# Cylinders DSBG to ISO 15552

FESTO

New

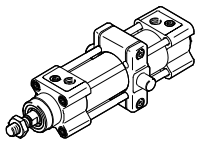
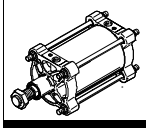
# Cylinders DSBG to ISO 15552

Key features

## At a glance

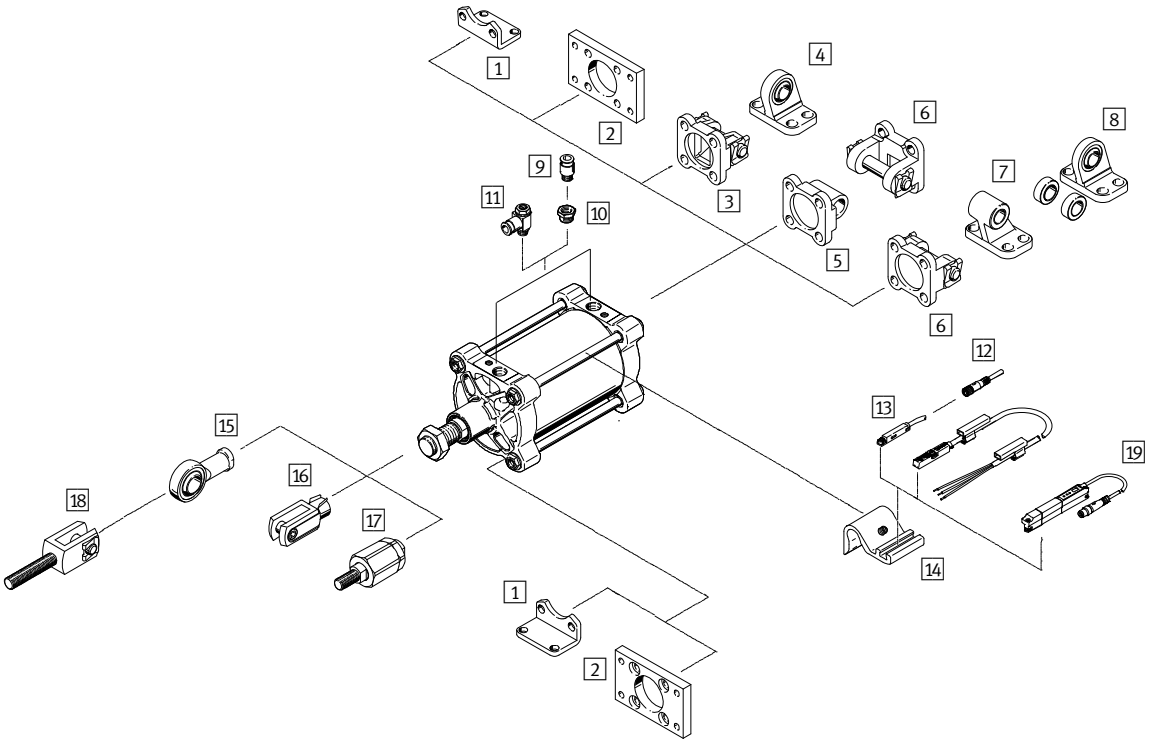
- Cylinders to ISO 15552 (corresponds to the withdrawn standards ISO 6431, DIN ISO 6431, VDMA 24 562, NF E 49 003.1 and UNI 10290)
- Sturdy tie rod design
- Double-acting
- For contactless position sensing
- EX4: for use in potentially explosive areas
- Extensive range of accessories makes it possible to install the cylinder virtually anywhere
- Choice of two cushioning types:
  - P cushioning: elastic cushioning rings/pads at both ends
  - PPV cushioning: pneumatic cushioning, adjustable at both ends
- The variants can be configured according to individual needs using a modular product system
- High flexibility thanks to the wide range of variants

**Variants from the modular product system**

| Symbol | Features | Description |
|---|---|---|
|  | T Through piston rod | For working at both ends, equal force in the forward and return stroke, for attaching external stops |
|  | R3 High corrosion protection | All external cylinder surfaces comply with corrosion resistance class 3 to Festo standard 940 070. The piston rod is made from corrosion and acid-resistant steel |
|  | T1 Heat-resistant seals | Temperature range 0 … +120 °C |
|  | T4 Heat-resistant seals | Temperature range 0 … +150 °C |
|  | …E Piston rod extension | 1 … 500 mm |
|  | …L Piston rod thread extension | 1 … 100 mm |
|  | M36 Piston rod thread | Piston rod thread version M36<br>(standard: precision thread M36x2) |
| | M42 Piston rod thread | Piston rod thread version M42<br>(standard: precision thread M42x2) |
| | M48 Piston rod thread | Piston rod thread version M48<br>(standard: precision thread M48x2) |
|  | V Central swivel mounting | Swivel mounting, clamped centrally between end caps |
| | …Y Swivel mounting position | Swivel mounting, position freely selectable, positive-locking screw connection |
|  | B Integrated stud bolts | • B1: At both ends<br>• B2: On the bearing cap<br>• B3: On the end cap |

# Cylinders DSBG to ISO 15552

Peripherals overview

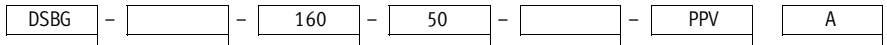



| Mounting components and accessories | | | | |
|---|---|---|---|---|
| | | For ∅ | Description | ➔ Page/Internet |
| 1 | Foot mounting HNG | 160 … 320 | For bearing and end cap, corresponds to MS1 to ISO 15552 | 15 |
| 2 | Flange mounting FNG | 160 … 320 | For bearing or end cap, corresponds to MF1/MF2 to ISO 15552 | 15 |
| 3 | Swivel flange SNG | 160, 200 | For end caps | 16 |
| 4 | Clevis foot LSNG | 160, 200 | With spherical bearing | 18 |
| 5 | Swivel flange SNGL | 160, 200 | For end cap, corresponds to MP2 to ISO 15552 | 17 |
| 6 | Swivel flange SNGB | 160 … 320 | For end cap, corresponds to MP2 to ISO 15552 | 16 |
| 7 | Clevis foot LN/LNG | 160 … 320 | For swivel flange SNGB | 18 |
| 8 | Clevis foot LSN | 160 … 320 | With spherical bearing | 18 |
| 9 | Push-in fitting QS | 160, 200 | For connecting compressed air tubing with standard O.D. | quick star |
| 10 | Reducing nipple NPFC | 160, 200 | For connecting QS fittings with thread G½ to cylinders with thread G¾ | 19 |
| | Reducing nipple D | 250, 320 | For connecting QS fittings with thread G½ to cylinders with thread G1 | |
| 11 | One-way flow control valve GRLA | 160, 200 | For regulating speed | grla |
| 12 | Connecting cable NEBU | 160 … 320 | – | 19 |
| 13 | Proximity sensor SME/SMT-8 | 160 … 320 | For sensing the piston position | 18 |
| 14 | Sensor bracket DASP | 160 … 320 | For proximity sensors SME/SMT-8 | 19 |
| 15 | Rod eye SGS | 160 … 320 | With spherical bearing | 18 |
| 16 | Rod clevis SG | 160 … 320 | Permits a swivelling movement of the cylinder in one plane | 18 |
| 17 | Self-aligning rod coupler FK | 160, 200 | For compensating radial and angular misalignments | 18 |
| 18 | Rod clevis SGA | 160, 200 | Suitable for spherical mounting of cylinders in conjunction with rod eye SGS | 18 |
| 19 | Position transmitter SDAT | 160, 200 | – Continuously senses the position of the piston<br>– Has an analogue output | 19 |
| – | Trunnion support LNZG | 160 … 320 | For mounting the cylinder in combination with central swivel mounting or swivel mounting position | 17 |

