

Cylinders DSBG to ISO 15552

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Cylinders DSBG to ISO 15552

Key features



At a glance



DIN








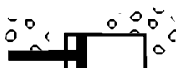
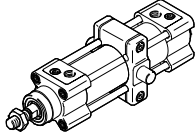
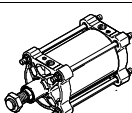


- Cylinders to ISO 15552 (corresponds to the withdrawn standards ISO 6431, DIN ISO 6431, VDMA 24 562, NF E 49 003.1 and UNI 10290)

- 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

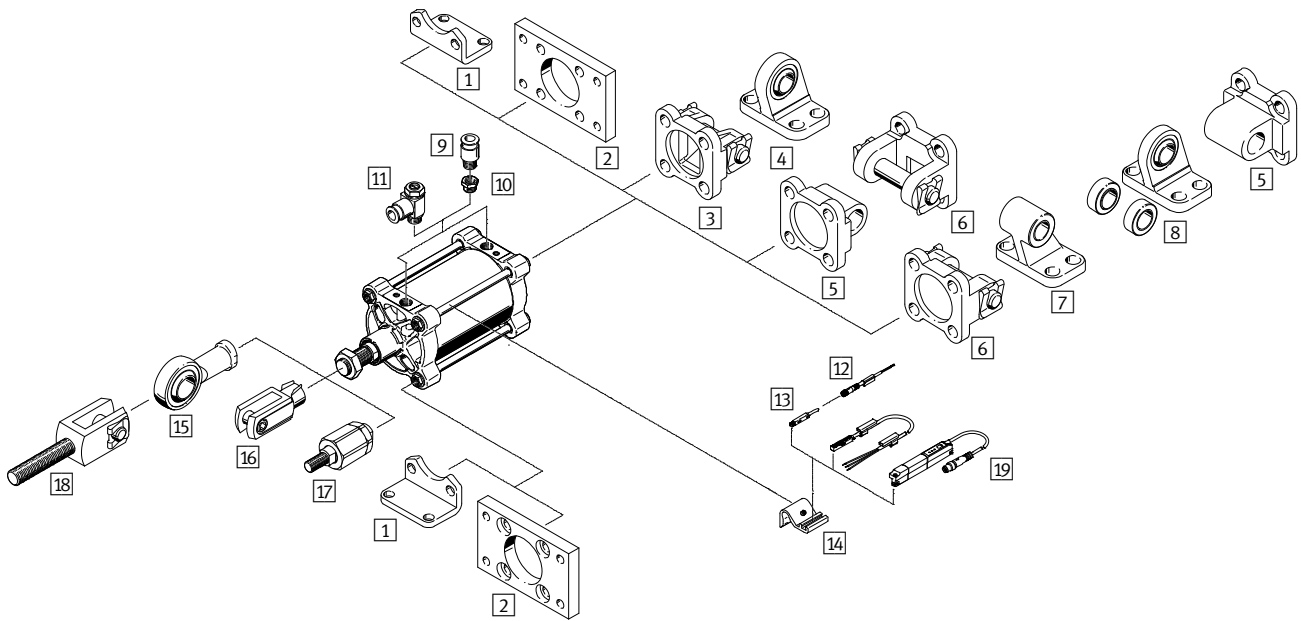
- Choice of two cushioning types:
 - P cushioning: elastic cushioning rings/pads at both ends
 - PPV cushioning: pneumatic cushioning, adjustable at both ends

- 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 (standard: precision thread M36x2) |
| | M42 Piston rod thread | Piston rod thread version M42 (standard: precision thread M42x2) |
| | M48 Piston rod thread | Piston rod thread version M48 (standard: precision thread M48x2) |
|  | A6 Wiper seal variant | Metal wiper seal: The cylinder is fitted with a hard-chrome plated piston rod and metal wiper seal which scrapes off hard particles (e.g. welding spatter) that stick to the piston rod. For use in welding systems, for example |
|  | V Central swivel mounting | <ul style="list-style-type: none"> • For piston Ø 160/200 • Swivel mounting, clamped centrally between the end caps • Position can be moved at any time |
| | ...Y Swivel mounting position | <ul style="list-style-type: none"> • For piston Ø 250/320 • Swivel mounting, position freely selectable, positive-locking screw connection • Position cannot be changed subsequently |
|  | B Integrated stud bolts | <ul style="list-style-type: none"> • B1: At both ends • B2: On the bearing cap • B3: On the end cap |

