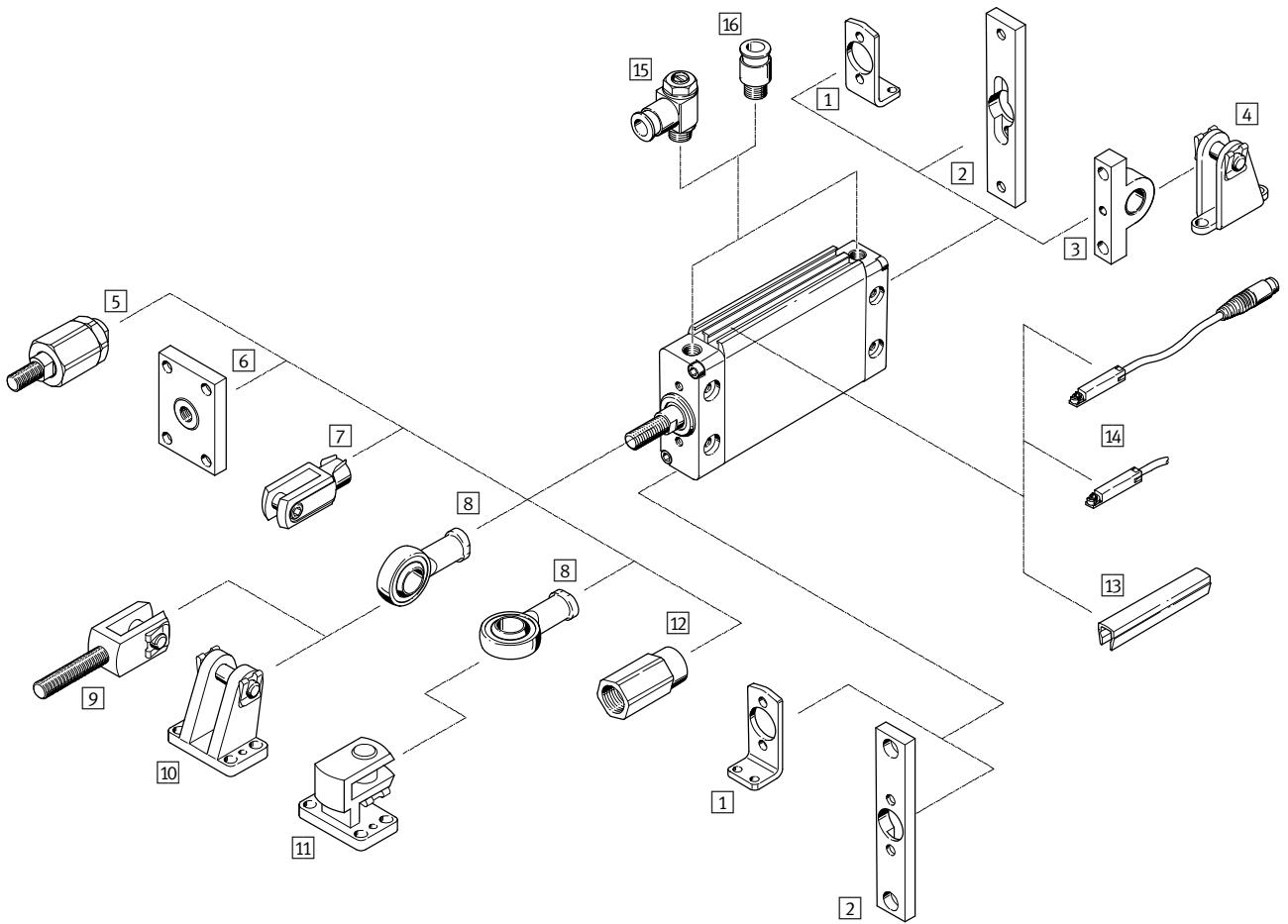
| Type | L2 | L3 | L4 | L5 | L6 | L7 | L8 | R1 |
|------------------|-----------|-------|------|-------|----|------|----|-------|
| | +0.9/-1.6 | ±0.4 | ±0.4 | | | | | |
| EZH-10/40-40-A-B | 189.9 | 180.5 | 165 | 159.5 | 10 | 15.5 | 12 | 4.925 |

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 |
| | 2.5x9 | 10 | 164991 | EZH-2,5/9-10-B |
| | | 20 | 164992 | EZH-2,5/9-20-B |
| | 5x20 | 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

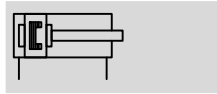
Type codes

| | | | | | | | | | | | | | | |
|--------------------------|---|-----|---|----|---|-----|---|--|---|---|---|---|---|--|
| | | 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

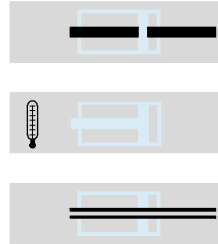
Function



- \varnothing - 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 | G $\frac{1}{8}$ | G $\frac{1}{8}$ | G $\frac{1}{4}$ | G $\frac{1}{4}$ |
| Piston rod thread | female | M3 | M4 | M5 | M6 | M8 | M10 | M10 |
| | male | M6 | M8 | M10x1.25 | M10x1.25 | M12x1.25 | M16x1.5 | M16x1.5 |
| 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 | |
| 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] 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 |

