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# Compact cylinders ADN/AEN, to ISO 21287

FESTO



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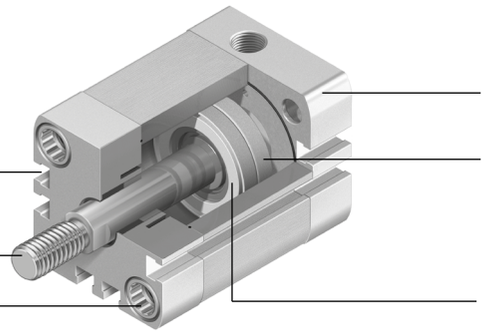
# Key features

## At a glance




### More than the standard

- The compact cylinders comply with or are based on the ISO 21287 standard, depending on the piston diameter
- The ADN/AEN is characterised by its compact design and wide range of application thanks to the large number of variants
- The variants can be configured using a modular product system

### Powerful

- Integrated cushioning for absorbing residual energy
- Long service life thanks to exceptional cushioning characteristics and low friction values

### Convenient

- Easy to mount with a comprehensive range of mounting accessories for just about every type of installation
- Highly flexible thanks to the wide range of variants
- Contactless position sensing using proximity switches

### Reliable

- Optimised manufacturing methods, patented technology and more than 40 years of experience in the field of cylinders make Festo and ADN/AEN a great partner

## Cushioning types

### Cushioning P

**Operating mode**

- The drive is fitted with polymer elastic end-position cushioning

**Application**

- Small loads
- Low speeds
- Small cushioning capacity

**Advantages**

- No adjustment required
- Saves time

### Cushioning PPS

**Operating mode**

- The drive has self-adjusting, pneumatic end-position cushioning

**Application**

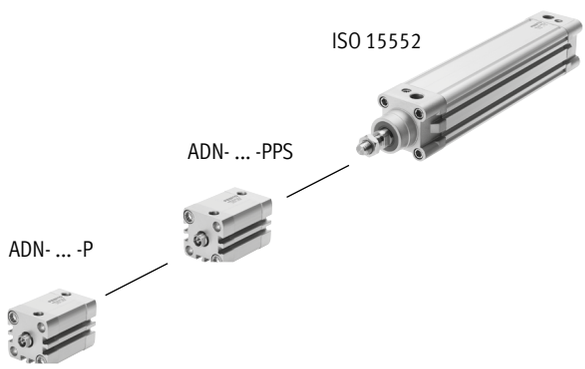
- Larger loads
- Higher speeds
- Larger cushioning capacity

**Advantages**

- No adjustment required
- Cushioning capacity is four times bigger than ADN-...-P
- Saves time
- Reduces noise

## Cushioning capacity of ISO 21287 and ISO 15552

The cushioning capacity of the compact cylinder ADN-...-PPS fills the gap between ADN-...-P and standards-based cylinders to ISO 15552.




## ADN-...-KE – with stroke adjustment



- Through piston rod with stroke adjustment
- Setting range of the advanced end position

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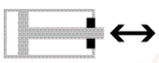
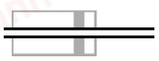
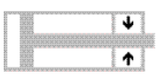
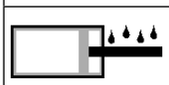
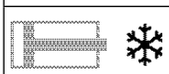
# Key features

**Variants from the modular product system**

| Symbol | Key features | Description |
|---|---|---|
|  | S1 Reinforced piston rod | Increased lateral forces. Absorbs many times more lateral force than a basic cylinder |
|  | S2 Through piston rod | The piston rod can be used for attachment at both ends of the cylinder |
|  | KE Stroke adjustment | Through piston rod with adjustment component mounted on one side. For limiting the advancing end position and to set a precise position. |
|  | S6 Heat-resistant seals | Temperature resistance up to max. 120°C |
|  | S10 Constant motion (slow speed) at low piston speeds | • Break-away pressure: very low<br>• Dynamic response: suitable for very slow, constant and stick-slip-free movements<br>Application example: slow, constant feed motion |
|  | S11 Low friction | • Break-away pressure: very low<br>• Dynamic response: especially suitable for slow movements with considerably reduced system friction<br>• Application example: slow applications where standstill is critical |
|  | S20 Through, hollow piston rod | The piston rod can be used for attachment at both ends of the cylinder. The piston rod is hollow inside. This means it can be used to carry vacuum or compressed air |
|  | ...K2 Extended male piston rod thread | – |
|  | ...K5 – Special piston rod thread | Metric coarse thread to ISO |
|  | K8 – Extended piston rod | – |
|  | K10 Smooth anodised aluminium piston rod | Ideal for use in welding environments:<br>• Protection against welding spatter<br>• Small moving masses<br>• Harder surface compared to steel<br>• Long service life |
|  | KP With clamping unit | Integrated clamping unit on the piston rod |
|  | EL With end-position locking | Positive locking in the end position as a drop guard. If there is a drop in pressure, the cylinder is secured in its end position to prevent it from dropping |
|  | Q Square piston rod | Protection against rotation. For position-oriented feeding |
|  | 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 |
|  | R8 Dust protection with scraper | The cylinder has a hard-chrome-plated piston rod and a hard scraper, which protects against dry, dusty media |
| | TL Captive rating plate | Laser-etched rating plate. Easy identification for spare parts, even after years in a harsh environment |
|  | TT Low temperature | Temperature resistance down to max. -40°C |
| | F1A Recommended for production plants for manufacturing lithium-ion batteries | Suitable for battery production with reduced Cu/Zn/Ni values (F1a) |

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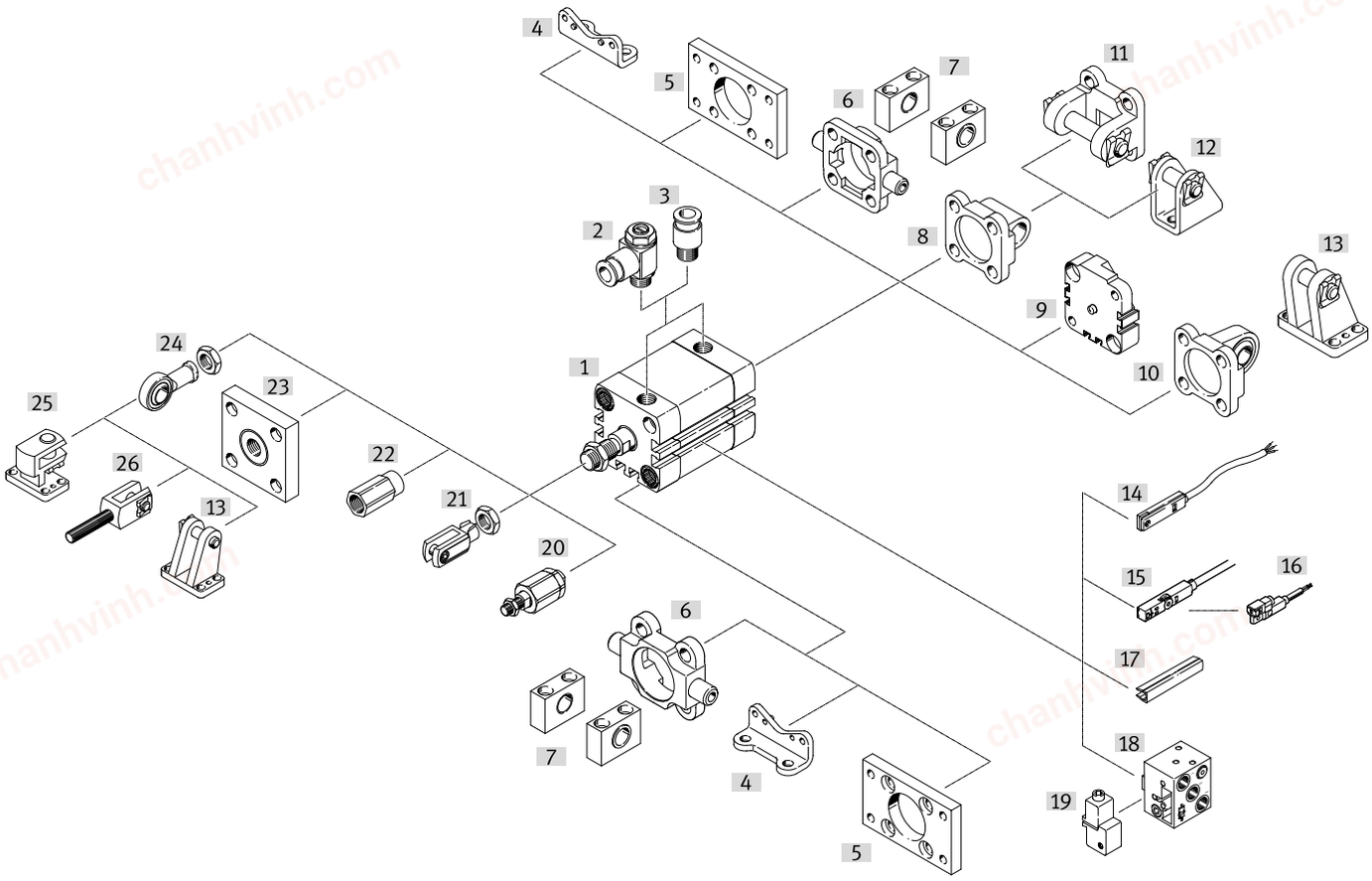
## Peripherals overview



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# Peripherals overview

**Mounting attachments and accessories**

| | | Description | → Page/Internet |
|---|---|---|---|
| [1] | Compact cylinder<br>ADN | Double-acting cylinder | 7 |
| | Compact cylinder<br>AEN | Single-acting cylinder | 61 |
| [2] | One-way flow control valve<br>GRLA/GRLZ | For regulating speed | 87 |
| [3] | Push-in fitting<br>QS | For connecting tubing with standard O.D. | qs |
| [4] | Foot mounting<br>HNA | For bearing or end caps | 76 |
| [5] | Flange mounting<br>FNC | For bearing or end caps | 77 |
| [6] | Trunnion flange<br>ZNCF/CRZNG | For bearing caps | 84 |
| [7] | Trunnion support<br>LNZG | For trunnion flange ZNCF/CRZNG | 85 |
| [8] | Swivel flange<br>SNCL/SNCL-...-R3 | For end caps | 78 |
| [9] | Multi-position kit<br>DPNA | For connecting two cylinders with the same piston diameter to form a multi-position cylinder | 81 |
| [10] | Swivel flange<br>SNCS/CRSNCS/SNCS-...-R3 | For end caps | 79 |
| [11] | Swivel flange<br>SNCB/SNCB-...-R3 | For swivel flange SNCL | 83 |
| [12] | Clevis foot<br>LBN/CRLBN | For swivel flange SNCL | 82 |
| [13] | Clevis foot<br>LBG/LBG-...-R3 | For swivel flange SNCS | 80 |
| [14] | Proximity switch<br>SME-8 | Can be integrated in the cylinder profile barrel | 89 |
| [15] | Proximity switch<br>SME/SMT-8M | Can be integrated in the cylinder profile barrel | 89 |
| [16] | Proximity switch<br>SMT-8G | Inserted into the slot lengthwise | 89 |
| [17] | Slot cover<br>ABP-5-S | For protecting the sensor cables and the sensor slots from contamination | 90 |
| [18] | Proximity switch<br>SMPO-8E | Pneumatic output signal | 90 |
| [19] | Mounting kit<br>SMB-8E | For proximity switch SMPO-8E | 90 |
| [20] | Self-aligning rod coupler<br>FK/CRFK/DARP | To compensate for radial and angular deviations | 86 |
| [21] | Rod clevis<br>SG/CRSG | Permits a swivelling movement of the cylinder in one plane | 86 |
| [22] | Adapter<br>AD | For mounting a suction cup on a hollow piston rod | 86 |
| [23] | Coupling piece<br>KSG/KSZ | To compensate for radial deviations | 86 |
| [24] | Rod eye<br>SGS/CRSGS | With spherical bearing | 86 |
| [25] | Right-angle clevis foot<br>LQG | For rod eye SGS | 87 |
| [26] | Rod clevis<br>SGA | With male thread | 86 |

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# Type codes

| 001 | Series | |
|---|---|---|
| **ADN** | Compact cylinder, double-acting | |

| 002 | Piston diameter [mm] | |
|---|---|---|
| **12** | 12 | |
| **16** | 16 | |
| **20** | 20 | |
| **25** | 25 | |
| **32** | 32 | |
| **40** | 40 | |
| **50** | 50 | |
| **63** | 63 | |
| **80** | 80 | |
| **100** | 100 | |
| **125** | 125 | |

| 003 | Stroke range [mm] | |
|---|---|---|
| **...** | 1 ... 500 | |

| 004 | Piston rod thread type | |
|---|---|---|
| **A** | Male thread | |
| **I** | Female thread | |

| 005 | Cushioning | |
|---|---|---|
| **P** | Elastic cushioning rings/plates on both sides | |
| **PPS** | Pneumatic cushioning, self-adjusting at both ends | |

| 006 | Position sensing | |
|---|---|---|
| **A** | For proximity sensor | |

| 007 | Special material properties | |
|---|---|---|
| | None | |
| **F1A** | Recommended for production plants for manufacturing lithium-ion batteries, F1A | |

| 008 | Protection against rotation | |
|---|---|---|
| | None | |
| **Q** | Square piston rod | |

| 009 | Stroke adjustment | |
|---|---|---|
| | Without | |
| **10KE** | 10 mm, extending | |

| 010 | Piston rod type | |
|---|---|---|
| | At one end | |
| **S2** | Through piston rod | |
| **S20** | Through, hollow piston rod | |

| 011 | Custom thread | |
|---|---|---|
| **“M5”K5** | M5 | |
| **“M6”K5** | M6 | |
| **“M8”K5** | M8 | |
| **“M10”K5** | M10 | |
| **“M10x1,25”K5** | M10x1.25 | |
| **“M12”K5** | M12 | |
| **“M16”K5** | M16 | |
| **“M20”K5** | M20 | |
| **“M20x1,5”K5** | M20x1.5 | |

| 012 | Temperature range | |
|---|---|---|
| | Standard | |
| **S6** | Heat-resistant seals max. 120 °C | |

| 013 | Constant motion | |
|---|---|---|
| | Standard | |
| **S10** | Uniform, slow movement | |

| 014 | Running characteristics | |
|---|---|---|
| | Standard | |
| **S11** | Low friction | |

| 015 | Improved running performance | |
|---|---|---|
| | None | |
| **K10** | Smooth anodised aluminium coated piston rod | |

| 016 | Corrosion protection | |
|---|---|---|
| | Standard | |
| **R3** | High corrosion protection | |

| 017 | Increased lateral force | |
|---|---|---|
| | None | |
| **S1** | Reinforced piston rod or extended piston rod bearing | |

| 018 | Captive rating plate | |
|---|---|---|
| | Rating plate, glued | |
| **TL** | Laser etched rating plate | |

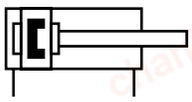
| 019 | Low temperature | |
|---|---|---|
| | None | |
| **TT** | -40 °C ... +80 °C | |

| 020 | Scraper variant | |
|---|---|---|
| | Standard | |
| **R8** | Dust protection | |

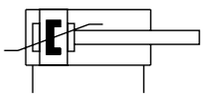
| 021 | EU certification | |
|---|---|---|
| | None | |
| **EX4** | II 2GD | |

# Datasheet

Function
cushioning P



PPS cushioning



Diameter
12 ... 125 mm

Stroke length
1 ... 500 mm

Variants → Page 3

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| General technical data | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Piston ø | 12 | 16 | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 | 125 |
| Standard | Based on ISO 21287 | | Conforms to ISO 21287 | | | | | | | | Based on ISO 21287 |
| Design | Piston | | | | | | | | | | |
| | Piston rod | | | | | | | | | | |
| | Cylinder barrel | | | | | | | | | | |
| Operating mode | Double-acting | | | | | | | | | | |
| Cushioning | | | | | | | | | | | |
| P | Elastic cushioning rings/plates at both ends | | | | | | | | | | |
| PPS | – | | Pneumatic cushioning, self-adjusting at both ends | | | | | | | | – |
| Cushioning length | | | | | | | | | | | |
| PPS [mm] | – | | 3 | 3.5 | 4 | 5 | 6 | 7 | 7.5 | 10 | – |
| Position sensing | Via proximity switch | | | | | | | | | | |
| Type of mounting | With through-hole | | | | | | | | | | |
| | With female thread | | | | | | | | | | |
| | With accessories | | | | | | | | | | |
| Mounting position | Any | | | | | | | | | | |

| Technical data – Basic version and variants | | | | | | |
|---|---|---|---|---|---|---|
| Piston ø | 12 | 16 | 20 | 25 | 32 | 40 |
| Pneumatic connection | | | | | | |
| – | M5 | M5 | M5 | M5 | G1/8 | G1/8 |
| S1 | – | – | – | M5 | – | M5 |
| Female piston rod thread | | | | | | |
| – | M3 | M4 | M6 | M6 | M8 | M8 |
| K5 | – | – | M5 | M5 | M6 | M6 |
| S1 | – | – | – | M6 | – | M10 |
| S1-K5 | – | – | – | M5 | – | M8 |
| Male piston rod thread | | | | | | |
| – | M5 | M6 | M8 | M8 | M10x1.25 | M10x1.25 |
| K5 | M6 | M8 | M10; M10x1.25 | M10; M10x1.25 | M10; M12 | M10; M12 |
| S1 | – | – | – | M8 | – | M12x1.25 |
| S1-K5 | – | – | – | M10; M10x1.25 | – | M10x1.25; M12 |
| Q-K5 | M6 | M8 | M10; M10x1.25 | M10; M10x1.25 | M10 | M10 |
| Max. torsional backlash of the piston rod [°] | | | | | | |
| Q | 2 | 1.8 | 1.6 | 1.6 | 1.2 | 1.2 |