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Peripherals overview



| Mounting components and accessories | | | |
|-------------------------------------|-------------|--|---------------------|
| | For Ø | Description | → Page/ Internet |
| 1 | 160 ... 320 | Foot mounting HNG For bearing and end cap, corresponds to MS1 to ISO 15552 | 15 |
| 2 | 160 ... 320 | Flange mounting FNG For bearing or end cap, corresponds to MF1/MF2 to ISO 15552 | 15 |
| 3 | 160, 200 | Swivel flange SNG For end caps | 16 |
| 4 | 160, 200 | Clevis foot LSNG With spherical bearing | 18 |
| 5 | 160, 200 | Swivel flange SNGL For end cap, corresponds to MP2 to ISO 15552 | 17 |
| 6 | 160 ... 320 | Swivel flange SNGB For end cap, corresponds to MP2 to ISO 15552 | 16 |
| 7 | 160 ... 320 | Clevis foot LN/LNG For swivel flange SNGB | 18 |
| 8 | 160 ... 320 | Clevis foot LSN With spherical bearing | 18 |
| 9 | 160, 200 | Push-in fitting QS For connecting compressed air tubing with standard O.D. | 18 |
| 10 | 160, 200 | Reducing nipple NPFC For connecting QS fittings with thread G $\frac{3}{2}$ to cylinders with thread G $\frac{3}{4}$ | 18 |
| | 250, 320 | Reducing nipple D For connecting QS fittings with thread G $\frac{3}{2}$ to cylinders with thread G1 | |
| 11 | 160, 200 | One-way flow control valve GRLA For regulating speed | gla |
| 12 | 160 ... 320 | Connecting cable NEBU - | 19 |
| 13 | 160 ... 320 | Proximity sensor SME/SMT-8 For sensing the piston position | 19 |
| 14 | 160 ... 320 | Sensor bracket DASP For proximity sensors SME/SMT-8 | 20 |
| 15 | 160 ... 320 | Rod eye SGS With spherical bearing | 18 |
| 16 | 160 ... 320 | Rod clevis SG Permits a swivelling movement of the cylinder in one plane | 18 |
| 17 | 160, 200 | Self-aligning rod coupler FK For compensating radial and angular misalignments | 18 |
| 18 | 160, 200 | Rod clevis SGA Suitable for spherical mounting of cylinders in conjunction with rod eye SGS | 18 |
| 19 | 160, 200 | Position transmitter SDAT - Continuously senses the position of the piston - Has an analogue output | 20 |
| - | 160 ... 320 | Trunnion support LNZG For mounting the cylinder in combination with central swivel mounting or swivel mounting position | 17 |

