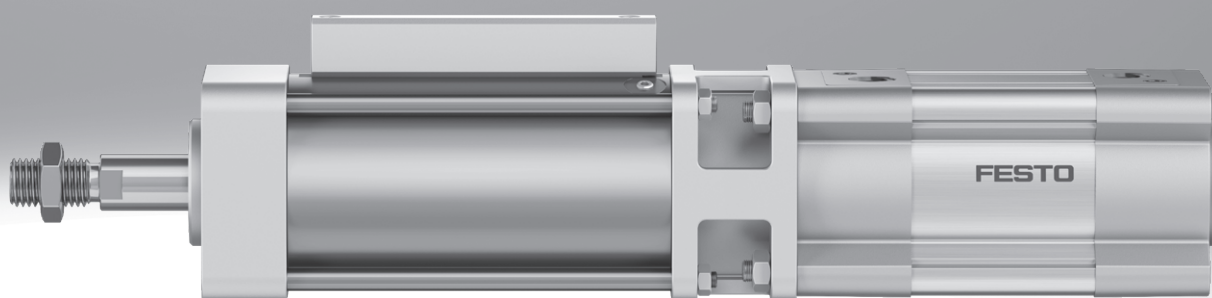


## Cylinder with holding brake DFLL/G

**FESTO**



## Key features

### At a glance

Holding brakes are generally used to dynamically brake a movement or to prevent round rods of different lengths from starting up at any position. The double-acting cylinders with holding brake DFLL-C/G can brake or clamp the piston rod. During clamping, the piston

rod is securely locked so that the application of external force does not produce any relative motion. A rod can be locked at any position along the stroke, whether in the end positions or the intermediate positions. This provides protection in the event of a pressure fail-

ure and secures the piston rod during intermediate stops for process operations.

- The clamping force is released when compressed air is supplied to the holding brake
- Static holding force up to 17000 N

- The cylinders with holding brake are based on ISO 15552 (previously also VDMA 24562, ISO 6431, NF E49 003.1, UNI 10290)

### Note

The cylinders with holding brake DFLL/G-...-S are a safety device as defined in the Machinery Directive 2006/42/EC and have been tested and certified to relevant standards. More information: [www.festo.com/sp](http://www.festo.com/sp) → Certificates.

The cylinders with holding brake DFLL/G-...-EX4-S are suitable for use in ATEX zones in "static holding" mode.

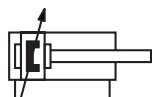
Possible safety functions:

- Holding function: retains the piston rod by clamping with frictional locking
- Emergency braking function: the movement of the piston rod is stopped by clamping with frictional locking

The safety functions are triggered by switching off the compressed air supply or by the failure of the compressed air supply.

### Cushioning

[PPV] Pneumatic cushioning, adjustable at both ends



- The drive is fitted with pneumatic end-position cushioning, which can be adjusted by the operator for maximum performance according to the moved mass and speed.
- Very powerful

### Corrosion protection

[R3] High corrosion protection



- Protects the drive against corrosion

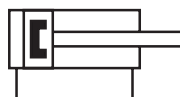
### Certification

[S] Safety device

- To Machinery Directive 2006/42/EC

### Position sensing

[A] Via proximity switch



- For monitoring the switching status of the holding brake

### EU certification

[EX4] II 2GD

- ATEX category for gas II 2G
- ATEX category for dust II 2D
- Ex ignition protection type for gas Ex h IIC T4 Gb
- Ex ignition protection type for dust Ex h IIIC T120°C Db
- Explosion-proof ambient temperature  $-20 \leq T_a \leq +60$

## Type codes

|             |                             |  |
|-------------|-----------------------------|--|
| 001         | Series                      |  |
| <b>DFLL</b> | Cylinder with holding brake |  |

|            |                 |  |
|------------|-----------------|--|
| 002        | Piston diameter |  |
| <b>40</b>  | 40              |  |
| <b>63</b>  | 63              |  |
| <b>100</b> | 100             |  |

|     |             |  |
|-----|-------------|--|
| 003 | Stroke      |  |
| ... | 10 ... 2000 |  |

|            |   |  |
|------------|---|--|
| 004        | Cushioning                                    |  |
| <b>PPV</b> | Pneumatic cushioning, adjustable at both ends |  |

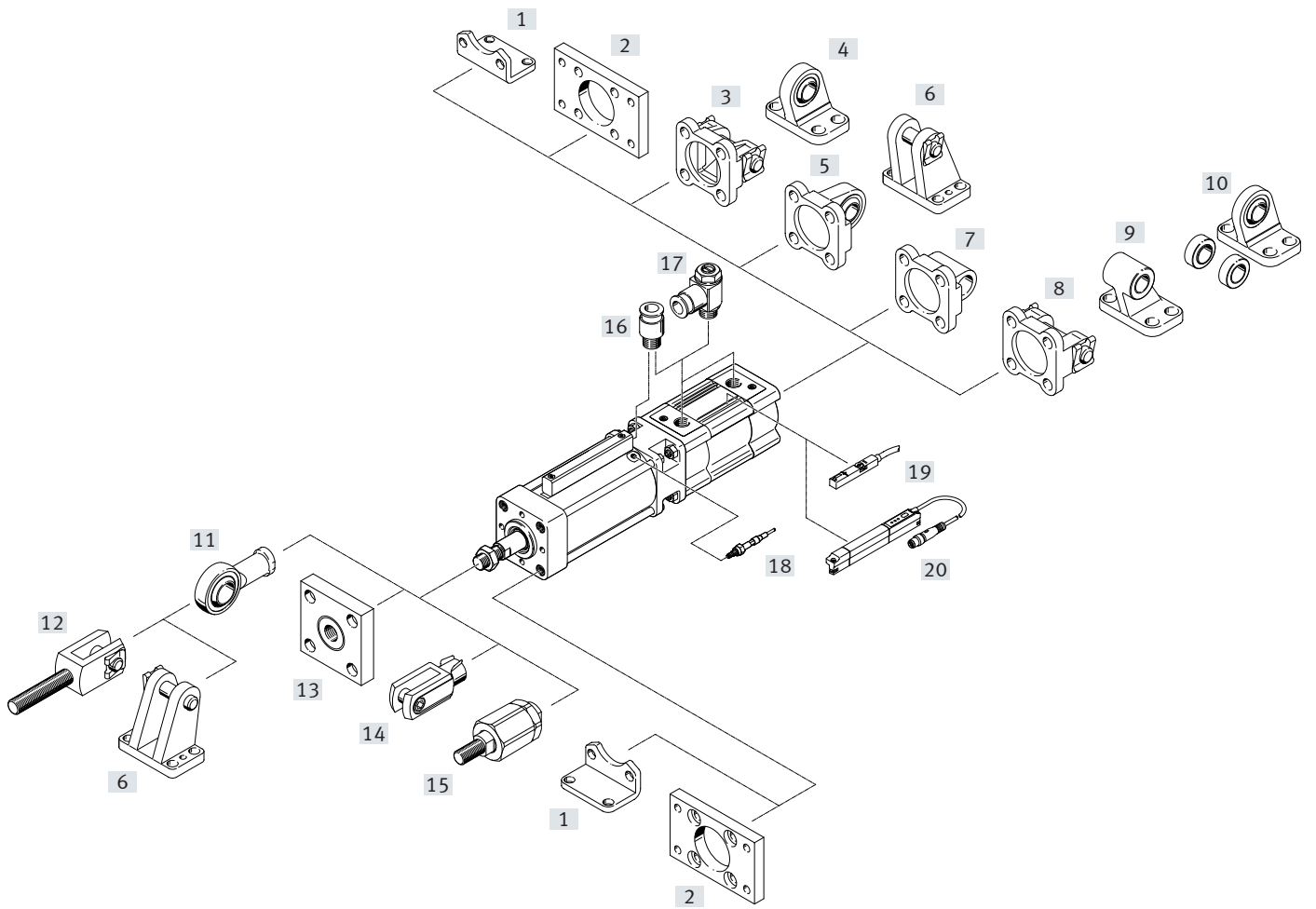
|          |                      |  |
|----------|----------------------|--|
| 005      | Position sensing     |  |
| <b>A</b> | For proximity sensor |  |

|           |                           |  |
|-----------|---------------------------|--|
| 006       | Corrosion protection      |  |
|           | Standard                  |  |
| <b>R3</b> | High corrosion protection |  |

|            |                  |  |
|------------|------------------|--|
| 007        | EU certification |  |
|            | None             |  |
| <b>EX4</b> | II 2GD           |  |


|          |  |  |
|----------|--|--|
| 008      | Certification                                      |  |
| <b>S</b> | Safety component to Machinery Directive 2006/42/EC |  |

Peripherals overview



## Peripherals overview

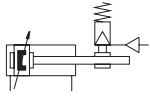
| Accessories                                |   |                 |
|--|---|-----------------|
| Type/order code                            | Description   | → Page/Internet |
| [1] Foot mounting<br>HNC/CRHNC             | For bearing or end caps   | 22              |
| [2] Flange mounting<br>FNC/CRFNG           | <ul style="list-style-type: none"> <li>• For bearing or end caps</li> <li>• Suitable for emergency stop applications/dynamic braking</li> </ul>                                       | 24              |
| [3] Swivel flange<br>SNC                   | For end caps  | 26              |
| [4] Clevis foot<br>LSNG                    | Weld-on, with spherical bearing   | 32              |
| [5] Swivel flange<br>SNCS/SNCS-...-R3      | With spherical bearing for end caps   | 27              |
| [6] Clevis foot<br>LBG/LBG-...-R3          | –   | 32              |
| [7] Swivel flange<br>SNCL                  | For end caps  | 28              |
| [8] Swivel flange<br>SNCB/SNCB-...-R3      | For end caps  | 29              |
| [9] Clevis foot<br>LNG/CRLNG               | –   | 32              |
| [10] Clevis foot<br>LSN                    | With spherical bearing  | 32              |
| [11] Rod eye<br>SGS/CRSGS                  | With spherical bearing  | 33              |
| [12] Rod clevis<br>SGA                     | With male thread  | 33              |
| [13] Coupling piece<br>KSG                 | To compensate for radial deviations   | 33              |
| [14] Rod clevis<br>SG/CRSG                 | Permits a swivelling movement of the cylinder in one plane  | 33              |
| [15] Self-aligning rod coupler<br>FK, CRFK | To compensate for radial and angular deviations   | 33              |
| [16] Push-in fitting<br>QS                 | For connecting tubing with standard O.D.  | qs              |
| [17] One-way flow control valve<br>GRLA    | For regulating speed  | 37              |
| [18] Sensor kit<br>DADG                    | <ul style="list-style-type: none"> <li>• Inductive sensor kit for status sensing of the clamping function</li> <li>• Not included in the scope of delivery</li> </ul>                 | 34              |
| [19] Proximity switch<br>SMT-8M-A          | <ul style="list-style-type: none"> <li>• For sensing the piston position</li> <li>• Not included in the scope of delivery</li> </ul>  | 35              |
| Proximity switch<br>SDBT-MS                | <ul style="list-style-type: none"> <li>• For sensing the piston position</li> <li>• Not included in the scope of delivery</li> </ul>  | 35              |
| [20] Position transmitter<br>SDAT-MHS      | <ul style="list-style-type: none"> <li>• Continuously senses the position of the piston</li> <li>• Has an analogue output</li> <li>• Not included in the scope of delivery</li> </ul> | 36              |



 **Note**

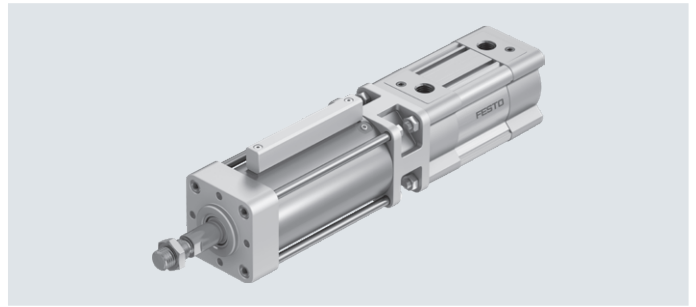
Only the flange mounting FNC/CRFNG is permissible for emergency stop applications/dynamic braking. Additional accessories for this application are available on request.

