

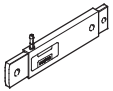
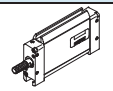
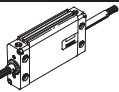
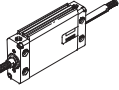
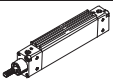
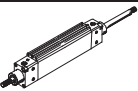
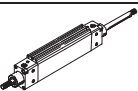


- Extremely flat design
- Protected against torsion thanks to special piston shape
- Compact assembly with block mounting
- Wide variety of mounting options

# Flat cylinders EZH/DZF/DZH

Product range overview

**FESTO**

| Function                                                                            | Design                                                                            | Type                                                                                | Piston Ø                          | Stroke                                                 |                                    |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------|--------------------------------------------------------|------------------------------------|
|                                                                                     |                                                                                   |                                                                                     | [mm]                              | [mm]                                                   |                                    |
| Single-actin<br>g                                                                   | EZH                                                                               |                                                                                     |                                   |                                                        |                                    |
|                                                                                     |  | EZH<br>Single-ended<br>piston rod                                                   | 1.5x6.5                           | 10                                                     |                                    |
|                                                                                     |                                                                                   |                                                                                     | 2.5x9                             | 10, 20                                                 |                                    |
|                                                                                     |                                                                                   |                                                                                     | 5x20                              | 25, 50                                                 |                                    |
|                                                                                     |                                                                                   |                                                                                     | 10x40                             | 40                                                     |                                    |
| Double-actin<br>g                                                                   | DZF                                                                               |                                                                                     |                                   |                                                        |                                    |
|                                                                                     |  | DZF<br>Single-ended<br>piston rod                                                   | 12, 18, 25                        | 10, 25, 40, 50, 80, 100, 125, 160, 200                 | 10 ... 200                         |
|                                                                                     |                                                                                   |                                                                                     | 32, 40, 50, 63                    | 10, 25, 40, 50, 80, 100, 125, 160, 200, 250, 320       | 10 ... 320                         |
|                                                                                     |  | DZF-...-S2<br>Through piston<br>rod                                                 | 12, 18, 25                        | –                                                      | 10 ... 200                         |
|                                                                                     |                                                                                   |                                                                                     | 32, 40, 50, 63                    | –                                                      | 10 ... 320                         |
|                                                                                     |  | DZF-...-S20<br>Through, hollow<br>piston rod                                        | 12, 18, 25                        | –                                                      | 10 ... 200                         |
|                                                                                     |                                                                                   |                                                                                     | 32, 40, 50, 63                    | –                                                      | 10 ... 320                         |
|                                                                                     | Double-actin<br>g                                                                 | DZH                                                                                 |                                   |                                                        |                                    |
|                                                                                     |                                                                                   |  | DZH<br>Single-ended<br>piston rod | 16                                                     | 25, 40, 50, 80, 100, 125, 160, 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<br>Through piston<br>rod                                                 | 16                                | –                                                      | 1 ... 200                          |
|                                                                                     |                                                                                   |                                                                                     | 20                                | –                                                      | 1 ... 320                          |
|                                                                                     |                                                                                   |                                                                                     | 25                                | –                                                      | 1 ... 500                          |
|                                                                                     |                                                                                   |                                                                                     | 32, 40, 50, 63                    | –                                                      | 1 ... 1000                         |
|  |                                                                                   | DZH-...-S20<br>Through, hollow<br>piston rod                                        | 16                                | –                                                      | 1 ... 200                          |
|                                                                                     |                                                                                   |                                                                                     | 20                                | –                                                      | 1 ... 320                          |
|                                                                                     |                                                                                   |                                                                                     | 25                                | –                                                      | 1 ... 500                          |

# Flat cylinders EZH/DZF/DZH

Product range overview

**FESTO**

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

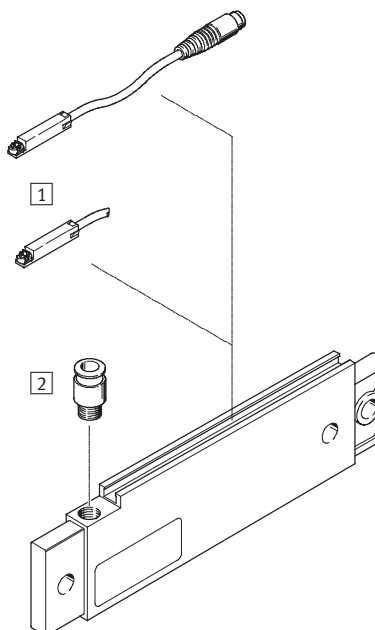
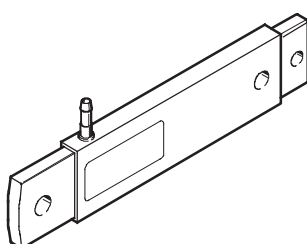
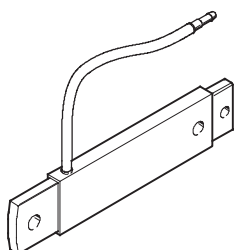
# Flat cylinders EZH

Peripherals overview and type codes

FESTO

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

Piston area 10x40 mm



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

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

# Flat cylinders EZH

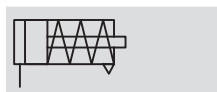
FESTO

## Technical data

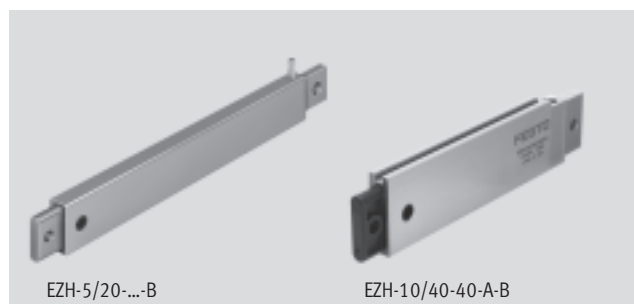
Function

**EZH-...**

Without end-position sensing

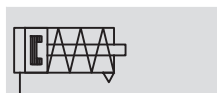


-N- Diameter  
approx. 3.6 ... 22 mm  
-T- Stroke length  
10 ... 50 mm



**EZH-...-A-B**

For end position sensing



| 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 Ø    | 3.6                                         | 5.6   | 5.6   | 12   | 12   | 22                    |
| Pneumatic connection   | Barbed fitting PK-3 for 3 mm plastic tubing |       |       |      |      | G1/8                  |
| Constructional design  | Piston, piston rod                          |       |       |      |      |                       |
| Cushioning             | None                                        |       |       |      |      |                       |
| Position sensing       | –                                           | –     | –     | –    | –    | For proximity sensing |
| Type of mounting       | With transverse bore                        |       |       |      |      |                       |
| Mounting position      | Any                                         |       |       |      |      |                       |

| Operating and environmental conditions       |                                                                                                        |             |             |             |             |             |
|----------------------------------------------|--------------------------------------------------------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|
| Piston area                                  | 1.5x6.5                                                                                                | 2.5x9       | 2.5x9       | 5x20        | 5x20        | 10x40       |
| Stroke length                                | 10                                                                                                     | 10          | 20          | 25          | 50          | 40          |
| Operating medium                             | Compressed air in accordance with ISO 8573-1:2010 [7:4:4]                                              |             |             |             |             |             |
| Note on operating/pilot medium               | Operation with lubricated medium possible (in which case lubricated operation will always be required) |             |             |             |             |             |
| Operating pressure [bar]                     | 3.0 ... 6.0                                                                                            | 2.8 ... 6.0 | 2.8 ... 6.0 | 2.5 ... 6.0 | 2.5 ... 6.0 | 2.5 ... 6.0 |
| Ambient temperature <sup>1)</sup> [°C]       | 0 ... +60                                                                                              |             |             |             |             |             |
| Corrosion resistance class CRC <sup>2)</sup> | 2                                                                                                      |             |             |             |             |             |

1) Observe operating range of proximity sensors

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

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

| Forces [N]                            |         |       |       |      |      |       |
|---------------------------------------|---------|-------|-------|------|------|-------|
| Piston area                           | 1.5x6.5 | 2.5x9 | 2.5x9 | 5x20 | 5x20 | 10x40 |
| Stroke length                         | 10      | 10    | 20    | 25   | 50   | 40    |
| Theoretical force at 6 bar, advancing | 3.8     | 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   |

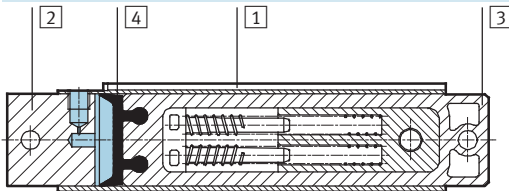
# Flat cylinders EZH

Technical data

**FESTO**

## Materials

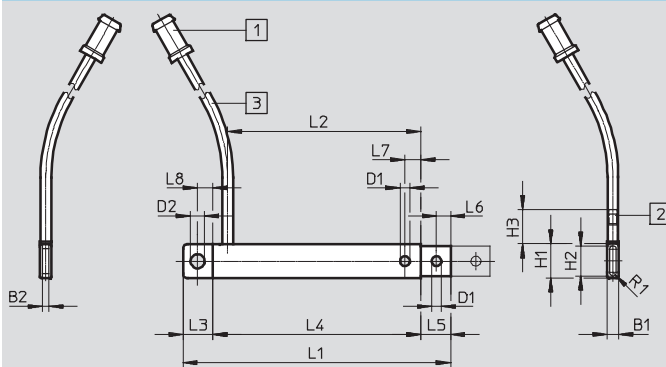
Sectional view



|                      |                                                     |                  |       |      |      |                       |
|----------------------|-----------------------------------------------------|------------------|-------|------|------|-----------------------|
| 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/us/cad](http://www.festo.com/us/cad)

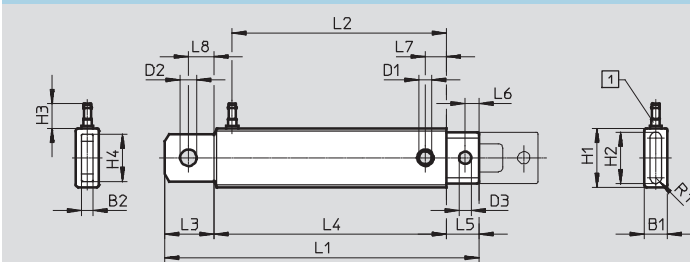


- 1 Barbed fittings for 3 mm plastic tubing
- 2 Barbed fittings for 1.5 mm plastic tubing
- 3 200 mm tubing length

| Type           | B1  | B2  | D1<br>Ø | D2<br>Ø<br>H11 | H1  | H2  | H3  | L1   | L2<br>±0.2 | L3<br>±0.5 | L4<br>±0.2 | L5<br>±0.5 | L6 | L7  | L8  | R1  |
|----------------|-----|-----|---------|----------------|-----|-----|-----|------|------------|------------|------------|------------|----|-----|-----|-----|
| EZH-1,5/6,5-10 | 2.5 | 1.4 | 2.5     | 3              | 7.3 | 6.5 | 7.3 | 57.1 | 41.2       | 6.4        | 44.3       | 6.4        | 3  | 3.4 | 3.3 | 0.7 |