New

# Cylinders DSBG to ISO 15552

Type codes




| Type | |
|---|---|
| Double-acting | |
| DSBG | ISO cylinder |

| Central swivel mounting | |
|---|---|
| – | Without |
| V | Centrally clamped |

| Piston ∅ [mm] |
|---|

| Stroke [mm] |
|---|

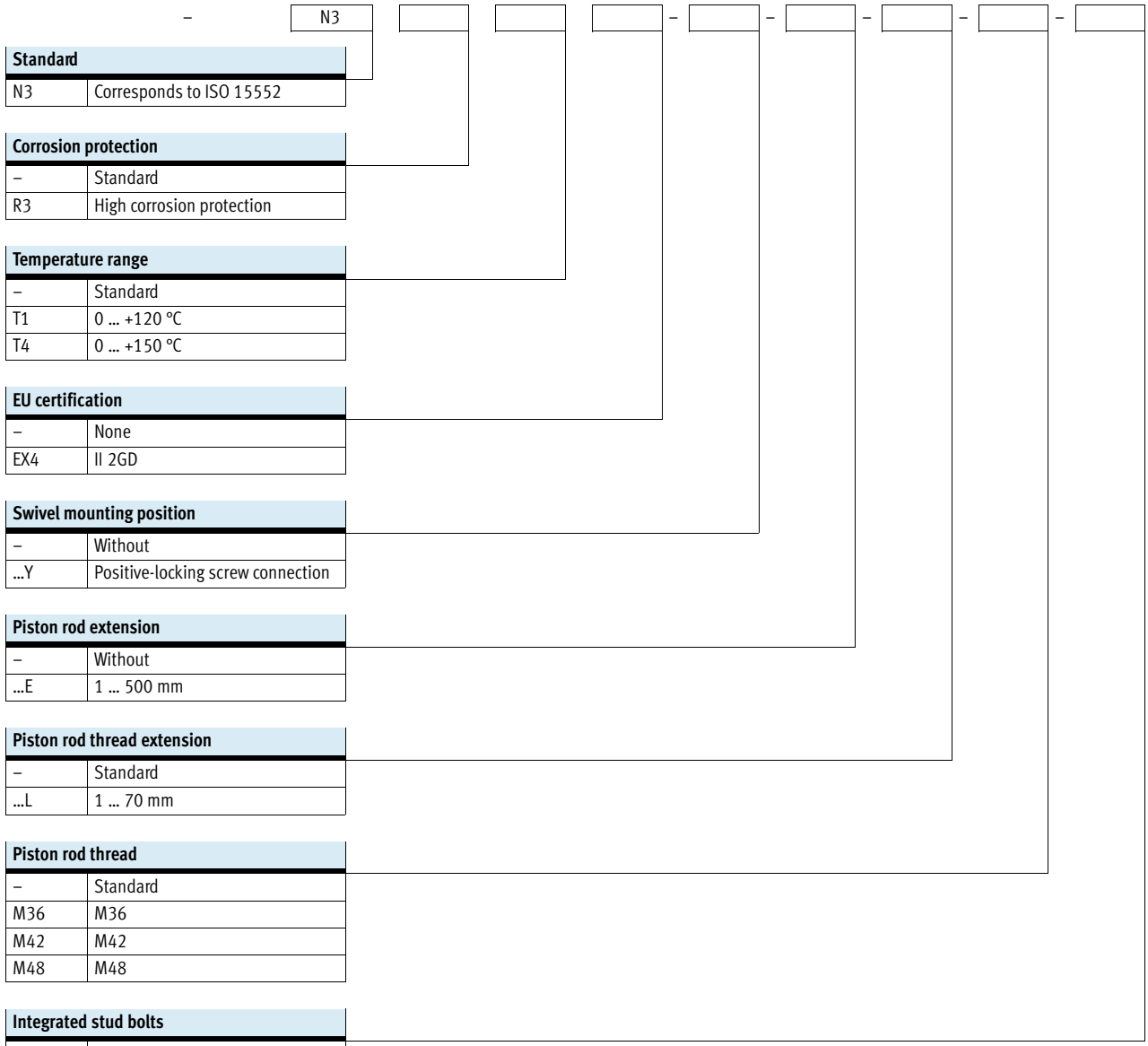
| Piston rod type | |
|---|---|
| – | Single-ended piston rod |
| T | Through piston rod |

| Cushioning | |
|---|---|
| P | Elastic cushioning rings/pads at both ends |
| PPV | Pneumatic cushioning, adjustable at both ends |

| Position sensing | |
|---|---|
| A | Via proximity sensor |

# Cylinders DSBG to ISO 15552

Type codes




| Standard | |
|---|---|
| N3 | Corresponds to ISO 15552 |

| Corrosion protection | |
|---|---|
| – | Standard |
| R3 | High corrosion protection |

| Temperature range | |
|---|---|
| – | Standard |
| T1 | 0 … +120 °C |
| T4 | 0 … +150 °C |

| EU certification | |
|---|---|
| – | None |
| EX4 | II 2GD |

| Swivel mounting position | |
|---|---|
| – | Without |
| …Y | Positive-locking screw connection |

| Piston rod extension | |
|---|---|
| – | Without |
| …E | 1 … 500 mm |

| Piston rod thread extension | |
|---|---|
| – | Standard |
| …L | 1 … 70 mm |

| Piston rod thread | |
|---|---|
| – | Standard |
| M36 | M36 |
| M42 | M42 |
| M48 | M48 |

| Integrated stud bolts | |
|---|---|
| – | Without |
| B1 | At both ends |
| B2 | On bearing cap |
| B3 | On end cap |

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# Cylinders DSBG to ISO 15552

Technical data

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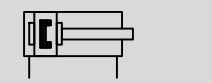
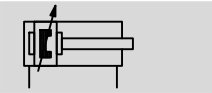
Function

P cushioning



PPV cushioning



Diameter
160 ... 320 mm

Stroke length
1 ... 2700 mm

www.festo.com

| General technical data | | | | | |
|---|---|---|---|---|---|
| Piston ∅ | | 160 | 200 | 250 | 320 |
| Design | | Piston/piston rod/cylinder barrel | | | |
| Mode of operation | | Double-acting | | | |
| Pneumatic connection | | G¾ | G¾ | G1 | G1 |
| Stroke[1] | | | | | |
| DSBG-... | [mm] | 1 ... 2700 | | 1 ... 2250 | |
| DSBG-...-...E | [mm] | 1 ... 2000 | | | |
| DSBG-...-...L | [mm] | 1 ... 2000 | | | |
| Cushioning | | | | | |
| DSBG-...-P | | Elastic cushioning rings/pads at both ends | | | |
| DSBG-...-PPV | | Pneumatic cushioning, adjustable at both ends | | | |
| Cushioning length | [mm] | 48 | | 55 | 65 |
| Position sensing | | Via proximity sensor | | | |
| Type of mounting | | Via internal thread/accessories | | | |
| Mounting position | | Any | | | |

1) In combination with the position sensing option, the minimum stroke is 10 mm

| Operating and environmental conditions | | |
|---|---|---|
| Operating medium | | Compressed air to ISO 8573-1:2010 [7:4:4] |
| Note on operating/pilot medium | | Lubricated operation possible (in which case lubricated operation will always be required) |
| Operating pressure | [bar] | 0.6 ... 10 |
| Ambient temperature[1] | | |
| DSBG-... | [°C] | –20 ... +80 |
| DSBG-...-T1 | [°C] | 0 ... +120 |
| DSBG-...-T4 | [°C] | 0 ... +150 |
| DSBC-...-EX4 | [°C] | –20 ... +60 |
| Corrosion resistance class CRC | | |
| DSBG-... | | 2[2] |
| DSBG-...-R3 | | 3[3] |

1) Note operating range of proximity sensors

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

3) Corrosion resistance class CRC 3 to Festo standard FN 940070
High corrosion stress. Outdoor exposure under moderate corrosive conditions. External visible parts with primarily functional requirements for the surface and which are in direct contact with a normal industrial environment.