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# Datasheet

| Technical data – Basic version and variants | | | | | |
|---|---|---|---|---|---|
| Piston ⌀ | 50 | 63 | 80 | 100 | 125 |
| Pneumatic connection | | | | | |
| – | G1/8 | G1/8 | G1/8 | G1/8 | G1/4 |
| S1 | – | G1/8 | – | G1/8 | – |
| Female piston rod thread | | | | | |
| – | M10 | M10 | M12 | M12 | M16 |
| K5 | M8 | M8 | M10 | M10 | – |
| S1 | – | M12 | – | M16 | – |
| S1-K5 | – | M10 | – | – | – |
| Male piston rod thread | | | | | |
| – | M12x1.25 | M12x1.25 | M16x1.5 | M16x1.5 | M20x1.5 |
| K5 | M12; M16 | M12; M16 | M16; M20; M20x1.5 | M16; M20; M20x1.5 | M20 |
| S1 | – | M16x1.5 | – | M20x1.5 | – |
| S1-K5 | – | M12x1.25; M16 | – | M16x1.5; M20 | – |
| Q-K5 | M12 | M12 | M16 | M16 | M20 |
| Max. torsional backlash of the piston rod [°] | | | | | |
| Q | 1 | 1 | 0.8 | 0.8 | 0.8 |

| Operating and environmental conditions | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Piston ⌀ | 12 | 16 | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 | 125 |
| Operating medium | Compressed air to ISO 8573-1:2010 [7:4:4] | | | | | | | | | | |
| Note on the operating/pilot medium | Lubricated operation possible (in which case lubricated operation will always be required) | | | | | | | | | | |
| Operating pressure | | | | | | | | | | | |
| in [MPa] | | | | | | | | | | | |
| – | 0.1 ... 1 | | 0.06 ... 1 | | | | | | | | |
| PPS | – | | 0.15 ... 1 | | | 0.1 ... 1 | | | | | – |
| Q | 0.15 ... 1 | | 0.1 ... 1 | | | | | | | | |
| Q-S2, S20, KE | 0.15 ... 1 | | 0.12 ... 1 | | 0.1 ... 1 | | | | | | |
| Q-S6 | 0.15 ... 0.6 | | 0.1 ... 0.6 | | | | | | | | |
| S1 | – | | | 0.1 ... 1 | – | 0.1 ... 1 | – | 0.1 ... 1 | – | 0.1 ... 1 | – |
| S2, S20, KE | 0.15 ... 1 | | 0.12 ... 1 | | 0.1 ... 1 | | | 0.08 ... 1 | | | |
| S6 | 0.1 ... 1 | | 0.06 ... 1 | | | | | | | | |
| S11 | 0.045 ... 1 | | | | 0.025 ... 1 | | | | | | |
| R8, TT | – | | 0.15 ... 1 | | | 0.1 ... 1 | | | | | – |
| in [bar] | | | | | | | | | | | |
| – | 1 ... 10 | | 0.6 ... 10 | | | | | | | | |
| PPS | – | | 1.5 ... 10 | | | 1 ... 10 | | | | | – |
| Q | 1.5 ... 10 | | 1 ... 10 | | | | | | | | |
| Q-S2, S20, KE | 1.5 ... 10 | | 1.2 ... 10 | | 1 ... 10 | | | | | | |
| Q-S6 | 1.5 ... 6 | | 1 ... 6 | | | | | | | | |
| S1 | – | | | 1 ... 10 | – | 1 ... 10 | – | 1 ... 10 | – | 1 ... 10 | – |
| S2, S20, KE | 1.5 ... 10 | | 1.2 ... 10 | | 1 ... 10 | | | 0.8 ... 10 | | | |
| S6 | 1 ... 10 | | 0.6 ... 10 | | | | | | | | |
| S11 | 0.45 ... 10 | | | | 0.25 ... 10 | | | | | | |
| R8, TT | – | | 1.5 ... 10 | | | 1 ... 10 | | | | | – |
| in [psi] | | | | | | | | | | | |
| – | 14.5 ... 145 | | 8.7 ... 145 | | | | | | | | |
| PPS | – | | 21.76 ... 145 | | | 14.5 ... 145 | | | | | – |
| Q | 21.76 ... 145 | | 14.5 ... 145 | | | | | | | | |
| Q-S2, S20, KE | 21.76 ... 145 | | 17.4 ... 145 | | 14.5 ... 145 | | | | | | |
| Q-S6 | 21.76 ... 87 | | 14.5 ... 87 | | | | | | | | |
| S1 | – | | | 14.5 ... 145 | – | 14.5 ... 145 | – | 14.5 ... 145 | – | 14.5 ... 145 | – |
| S2, S20, KE | 21.76 ... 145 | | 17.4 ... 145 | | 14.5 ... 145 | | | 11.6 ... 145 | | | |
| S6 | 14.5 ... 145 | | 8.7 ... 145 | | | | | | | | |
| S11 | 6.53 ... 145 | | | | 3.63 ... 145 | | | | | | |
| R8, TT | – | | 21.76 ... 145 | | | 14.5 ... 145 | | | | | – |

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# Datasheet

| Operating and environmental conditions | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Piston ø | 12 | 16 | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 | 125 |
| Ambient temperature1) [°C] | | | | | | | | | | | |
| – | –20 ... +80 | | | | | | | | | | |
| S6 | 0 ... +120 | | | | | | | | | | |
| S10, S11 | +5 ... +80 | | | | | | | | | | |
| R3 | –20 ... +80 | | | | | | | | | | |
| TT | – | | –40 ... +80 | | | | | | | | – |
| Corrosion resistance class CRC[2)] | | | | | | | | | | | |
| – | 2 - Moderate corrosion stress | | | | | | | | | | |
| R3 | 3 - High corrosion stress | | | | | | | | | | |
| F1A | 0 - no corrosion stress | | | | | | | | | | |
| ATEX | Selected types ➔ www.festo.com | | | | | | | | | | |

1) Note operating range of proximity switches
2) More information www.festo.com/x/topic/crc

# Datasheet

| Forces [N] and impact energy [J] | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Piston ø | 12 | 16 | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 | 125 |
| Theoretical force at 6 bar, advancing | | | | | | | | | | | |
| – | 68 | 121 | 188 | 295 | 483 | 754 | 1178 | 1870 | 3016 | 4712 | 7363 |
| S1 | – | – | – | 295 | – | 754 | – | 1870 | – | 4712 | – |
| S2 | 51 | 90 | 141 | 247 | 415 | 686 | 1057 | 1750 | 2827 | 4524 | 7069 |
| Theoretical force at 6 bar, retracting | | | | | | | | | | | |
| – | 51 | 90 | 141 | 247 | 415 | 686 | 1057 | 1750 | 2827 | 4524 | 7069 |
| S1 | – | – | – | 247 | – | 633 | – | 1681 | – | 4417 | – |
| S2 | 51 | 90 | 141 | 247 | 415 | 686 | 1057 | 1750 | 2827 | 4524 | 7069 |
| Max. impact energy in the end positions | | | | | | | | | | | |
| – | 0.07 | 0.15 | 0.2 | 0.3 | 0.4 | 0.7 | 1 | 1.3 | 1.8 | 2.5 | 3.3 |
| S1 | – | – | – | 0.3 | – | 0.7 | – | 1.3 | – | 2.5 | – |
| S6, S10, S11, TT | 0.035 | 0.075 | 0.1 | 0.15 | 0.2 | 0.35 | 0.5 | 0.65 | 0.9 | 1.25 | 1.75 |
| K10 | – | – | 0.16 | 0.24 | 0.32 | 0.56 | 0.8 | 1 | 1.4 | 2 | 2.6 |
| S20 | – | 0.016 | 0.024 | 0.083 | 0.15 | 0.39 | 0.48 | 0.62 | 0.8 | 0.9 | 0.95 |
| KE | 0.055 | 0.12 | 0.16 | 0.24 | 0.32 | 0.56 | 0.8 | 1 | – | – | – |

**Note**

These specifications represent the maximum values that can be achieved. The maximum permissible impact energy must be observed.

Permissible impact velocity:

$$V = \sqrt{\frac{2 \times E}{m_1 + m_2}}$$

Maximum permissible mass:

$$m_2 = \frac{2 \times E}{v^2} - m_1$$

| | |
|---|---|
| V | Perm. impact velocity |
| E | Max. impact energy |
| m1 | Moving mass (drive) |
| m2 | Moving payload |

**Note**

The maximum impact energy is still maintained in combination with cushioning PPS.

| Max. energy conversion capacity [J] | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Piston ø | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 |
| For cushioning PPS | 0.65 | 0.8 | 1 | 1.7 | 2.8 | 4.8 | 8 | 12 |

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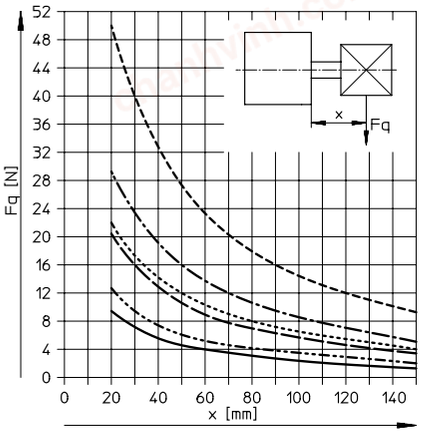
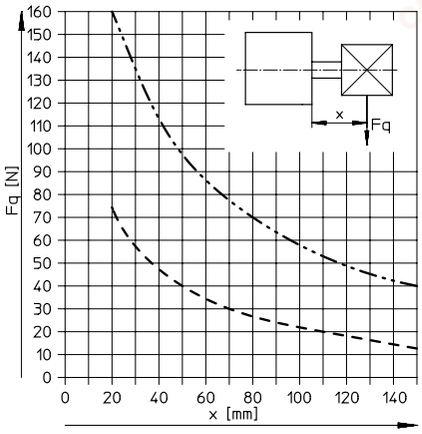
# Datasheet

**Max. lateral force Fq as a function of projection x**

Ø 12 ... 63




Ø 80 ... 125




- Ø 12
- Ø 16
- Ø 20
- Ø 25
- Ø 32/40
- Ø 50/63
- Ø 80/100
- Ø 125

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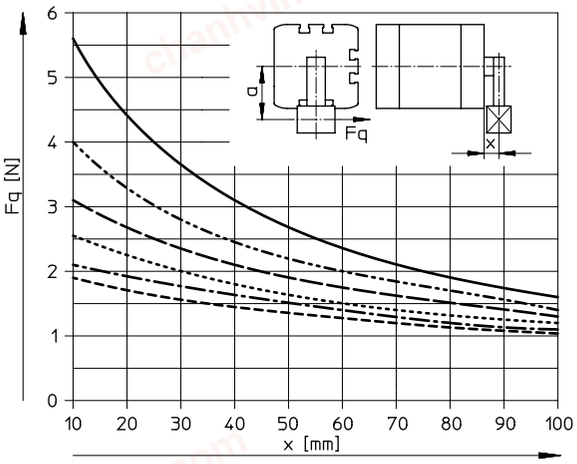
# Datasheet

**Max. lateral force Fq as a function of projection x and lever arm a**

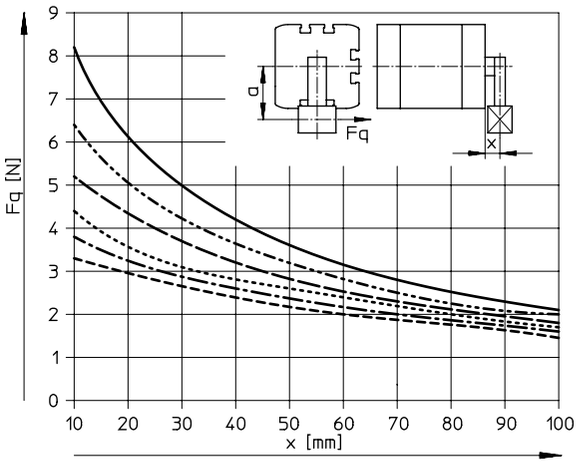
Q – Square piston rod

Ø 12



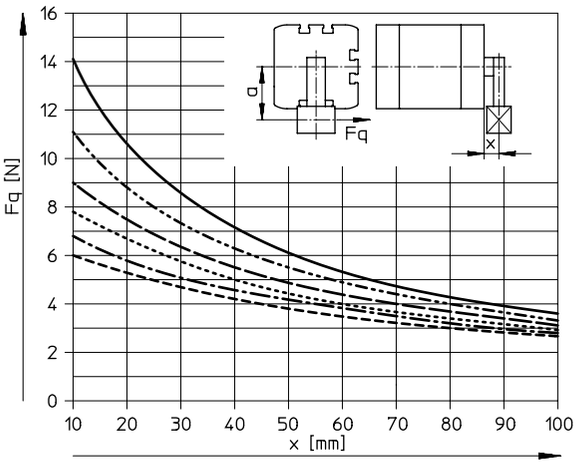

- a = 5 mm
- a = 10 mm
- a = 15 mm
- a = 20 mm
- a = 25 mm
- a = 30 mm

Ø 16



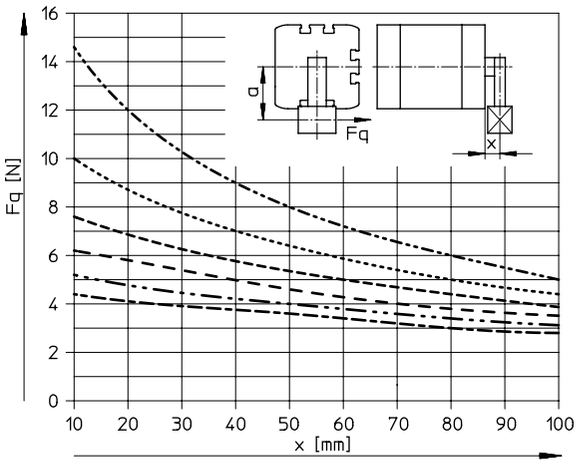

- a = 5 mm
- a = 10 mm
- a = 15 mm
- a = 20 mm
- a = 25 mm
- a = 30 mm

Ø 20/25




- a = 5 mm
- a = 10 mm
- a = 15 mm
- a = 20 mm
- a = 25 mm
- a = 30 mm

Ø 32/40




- a = 10 mm
- a = 20 mm
- a = 30 mm
- a = 40 mm
- a = 50 mm
- a = 60 mm

**Note**

- For cantilevers that are larger than those shown in the diagrams, torques on the piston rod must be ruled out.
- If a = 0, the corresponding lateral force line of the basic version of the ADN can be used (➔ page 15).