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

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)



- 1 Barbed fittings for 3 mm plastic tubing

| Type         | B1  | B2  | D1<br>Ø | D2<br>Ø<br>H11 | D3<br>Ø | H1 | H2   | H3   | H4 |
|--------------|-----|-----|---------|----------------|---------|----|------|------|----|
| EZH-2,5/9-10 | 4.9 | 2.5 | 3.1     | 4              | 3.1     | 12 | 9.9  | 10.7 | 9  |
| EZH-2,5/9-20 | 4.9 | 2.4 | 3.1     | 4              | 3.1     | 12 | 9.9  | 10.7 | 9  |
| EZH-5/20-25  | 10  | 5   | 5.5     | 7              | 5.2     | 25 | 21.9 | 10.7 | 20 |
| EZH-5/20-50  | 10  | 5   | 5.5     | 7              | 5.2     | 25 | 21.9 | 10.7 | 20 |

| Type         | L1              | L2    | L3           | L4<br>+0.2 | L5             | L6 | L7  | L8  | R1  |
|--------------|-----------------|-------|--------------|------------|----------------|----|-----|-----|-----|
| EZH-2,5/9-10 | 67 +0.7/-0.8    | 43.6  | 10 +0.3/-0.5 | 48.6       | 8.4 +0.3/-0.5  | 4  | 4.5 | 5.5 | 1.3 |
| EZH-2,5/9-20 | 99 ±0.7         | 75.5  | 10 +0.3/-0.5 | 80.6       | 8.4 +0.3/-0.5  | 4  | 4.5 | 5.5 | 1.2 |
| EZH-5/20-25  | 133.9 +0.6/-0.8 | 91.3  | 21 +0.3/-0.5 | 99         | 13.9 +0.3/-0.5 | 6  | 9   | 11  | 2.5 |
| EZH-5/20-50  | 205.9 +0.8/-1.1 | 163.3 | 21 +0.5/-0.7 | 171        | 13.9 +0.3/-0.6 | 6  | 9   | 11  | 2.5 |

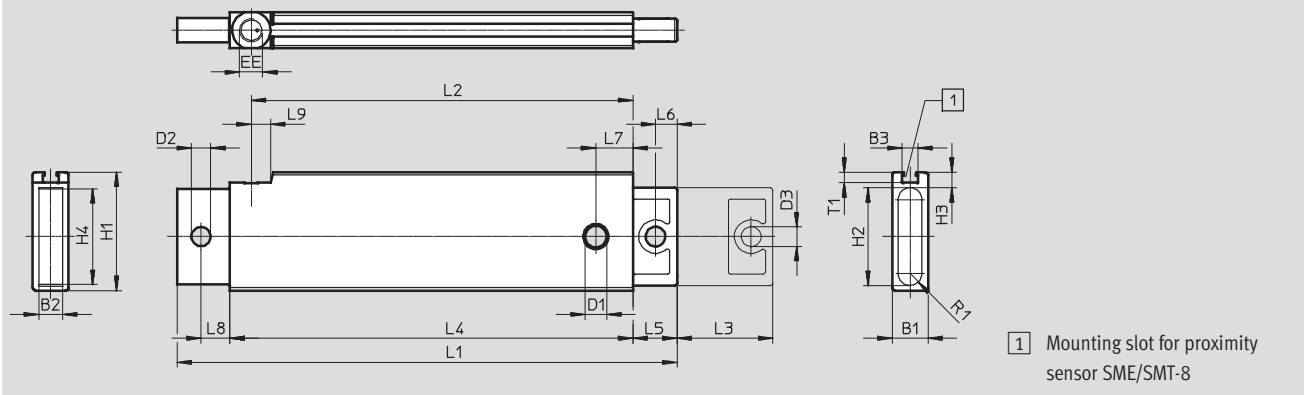
# Flat cylinders EZH

Technical data

**FESTO**

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

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)



| Type             | B1   | B2   | B3   | D1<br>Ø | D2<br>Ø<br>H11 | D3<br>Ø | EE   | H1   | H2         | H3        | H4        |
|------------------|------|------|------|---------|----------------|---------|------|------|------------|-----------|-----------|
| EZH-10/40-40-A-B | -0.3 | -0.2 | +0.2 | 8.5     | 8              | 8.2     | G1/8 | 49.5 | +0.15/-0.1 | +0.4/-0.6 | -0.1/-0.3 |

| Type             | L1        | L2   | L3        | L4   | L5        | L6   | L7   | L8 | L9 | R1  | T1  |
|------------------|-----------|------|-----------|------|-----------|------|------|----|----|-----|-----|
| EZH-10/40-40-A-B | +0.8/-1.5 | ±0.4 | +0.8/-0.1 | ±0.2 | +0.4/-1.1 | ±0.4 | ±0.4 | 12 | 8  | 4.9 | 4.5 |

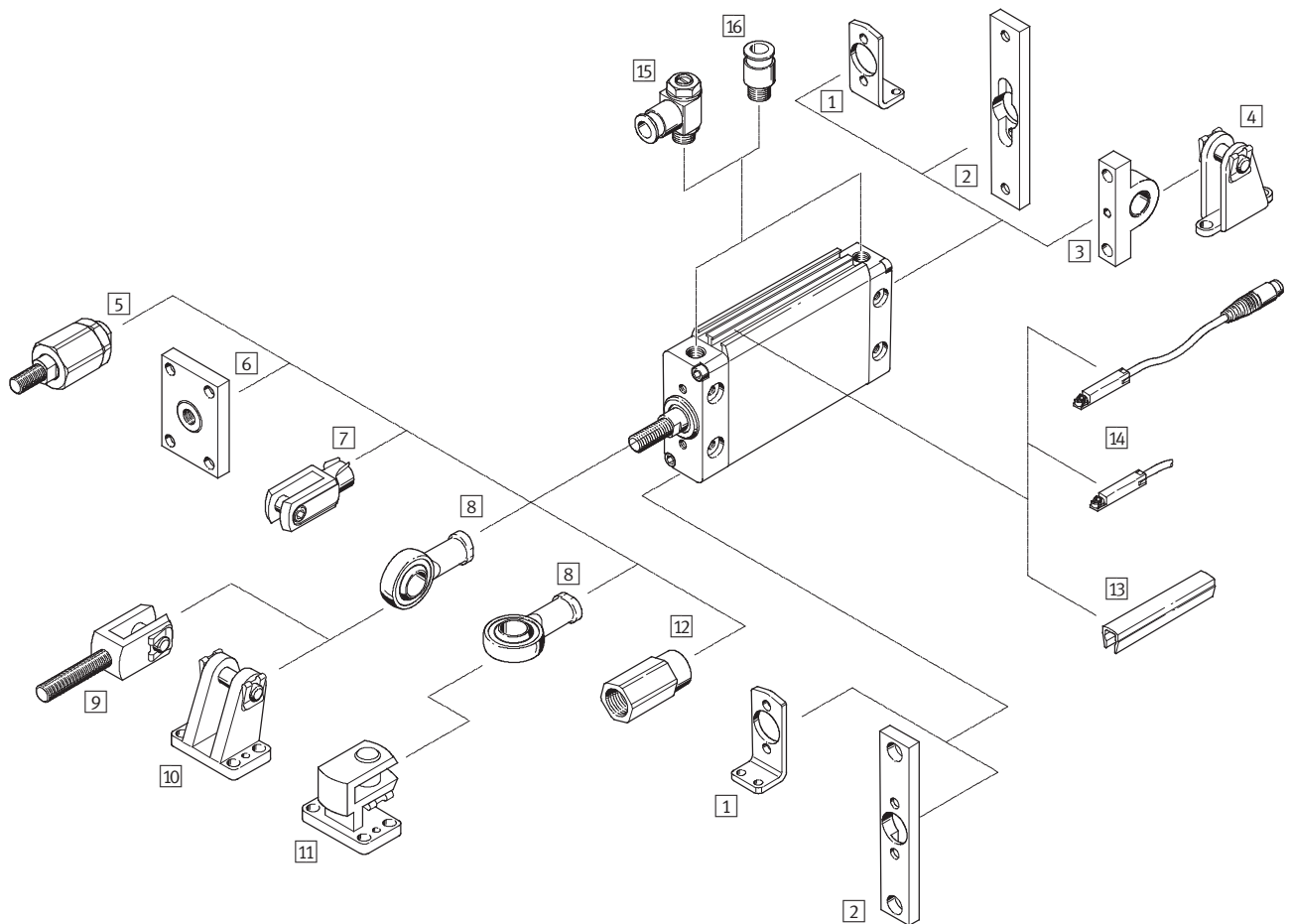
## Ordering data

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

# Flat cylinders DZF

Peripherals overview

FESTO



# Flat cylinders DZF

Peripherals overview

FESTO

| Mounting attachments and accessories |                                         |                       |                       |                 |
|--------------------------------------|-----------------------------------------|-----------------------|-----------------------|-----------------|
|                                      | Brief description                       | Piston Ø 16 ... 40 mm | Piston Ø 50 ... 63 mm | → Page/Internet |
| 1                                    | Foot mounting<br>HZF                    | ■                     | ■                     | 19              |
| 2                                    | Flange mounting<br>FZF                  | ■                     | ■                     | 19              |
| 3                                    | Swivel flange<br>SZF                    | ■                     | ■                     | 20              |
| 4                                    | Clevis foot<br>LZF                      | ■                     | ■                     | 20              |
| 5                                    | Self-aligning rod coupler<br>FK         | ■                     | ■                     | 21              |
| 6                                    | Coupling piece<br>KSZ                   | ■                     | ■                     | 21              |
| 7                                    | Rod clevis<br>SG                        | ■                     | ■                     | 21              |
| 8                                    | Rod eye<br>SGS                          | ■                     | ■                     | 21              |
| 9                                    | Rod clevis<br>SGA                       | ■                     | ■                     | 21              |
| 10                                   | Clevis foot<br>LBG                      | ■                     | ■                     | 21              |
| 11                                   | Right-angle clevis foot<br>LQG          | ■                     | ■                     | 21              |
| 12                                   | Adapter<br>AD                           | ■<br>S20              | –                     | 21              |
| 13                                   | Slot cover<br>ABP-5-S                   | ■                     | ■                     | 37              |
| 14                                   | Proximity sensor<br>SME/SMT-8           | ■                     | ■                     | 37              |
| 15                                   | One-way flow control valve<br>GRLA/GRLZ | ■                     | ■                     | 38              |
| 16                                   | Push-in fitting<br>QS                   | ■                     | ■                     | quick star      |