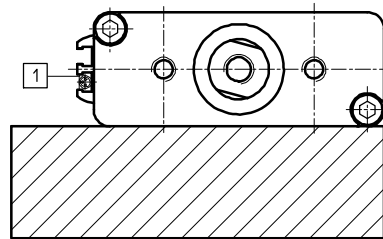
1) The max. torque must also be observed when fitting mounting attachments to the piston rod

| 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

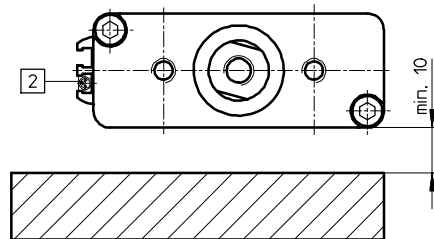
Cylinder – Ferritic components

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



1 SMT-8...

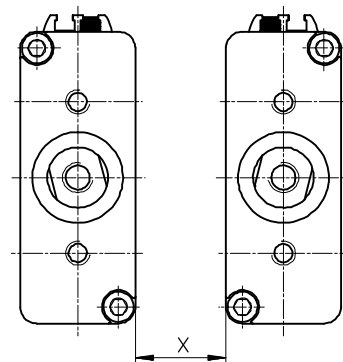
If a proximity sensor SME-8 is used, then with piston Ø 12 to 32 mm, a minimum clearance to the ferritic component of 10 mm must be maintained.



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.



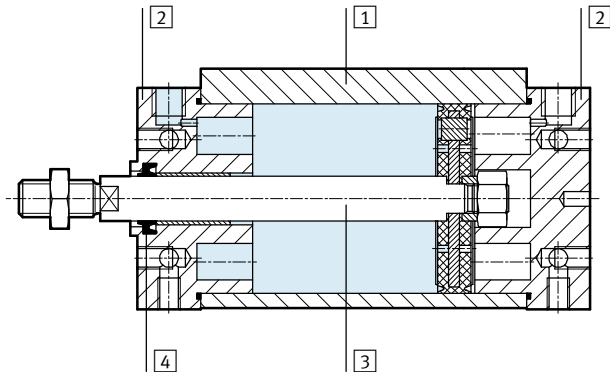
| Piston Ø | | 12 | 18 | 25 | 32 | 40 | 50 | 63 |
|-------------------------|----------|----|----|----|----|----|----|----|
| Min. safety clearance X | SMT-8... | 35 | | | 25 | 45 | | 80 |
| [mm] | SME-8... | 50 | | | 45 | 65 | | 50 |

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 stainless steel |
| | High-alloy steel Ø 32 ... 63 | 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 Ø H9 | E | EE | G | H1 | L1 | L2 | L3 | L4 | L5 |
|----|----|----|----|---------------|----|----|----|----|----|----|-----|-----|----|
| 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 Ø | PL | R | RT | T1 | T3 | TO | WH | ZJ | ≈C1 h13 | Max. tightening torque [Nm] +10% |
|----|----|----|---------|-----|-----|----|----|----|----|----|----|------------|--|
| 12 | 7 | 3 | 6 | 8.5 | 7.5 | M3 | 7 | 4 | 20 | 7 | 69 | 5 | 2.9 |
| 18 | - | - | 8 | 8.5 | 9 | M4 | 7 | 6 | 18 | 7 | 69 | 7 | 2.9 |