## Datasheet

### Function



-  - Diameter  
40 ... 100 mm
-  - Stroke length  
10 ... 2000 mm



| General technical data                 |  |         |         |
|--|--|---------|---------|
| Piston ø                               | 40   | 63      | 100     |
| Design                                 | Piston   |         |         |
|  | Piston rod   |         |         |
|  | Profile barrel   |         |         |
| Variants                               | Piston rod at one end                                  |         |         |
| Operating mode                         | Double-acting  |         |         |
| Pneumatic connection                   |  |         |         |
| Cylinders                              | G1/4   | G3/8    | G1/2    |
| Holding brake                          | G1/8   | G1/8    | G3/8    |
| Piston rod thread                      | M12x1.25   | M16x1.5 | M20x1.5 |
| Piston rod end                         | Male thread  |         |         |
| Cushioning                             | Pneumatic cushioning adjustable at both ends           |         |         |
| Cushioning length [mm]                 | 19   | 22      | 31      |
| Position sensing                       | Via proximity switch                                   |         |         |
| Type of mounting                       | With female thread                                     |         |         |
|  | With accessories                                       |         |         |
| Clamping type with operating direction | On both sides  |         |         |
|  | Clamping via spring force, released via compressed air |         |         |
| Mounting position                      | Any  |         |         |

| Operating and environmental conditions       |   |    |             |
|--|---|----|-------------|
| Piston ø                                     | 40  | 63 | 100         |
| Cylinders                                    |   |    |             |
| Operating pressure [bar]                     | 0.6 ... 8                                 |    |             |
| Holding brake                                |   |    |             |
| Min. release pressure [bar]                  | 3.8                                       |    |             |
| Max. permissible test pressure [bar]         | 8   |    |             |
| Operating medium                             | Compressed air to ISO 8573-1:2010 [7:4:4] |    |             |
| Note on the operating/pilot medium           | Lubricated operation not possible         |    |             |
| Ambient temperature <sup>1)</sup> [°C]       | -20 ... +80                               |    | -10 ... +80 |
| Corrosion resistance class CRC <sup>2)</sup> |   |    |             |
| [ ] Standard                                 | 1   |    |             |
| [R3] High corrosion protection               | 3   |    |             |

1) Note operating range of proximity switches.  
2) More information: [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

## Datasheet


| Safety characteristics                                     |  |    |     |
|--|--|----|-----|
| Piston ø   | 40   | 63 | 100 |
| Conforms to standard                                       | This product is based on ISO 15552 (previously also VDMA 24562, ISO 6431, NF E49 003.1, UNI 10290) |    |     |
| Safety function  | Holding and stopping a movement  |    |     |
| Performance level (PL)                                     | Stopping, holding, blocking a movement/category 1, Performance Level c                             |    |     |
| Certification  | German Technical Control Board (TÜV)   |    |     |
| Certificate-issuing authority                              | German Technical Control Board (TÜV) CA 697  |    |     |
| CE marking (see declaration of conformity) <sup>1)</sup>   | To EU Machinery Directive  |    |     |
| UKCA marking (see declaration of conformity) <sup>1)</sup> | To UK explosion regulations  |    |     |

1) More information [www.festo.com/catalogue/qs](http://www.festo.com/catalogue/qs) → Support/Downloads

| ATEX                                     |                     |    |     |
|--|---------------------|----|-----|
| Piston ø                                 | 40                  | 63 | 100 |
| ATEX category for gas                    | II 2G               |    |     |
| Type of (ignition) protection for gas    | Ex h IIC T4 Gb      |    |     |
| ATEX category for dust                   | II 2D               |    |     |
| Type of (ignition) protection for dust   | Ex h IIIC T120°C Db |    |     |
| Explosion-proof ambient temperature [°C] | -20 ≤ Ta ≤ +60      |    |     |

| Weight [g]                              |      |      |       |
|---|------|------|-------|
| Piston ø                                | 40   | 63   | 100   |
| Basic weight with 0 mm stroke           | 2930 | 6185 | 19120 |
| Additional weight per 10 mm stroke      | 37   | 62   | 101   |
| Moving mass with 0 mm stroke            | 502  | 955  | 1940  |
| Additional moving mass per 10 mm stroke | 16   | 25   | 40    |

| Forces [N]                             |      |      |      |
|--|------|------|------|
| Piston ø                               | 40   | 63   | 100  |
| Theoretical force at 6 bar, advancing  | 754  | 1870 | 4712 |
| Theoretical force at 6 bar, retracting | 633  | 1682 | 4418 |
| Static holding force                   | 1350 | 3300 | 8200 |

 Note

The specified holding force refers to a static load. If this value is exceeded, slippage may occur. Dynamic forces occurring during operation must

not exceed the static holding force if slippage is to be avoided. The holding brake is backlash-free in the clamped condition when varying loads are applied to the piston rod.

Lateral loads and bending moments on the piston rod can impair the function. (Make sure that the load on the piston rod is only in the direction of movement.)

When the holding brake is released and force is applied internally or externally, there is a risk of accidents caused by jerky movements of the drive. There is also increased wear on the holding brake.

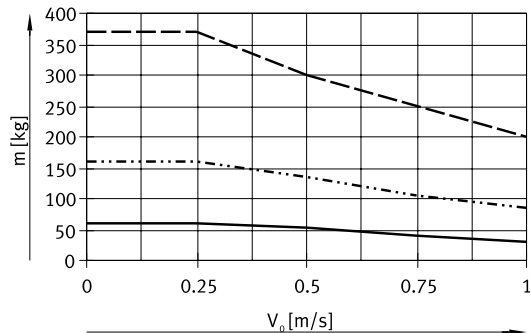
Internal forces occur, for example, because of different pressures in the piston chambers. External forces are generated, for example, by the gravitational force of vertical axes.

The actuator is not expected to move when used as intended and when sufficiently pressurised.

More information  
→ User documentation

## Datasheet

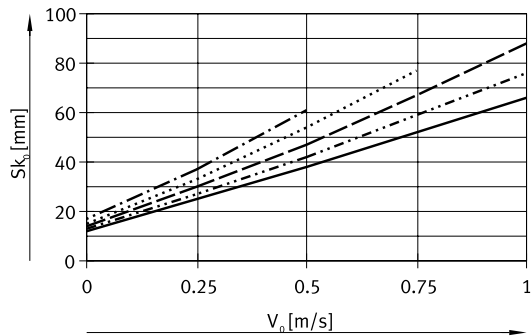
### Load mass $m$ as a function of piston speed $v_0$



- DFCL-100
- · - · - DFCL-63
- DFCL-40

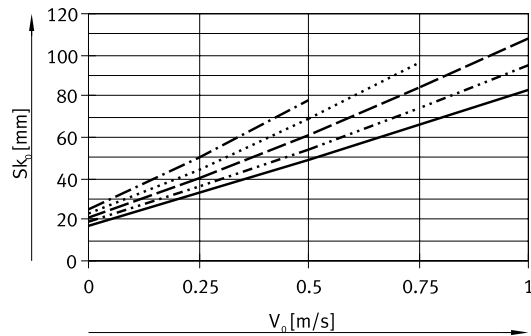
### Stopping distance $sk_0$ as a function of piston speed $v_0$

∅ 40



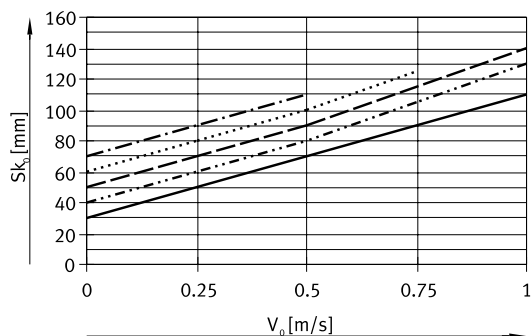
- · - · - 50 kg
- 40 kg
- 30 kg
- · - · - 20 kg
- 10 kg

∅ 63



- · - · - 125 kg
- 100 kg
- 75 kg
- · - · - 50 kg
- 25 kg

∅ 100



- · - · - 300 kg
- 250 kg
- 200 kg
- · - · - 150 kg
- 100 kg

#### Note

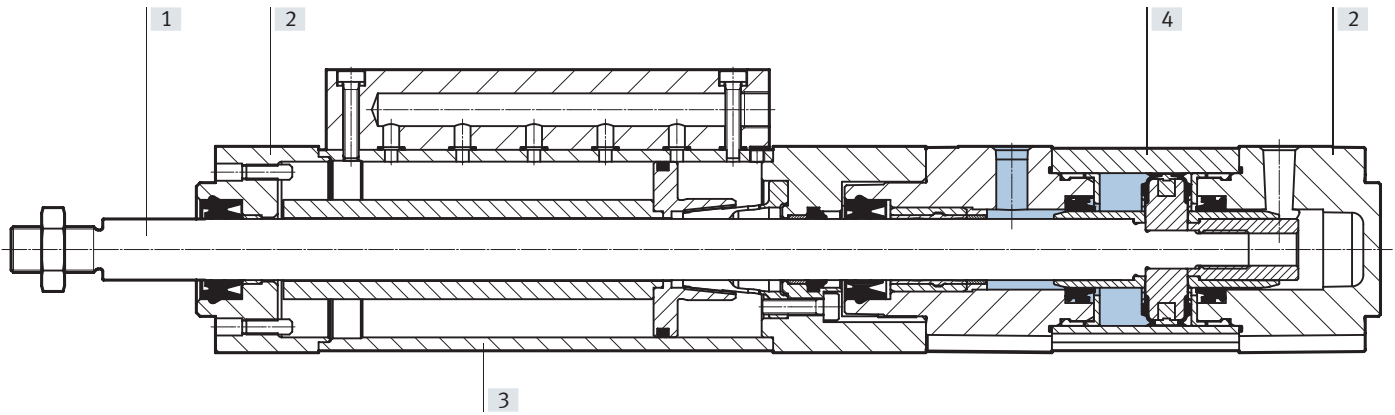
All data in the graphs is intended exclusively for the purposes of preselection when configuring the emergency braking function and must be checked mathematically and in practice prior to commissioning. More information [www.festo.com/sp](http://www.festo.com/sp) → User documentation.



## Datasheet

### Materials

Sectional view

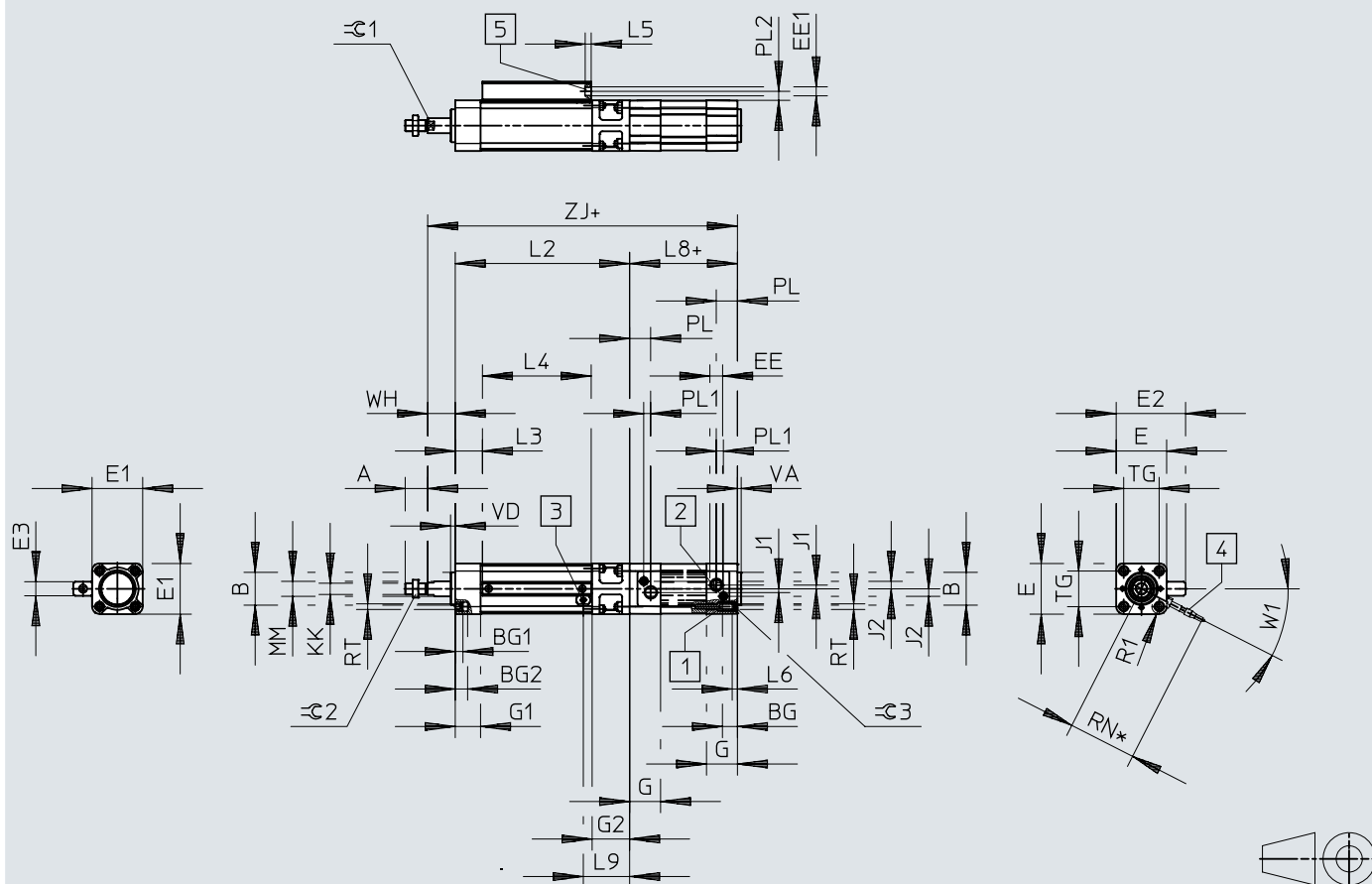


| Cylinder with holding brake |   |
|-----------------------------|---|
| [1] Piston rod              | Hard-chrome-plated steel                      |
| [2] Cover                   | Die-cast aluminium<br>Wrought aluminium alloy |
| [3] Housing                 |   |
| DFLC-...                    | Steel   |
| DFLC-...-R3                 | High-alloy stainless steel                    |
| [4] Cylinder barrel         |   |
| DFLC-...                    | Smooth-anodised wrought aluminium alloy       |
| DFLC-...-R3                 | High-alloy stainless steel                    |
| - Seals                     | NBR<br>TPE-U(PU)                              |
| LABS (PWIS) conformity      | VDMA24364-B2-L                                |
| Note on materials           | RoHS-compliant                                |

Datasheet

Dimensions

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



- [1] Socket head screw with female thread for mounting components
  - [2] Adjusting screw for adjustable end-position cushioning
  - [3] Position for proximity switch (thread M6x0.75)
  - [4] Sensor kit DADG-D-F8
  - [5] Connection to release clamping function
- + = plus stroke length  
\* = installation space for sensor kit DADG-D-F8