# Flat cylinders DZF

Type codes

FESTO

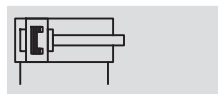
|                          |                                               |     |   |    |   |     |   |  |   |   |   |   |   |  |
|--------------------------|-----------------------------------------------|-----|---|----|---|-----|---|--|---|---|---|---|---|--|
|                          |                                               | DZF | – | 25 | – | 100 | – |  | – | P | – | A | – |  |
| <b>Type</b>              |                                               |     |   |    |   |     |   |  |   |   |   |   |   |  |
| Double-acting            |                                               |     |   |    |   |     |   |  |   |   |   |   |   |  |
| DZF                      | Flat cylinder                                 |     |   |    |   |     |   |  |   |   |   |   |   |  |
| <b>Piston Ø [mm]</b>     |                                               |     |   |    |   |     |   |  |   |   |   |   |   |  |
| <b>Stroke [mm]</b>       |                                               |     |   |    |   |     |   |  |   |   |   |   |   |  |
| <b>Piston rod thread</b> |                                               |     |   |    |   |     |   |  |   |   |   |   |   |  |
|                          | Female thread                                 |     |   |    |   |     |   |  |   |   |   |   |   |  |
| A                        | Male thread                                   |     |   |    |   |     |   |  |   |   |   |   |   |  |
| <b>Cushioning</b>        |                                               |     |   |    |   |     |   |  |   |   |   |   |   |  |
| P                        | Flexible cushioning rings/plates at both ends |     |   |    |   |     |   |  |   |   |   |   |   |  |
| <b>Position sensing</b>  |                                               |     |   |    |   |     |   |  |   |   |   |   |   |  |
| A                        | For proximity sensing                         |     |   |    |   |     |   |  |   |   |   |   |   |  |
| <b>Variant</b>           |                                               |     |   |    |   |     |   |  |   |   |   |   |   |  |
| S2                       | Through piston rod                            |     |   |    |   |     |   |  |   |   |   |   |   |  |
| S6                       | Heat resistant seals up to 120 °C             |     |   |    |   |     |   |  |   |   |   |   |   |  |
| S20                      | Through, hollow piston rod                    |     |   |    |   |     |   |  |   |   |   |   |   |  |

# Flat cylinders DZF

Technical data

FESTO

## Function



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

## Variants



S2



S6



S20



[www.festo.com/en/](http://www.festo.com/en/)

Spare\_parts\_service

| General technical data |                                               |    |    |                 |                 |                 |                 |
|------------------------|-----------------------------------------------|----|----|-----------------|-----------------|-----------------|-----------------|
| Piston Ø               | 12                                            | 18 | 25 | 32              | 40              | 50              | 63              |
| Pneumatic connection   | M5                                            | M5 | M5 | G $\frac{1}{8}$ | G $\frac{1}{8}$ | G $\frac{1}{4}$ | G $\frac{1}{4}$ |
| Piston rod thread      | female                                        | M3 | M4 | M5              | M6              | M8              | M10             |
|                        | male                                          | M6 | M8 | M10x1.25        | M10x1.25        | M12x1.25        | 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 Ø                 | 12         | 18       | 25 | 32 | 40 | 50 | 63 |
|                          | 1.6 ... 10 | 1 ... 10 |    |    |    |    |    |

| Ambient conditions                           |                                                                                                        |            |
|----------------------------------------------|--------------------------------------------------------------------------------------------------------|------------|
| Variant                                      | Basic version                                                                                          | 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 <sup>1)</sup> [°C]       | 0 ... +80                                                                                              | 0 ... +120 |
| 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 requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating agents

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

# Flat cylinders DZF

Technical data

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

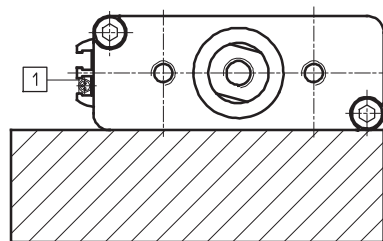
1) The max. torque must also be observed when fitting mounting attachments to the piston rod

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

## Safety clearances for reliable switching function

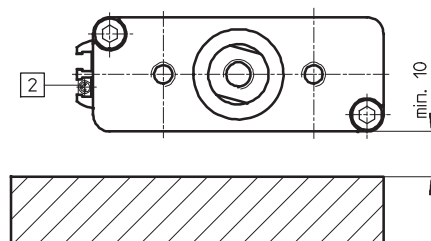
### Cylinder – Ferritic components

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



1 SMT-8...

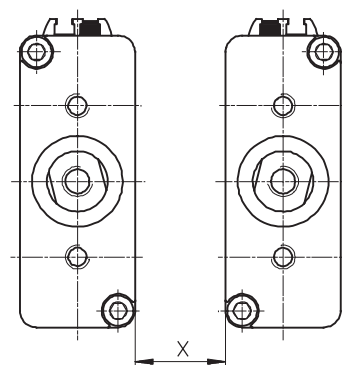
If a proximity sensor SME-8 is used, then with piston Ø 12 to 32 mm, a minimum clearance to the ferritic component of 10 mm must be maintained.



2 SME-8...

### Cylinder – Cylinder

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



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

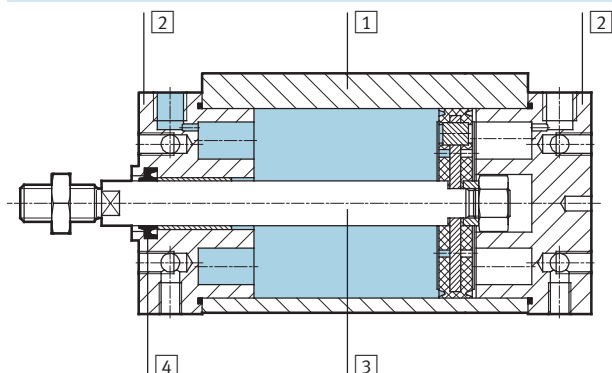
# Flat cylinders DZF

Technical data

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## Materials

Sectional view

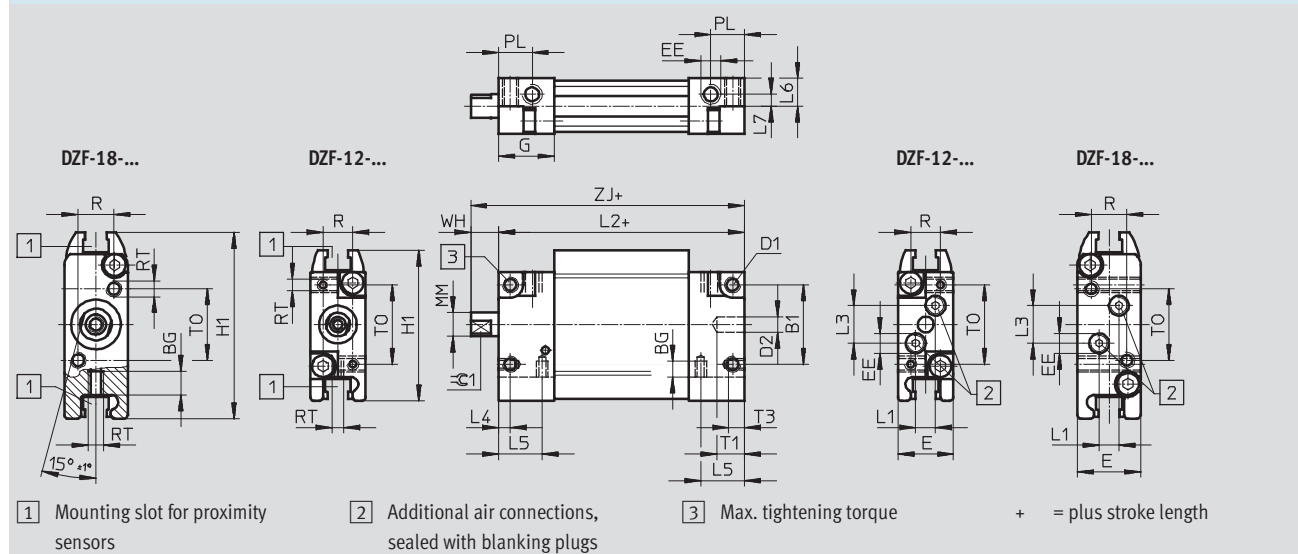


| Flat cylinder               | Basic version                     | S6                                |
|-----------------------------|-----------------------------------|-----------------------------------|
| 1 Cylinder barrel           | Wrought aluminium alloy, anodised | Wrought aluminium alloy,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

## Dimensions – Basic version

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)

Ø 12, 18



| Ø    | B1 | BG | D1 | D2<br>Ø<br>H9 | E  | EE | G  | H1 | L1 | L2 | L3  | L4  | L5 |
|------|----|----|----|---------------|----|----|----|----|----|----|-----|-----|----|
| [mm] |    |    |    |               |    |    |    |    |    |    |     |     |    |
| 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<br>Ø | PL  | R   | RT | T1 | T3 | T0 | WH | ZJ | ≈C1<br>h13 | Max. tightening<br>torque<br>[Nm] +10% |
|------|----|----|---------|-----|-----|----|----|----|----|----|----|------------|----------------------------------------|
| [mm] |    |    |         |     |     |    |    |    |    |    |    |            |                                        |
| 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

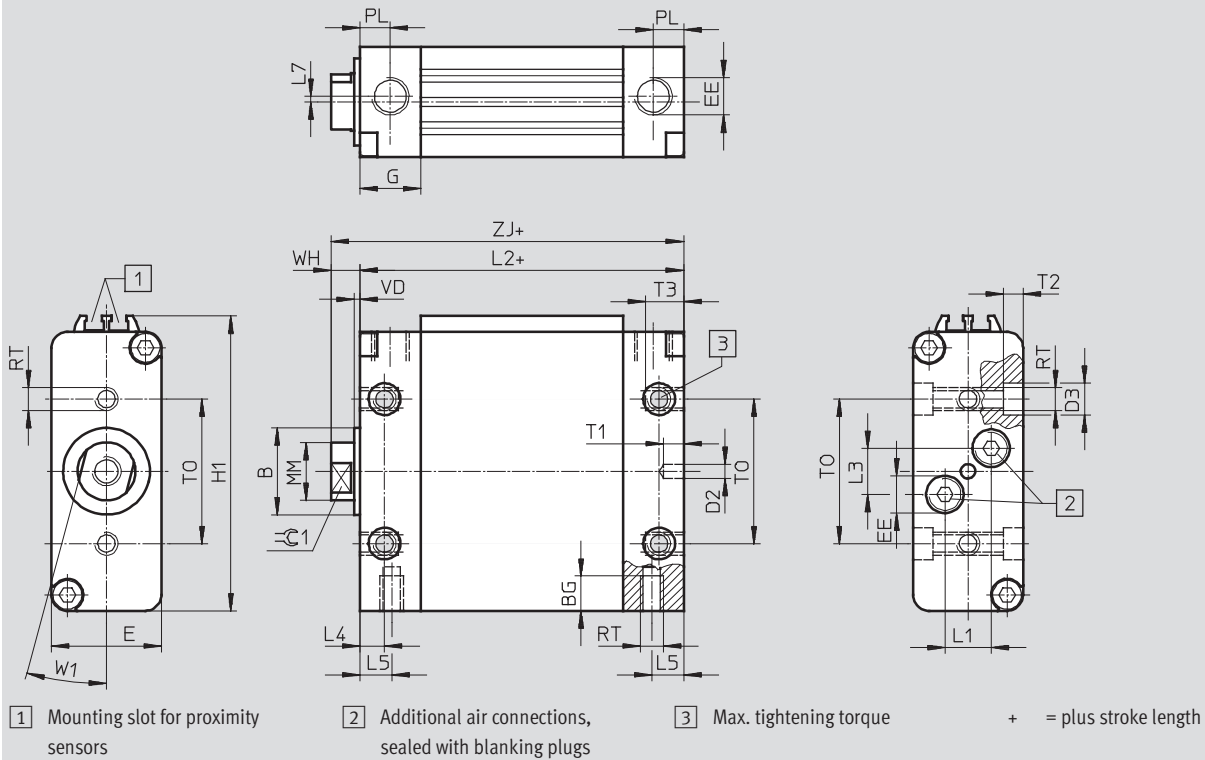
Technical data

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## Dimensions – Basic version