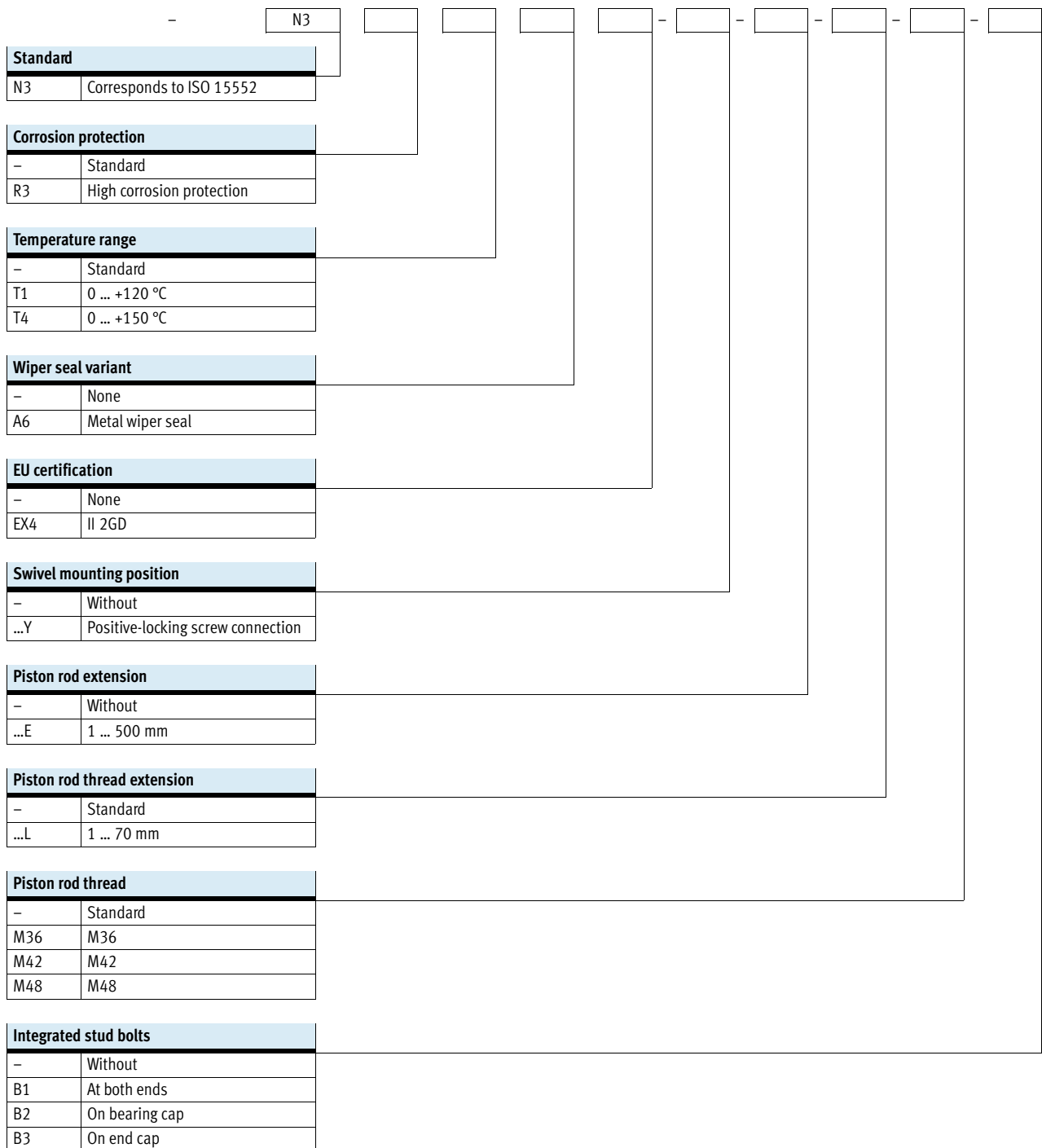
Cylinders DSBG to ISO 15552

Type codes

| | | | | | | | | | | | | | | |
|--------------------------------|---|------|---|--|---|-----|---|----|---|--|---|-----|--|---|
| | | DSBG | - | | - | 160 | - | 50 | - | | - | PPV | | A |
| Type | | | | | | | | | | | | | | |
| Double-acting | | | | | | | | | | | | | | |
| DSBG | ISO cylinder | | | | | | | | | | | | | |
| Central swivel mounting | | | | | | | | | | | | | | |
| - | Without | | | | | | | | | | | | | |
| V | Centrally clamped | | | | | | | | | | | | | |
| Piston Ø [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

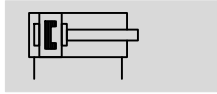


Cylinders DSBG to ISO 15552

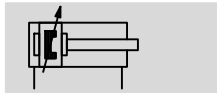
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Technical data

Function
P cushioning



PPV cushioning



DIN



⌀ - Diameter
160 ... 320 mm

— - Stroke length
1 ... 2700 mm

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| General technical data | | | | | |
|------------------------|---|-----------------|-----------------|------------|-----|
| Piston Ø | | 160 | 200 | 250 | 320 |
| Design | Piston/piston rod/cylinder barrel | | | | |
| Mode of operation | Double-acting | | | | |
| Pneumatic connection | | G $\frac{3}{4}$ | G $\frac{3}{4}$ | 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.

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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 Ø | 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

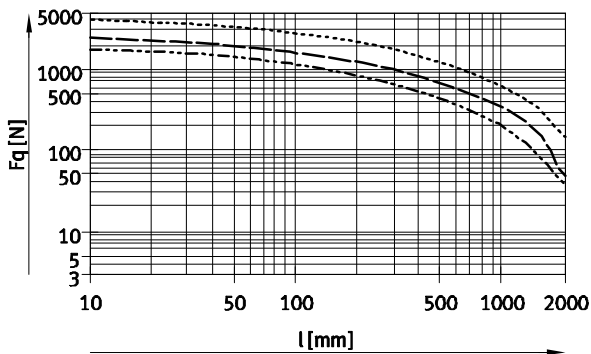
| Weight [g] | | | | |
|------------------------------------|--------|--------|--------|--------|
| Piston Ø | 160 | 200 | 250 | 320 |
| DSBG-... | | | | |
| Product weight with 0 mm stroke | 11,751 | 15,493 | 29,313 | 50,231 |
| Additional weight per 10 mm stroke | 208 | 246 | 384 | 623 |
| Moving mass 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 |

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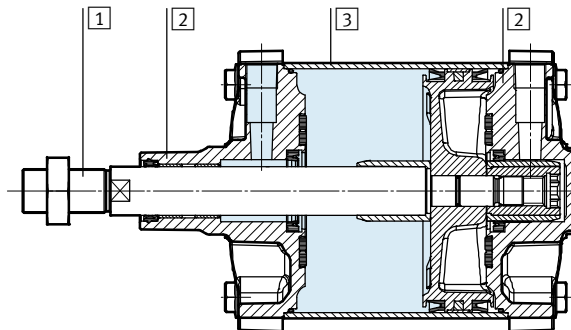
Max. lateral force F_q as a function of stroke length l



- Ø 160/200
- Ø 250
- Ø 320

Materials

Sectional view



ISO cylinder

| | | |
|---|-----------------------|---|
| 1 | Piston rod, tie rod | |
| | DSBG-... | High-alloy steel |
| | DSBG-...-R3 | High-alloy stainless steel |
| | DSBG-...-A6 | Hard-chromium plated tempered steel |
| 2 | Cover | Coated die-cast aluminium |
| 3 | Cylinder barrel | Anodised wrought aluminium alloy |
| - | Piston rod seal | |
| | DSBG-... | NBR |
| | DSBG-...-T1/-T4 | FPM |
| | Piston rod wiper seal | |
| | DSBG-...-A6 | CuZn |
| | 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) |