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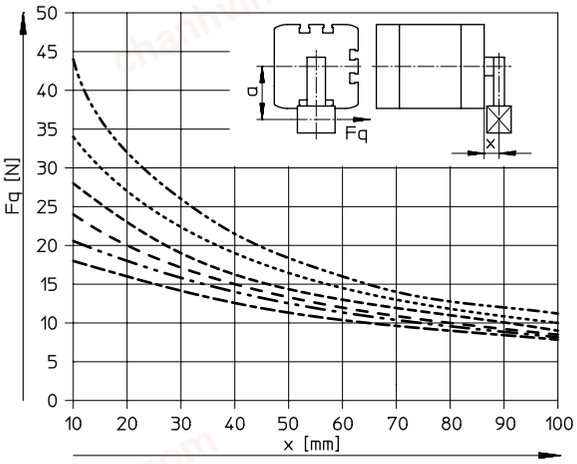
# Datasheet

**Max. lateral force Fq as a function of projection x and lever arm a**

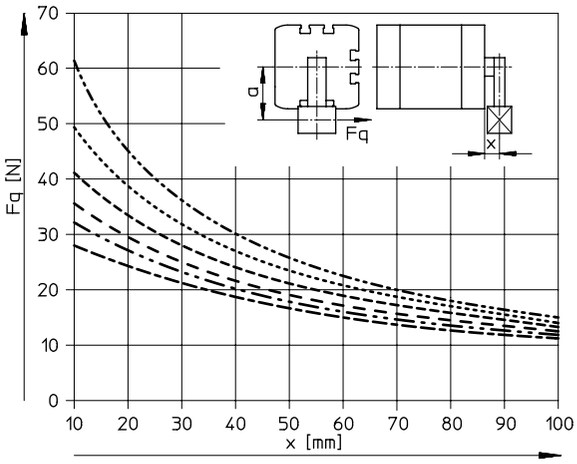
Q – Square piston rod

Ø 50/63



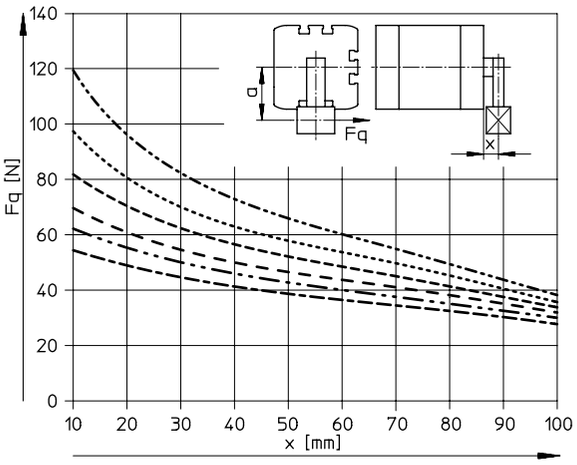

- a = 10 mm
- a = 20 mm
- a = 30 mm
- a = 40 mm
- a = 50 mm
- a = 60 mm

Ø 80/100




- a = 10 mm
- a = 20 mm
- a = 30 mm
- a = 40 mm
- a = 50 mm
- a = 60 mm

Ø 125




- a = 10 mm
- a = 20 mm
- a = 30 mm
- a = 40 mm
- a = 50 mm
- a = 60 mm

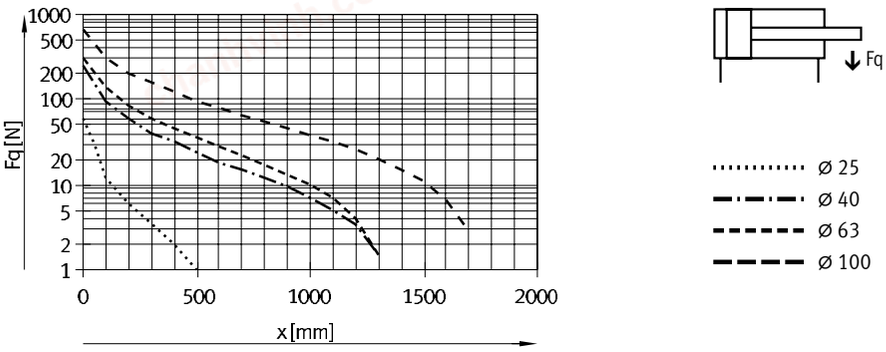
**Note**

- For cantilevers that are larger than those shown in the diagrams, torques on the piston rod must be ruled out.
- If a = 0, the corresponding lateral force line of the basic version of the ADN can be used (➔ page 15).

# Datasheet

**Max. lateral force Fq as a function of projection x**

S1 – Reinforced piston rod




| **Weight [g]** | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Piston ø | 12 | 16 | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 | 125 |
| **ADN-...** | | | | | | | | | | | |
| Product weight with 0 mm stroke | 64 | 75 | 128 | 181 | 265 | 361 | 531 | 755 | 1140 | 1741 | 2952 |
| Additional weight per 10 mm stroke | 12 | 14 | 22 | 26 | 29 | 38 | 51 | 60 | 80 | 99 | 116 |
| Moving mass with 0 mm stroke | 11 | 18 | 32 | 41 | 76 | 103 | 164 | 222 | 431 | 595 | 1020 |
| Additional mass per 10 mm stroke | 2 | 4 | 6 | 6 | 9 | 9 | 16 | 16 | 25 | 25 | 29 |
| **ADN-...-I** | | | | | | | | | | | |
| Product weight with 0 mm stroke | 62 | 71 | 119 | 172 | 240 | 318 | 489 | 713 | 1012 | 1605 | 2768 |
| Additional weight per 10 mm stroke | 12 | 14 | 22 | 26 | 29 | 38 | 51 | 60 | 80 | 99 | 116 |
| Moving mass with 0 mm stroke | 9 | 14 | 23 | 32 | 51 | 60 | 122 | 180 | 303 | 459 | 836 |
| Additional mass per 10 mm stroke | 2 | 4 | 6 | 6 | 9 | 9 | 16 | 16 | 25 | 25 | 29 |
| **ADN-...-S2** | | | | | | | | | | | |
| Product weight with 0 mm stroke | 68 | 83 | 144 | 200 | 294 | 389 | 582 | 805 | 1220 | 1830 | 3245 |
| Additional weight per 10 mm stroke | 15 | 18 | 29 | 33 | 38 | 47 | 68 | 76 | 105 | 123 | 156 |
| Moving mass with 0 mm stroke | 15 | 26 | 48 | 55 | 105 | 127 | 205 | 265 | 493 | 665 | 1308 |
| Additional mass per 10 mm stroke | 5 | 8 | 13 | 13 | 18 | 18 | 33 | 32 | 50 | 49 | 69 |
| **ADN-...-S20** | | | | | | | | | | | |
| Product weight with 0 mm stroke | – | 84 | 140 | 193 | 284 | 377 | 563 | 786 | 1162 | 1771 | 3076 |
| Additional weight per 10 mm stroke | – | 17 | 27 | 31 | 36 | 45 | 62 | 71 | 96 | 115 | 136 |
| Moving mass with 0 mm stroke | – | 22 | 42 | 48 | 96 | 115 | 186 | 245 | 435 | 606 | 1099 |
| Additional mass per 10 mm stroke | – | 7 | 11 | 11 | 16 | 16 | 27 | 27 | 41 | 41 | 49 |
| **ADN-...-KE** | | | | | | | | | | | |
| Product weight with 0 mm stroke | 80 | 94 | 166 | 222 | 333 | 426 | 646 | 870 | – | – | – |
| Additional weight per 10 mm stroke | 15 | 18 | 28 | 32 | 39 | 47 | 67 | 76 | – | – | – |
| Moving mass with 0 mm stroke | 27 | 37 | 70 | 77 | 144 | 163 | 269 | 329 | – | – | – |
| Additional mass per 10 mm stroke | 5 | 8 | 13 | 13 | 18 | 18 | 32 | 32 | – | – | – |
| **ADN-...-Q** | | | | | | | | | | | |
| Product weight with 0 mm stroke | 65 | 78 | 132 | 180 | 270 | 361 | 537 | 749 | 1144 | 1741 | 2945 |
| Additional weight per 10 mm stroke | 12 | 14 | 22 | 26 | 28 | 37 | 46 | 55 | 75 | 94 | 108 |
| Moving mass with 0 mm stroke | 11 | 17 | 32 | 41 | 73 | | 153 | 209 | 413 | 575 | 985 |
| Additional mass per 10 mm stroke | 2 | 4 | 6 | 6 | 8 | 8 | 11 | 11 | 20 | 20 | 21 |
| **ADN-...-S1** | | | | | | | | | | | |
| Product weight with 0 mm stroke | – | – | – | 183 | – | 394 | – | 886 | – | 2710 | – |
| Additional weight per 10 mm stroke | – | – | – | 26 | – | 44 | – | 68 | – | 136 | – |
| Moving mass with 0 mm stroke | – | – | – | 45 | – | 134 | – | 308 | – | 737 | – |
| Additional mass per 10 mm stroke | – | – | – | 6 | – | 15 | – | 24 | – | 38 | – |
| **ADN-...-PPS** | | | | | | | | | | | |
| Product weight with 0 mm stroke | – | – | 128 | 173 | 272 | 372 | 547 | 773 | 1162 | 1766 | – |
| Additional weight per 10 mm stroke | – | – | 22 | 26 | 29 | 38 | 51 | 60 | 80 | 99 | – |
| Moving mass with 0 mm stroke | – | – | 33 | 39 | 83 | 114 | 180 | 240 | 453 | 620 | – |
| Additional mass per 10 mm stroke | – | – | 6 | 6 | 9 | 9 | 16 | 16 | 25 | 25 | – |

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# Datasheet

| **Weight [g]** | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Piston ø | 12 | 16 | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 | 125 |
| **ADN-...-TT/-R8** | | | | | | | | | | | |
| Product weight with 0 mm stroke | – | – | 133 | 181 | 280 | 380 | 561 | 786 | 1167 | 1768 | – |
| Additional weight per 10 mm stroke | – | – | 22 | 26 | 29 | 38 | 51 | 60 | 80 | 99 | – |
| Moving mass with 0 mm stroke | – | – | 35 | 44 | 82 | 109 | 175 | 234 | 447 | 612 | – |
| Additional mass per 10 mm stroke | – | – | 6 | 6 | 9 | 9 | 16 | 16 | 25 | 25 | – |
| **ADN-...-K10** | | | | | | | | | | | |
| Product weight with 0 mm stroke | – | – | 131 | 183 | 281 | 373 | 562 | 780 | 1158 | 1754 | 2932 |
| Additional weight per 10 mm stroke | – | – | 18 | 22 | 23 | 29 | 40 | 48 | 61 | 80 | 86 |
| Moving mass with 0 mm stroke | – | – | 35 | 43 | 92 | 115 | 195 | 247 | 449 | 608 | 1000 |
| Additional mass per 10 mm stroke | – | – | 2 | 2 | 3 | 0 | 5 | 4 | 6 | 6 | 0 |
| **ADN-...-R3** | | | | | | | | | | | |
| Product weight with 0 mm stroke | 64 | 75 | 128 | 181 | 265 | 361 | 531 | 755 | 1301 | 2171 | 2952 |
| Additional weight per 10 mm stroke | 12 | 14 | 22 | 26 | 29 | 38 | 51 | 60 | 80 | 99 | 116 |
| Moving mass with 0 mm stroke | 11 | 18 | 32 | 41 | 76 | 103 | 164 | 222 | 431 | 595 | 1020 |
| Additional mass per 10 mm stroke | 2 | 4 | 6 | 6 | 9 | 9 | 16 | 16 | 25 | 25 | 29 |
| **ADN-...-K8** | | | | | | | | | | | |
| Additional weight and mass per 10 mm piston rod extension | 2 | 4 | 6 | 6 | 9 | 9 | 16 | 16 | 25 | 25 | – |
| **ADN-...-K2** | | | | | | | | | | | |
| Additional weight and mass per 10 mm piston rod thread extension | 2 | 2 | 4 | 4 | 6 | 6 | 9 | 9 | 16 | 16 | – |

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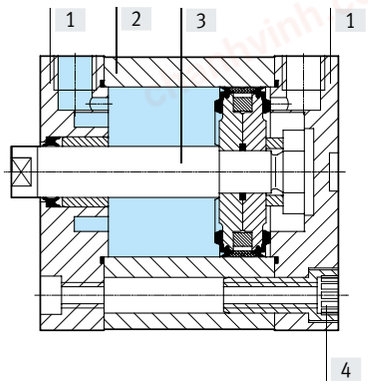
# Datasheet

## Materials

Sectional view




| Compact cylinder | | Basic version, Q | R8 | S6, S10, S11 | R3 | K10 | F1A |
|---|---|---|---|---|---|---|---|
| [1] | Cover | | | | | | |
| | ø 12 ... 63 | Anodised aluminium | | | | | |
| | ø 80 ... 125 | Coated die-cast aluminum | | | | | |
| [2] | Cylinder barrel | Anodised aluminium | | | | | |
| [3] | Piston rod | High-alloy steel | Hard-chrome-plated tempered steel | High-alloy steel | | Anodised aluminium | High-alloy steel |
| [4] | Flange screws | | | | | | |
| | ø 12 ... 16 | High-alloy steel | | | High-alloy steel | – | Steel, chemically nickel-plated |
| | ø 20 ... 63 | Galvanised steel | | | Tempered steel | Galvanised steel | |
| | ø 80 ... 125 | Standard screws, galvanised steel | | | Standard screws, high-alloy steel | Standard screws, galvanised steel | |
| – | Stroke adjustment ADN-...-KE | | | | | | |
| | Stop element | PE-UHMW | | | | | |
| | Threaded coupling | Aluminium | | | | | |
| – | Seals | Polyurethane | | Fluoro rubber | Polyurethane | | Polyurethane |
| – | Note on materials | | | | | | |
| | ADN-... | RoHs-compliant | | | | | |
| | | LABS (PWIS) conformity: VDMA24364-B1/B2-L | | | | | |
| | ø 12 ... 63 | Cleanroom class 5 to ISO 14644-1 | | | | | |
| | ADN-...-S10/11 | Contains paint-wetting impairment substances | | | | | |
| | | LABS (PWIS) conformity: VDMA24364-Zone III | | | | | |
| | ADN-...-F1A | Suitable for battery production with reduced Cu/Zn/Ni values (F1a) | | | | | |

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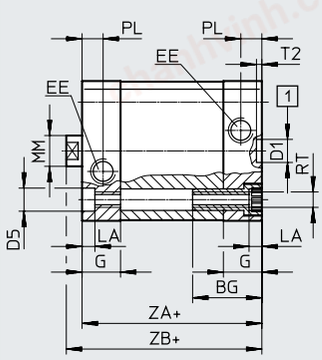
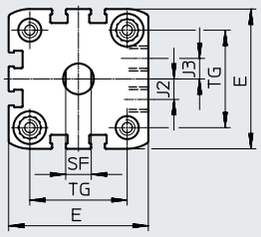
# Datasheet

**Dimensions – Basic version** Download CAD data ➔ www.festo.com

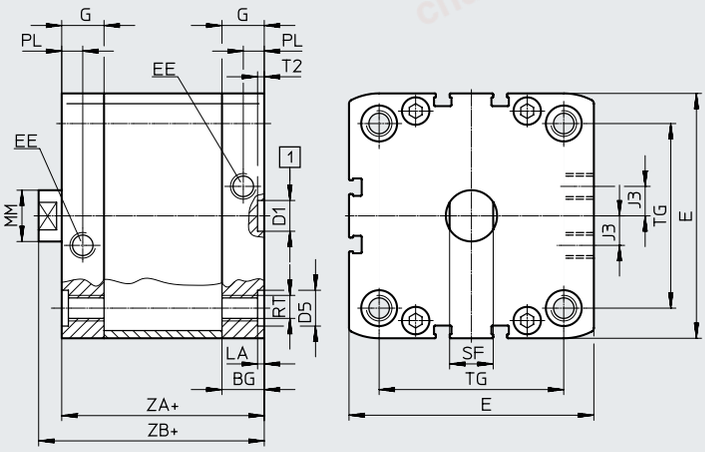
Ø 12 ... 63




Ø 32 ... 63



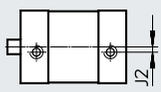

Ø 80 ... 125




Ø 12 ... 25



Ø 12




\+ = plus stroke length

[1] = Drilled hole for centring pin/sleeve

| Ø [mm] | BG min. | D1 Ø H9 | D5 Ø | E | EE | G | J2 | J3 | PW +0.2 |
|---|---|---|---|---|---|---|---|---|---|
| 12 | 17 | 9 | $6^{F9}$ | 27.5 +0.3 | M5 | 10.5 | 2 | – | 3.5 |
| 16 | | | | 29 +0.3 | | 11 | 2.6 | | |
| 20 | 19.5 | | $9^{F9}$ | 35.5 +0.3 | | 12 | | | 5 |
| 25 | | | | 39.5 +0.3 | | | | | |
| 32 | 26 | | | 47 +0.3 | G1/8 | 15 | 6 | | |
| 40 | | | | 54.5 +0.3 | | | 8 | | |
| 50 | 27 | 12 | $12^{F9}$ | 65.5 +0.3 | | | 11.5 | | |
| 63 | | | | 75.5 +0.3 | | | | | |
| 80 | 17 | | 15 | 95.5 +0.6 | | 16.5 | | | 2.6 |
| 100 | 21.5 | | | 113.5 +0.6 | | 21.5 | 20 | | |
| 125 | 20 | | – | 134.6 +0.3 | G1/4 | 20 | 21.15 | | – |

| Ø [mm] | MM Ø | PL +0.2 | RT | ST h13 | T2 +0.1 | TG ±0.2 | ZA ±0.6 | ZB +1.2 | ZB PPS +1.3 |
|---|---|---|---|---|---|---|---|---|---|
| 12 | 6 | 6 | M4 | 5 | 2.1 | 16 | 35 | 39.2 | – |
| 16 | 8 | | | 7 | | 18 | | 39.7 | |
| 20 | 10 | | M5 | 9 | | 22 | 37 | 42.5 | 42.5 |
| 25 | | | | | | 26 | 39 | 44.5 | 45.3 |
| 32 | 12 | 8.2 | M6 | 10 | | 32.5 | 44 | 50 | 50.6 |
| 40 | | | | | | 38 | 45 | 51.1 | 51.7 |
| 50 | 16 | | M8 | 13 | 2.6 | 46.5 | | 52.7 | 53.2 |
| 63 | | | | | | 56.5 | 49 | 56.5 | 57 |
| 80 | 20 | | M10 | 17 | | 72 | 54 | 62.9 | 63.4 |
| 100 | | 10.5 | | | | 89 | 67 | 76 | 76.8 |
| 125 | 25 | | M12 | 21 | | 110 | 81 | 92 | – |