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Piston Ø 25 ... 63



| Ø<br>[mm] | B<br>Ø<br>h9 | BG | D2<br>Ø<br>H9 | D3<br>Ø | 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 |

| Ø<br>[mm] | L7  | MM<br>Ø | PL   | RT  | T1 | T2 | T3 | T0 | VD | W1<br>±1 | WH | ZJ | ⌀C1<br>h13 | Max.<br>tightening<br>torque<br>[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

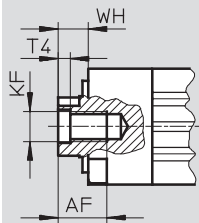
Technical data

**FESTO**

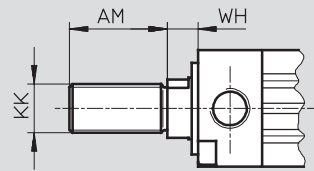
## Dimensions – Variants

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)

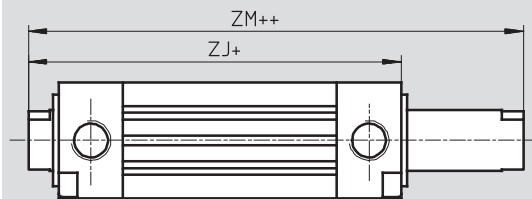
Basic version with female thread



Basic version with male thread

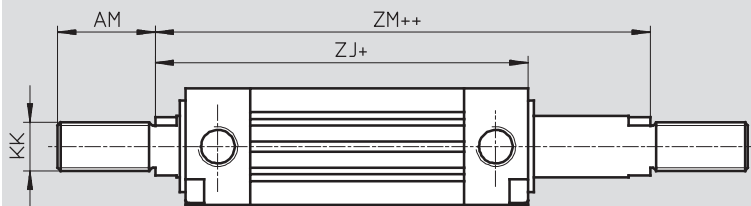


S2 – Through piston rod with female thread



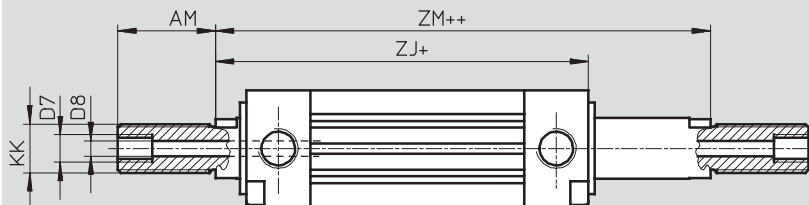
+ = plus stroke length  
++ = plus 2x stroke length

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

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

# Flat cylinders DZF

Technical data

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

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

# Flat cylinders DZF

Technical data

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

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

# Flat cylinders DZF

Technical data

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| Ordering data – Variants                                                            |                  |                |                               |                   |                             |                                    |
|-------------------------------------------------------------------------------------|------------------|----------------|-------------------------------|-------------------|-----------------------------|------------------------------------|
| Type                                                                                | Piston Ø<br>[mm] | Stroke<br>[mm] | Piston rod with female thread |                   | Piston rod with male thread |                                    |
|                                                                                     |                  |                | Part No.                      | Type              | Part No.                    | Type                               |
| Variable stroke                                                                     |                  |                |                               |                   |                             |                                    |
|    | 12               | 10 ... 200     | 164 000                       | DZF-12-...-P-A    | 161 220                     | DZF-12-...-A-P-A                   |
|                                                                                     | 18               | 10 ... 200     | 164 012                       | DZF-18-...-P-A    | 161 233                     | DZF-18-...-A-P-A                   |
|                                                                                     | 25               | 10 ... 200     | 164 024                       | DZF-25-...-P-A    | 161 246                     | DZF-25-...-A-P-A <sup>1)</sup>     |
|                                                                                     | 32               | 10 ... 320     | 164 036                       | DZF-32-...-P-A    | 161 259                     | DZF-32-...-A-P-A <sup>1)</sup>     |
|                                                                                     | 40               | 10 ... 320     | 164 050                       | DZF-40-...-P-A    | 161 274                     | DZF-40-...-A-P-A <sup>1)</sup>     |
|                                                                                     | 50               | 10 ... 320     | 164 064                       | DZF-50-...-P-A    | 161 289                     | DZF-50-...-A-P-A <sup>1)</sup>     |
|                                                                                     | 63               | 10 ... 320     | 164 078                       | DZF-63-...-P-A    | 161 304                     | DZF-63-...-A-P-A <sup>1)</sup>     |
| S2 – Through piston rod                                                             |                  |                |                               |                   |                             |                                    |
|    | 12               | 10 ... 200     | 164 001                       | DZF-12-...-P-A-S2 | 161 221                     | DZF-12-...-A-P-A-S2                |
|                                                                                     | 18               | 10 ... 200     | 164 013                       | DZF-18-...-P-A-S2 | 161 234                     | DZF-18-...-A-P-A-S2                |
|                                                                                     | 25               | 10 ... 200     | 164 025                       | DZF-25-...-P-A-S2 | 161 247                     | DZF-25-...-A-P-A-S2 <sup>1)</sup>  |
|                                                                                     | 32               | 10 ... 320     | 164 037                       | DZF-32-...-P-A-S2 | 161 260                     | DZF-32-...-A-P-A-S2 <sup>1)</sup>  |
|                                                                                     | 40               | 10 ... 320     | 164 051                       | DZF-40-...-P-A-S2 | 161 275                     | DZF-40-...-A-P-A-S2 <sup>1)</sup>  |
|                                                                                     | 50               | 10 ... 320     | 164 065                       | DZF-50-...-P-A-S2 | 161 290                     | DZF-50-...-A-P-A-S2 <sup>1)</sup>  |
|                                                                                     | 63               | 10 ... 320     | 164 079                       | DZF-63-...-P-A-S2 | 161 305                     | DZF-63-...-A-P-A-S2 <sup>1)</sup>  |
| S6 – Heat resistant seals up to 120 °C                                              |                  |                |                               |                   |                             |                                    |
|  | 12               | 10 ... 200     | 164 002                       | DZF-12-...-P-A-S6 | 161 223                     | DZF-12-...-A-P-A-S6                |
|                                                                                     | 18               | 10 ... 200     | 164 014                       | DZF-18-...-P-A-S6 | 161 236                     | DZF-18-...-A-P-A-S6                |
|                                                                                     | 25               | 10 ... 200     | 164 026                       | DZF-25-...-P-A-S6 | 161 249                     | DZF-25-...-A-P-A-S6 <sup>1)</sup>  |
|                                                                                     | 32               | 10 ... 320     | 164 038                       | DZF-32-...-P-A-S6 | 161 262                     | DZF-32-...-A-P-A-S6 <sup>1)</sup>  |
|                                                                                     | 40               | 10 ... 320     | 164 052                       | DZF-40-...-P-A-S6 | 161 277                     | DZF-40-...-A-P-A-S6 <sup>1)</sup>  |
|                                                                                     | 50               | 10 ... 320     | 164 066                       | DZF-50-...-P-A-S6 | 161 292                     | DZF-50-...-A-P-A-S6 <sup>1)</sup>  |
|                                                                                     | 63               | 10 ... 320     | 164 080                       | DZF-63-...-P-A-S6 | 161 307                     | DZF-63-...-A-P-A-S6 <sup>1)</sup>  |
| S20 – Through, hollow piston rod                                                    |                  |                |                               |                   |                             |                                    |
|  | 12               | 10 ... 200     | –                             | –                 | 161 222                     | DZF-12-...-A-P-A-S20               |
|                                                                                     | 18               | 10 ... 200     |                               |                   | 161 235                     | DZF-18-...-A-P-A-S20               |
|                                                                                     | 25               | 10 ... 200     |                               |                   | 161 248                     | DZF-25-...-A-P-A-S20 <sup>1)</sup> |
|                                                                                     | 32               | 10 ... 320     |                               |                   | 161 261                     | DZF-32-...-A-P-A-S20 <sup>1)</sup> |
|                                                                                     | 40               | 10 ... 320     |                               |                   | 161 276                     | DZF-40-...-A-P-A-S20 <sup>1)</sup> |
|                                                                                     | 50               | 10 ... 320     |                               |                   | 161 291                     | DZF-50-...-A-P-A-S20 <sup>1)</sup> |
|                                                                                     | 63               | 10 ... 320     |                               |                   | 161 306                     | DZF-63-...-A-P-A-S20 <sup>1)</sup> |

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

# Flat cylinders DZF

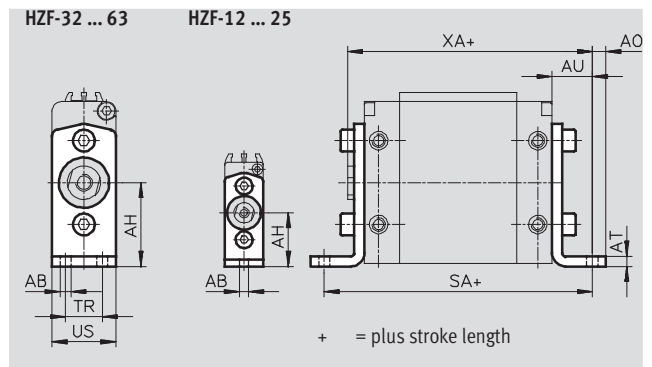
Accessories

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## Foot mounting HZF

Material:

Steel

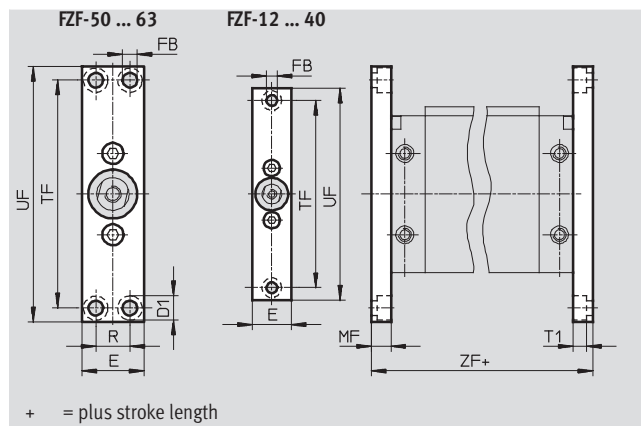


| Dimensions and ordering data |         |    |     |    |    |     |    |    |     |               |          |         |
|------------------------------|---------|----|-----|----|----|-----|----|----|-----|---------------|----------|---------|
| For Ø                        | AB<br>Ø | AH | AO  | AT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