Flat cylinders DZF

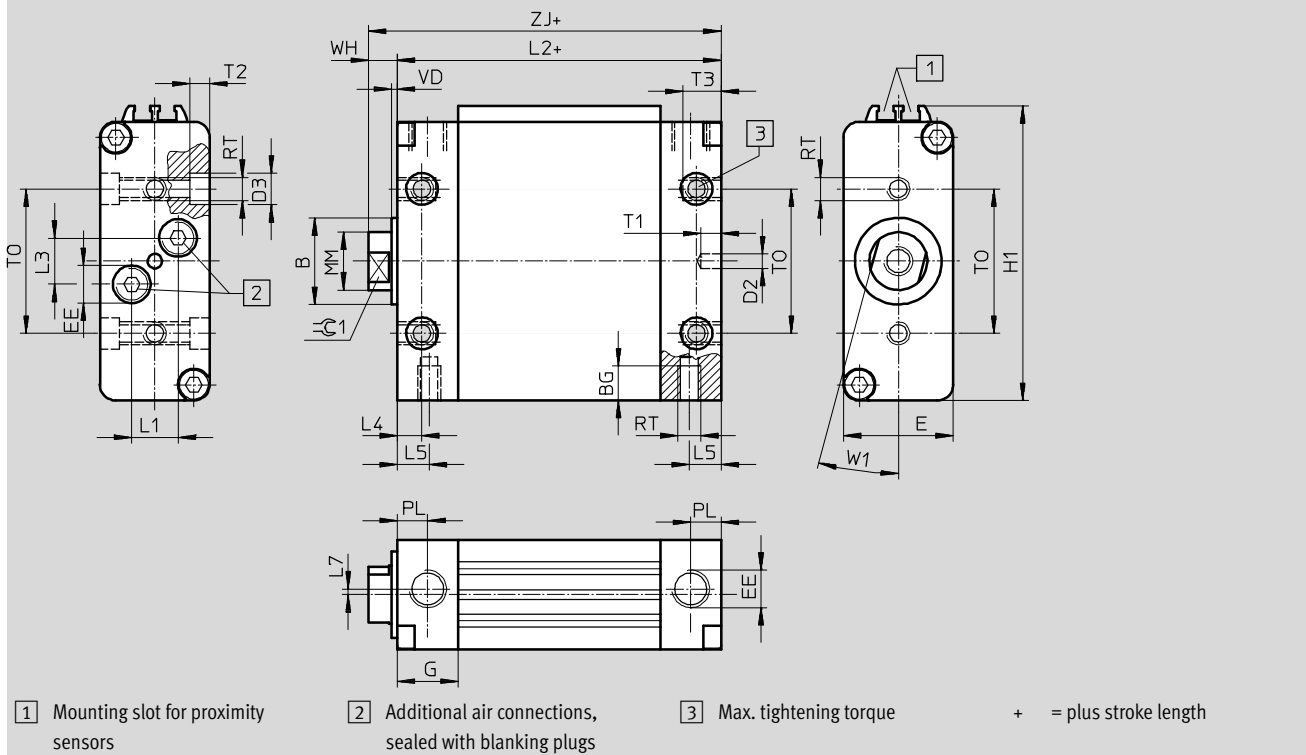
Technical data

FESTO

Dimensions

Piston \varnothing 25 ... 63

Download CAD data → www.festo.com



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

| \varnothing [mm] | L7 | MM \varnothing | PL | RT | T1 | T2 | T3 | T0 | VD | W1 ± 1 | WH | ZJ | $\approx \text{C1}$ h13 | Max. tightening torque [Nm] +10% |
|-----------------------|-----|---------------------|------|-----|----|----|----|----|----|---------------|----|----|----------------------------|-------------------------------------|
| 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 |

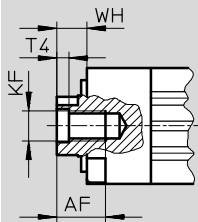
Flat cylinders DZF

Technical data

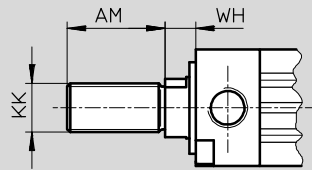
Dimensions – Variants

Download CAD data → www.festo.com

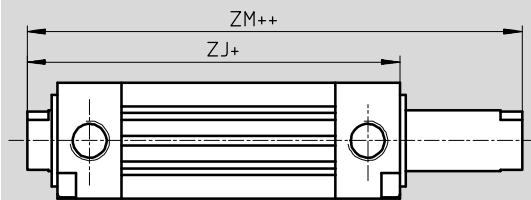
Female thread



Male thread

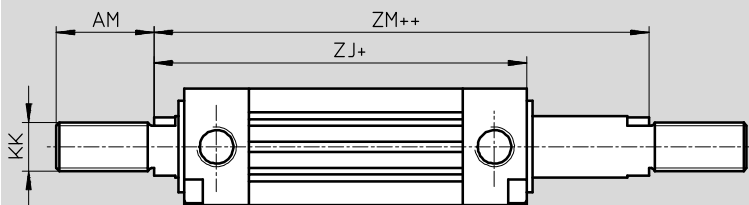


S2 – Through piston rod with female thread



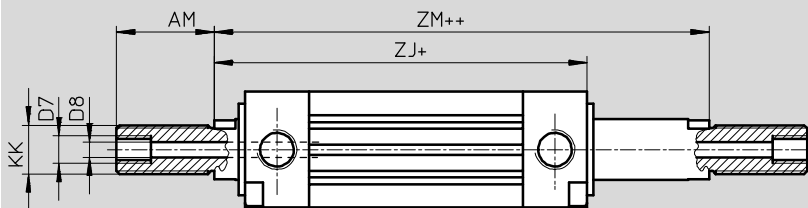
+ = plus stroke length
++ = plus 2x stroke length

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 | G $\frac{1}{8}$ | 8 | M10 | M16x1.5 | 4.7 | 10 | 92 | 102 |
| 63 | 20 | 32 | G $\frac{1}{8}$ | 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




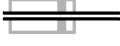
| Ordering data | | | | | | |
|---|------------------|----------------|-------------------------------|----------------|-----------------------------|--------------------------------|
| Type | Piston Ø [mm] | Stroke [mm] | Piston rod with female thread | | Piston rod with male thread | |
| | | | Part 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