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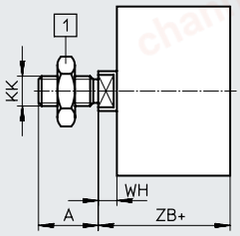
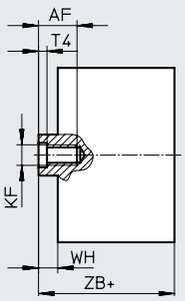
# Datasheet

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

Basic version

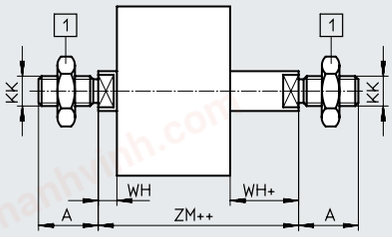


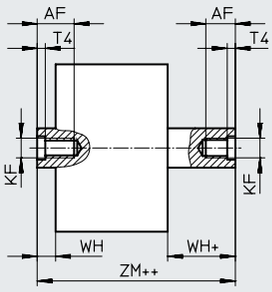




[1] Hex nut DIN 439-B only with Ø 32 ... 125

\+ = plus stroke length

S2 – Through piston rod



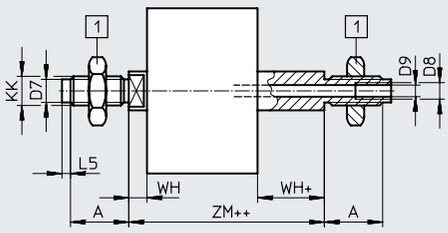




[1] Hex nut DIN 439-B only with Ø 32 ... 125

\+ = plus stroke length

++ = plus 2x stroke length

S20 – Through, hollow piston rod

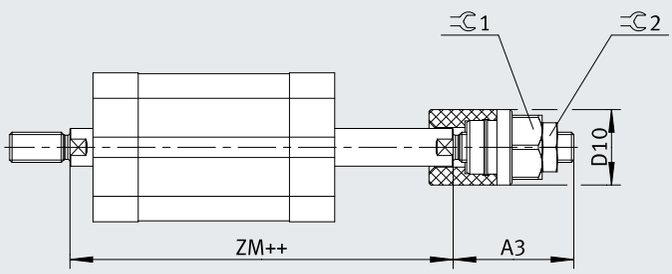



[1] Hex nut DIN 439-B only with Ø 32 ... 125

\+ = plus stroke length

++ = plus 2x stroke length

KE – Stroke adjustment




\+ = plus stroke length

++ = plus 2x stroke length

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## Datasheet

| ø<br>[mm] | A<br>–0.5 | AF<br>min. | A3 | D7<br>ø | D8 | D9<br>ø | D10<br>ø | L5 | KF | KK | T4 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 | 10 | 8 | 28 | – | – | – | 15 | – | M3 | M5 | 1.5 |
| 16 | 12 | 10 | | 4.5 | | 3.2 | | 3 | M4 | M6 | |
| 20 | 16 | 14 | 32 | 6 | – | 3.8 | 20 | 2 | M6 | M8 | 2.6 |
| 25 | | | | | | | | | | | |
| 32 | 19 | 16 | 37 | 8 | | 4.5 | 30 | 3 | M8 | M10x1.25 | 3.3 |
| 40 | | | | | | | | | | | |
| 50 | 22 | 20 | 41 | 10 | | 6 | 35 | 3.5 | M10 | M12x1.25 | 4.7 |
| 63 | | | | | | | | | | | |
| 80 | 28 | | – | – | G1/8 | 8 | – | – | M12 | M16x1.5 | 6.1 |
| 100 | | | | | | | | | | | |
| 125 | 40 | 25 | | | G1/4 | 11.7 | | | M16 | M20x1.5 | 7 |

| ø<br>[mm] | WH | | | ZB | | | ZM | | ⌀ 1 | ⌀ 2 |
|---|---|---|---|---|---|---|---|---|---|---|
| | +1.3 | PPS<br>+1.4 | R8/TT<br>+1.3 | +1.2 | PPS<br>+1.3 | R8/TT<br>+1.2 | | PPS | | |
| 12 | 4.2 | – | – | 39.2 | – | – | 44.5 $^{+0.5}$ | – | 13 | 10 |
| 16 | 4.7 | | | 39.7 | | | 45.7 $^{+0.5}$ | | | |
| 20 | 5.5 | 5.5 | 10.5 | 42.5 | 42.5 | 47.5 | 49.5 $^{+0.5}$ | 49.5 $^{+0.5}$ | 17 | 13 |
| 25 | | 5.5 | | 44.5 | 45.3 | 49.5 | 51.5 $^{+0.5}$ | 51.5 $^{+0.5}$ | | |
| 32 | 6 | 6.5 | 12.5 | 50 | 50.6 | 56.5 | 57.5 $^{+0.5}$ | 58.6 $^{+0.6}$ | 24 | 17 |
| 40 | 6.1 | 6.6 | | 51.1 | 51.7 | 57.5 | 58.6 $^{+0.6}$ | 59.7 $^{+0.7}$ | | |
| 50 | 7.7 | 8.2 | 14.7 | 52.7 | 53.2 | 59.7 | 62.0 $^{+0.6}$ | 63.1 $^{+0.7}$ | 30 | 19 |
| 63 | 7.5 | 8 | 14.6 | 56.5 | 57 | 63.6 | 65.4 $^{+0.6}$ | 66.5 $^{+0.7}$ | | |
| 80 | 8.9 | 9.4 | 15.4 | 62.9 | 63.4 | 69.4 | 73.2 $^{+0.6}$ | 74.3 $^{+0.7}$ | – | – |
| 100 | 9 | 9.8 | 15.5 | 76 | 76.8 | 82.5 | 86.4 $^{+0.6}$ | 88 $^{+0.7}$ | | |
| 125 | 11 | – | – | 92 | – | – | 104.4 $^{+0.6}$ | – | | |

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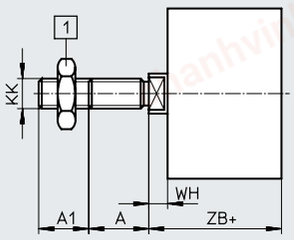
# Datasheet

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

K2 – Extended male piston rod thread



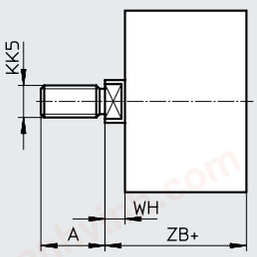

- - **Note**

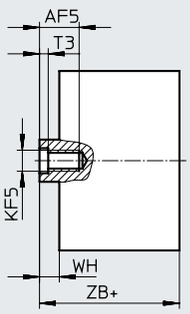
In combination with variants S2/ S20, the piston rod thread is extended at both ends

[1] Hex nut DIN 439-B only with Ø 32 ... 125

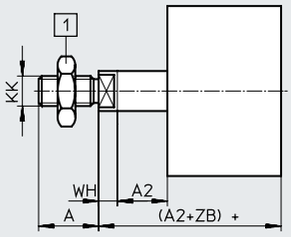
\+ = plus stroke length

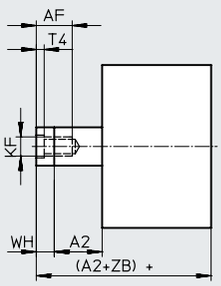
K5 – Special piston rod thread




K8 – Extended piston rod



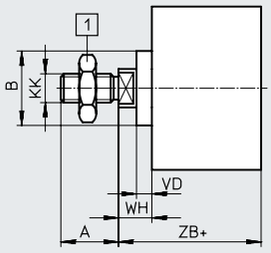

- - **Note**

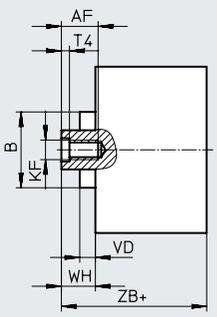
In combination with variants S2/ S20, the piston rod thread is extended at one end

[1] Hex nut DIN 439-B only with Ø 32 ... 125

\+ = plus stroke length

R8 – Dust protection / TT – Low temperature




[1] Hex nut DIN 439-B only with Ø 32 ... 125

\+ = plus stroke length

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## Datasheet

| ø<br>[mm] | A<br>–0.5 | A1 | A2 | AF<br>min. | AF5<br>min. | B<br>ø | KF | KF5 | KK | KK5 |
|---|---|---|---|---|---|---|---|---|---|---|
| 12 | 10 | 1 ... 10 | 1 ... 300 | 8 | – | – | M3 | – | M5 | M6 |
| 16 | 12 | | | 10 | | | M4 | | M6 | M8 |
| 20 | 16 | 1 ... 20 | | 14 | 12 | 18 | M6 | M5 | M8 | M10x1.25 |
| 25 | | | | | | | | | | M10 |
| 32 | 19 | | 1 ...400 | 16 | 14 | 27 | M8 | M6 | M10x1.25 | M10 |
| 40 | | | | | | | | | | M10 |
| 50 | 22 | | | 20 | 16 | 31 | M10 | M8 | M12x1.25 | M12 |
| 63 | | | | | | | | | | M12 |
| 80 | 28 | 1 ... 30 | 1 ... 500 | | 20 | 35 | M12 | M10 | M16x1.5 | M16 |
| 100 | | | | | | | | | | M16 |
| 125 | 40 | 1 ... 40 | | 25 | – | – | M16 | – | M20x1.5 | M20 |

| ø<br>[mm] | T3 | T4 | VD | WH | | | ZB | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | +1.3 | PPS<br>+1.4 | R8/TT<br>+1.3 | +1.2 | PPS<br>+1.3 | R8/TT<br>+1.2 |
| 12 | – | 1.5 | – | 4.2 | – | – | 39.2 | – | – |
| 16 | | | | 4.7 | | | 39.7 | | |
| 20 | 2 | 2.6 | 5.2 | 5.5 | 5.5 | 10.5 | 42.5 | 42.5 | 47.5 |
| 25 | | | | | 5.5 | | 44.5 | 45.3 | 49.5 |
| 32 | 2.6 | 3.3 | 6.4 | 6 | 6.5 | 12.5 | 50 | 50.6 | 56.5 |
| 40 | | | | 6.1 | 6.6 | | 51.1 | 51.7 | 57.5 |
| 50 | 3.3 | 4.7 | | 7.7 | 8.2 | 14.7 | 52.7 | 53.2 | 59.7 |
| 63 | | | | 7.5 | 8 | 14.6 | 56.5 | 57 | 63.6 |
| 80 | 4.7 | 6.1 | | 8.9 | 9.4 | 15.4 | 62.9 | 63.4 | 69.4 |
| 100 | | | | 9 | 9.8 | 15.5 | 76 | 76.8 | 82.5 |
| 125 | – | 7 | – | 11 | – | – | 92 | – | – |

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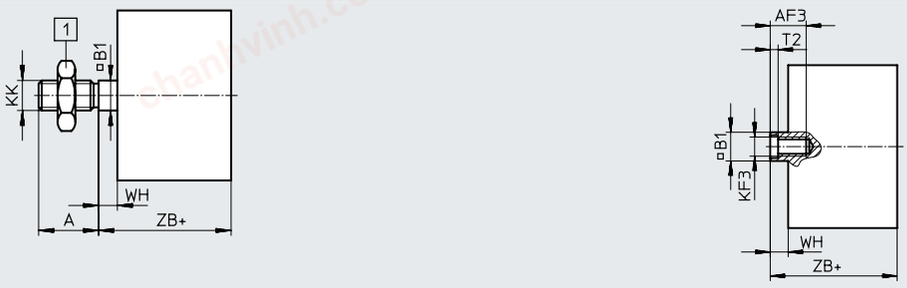
# Datasheet

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

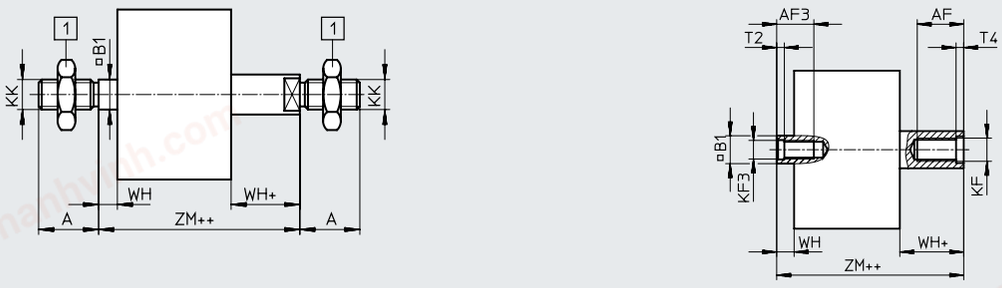
Q – Square piston rod




[1] Hex nut DIN 439-B only with Ø 32 ... 125

\+ = plus stroke length

Q-S2 – Square, through piston rod

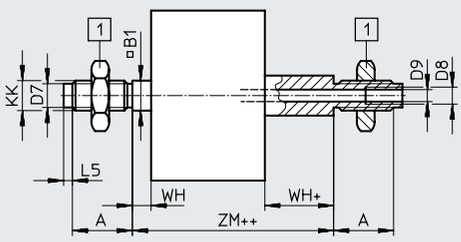



[1] Hex nut DIN 439-B only with Ø 32 ... 125

\+ = plus stroke length

++ = plus 2x stroke length

Q-S20 – Square, through, hollow piston rod

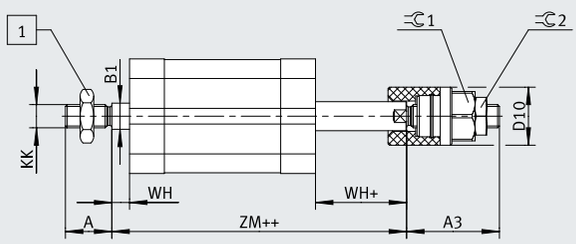



[1] Hex nut DIN 439-B only with Ø 32 ... 125

\+ = plus stroke length

++ = plus 2x stroke length

Q-KE – Square, through piston rod with stroke adjustment

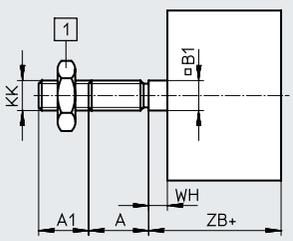



[1] Hex nut DIN 439-B only with Ø 32 ... 125

\+ = plus stroke length

++ = plus 2x stroke length

Q-K2 – Square piston rod with extended male thread




**Note**

In combination with variants S2/ S20, the piston rod thread is extended at both ends.

[1] Hex nut DIN 439-B only with Ø 32 ... 125

\+ = plus stroke length

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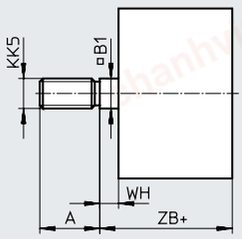
# Datasheet

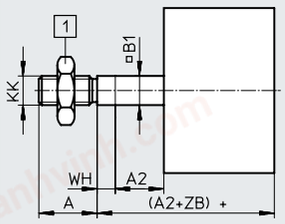
**Dimensions – Variants** Download CAD data ➔ www.festo.com

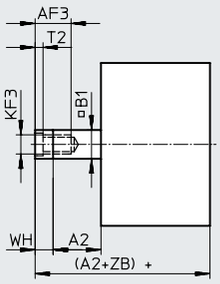
Q-K5 – Square piston rod with special piston rod thread




\+ = plus stroke length

Q-K8 – Square, extended piston rod




**Note**

In combination with variants S2/S20, the piston rod thread is extended at both ends.