# Cylinders DSBG to ISO 15552

Technical data

| ATEX[1] | |
|---|---|
| Explosion-proof ambient temperature | −20°C ≤ Ta ≤ +60°C |
| CE marking (see declaration of conformity) | To EU Explosion Protection Directive (ATEX) |
| ATEX category for gas | II 2G |
| Explosion ignition protection type for gas | c T4 |
| ATEX category for dust | II 2D |
| Explosion ignition protection type for dust | c T120°C |

1) Note the ATEX certification of the accessories.

| Forces [N] and impact energy [J] | | | | |
|---|---|---|---|---|
| Piston ∅ | 160 | 200 | 250 | 320 |
| Theoretical force at 6 bar, advancing | 12,064 | 18,850 | 29,452 | 48,255 |
| Theoretical force at 6 bar, retracting | 11,310 | 18,096 | 28,274 | 46,385 |
| Max. impact energy in the end positions | | | | |
| DSBG-... | 3.3 | 4.8 | 7.2 | 12.6 |
| DSBG-...-T1/-T4 | 2.3 | 4 | 4.2 | 6 |

Permissible impact velocity

$$v_{perm.} = \sqrt{\frac{2 \times E_{perm.}}{m_{Intrinsic} + m_{Load}}}$$

Maximum permissible load:

$$m_{Load} = \frac{2 \times E_{perm.}}{v^2} - m_{Intrinsic}$$

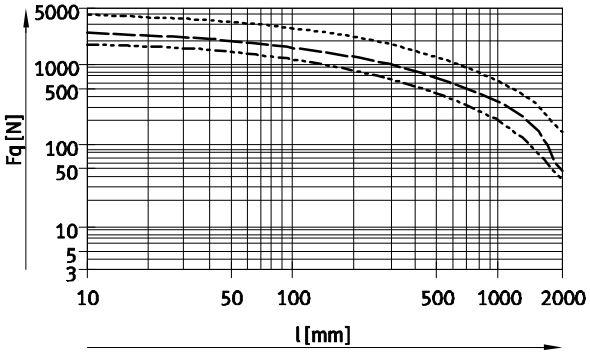
$v_{perm.}$ Permissible impact velocity
$E_{perm.}$ Maximum impact energy
$m_{Intrinsic}$ Moving mass (drive)
$m_{Load}$ Moving payload

| Weight [g] | | | | |
|---|---|---|---|---|
| Piston ∅ | 160 | 200 | 250 | 320 |
| DSBG-... | | | | |
| Product weight with 0 mm stroke | 11,751 | 15,493 | 29,313 | 50,231 |
| Additional weight per 10 mm stroke | 208 | 246 | 384 | 623 |
| Moving mass with 0 mm stroke | 4292 | 5348 | 9978 | 16,912 |
| Moving mass per 10 mm stroke | 97 | 97 | 157 | 249 |
| | | | | |
| DSBG-...-T | | | | |
| Product weight with 0 mm stroke | 13,487 | 17,356 | 31,979 | 54,775 |
| Additional weight per 10 mm stroke | 304 | 343 | 541 | 872 |
| Moving mass with 0 mm stroke | 6028 | 7210 | 12,643 | 21,455 |
| Moving mass per 10 mm stroke | 194 | 194 | 314 | 499 |

# Cylinders DSBG to ISO 15552

Technical data

## Max. lateral force Fq as a function of stroke length l

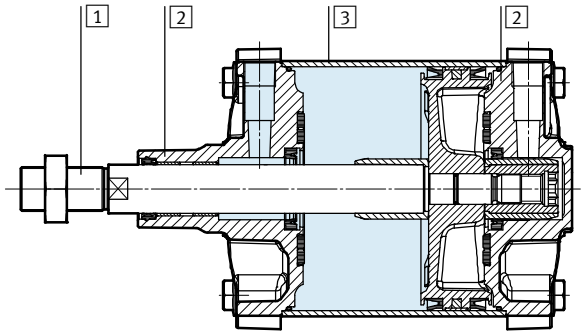




- ∅ 160/200
- ∅ 250
- ∅ 320

## Materials

Sectional view




| ISO cylinder | | |
|---|---|---|
| 1 | Piston rod, tie rod | |
| | DSBG-... | High-alloy steel |
| | DSBG-...-R3 | High-alloy stainless steel |
| 2 | Cover | Coated die-cast aluminium |
| 3 | Cylinder barrel | Anodised wrought aluminium alloy |
| – | Piston rod seal | |
| | DSBG-... | NBR |
| | DSBG-...-T1/-T4 | FPM |
| | Cushioning seal | |
| | DSBG-... | PUR |
| | DSBG-...-T1/-T4 | FPM |
| | Cushioning boss | |
| | DSBG-... | POM |
| | DSBG-...-T1/-T4 | Wrought aluminium alloy |
| – | Note on materials | |
| | DSBG-... | RoHS-compliant |
| | DSBG-...-T4 | Contains PWIS (paint-wetting impairment substances) |

# Cylinders DSBG to ISO 15552

Technical data

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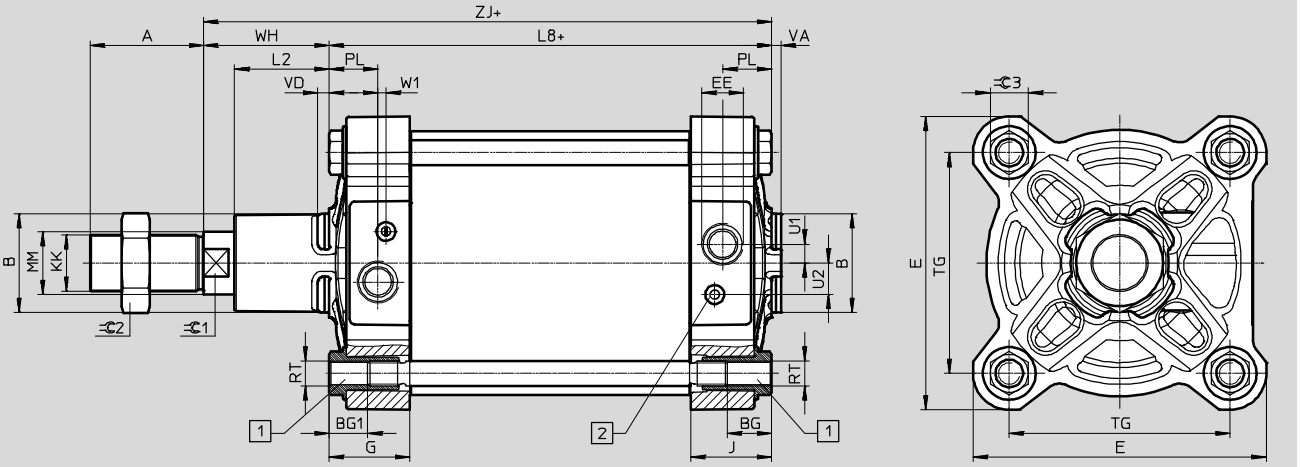
**Dimensions** Download CAD data ➔ **www.festo.com**