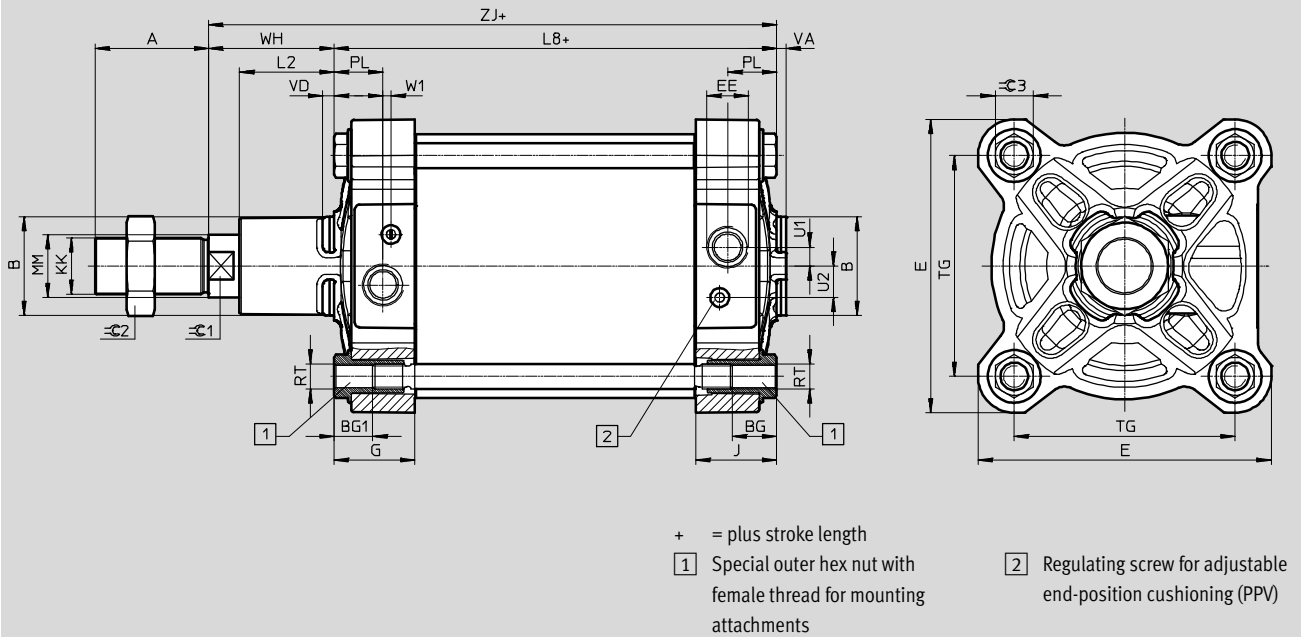
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Technical data

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Dimensions

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| ∅ | A | B | BG | BG1 | E | EE | G | J |
|------|------|----------|------|------|------|-----------------|------|------|
| [mm] | -0.5 | ∅ d11 | min. | ±0.5 | ±0.9 | | | |
| 160 | 72 | 65 | 24 | 25 | 186 | G $\frac{3}{4}$ | 52 | 52 |
| 200 | 72 | 75 | 24 | 25 | 230 | G $\frac{3}{4}$ | 48.2 | 50.2 |
| 250 | 84 | 90 | 25 | 26 | 284 | G1 | 53 | 53 |
| 320 | 96 | 110 | 28 | 29 | 347 | G1 | 60 | 60 |

| ∅ | KK | | L2 | L8 | MM | PL | RT | TG | U1 |
|------|----------|-------|----|---------|----|------|-----|------|----|
| | DSBG-... | -M... | | | | | | | |
| [mm] | | | | | | | | ±1.1 | |
| 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 |

| ∅ | U2 | VA | VD | W1 | WH | ZJ | ∅C1 | ∅C2 | ∅C3 |
|------|----|----|------|-----|---------|-----|-----|-----|-------------------|
| [mm] | | -1 | | | | ±1 | | | |
| 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} |

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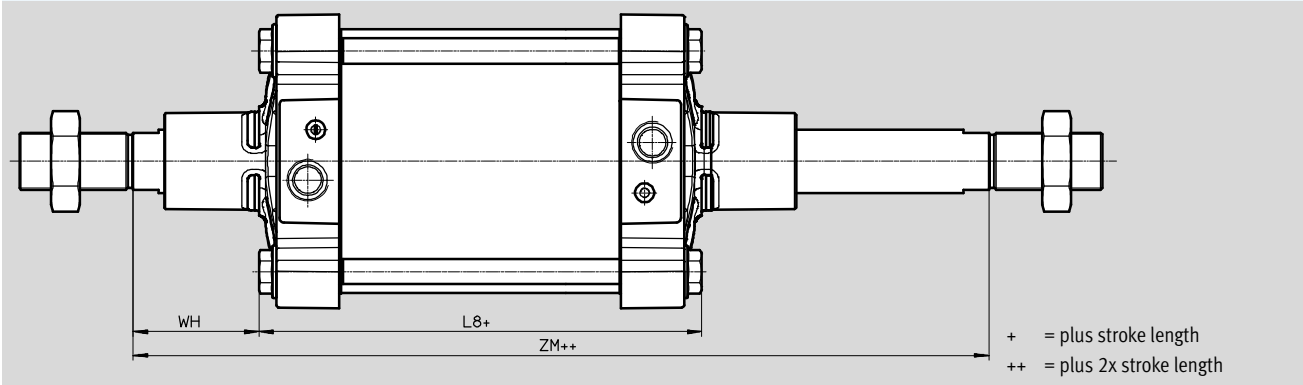
Technical data