[1] Hex nut DIN 439-B only with Ø 32 ... 125

\+ = plus stroke length

| ø [mm] | A –0.5 | A1 | A2 | A3 | AF min. | AF3 min. | B1 □ | D7 ø | D8 | D9 ø | D10 ø | L5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 | 10 | 1 ... 10 | 1 ... 300 | 28 | 8 | 8 | 5.5 | – | – | – | 15 | – |
| 16 | 12 | | | | 10 | 10 | 7 | 4.5 | | 3.2 | | 3 |
| 20 | 16 | 1 ... 20 | | 32 | 14 | 12 | 9 | 6 | | 3.8 | 20 | 2 |
| 25 | | | | | | | | | | | | |
| 32 | 19 | | 1 ...400 | 37 | 16 | 14 | 10 | 8 | | 4.5 | 30 | 3 |
| 40 | | | | | | | | | | | | |
| 50 | 22 | | | 41 | 20 | 16 | 12 | 10 | | 6 | 35 | 3.5 |
| 63 | | | | | | | | | | | | |
| 80 | 28 | 1 ... 30 | 1 ... 500 | – | 20 | 20 | 16 | – | G1/8 | 8 | – | – |
| 100 | | | | | | | | | | | | |
| 125 | 40 | 1 ... 40 | | | 25 | 24 | 20 | | G1/4 | 11.7 | | |

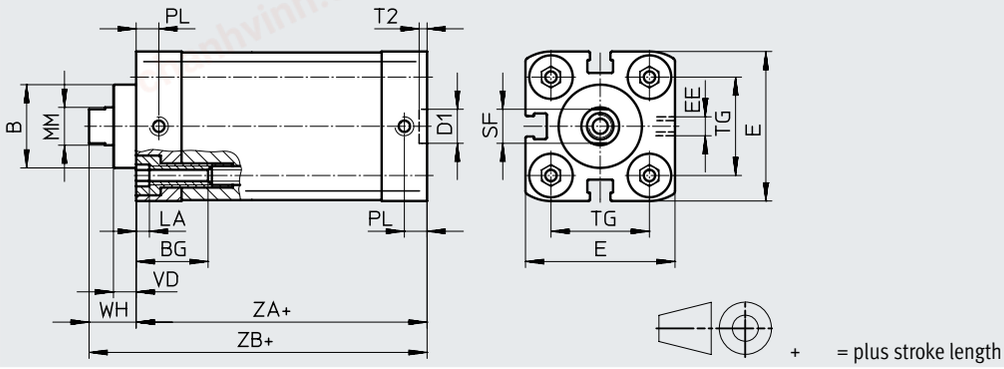
| ø [mm] | KF | KF3 | KK | KK5 | T2 | T4 | WH +1.3 | ZB +1.2 | ZM | | ⫧ 1 | ⫧ 2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | PPS | | |
| 12 | M3 | M3 | M5 | M6 | 1.5 | 1.5 | 4.2 | 39.2 | 44.5 +0.5 | – | 13 | 10 |
| 16 | M4 | M4 | M6 | M8 | | | 4.7 | 39.7 | 45.7 +0.5 | | | |
| 20 | M6 | M5 | M8 | M10x1.25 M10 | 2 | 2.6 | 5.5 | 42.5 | 49.5 +0.5 | 49.5 +0.5 | 17 | 13 |
| 25 | | | | | | | | 44.5 | 51.5 +0.5 | 51.5 +0.5 | | |
| 32 | M8 | M6 | M10x1.25 | M10 | 2.6 | 3.3 | 6 | 50 | 57.5 +0.5 | 58.6 +0.6 | 24 | 17 |
| 40 | | | | | | | 6.1 | 51.1 | 58.6 +0.6 | 59.7 +0.7 | | |
| 50 | M10 | M8 | M12x1.25 | M12 | 3.3 | 4.7 | 8.2 | 53.2 | 62.0 +0.6 | 63.1 +0.7 | 30 | 19 |
| 63 | | | | | | | 8.1 | 57.1 | 65.4 +0.6 | 66.5 +0.7 | | |
| 80 | M12 | M10 | M16x1.5 | M16 | 4.7 | 6.1 | 8.9 | 62.9 | 73.2 +0.6 | 74.3 +0.7 | – | – |
| 100 | | | | | | | 9 | 76 | 86.4 +0.6 | 88 +0.7 | | |
| 125 | M16 | M12 | M20x1.5 | M20 | 6.1 | 7 | 11 | 92 | 104.4 +0.6 | – | | |

# Datasheet

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

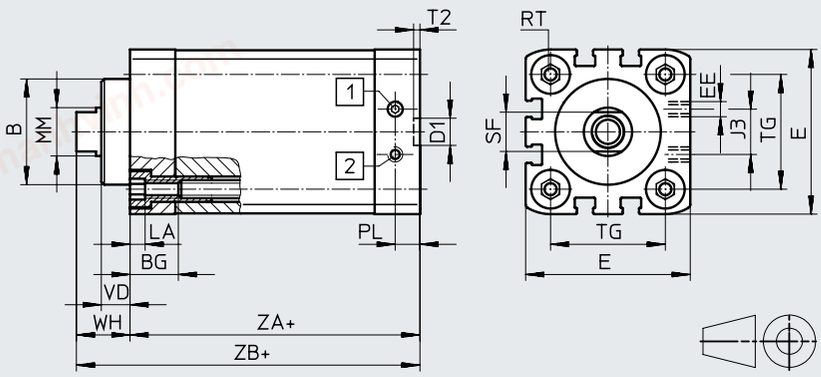
S1 – Reinforced piston rod

Ø 25




\+ = plus stroke length

Ø 40 ... 100




[1] Cylinder advancing
[2] Cylinder retracting

\+ = plus stroke length

| Ø [mm] | B Ø f8 | BG min. | D1 Ø H9 | E | EE | J3 | PW | MM Ø | PL |
|---|---|---|---|---|---|---|---|---|---|
| 25 | 22 | 15 | 9 | 39.5 +0.3 | M5 | – | 5 | 10 | 6 |
| 40 | 35 | 16 | | 54.5 +0.3 | | 15 | | 16 | 8.2 |
| 63 | 42 | | 12 | 75.5 +0.3 | G1/8 | 23 | | 20 | |
| 100 | 55 | 17 | | 113.5 +0.6 | | 40 | | 25 | 10.5 |

| Ø [mm] | RT | ST h13 | T2 +0.1 | TG ±0.2 | VD | WH +1.3 | ZA ±0.6 | ZB +1.2 |
|---|---|---|---|---|---|---|---|---|
| 25 | M5 | 9 | 2.1 | 26 | 6 | 11.8 | 39 | 50.9 |
| 40 | M6 | 13 | | 38 | 9.5 | 18 | 45 | 62.9 |
| 63 | M8 | 17 | 2.6 | 56.5 | 12 | 21 | 49 | 70.2 |
| 100 | M10 | 21 | | 89 | 15.5 | 26.5 | 67 | 93.5 |

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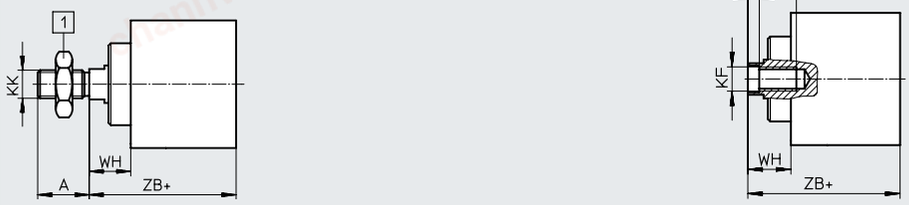
# Datasheet

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

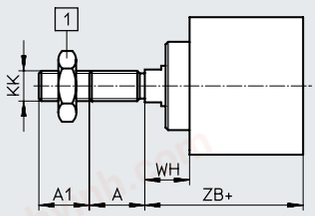
S1 – Reinforced piston rod




[1] Hex nut DIN 439-B only with Ø 40 ... 100

\+ = plus stroke length

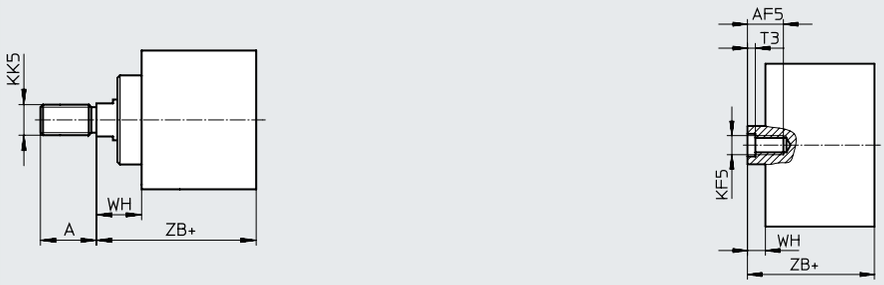
S1-K2 – Reinforced piston rod with extended male piston rod thread




[1] Hex nut DIN 439-B only with Ø 40 ... 100

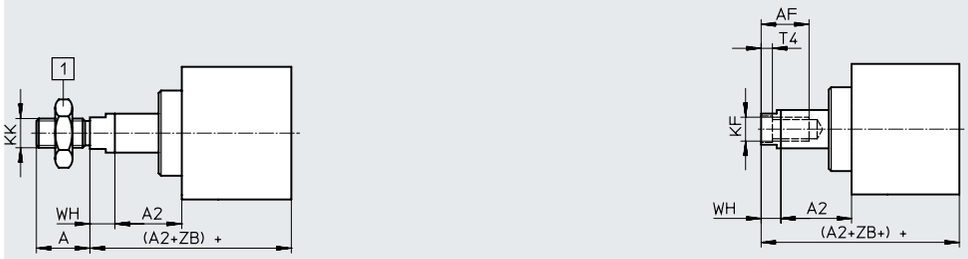
\+ = plus stroke length

S1-K5 – Reinforced piston rod with special piston rod thread




\+ = plus stroke length

S1-K8 – Reinforced piston rod with extended piston rod




[1] Hex nut DIN 439-B only with Ø 40 ... 100

\+ = plus stroke length

| ø [mm] | A –0.5 | A1 | A2 | AF min. | AF5 min. | KF | KF5 | KK | KK5 | T3 | T4 | WH +1.3 | ZB +1.2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | 16 | 1 ... 20 | 1 ... 300 | 14 | 12 | M6 | M5 | M8 | M10x1.25<br>M10 | 2 | 2.6 | 11.8 | 50.9 |
| 40 | 22 | | 1 ... 400 | 20 | 16 | M10 | M8 | M12x1.25 | M10x1.25<br>M12 | 3.3 | 4.7 | 18 | 62.9 |
| 63 | 28 | | | | 20 | M12 | M10 | M16x1.5 | M12x1.25<br>M16 | 4.7 | 6.1 | 21 | 70.2 |
| 100 | 40 | 1 ... 30 | 1 ... 500 | 25 | – | M16 | – | M20x1.5 | M16x1.5<br>M20 | – | 7 | 26.5 | 93.5 |

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# Datasheet

**Ordering data**

| Type | Piston ø | Stroke | I – Piston rod with female thread<br>P – Elastic cushioning rings/plates at both ends | | A – Piston rod with male thread<br>P – Elastic cushioning rings/plates at both ends | |
|---|---|---|---|---|---|---|
| | [mm] | [mm] | Part no. | Type | Part no. | Type |
|  | 12 | 5 | **536211** | **ADN-12-5-I-P-A** | **536204** | **ADN-12-5-A-P-A** |
| | | 10 | **536212** | **ADN-12-10-I-P-A** | **536205** | **ADN-12-10-A-P-A** |
| | | 15 | **536213** | **ADN-12-15-I-P-A** | **536206** | **ADN-12-15-A-P-A** |
| | | 20 | **536214** | **ADN-12-20-I-P-A** | **536207** | **ADN-12-20-A-P-A** |
| | | 25 | **536215** | **ADN-12-25-I-P-A** | **536208** | **ADN-12-25-A-P-A** |
| | | 30 | **536216** | **ADN-12-30-I-P-A** | **536209** | **ADN-12-30-A-P-A** |
| | | 35 | **8178328** | **ADN-12-35-I-P-A** | **8178327** | **ADN-12-35-A-P-A** |
| | | 40 | **536217** | **ADN-12-40-I-P-A** | **536210** | **ADN-12-40-A-P-A** |
| | | 50 | **8178550** | **ADN-12-50-I-P-A** | **8178548** | **ADN-12-50-A-P-A** |
| | | 60 | **604883** | **ADN-12-60-I-P-A** | **8178549** | **ADN-12-60-A-P-A** |
| | 16 | 5 | **536226** | **ADN-16-5-I-P-A** | **536219** | **ADN-16-5-A-P-A** |
| | | 10 | **536227** | **ADN-16-10-I-P-A** | **536220** | **ADN-16-10-A-P-A** |
| | | 15 | **536228** | **ADN-16-15-I-P-A** | **536221** | **ADN-16-15-A-P-A** |
| | | 20 | **536229** | **ADN-16-20-I-P-A** | **536222** | **ADN-16-20-A-P-A** |
| | | 25 | **536230** | **ADN-16-25-I-P-A** | **536223** | **ADN-16-25-A-P-A** |
| | | 30 | **536231** | **ADN-16-30-I-P-A** | **536224** | **ADN-16-30-A-P-A** |
| | | 35 | **8178765** | **ADN-16-35-I-P-A** | **8178762** | **ADN-16-35-A-P-A** |
| | | 40 | **536232** | **ADN-16-40-I-P-A** | **536225** | **ADN-16-40-A-P-A** |
| | | 50 | **536341** | **ADN-16-50-I-P-A** | **536331** | **ADN-16-50-A-P-A** |
| | | 60 | **8178766** | **ADN-16-60-I-P-A** | **8178763** | **ADN-16-60-A-P-A** |
| | | 70 | **8178767** | **ADN-16-70-I-P-A** | **594950** | **ADN-16-70-A-P-A** |
| | 20 | 5 | **536242** | **ADN-20-5-I-P-A** | **536234** | **ADN-20-5-A-P-A** |
| | | 10 | **536243** | **ADN-20-10-I-P-A** | **536235** | **ADN-20-10-A-P-A** |
| | | 15 | **536244** | **ADN-20-15-I-P-A** | **536236** | **ADN-20-15-A-P-A** |
| | | 20 | **536245** | **ADN-20-20-I-P-A** | **536237** | **ADN-20-20-A-P-A** |
| | | 25 | **536246** | **ADN-20-25-I-P-A** | **536238** | **ADN-20-25-A-P-A** |
| | | 30 | **536247** | **ADN-20-30-I-P-A** | **536239** | **ADN-20-30-A-P-A** |
| | | 35 | **578011** | **ADN-20-35-I-P-A** | **8178859** | **ADN-20-35-A-P-A** |
| | | 40 | **536248** | **ADN-20-40-I-P-A** | **536240** | **ADN-20-40-A-P-A** |
| | | 50 | **536249** | **ADN-20-50-I-P-A** | **536241** | **ADN-20-50-A-P-A** |
| | | 60 | **536362** | **ADN-20-60-I-P-A** | **536352** | **ADN-20-60-A-P-A** |
| | | 70 | **8178862** | **ADN-20-70-I-P-A** | **595275** | **ADN-20-70-A-P-A** |
| | 25 | 5 | **536259** | **ADN-25-5-I-P-A** | **536251** | **ADN-25-5-A-P-A** |
| | | 10 | **536260** | **ADN-25-10-I-P-A** | **536252** | **ADN-25-10-A-P-A** |
| | | 15 | **536261** | **ADN-25-15-I-P-A** | **536253** | **ADN-25-15-A-P-A** |
| | | 20 | **536262** | **ADN-25-20-I-P-A** | **536254** | **ADN-25-20-A-P-A** |
| | | 25 | **536263** | **ADN-25-25-I-P-A** | **536255** | **ADN-25-25-A-P-A** |
| | | 30 | **536264** | **ADN-25-30-I-P-A** | **536256** | **ADN-25-30-A-P-A** |
| | | 35 | **608920** | **ADN-25-35-I-P-A** | **574647** | **ADN-25-35-A-P-A** |
| | | 40 | **536265** | **ADN-25-40-I-P-A** | **536257** | **ADN-25-40-A-P-A** |
| | | 50 | **536266** | **ADN-25-50-I-P-A** | **536258** | **ADN-25-50-A-P-A** |
| | | 60 | **536383** | **ADN-25-60-I-P-A** | **536373** | **ADN-25-60-A-P-A** |
| | | 70 | **8178880** | **ADN-25-70-I-P-A** | **8178877** | **ADN-25-70-A-P-A** |
| | | 80 | **578450** | **ADN-25-80-I-P-A** | **576652** | **ADN-25-80-A-P-A** |