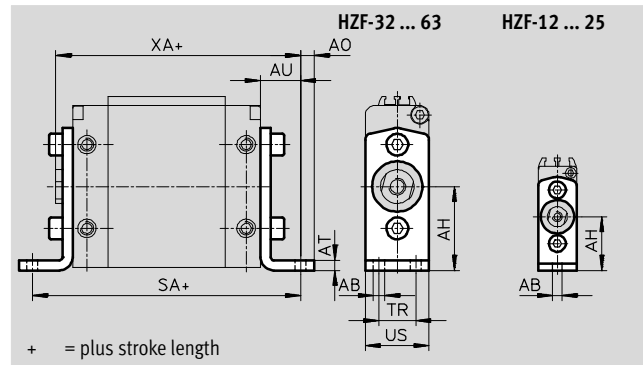
Flat cylinders DZF

Accessories



Foot mounting HZF

Material:
Steel

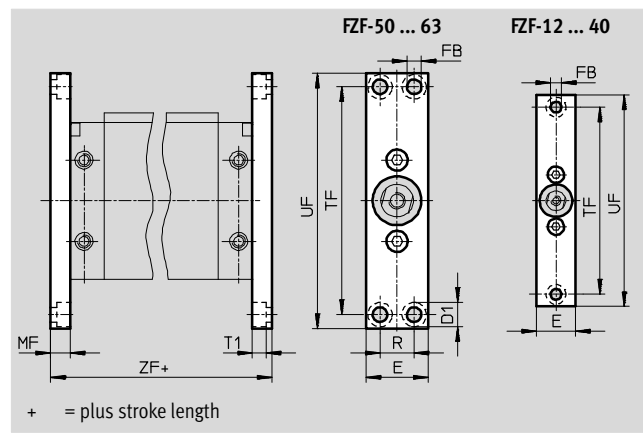


| Dimensions and ordering data | | | | | | | | | | | | | |
|------------------------------|---------------------|----|-----|----|----|-----|----|----|-----|-------------------|---------------|----------|--------|
| For \varnothing | AB \varnothing | AH | AO | AT | AU | SA | TR | US | XA | CRC ¹⁾ | Weight [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.

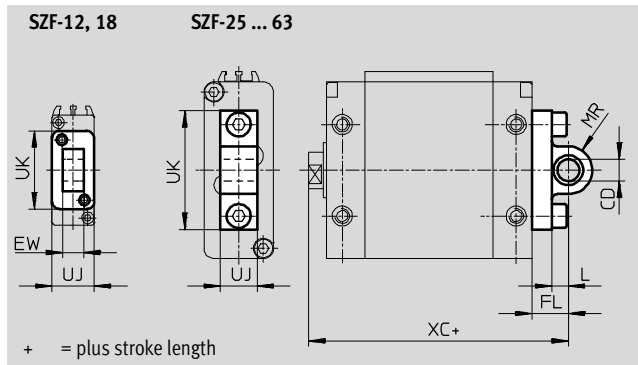
Flat cylinders DZF

Accessories



Swivel flange SZF

Material:
High-alloy steel

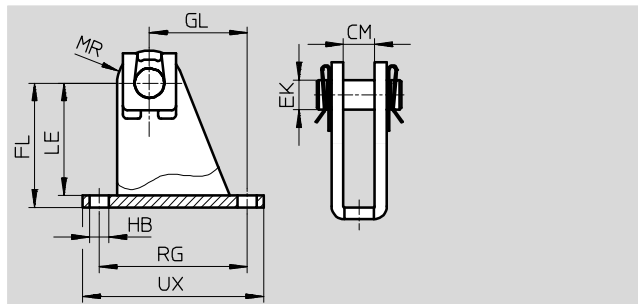


| Dimensions and ordering data | | | | | | | | | | | | |
|------------------------------|---------------------------|-----------|----|----|-----|------|----|-----|-------------------|---------------|---------------|---------------|
| For \varnothing | CD \varnothing H9 | EW h12 | FL | L | MR | UJ | UK | 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

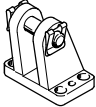
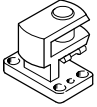






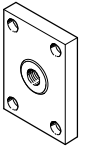

| Dimensions and ordering data | | | | | | | | | | | | |
|------------------------------|-----------|---------------------------|--------------|------|---------------------|----|-----|----|----|---------------|---------------|------------------|
| For \varnothing | CM | EK \varnothing H8 | FL | GL | 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