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Dimensions – Variants

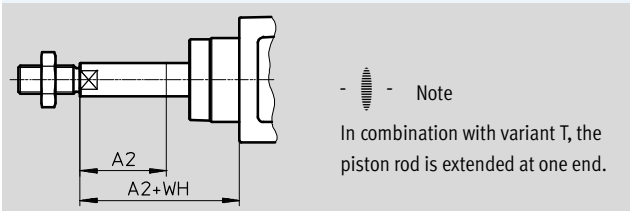
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T – Through piston rod

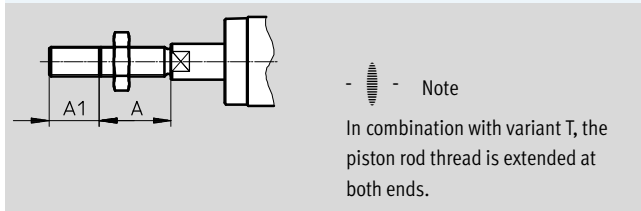


| ∅ | L8 | WH | ZM |
|------|---------|---------|---------|
| [mm] | | | |
| 160 | 180±1.1 | 80±1.3 | 342±1 |
| 200 | 180±1 | 95±1.4 | 372±1.2 |
| 250 | 200±1 | 105±1.5 | 410±1.6 |
| 320 | 220±2.2 | 120±1.5 | 462±1 |

...E – Piston rod extension



...L – Piston rod thread extension



| ∅ | A | A1 | | A2 | | WH |
|------|----|------|------|------|------|---------|
| | | min. | max. | min. | max. | |
| [mm] | | | | | | |
| 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 |

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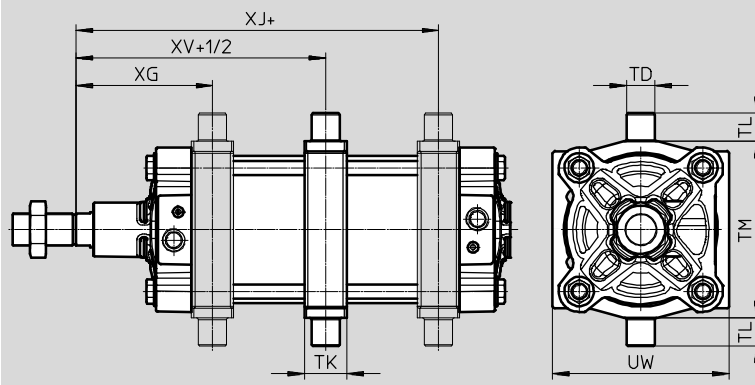
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Dimensions – Variants

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V – Central swivel mounting



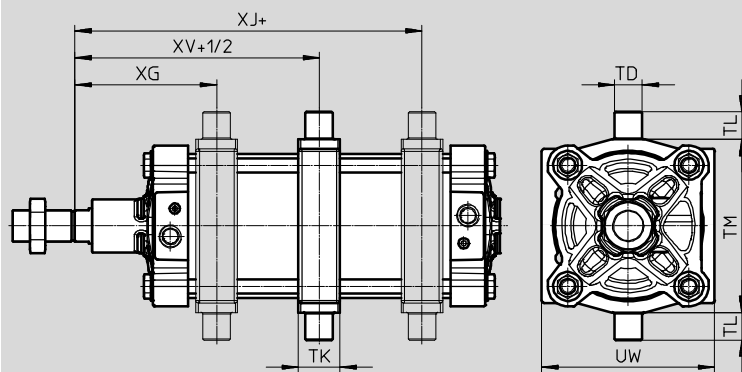
-  - Note

The swivel mounting is mounted centrally on delivery but can be moved at any time.

+ = plus stroke length
+1/2 = plus half stroke length

| ∅ | TD | TK | TL | TM | UW | XG | XJ | XV |
|------|---------|----|-----|-----|-----|-------|-------|-----|
| [mm] | ∅ e8 | | h14 | h14 | | ±0.5 | ±0.5 | |
| 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 dimensions for the trunnion flange mounting position (...Y) refer to the basic design without piston rod extension.

The swivel mounting has a positive-locking screw connection. This means that the position cannot be changed subsequently.