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# Datasheet

**Ordering data**

| Type | Piston ⌀ | Stroke | I – Piston rod with female thread<br>P – Elastic cushioning rings/plates at both ends | | A – Piston rod with male thread<br>P – Elastic cushioning rings/plates at both ends | |
|---|---|---|---|---|---|---|
| | [mm] | [mm] | Part no. | Type | Part no. | Type |
|  | 32 | 5 | **536278** | **ADN-32-5-I-P-A** | **536268** | **ADN-32-5-A-P-A** |
| | | 10 | **536279** | **ADN-32-10-I-P-A** | **536269** | **ADN-32-10-A-P-A** |
| | | 15 | **536280** | **ADN-32-15-I-P-A** | **536270** | **ADN-32-15-A-P-A** |
| | | 20 | **536281** | **ADN-32-20-I-P-A** | **536271** | **ADN-32-20-A-P-A** |
| | | 25 | **536282** | **ADN-32-25-I-P-A** | **536272** | **ADN-32-25-A-P-A** |
| | | 30 | **536283** | **ADN-32-30-I-P-A** | **536273** | **ADN-32-30-A-P-A** |
| | | 35 | **8179019** | **ADN-32-35-I-P-A** | **576645** | **ADN-32-35-A-P-A** |
| | | 40 | **536284** | **ADN-32-40-I-P-A** | **536274** | **ADN-32-40-A-P-A** |
| | | 50 | **536285** | **ADN-32-50-I-P-A** | **536275** | **ADN-32-50-A-P-A** |
| | | 60 | **536286** | **ADN-32-60-I-P-A** | **536276** | **ADN-32-60-A-P-A** |
| | | 70 | **8173462** | **ADN-32-70-I-P-A** | **564092** | **ADN-32-70-A-P-A** |
| | | 80 | **536287** | **ADN-32-80-I-P-A** | **536277** | **ADN-32-80-A-P-A** |
| | 40 | 5 | **536299** | **ADN-40-5-I-P-A** | **536289** | **ADN-40-5-A-P-A** |
| | | 10 | **536300** | **ADN-40-10-I-P-A** | **536290** | **ADN-40-10-A-P-A** |
| | | 15 | **536301** | **ADN-40-15-I-P-A** | **536291** | **ADN-40-15-A-P-A** |
| | | 20 | **536302** | **ADN-40-20-I-P-A** | **536292** | **ADN-40-20-A-P-A** |
| | | 25 | **536303** | **ADN-40-25-I-P-A** | **536293** | **ADN-40-25-A-P-A** |
| | | 30 | **536304** | **ADN-40-30-I-P-A** | **536294** | **ADN-40-30-A-P-A** |
| | | 35 | **8179033** | **ADN-40-35-I-P-A** | **8179031** | **ADN-40-35-A-P-A** |
| | | 40 | **536305** | **ADN-40-40-I-P-A** | **536295** | **ADN-40-40-A-P-A** |
| | | 50 | **536306** | **ADN-40-50-I-P-A** | **536296** | **ADN-40-50-A-P-A** |
| | | 60 | **536307** | **ADN-40-60-I-P-A** | **536297** | **ADN-40-60-A-P-A** |
| | | 70 | **8179034** | **ADN-40-70-I-P-A** | **582549** | **ADN-40-70-A-P-A** |
| | | 80 | **536308** | **ADN-40-80-I-P-A** | **536298** | **ADN-40-80-A-P-A** |
| | 50 | 5 | **536320** | **ADN-50-5-I-P-A** | **536310** | **ADN-50-5-A-P-A** |
| | | 10 | **536321** | **ADN-50-10-I-P-A** | **536311** | **ADN-50-10-A-P-A** |
| | | 15 | **536322** | **ADN-50-15-I-P-A** | **536312** | **ADN-50-15-A-P-A** |
| | | 20 | **536323** | **ADN-50-20-I-P-A** | **536313** | **ADN-50-20-A-P-A** |
| | | 25 | **536324** | **ADN-50-25-I-P-A** | **536314** | **ADN-50-25-A-P-A** |
| | | 30 | **536325** | **ADN-50-30-I-P-A** | **536315** | **ADN-50-30-A-P-A** |
| | | 35 | **8178619** | **ADN-50-35-I-P-A** | **8178336** | **ADN-50-35-A-P-A** |
| | | 40 | **536326** | **ADN-50-40-I-P-A** | **536316** | **ADN-50-40-A-P-A** |
| | | 50 | **536327** | **ADN-50-50-I-P-A** | **536317** | **ADN-50-50-A-P-A** |
| | | 60 | **536328** | **ADN-50-60-I-P-A** | **536318** | **ADN-50-60-A-P-A** |
| | | 70 | **8178338** | **ADN-50-70-I-P-A** | **572851** | **ADN-50-70-A-P-A** |
| | | 80 | **536329** | **ADN-50-80-I-P-A** | **536319** | **ADN-50-80-A-P-A** |
| | 63 | 10 | **536342** | **ADN-63-10-I-P-A** | **536332** | **ADN-63-10-A-P-A** |
| | | 15 | **536343** | **ADN-63-15-I-P-A** | **536333** | **ADN-63-15-A-P-A** |
| | | 20 | **536344** | **ADN-63-20-I-P-A** | **536334** | **ADN-63-20-A-P-A** |
| | | 25 | **536345** | **ADN-63-25-I-P-A** | **536335** | **ADN-63-25-A-P-A** |
| | | 30 | **536346** | **ADN-63-30-I-P-A** | **536336** | **ADN-63-30-A-P-A** |
| | | 35 | **8178659** | **ADN-63-35-I-P-A** | **8178283** | **ADN-63-35-A-P-A** |
| | | 40 | **536347** | **ADN-63-40-I-P-A** | **536337** | **ADN-63-40-A-P-A** |
| | | 50 | **536348** | **ADN-63-50-I-P-A** | **536338** | **ADN-63-50-A-P-A** |
| | | 60 | **536349** | **ADN-63-60-I-P-A** | **536339** | **ADN-63-60-A-P-A** |
| | | 70 | **8178285** | **ADN-63-70-I-P-A** | **8178284** | **ADN-63-70-A-P-A** |
| | | 80 | **536350** | **ADN-63-80-I-P-A** | **536340** | **ADN-63-80-A-P-A** |

# Datasheet

**Ordering data**

| Type | Piston ⌀ | Stroke | I – Piston rod with female thread<br>P – Elastic cushioning rings/plates at both ends | | A – Piston rod with male thread<br>P – Elastic cushioning rings/plates at both ends | |
|---|---|---|---|---|---|---|
| | [mm] | [mm] | Part no. | Type | Part no. | Type |
|  | 80 | 10 | **536363** | **ADN-80-10-I-P-A** | **536353** | **ADN-80-10-A-P-A** |
| | | 15 | **536364** | **ADN-80-15-I-P-A** | **536354** | **ADN-80-15-A-P-A** |
| | | 20 | **536365** | **ADN-80-20-I-P-A** | **536355** | **ADN-80-20-A-P-A** |
| | | 25 | **536366** | **ADN-80-25-I-P-A** | **536356** | **ADN-80-25-A-P-A** |
| | | 30 | **536367** | **ADN-80-30-I-P-A** | **536357** | **ADN-80-30-A-P-A** |
| | | 40 | **536368** | **ADN-80-40-I-P-A** | **536358** | **ADN-80-40-A-P-A** |
| | | 50 | **536369** | **ADN-80-50-I-P-A** | **536359** | **ADN-80-50-A-P-A** |
| | | 60 | **536370** | **ADN-80-60-I-P-A** | **536360** | **ADN-80-60-A-P-A** |
| | | 80 | **536371** | **ADN-80-80-I-P-A** | **536361** | **ADN-80-80-A-P-A** |
| | 100 | 10 | **536384** | **ADN-100-10-I-P-A** | **536374** | **ADN-100-10-A-P-A** |
| | | 15 | **536385** | **ADN-100-15-I-P-A** | **536375** | **ADN-100-15-A-P-A** |
| | | 20 | **536386** | **ADN-100-20-I-P-A** | **536376** | **ADN-100-20-A-P-A** |
| | | 25 | **536387** | **ADN-100-25-I-P-A** | **536377** | **ADN-100-25-A-P-A** |
| | | 30 | **536388** | **ADN-100-30-I-P-A** | **536378** | **ADN-100-30-A-P-A** |
| | | 40 | **536389** | **ADN-100-40-I-P-A** | **536379** | **ADN-100-40-A-P-A** |
| | | 50 | **536390** | **ADN-100-50-I-P-A** | **536380** | **ADN-100-50-A-P-A** |
| | | 60 | **536391** | **ADN-100-60-I-P-A** | **536381** | **ADN-100-60-A-P-A** |
| | | 80 | **536392** | **ADN-100-80-I-P-A** | **536382** | **ADN-100-80-A-P-A** |

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# Datasheet

**Ordering data**

| Type | Piston ø | Stroke | I – Piston rod with female thread<br>PPS – Pneumatic cushioning, self-adjusting at both ends | | A – Piston rod with male thread<br>PPS – Pneumatic cushioning, self-adjusting at both ends | |
|---|---|---|---|---|---|---|
| | [mm] | [mm] | Part no. | Type | Part no. | Type |
|  | 20 | 10 | **577158** | **ADN-20-10-I-PPS-A** | **577166** | **ADN-20-10-A-PPS-A** |
| | | 15 | **577159** | **ADN-20-15-I-PPS-A** | **577167** | **ADN-20-15-A-PPS-A** |
| | | 20 | **577160** | **ADN-20-20-I-PPS-A** | **577168** | **ADN-20-20-A-PPS-A** |
| | | 25 | **577161** | **ADN-20-25-I-PPS-A** | **577169** | **ADN-20-25-A-PPS-A** |
| | | 30 | **577162** | **ADN-20-30-I-PPS-A** | **577170** | **ADN-20-30-A-PPS-A** |
| | | 35 | **8178865** | **ADN-20-35-I-PPS-A** | **8178863** | **ADN-20-35-A-PPS-A** |
| | | 40 | **577163** | **ADN-20-40-I-PPS-A** | **577171** | **ADN-20-40-A-PPS-A** |
| | | 50 | **577164** | **ADN-20-50-I-PPS-A** | **577172** | **ADN-20-50-A-PPS-A** |
| | | 60 | **577165** | **ADN-20-60-I-PPS-A** | **577173** | **ADN-20-60-A-PPS-A** |
| | | 70 | **8178866** | **ADN-20-70-I-PPS-A** | **593451** | **ADN-20-70-A-PPS-A** |
| | 25 | 10 | **577174** | **ADN-25-10-I-PPS-A** | **577182** | **ADN-25-10-A-PPS-A** |
| | | 15 | **577175** | **ADN-25-15-I-PPS-A** | **577183** | **ADN-25-15-A-PPS-A** |
| | | 20 | **577176** | **ADN-25-20-I-PPS-A** | **577184** | **ADN-25-20-A-PPS-A** |
| | | 25 | **577177** | **ADN-25-25-I-PPS-A** | **577185** | **ADN-25-25-A-PPS-A** |
| | | 30 | **577178** | **ADN-25-30-I-PPS-A** | **577186** | **ADN-25-30-A-PPS-A** |
| | | 35 | **8178885** | **ADN-25-35-I-PPS-A** | **8178882** | **ADN-25-35-A-PPS-A** |
| | | 40 | **577179** | **ADN-25-40-I-PPS-A** | **577187** | **ADN-25-40-A-PPS-A** |
| | | 50 | **577180** | **ADN-25-50-I-PPS-A** | **577188** | **ADN-25-50-A-PPS-A** |
| | | 60 | **577181** | **ADN-25-60-I-PPS-A** | **577189** | **ADN-25-60-A-PPS-A** |
| | | 70 | **8178886** | **ADN-25-70-I-PPS-A** | **8178883** | **ADN-25-70-A-PPS-A** |
| | | 80 | **8178887** | **ADN-25-80-I-PPS-A** | **8178884** | **ADN-25-80-A-PPS-A** |
| | 32 | 10 | **572646** | **ADN-32-10-I-PPS-A** | **572655** | **ADN-32-10-A-PPS-A** |
| | | 15 | **572647** | **ADN-32-15-I-PPS-A** | **572656** | **ADN-32-15-A-PPS-A** |
| | | 20 | **572648** | **ADN-32-20-I-PPS-A** | **572657** | **ADN-32-20-A-PPS-A** |
| | | 25 | **572649** | **ADN-32-25-I-PPS-A** | **572658** | **ADN-32-25-A-PPS-A** |
| | | 30 | **572650** | **ADN-32-30-I-PPS-A** | **572659** | **ADN-32-30-A-PPS-A** |
| | | 35 | **8179023** | **ADN-32-35-I-PPS-A** | **8179021** | **ADN-32-35-A-PPS-A** |
| | | 40 | **572651** | **ADN-32-40-I-PPS-A** | **572660** | **ADN-32-40-A-PPS-A** |
| | | 50 | **572652** | **ADN-32-50-I-PPS-A** | **572661** | **ADN-32-50-A-PPS-A** |
| | | 60 | **572653** | **ADN-32-60-I-PPS-A** | **572662** | **ADN-32-60-A-PPS-A** |
| | | 70 | **8179024** | **ADN-32-70-I-PPS-A** | **8179022** | **ADN-32-70-A-PPS-A** |
| | | 80 | **572654** | **ADN-32-80-I-PPS-A** | **572663** | **ADN-32-80-A-PPS-A** |
| | 40 | 10 | **572664** | **ADN-40-10-I-PPS-A** | **572673** | **ADN-40-10-A-PPS-A** |
| | | 15 | **572665** | **ADN-40-15-I-PPS-A** | **572674** | **ADN-40-15-A-PPS-A** |
| | | 20 | **572666** | **ADN-40-20-I-PPS-A** | **572675** | **ADN-40-20-A-PPS-A** |
| | | 25 | **572667** | **ADN-40-25-I-PPS-A** | **572676** | **ADN-40-25-A-PPS-A** |
| | | 30 | **572668** | **ADN-40-30-I-PPS-A** | **572677** | **ADN-40-30-A-PPS-A** |
| | | 35 | **8179037** | **ADN-40-35-I-PPS-A** | **8179035** | **ADN-40-35-A-PPS-A** |
| | | 40 | **572669** | **ADN-40-40-I-PPS-A** | **572678** | **ADN-40-40-A-PPS-A** |
| | | 50 | **572670** | **ADN-40-50-I-PPS-A** | **572679** | **ADN-40-50-A-PPS-A** |
| | | 60 | **572671** | **ADN-40-60-I-PPS-A** | **572680** | **ADN-40-60-A-PPS-A** |
| | | 70 | **8179038** | **ADN-40-70-I-PPS-A** | **8179036** | **ADN-40-70-A-PPS-A** |
| | | 80 | **572672** | **ADN-40-80-I-PPS-A** | **572681** | **ADN-40-80-A-PPS-A** |

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# Datasheet

**Ordering data**

| Type | Piston ø | Stroke | I – Piston rod with female thread<br>PPS – Pneumatic cushioning, self-adjusting at both ends | | A – Piston rod with male thread<br>PPS – Pneumatic cushioning, self-adjusting at both ends | |
|---|---|---|---|---|---|---|
| | [mm] | [mm] | Part no. | Type | Part no. | Type |
|  | 50 | 10 | **572682** | **ADN-50-10-I-PPS-A** | **572691** | **ADN-50-10-A-PPS-A** |
| | | 15 | **572683** | **ADN-50-15-I-PPS-A** | **572692** | **ADN-50-15-A-PPS-A** |
| | | 20 | **572684** | **ADN-50-20-I-PPS-A** | **572693** | **ADN-50-20-A-PPS-A** |
| | | 25 | **572685** | **ADN-50-25-I-PPS-A** | **572694** | **ADN-50-25-A-PPS-A** |
| | | 30 | **572686** | **ADN-50-30-I-PPS-A** | **572695** | **ADN-50-30-A-PPS-A** |
| | | 35 | **8178620** | **ADN-50-35-I-PPS-A** | **8178339** | **ADN-50-35-A-PPS-A** |
| | | 40 | **572687** | **ADN-50-40-I-PPS-A** | **572696** | **ADN-50-40-A-PPS-A** |
| | | 50 | **572688** | **ADN-50-50-I-PPS-A** | **572697** | **ADN-50-50-A-PPS-A** |
| | | 60 | **572689** | **ADN-50-60-I-PPS-A** | **572698** | **ADN-50-60-A-PPS-A** |
| | | 70 | **8178341** | **ADN-50-70-I-PPS-A** | **8178340** | **ADN-50-70-A-PPS-A** |
| | | 80 | **572690** | **ADN-50-80-I-PPS-A** | **572699** | **ADN-50-80-A-PPS-A** |
| | 63 | 10 | **572700** | **ADN-63-10-I-PPS-A** | **572709** | **ADN-63-10-A-PPS-A** |
| | | 15 | **572701** | **ADN-63-15-I-PPS-A** | **572710** | **ADN-63-15-A-PPS-A** |
| | | 20 | **572702** | **ADN-63-20-I-PPS-A** | **572711** | **ADN-63-20-A-PPS-A** |
| | | 25 | **572703** | **ADN-63-25-I-PPS-A** | **572712** | **ADN-63-25-A-PPS-A** |
| | | 30 | **572704** | **ADN-63-30-I-PPS-A** | **572713** | **ADN-63-30-A-PPS-A** |
| | | 35 | **609539** | **ADN-63-35-I-PPS-A** | **610152** | **ADN-63-35-A-PPS-A** |
| | | 40 | **572705** | **ADN-63-40-I-PPS-A** | **572714** | **ADN-63-40-A-PPS-A** |
| | | 50 | **572706** | **ADN-63-50-I-PPS-A** | **572715** | **ADN-63-50-A-PPS-A** |
| | | 60 | **572707** | **ADN-63-60-I-PPS-A** | **572716** | **ADN-63-60-A-PPS-A** |
| | | 70 | **609538** | **ADN-63-70-I-PPS-A** | **8178287** | **ADN-63-70-A-PPS-A** |
| | | 80 | **572708** | **ADN-63-80-I-PPS-A** | **572717** | **ADN-63-80-A-PPS-A** |