## Flange mounting FZF

Material:

Wrought aluminium alloy



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

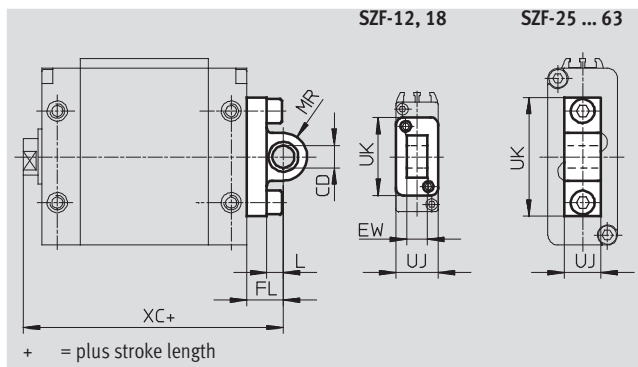
# Flat cylinders DZF

Accessories

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## Swivel flange SZF

Material:  
High-alloy steel



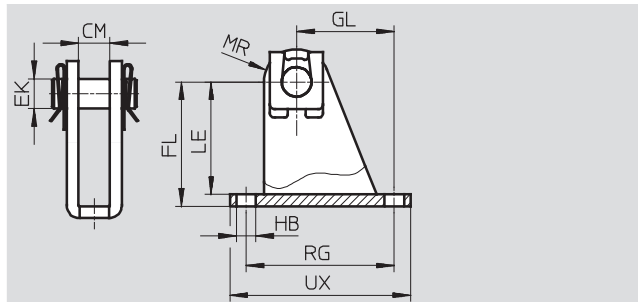
| Dimensions and ordering data |               |           |    |    |     |      |    |     |                   |          |        |
|------------------------------|---------------|-----------|----|----|-----|------|----|-----|-------------------|----------|--------|
| For Ø                       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

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

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

## Clevis foot LZF

Material:  
Steel

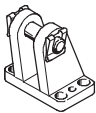
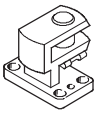


| Dimensions and ordering data |           |               |              |      |         |    |     |    |    |                   |
|------------------------------|-----------|---------------|--------------|------|---------|----|-----|----|----|-------------------|
| For Ø                        |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

# Flat cylinders DZF

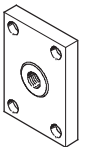
Accessories

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| 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    | 31 761   | LBG-32 |  | 32    | 31 768   | LQG-32 |
|                                                                                   | 40    | 31 762   | LBG-40 |                                                                                   | 40    | 31 769   | LQG-40 |
|                                                                                   | 50    | 31 763   | LBG-50 |                                                                                   | 50    | 31 770   | LQG-50 |
|                                                                                   | 63    | 31 764   | LBG-63 |                                                                                   | 63    | 31 771   | LQG-63 |

Ordering data – Piston rod attachments

Technical data → Internet: piston-rod attachment

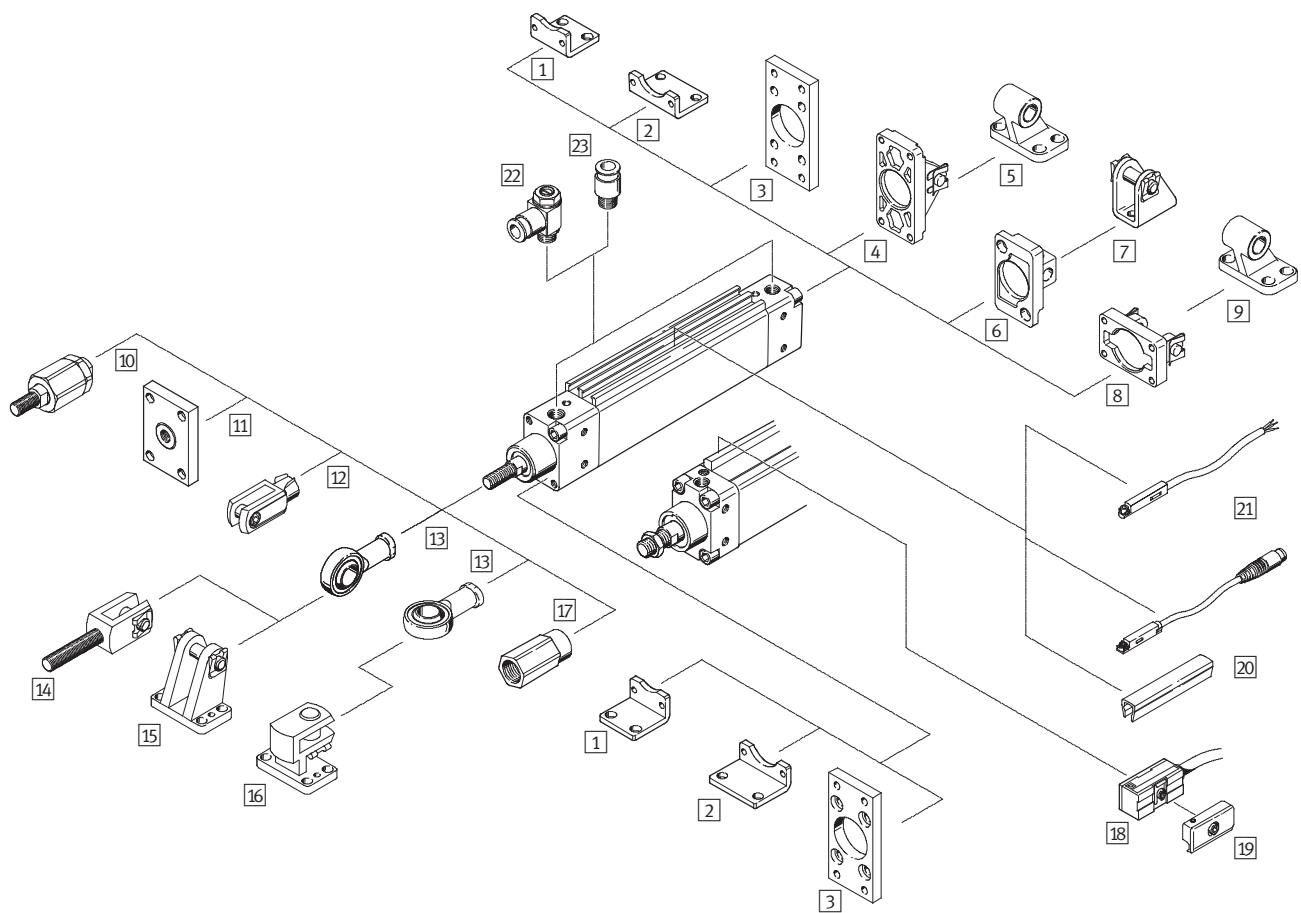
| Designation                                                                         | For Ø | Part No. | Type         |
|-------------------------------------------------------------------------------------|-------|----------|--------------|
| Rod eye SGS                                                                         |       |          |              |
|    | 12    | 9 254    | SGS-M6       |
|                                                                                     | 18    | 9 255    | SGS-M8       |
|                                                                                     | 25    | 9 261    | SGS-M10x1,25 |
|                                                                                     | 32    |          |              |
|                                                                                     | 40    |          |              |
|                                                                                     | 50    | 9 262    | SGS-M12x1,25 |
|                                                                                     | 63    | 9 263    | SGS-M16x1,5  |
| Rod clevis SG                                                                       |       |          |              |
|   | 12    | 3 110    | SG-M6        |
|                                                                                     | 18    | 3 111    | SG-M8        |
|                                                                                     | 25    | 6 144    | SG-M10x1,25  |
|                                                                                     | 32    |          |              |
|                                                                                     | 40    |          |              |
|                                                                                     | 50    | 6 145    | SG-M12x1,25  |
|                                                                                     | 63    | 6 146    | SG-M16x1,5   |
| Coupling piece KSZ                                                                  |       |          |              |
|  | 12    | 36 123   | KSZ-M6       |
|                                                                                     | 18    | 36 124   | KSZ-M8       |
|                                                                                     | 25    | 36 125   | KSZ-M10x1,25 |
|                                                                                     | 32    |          |              |
|                                                                                     | 40    |          |              |
|                                                                                     | 50    | 36 126   | KSZ-M12x1,25 |
|                                                                                     | 63    | 36 127   | KSZ-M16x1,5  |

| Designation                                                                         | For Ø | Part No. | Type            |
|-------------------------------------------------------------------------------------|-------|----------|-----------------|
| Rod clevis SGA                                                                      |       |          |                 |
|    | 12    | –        | –               |
|                                                                                     | 18    | –        | –               |
|                                                                                     | 25    | 32 954   | SGA-M10x1,25    |
|                                                                                     | 32    |          |                 |
|                                                                                     | 40    |          |                 |
|                                                                                     | 50    | 10 767   | SGA-M12x1,25    |
|                                                                                     | 63    | 10 768   | SGA-M16x1,5     |
| Self-aligning rod coupler FK                                                        |       |          |                 |
|   | 12    | 2 061    | FK-M6           |
|                                                                                     | 18    | 2 062    | FK-M8           |
|                                                                                     | 25    | 6 140    | FK-M10x1,25     |
|                                                                                     | 32    |          |                 |
|                                                                                     | 40    |          |                 |
|                                                                                     | 50    | 6 141    | FK-M12x1,25     |
|                                                                                     | 63    | 6 142    | FK-M16x1,5      |
| Adapter AD                                                                          |       |          |                 |
|  | 12    | 157 328  | AD-M6-M5        |
|                                                                                     |       | 157 329  | AD-M6-1/8       |
|                                                                                     |       | 157 330  | AD-M6-1/4       |
|                                                                                     | 18    | 157 331  | AD-M8-1/8       |
|                                                                                     |       | 157 332  | AD-M8-1/4       |
|                                                                                     | 25    | 157 333  | AD-M10x1,25-1/8 |
|                                                                                     | 32    | 157 334  | AD-M10x1,25-1/4 |
|                                                                                     | 40    | 160 256  | AD-M12x1,25-1/4 |
|                                                                                     |       | 160 257  | AD-M12x1,25-3/8 |