## Datasheet

| ∅    | A    | B        | BG   | BG1 | BG2  | E    | E1   | E2    | E3 | EE   |
|------|------|----------|------|-----|------|------|------|-------|----|------|
| [mm] | -0.5 | ∅<br>d11 | min. |     |      | ±0.8 | +0.5 | ±1    |    |      |
| 40   | 24   | 35       | 16   | 8   | 13.2 | 54   | 54   | 74.1  | 15 | G1/4 |
| 63   | 32   | 45       | 16   | 9   | 14.8 | 78   | 75   | 98.1  | 15 | G3/8 |
| 100  | 40   | 55       | 17   | 10  | 14.8 | 124  | 110  | 152.1 | 22 | G1/2 |

| ∅    | EE1  | G    | G1 | G2 | J1   | J2    | KK       | L2  | L3   | L4    |
|------|------|------|----|----|------|-------|----------|-----|------|-------|
| [mm] |      |      |    |    |      |       |          | ±1  |      |       |
| 40   | G1/8 | 33   | 27 | 40 | 4    | 8     | M12x1.25 | 186 | 29   | 116   |
| 63   | G1/8 | 40.5 | 30 | 44 | 6.25 | 12.75 | M16x1.5  | 210 | 38.4 | 122.5 |
| 100  | G3/8 | 48   | 35 | 54 | 10   | 13.5  | M20x1.5  | 255 | 47.1 | 148.5 |

| ∅    | L5  | L6  | L8+  | L9   | MM | PL   | PL1 | PL2  | R1  | RN  |
|------|-----|-----|------|------|----|------|-----|------|-----|-----|
| [mm] |     |     | ±0.4 |      | ∅  |      |     |      |     |     |
| 40   | 6.5 | 5.5 | 105  | 49.4 | 16 | 22.5 | 7.5 | 9.6  | R8  | 98  |
| 63   | 6.5 | 6   | 121  | 53.6 | 20 | 27.5 | 9   | 9.6  | R10 | 100 |
| 100  | 8   | –   | 138  | 65.3 | 25 | 31.5 | 7.5 | 13.6 | R15 | 120 |

| ∅    | RT  | TG   | VA   | VD   | W1  | WH      | Zj+       | ≅G1 | ≅G2 | ≅G3 |
|------|-----|------|------|------|-----|---------|-----------|-----|-----|-----|
| [mm] |     | ±0.3 | -0.2 | ±0.2 |     | +3.2/-1 | +2.6/-0.4 |     |     |     |
| 40   | M6  | 38   | 4    | 5    | 27° | 28.7    | 319.7     | 13  | 19  | 6   |
| 63   | M8  | 56.5 | 4    | 5    | 20° | 35.9    | 366.9     | 17  | 24  | 8   |
| 100  | M10 | 89   | 4    | 5    | 20° | 49.3    | 442.3     | 22  | 30  | 6   |

Ordering data – Modular product system

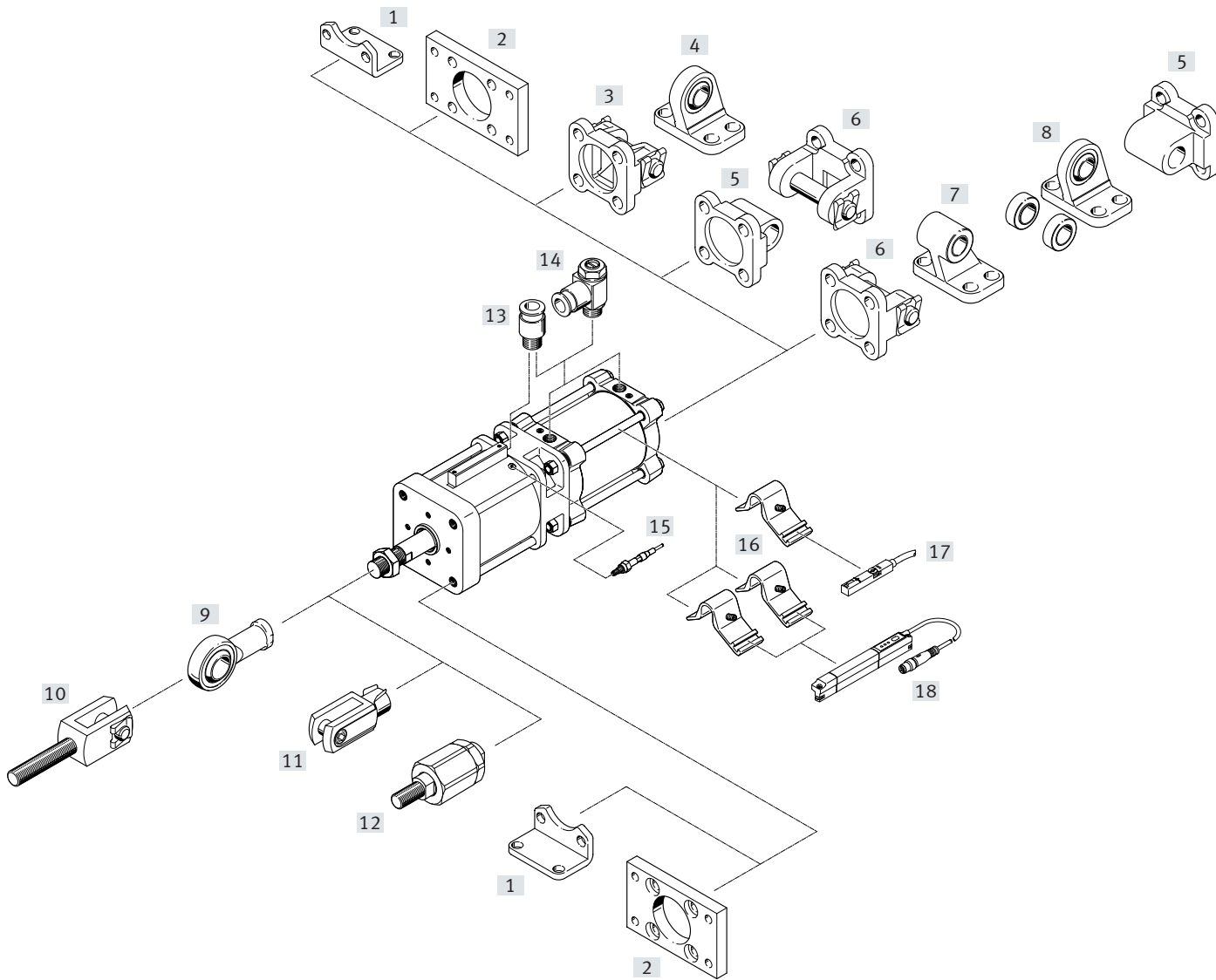
| Ordering table       |   |         |         |            |             |            |
|----------------------|---|---------|---------|------------|-------------|------------|
| Size                 | 40  | 63      | 100     | Conditions | Code        | Enter code |
| Module no.           | 8073331   | 8073332 | 8073333 |            |             |            |
| Function             | Cylinder with holding brake, double-acting      |         |         |            | <b>DFLC</b> | DFLC       |
| Piston ø [mm]        | 40  | 63      | 100     |            | <b>-...</b> |            |
| Stroke [mm]          | 10 ... 2000                                     |         |         |            | <b>-...</b> |            |
| Cushioning           | Pneumatic cushioning, adjustable at both ends   |         |         |            | <b>-PPV</b> | -PPV       |
| Position sensing     | Via proximity switch                            |         |         |            | <b>A</b>    | A          |
| Corrosion protection | Standard  |         |         |            |             |            |
|                      | High corrosion protection                       |         |         |            | <b>-R3</b>  |            |
| EU certification     | None  |         |         |            |             |            |
|                      | II 2GD  |         |         |            | <b>-EX4</b> |            |
| Certification        | Safety device to Machinery Directive 2006/42/EC |         |         |            | <b>-S</b>   | -S         |

## Type codes

|             |   |  |
|-------------|---|--|
| 001         | Series  |  |
| <b>DFLG</b> | Cylinder with holding brake                   |  |
| 002         | Piston diameter                               |  |
| <b>160</b>  | 160   |  |
| 003         | Stroke  |  |
| ...         | 10 ... 2000                                   |  |
| 004         | Cushioning                                    |  |
| <b>PPV</b>  | Pneumatic cushioning, adjustable at both ends |  |


|            |  |  |
|------------|--|--|
| 005        | Position sensing                                   |  |
| <b>A</b>   | For proximity sensor                               |  |
| 006        | Corrosion protection                               |  |
|            | Standard   |  |
| <b>R3</b>  | High corrosion protection                          |  |
| 007        | EU certification                                   |  |
|            | None   |  |
| <b>EX4</b> | II 2GD   |  |
| 008        | Certification                                      |  |
| <b>S</b>   | Safety component to Machinery Directive 2006/42/EC |  |

Peripherals overview



## Peripherals overview

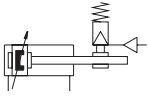
| Accessories |                                    |  |                 |
|-------------|------------------------------------|--|-----------------|
|             | Type/order code                    | Description  | → Page/Internet |
| [1]         | Foot mounting<br>HNG               | For bearing and end caps, corresponds to MS1 according to ISO 15552  | 23              |
| [2]         | Flange mounting<br>FNG             | <ul style="list-style-type: none"> <li>• For bearing or end caps, corresponds to MF1/MF2 to ISO 15552</li> <li>• Suitable for emergency stop applications/dynamic braking</li> </ul>   | 25              |
| [3]         | Swivel flange<br>SNG               | For end caps   | 30              |
| [4]         | Clevis foot<br>LSNG                | With spherical bearing   | 32              |
| [5]         | Swivel flange<br>SNGL              | For end caps, corresponds to MP2 to ISO 15552  | 30              |
| [6]         | Swivel flange<br>SNGB              | For end caps, corresponds to MP2 to ISO 15552  | 31              |
| [7]         | Clevis foot<br>LN                  | For swivel flange SNGB   | 32              |
| [8]         | Clevis foot<br>LSN                 | With spherical bearing   | 32              |
| [9]         | Rod eye<br>SGS                     | With spherical bearing   | 33              |
| [10]        | Rod clevis<br>SGA                  | Suitable for spherical mounting of cylinders in conjunction with rod eye SGS   | 33              |
| [11]        | Rod clevis<br>SG                   | Permits a swivelling movement of the cylinder in one plane   | 33              |
| [12]        | Self-aligning rod coupler<br>FK    | To compensate for radial and angular deviations  | 33              |
| [13]        | Push-in fitting<br>QS              | For connecting tubing with standard O.D.   | qs              |
| [14]        | One-way flow control valve<br>GRLA | For regulating speed   | 37              |
| [15]        | Sensor kit<br>DADG                 | <ul style="list-style-type: none"> <li>• Inductive sensor kit for status sensing of the clamping function</li> <li>• Not included in the scope of delivery</li> </ul>  | 34              |
| [16]        | Sensor mounting<br>DASP            | For proximity switch SMT-8M-A and position transmitter SDAT-MHS  | 36              |
| [17]        | Proximity switch<br>SMT-8M-A       | <ul style="list-style-type: none"> <li>• For sensing the piston position</li> <li>• Can be integrated in the cylinder profile barrel</li> <li>• Not included in the scope of delivery</li> </ul>   | 35              |
|             | Proximity switch<br>SDBT-MS        | <ul style="list-style-type: none"> <li>• For sensing the piston position</li> <li>• Can be integrated in the cylinder profile barrel</li> <li>• Not included in the scope of delivery</li> </ul>   | 35              |
| [18]        | Position transmitter<br>SDAT-MHS   | <ul style="list-style-type: none"> <li>• Continuously senses the position of the piston</li> <li>• Has an analogue output</li> <li>• Can be integrated in the cylinder profile barrel</li> <li>• 2 sensor mountings DASP are required for mounting</li> <li>• Not included in the scope of delivery</li> </ul> | 36              |



 **Note**

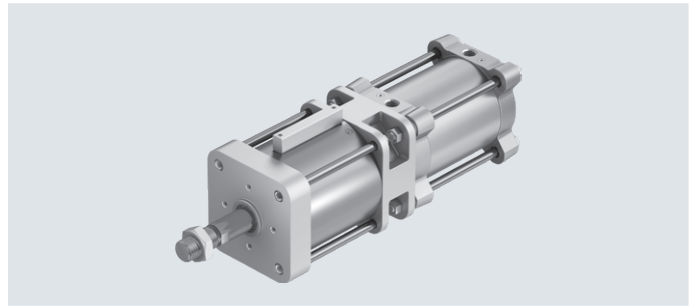
Only the flange mounting FNG is permissible for emergency stop applications/dynamic braking. Additional accessories for this application are available on request.

## Datasheet

### Function



-  - Diameter  
160 mm
-  - Stroke length  
10 ... 2000 mm



### General technical data

|  |  |
|--|--|
| Piston $\varnothing$                   | 160  |
| Design                                 | Piston   |
|  | Piston rod   |
|  | Profile barrel   |
| Variants                               | Piston rod at one end                                  |
| Operating mode                         | Double-acting  |
| Pneumatic connection                   |  |
| Cylinders                              | G3/4   |
| Holding brake                          | G3/8   |
| Piston rod thread                      | M36x2  |
| Piston rod end                         | Male thread  |
| Cushioning                             | Pneumatic cushioning adjustable at both ends           |
| Cushioning length [mm]                 | 48   |
| Position sensing                       | Via proximity switch                                   |
| Type of mounting                       | With female thread                                     |
|  | With accessories                                       |
| Clamping type with operating direction | On both sides  |
|  | Clamping via spring force, released via compressed air |
| Mounting position                      | Any  |

### Operating and environmental conditions

|  |   |
|--|---|
| Piston $\varnothing$                         | 160                                       |
| Cylinders                                    |   |
| Operating pressure [bar]                     | 0.6 ... 8                                 |
| Holding brake                                |   |
| Min. release pressure [bar]                  | 3.8                                       |
| Max. permissible test pressure [bar]         | 8   |
| Operating medium                             | Compressed air to ISO 8573-1:2010 [7:4:4] |
| Note on the operating/pilot medium           | Lubricated operation not possible         |
| Ambient temperature <sup>1)</sup> [°C]       | -20 ... +80                               |
| Corrosion resistance class CRC <sup>2)</sup> |   |
| [ ] Standard                                 | 1   |
| [R3] High corrosion protection               | 3   |

1) Note operating range of proximity switches.  
2) More information: [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)



## Datasheet


| <b>Safety characteristics</b>                              |  |
|--|--|
| Piston $\varnothing$                                       | 160  |
| Conforms to standard                                       | This product is based on ISO 15552 (previously also VDMA 24562, ISO 6431, NF E49 003.1, UNI 10290) |
| Safety function  | Holding and stopping a movement  |
| Performance level (PL)                                     | Stopping, holding, blocking a movement/category 1, Performance Level c                             |
| Certification  | German Technical Control Board (TÜV)   |
| Certificate-issuing authority                              | German Technical Control Board (TÜV) CA 697  |
| CE marking (see declaration of conformity) <sup>1)</sup>   | To EU Machinery Directive  |
| UKCA marking (see declaration of conformity) <sup>1)</sup> | To UK explosion regulations  |