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# Datasheet

**Ordering data**

| Type | Piston ⌀ | Stroke | I – Piston rod with female thread<br>PPS – Pneumatic cushioning, self-adjusting at both ends | | A – Piston rod with male thread<br>PPS – Pneumatic cushioning, self-adjusting at both ends | |
|---|---|---|---|---|---|---|
| | [mm] | [mm] | Part no. | Type | Part no. | Type |
|  | 80 | 10 | **572718** | **ADN-80-10-I-PPS-A** | **572727** | **ADN-80-10-A-PPS-A** |
| | | 15 | **572719** | **ADN-80-15-I-PPS-A** | **572728** | **ADN-80-15-A-PPS-A** |
| | | 20 | **572720** | **ADN-80-20-I-PPS-A** | **572729** | **ADN-80-20-A-PPS-A** |
| | | 25 | **572721** | **ADN-80-25-I-PPS-A** | **572730** | **ADN-80-25-A-PPS-A** |
| | | 30 | **572722** | **ADN-80-30-I-PPS-A** | **572731** | **ADN-80-30-A-PPS-A** |
| | | 40 | **572723** | **ADN-80-40-I-PPS-A** | **572732** | **ADN-80-40-A-PPS-A** |
| | | 50 | **572724** | **ADN-80-50-I-PPS-A** | **572733** | **ADN-80-50-A-PPS-A** |
| | | 60 | **572725** | **ADN-80-60-I-PPS-A** | **572734** | **ADN-80-60-A-PPS-A** |
| | | 80 | **572726** | **ADN-80-80-I-PPS-A** | **572735** | **ADN-80-80-A-PPS-A** |
| | 100 | 15 | **577191** | **ADN-100-15-I-PPS-A** | **577200** | **ADN-100-15-A-PPS-A** |
| | | 20 | **577192** | **ADN-100-20-I-PPS-A** | **577201** | **ADN-100-20-A-PPS-A** |
| | | 25 | **577193** | **ADN-100-25-I-PPS-A** | **577202** | **ADN-100-25-A-PPS-A** |
| | | 30 | **577194** | **ADN-100-30-I-PPS-A** | **577203** | **ADN-100-30-A-PPS-A** |
| | | 40 | **577195** | **ADN-100-40-I-PPS-A** | **577204** | **ADN-100-40-A-PPS-A** |
| | | 50 | **577196** | **ADN-100-50-I-PPS-A** | **577205** | **ADN-100-50-A-PPS-A** |
| | | 60 | **577197** | **ADN-100-60-I-PPS-A** | **577206** | **ADN-100-60-A-PPS-A** |
| | | 80 | **577198** | **ADN-100-80-I-PPS-A** | **577207** | **ADN-100-80-A-PPS-A** |

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# Ordering data – Modular product system, basic version and variants

**Ordering table**

| Size | 12 | 16 | 20 | 25 | 32 | 40 | Conditions | Code | | Enter code |
|---|---|---|---|---|---|---|---|---|---|---|
| Module no. | **536203** | **536218** | **536233** | **536250** | **536267** | **536288** | | | | |
| Function | Compact cylinder, double-acting | | | | | | | **ADN** | | ADN |
| Standard | Based on ISO 21287 | | Conforms to ISO 21287 | | | | | | | |
| Piston ø [mm] | 12 | 16 | 20 | 25 | 32 | 40 | | **-...** | | |
| Stroke [mm] | 1 ... 300 | | | | 1 ... 400 | | [10] | **-...** | | |
| Piston rod thread | Male thread | | | | | | | **-A** | | |
| | Female thread | | | | | | [1] | **-I** | | |
| Cushioning | Elastic cushioning rings/plates at both ends | | | | | | | **-P** | | |
| | – | | Pneumatic cushioning, self-adjusting at both ends | | | | [8] | **-PPS** | | |
| Position sensing | Via proximity switch | | | | | | | **-A** | | -A |

[1] **I** Not with piston rod type S20. Not with extended male thread K2.

[8] PPS Not with improved running performance K10, temperature resistance S6, low temperature TT, scraper R8
Minimum stroke 5 mm

[10] Stroke Minimum stroke 5 mm with a combination of piston rod thread I and piston rod type S2

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# Ordering data – Modular product system, basic version and variants

**Ordering table**

| Size | | 12 | 16 | 20 | 25 | 32 | 40 | Conditions | Code | Enter code |
|---|---|---|---|---|---|---|---|---|---|---|
| Stroke adjustment, advancing | [mm] | 0 ... 10 | | | | | | [10] | **-10KE** | |
| Piston rod type | | Through piston rod | | | | | | [2] | **-S2** | |
| | [mm] | – | Through, hollow piston rod | | | | | [2] | **-S20** | |
| | | | 1 ... 300 | | | 1 ... 400 | | | | |
| Extended male thread | | Extended male piston rod thread | | | | | | | | |
| | [mm] | 1 ... 10 | | 1 ... 20 | | | | | **-...K2** | |
| Special piston rod thread | Male thread | M6 | M8 | M10x1.25<br>M10 | M10x1.25<br>M10 | M10<br>M12 | M10<br>M12 | | **-"..."K5** | |
| | Female thread | – | – | M5 | M5 | M6 | M6 | | | |
| Extended piston rod | | Extended piston rod | | | | | | | | |
| | [mm] | 1 ... 300 | | | | 1 ... 400 | | [3] | **-...K8** | |
| Improved running performance | | – | – | Smooth anodised aluminium piston rod | | | | [4] | **-K10** | |
| Temperature resistance | | Heat-resistant seals max. 120 °C | | | | | | | **-S6** | |
| Corrosion protection | | High corrosion protection | | | | | | [5] | **-R3** | |
| Captive rating plate | | Laser-etched rating plate | | | | | | | **-TL** | |
| Low temperature | [°C] | – | – | –40 ... +80 | | | | [6] [7] | **-TT** | |
| Scraper | | – | – | Dust protection | | | | [6] | **-R8** | |
| Special material properties | | Recommended for production systems for manufacturing lithium-ion batteries | | | | | | [9] | **-F1A** | |

[2] **S2, S20** Not with increased running performance K10 Not with corrosion protection R3 Not with wiper R8
[3] K8 The sum of the stroke length and piston rod extension must not exceed the maximum permissible stroke length
[4] K10 Not with extended male thread K2
Not with special piston rod thread K5
Not with corrosion protection R3
[5] R3 Not with captive rating plate TL
Not with scraper R8
[6] **TT, R8** Not with increased running performance K10. Not with temperature resistance S6.
[7] TT Not with scraper R8
[9] F1A Not with S6, S20, K10, R3, TL, TT, R8, PPS
[10] 10KE Not with S2, S20, K10, S6, TL, TT, R8

**Note**

NSF-H1 lubricants are used in combination with R3 and in combination with R3 and K2, K5 or K8.

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# Ordering data – Modular product system, basic version and variants

**Ordering table**

| Size | | 50 | 63 | 80 | 100 | 125 | Conditions | Code | | Enter code |
|---|---|---|---|---|---|---|---|---|---|---|
| Module no. | | **536309** | **536330** | **536351** | **536372** | **536393** | | | | |
| Function | | Compact cylinder, double-acting | | | | | | **ADN** | | ADN |
| Standard | | Conforms to ISO 21287 | | | | Based on ISO 21287 | | | | |
| Piston ø | [mm] | 50 | 63 | 80 | – | – | | **-...** | | |
| | | – | – | – | 100 | 125 | | **-...** | | |
| Stroke | [mm] | 1 ... 400 | | 1 ... 500 | | | [10] | **-...** | | |
| Piston rod thread | | Male thread | | | | | | **-A** | | |
| | | Female thread | | | | | [1] | **-I** | | |
| Cushioning | | Elastic cushioning rings/plates at both ends | | | | | | **-P** | | |
| | | Pneumatic cushioning, self-adjusting at both ends | | | | – | [8] | **-PPS** | | |
| Position sensing | | Via proximity switch | | | | | | **-A** | | -A |

[1] **I** Not with piston rod type S20. Not with extended male thread K2.
[8] PPS Not with improved running performance K10, temperature resistance S6, low temperature TT, scraper R8
Minimum stroke 5 mm
[10] Stroke Minimum stroke 5 mm with a combination of piston rod thread I and piston rod type S2

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# Ordering data – Modular product system, basic version and variants

**Ordering table**

| Size | | 50 | 63 | 80 | 100 | 125 | Conditions | Code | Enter code |
|---|---|---|---|---|---|---|---|---|---|
| Stroke adjustment, advancing | [mm] | 0 ... 10 | | – | | | [10] | **-10KE** | |
| Piston rod type | | Through piston rod | | | | | [2] | **-S2** | |
| | | Through, hollow piston rod | | | | | [2] | **-S20** | |
| | [mm] | 1 ... 400 | | 1 ... 500 | | | | | |
| Extended male thread | | Extended male piston rod thread | | | | | | | |
| | [mm] | 1 ... 20 | | 1 ... 30 | | 1 ... 40 | | **-...K2** | |
| Special piston rod thread | Male thread | M12<br>M16 | M12<br>M16 | M16<br>M20<br>M20x1.5 | M16<br>M20<br>M20x1.5 | M20 | | **-"..."K5** | |
| | Female thread | M8 | M8 | M10 | M10 | – | | | |
| Extended piston rod | | Extended piston rod | | | | | | | |
| | [mm] | 1 ... 400 | | 1 ... 500 | | | [3] | **-...K8** | |
| Improved running performance | | Smooth anodised aluminium piston rod<br>Restricted stroke | | | | | [4] | **-K10** | |
| | [mm] | 2 ... 400 | 5 ... 400 | 5 ... 500 | | | | | |
| Temperature resistance | | Heat-resistant seals max. 120 °C | | | | | | **-S6** | |
| Corrosion protection | | High corrosion protection | | | | | [5] | **-R3** | |
| Captive rating plate | | Laser-etched rating plate | | | | | | **-TL** | |
| Low temperature | [°C] | –40 ... +80 | | | | – | [6] [7] | **-TT** | |
| Scraper | | Dust protection | | | | – | [6] | **-R8** | |
| Special material properties | | Recommended for production systems for manufacturing lithium-ion batteries | | | | | [9] | **-F1A** | |

[2] **S2, S20** Not with increased running performance K10 Not with corrosion protection R3 Not with wiper R8
[3] K8 The sum of the stroke length and piston rod extension must not exceed the maximum permissible stroke length
[4] K10 Not with extended male thread K2
Not with special piston rod thread K5
Not with corrosion protection R3
[5] R3 Not with captive rating plate TL
Not with scraper R8
[6] **TT, R8** Not with increased running performance K10. Not with temperature resistance S6.
[7] TT Not with scraper R8
[9] F1A Not with S6, S20, K10, R3, TL, TT, R8, PPS
[10] 10KE Not with S2, S20, K10, S6, TL, TT, R8

**Note**

NSF-H1 lubricants are used in combination with R3 and in combination with R3 and K2, K5 or K8.

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# Ordering data – Modular product system, S10 – constant motion, S11 – low friction

**Ordering table**

| Size | | 12 | 16 | 20 | 25 | 32 | 40 | Conditions | Code | Enter code |
|---|---|---|---|---|---|---|---|---|---|---|
| Module no. | | **536203** | **536218** | **536233** | **536250** | **536267** | **536288** | | | |
| Function | | Compact cylinder, double-acting | | | | | | | **ADN** | ADN |
| Standard | | Based on ISO 21287 | | Conforms to ISO 21287 | | | | | | |
| Piston ø | [mm] | 12 | 16 | 20 | 25 | 32 | 40 | | **-...** | |
| Stroke | [mm] | 1 ... 300 | | | | 1 ... 400 | | | **-...** | |
| Piston rod thread | | Male thread | | | | | | | **-A** | |
| | | Female thread | | | | | | [1] | **-I** | |
| Cushioning | | Elastic cushioning rings/plates at both ends | | | | | | | **-P** | -P |
| Position sensing | | Via proximity switch | | | | | | | **-A** | -A |
| Extended male thread | | Extended male piston rod thread | | | | | | | | |
| | [mm] | 1 ... 10 | | 1 ... 20 | | | | | **-...K2** | |
| Special piston rod thread | Male thread | M6 | M8 | M10x1.25<br>M10 | M10x1.25<br>M10 | M10<br>M12 | M10<br>M12 | | **-"..."K5** | |
| | Female thread | – | – | M5 | M5 | M6 | M6 | | | |
| Extended piston rod | | Extended piston rod | | | | | | | | |
| | [mm] | 1 ... 300 | | | | 1 ... 400 | | [2] | **-...K8** | |
| Improved running performance | | – | – | Smooth anodised aluminium piston rod | | | | [3] | **-K10** | |
| Constant motion | | Slow speed (constant motion at low piston speeds)<br>Restricted stroke | | | | | | [4] | **-S10** | |
| | [mm] | 20 ... 300 | | | | 20 ... 400 | | | | |
| Low friction | | Low friction | | | | | | [5] | **-S11** | |
| Corrosion protection | | High corrosion protection | | | | | | [6] | **-R3** | |
| Captive rating plate | | Laser-etched rating plate | | | | | | | **-TL** | |

[1] I Not with extended male thread K2
[2] K8 The sum of the stroke length and piston rod extension must not exceed the maximum permissible stroke length
[3] K10 Not with extended male thread K2
Not with special piston rod thread K5
Not with corrosion protection R3
[4] S10 Not with low friction S11
[5] S11 Not with constant motion S10
[6] R3 Not with captive rating plate TL

**Note**

NSF-H1 lubricants are used in combination with R3 and in combination with R3 and K2, K5 or K8.

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# Ordering data – Modular product system, S10 – constant motion, S11 – low friction

**Ordering table**

| Size | | 50 | 63 | 80 | 100 | 125 | Conditions | Code | Enter code |
|---|---|---|---|---|---|---|---|---|---|
| Module no. | | **536309** | **536330** | **536351** | **536372** | **536393** | | | |
| Function | | Compact cylinder, double-acting | | | | | | **ADN** | ADN |
| Standard | | Conforms to ISO 21287 | | | | Based on ISO 21287 | | | |
| Piston ø | [mm] | 50 | 63 | 80 | 100 | 125 | | **-...** | |
| Stroke | [mm] | 1 ... 400 | | 1 ... 500 | | | | **-...** | |
| Piston rod thread | | Male thread | | | | | | **-A** | |
| | | Female thread | | | | | [1] | **-I** | |
| Cushioning | | Elastic cushioning rings/plates at both ends | | | | | | **-P** | -P |
| Position sensing | | Via proximity switch | | | | | | **-A** | -A |
| Extended male thread | | Extended male piston rod thread | | | | | | | |
| | [mm] | 1 ... 20 | | 1 ... 30 | | 1 ... 40 | | **-...K2** | |
| Special piston rod thread | Male thread | M12<br>M16 | M12<br>M16 | M16<br>M20<br>M20x1.5 | M16<br>M20<br>M20x1.5 | M20 | | **-"..."K5** | |
| | Female thread | M8 | M8 | M10 | M10 | – | | | |
| Extended piston rod | | Extended piston rod | | | | | | | |
| | [mm] | 1 ... 400 | | 1 ... 500 | | | [2] | **-...K8** | |
| Improved running performance | | Smooth anodised aluminium piston rod | | | | | [3] | **-K10** | |
| | | Restricted stroke | | | | | | | |
| | [mm] | 2 ... 400 | 5 ... 400 | 5 ... 500 | | | | | |
| Constant motion | | Slow speed (constant motion at low piston speeds) | | | | | [4] | **-S10** | |
| | | Restricted stroke | | | | | | | |
| | [mm] | 20 ... 400 | | 20 ... 500 | | | | | |
| Low friction | | Low friction | | | | | [5] | **-S11** | |
| Corrosion protection | | High corrosion protection | | | | | [6] | **-R3** | |
| Captive rating plate | | Laser-etched rating plate | | | | | | **-TL** | |

[1] I Not with extended male thread K2
[2] K8 The sum of the stroke length and piston rod extension must not exceed the maximum permissible stroke length
[3] K10 Not with extended male thread K2
Not with special piston rod thread K5
Not with corrosion protection R3
[4] S10 Not with low friction S11
[5] S11 Not with constant motion S10
[6] R3 Not with captive rating plate TL

**Note**

NSF-H1 lubricants are used in combination with R3 and in combination with R3 and K2, K5 or K8.