+ = plus stroke length
+1/2 = plus half stroke length

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

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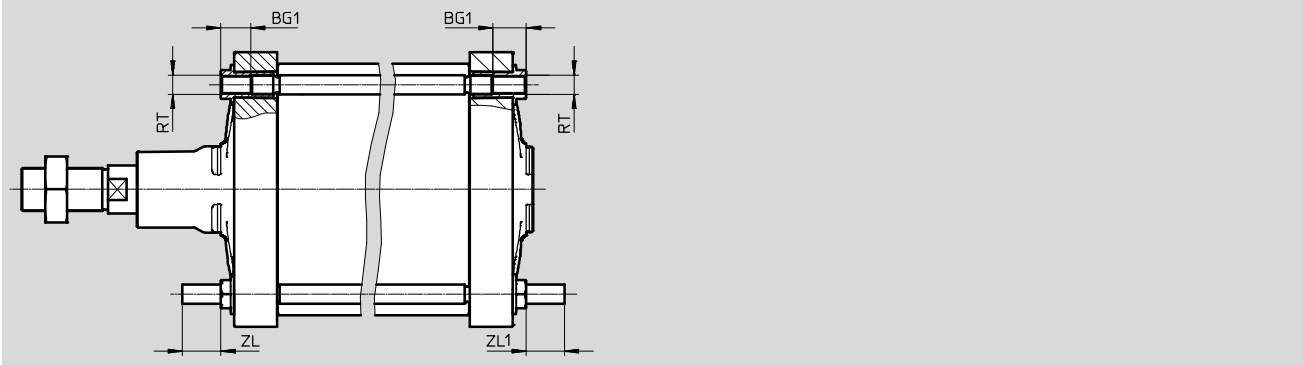
Technical data



Dimensions – Variants

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B1/B2/B3 – Integrated stud bolt



| ∅ | BG | BG1 | RT | ZL | ZL1 ¹⁾ |
|------|------|------|-----|------|-------------------|
| [mm] | min. | ±0.5 | | ±0.5 | |
| 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 Ø [mm] | Stroke [mm] | With PPV cushioning | | With P cushioning | |
| | | Part No. | Type | 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

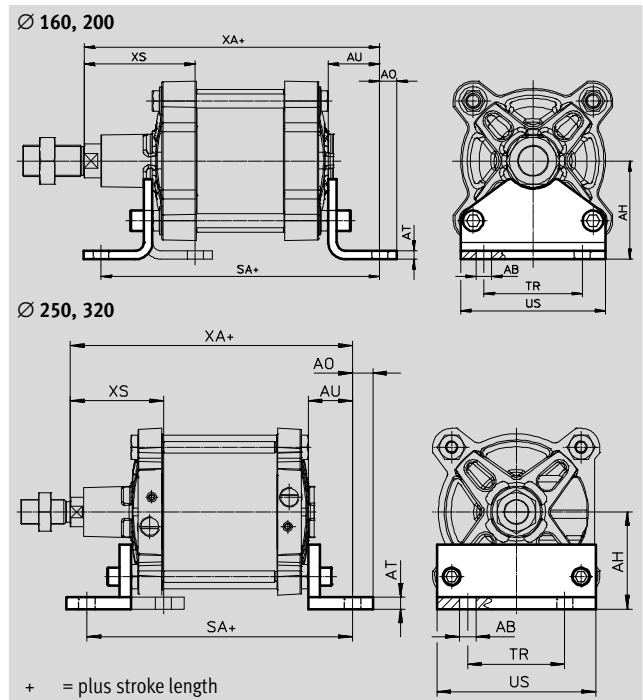
Other variants in the modular product system → 14

Standard cylinders DSBG, to ISO 15552

Accessories

Foot mounting HNG

Material:
Galvanised steel
Free of copper and PTFE

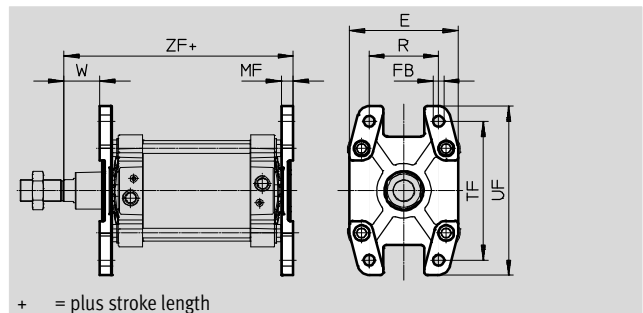
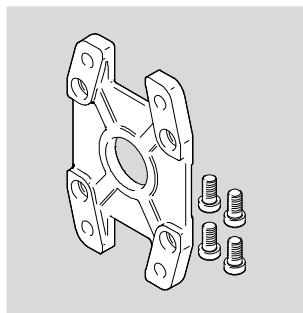


| Dimensions and ordering data | | | | | | | | | | | | | | |
|------------------------------|------|-----|----|----|----|-----|-----|-----|-----|-----|-------------------|--------|----------|---------|
| For Ø | AB | AH | AO | AT | AU | SA | TR | US | XA | XS | CRC ¹⁾ | Weight | Part No. | Type |
| [mm] | Ø | | | | | | | | | | | [g] | | |
| 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 Ø | E | FB | MF | R | TF | UF | W | ZF | CRC ¹⁾ | Weight | Part No. | Type |
| [mm] | | Ø H13 | | | | | | | | [g] | | |
| 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).