1) More information [www.festo.com/catalogue/dflg](http://www.festo.com/catalogue/dflg) → Support/Downloads

| <b>ATEX</b>                              |                        |
|--|------------------------|
| Piston $\varnothing$                     | 160                    |
| ATEX category for gas                    | II 2G                  |
| Type of (ignition) protection for gas    | Ex h IIC T4 Gb         |
| ATEX category for dust                   | II 2D                  |
| Type of (ignition) protection for dust   | Ex h IIIC T120°C Db    |
| Explosion-proof ambient temperature [°C] | $-20 \leq Ta \leq +60$ |

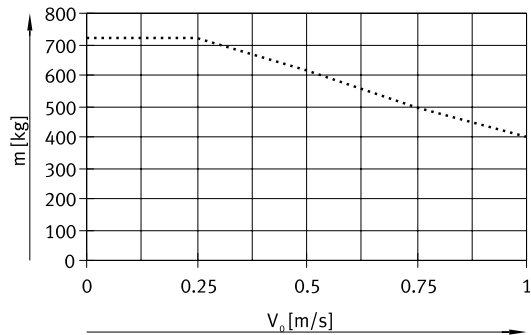
| <b>Weight [g]</b>                       |       |
|---|-------|
| Piston $\varnothing$                    | 160   |
| Basic weight with 0 mm stroke           | 49660 |
| Additional weight per 10 mm stroke      | 208   |
| Moving mass with 0 mm stroke            | 7085  |
| Additional moving mass per 10 mm stroke | 97    |

| <b>Forces [N]</b>                      |       |
|--|-------|
| Piston $\varnothing$                   | 160   |
| Theoretical force at 6 bar, advancing  | 12064 |
| Theoretical force at 6 bar, retracting | 11310 |
| Static holding force                   | 17000 |

| <b>Note</b>   |  |   |  |
|---|--|---|--|
|  <p>The specified holding force refers to a static load. If this value is exceeded, slippage may occur. Dynamic forces occurring during operation must</p> | <p>not exceed the static holding force if slippage is to be avoided. The holding brake is backlash-free in the clamped condition when varying loads are applied to the piston rod.</p> | <p>Lateral loads and bending moments on the piston rod can impair the function. (Make sure that the load on the piston rod is only in the direction of movement.)</p> | <p><b>Control:</b><br/>The holding brake may only be released when the forces on the piston rod are balanced. Otherwise there is a risk of accidents caused by the sudden movement of the piston rod. Blocking off the compressed air supply at both ends (e.g. with a 5/3-way valve) does not provide any safety.</p> |

## Datasheet

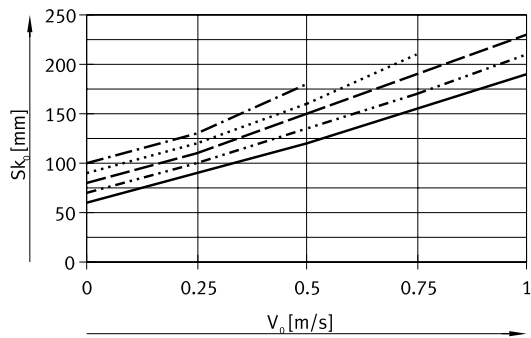
### Load mass $m$ as a function of piston speed $v_0$



..... DFLG-160

### Stopping distance $s_{k_0}$ as a function of piston speed $v_0$

$\varnothing 160$



- - - - - 700 kg
- ..... 600 kg
- - - - - 500 kg
- · - · - 400 kg
- 300 kg

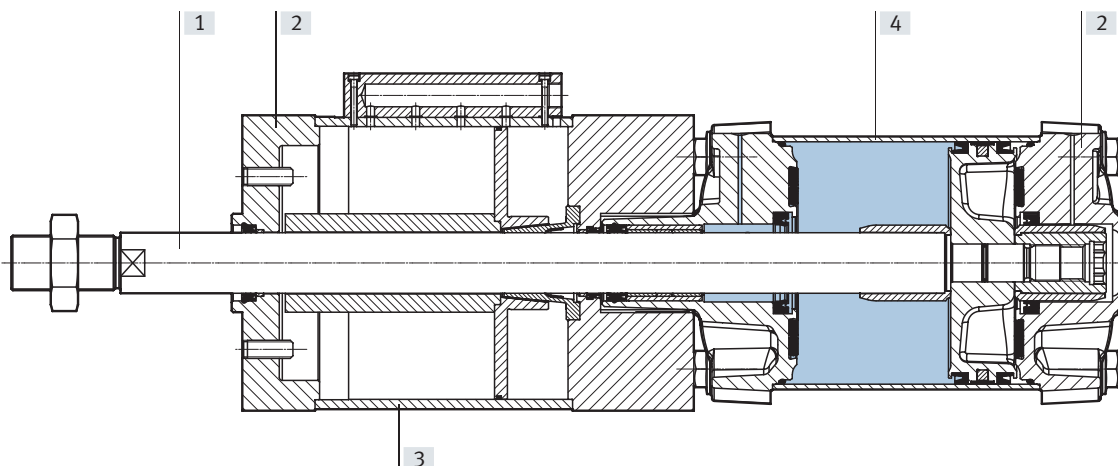
#### Note

All data in the graphs is intended exclusively for the purposes of preselection when configuring the emergency braking function and must be checked mathematically and in practice prior to commissioning. More information [www.festo.com/sp](http://www.festo.com/sp) → User documentation.

## Datasheet

### Materials

Sectional view



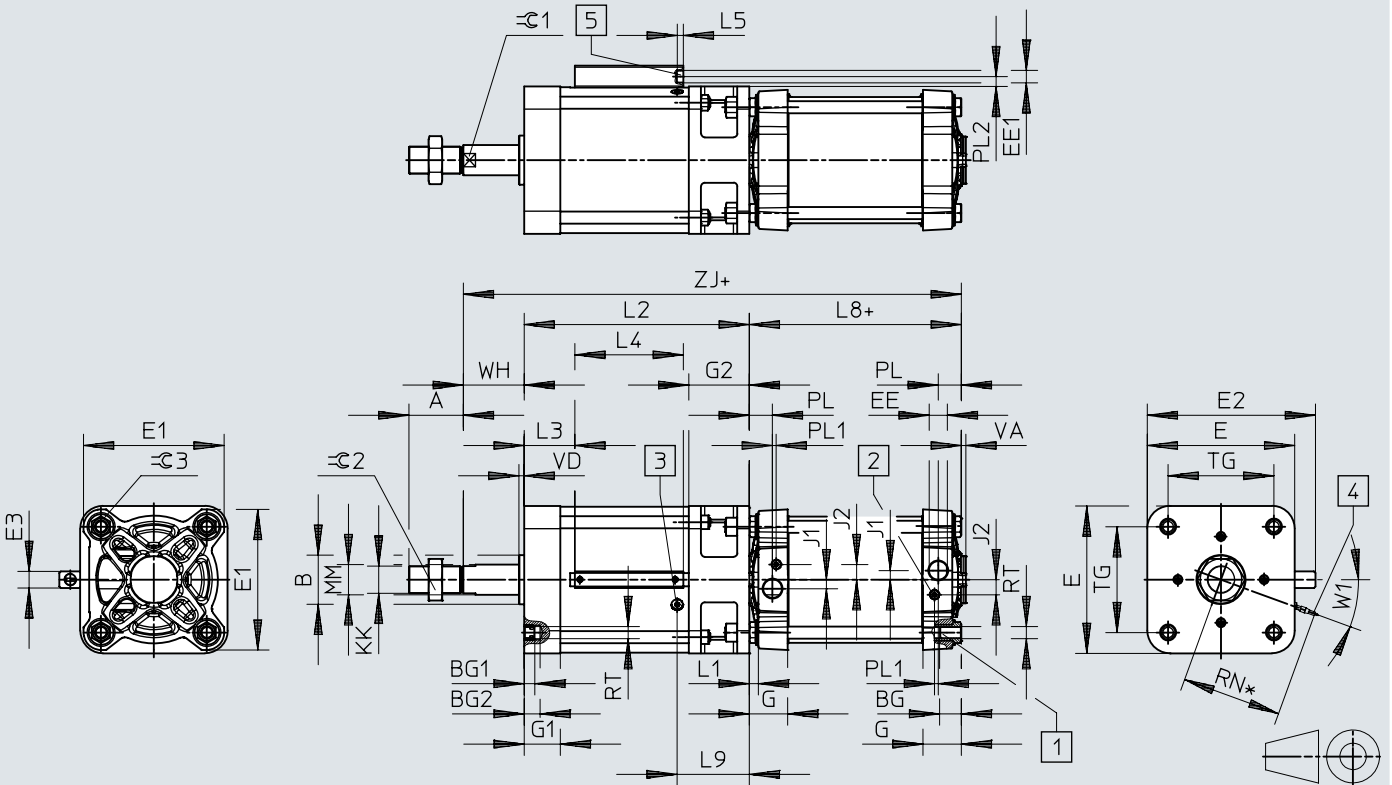
Cylinder with holding brake

|                        |   |
|------------------------|---|
| [1] Piston rod         | Hard-chrome-plated steel                |
| [2] Cover              | Die-cast aluminium                      |
|                        | Wrought aluminium alloy                 |
| [3] Housing            |   |
| DFLG-...               | Steel                                   |
| DFLG-...-R3            | High-alloy stainless steel              |
| [4] Cylinder barrel    |   |
| DFLG-...               | Smooth-anodised wrought aluminium alloy |
| DFLG-...-R3            | High-alloy stainless steel              |
| - Seals                | NBR                                     |
|                        | TPE-U(PU)                               |
| LABS (PWIS) conformity | VDMA24364-B2-L                          |
| Note on materials      | RoHS-compliant                          |

Datasheet

Dimensions

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



- [1] Socket head screw with female thread for mounting components      + = plus stroke length
- [2] Adjusting screw for adjustable end-position cushioning              \* = installation space for sensor kit DADG-D-F8
- [3] Position for proximity switch (thread M6x0.75)
- [4] Sensor kit DADG-D-F8
- [5] Connection to release clamping function

| $\varnothing$ | A    | B     | BG   | BG1 | BG2 | E         | E1        | E2      | E3 | EE   |
|---------------|------|-------|------|-----|-----|-----------|-----------|---------|----|------|
| [mm]          | -0.5 | $d11$ | min. |     |     | $\pm 0.8$ | $\pm 0.9$ | $\pm 1$ |    |      |
| 160           | 72   | 65    | 24   | 14  | 21  | 195       | 186       | 222.6   | 22 | G3/4 |

| $\varnothing$ | EE1  | G    | G1 | G2 | J1 | J2 | KK    | L1 | L2      | L3   |
|---------------|------|------|----|----|----|----|-------|----|---------|------|
| [mm]          |      |      |    |    |    |    |       |    | $\pm 1$ |      |
| 160           | G3/8 | 50.7 | 48 | 80 | 12 | 20 | M36x2 | 12 | 298     | 67.2 |

| $\varnothing$ | L4    | L5 | L8+     | L9   | MM            | PL | PL1 | PL2  | R   | RN  |
|---------------|-------|----|---------|------|---------------|----|-----|------|-----|-----|
| [mm]          |       |    | $\pm 1$ |      | $\varnothing$ |    |     |      |     |     |
| 160           | 143.5 | 8  | 180     | 95.5 | 40            | 31 | 5   | 13.1 | R30 | 155 |

| $\varnothing$ | RT  | TG        | VA | VD        | W1  | WH          | ZJ+         | $\varnothing C1$ | $\varnothing C2$ | $\varnothing C3$ |
|---------------|-----|-----------|----|-----------|-----|-------------|-------------|------------------|------------------|------------------|
| [mm]          |     | $\pm 1.1$ | -1 | $\pm 0.2$ |     | $+2.3/-2.3$ | $+2.3/-2.3$ |                  |                  |                  |
| 160           | M16 | 140       | 6  | 7         | 20° | 80          | 558         | 36               | 55               | 24               |

## Ordering data – Modular product system

| Ordering table       |   | Conditions | Code        | Enter code |
|----------------------|---|------------|-------------|------------|
| Size                 | 160   |            |             |            |
| Module no.           | 8073334   |            |             |            |
| Function             | Cylinder with holding brake, double-acting      |            | <b>DFLG</b> | DFLG       |
| Piston ø [mm]        | 160   |            | <b>-160</b> | -160       |
| Stroke [mm]          | 10 ... 2000                                     |            | <b>-...</b> |            |
| Cushioning           | Pneumatic cushioning, adjustable at both ends   |            | <b>-PPV</b> | -PPV       |
| Position sensing     | Via proximity switch                            |            | <b>A</b>    | A          |
| Corrosion protection | Standard  |            |             |            |
|                      | High corrosion protection                       |            | <b>-R3</b>  |            |
| EU certification     | None  |            |             |            |
|                      | II 2GD  |            | <b>-EX4</b> |            |
| Certification        | Safety device to Machinery Directive 2006/42/EC |            | <b>-S</b>   | -S         |