# Flat cylinders DZH

Peripherals overview

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# Flat cylinders DZH

Peripherals overview

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| Mounting attachments and accessories |                                        |                                                                                  |             |                    |                 |
|--------------------------------------|----------------------------------------|----------------------------------------------------------------------------------|-------------|--------------------|-----------------|
|                                      | Brief description                      | Piston Ø 16 ... 20                                                               | Piston Ø 25 | Piston Ø 32 ... 63 | → Page/Internet |
| 1                                    | Foot mounting, narrow HZS              | for bearing and end caps                                                         | ■           | ■                  | 31              |
| 2                                    | Foot mounting, wide HZB                | for bearing and end caps                                                         | ■           | ■                  | 32              |
| 3                                    | Flange mounting FZS                    | for bearing and end caps                                                         | ■           | ■                  | 31              |
| 4                                    | Swivel flange, narrow SZS              | for end caps                                                                     | –           | –                  | 33              |
| 5                                    | Clevis foot LBZB/LBZS                  | –                                                                                | –           | ■                  | 34              |
| 6                                    | Swivel flange, narrow SZSB             | for end caps                                                                     | ■           | –                  | 32              |
| 7                                    | Clevis foot LBN                        | –                                                                                | ■           | –                  | 35              |
| 8                                    | Swivel flange, wide SZB                | for end caps                                                                     | –           | –                  | 33              |
| 9                                    | Clevis foot LN                         | –                                                                                | –           | ■                  | 35              |
| 10                                   | Self-aligning rod coupler FK           | for compensating radial and angular deviations                                   | ■           | ■                  | 35              |
| 11                                   | Coupling piece KSZ                     | for cylinders with a non-rotating piston rod to compensate for radial deviations | ■           | ■                  | 35              |
| 12                                   | Rod clevis SG                          | permits a swivelling movement of the cylinder in one plane                       | ■           | ■                  | 35              |
| 13                                   | Rod eye SGS                            | with spherical bearing                                                           | ■           | ■                  | 35              |
| 14                                   | Rod clevis SGA                         | with male thread                                                                 | ■           | ■                  | 35              |
| 15                                   | Clevis foot LBG                        | –                                                                                | ■           | ■                  | 35              |
| 16                                   | Right-angle clevis foot LQG            | –                                                                                | ■           | ■                  | 35              |
| 17                                   | Adapter AD                             | for the vacuum generator S20                                                     | ■           | ■                  | 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            | ■           | ■                  | quick star      |

# Flat cylinders DZH

Type codes

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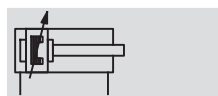
|                         |                                              |     |   |    |   |    |   |     |   |   |   |  |
|-------------------------|----------------------------------------------|-----|---|----|---|----|---|-----|---|---|---|--|
|                         |                                              | DZH | – | 16 | – | 40 | – | PPV | – | A | – |  |
| <b>Type</b>             |                                              |     |   |    |   |    |   |     |   |   |   |  |
| Double-acting           |                                              |     |   |    |   |    |   |     |   |   |   |  |
| DZH                     | Flat cylinder                                |     |   |    |   |    |   |     |   |   |   |  |
| <b>Piston Ø [mm]</b>    |                                              |     |   |    |   |    |   |     |   |   |   |  |
| <b>Stroke [mm]</b>      |                                              |     |   |    |   |    |   |     |   |   |   |  |
| <b>Cushioning</b>       |                                              |     |   |    |   |    |   |     |   |   |   |  |
| PPV                     | Pneumatic cushioning adjustable at both ends |     |   |    |   |    |   |     |   |   |   |  |
| <b>Position sensing</b> |                                              |     |   |    |   |    |   |     |   |   |   |  |
| A                       | For proximity sensing                        |     |   |    |   |    |   |     |   |   |   |  |
| <b>Variant</b>          |                                              |     |   |    |   |    |   |     |   |   |   |  |
| S2                      | Through piston rod                           |     |   |    |   |    |   |     |   |   |   |  |
| S6                      | Heat resistant seals up to 120 °C            |     |   |    |   |    |   |     |   |   |   |  |
| S20                     | Through, hollow piston rod                   |     |   |    |   |    |   |     |   |   |   |  |

# Flat cylinders DZH

Technical data

FESTO

## Function



|     |               |
|-----|---------------|
| -N- | Diameter      |
|     | 16 ... 63     |
| -T- | Stroke length |
|     | 10 ... 1,000  |

[www.festo.com/en/Spare\\_parts\\_service](http://www.festo.com/en/Spare_parts_service)

Wearing parts kits  
→ 30

## Variants



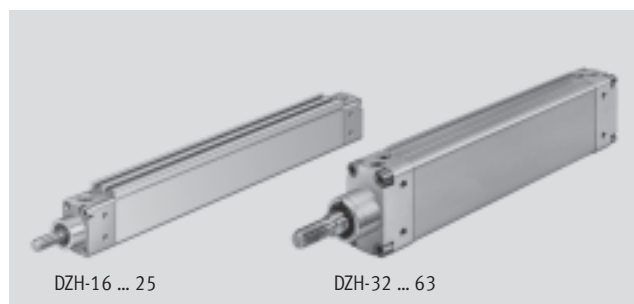
S2



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                           |                                                                                                        |            |
|----------------------------------------------|--------------------------------------------------------------------------------------------------------|------------|
| Variant                                      | Basic version                                                                                          | 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 <sup>1)</sup> [°C]       | -20 ... +80                                                                                            | 0 ... +120 |
| 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 requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating agents

## Note

Sizing software

ProPneu

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

# Flat cylinders DZH

Technical data

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| Forces [N] and torques [Nm]                 |     |     |     |     |     |       |       |
|---------------------------------------------|-----|-----|-----|-----|-----|-------|-------|
| Piston Ø                                    | 16  | 20  | 25  | 32  | 40  | 50    | 63    |
| Theoretical force at 6 bar, advancing       | 121 | 188 | 295 | 483 | 754 | 1,178 | 1,870 |
| S2/S20                                      | 104 | 158 | 247 | 415 | 633 | 989   | 1,682 |
| Theoretical force at 6 bar, retracting      | 104 | 158 | 247 | 415 | 633 | 989   | 1,682 |
| S2/S20                                      | 104 | 158 | 247 | 415 | 633 | 989   | 1,682 |
| Max. torque at the piston rod <sup>1)</sup> | 0.5 | 0.6 | 0.8 | 1.0 | 1.2 | 1.7   | 2.0   |

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

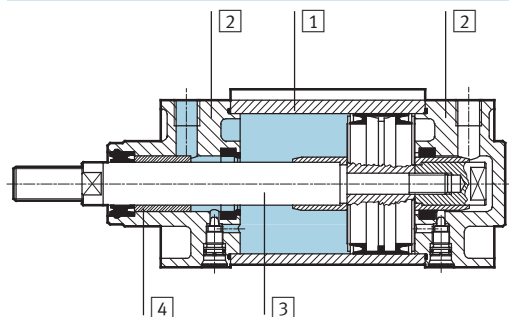
| Weights [g]                        |     |     |     |     |     |       |       |
|------------------------------------|-----|-----|-----|-----|-----|-------|-------|
| Piston Ø                           | 16  | 20  | 25  | 32  | 40  | 50    | 63    |
| Product weight at 0 mm stroke      | 140 | 230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

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

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

## Materials

Sectional view



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

# Flat cylinders DZH

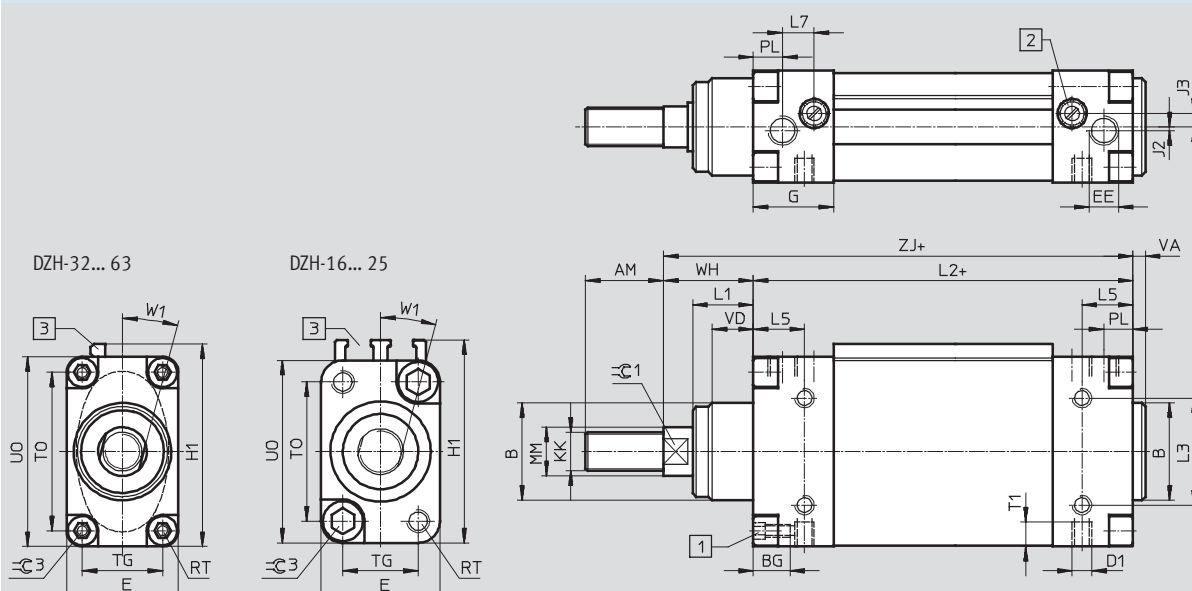
Technical data

FESTO

## Dimensions

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)

### Basic version



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

- 3 Ø 16 ... 25:  
Mounting slot for proximity sensors  
Ø 32 ... 63:  
Mounting rail for proximity sensor

+ = plus stroke length

| Ø<br>[mm] | AM | B<br>Ø<br>f10 | BG  | D1  | D8<br>Ø | 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 | G1/8 | 25   | 39.5  | -0.7 | 5   | M8       | 14 | 90.5 ±0.5 | 15 | 15   |
| 25        | 22 | 22            | 7   | M5  | 3.8     | 26 | G1/8 | 26   | 44.5  | -0.3 | 4.2 | M10x1.25 | 14 | 92.5 ±0.5 | 18 | 16   |
| 32        | 22 | 30            | 13  | M6  | -       | 36 | G1/8 | 27   | 53.3  | -    | 3   | M10x1.25 | 16 | 94 ±0.7   | 18 | 13   |
| 40        | 24 | 35            | 13  | M6  | -       | 40 | G1/4 | 33   | 66.3  | -    | 6   | M12x1.25 | 20 | 105 ±0.7  | 32 | 16.5 |
| 50        | 32 | 40            | 15  | M8  | -       | 46 | G1/4 | 32.5 | 82.3  | 2.5  | 3   | M16x1.5  | 25 | 106 ±0.7  | 44 | 21   |
| 63        | 32 | 42            | 15  | M10 | -       | 54 | G3/8 | 36.5 | 108.3 | 4    | 5   | M16x1.5  | 28 | 115 ±0.7  | 64 | 22.5 |

| Ø<br>[mm] | L7   | MM<br>Ø | PL   | RT | T1  | TG   | T0   | UO  | VA  | VD | WH<br>±1 | W1  | ZJ    | ZM         | ≤C1 | ≤C3 |
|-----------|------|---------|------|----|-----|------|------|-----|-----|----|----------|-----|-------|------------|-----|-----|
| 16        | 8.5  | 6       | 7.5  | M4 | 5.5 | 12   | 23   | 31  | 2.5 | 12 | 17.5     | 15° | 96    | 114.4 ±0.4 | 5   | 4   |
| 20        | 10.5 | 8       | 9.3  | M4 | 5.5 | 15   | 27   | 35  | 2.5 | 14 | 18.5     | 15° | 109   | 128 ±0.4   | 7   | 4   |
| 25        | 10   | 10      | 10.5 | M5 | 7   | 16.5 | 30.5 | 40  | 2.5 | 14 | 20.5     | 15° | 113   | 134 ±0.4   | 9   | 5   |
| 32        | 10.2 | 12      | 9    | M5 | 9   | 24.5 | 36.5 | 48  | 4   | 16 | 26       | 15° | 120   | 147.1 ±0.5 | 10  | 6   |
| 40        | 13.2 | 16      | 11   | M5 | 9   | 28   | 50   | 62  | 5.5 | 20 | 30       | 15° | 135   | 165.3 ±0.5 | 13  | 6   |
| 50        | 14   | 20      | 10.5 | M6 | 10  | 33   | 65   | 78  | 5   | 17 | 37.5     | 15° | 143.5 | 181.5 ±0.5 | 17  | 6   |
| 63        | 14.5 | 20      | 12.5 | M6 | 12  | 40   | 90   | 104 | 6   | 20 | 40       | 15° | 155   | 195.3 ±0.5 | 17  | 6   |