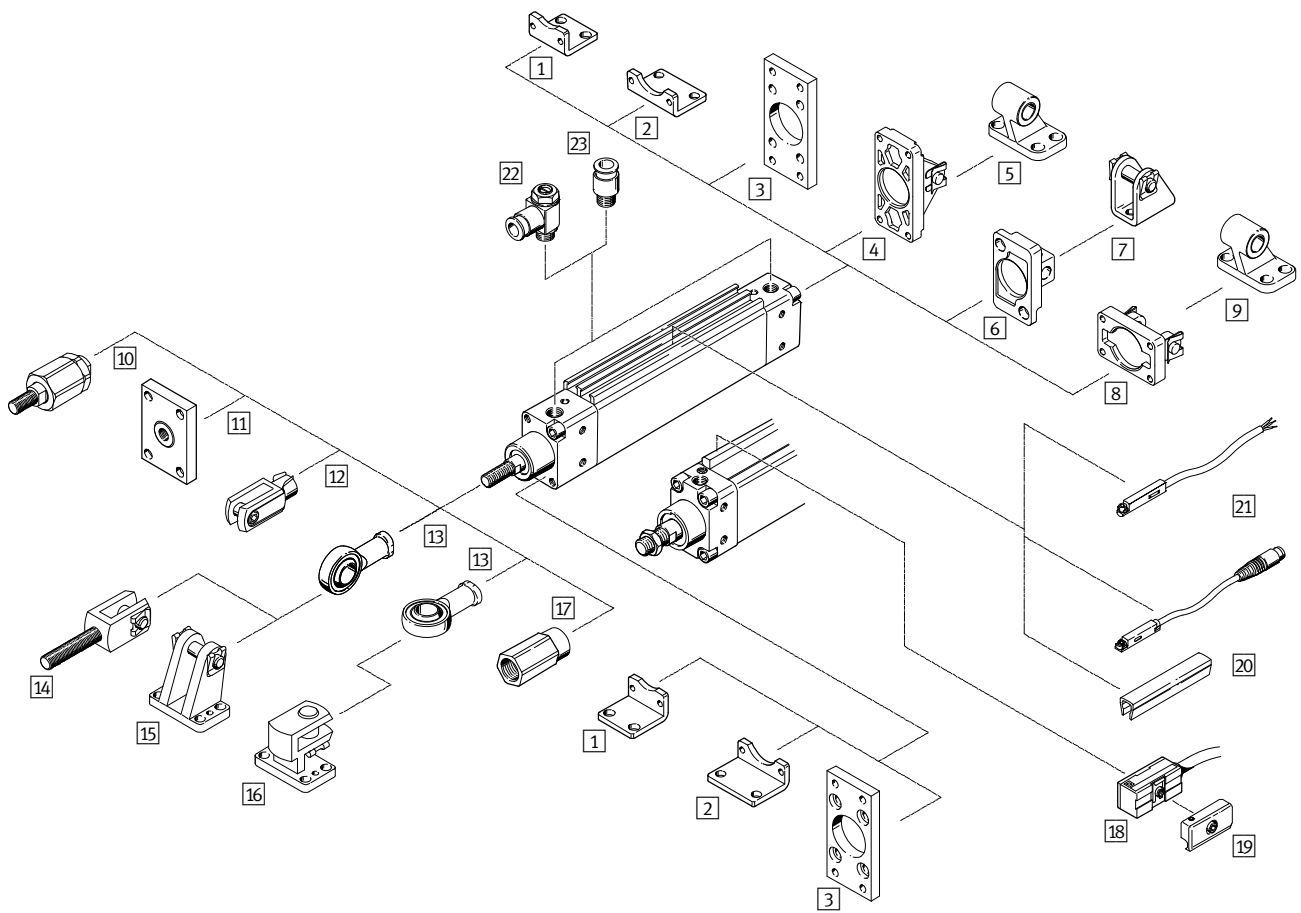
FESTO

| 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 | | | | 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 | | | | 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 | | 12 | 157329 | AD-M6-1/8 |
| | 25 | 36125 | KSZ-M10x1,25 | | 12 | 157330 | AD-M6-1/4 |
| | 32 | | | | 18 | 157331 | AD-M8-1/8 |
| | 40 | 36126 | KSZ-M12x1,25 | | 18 | 157332 | AD-M8-1/4 |
| | 50 | 36127 | KSZ-M16x1,5 | | 25 | 157333 | AD-M10x1,25-1/8 |
| | 63 | | | | 32 | 157334 | AD-M10x1,25-1/4 |
| | | | 40 | 160256 | AD-M12x1,25-1/4 | | |
| | | | | 40 | 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-rotat- ing 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/SMT0-1/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

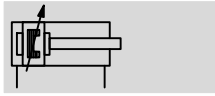
| | | | | | | | | | | | | |
|-------------------------|--|-----|---|----|---|----|---|-----|---|---|---|--|
| | | DZH | – | 16 | – | 40 | – | PPV | – | A | – | |
| Type | | | | | | | | | | | | |
| Double-acting | | | | | | | | | | | | |
| DZH | Flat cylinder | | | | | | | | | | | |
| Piston Ø [mm] | | | | | | | | | | | | |
| 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
→ 30

Variants



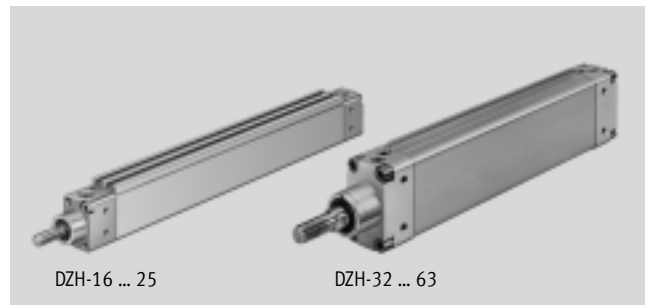
S2



S6



S20



DZH-16 ... 25

DZH-32 ... 63

| General technical data | | | | | | | |
|----------------------------------|--|------|----------|----------|----------|---------|---------|
| Piston Ø | 16 | 20 | 25 | 32 | 40 | 50 | 63 |
| Pneumatic connection | M5 | 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 | | | | | | |
| 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 |
| Theoretical force at 6 bar, retracting | 104 | 158 | 247 | 415 | 633 | 989 | 1682 |
| | S2/S20 | 104 | 158 | 247 | 415 | 633 | 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

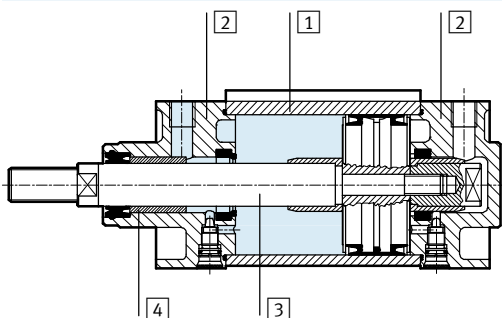
| Weights [g] | | | | | | | |
|------------------------------------|-----|-----|-----|-----|-----|------|------|
| Piston Ø | 16 | 20 | 25 | 32 | 40 | 50 | 63 |
| Product weight at 0 mm stroke | 140 | 230 | 330 | 500 | 820 | 1200 | 1690 |
| Additional weight per 10 mm stroke | 11 | 15 | 21 | 30 | 40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