## Accessories

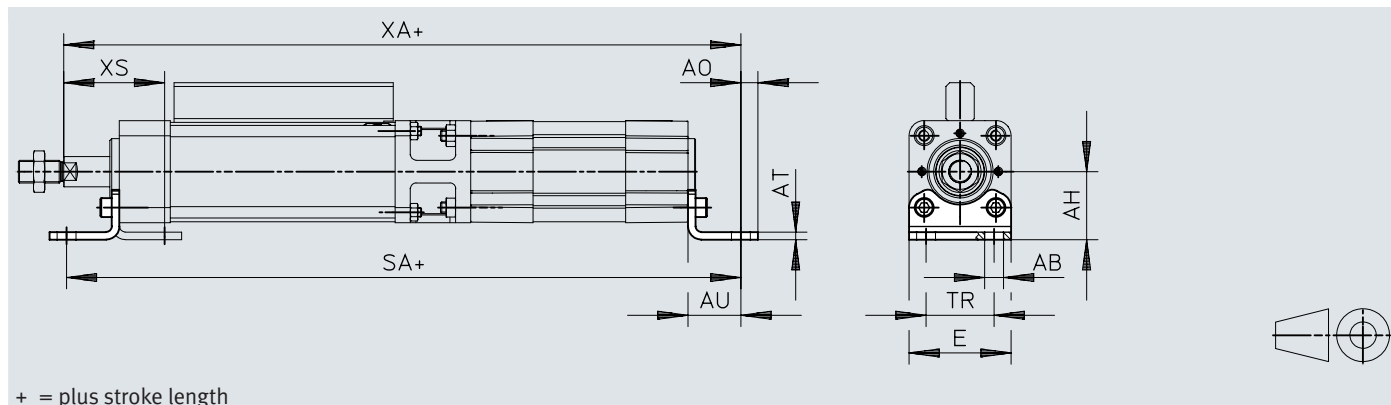
### Foot mounting HNC/CRHNC

For DFCL

Material:

HNC: Galvanised steel

CRHNC: High-alloy steel



+ = plus stroke length

#### Dimensions and ordering data

| For $\varnothing$ | AB<br>$\varnothing$ | AH | AO   | AT | AU | E   | SA  | TR | XA    | XS   |
|-------------------|---------------------|----|------|----|----|-----|-----|----|-------|------|
| [mm]              |                     |    |      |    |    |     |     |    |       |      |
| 40                | 10                  | 36 | 9    | 4  | 28 | 54  | 347 | 36 | 347.7 | 56.7 |
| 63                | 10                  | 50 | 12.5 | 5  | 32 | 75  | 395 | 50 | 398.9 | 67.9 |
| 100               | 14.5                | 71 | 17.5 | 6  | 41 | 110 | 475 | 75 | 483.3 | 90.3 |

| For $\varnothing$ | Basic version     |            |               |                    | Corrosion resistant |            |               |                    |
|-------------------|-------------------|------------|---------------|--------------------|---------------------|------------|---------------|--------------------|
|                   | CRC <sup>1)</sup> | Weight [g] | Part no.      | Type <sup>2)</sup> | CRC <sup>1)</sup>   | Weight [g] | Part no.      | Type <sup>2)</sup> |
| 40                | 2                 | 193        | <b>174370</b> | <b>HNC-40</b>      | 4                   | 188        | <b>176938</b> | <b>CRHNC-40</b>    |
| 63                | 2                 | 436        | <b>174372</b> | <b>HNC-63</b>      | 4                   | 424        | <b>176940</b> | <b>CRHNC-63</b>    |
| 100               | 2                 | 1009       | <b>174374</b> | <b>HNC-100</b>     | 4                   | 990        | <b>176942</b> | <b>CRHNC-100</b>   |

1) More information [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

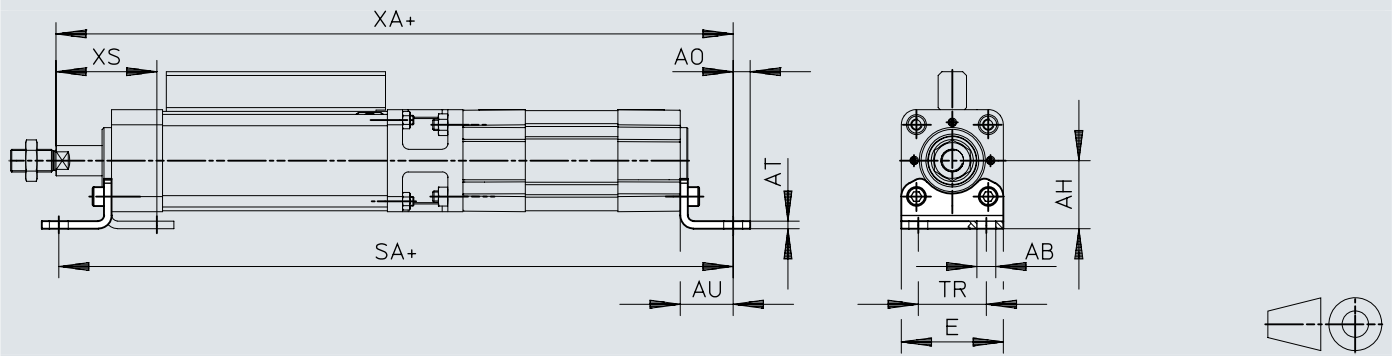
2) Suitable for ATEX

## Accessories

### Foot mounting HNG

For DFLLG

Material:  
Galvanised steel



+ = plus stroke length

#### Dimensions and ordering data

| For $\varnothing$ | AB<br>$\varnothing$ | AH  | AO | AT | AU | E   | SA  | TR  | XA  | XS  | CRC <sup>1)</sup> | Weight<br>[g] | Part no.     | Type <sup>2)</sup> |
|-------------------|---------------------|-----|----|----|----|-----|-----|-----|-----|-----|-------------------|---------------|--------------|--------------------|
| 160               | 18.5                | 115 | 20 | 10 | 60 | 169 | 598 | 115 | 618 | 140 | 2                 | 3931          | <b>34476</b> | <b>HNG-160</b>     |

1) More information [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

2) Suitable for ATEX

## Accessories

### Flange mounting FNC/CRFNG

For DFCL

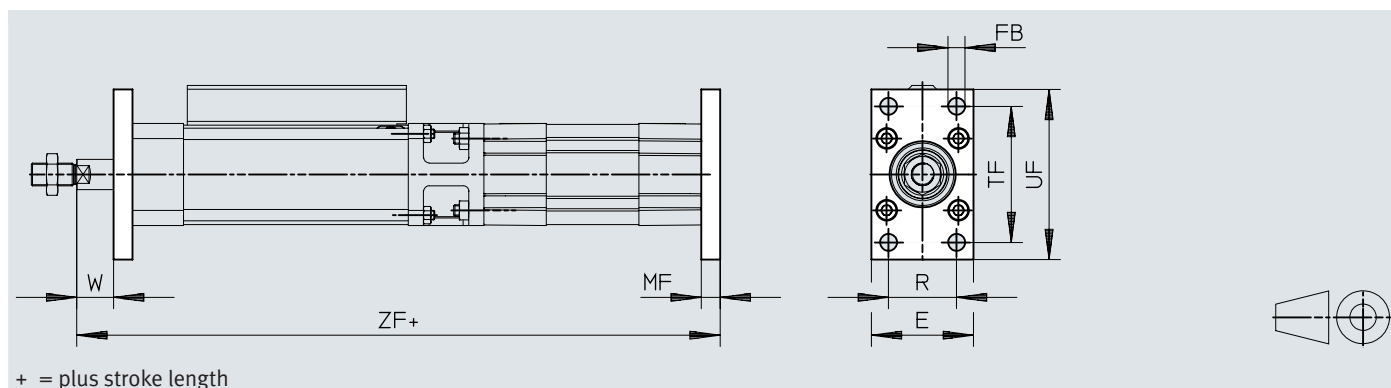
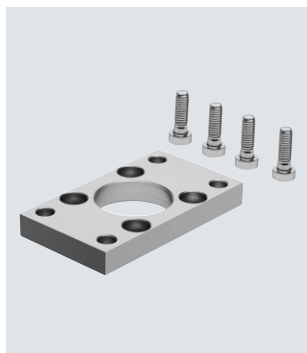
Suitable for emergency stop applications/  
dynamic braking

Material:

FNC: Galvanised steel

CRFNG: high-alloy steel

RoHS-compliant



#### Dimensions and ordering data

| For $\varnothing$<br>[mm] | E   | FB<br>$\varnothing$<br>H13 | MF | R  | TF  | UF  | W    | ZF    |
|---------------------------|-----|----------------------------|----|----|-----|-----|------|-------|
| 40                        | 54  | 9                          | 10 | 36 | 72  | 90  | 18.7 | 329.7 |
| 63                        | 75  | 9                          | 12 | 50 | 100 | 120 | 23.9 | 378.9 |
| 100                       | 110 | 14                         | 16 | 75 | 150 | 175 | 33.3 | 458.3 |

| For $\varnothing$<br>[mm] | Basic version     |               |               |                    | Corrosion resistant |               |               |                    |
|---------------------------|-------------------|---------------|---------------|--------------------|---------------------|---------------|---------------|--------------------|
|                           | CRC <sup>1)</sup> | Weight<br>[g] | Part no.      | Type <sup>2)</sup> | CRC <sup>1)</sup>   | Weight<br>[g] | Part no.      | Type <sup>2)</sup> |
| 40                        | 1                 | 291           | <b>174377</b> | <b>FNC-40</b>      | 4                   | 291           | <b>161847</b> | <b>CRFNG-40</b>    |
| 63                        | 1                 | 679           | <b>174379</b> | <b>FNC-63</b>      | 4                   | 680           | <b>161849</b> | <b>CRFNG-63</b>    |
| 100                       | 1                 | 2041          | <b>174381</b> | <b>FNC-100</b>     | 4                   | 2054          | <b>161851</b> | <b>CRFNG-100</b>   |

1) More information [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

2) Suitable for ATEX



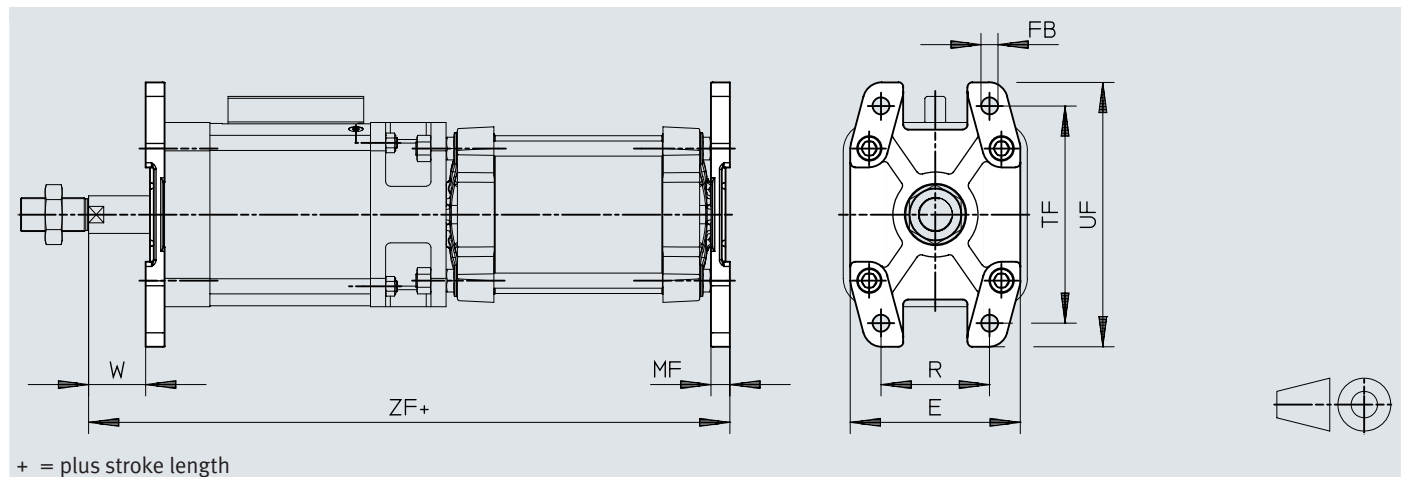
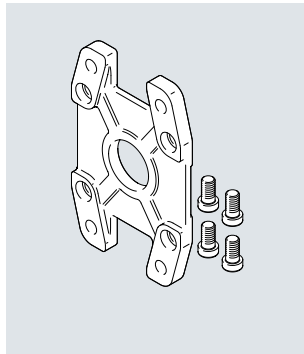
## Accessories

### Flange mounting FNG

For DFLLG

Suitable for emergency stop applications/  
dynamic braking

Material:  
Painted spheroidal graphite cast  
iron  
RoHS-compliant



+ = plus stroke length

#### Dimensions and ordering data

| For $\varnothing$ | E   | FB<br>$\varnothing$<br>H13 | MF | R   | TF  | UF  | W  | ZF  | CRC <sup>1)</sup> | Weight<br>[g] | Part no.     | Type <sup>2)</sup> |
|-------------------|-----|----------------------------|----|-----|-----|-----|----|-----|-------------------|---------------|--------------|--------------------|
| 160               | 180 | 18                         | 20 | 115 | 230 | 280 | 60 | 578 | 1                 | 3550          | <b>34478</b> | <b>FNG-160</b>     |

1) More information [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

2) Suitable for ATEX

## Accessories

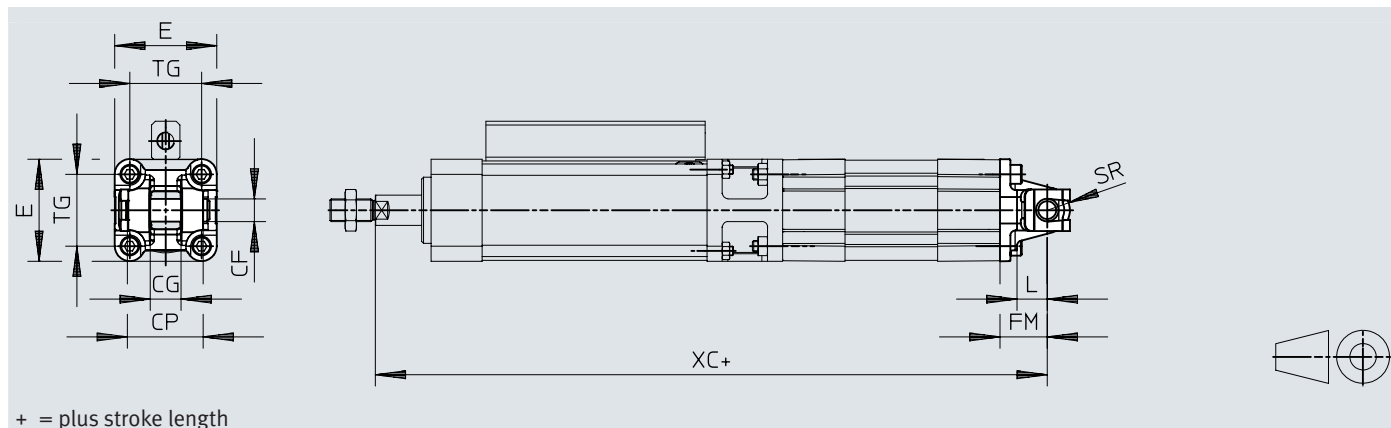
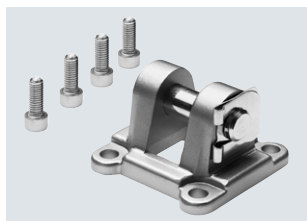
### Swivel flange SNC