\+ = plus stroke length

1 Special outer hex nut with female thread for mounting attachments

2 Regulating screw for adjustable end-position cushioning (PPV)

| ∅ [mm] | A −0.5 | B ∅ d11 | BG min. | BG1 ±0.5 | E ±0.9 | EE | G | J |
|---|---|---|---|---|---|---|---|---|
| 160 | 72 | 65 | 24 | 25 | 186 | G¾ | 52 | 52 |
| 200 | 72 | 75 | 24 | 25 | 230 | G¾ | 48.2 | 50.2 |
| 250 | 84 | 90 | 25 | 26 | 284 | G1 | 53 | 53 |
| 320 | 96 | 110 | 28 | 29 | 347 | G1 | 60 | 60 |

| ∅ [mm] | KK DSBG-... | KK DSBG-...-M... | L2 | L8 | MM | PL | RT | TG ±1.1 | U1 |
|---|---|---|---|---|---|---|---|---|---|
| 160 | M36x2 | M36 | 60 | 180±1.1 | 40 | 31 | M16 | 140 | 12 |
| 200 | M36x2 | M36 | 70 | 180±1 | 40 | 30 | M16 | 175 | 12 |
| 250 | M42x2 | M42 | 80 | 200±1 | 50 | 32 | M20 | 220 | 25 |
| 320 | M48x2 | M48 | 90 | 220±2.2 | 63 | 37.5 | M24 | 270 | 25 |

| ∅ [mm] | U2 | VA −1 | VD | W1 | WH | ZJ ±1 | =C1 | =C2 | =C3 |
|---|---|---|---|---|---|---|---|---|---|
| 160 | 20 | 6 | 7.5 | 5 | 80±1.3 | 260 | 36 | 55 | $24_{h13}$ |
| 200 | 20 | 6 | 7.5 | 5 | 95±1.4 | 275 | 36 | 55 | $24_{h13}$ |
| 250 | 25 | 10 | 13.7 | 3 | 105±1.5 | 305 | 46 | 65 | $41_{h14}$ |
| 320 | 25 | 10 | 10.7 | 1.5 | 120±1.5 | 340 | 55 | 75 | $50_{h14}$ |

# Cylinders DSBG to ISO 15552

Technical data

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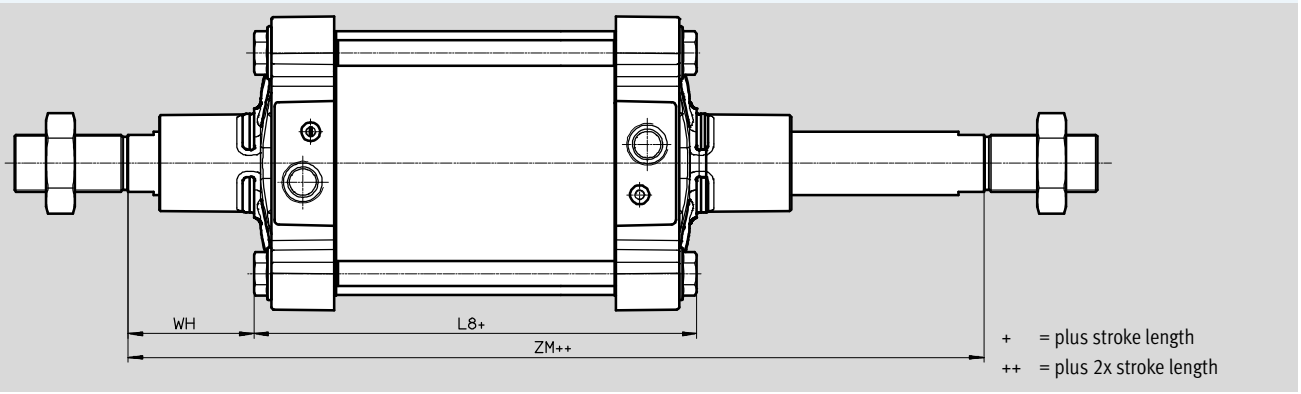
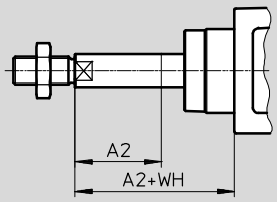
**Dimensions – Variants** Download CAD data ➔ **www.festo.com**

T – Through piston rod




| ∅ [mm] | L8 | WH | ZM |
|---|---|---|---|
| 160 | 180±1.1 | 80±1.3 | 342±1 |
| 200 | 180±1 | 95±1.4 | 372±1.2 |
| 250 | 200±1 | 105±1.5 | 410±1.6 |
| 320 | 220±2.2 | 120±1.5 | 462±1 |

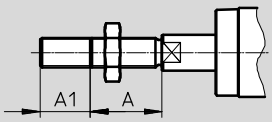
...E – Piston rod extension




Note

In combination with variant T, the piston rod is extended at one end.

...L – Piston rod thread extension




Note

In combination with variant T, the piston rod thread is extended at both ends.

| ∅ [mm] | A | A1 | | A2 | | WH |
|---|---|---|---|---|---|---|
| | | min. | max. | min. | max. | |
| 160 | 72 | 1 | 70 | 1 | 500 | 80±1.3 |
| 200 | 72 | 1 | 70 | 1 | 500 | 95±1.4 |
| 250 | 84 | 1 | 100 | 1 | 500 | 105±1.5 |
| 320 | 96 | 1 | 100 | 1 | 500 | 120±1.5 |

# Cylinders DSBG to ISO 15552

Technical data

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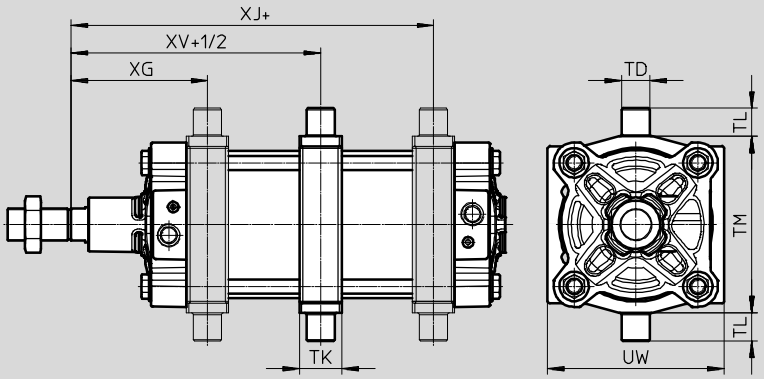
**Dimensions – Variants** Download CAD data ➔ **www.festo.com**