### Note

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

# Flat cylinders DZH

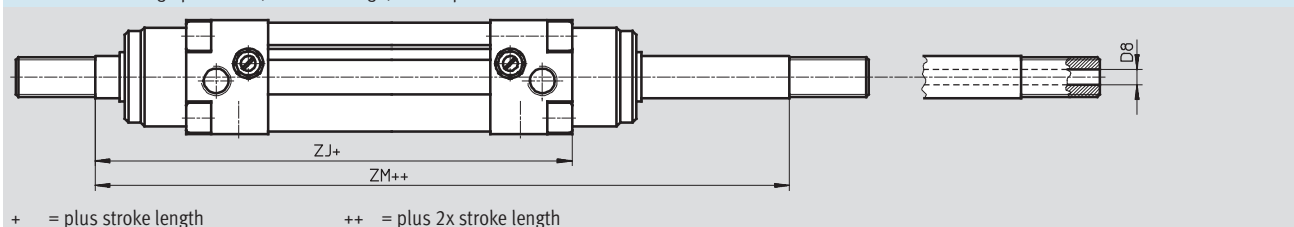
Technical data

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## Dimensions

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)

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



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

# Flat cylinders DZH

Technical data

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

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

# Flat cylinders DZH

Technical data

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

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

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

# Flat cylinders DZH

Accessories

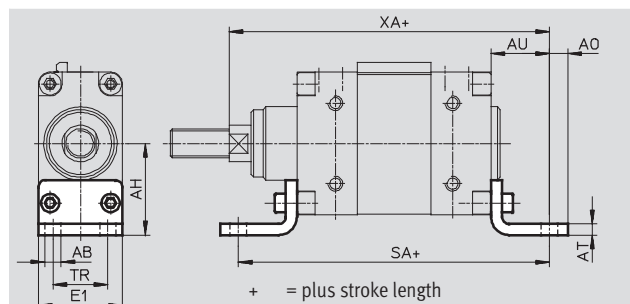
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## Foot mounting HZS, narrow

Material:

Steel

Free of copper, PTFE and silicone



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

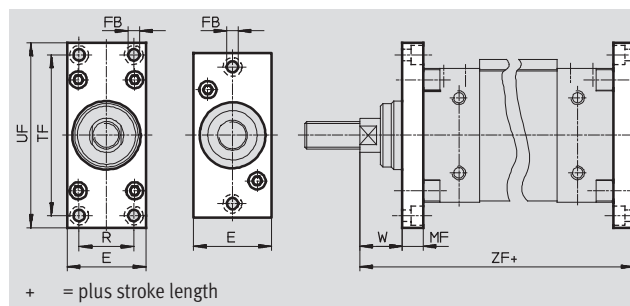
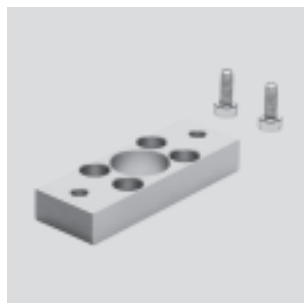
1) Corrosion resistance class 2 according to Festo standard 940 070

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

## Flange mounting FZS

Material:

Wrought aluminium alloy



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

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

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

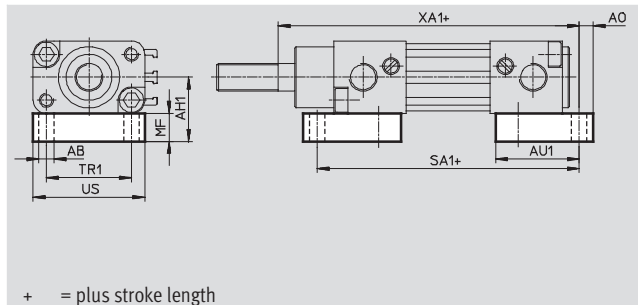
## Flat cylinders DZH

Accessories

FESTO

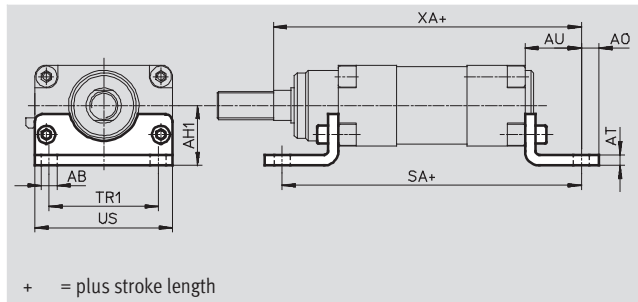
### Foot mounting HZB, wide for piston Ø 16 ... 25 mm

Material:  
Wrought aluminium alloy



### for piston Ø 32 ... 63 mm

Material:  
Steel



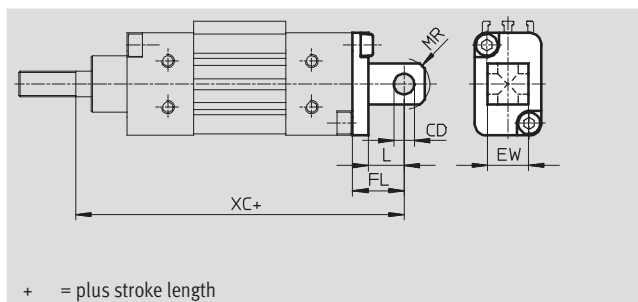
| Dimensions and ordering data |         |      |    |    |    |     |    |     |       |      |     |       |     |                   |               |          |        |
|------------------------------|---------|------|----|----|----|-----|----|-----|-------|------|-----|-------|-----|-------------------|---------------|----------|--------|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

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

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

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

Material:  
High-alloy stainless steel



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

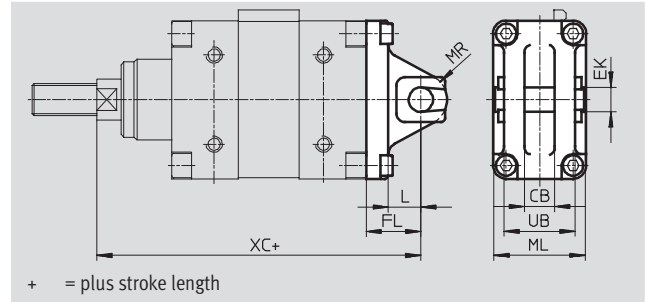
## Flat cylinders DZH

Accessories

**FESTO**

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

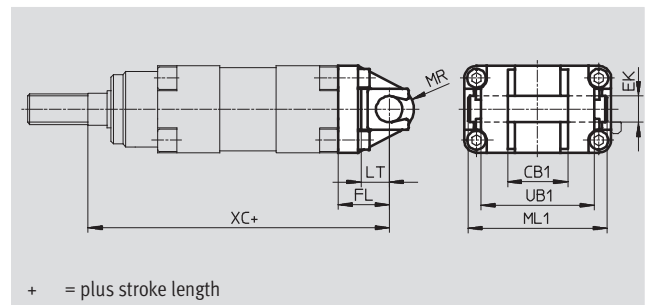
Material:  
Die-cast aluminium



| Dimensions and ordering data |      |         |    |      |      |    |      |       |               |                      |
|------------------------------|------|---------|----|------|------|----|------|-------|---------------|----------------------|
| For Ø                        | CB   | EK<br>Ø | FL | L    | ML   | MR | UB   | XC    | Weight<br>[g] | Part No. Type        |
|                              | +0.2 | e8      |    |      |      |    | ±0.1 |       |               |                      |
| 32                           | 9.4  | 10      | 22 | 13.5 | 35.6 | 11 | 25.8 | 142   | 80            | <b>14 883 SZS-32</b> |
| 40                           | 12.4 | 12      | 25 | 15.5 | 39.6 | 13 | 28.8 | 160   | 120           | <b>14 884 SZS-40</b> |
| 50                           | 14.4 | 12      | 27 | 15.5 | 45.6 | 13 | 34.8 | 170.5 | 170           | <b>14 885 SZS-50</b> |
| 63                           | 16.4 | 16      | 35 | 22.4 | 53.6 | 17 | 40.8 | 190   | 320           | <b>14 886 SZS-63</b> |

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

Material:  
High-alloy stainless steel



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

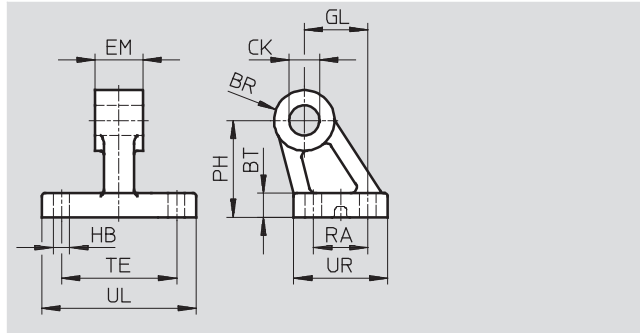
## Flat cylinders DZH

Accessories

FESTO

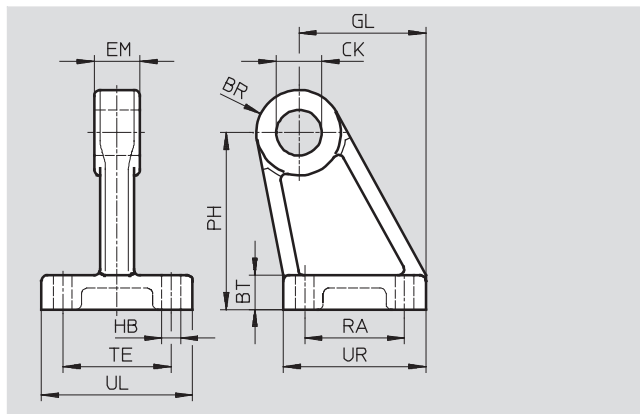
### Clevis foot LBZB for piston $\varnothing$ 32 mm

Material:  
Tempered steel



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

Material:  
Special steel casting

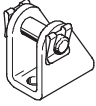
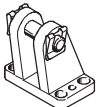
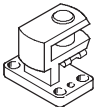