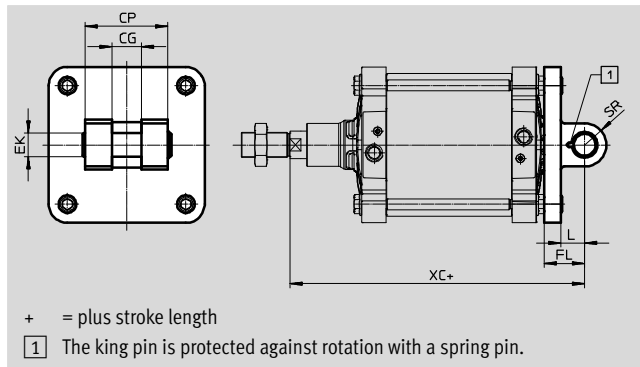
Standard cylinders DSBG, to ISO 15552

Accessories



Swivel flange SNG

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

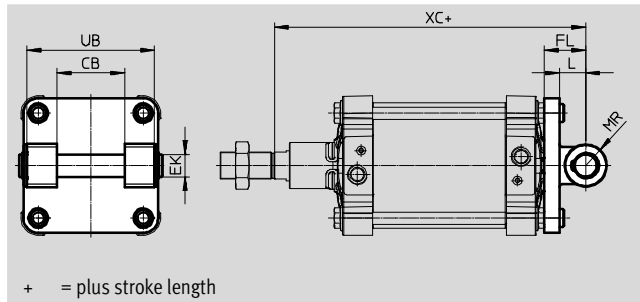


| Dimensions and ordering data | | | | | | | | | | | | |
|------------------------------|-----|-----|----------|------|----|------|-----|-------------------|--------|---------------|----------------|--|
| For Ø | CG | CP | EK Ø | FL | L | SR | XC | CRC ¹⁾ | Weight | Part No. | Type | |
| [mm] | H14 | d12 | F7 h9 | ±0.2 | | max. | | | [g] | | | |
| 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:
Ø160: Die-cast aluminium
Ø200: Galvanised steel
Ø250/320: Spheroidal graphite cast iron
Free of copper and PTFE
RoHS-compliant



| Dimensions and ordering data | | | | | | | | | | | | |
|------------------------------|-----|----|------|----|----|-----|-----|-------------------|--------|---------------|-------------------|--|
| For Ø | CB | EK | FL | L | MR | UB | XC | CRC ¹⁾ | Weight | Part No. | Type | |
| [mm] | H14 | Ø | ±0.2 | | | h14 | | | [g] | | | |
| 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 | |

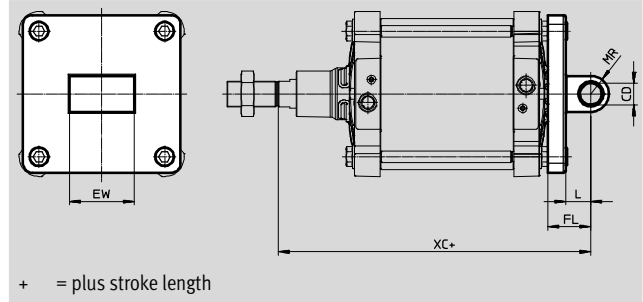
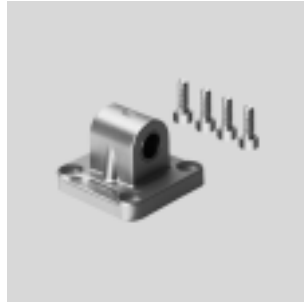
1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial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

Standard cylinders DSBG, to ISO 15552

Accessories

Swivel flange SNGL

Material:
Die-cast aluminium
Free of copper and PTFE

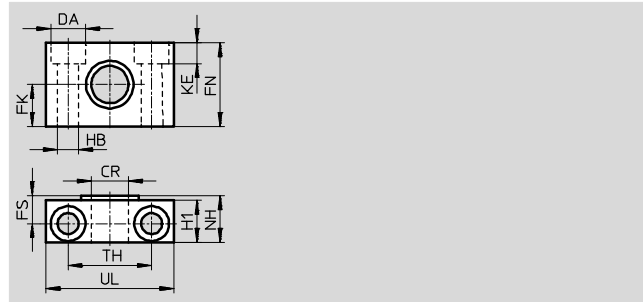


| Dimensions and ordering data | | | | | | | | | | |
|------------------------------|----|-----------|------|----|----|-----|-------------------|--------|---------------|-----------------|
| For Ø | CD | EW | FL | L | MR | XC | CRC ¹⁾ | Weight | Part No. | Type |
| [mm] | Ø | -0.5/-1.2 | ±0.2 | | | | | [g] | | |
| 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 Ø | CR | DA | FK | FN | FS | H1 | HB | KE |
| [mm] | Ø | Ø | Ø | | | | Ø | |
| 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 |

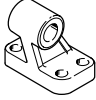
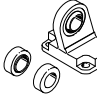
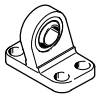
| For Ø | NH | TH | UL | CRC ¹⁾ | Weight | Part No. | Type |
|----------|----|------|-----|-------------------|--------|---------------|---------------------|
| [mm] | | ±0.3 | | | [g] | | |
| 160, 200 | 40 | 60 | 92 | 2 | 659 | 35780 | LNZG-160/200 |
| 250 | 50 | 90 | 140 | 2 | 2218 | 157516 | LNZG-250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