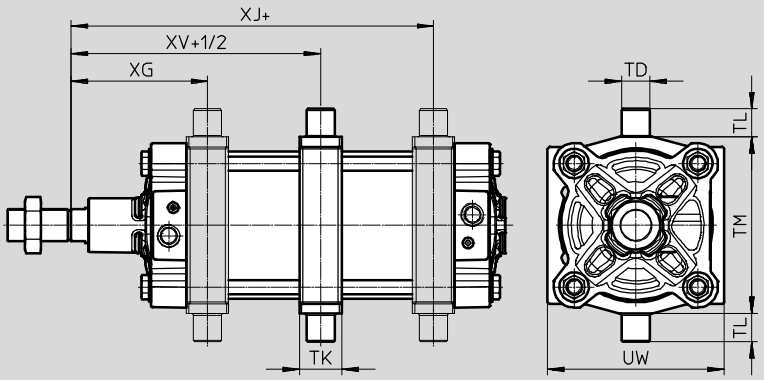
V – Central swivel mounting




\+ = plus stroke length
+½ = plus half stroke length

| ∅ [mm] | TD ∅ e8 | TK | TL h14 | TM h14 | UW | XG ±0.5 | XJ ±0.5 | XV |
|---|---|---|---|---|---|---|---|---|
| 160 | 32 | 48 | 32 | 200 | 200 | 157.5 | 182.5 | 170 |
| 200 | 32 | 48 | 32 | 250 | 240 | 169 | 200.5 | 185 |

...Y – Swivel mounting position




Note

The swivel mounting has a positive-locking screw connection.

\+ = plus stroke length
+½ = plus half stroke length

| ∅ [mm] | TD ∅ e8 | TK | TL h14 | TM h14 | UW | XG ±2.4 | XJ ±2.4 | XV ±2.4 |
|---|---|---|---|---|---|---|---|---|
| 250 | 40 | 60 | 40 | 320 | 319 | 198 | 209 | 205 |
| 320 | 50 | 70 | 50 | 400 | 385 | 226 | 233 | 230 |

# Cylinders DSBG to ISO 15552

Technical data

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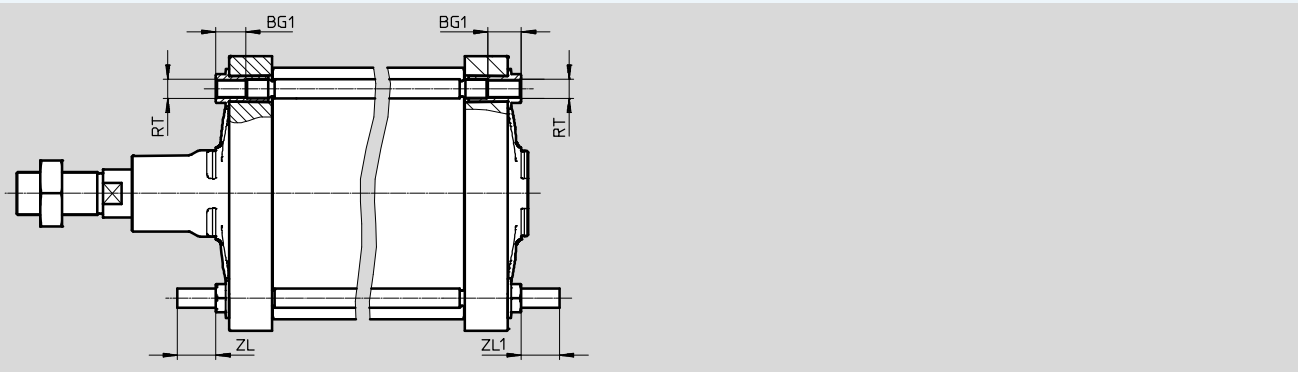
**Dimensions – Variants** Download CAD data ➔ **www.festo.com**

B1/B2/B3 – Integrated stud bolt




| ∅ [mm] | BG min. | BG1 ±0.5 | RT | ZL ±0.5 | ZL1 [1)] |
|---|---|---|---|---|---|
| 160 | 24 | 25 | M16 | 32 | 32 |
| 200 | 24 | 25 | M16 | 32 | 32 |
| 250 | 25 | 26 | M20 | 40 | 40 |
| 320 | 28 | 29 | M24 | 50 | 50 |

1) Tolerances depending on variant:
B1: ZL1 = +1/−2; B3: ZL1 = ±0.5

# Cylinders DSBG to ISO 15552

Technical data

| Ordering data | | | | | | |
|---|---|---|---|---|---|---|
| Piston ∅ [mm] | Stroke [mm] | With PPV cushioning Part No. | Type | | With P cushioning Part No. | Type |
| 160 | 25 | **2029462** | **DSBG-160-25-PPVA-N3** | | **2536747** | **DSBG-160-25-P-N3** |
| | 40 | **2029463** | **DSBG-160-40-PPVA-N3** | | **2536748** | **DSBG-160-40-P-N3** |
| | 50 | **2029464** | **DSBG-160-50-PPVA-N3** | | **2536749** | **DSBG-160-50-P-N3** |
| | 80 | **2029465** | **DSBG-160-80-PPVA-N3** | | **2536750** | **DSBG-160-80-P-N3** |
| | 100 | **2029466** | **DSBG-160-100-PPVA-N3** | | **2536751** | **DSBG-160-100-P-N3** |
| | 125 | **2029467** | **DSBG-160-125-PPVA-N3** | | **2536752** | **DSBG-160-125-P-N3** |
| | 160 | **2029468** | **DSBG-160-160-PPVA-N3** | | **2536753** | **DSBG-160-160-P-N3** |
| | 200 | **2029469** | **DSBG-160-200-PPVA-N3** | | **2536754** | **DSBG-160-200-P-N3** |
| | 250 | **2029470** | **DSBG-160-250-PPVA-N3** | | **2536755** | **DSBG-160-250-P-N3** |
| | 320 | **2029471** | **DSBG-160-320-PPVA-N3** | | **2536756** | **DSBG-160-320-P-N3** |
| | 400 | **2029472** | **DSBG-160-400-PPVA-N3** | | **2536758** | **DSBG-160-400-P-N3** |
| | 500 | **2029473** | **DSBG-160-500-PPVA-N3** | | **2536759** | **DSBG-160-500-P-N3** |
| | 1 … 2700[1)] | **2035926** | **DSBG-160-…-PPVA-N3** | | **2537196** | **DSBG-160-…-P-N3** |
| | | | | | | |
| 200 | 25 | **2390139** | **DSBG-200-25-PPVA-N3** | | **2537448** | **DSBG-200-25-P-N3** |
| | 40 | **2390140** | **DSBG-200-40-PPVA-N3** | | **2537449** | **DSBG-200-40-P-N3** |
| | 50 | **2390141** | **DSBG-200-50-PPVA-N3** | | **2537450** | **DSBG-200-50-P-N3** |
| | 80 | **2390142** | **DSBG-200-80-PPVA-N3** | | **2537451** | **DSBG-200-80-P-N3** |
| | 100 | **2390143** | **DSBG-200-100-PPVA-N3** | | **2537452** | **DSBG-200-100-P-N3** |
| | 125 | **2390144** | **DSBG-200-125-PPVA-N3** | | **2537454** | **DSBG-200-125-P-N3** |
| | 160 | **2390145** | **DSBG-200-160-PPVA-N3** | | **2537455** | **DSBG-200-160-P-N3** |
| | 200 | **2390146** | **DSBG-200-200-PPVA-N3** | | **2537456** | **DSBG-200-200-P-N3** |
| | 250 | **2390147** | **DSBG-200-250-PPVA-N3** | | **2537457** | **DSBG-200-250-P-N3** |
| | 320 | **2390148** | **DSBG-200-320-PPVA-N3** | | **2537458** | **DSBG-200-320-P-N3** |
| | 400 | **2390149** | **DSBG-200-400-PPVA-N3** | | **2537459** | **DSBG-200-400-P-N3** |
| | 500 | **2390150** | **DSBG-200-500-PPVA-N3** | | **2537460** | **DSBG-200-500-P-N3** |
| | 1 … 2700[1)] | **2389803** | **DSBG-200-…-PPVA-N3** | | **2537445** | **DSBG-200-…-P-N3** |
| | | | | | | |
| 250 | 1 … 2250[1)] | **2865078** | **DSBG-250-…-PPVA-N3** | | **2865145** | **DSBG-250-…-P-N3** |
| | | | | | | |
| 320 | 1 … 2250[1)] | **3150987** | **DSBG-320-…-PPVA-N3** | | **3178601** | **DSBG-320-…-P-N3** |