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

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

Materials

Sectional view



| Flat cylinder | 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 | |

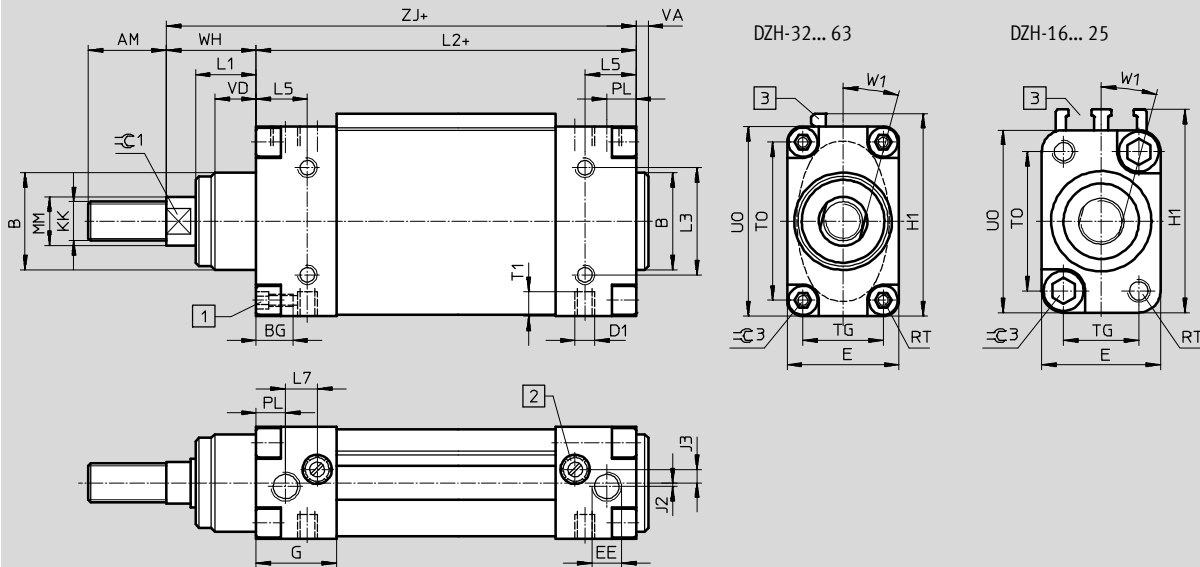
Flat cylinders DZH

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 $\varnothing 16 \dots 25$:
Mounting slot for proximity sensors
 $\varnothing 32 \dots 63$:
Mounting rail for proximity sensor
- + = plus stroke length

| \varnothing [mm] | AM | B \varnothing f10 | BG | D1 | D8 \varnothing | E | EE | G | H1 | J2 | J3 | KK | L1 | L2 | L3 | L5 |
|-----------------------|----|---------------------------|-----|-----|---------------------|----|-----------------|------|-------|------|-----|----------|----|-----------|----|------|
| 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 | G $\frac{1}{8}$ | 25 | 39.5 | -0.7 | 5 | M8 | 14 | 90.5 ±0.5 | 15 | 15 |
| 25 | 22 | 22 | 7 | M5 | 3.8 | 26 | G $\frac{1}{8}$ | 26 | 44.5 | -0.3 | 4.2 | M10x1.25 | 14 | 92.5 ±0.5 | 18 | 16 |
| 32 | 22 | 30 | 13 | M6 | - | 36 | G $\frac{1}{8}$ | 27 | 53.3 | - | 3 | M10x1.25 | 16 | 94 ±0.7 | 18 | 13 |
| 40 | 24 | 35 | 13 | M6 | - | 40 | G $\frac{1}{4}$ | 33 | 66.3 | - | 6 | M12x1.25 | 20 | 105 ±0.7 | 32 | 16.5 |
| 50 | 32 | 40 | 15 | M8 | - | 46 | G $\frac{1}{4}$ | 32.5 | 82.3 | 2.5 | 3 | M16x1.5 | 25 | 106 ±0.7 | 44 | 21 |
| 63 | 32 | 42 | 15 | M10 | - | 54 | G $\frac{3}{8}$ | 36.5 | 108.3 | 4 | 5 | M16x1.5 | 28 | 115 ±0.7 | 64 | 22.5 |

| \varnothing [mm] | L7 | MM \varnothing | PL | RT | T1 | TG | TO | U0 | VA | VD | WH | W1 | ZJ | ZM | $\approx \varnothing 1$ | $\approx \varnothing 3$ |
|-----------------------|------|---------------------|------|----|-----|------|------|-----|-----|----|------|-----|-------|------------|-------------------------|-------------------------|
| 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 onto the piston rod. Counterhold by means of the spanner flats $\approx \varnothing 1$. additional components are screwed