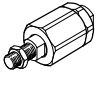
1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial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


Standard cylinders DSBG, to ISO 15552

Accessories


FESTO

| Ordering data – Mounting components | | | | Technical data → Internet: mounting component | | | |
|---|-------|----------|----------|---|-------|----------|---------|
| Designation | For Ø | Part No. | Type | Designation | For Ø | Part No. | Type |
| Clevis foot LN/LNG | | | | Clevis foot LSN | | | |
|  | 160 | 9037 | LN-160 |  | 160 | 6988 | LSN-160 |
| | 200 | 33898 | LNG-200 | | 200 | 6989 | LSN-200 |
| | 250 | 9039 | LN-250 | | 250 | 6990 | LSN-250 |
| | 320 | 9040 | LN-320 | | 320 | 6991 | LSN-320 |
| Clevis foot LSNG | | | | | | | |
|  | 160 | 152599 | LSNG-160 | | | | |
| | 200 | 152600 | LSNG-200 | | | | |

| Ordering data – Piston rod attachments | | | | Technical data → Internet: piston rod attachment | | | |
|---|----------|----------|-----------|---|----------|----------|-----------|
| Designation | For Ø | Part No. | Type | Designation | For Ø | Part No. | Type |
| Rod eye SGS | | | | Rod clevis SGA | | | |
|  | 160, 200 | 10775 | SGS-M36x2 |  | 160, 200 | 10771 | SGA-M36x2 |
| | 250 | 10776 | SGS-M42x2 | | | | |
| | 320 | 10777 | SGS-M48x2 | | | | |
| Rod eye SG | | | | Self-aligning rod coupler FK | | | |
|  | 160, 200 | 9581 | SG-M36x2 |  | 160, 200 | 10746 | FK-M36x2 |
| | 250 | 9582 | SG-M42x2 | | | | |
| | 320 | 9583 | SG-M48x2 | | | | |

| Ordering data – Push-in fittings | | | | Technical data → Internet: qs | | |
|---|------------|-------------------------------|----------|-------------------------------|--------------------------------------|---|
| For diameter | Connection | | Part No. | Type | PU ¹⁾ | |
| | Thread | Tubing O.D. | | | | |
| G thread with external hexagon | | | | | | |
|  | 160, 200 | G ³ / ₄ | 22 | 8040613 | QS-G ³ / ₄ -22 | 1 |

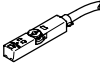
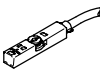
1) Packaging unit

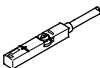
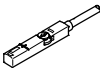
| Ordering data – Reducing nipple | | | | | |
|---|--|---|-------------------------------------|-------------------|---|
| For diameter | Description | Part No. | Type | PU ¹⁾ | |
| Reducing nipple NPFC | | | | | |
|  | 160, 200 | For connecting QS fittings with thread G ¹ / ₂ to cylinders with thread G ³ / ₄ | 8030313 | NPFC-R-G34-G12-MF | 1 |
| | Reducing nipple D | | | | |
| 250, 320 | For connecting QS fittings with thread G ¹ / ₂ to cylinders with thread G1 | 197634 | D- ¹ / ₂ I-1A | 1 | |



1) Packaging unit

Standard cylinders DSBG, to ISO 15552

Accessories

| Ordering data – Proximity sensor 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 | | | | | | |
|  | Inserted 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 | | | | | | |
|  | Inserted 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 | | | | | | |
|  | Inserted 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 |

| 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 |

Standard cylinders DSBG, to ISO 15552

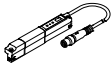
Accessories

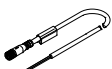
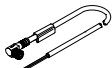
FESTO


Position sensor

The position sensor 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 sensor for T-slot | | | | | | | Technical data → Internet: position sensor | |
|---|--------------|--------------------------|----------------------|---------------------------------|-------------------------------------|------------------|--|------------------------------|
| | For diameter | Position measuring range | Analogue output [mA] | Type of mounting | Electrical connection | Cable length [m] | Part No. | Type |
|  | 160, 200 | 0 ... 50 | 4 ... 20 | Inserted 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, 4-pin | Cable, open end, 4-wire | 2.5 | 541342 | NEBU-M8G4-K-2.5-LE4 |
| | | | 5 | 541343 | NEBU-M8G4-K-5-LE4 |
|  | Angled socket, M8x1, 4-pin | Cable, open end, 4-wire | 2.5 | 541344 | NEBU-M8W4-K-2.5-LE4 |
| | | | 5 | 541345 | NEBU-M8W4-K-5-LE4 |

| Ordering data – Sensor bracket for proximity sensor | | | Part No. | Type |
|---|--------------|--|----------|---------------|
| | For diameter | Materials | | |
|  | 160, 200 | Rail: Anodised wrought aluminium alloy | 1553813 | DASP-M4-160-A |
| | 250 | Screws: High-alloy stainless steel | 1456781 | DASP-M4-250-A |
| | 320 | | 3015256 | DASP-M4-320-A |