1) In combination with the position sensing option, the minimum stroke is 10 mm.

Note

Other variants in the modular product system ➔ 14

# Cylinders DSBG to ISO 15552

Ordering data – Modular products

FESTO

**Ordering table**

| | Size | | 160 | 200 | 250 | 320 | Condi-tions | Code | Enter code |
|---|---|---|---|---|---|---|---|---|---|
| M | Module No. | | **2036032** | **2344936** | **2732003** | **2776472** | | | |
| | Function | | ISO cylinder, double-acting, based on ISO 15552 | | | | | **DSBG** | DSBG |
| O | Central swivel mounting | | Without | | | | | | |
| | | | Centrally clamped | | – | | | **-V** | |
| M | Piston ∅ | [mm] | 160 | 200 | 250 | 320 | | **-...** | |
| | Stroke | [mm] | 1 ... 2700 | | 1 ... 2250 | | 1 | **-...** | |
| O | Piston rod type | | Single-ended piston rod | | | | | | |
| | | | Through piston rod | | | | | **-T** | |
| M | Cushioning | | Elastic cushioning rings/pads at both ends | | | | | **-P** | |
| | | | Pneumatic cushioning, adjustable at both ends | | | | | **-PPV** | |
| O | Position sensing | | Without | | | | | | |
| | | | Via proximity sensor | | | | | **A** | |
| | Standard | | Corresponds to ISO 15552 | | | | | **-N3** | N3 |
| | Corrosion protection | | Standard | | | | | | |
| | | | High corrosion protection | | | | 2 | **R3** | |
| | Temperature range | | Standard | | | | | | |
| | | [°C] | Heat-resistant seals up to max. 120 | | | | | **T1** | |
| | | [°C] | 0 ... +150 | | – | | | **T4** | |
| | EU certification | | None | | | | | | |
| | | | II 2GD | | | | 3 | **EX4** | |
| | Swivel mounting position (positive-locking) | [mm] | Without | | | | | | |
| | | | – | | 198 ... 2459 | 226 ... 2483 | | **-...Y** | |
| | Piston rod extension | [mm] | Without | | | | | | |
| | | | 1 ... 500 | | | | 4 | **-...E** | |
| | Piston rod thread extension | [mm] | Without | | | | | | |
| | | | 1 ... 70 | | 1 ... 100 | | 4 | **-...L** | |
| | Piston rod thread | | Standard | | | | | | |
| | | | M36 | | – | | | **-M36** | |
| | | | – | | M42 | – | | **-M42** | |
| | | | – | | | M48 | | **-M48** | |
| | Integrated stud bolts | | Without | | | | | | |
| | | | At both ends | | | | | **-B1** | |
| | | | On bearing cap | | | | | **-B2** | |
| | | | On end cap | | | | | **-B3** | |

1 ... In combination with the position sensing option A, the minimum stroke is 10 mm
2 **R3** Not with V, ...Y
3 **EX4** Not with V, P, T1, T4, B1, B2, B3
4 **...E, ...L** Only up to strokes of 2000 mm

M Mandatory data
O Options

**Transfer order code**

| | DSBG | – | | – | | – | | – | | – | | – | N3 | | | | – | | – | | – | | – | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

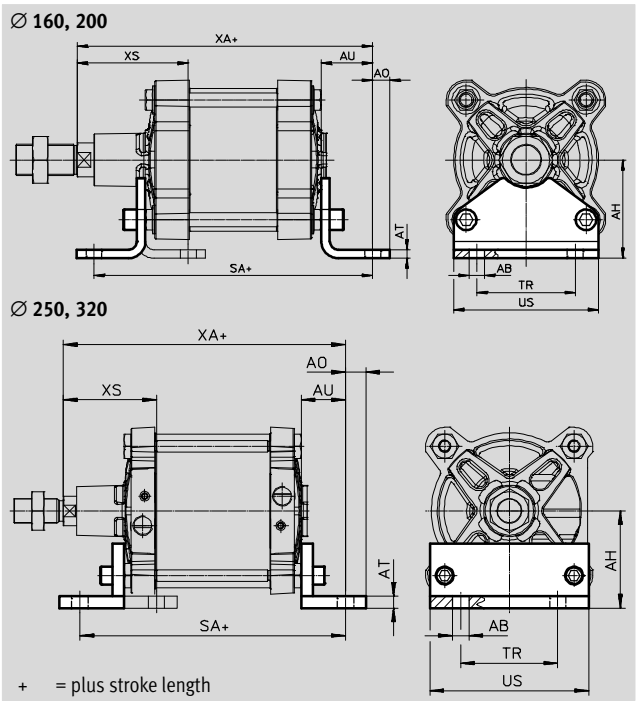
# Standard cylinders DSBG, to ISO 15552

Accessories

FESTO

**Foot mounting HNG**

Material:
Galvanised steel
Free of copper and PTFE



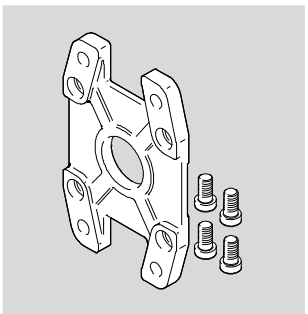

**Dimensions and ordering data**

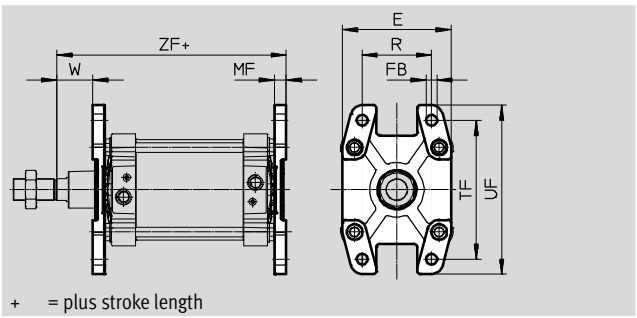
| For ∅ [mm] | AB ∅ | AH | AO | AT | AU | SA | TR | US | XA | XS | CRC[1] | Weight [g] | Part No. | Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 160 | 18.5 | 115 | 20 | 10 | 60 | 300 | 115 | 169 | 320 | 130 | 2 | 3931 | **34476** | **HNG-160** |
| 200 | 24 | 135 | 30 | 12 | 70 | 320 | 135 | 214 | 345 | 153 | 2 | 6896 | **34477** | **HNG-200** |
| 250 | 28 | 165 | 35 | 20 | 75 | 350 | 165 | 270 | 380 | 160 | 2 | 17084 | **157510** | **HNG-250** |
| 320 | 35 | 200 | 40 | 25 | 85 | 390 | 200 | 340 | 425 | 180 | 2 | 29968 | **157511** | **HNG-320** |