Flat cylinders DZH

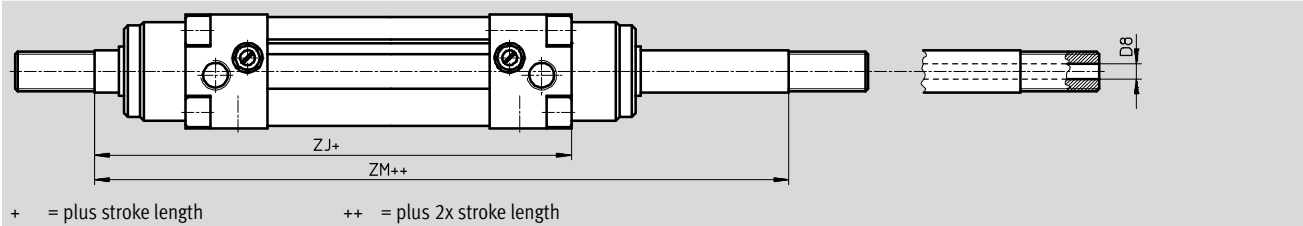
Technical data



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 |

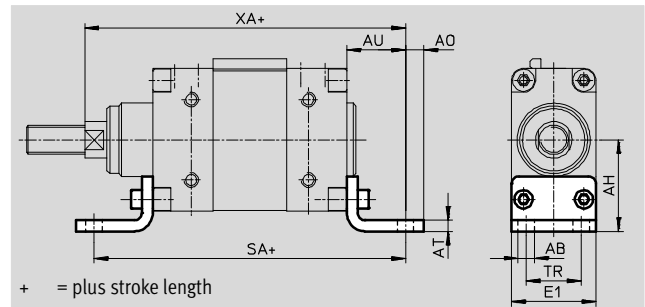
Flat cylinders DZH

Accessories

FESTO

Foot mounting HZS, narrow

Material:
Steel

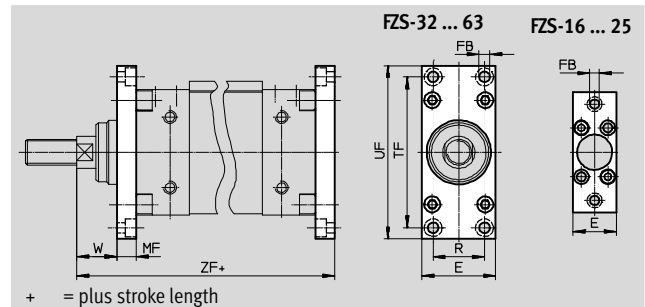
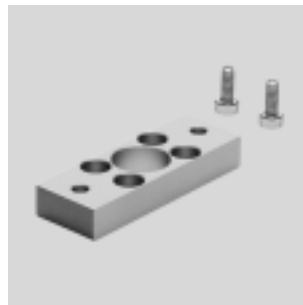


| Dimensions and ordering data | | | | | | | | | | | | | |
|------------------------------|---------------------|------|----|----|----|----|-------|------|-------|-------------------|---------------|----------|--------|
| For \varnothing | AB \varnothing | AH | AO | AT | AU | E1 | SA | TR | XA | CRC 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.

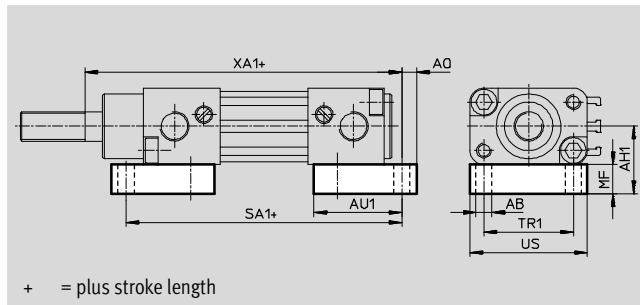
Flat cylinders DZH

Accessories



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

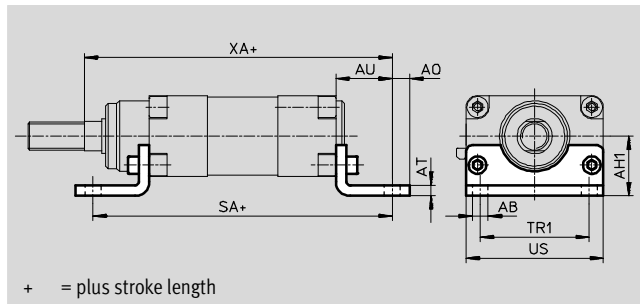
Material:
Wrought aluminium alloy



+ = plus stroke length

for piston Ø 32 ... 63 mm

Material:
Steel



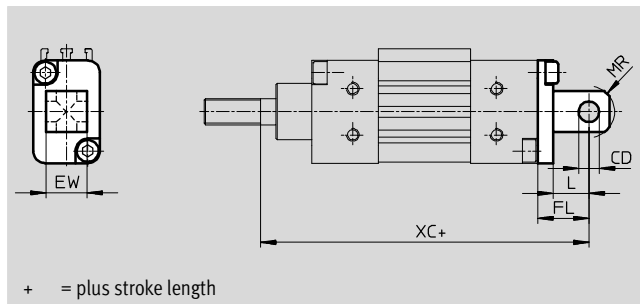
+ = plus stroke length

| Dimensions and ordering data | | | | | | | | | | | | | | | | | |
|------------------------------|---------|------|----|----|----|-----|----|-----|-------|------|-----|-------|-----|-------------------|---------------|----------|--------|
| For Ø | AB Ø | AH1 | AO | AT | AU | AU1 | MF | SA | SA1 | TR1 | US | XA | XA1 | CRC ¹⁾ | Weight [g] | Part No. | Type |
| 16 | 4.5 | 20 | 4 | - | - | 23 | 10 | - | 88.5 | 23 | 30 | - | 101 | 2 | 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 Ø 16 ... 25 mm

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



+ = plus stroke length

| Dimensions and ordering data | | | | | | | | | |
|------------------------------|---------------|----|----|----|-----|-------------------|---------------|----------|---------|
| For Ø | CD Ø 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.