For DFLL

Material:

Die-cast aluminium

RoHS-compliant



+ = plus stroke length

#### Dimensions and ordering data

| For $\varnothing$ | CF<br>$\varnothing$ | CG  | CP  | E                 | FM        | L  | SR |
|-------------------|---------------------|-----|-----|-------------------|-----------|----|----|
| [mm]              | E7/h9               | H14 | h14 |                   | $\pm 0.2$ |    |    |
| 40                | 12                  | 16  | 40  | $54_{-0.5}$       | 25        | 16 | 12 |
| 63                | 16                  | 21  | 51  | $75_{-0.6}$       | 32        | 21 | 16 |
| 100               | 20                  | 25  | 75  | $110_{+0.3/-0.8}$ | 41        | 27 | 20 |

| For $\varnothing$ | TG   | XC    | CRC <sup>1)</sup> | Weight | Part no.      | Type <sup>2)</sup> |
|-------------------|------|-------|-------------------|--------|---------------|--------------------|
| [mm]              |      |       |                   | [g]    |               |                    |
| 40                | 38   | 344.7 | 1                 | 140    | <b>174384</b> | <b>SNC-40</b>      |
| 63                | 56.5 | 398.9 | 1                 | 331    | <b>174386</b> | <b>SNC-63</b>      |
| 100               | 89   | 483.3 | 1                 | 865    | <b>174388</b> | <b>SNC-100</b>     |

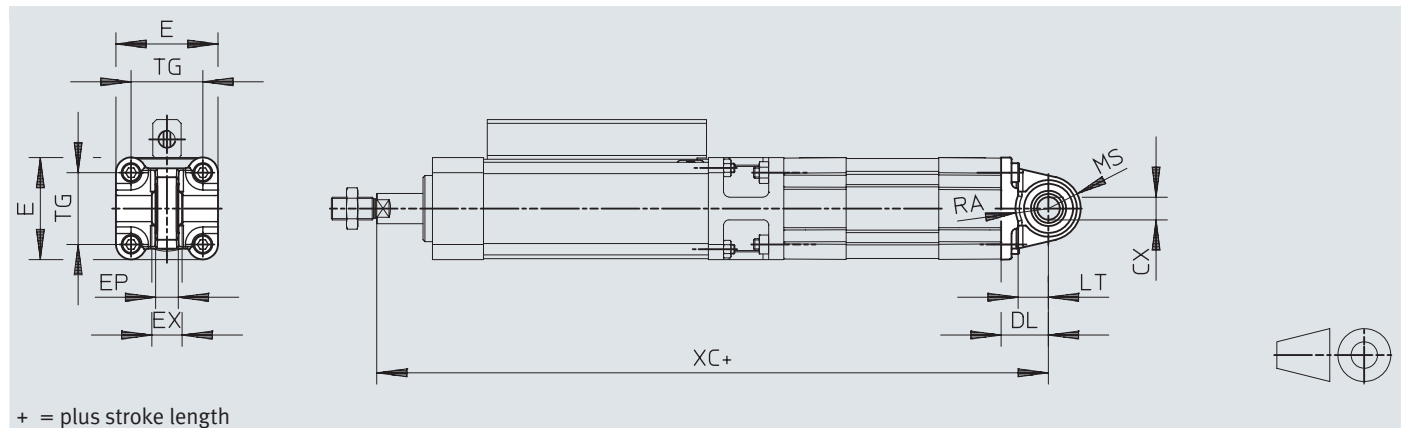
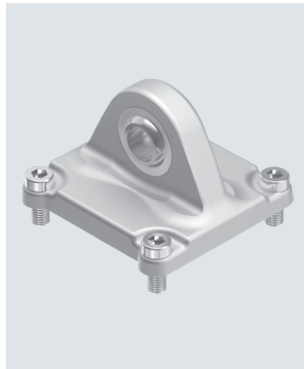
1) More information [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

2) Suitable for ATEX

## Accessories

**Swivel flange SNCS/SNCS-...-R3**  
For DFLL

Material:  
SNCS 40: Die-cast aluminium  
SNCS 63 ... 100:  
Wrought aluminium alloy  
SNCS-...-R3 100:  
Wrought aluminium alloy with  
protective coating  
RoHS-compliant



| For $\varnothing$ | CX            |                     |                     | DL        | E                |             |                 | EP        |
|-------------------|---------------|---------------------|---------------------|-----------|------------------|-------------|-----------------|-----------|
|                   |               | [CRSNCS]            | [SNCS-...-R3]       |           |                  | [CRSNCS]    | [SNCS-...-R3]   |           |
| [mm]              |               |                     |                     | $\pm 0.2$ |                  |             |                 | $\pm 0.2$ |
| 40                | $12_{+0.015}$ | $12_{+0.018/-0.04}$ | –                   | 25        | $54_{-0.5}$      | $54_{-0.5}$ | –               | 12        |
| 63                | $16_{+0.015}$ | $16_{+0.018/-0.14}$ | –                   | 32        | $74.5_{\pm 0.5}$ | $75_{-0.6}$ | –               | 15        |
| 100               | $20_{+0.018}$ | –                   | $20_{+0.021/-0.04}$ | 41        | $109_{+1/-0.7}$  | –           | $109_{+1/-0.7}$ | 18        |

| For $\varnothing$ | EX | LT | MS             |             |                | RA   |          |               | TG   | XC    |
|-------------------|----|----|----------------|-------------|----------------|------|----------|---------------|------|-------|
|                   |    |    |                | [CRSNCS]    | [SNCS-...-R3]  |      | [CRSNCS] | [SNCS-...-R3] |      |       |
| [mm]              |    |    |                |             |                | +1   | +1       | +1            |      |       |
| 40                | 16 | 16 | $17_{+0.5}$    | $17_{+0.5}$ | –              | 17.5 | 17.5     | –             | 38   | 344.7 |
| 63                | 21 | 21 | $23_{-0.5}$    | $22_{+0.5}$ | –              | 23   | 23       | –             | 56.5 | 398.9 |
| 100               | 25 | 27 | $30_{\pm 0.5}$ | –           | $30_{\pm 0.5}$ | 95   | –        | 100           | 89   | 483.3 |

| For $\varnothing$ | Basic version     |            |               |                 | High corrosion protection |            |                |                    |
|-------------------|-------------------|------------|---------------|-----------------|---------------------------|------------|----------------|--------------------|
|                   | CRC <sup>1)</sup> | Weight [g] | Part no.      | Type            | CRC <sup>1)</sup>         | Weight [g] | Part no.       | Type               |
| 40                | 1                 | 122        | <b>174398</b> | <b>SNCS-40</b>  | 4                         | 239        | <b>2895921</b> | <b>CRSNCS-40</b>   |
| 63                | 2                 | 281        | <b>174400</b> | <b>SNCS-63</b>  | 4                         | 576        | <b>2895923</b> | <b>CRSNCS-63</b>   |
| 100               | 2                 | 683        | <b>174402</b> | <b>SNCS-100</b> | 3                         | 684        | <b>2895925</b> | <b>SNCS-100-R3</b> |

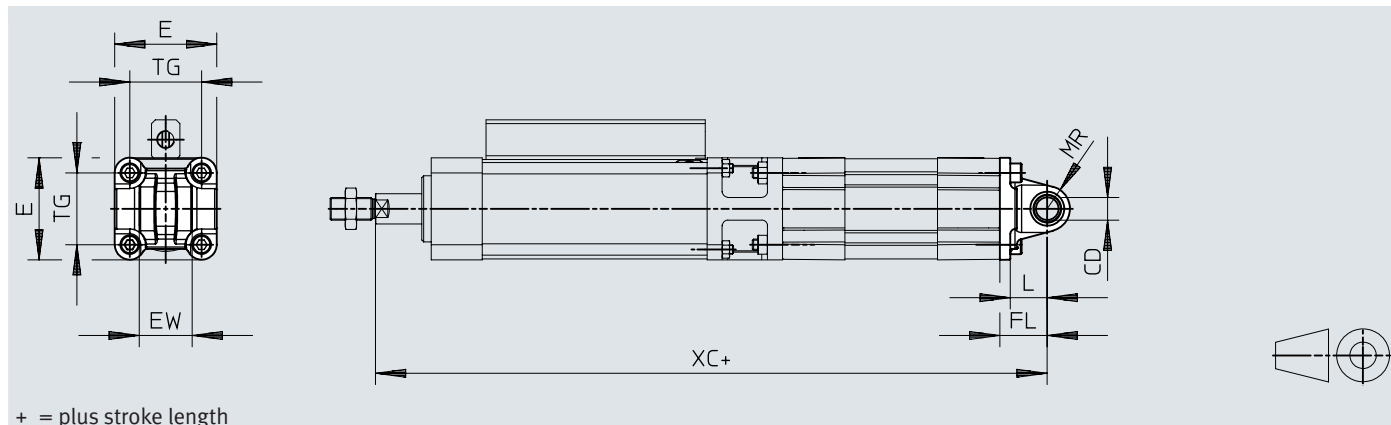
1) More information: [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

## Accessories

### Swivel flange SNCL

For DFCL

Material:  
Die-cast aluminium  
RoHS-compliant



+ = plus stroke length

#### Dimensions and ordering data

| For $\varnothing$ | CD                   | E                  | EW           | FL        | L  | MR    |
|-------------------|----------------------|--------------------|--------------|-----------|----|-------|
| [mm]              | $\varnothing$<br>H10 |                    | -0.2<br>-0.6 | $\pm 0.2$ |    |       |
| 40                | 12                   | 54 <sub>-0.5</sub> | 28           | 25        | 16 | 12    |
| 63                | 16                   | 75 <sub>-0.6</sub> | 40           | 32        | 21 | 16    |
| 100               | 60                   | 41                 | 27           | 20        | 89 | 483.3 |

| For $\varnothing$ | TG   | XC    | CRC <sup>1)</sup> | Weight | Part no.      | Type            |
|-------------------|------|-------|-------------------|--------|---------------|-----------------|
| [mm]              |      |       |                   | [g]    |               |                 |
| 40                | 38   | 344.7 | 1                 | 95     | <b>174405</b> | <b>SNCL-40</b>  |
| 63                | 56.5 | 398.9 | 1                 | 225    | <b>174407</b> | <b>SNCL-63</b>  |
| 100               | 89   | 483.3 | 1                 | 606    | <b>174409</b> | <b>SNCL-100</b> |

1) More information: [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

## Accessories

### Swivel flange SNCB/SNCB-...-R3

For DF/LC

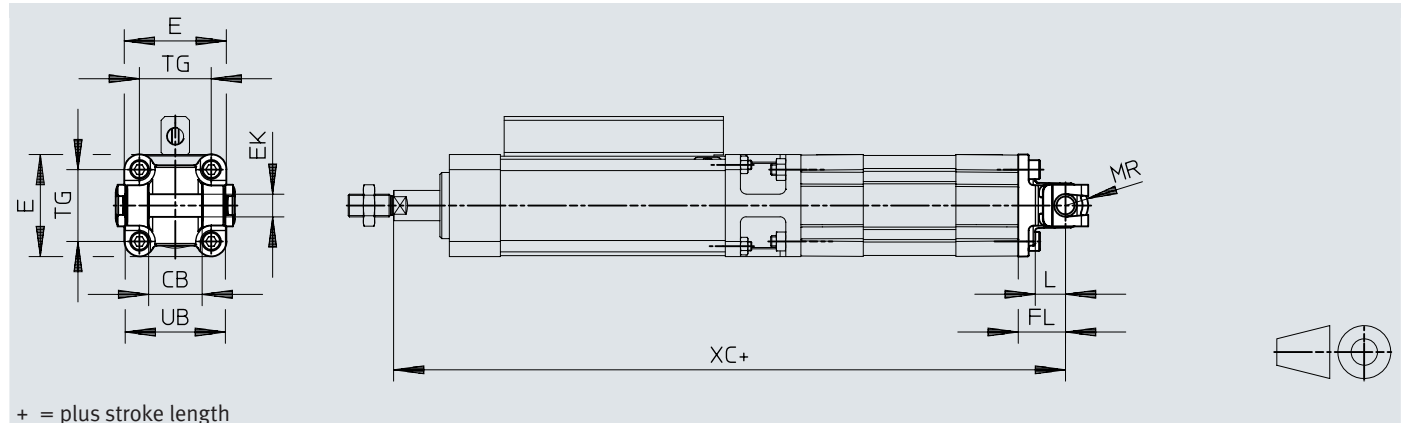
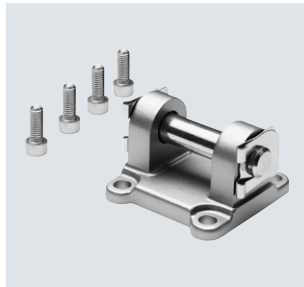
Material:

SNCB: Die-cast aluminium

SNCB-...-R3: Die-cast aluminium

with protective coating

RoHS-compliant



#### Dimensions and ordering data

| For $\varnothing$ | CB  | E                        | EK<br>$\varnothing$ | FL        | L  | MR   | TG   | UB  | XC    |
|-------------------|-----|--------------------------|---------------------|-----------|----|------|------|-----|-------|
| [mm]              | H14 |                          | H10/e8              | $\pm 0.2$ |    | -0.5 |      | h14 |       |
| 40                | 28  | 54 <sub>-0.5</sub>       | 12                  | 25        | 16 | 12   | 38   | 52  | 344.7 |
| 63                | 40  | 75 <sub>-0.6</sub>       | 16                  | 32        | 21 | 16   | 56.5 | 70  | 398.9 |
| 100               | 60  | 110 <sub>+0.3/-0.8</sub> | 20                  | 41        | 27 | 20   | 89   | 110 | 483.3 |

| For $\varnothing$ | Basic version     |            |               |                 | R3 – High corrosion protection |            |               |                    |
|-------------------|-------------------|------------|---------------|-----------------|--------------------------------|------------|---------------|--------------------|
|                   | CRC <sup>1)</sup> | Weight [g] | Part no.      | Type            | CRC <sup>1)</sup>              | Weight [g] | Part no.      | Type               |
| 40                | 1                 | 155        | <b>174391</b> | <b>SNCB-40</b>  | 3                              | 151        | <b>176945</b> | <b>SNCB-40-R3</b>  |
| 63                | 1                 | 375        | <b>174393</b> | <b>SNCB-63</b>  | 3                              | 371        | <b>176947</b> | <b>SNCB-63-R3</b>  |
| 100               | 1                 | 1035       | <b>174395</b> | <b>SNCB-100</b> | 3                              | 986        | <b>176949</b> | <b>SNCB-100-R3</b> |

1) More information: [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

## Accessories

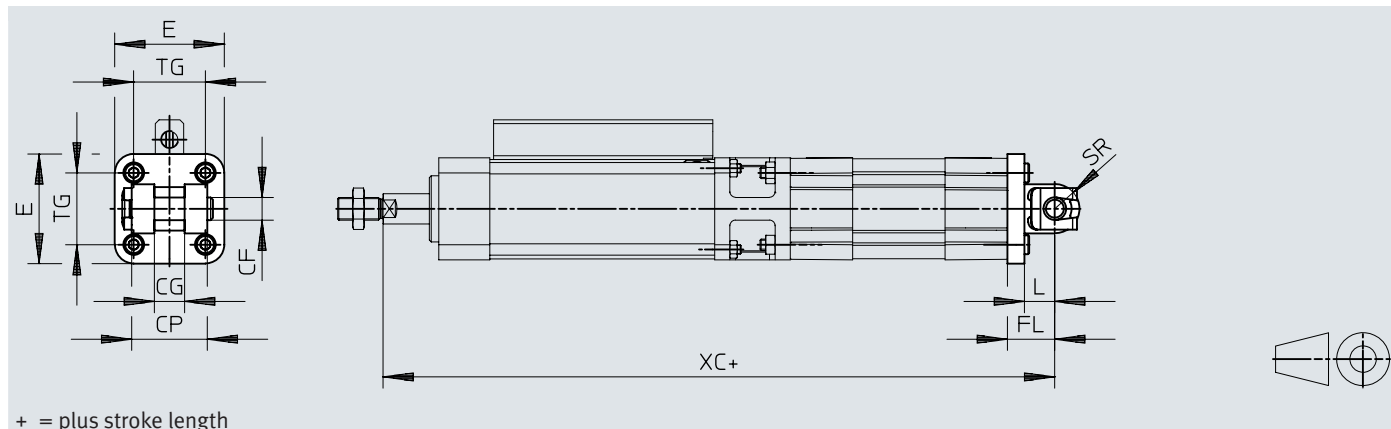
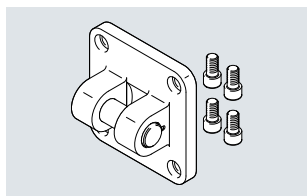
### Swivel flange SNG

For DFLG

Material:

Die-cast aluminium

RoHS-compliant



+ = plus stroke length

#### Dimensions and ordering data

| For $\varnothing$ | CF    | CG  | CP  | E    | FL        | L  | SR   | TG            | XC  | CRC <sup>1)</sup> | Weight | Part no.      | Type           |
|-------------------|-------|-----|-----|------|-----------|----|------|---------------|-----|-------------------|--------|---------------|----------------|
| [mm]              | F7/h9 | H14 | d12 | max. | $\pm 0.2$ |    | max. |               |     |                   | [g]    |               |                |
| 160               | 35    | 43  | 122 | 186  | 55        | 35 | 32   | 140 $\pm 0.3$ | 613 | 2                 | 3577   | <b>152597</b> | <b>SNG-160</b> |

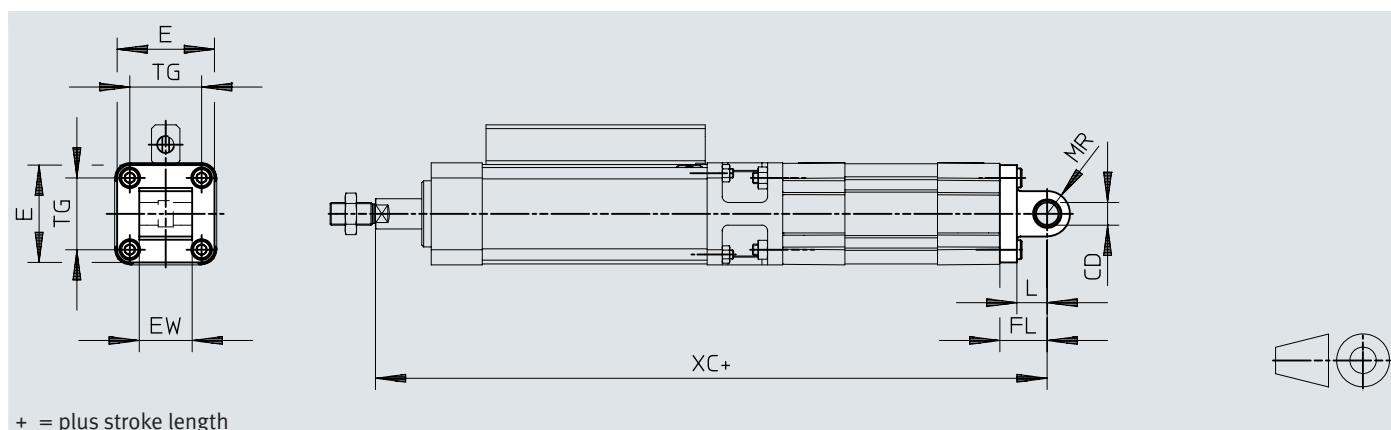
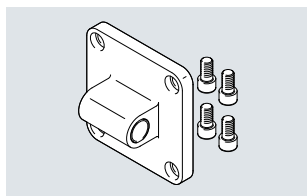
1) More information: [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

### Swivel flange SNG1

For DFLG

Material:

Die-cast aluminium



+ = plus stroke length

#### Dimensions and ordering data

| For $\varnothing$ | CD                  | EW                | E         | FL        | L  | MR | TG  | XC  | CRC <sup>1)</sup> | Weight | Part no.      | Type            |
|-------------------|---------------------|-------------------|-----------|-----------|----|----|-----|-----|-------------------|--------|---------------|-----------------|
| [mm]              | $\varnothing$<br>H9 |                   | $\pm 0.5$ | $\pm 0.2$ |    |    |     |     |                   | [g]    |               |                 |
| 160               | 30                  | 90 $_{-0.5/-1.2}$ | 179.5     | 55        | 35 | 25 | 140 | 613 | 2                 | 2358   | <b>151534</b> | <b>SNG1-160</b> |

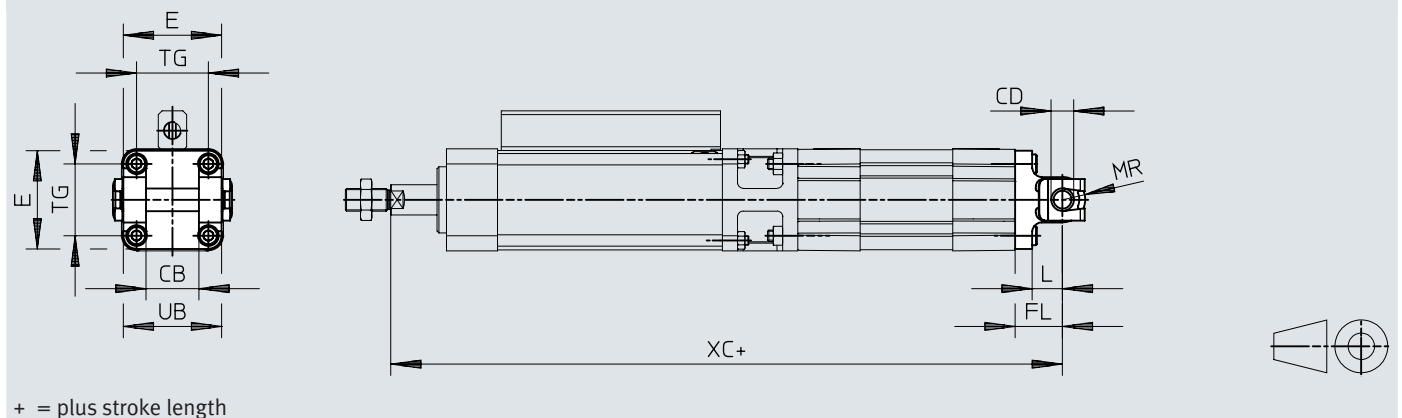
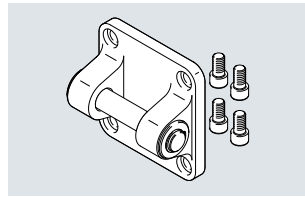
1) More information: [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

## Accessories

### Swivel flange SNGB

For DFLLG

Material:  
Die-cast aluminium  
RoHS-compliant





#### Dimensions and ordering data

| For $\varnothing$ | CB  | CD<br>$\varnothing$ | E         | FL        | L | MR | TG              | UB  | XC  | CRC <sup>1)</sup> | Weight<br>[g] | Part no.     | Type            |
|-------------------|-----|---------------------|-----------|-----------|---|----|-----------------|-----|-----|-------------------|---------------|--------------|-----------------|
| 160               | H14 | E10                 | $\pm 0.5$ | $\pm 0.2$ |   |    | $140_{\pm 0.3}$ | h14 | 613 | 2                 | 3445          | <b>34547</b> | <b>SNGB-160</b> |


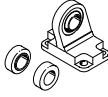
1) More information: [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

## Accessories

### Ordering data – Mounting components

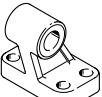
| Designation   | For $\varnothing$ | Part no.      | Type            |
|---|-------------------|---------------|-----------------|
| Clevis foot LN/LNG  |                   |               |                 |
|  | 40                | <b>33891</b>  | <b>LNG-40</b>   |
|   | 63                | <b>33893</b>  | <b>LNG-63</b>   |
|   | 100               | <b>33895</b>  | <b>LNG-100</b>  |
|   | 160               | <b>9037</b>   | <b>LN-160</b>   |
| Clevis foot LSNG  |                   |               |                 |
|  | 40                | <b>31741</b>  | <b>LSNG-40</b>  |
|   | 63                | <b>31743</b>  | <b>LSNG-63</b>  |
|   | 100               | <b>31745</b>  | <b>LSNG-100</b> |
|   | 160               | <b>152599</b> | <b>LSNG-160</b> |

Datasheets → Internet: clevis foot

| Designation   | For $\varnothing$ | Part no.     | Type           |
|---|-------------------|--------------|----------------|
| Clevis foot LBG <sup>1)</sup><br>For DFCL   |                   |              |                |
|  | 40                | <b>31762</b> | <b>LBG-40</b>  |
|   | 63                | <b>31764</b> | <b>LBG-63</b>  |
|   | 100               | <b>31766</b> | <b>LBG-100</b> |
| Clevis foot LSN   |                   |              |                |
|  | 40                | <b>5562</b>  | <b>LSN-40</b>  |
|   | 63                | <b>5564</b>  | <b>LSN-63</b>  |
|   | 100               | <b>5566</b>  | <b>LSN-100</b> |
|   | 160               | <b>6988</b>  | <b>LSN-160</b> |

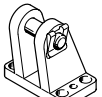
1) Suitable for ATEX

### Ordering data – Mounting components, corrosion-resistant

| Designation  | For $\varnothing$ | Part no.      | Type             |
|--|-------------------|---------------|------------------|
| Clevis foot CRLNG<br>For DFCL  |                   |               |                  |
|  | 40                | <b>161841</b> | <b>CRLNG-40</b>  |
|  | 63                | <b>161843</b> | <b>CRLNG-63</b>  |
|  | 100               | <b>161845</b> | <b>CRLNG-100</b> |

Datasheets → Internet: crlng

### Ordering data – Mounting components, high corrosion protection

| Designation  | For $\varnothing$ | Part no.       | Type <sup>1)</sup> |
|--|-------------------|----------------|--------------------|
| Clevis foot LBG-R3<br>For DFCL   |                   |                |                    |
|  | 40                | <b>2078792</b> | <b>LBG-40-R3</b>   |
|  | 63                | <b>2078795</b> | <b>LBG-63-R3</b>   |
|  | 100               | <b>2078799</b> | <b>LBG-100-R3</b>  |


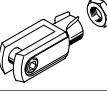
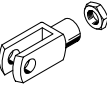
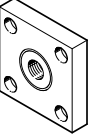
Datasheets → Internet: lbg

1) Suitable for ATEX



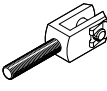
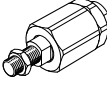
## Accessories