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

**Flange mounting FNG**

Material:
Painted spheroidal graphite cast iron
Free of copper and PTFE
RoHS-compliant






**Dimensions and ordering data**

| For ∅ [mm] | E | FB ∅ H13 | MF | R | TF | UF | W | ZF | CRC[1] | Weight [g] | Part No. | Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 160 | 180 | 18 | 20 | 115 | 230 | 280 | 60 | 280 | 1 | 3550 | **34478** | **FNG-160** |
| 200 | 220 | 22 | 25 | 135 | 270 | 320 | 70 | 300 | 1 | 5321 | **34479** | **FNG-200** |
| 250 | 270 | 26 | 25 | 165 | 330 | 390 | 80 | 330 | 1 | 8657 | **157508** | **FNG-250** |
| 320 | 340 | 33 | 30 | 200 | 400 | 470 | 90 | 370 | 1 | 15109 | **157509** | **FNG-320** |

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

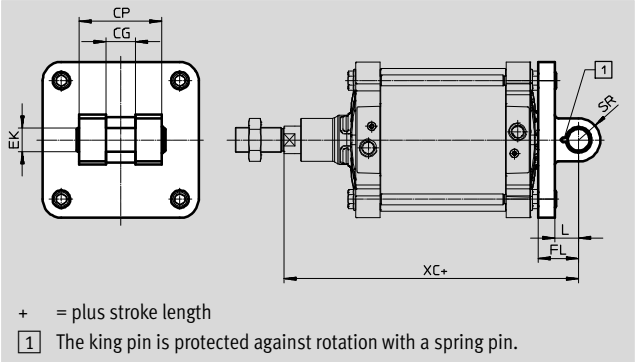
# Standard cylinders DSBG, to ISO 15552

Accessories

FESTO

### Swivel flange SNG

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




\+ = plus stroke length
1 The king pin is protected against rotation with a spring pin.

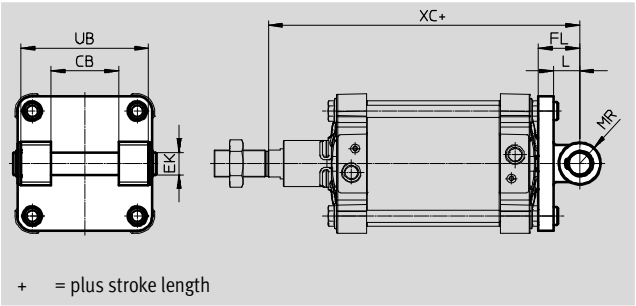
**Dimensions and ordering data**

| For ∅ [mm] | CG H14 | CP d12 | EK ∅ F7 h9 | FL ±0.2 | L | SR max. | XC | CRC[1] | Weight [g] | Part No. | Type |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 160 | 43 | 122 | 35 | 55 | 35 | 32 | 315 | 2 | 3577 | **152597** | **SNG-160** |
| 200 | 43 | 122 | 35 | 60 | 35 | 32 | 335 | 2 | 5160 | **152598** | **SNG-200** |

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

### Swivel flange SNGB

Material:
∅160: Die-cast aluminium
∅200: Galvanised steel
∅250/320: Spheroidal graphite cast iron
Free of copper and PTFE
RoHS-compliant




\+ = plus stroke length

**Dimensions and ordering data**

| For ∅ [mm] | CB ∅ H14 | CD ∅ E10 | FL ±0.2 | L | MR | UB h14 | XC | CRC[1] | Weight [g] | Part No. | Type |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 160 | 90 | 30 | 55 | 37 | 30 | 170 | 315 | 2 | 3438 | **34547** | **SNGB-160** |
| 200 | 90 | 30 | 60 | 40 | 25 | 170 | 335 | 2 | 10013 | **562455** | **SNGB-200-B** |
| 250 | 110 | 40 | 70 | 47 | 40 | 200 | 375 | 2 | 16141 | **157512** | **SNGB-250** |
| 320 | 120 | 45 | 80 | 52 | 45 | 220 | 420 | 2 | 26636 | **157513** | **SNGB-320** |

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

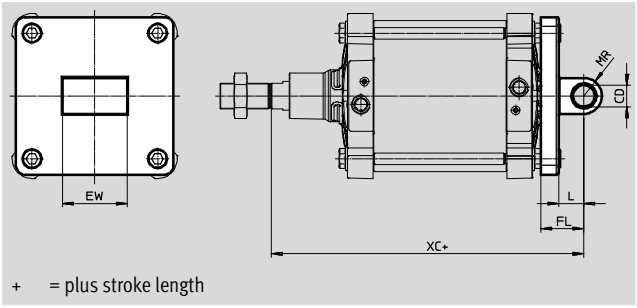
# Standard cylinders DSBG, to ISO 15552

Accessories

FESTO

### Swivel flange SNGL

Material:
Die-cast aluminium
Free of copper and PTFE




\+ = plus stroke length

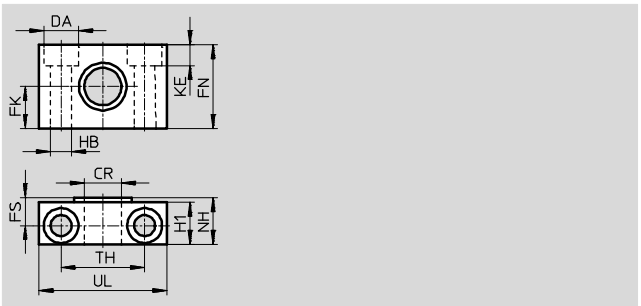
**Dimensions and ordering data**

| For ∅ [mm] | CD ∅ H9 | EW −0.5/−1.2 | FL ±0.2 | L | MR | XC | CRC[1] | Weight [g] | Part No. | Type |
|---|---|---|---|---|---|---|---|---|---|---|
| 160 | 30 | 90 | 55 | 35 | 25 | 315 | 2 | 2358 | **151534** | **SNGL-160** |
| 200 | 30 | 90 | 60 | 35 | 25 | 335 | 2 | 3713 | **151535** | **SNGL-200** |

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

### Trunnion support LNZG

Material:
Mounting: Galvanised steel
Plain bearing: Plastic
Free of copper and PTFE
RoHS-compliant




**Dimensions and ordering data**

| For ∅ [mm] | CR ∅ | DA ∅ H13 | FK ∅ ±0.2 | FN | FS | H1 | HB ∅ H13 | KE |
|---|---|---|---|---|---|---|---|---|
| 160, 200 | $32^{D11}$ | 26 | 30 | 60 | 22.5 | 36 | 18 | 17 |
| 250 | $40^{G7}$ | 33 | 35 | 70 | 27.5 | 45 | 22 | 21.5 |
| 320 | $50^{G7}$ | 40 | 40 | 80 | 32.5 | 55 | 26 | 25.5 |

| For ∅ [mm] | NH | TH ±0.3 | UL | CRC[1] | Weight [g] | Part No. | Type |
|---|---|---|---|---|---|---|---|
| 160, 200 | 40 | 60 | 92 | 2 | 659 | **35780** | **LNZG-160/200** |
| 250 | 50 | 90 | 140 | 2 | 2218 | **157516** | **LNZG-250** |
| 320 | 60 | 100 | 150 | 2 | 2934 | **157517** | **LNZG-320** |