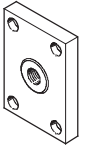
| Dimensions and ordering data |    |    |                     |      |    |                     |      |    |    |    |    |               |                   |
|------------------------------|----|----|---------------------|------|----|---------------------|------|----|----|----|----|---------------|-------------------|
| For $\varnothing$            | BR | BT | CK<br>$\varnothing$ | EM   | GL | HB<br>$\varnothing$ | PH   | RA | TE | UL | UR | Weight<br>[g] | Part No.    Type  |
|                              |    |    |                     | -0.3 |    |                     |      |    |    |    |    |               |                   |
| LBZB                         |    |    |                     |      |    |                     |      |    |    |    |    |               |                   |
| 32                           | 10 | 8  | 10 <sup>H9</sup>    | 15.8 | 21 | 5.5                 | 32   | 18 | 38 | 41 | 31 | 131           | 33 842    LBZB-32 |
| LBZS                         |    |    |                     |      |    |                     |      |    |    |    |    |               |                   |
| 32                           | 10 | 8  | 10 <sup>H8</sup>    | 9    | 21 | 5.5                 | 33.5 | 18 | 24 | 35 | 31 | 92            | 33 843    LBZS-32 |
| 40                           | 11 | 10 | 12 <sup>H8</sup>    | 12   | 24 | 5.5                 | 40   | 22 | 28 | 39 | 35 | 138           | 33 844    LBZS-40 |
| 50                           | 13 | 12 | 12 <sup>H8</sup>    | 14   | 33 | 6.6                 | 51.5 | 30 | 30 | 45 | 45 | 244           | 33 845    LBZS-50 |
| 63                           | 15 | 12 | 16 <sup>H8</sup>    | 16   | 37 | 6.6                 | 62   | 35 | 38 | 53 | 51 | 321           | 33 846    LBZS-63 |

# 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    | 6 058    | LBN-12/16 |  | 32    | 5 147    | LN-32  |
|                                                                                   | 20    | 6 059    | LBN-20/25 |                                                                                   | 40    | 5 148    | LN-40  |
|                                                                                   | 25    |          |           |                                                                                   | 50    | 5 149    | LN-50  |
|                                                                                   |       |          |           |                                                                                   | 63    | 5 150    | LN-63  |
| Clevis foot LBG                                                                   |       |          |           | Right-angle clevis foot LQG                                                       |       |          |        |
|  | 32    | 31 761   | LBG-32    |  | 32    | 31 768   | LQG-32 |
|                                                                                   | 40    | 31 762   | LBG-40    |                                                                                   | 40    | 31 769   | LQG-40 |
|                                                                                   | 50    | 31 763   | LBG-50    |                                                                                   | 50    | 31 770   | LQG-50 |
|                                                                                   | 63    | 31 764   | LBG-63    |                                                                                   | 63    | 31 771   | LQG-63 |

| Ordering data – Piston rod attachments                                              |       |          |              | Technical data → Internet: piston-rod attachment                                    |       |          |                 |
|-------------------------------------------------------------------------------------|-------|----------|--------------|-------------------------------------------------------------------------------------|-------|----------|-----------------|
| Designation                                                                         | For Ø | Part No. | Type         | Designation                                                                         | For Ø | Part No. | Type            |
| Rod eye SGS                                                                         |       |          |              | Rod clevis SGA                                                                      |       |          |                 |
|    | 16    | 9 254    | SGS-M6       |    | 16    | –        | –               |
|                                                                                     | 20    | 9 255    | SGS-M8       |                                                                                     | 20    | –        | –               |
|                                                                                     | 25    | 9 261    | SGS-M10x1,25 |                                                                                     | 25    | 32 954   | SGA-M10x1,25    |
|                                                                                     | 32    |          |              |                                                                                     | 32    |          |                 |
|                                                                                     | 40    | 9 262    | SGS-M12x1,25 |                                                                                     | 40    | 10 767   | SGA-M12x1,25    |
|                                                                                     | 50    | 9 263    | SGS-M16x1,5  |                                                                                     | 50    | 10 768   | SGA-M16x1,5     |
|                                                                                     | 63    |          |              |                                                                                     | 63    |          |                 |
| Rod clevis SG                                                                       |       |          |              | Self-aligning rod coupler FK                                                        |       |          |                 |
|  | 16    | 3 110    | SG-M6        |  | 16    | 2 061    | FK-M6           |
|                                                                                     | 20    | 3 111    | SG-M8        |                                                                                     | 20    | 2 062    | FK-M8           |
|                                                                                     | 25    | 6 144    | SG-M10x1,25  |                                                                                     | 25    | 6 140    | FK-M10x1,25     |
|                                                                                     | 32    |          |              |                                                                                     | 32    |          |                 |
|                                                                                     | 40    | 6 145    | SG-M12x1,25  |                                                                                     | 40    | 6 141    | FK-M12x1,25     |
|                                                                                     | 50    | 6 146    | SG-M16x1,5   |                                                                                     | 50    | 6 142    | FK-M16x1,5      |
|                                                                                     | 63    |          |              |                                                                                     | 63    |          |                 |
| Coupling piece KSZ                                                                  |       |          |              | Adapter AD                                                                          |       |          |                 |
|  | 16    | 36 123   | KSZ-M6       |  | 16    | 157 328  | AD-M6-M5        |
|                                                                                     | 20    | 36 124   | KSZ-M8       |                                                                                     |       | 157 329  | AD-M6-1/8       |
|                                                                                     | 25    | 36 125   | KSZ-M10x1,25 |                                                                                     |       | 157 330  | AD-M6-1/4       |
|                                                                                     | 32    |          |              |                                                                                     | 20    | 157 331  | AD-M8-1/8       |
|                                                                                     | 40    | 36 126   | KSZ-M12x1,25 |                                                                                     |       | 157 332  | AD-M8-1/4       |
|                                                                                     | 50    | 36 127   | KSZ-M16x1,5  |                                                                                     | 25    | 157 333  | AD-M10x1,25-1/8 |
|                                                                                     | 63    |          |              |                                                                                     |       | 157 334  | 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              | 151 683                         | SMTO-1-PS-K-LED-24-C |
|                                                                                   |                  |               | –                     | 3-pin   | –                | 151 685                         | SMTO-1-PS-S-LED-24-C |
|                                                                                   |                  | NPN           | 3 wires               | –       | 2.5              | 151 684                         | SMTO-1-NS-K-LED-24-C |
|                                                                                   |                  |               | –                     | 3-pin   | –                | 151 686                         | SMTO-1-NS-S-LED-24-C |

| Ordering data – Block-shaped proximity sensors, magnetic reed                     |                  |                       |         |                     |          | Technical data → Internet: smeo |  |
|-----------------------------------------------------------------------------------|------------------|-----------------------|---------|---------------------|----------|---------------------------------|--|
|                                                                                   | Mounting         | Electrical connection |         | Cable length<br>[m] | Part No. | Type                            |  |
|                                                                                   |                  | Cables                | M8 plug |                     |          |                                 |  |
| NO contact                                                                        |                  |                       |         |                     |          |                                 |  |
|  | With accessories | 3 wires               | –       | 2.5                 | 30 459   | SMEO-1-LED-24-B                 |  |
|                                                                                   |                  | 3 wires               | –       | 5.0                 | 151 672  | SMEO-1-LED-24-K5-B              |  |
|                                                                                   |                  | –                     | 3-pin   | –                   | 150 848  | SMEO-1-S-LED-24-B               |  |

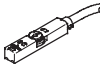
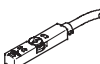
| Ordering data – Block-shaped proximity sensor, pneumatic                           |                  |                                      |          | Technical data → Internet: smpo |  |
|------------------------------------------------------------------------------------|------------------|--------------------------------------|----------|----------------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

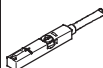
| Ordering data – Mounting kit                                                        |                                                               |  |  |  | Technical data → Internet: smb |       |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------|--|--|--|--------------------------------|-------|
|                                                                                     | Mounting                                                      |  |  |  | Part No.                       | Type  |
|  | for cylinder with tie rod Ø 6 mm or DUO rail mounting profile |  |  |  | 11 886                         | SMB-1 |

# Flat cylinders EZH/DZF/DZH

Accessories

**FESTO**

| Ordering data – Proximity sensors for T-slot, magneto-resistive                   |                                                                              |               |                       |                  | Technical data → 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              | 543 862                        | SME-8M-DS-24V-K-2,5-OE  |
|                                                                                     |                                                                    |               |                       | 5.0              | 543 863                        | SME-8M-DS-24V-K-5,0-OE  |
|                                                                                     |                                                                    |               | Cable, 2-wire         | 2.5              | 543 872                        | SME-8M-ZS-24V-K-2,5-OE  |
|                                                                                     |                                                                    |               | Plug M8x1, 3-pin      | 0.3              | 543 861                        | SME-8M-DS-24V-K-0,3-M8D |
|  | Insertable in the slot lengthwise, flush with the cylinder profile | Contacting    | Cable, 3-wire         | 2.5              | 150 855                        | SME-8-K-LED-24          |
|                                                                                     |                                                                    |               | Plug M8x1, 3-pin      | 0.3              | 150 857                        | SME-8-S-LED-24          |
|                                                                                     |                                                                    |               |                       |                  |                                |                         |
| N/C contact                                                                         |                                                                    |               |                       |                  |                                |                         |
|  | Insertable in the slot 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 → Internet: nebu |                      |
|-------------------------------------------------------------------------------------|-------------------------------|------------------------------|------------------|---------------------------------|----------------------|
|                                                                                     | Electrical connection, left   | Electrical connection, right | Cable length [m] | Part No.                        | Type                 |
|  | Straight socket, M8x1, 3-pin  | Cable, open end, 3-wire      | 2.5              | 541 333                         | NEBU-M8G3-K-2.5-LE3  |
|                                                                                     |                               |                              | 5                | 541 334                         | NEBU-M8G3-K-5-LE3    |
|                                                                                     | Straight socket, M12x1, 5-pin | Cable, open end, 3-wire      | 2.5              | 541 363                         | NEBU-M12G5-K-2.5-LE3 |
|                                                                                     |                               |                              | 5                | 541 364                         | NEBU-M12G5-K-5-LE3   |
|                                                                                     |                               |                              | 5                | 541 366                         | NEBU-M12G5-K-5-LE3   |
|  | Angled socket, M8x1, 3-pin    | Cable, open end, 3-wire      | 2.5              | 541 338                         | NEBU-M8W3-K-2.5-LE3  |
|                                                                                     |                               |                              | 5                | 541 341                         | NEBU-M8W3-K-5-LE3    |
|                                                                                     | Angled socket, M12x1, 5-pin   | Cable, open end, 3-wire      | 2.5              | 541 367                         | NEBU-M12W5-K-2.5-LE3 |
|                                                                                     |                               |                              | 5                | 541 368                         | NEBU-M12W5-K-5-LE3   |
|                                                                                     |                               |                              | 5                | 541 370                         | NEBU-M12W5-K-5-LE3   |

| Ordering data – Slot cover for T-slot                                               |                     |          |          |         |  |
|-------------------------------------------------------------------------------------|---------------------|----------|----------|---------|--|
|                                                                                     | Mounting            | Length   | Part No. | Type    |  |
|  | inserted from above | 2x 0.5 m | 151 680  | ABP-5-S |  |

# Flat cylinders EZH/DZF/DZH

Accessories

**FESTO**

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

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