### Ordering data – Piston rod attachments


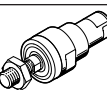
| Designation   | For ø | Part no. | Type         |
|---|-------|----------|--------------|
| <b>Rod eye SGS</b>  |       |          |              |
|  | 40    | 9262     | SGS-M12x1.25 |
|   | 63    | 9263     | SGS-M16x1.5  |
|   | 100   | 9264     | SGS-M20x1.5  |
|   | 160   | 10775    | SGS-M36x2    |
| <b>Rod clevis SG<sup>1)</sup></b>   |       |          |              |
|  | 40    | 6145     | SG-M12x1.25  |
|   | 63    | 6146     | SG-M16x1.5   |
|  | 100   | 6147     | SG-M20x1.5   |
|   | 160   | 9581     | SG-M36x2     |
| <b>Coupling piece KSG<sup>1)</sup></b><br>For DFCL                                |       |          |              |
|  | 40    | 32964    | KSG-M12x1.25 |
|   | 63    | 32965    | KSG-M16x1.5  |
|   | 100   | 32966    | KSG-M20x1.5  |

1) Suitable for ATEX

Datasheets → Internet: piston rod attachment

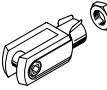
| Designation   | For ø | Part no. | Type         |
|---|-------|----------|--------------|
| <b>Rod clevis SGA<sup>1)</sup></b>  |       |          |              |
|  | 40    | 10767    | SGA-M12x1.25 |
|   | 63    | 10768    | SGA-M16x1.5  |
|   | 100   | 10769    | SGA-M20x1.5  |
|   | 160   | 10771    | SGA-M36x2    |
| <b>Self-aligning rod coupler FK<sup>1)</sup></b>                                  |       |          |              |
|  | 40    | 6141     | FK-M12x1.25  |
|   | 63    | 6142     | FK-M16x1.5   |
|   | 100   | 6143     | FK-M20x1.5   |
|   | 160   | 10746    | FK-M36x2     |

### Ordering data – Piston rod attachments, corrosion-resistant

| Designation   | For ø | Part no. | Type           |
|---|-------|----------|----------------|
| <b>Rod eye CRSGS</b><br>For DFCL  |       |          |                |
|  | 40    | 195583   | CRSGS-M12x1.25 |
|   | 63    | 195584   | CRSGS-M16x1.5  |
|   | 100   | 195585   | CRSGS-M20x1.5  |
| <b>Self-aligning rod coupler CRFK<sup>1)</sup></b><br>For DFCL                      |       |          |                |
|  | 40    | 2305779  | CRFK-M12x1.25  |
|   | 63    | 2490673  | CRFK-M16x1.5   |
|   | 100   | 2545677  | CRFK-M20x1.5   |

1) Suitable for ATEX

Datasheets → Internet: piston rod attachment

| Designation   | For ø | Part no. | Type          |
|---|-------|----------|---------------|
| <b>Rod clevis CRSG<sup>1)</sup></b><br>For DFCL                                     |       |          |               |
|  | 40    | 13570    | CRSG-M12x1.25 |
|   | 63    | 13571    | CRSG-M16x1.5  |
|   | 100   | 13572    | CRSG-M20x1.5  |

## Accessories

### Proximity switch DADG

#### General technical data


| For ø                                      | 40; 63   | 100 | 160 |
|--|--|-----|-----|
| Size                                       | M4   |     |     |
| Type of mounting                           | Screw-clamped  |     |     |
| Type of mounting                           | Flush  |     |     |
| Housing material                           | Steel  |     |     |
| Cable sheath material                      | TPE-U(PUR)   |     |     |
| Note on materials                          | Contains paint-wetting impairment substances<br>RoHS-compliant |     |     |
| Product weight [g]                         | 26   | 30  | 32  |
| Conforms to standard                       | EN 60947-5-2   |     |     |
| Certification                              | RCM<br>c UL us (OL)  |     |     |
| CE marking (see declaration of conformity) | To EU EMC Directive  |     |     |
| Degree of protection                       | IP67   |     |     |

#### Operating and environmental conditions

| For ø  | 40; 63   | 100 | 160 |
|--|--|-----|-----|
| Switching output                               | PNP  |     |     |
| Switching element function                     | N/O  |     |     |
| Electrical connection 1, connection type       | Cable  |     |     |
| Electrical connection 1, connection technology | Open end   |     |     |
| Electrical connection 1, number of pins/wires  | 3  |     |     |
| Cable length [m]                               | 2  |     |     |
| Operating voltage range DC [V]                 | 10 ... 30  |     |     |
| Max. switching frequency                       | 5000 Hz  |     |     |
| Max. switching frequency DC                    | 5000 Hz  |     |     |
| Max. output current [mA]                       | 100  |     |     |
| No-load current [mA]                           | ≤ 10   |     |     |
| Voltage drop [V]                               | 2  |     |     |
| Residual ripple [%]                            | 10   |     |     |
| Reverse polarity protection                    | For all electrical connections   |     |     |
| Short circuit current rating                   | Clocked  |     |     |
| Rated operating distance [mm]                  | 0.6  |     |     |
| Assured operating distance [mm]                | 0.64   |     |     |
| Reduction factors                              | Aluminium = 0.55<br>Stainless steel St 18/8 = 0.8<br>Copper = 0.5<br>Brass = 0.65<br>Steel St 37 = 1.0 |     |     |
| Repetition accuracy [mm]                       | 0.01   |     |     |
| Ambient temperature [°C]                       | -25 ... +70  |     |     |

#### Ordering data

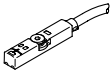
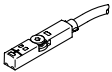
Datasheets → Internet: dadg

|  | For ø  | Part no. | Type            |
|--|--------|----------|-----------------|
|  | 40; 63 | 8072857  | DADG-D-F8-16/20 |
|  | 100    | 8072858  | DADG-D-F8-25    |
|  | 160    | 8072859  | DADG-D-F8-40    |
|  |        |          |                 |

## Accessories

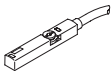
### Ordering data – Proximity switch for T-slot, magneto-resistive

Datasheets → Internet: smt

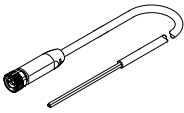
|   | Type of mounting   | Switching output | Electrical connection | Cable length [m] | Part no.      | Type                             |
|---|--|------------------|-----------------------|------------------|---------------|----------------------------------|
| <b>N/O</b>  |  |                  |                       |                  |               |                                  |
|  | Inserted in the slot from above, flush with cylinder profile, Short design | PNP              | Cable, 3-core         | 2.5              | <b>574335</b> | <b>SMT-8M-A-PS-24V-E-2.5-OE</b>  |
|   |  |                  | Plug M8x1, 3-pin      | 0.3              | <b>574334</b> | <b>SMT-8M-A-PS-24V-E-0.3-M8D</b> |
|   |  | NPN              | Cable, 3-core         | 2.5              | <b>574338</b> | <b>SMT-8M-A-NS-24V-E-2.5-OE</b>  |
|   |  |                  | 1x M8 plug, 3-pin     | 0.3              | <b>574339</b> | <b>SMT-8M-A-NS-24V-E-0.3-M8D</b> |
| <b>N/C</b>  |  |                  |                       |                  |               |                                  |
|  | Inserted in the slot from above, flush with cylinder profile, Short design | PNP              | Cable, 3-core         | 7.5              | <b>574340</b> | <b>SMT-8M-A-PO-24V-E-7.5-OE</b>  |
|   |  |                  |                       |                  |               |                                  |

### Ordering data – Proximity switch for T-slot, NAMUR

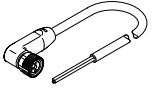
Datasheets → Internet: sdbt

|   | Type of mounting   | Switching output | Electrical connection | Cable length [m] | Part no.      | Type                               |
|---|--|------------------|-----------------------|------------------|---------------|------------------------------------|
| <b>N/O</b>  |  |                  |                       |                  |               |                                    |
|  | Inserted in the slot from above, flush with cylinder profile | NAMUR            | Cable, 2-core         | 5                | <b>579071</b> | <b>SDBT-MS-20NL-ZN-E-5-LE-EX6</b>  |
|   |  |                  |                       | 10               | <b>579072</b> | <b>SDBT-MS-20NL-ZN-E-10-LE-EX6</b> |

### Connecting cables NEBA, straight

|   | Electrical connection 1, connection technology | Electrical connection 2, connection technology | Electrical connection 2, number of pins/cores | Cable length | Part no.       | Type                         |
|---|--|--|---|--------------|----------------|------------------------------|
|  | M8x1 A-coded to EN 61076-2-104                 | Open end                                       | 3   | 2.5 m        | <b>8078223</b> | <b>NEBA-M8G3-U-2.5-N-LE3</b> |
|   |  |  |   | 5 m          | <b>8078224</b> | <b>NEBA-M8G3-U-5-N-LE3</b>   |

### Connecting cables NEBA, angled

|   | Electrical connection 1, connection technology | Electrical connection 2, connection technology | Electrical connection 2, number of pins/cores | Cable length | Part no.       | Type                         |
|---|--|--|---|--------------|----------------|------------------------------|
|  | M8x1 A-coded to EN 61076-2-104                 | Open end                                       | 3   | 2.5 m        | <b>8078230</b> | <b>NEBA-M8W3-U-2.5-N-LE3</b> |
|   |  |  |   | 5 m          | <b>8078231</b> | <b>NEBA-M8W3-U-5-N-LE3</b>   |

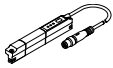
## Accessories

### Position transmitter

The position transmitter continuously senses the position of the piston.  
It has an analogue output with an output signal that is proportional to the piston position.

#### Ordering data – Position transmitter for T-slot


Datasheets → Internet: sdat

|  | Position measuring range | Analogue output [mA] | Type of mounting                | Electrical connection     | Cable length [m] | Part no.       | Type                                |
|--|--------------------------|----------------------|---------------------------------|---------------------------|------------------|----------------|-------------------------------------|
|  | 0 ... 50                 | 4 ... 20             | Inserted in the slot from above | Plug M8x1, 4-pin, in-line | 0.3              | <b>1531265</b> | <b>SDAT-MHS-M50-1L-SA-E-0.3-M8</b>  |
|  | 0 ... 80                 |                      |                                 |                           |                  | <b>1531266</b> | <b>SDAT-MHS-M80-1L-SA-E-0.3-M8</b>  |
|  | 0 ... 100                |                      |                                 |                           |                  | <b>1531267</b> | <b>SDAT-MHS-M100-1L-SA-E-0.3-M8</b> |
|  | 0 ... 125                |                      |                                 |                           |                  | <b>1531268</b> | <b>SDAT-MHS-M125-1L-SA-E-0.3-M8</b> |
|  | 0 ... 160                |                      |                                 |                           |                  | <b>1531269</b> | <b>SDAT-MHS-M160-1L-SA-E-0.3-M8</b> |

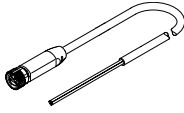
#### Ordering data – Sensor bracket for proximity switch SMT-8M and position transmitter SDAT-MHS

Datasheets → Internet: dasp

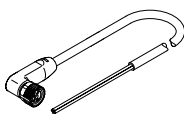
For DFLG

|  | For ø | Materials  | Part no.       | Type                 |
|--|-------|--|----------------|----------------------|
|  | 160   | Rail: Anodised wrought aluminium alloy<br>Screws: High-alloy stainless steel | <b>1553813</b> | <b>DASP-M4-160-A</b> |



#### Connecting cables NEBA, straight, M8 connection

|  | Electrical connection 1, connection technology | Electrical connection 2, connection technology | Electrical connection 2, number of pins/cores | Cable length | Part no.       | Type                         |
|--|--|--|---|--------------|----------------|------------------------------|
|  | M8x1 A-coded to EN 61076-2-104                 | Open end                                       | 4   | 2.5 m        | <b>8078227</b> | <b>NEBA-M8G4-U-2.5-N-LE4</b> |
|  |  |  |   | 5 m          | <b>8078228</b> | <b>NEBA-M8G4-U-5-N-LE4</b>   |

#### Connecting cables NEBA, angled, M8 connection

|  | Electrical connection 1, connection technology | Electrical connection 2, connection technology | Electrical connection 2, number of pins/cores | Cable length | Part no.       | Type                         |
|--|--|--|---|--------------|----------------|------------------------------|
|  | M8x1 A-coded to EN 61076-2-104                 | Open end                                       | 4   | 2.5 m        | <b>8078233</b> | <b>NEBA-M8W4-U-2.5-N-LE4</b> |
|  |  |  |   | 5 m          | <b>8078234</b> | <b>NEBA-M8W4-U-5-N-LE4</b>   |

## Accessories

| Ordering data – One-way flow control valves                                       |   |                 |              |               | Datasheets → Internet: grla |                   |  |
|---|---|-----------------|--------------|---------------|-----------------------------|-------------------|--|
|   | Connection  |                 | Material     | Part no.      | Type                        |                   |  |
|   | Thread  | For tubing O.D. |              |               |                             |                   |  |
| for DFCL – exhaust air  |   |                 |              |               |                             |                   |  |
|  | G1/8  | 4               | Metal design | <b>193143</b> | <b>GRLA-1/8-QS-4-D</b>      |                   |  |
|   |   | 6               |              | <b>193144</b> | <b>GRLA-1/8-QS-6-D</b>      |                   |  |
|   |   | 8               |              | <b>193145</b> | <b>GRLA-1/8-QS-8-D</b>      |                   |  |
|   | G1/4  | 6               |              | <b>193146</b> | <b>GRLA-1/4-QS-6-D</b>      |                   |  |
|   |   | 8               |              | <b>193147</b> | <b>GRLA-1/4-QS-8-D</b>      |                   |  |
|   |   | 10              |              | <b>193148</b> | <b>GRLA-1/4-QS-10-D</b>     |                   |  |
|   | G3/8  | 6               |              | <b>193149</b> | <b>GRLA-3/8-QS-6-D</b>      |                   |  |
|   |   | 8               |              | <b>193150</b> | <b>GRLA-3/8-QS-8-D</b>      |                   |  |
|   |   | 10              |              | <b>193151</b> | <b>GRLA-3/8-QS-10-D</b>     |                   |  |
|   | G1/2  | 12              |              | <b>193152</b> | <b>GRLA-1/2-QS-12-D</b>     |                   |  |
|   | for DFLG – exhaust air  |                 |              |               |                             |                   |  |
|   |  | G3/4            | 22           |               | <b>151180</b>               | <b>GRLA-3/4-B</b> |  |
|   |   |                 |              |               |                             |                   |  |