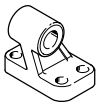
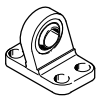
1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial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

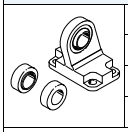
# Standard cylinders DSBG, to ISO 15552

Accessories

FESTO

**Ordering data – Mounting components** Technical data ➔ Internet: mounting component

| Designation | For ∅ | Part No. | Type |
|---|---|---|---|
| Clevis foot LN/LNG | | | |
|  | 160 | **9037** | **LN-160** |
| | 200 | **33898** | **LNG-200** |
| | 250 | **9039** | **LN-250** |
| | 320 | **9040** | **LN-320** |
| Clevis foot LSNG | | | |
|  | 160 | **152599** | **LSNG-160** |
| | 200 | **152600** | **LSNG-200** |

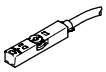
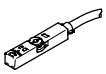
| Designation | For ∅ | Part No. | Type |
|---|---|---|---|
| Clevis foot LSN | | | |
|  | 160 | **6988** | **LSN-160** |
| | 200 | **6989** | **LSN-200** |
| | 250 | **6990** | **LSN-250** |
| | 320 | **6991** | **LSN-320** |

**Ordering data – Piston rod attachments** Technical data ➔ Internet: piston rod attachment

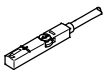
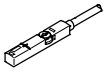
| Designation | For ∅ | Part No. | Type |
|---|---|---|---|
| Rod eye SGS | | | |
|  | 160, 200 | **10775** | **SGS-M36x2** |
| | 250 | **10776** | **SGS-M42x2** |
| | 320 | **10777** | **SGS-M48x2** |
| Rod eye SG | | | |
|  | 160, 200 | **9581** | **SG-M36x2** |
| | 250 | **9582** | **SG-M42x2** |
| | 320 | **9583** | **SG-M48x2** |

| Designation | For ∅ | Part No. | Type |
|---|---|---|---|
| Rod clevis SGA | | | |
|  | 160, 200 | **10771** | **SGA-M36x2** |
| Self-aligning rod coupler FK | | | |
|  | 160, 200 | **10746** | **FK-M36x2** |

**Ordering data – Proximity sensors for T-slot, magneto-resistive** Technical data ➔ Internet: smt

| | Type of mounting | Switching output | Electrical connection | Cable length [m] | Part No. | Type |
|---|---|---|---|---|---|---|
| N/O contact | | | | | | |
|  | Insertable in the slot from above, flush with the cylinder profile, short design | PNP | Cable, 3-wire | 2.5 | **574335** | **SMT-8M-A-PS-24V-E-2,5-OE** |
| | | | Plug connector M8x1, 3-pin | 0.3 | **574334** | **SMT-8M-A-PS-24V-E-0,3-M8D** |
| | | | Plug connector 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 connector 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 the 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 | Switching output | Electrical connection | Cable length [m] | Part No. | Type |
|---|---|---|---|---|---|---|
| N/O contact | | | | | | |
|  | Insertable in the slot from above, flush with the cylinder profile | Contacting | Cable, 3-wire | 2.5 | **543862** | **SME-8M-DS-24V-K-2,5-OE** |
| | | | | 5.0 | **543863** | **SME-8M-DS-24V-K-5,0-OE** |
| | | | Cable, 2-wire | 2.5 | **543872** | **SME-8M-ZS-24V-K-2,5-OE** |
| | | | Plug connector M8x1, 3-pin | 0.3 | **543861** | **SME-8M-DS-24V-K-0,3-M8D** |
| N/C contact | | | | | | |
|  | Insertable in the slot from above, flush with the cylinder profile | Contacting | Cable, 3-wire | 7.5 | **546799** | **SME-8M-DO-24V-K-7,5-OE** |

# Standard cylinders DSBG, to ISO 15552

Accessories

FESTO

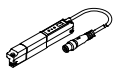
## Position transmitter

The position transmitter continuously senses the position of the piston.

It has an analogue output with an output signal in proportion to the piston position.

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

Technical data ➔ Internet: position transmitter

| | For ∅ | Position measuring range | Analogue output [mA] | Type of mounting | Electrical connection | Cable length [m] | Part No. | Type |
|---|---|---|---|---|---|---|---|---|
|  | 160, 200 | 0 … 50 | 0 … 20 | Insertable in the slot from above | Plug connector M8x1, 4-pin, in-line | 0.3 | **1531265** | **SDAT-MHS-M50-1L-SA-E-0.3-M8** |
| | | 0 … 80 | | | | | **1531266** | **SDAT-MHS-M80-1L-SA-E-0.3-M8** |
| | | 0 … 100 | | | | | **1531267** | **SDAT-MHS-M100-1L-SA-E-0.3-M8** |
| | | 0 … 125 | | | | | **1531268** | **SDAT-MHS-M125-1L-SA-E-0.3-M8** |
| | | 0 … 160 | | | | | **1531269** | **SDAT-MHS-M160-1L-SA-E-0.3-M8** |

**Ordering data – Connecting cables**

Technical data ➔ Internet: nebu

| | Electrical connection, left | Electrical connection, right | Cable length [m] | Part No. | Type |
|---|---|---|---|---|---|
|  | Straight socket, M8x1, 3-pin | Cable, open end, 3-wire | 2.5 | **541333** | **NEBU-M8G3-K-2.5-LE3** |
| | | | 5 | **541334** | **NEBU-M8G3-K-5-LE3** |
| | Straight socket, M12x1, 5-pin | Cable, open end, 3-wire | 2.5 | **541363** | **NEBU-M12G5-K-2.5-LE3** |
| | | | 5 | **541364** | **NEBU-M12G5-K-5-LE3** |
|  | Angled socket, M8x1, 3-pin | Cable, open end, 3-wire | 2.5 | **541338** | **NEBU-M8W3-K-2.5-LE3** |
| | | | 5 | **541341** | **NEBU-M8W3-K-5-LE3** |
| | Angled socket, M12x1, 5-pin | Cable, open end, 3-wire | 2.5 | **541367** | **NEBU-M12W5-K-2.5-LE3** |
| | | | 5 | **541370** | **NEBU-M12W5-K-5-LE3** |

**Ordering data – Sensor bracket for proximity sensor SME/SMT-8**

| | For ∅ | Materials | Part No. | Type |
|---|---|---|---|---|
|  | 160, 200 | Rail: Anodised wrought aluminium alloy<br>Screws: High-alloy stainless steel | **1553813** | **DASP-M4-160-A** |
| | 250 | | **1456781** | **DASP-M4-250-A** |
| | 320 | | **3015256** | **DASP-M4-320-A** |

**Ordering data – Reducing nipple**

| | For ∅ | Description | Part No. | Type |
|---|---|---|---|---|
|  | Reducing nipple NPFC | | | |
| | 160, 200 | For connecting QS fittings with thread G½ to cylinders with thread G¾ | **8030313** | **NPFC-R-G34-G12-MF** |
| | Reducing nipple D | | | |
| | 250, 320 | For connecting QS fittings with thread G½ to cylinders with thread G1 | **197634** | **D-½I-1A** |