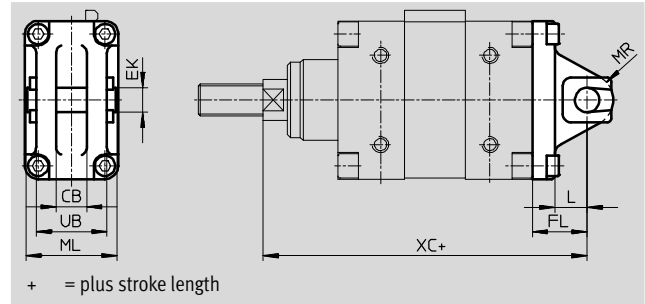
Flat cylinders DZH

Accessories



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

Material:
Die-cast aluminium
Free of copper and PTFE
RoHS-compliant



Dimensions and ordering data

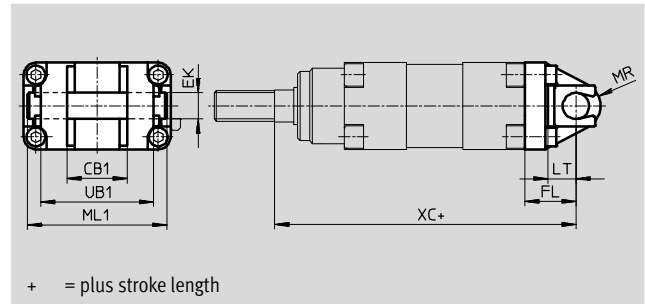
| For Ø | CB | EK Ø | FL | L | ML | MR | UB | XC | CRC ¹⁾ | Weight [g] | Part No. | Type |
|-------|------|---------|----|------|------|----|------|-------|-------------------|---------------|--------------|---------------|
| | +0.2 | e8 | | | | | ±0.1 | | | | | |
| 32 | 9.4 | 10 | 22 | 13.5 | 35.6 | 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
Free of copper and PTFE
RoHS-compliant



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.

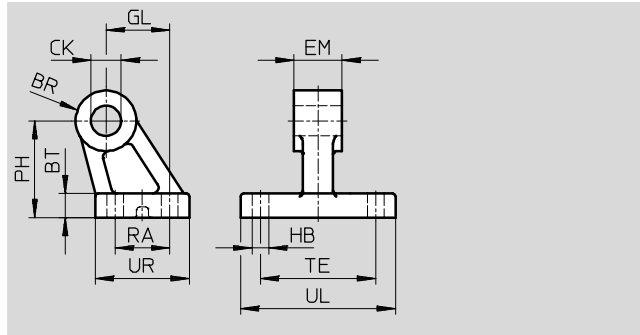
Flat cylinders DZH

Accessories



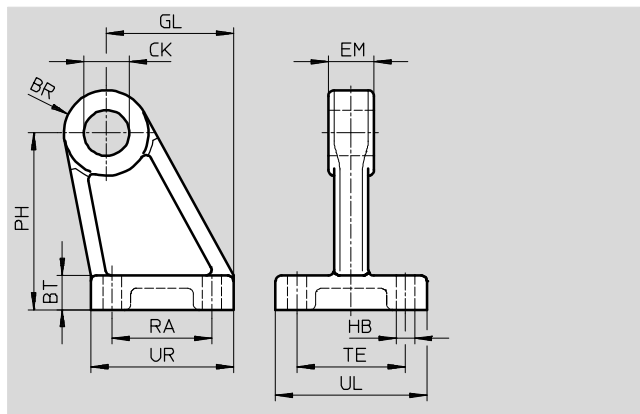
Clevis foot LBZB for piston \varnothing 32 mm

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



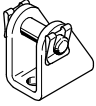

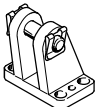
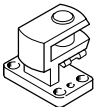
| Dimensions and ordering data | | | | | | | | | | | | | | | |
|------------------------------|----|----|---------------------|------|----|---------------------|------|----|----|----|----|-------------------|---------------|--------------|----------------|
| For \varnothing | BR | BT | CK \varnothing | EM | GL | HB \varnothing | PH | RA | TE | UL | UR | CRC ¹⁾ | Weight [g] | Part No. | Type |
| | | | | -0.3 | | | | | | | | | | | |
| 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 |





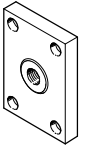

1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial 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 | Cables | M8 plug | Cable length [m] | Part No. | Type | |
| | | | | | | | 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 | |

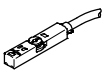
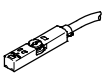
| Ordering data – Block-shaped proximity sensor, pneumatic | | | | | Technical data → Internet: smpo | |
|--|----------------------|--------------------------------------|--|----------|---------------------------------|-------------------|
| Mounting | Pneumatic connection | | | Part No. | Type | |
|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

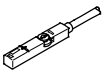


| Ordering data – Mounting kit | | | | Technical data → Internet: smb | |
|---|---|--|--|--------------------------------|--------------|
| Mounting | | | | Part No. | Type |
|  | for cylinder with tie rod Ø 6 mm or DUO rail mounting profile | | | 11886 | SMB-1 |



Flat cylinders EZH/DZF/DZH

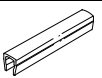
Accessories

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

FESTO

| 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 | | | |