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# Ordering data – Modular product system, Q – Square piston rod, non-rotating

**Ordering table**

| Size | 12 | 16 | 20 | 25 | 32 | 40 | Conditions | Code | Enter code |
|---|---|---|---|---|---|---|---|---|---|
| Module no. | **536203** | **536218** | **536233** | **536250** | **536267** | **536288** | | | |
| Function | Compact cylinder, double-acting | | | | | | | **ADN** | ADN |
| Standard | Based on ISO 21287 | | Conforms to ISO 21287 | | | | | | |
| Piston ø [mm] | 12 | 16 | 20 | 25 | 32 | 40 | | **-...** | |
| Stroke [mm] | 1 ... 300 | | | | 1 ... 400 | | [10] | **-...** | |
| Piston rod thread | Male thread | | | | | | | **-A** | |
| | Female thread | | | | | | [1] | **-I** | |
| Cushioning | Elastic cushioning rings/plates at both ends | | | | | | | **-P** | -P |
| Position sensing | Via proximity switch | | | | | | | **-A** | -A |
| Protection against rotation | Square piston rod | | | | | | | **-Q** | -Q |
| Stroke adjustment, advancing [mm] | 0 ... 10 | | | | | | [2] | **-10KE** | |
| Piston rod type | Through piston rod | | | | | | | **-S2** | |
| | – | Through, hollow piston rod<br>Restricted stroke | | | | | | **-S20** | |
| [mm] | | 1 ... 200 | | | 1 ... 300 | | | | |
| Extended male thread [mm] | Extended male piston rod thread<br>1 ... 10 | | 1 ... 20 | | | | | **-...K2** | |
| Special piston rod thread Male thread | M6 | M8 | M10x1.25<br>M10 | M10x1.25<br>M10 | M10 | M10 | | **-"..."K5** | |
| Extended piston rod [mm] | Extended piston rod<br>1 ... 300 | | | | 1 ... 400 | | [3] | **-...K8** | |
| Temperature resistance | Heat-resistant seals max. 120 °C | | | | | | | **-S6** | |
| Corrosion protection | High corrosion protection | | | | | | [4] | **-R3** | |
| Captive rating plate | Laser-etched rating plate | | | | | | | **-TL** | |

[1] **I** Not with piston rod type S20. Not with extended male thread K2.
[2] **10KE** Not with S2, S20, S6, TL
[3] K8 The sum of the stroke length and piston rod extension must not exceed the maximum permissible stroke length
[4] R3 Not with captive rating plate TL
[10] Stroke Minimum stroke 5 mm with a combination of piston rod thread I and piston rod type S2

**Note**

NSF-H1 lubricants are used in combination with R3 and in combination with R3 and K2, K5 or K8.

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# Ordering data – Modular product system, Q – Square piston rod, non-rotating

**Ordering table**

| Size | 50 | 63 | 80 | 100 | 125 | Conditions | Code | Enter code |
|---|---|---|---|---|---|---|---|---|
| Module no. | **536309** | **536330** | **536351** | **536372** | **536393** | | | |
| Function | Compact cylinder, double-acting | | | | | | **ADN** | ADN |
| Standard | Conforms to ISO 21287 | | | | Based on ISO 21287 | | | |
| Piston ø [mm] | 50 | 63 | 80 | 100 | 125 | | **-...** | |
| Stroke [mm] | 1 ... 400 | | 1 ... 500 | | | | **-...** | |
| Piston rod thread | Male thread | | | | | | **-A** | |
| | Female thread | | | | | [1] | **-I** | |
| Cushioning | Elastic cushioning rings/plates at both ends | | | | | | **-P** | -P |
| Position sensing | Via proximity switch | | | | | | **-A** | -A |
| Protection against rotation | Square piston rod | | | | | | **-Q** | -Q |
| Stroke adjustment, advancing [mm] | 0 ... 10 | | – | | | [2] | **-10KE** | |
| Piston rod type | Through piston rod | | | | | | **-S2** | |
| | Through, hollow piston rod | | | | | | **-S20** | |
| | Restricted stroke | | | | | | | |
| [mm] | 1 ... 300 | | 1 ... 400 | | | | | |
| Extended male thread | Extended male piston rod thread | | | | | | | |
| [mm] | 1 ... 20 | | 1 ... 30 | | 1 ... 40 | | **-...K2** | |
| Special piston rod thread Male thread | M12 | M12 | M16 | M16 | M20 | | **-"..."K5** | |
| Extended piston rod | Extended piston rod | | | | | | | |
| [mm] | 1 ... 400 | | 1 ... 500 | | | [3] | **-...K8** | |
| Temperature resistance | Heat-resistant seals max. 120 °C | | | | | | **-S6** | |
| Corrosion protection | High corrosion protection | | | | | [4] | **-R3** | |
| Captive rating plate | Laser-etched rating plate | | | | | | **-TL** | |

[1] **I** Not with piston rod type S20. Not with extended male thread K2.
[2] **10KE** Not with S2, S20, S6, TL
[3] K8 The sum of the stroke length and piston rod extension must not exceed the maximum permissible stroke length
[4] R3 Not with captive rating plate TL

**Note**

NSF-H1 lubricants are used in combination with R3 and in combination with R3 and K2, K5 or K8.

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# Ordering data – Modular product system, S1 – Reinforced piston rod

**Ordering table**

| Size | | 25 | 40 | 63 | 100 | Conditions | Code | Enter code |
|---|---|---|---|---|---|---|---|---|
| Module no. | | **536250** | **536288** | **536330** | **536372** | | | |
| Function | | Compact cylinder, double-acting | | | | | **ADN** | ADN |
| Standard | | Conforms to ISO 21287 | | | | | | |
| Piston ø | [mm] | 25 | 40 | 63 | 100 | | **-...** | |
| Stroke | [mm] | 5 ... 300 | 10 ... 400 | | 10 ... 500 | | **-...** | |
| Piston rod thread | | Male thread | | | | | **-A** | |
| | | Female thread | | | | [1] | **-I** | |
| Cushioning | | Elastic cushioning rings/plates at both ends | | | | | **-P** | -P |
| Position sensing | | Via proximity switch | | | | | **-A** | -A |
| Extended male thread | [mm] | Extended male piston rod thread<br>1 ... 20 | | | 1 ... 30 | | **-...K2** | |
| Special piston rod thread | Male thread | M10x1.25<br>M10 | M10x1.25<br>M12 | M12x1.25<br>M16 | M16x1.5<br>M20 | | **-"..."K5** | |
| | Female thread | M5 | M8 | M10 | – | | | |
| Extended piston rod | [mm] | Extended piston rod<br>1 ... 300 | 1 ... 400 | | 1 ... 500 | [2] | **-...K8** | |
| Temperature resistance | | Heat-resistant seals max. 120 °C | | | | | **-S6** | |
| Increased lateral force | | Reinforced piston rod or extended piston rod bearing | | | | | **-S1** | -S1 |
| Captive rating plate | | Laser-etched rating plate | | | | | **-TL** | |

[1] I Not with extended male thread K2

[2] K8 The sum of the stroke length and piston rod extension must not exceed the maximum permissible stroke length

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## Type codes

| 001 | Series | |
|---|---|---|
| **ADN** | Compact cylinder, double-acting, based on ISO 21287 | |

| 002 | Piston diameter | |
|---|---|---|
| **20** | 20 | |
| **25** | 25 | |
| **32** | 32 | |
| **40** | 40 | |
| **50** | 50 | |
| **63** | 63 | |
| **80** | 80 | |
| **100** | 100 | |

| 003 | Stroke | |
|---|---|---|
| **...** | 10 ... 500 | |

| 004 | Clamping unit | |
|---|---|---|
| **KP** | Attached | |

| 005 | Piston rod thread type | |
|---|---|---|
| **A** | Male thread | |
| **I** | Female thread | |

| 006 | Cushioning | |
|---|---|---|
| **P** | Elastic cushioning rings/plates on both sides | |

| 007 | Position sensing | |
|---|---|---|
| **A** | For proximity sensor | |

| 008 | Piston rod thread extension | |
|---|---|---|
| | None | |
| **...K2** | 1 ... 30 mm | |

| 009 | Custom thread | |
|---|---|---|
| **“M6”K5** | M6 | |
| **“M8”K5** | M8 | |
| **“M10”K5** | M10 | |
| **“M10x-1,25”K5** | M10x1.25 | |
| **“M12”K5** | M12 | |
| **“M16”K5** | M16 | |
| **“M20x-1,5”K5** | M20x1.5 | |
| **“M5”K5** | M5 | |
| **“M20”K5** | M20 | |

| 010 | Piston rod extension | |
|---|---|---|
| | None | |
| **...K8** | 1 ... 500 mm | |

| 011 | Captive rating plate | |
|---|---|---|
| | Rating plate, glued | |
| **TL** | Laser etched rating plate | |

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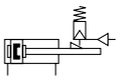
# Datasheet

Function



Diameter
20 ... 100 mm

Stroke length
10 ... 500 mm

Variants



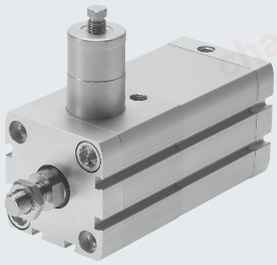
K2



K5



K8



**Note**

Additional measures are required for use in safety-related applications; in Europe, for example, the standards listed under the EC Machinery Directive must be observed.

Without additional measures in accordance with legally specified minimum requirements, the product is not suitable as a safety-related component in control systems.

| General technical data | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Piston ø | | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 |
| Pneumatic connection | | | | | | | | | |
| Cylinders | | M5 | M5 | G1/8 | G1/8 | G1/8 | G1/8 | G1/8 | G1/8 |
| KP | | M5 | M5 | M5 | G1/8 | G1/8 | G1/8 | G1/8 | G1/8 |
| Female piston rod thread | | | | | | | | | |
| – | | M6 | | M8 | | M10 | | M12 | |
| K5 | | M5 | | M6 | | M8 | | M10 | |
| Male piston rod thread | | | | | | | | | |
| – | | M8 | | M10x1.25 | | M12x1.25 | | M16x1.5 | |
| K5 | | M10; M10x1.25 | | M10; M12 | | M12; M16 | | M16; M20; M20x1.5 | |
| Axial backlash under load | [mm] | 0.5 | | | | 0.8 | | | |
| Design | | Piston | | | | | | | |
| | | Piston rod | | | | | | | |
| | | Cylinder barrel | | | | | | | |
| Cushioning | | Elastic cushioning rings/plates at both ends | | | | | | | |
| Position sensing | | Via proximity switch | | | | | | | |
| Type of mounting | | With through-hole | | | | | | | |
| | | With female thread | | | | | | | |
| | | With accessories | | | | | | | |
| Mounting position | | Any | | | | | | | |
| Clamping type with effective direction | | At both ends | | | | | | | |

| Operating and environmental conditions | | |
|---|---|---|
| Operating medium | | Compressed air to ISO 8573-1:2010 [7:4:4] |
| Note on the operating/ pilot medium | | Lubricated operation possible (in which case lubricated operation will always be required) |
| Operating pressure | [MPa] | 0.15 ... 1 |
| | [bar] | 1.5 ... 10 |
| | [psi] | 21.76 ... 145 |
| Min. release pressure | [MPa] | 0.3 |
| | [bar] | 3 |
| | [psi] | 43.5 |
| Ambient temperature1) | [°C] | –10 ... +80 |
| Corrosion resistance class CRC[2)] | | 2 - Moderate corrosion stress |

1) Note operating range of proximity switches
2) More information www.festo.com/x/topic/crc

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# Datasheet

| Impact energy [J] | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Piston ø | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 |
| Max. impact energy in the end positions | 0.2 | 0.3 | 0.4 | 0.7 | 1 | 1.3 | 1.8 | 2.5 |

**Note**

These specifications represent the maximum values that can be achieved. The maximum permissible impact energy must be observed.

Permissible impact velocity:

$$V = \sqrt{\frac{2 \times E}{m_1 + m_2}}$$

Maximum permissible mass:

$$m_2 = \frac{2 \times E}{v^2} - m_1$$

| | |
|---|---|
| V | Perm. impact velocity |
| E | Max. impact energy |
| m1 | Moving mass (drive) |
| m2 | Moving payload |

| Forces [N] | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Piston ø | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 |
| Theoretical force at 6 bar, advancing | 188 | 295 | 483 | 754 | 1178 | 1870 | 3016 | 4712 |
| Theoretical force at 6 bar, retracting | 141 | 247 | 415 | 633 | 990 | 1682 | 2721 | 4418 |
| Static holding force | 350 | 350 | 600 | 1000 | 1400 | 2000 | 5000 | 5000 |

**Note:**

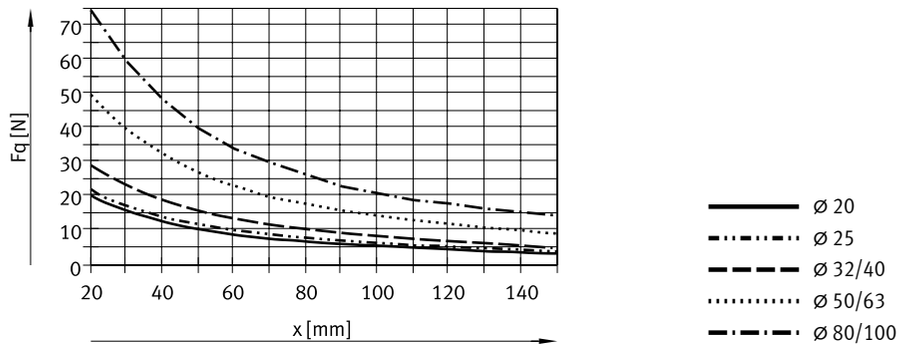
The specified holding force refers to a static load. If this value is exceeded, slippage may occur. Dynamic forces occurring during operation must not exceed the static holding force. The clamping unit is not backlash-free in the clamped condition if varying loads are applied to the piston rod

**Actuation**

The clamping unit may only be released if the forces at the piston have reached equilibrium. Otherwise, there is a risk of accidents due to 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.

**Max. lateral force Fq as a function of projection x**



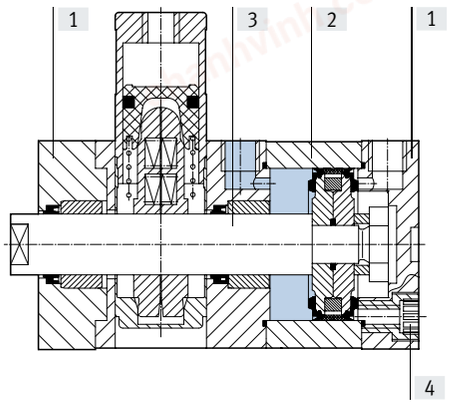

| Weight [g] | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Piston ø | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 |
| Product weight with 0 mm stroke | 282 | 344 | 503 | 789 | 1268 | 1894 | 3973 | 5497 |
| Additional weight per 10 mm stroke | 22 | 26 | 29 | 45 | 60 | 68 | 93 | 112 |
| Moving mass with 0 mm stroke | 53 | 63 | 100 | 173 | 296 | 368 | 755 | 932 |
| Additional mass per 10 mm stroke | 6 | 6 | 9 | 16 | 25 | 25 | 39 | 39 |

Compact cylinders ADN-KP, standard hole pattern, with clamping unit

# Datasheet

## Materials

Sectional view




| Compact cylinder | | | |
|---|---|---|---|
| [1] | Cover | | Anodised aluminium |
| [2] | Cylinder barrel | | Anodised aluminium |
| [3] | Piston rod | | High-alloy steel |
| [4] | Flange screws | Ø 20 ... 63 | Galvanised steel |
| | | Ø 80 ... 100 | Standard screws, galvanised steel |
| – | Seals | | Polyurethane, nitrile rubber |
| – | Note on materials | | RoHs-compliant |

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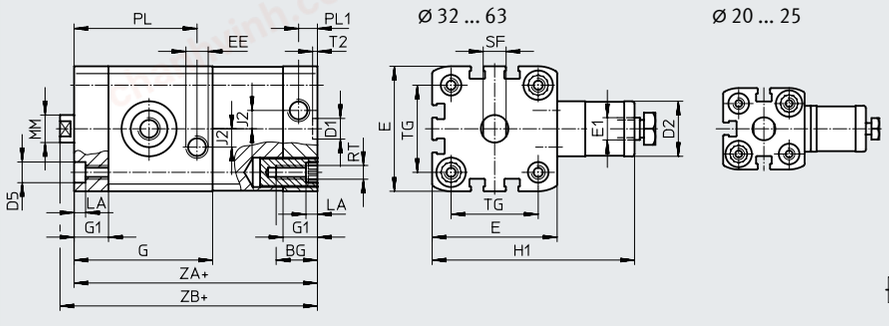
# Datasheet

**Dimensions – Basic version** Download CAD data ➔ www.festo.com

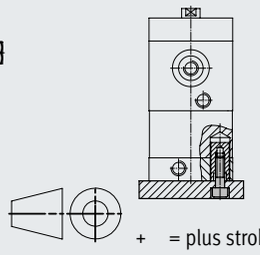
Ø 20 ... 63




Ø 32 ... 63

Ø 20 ... 25

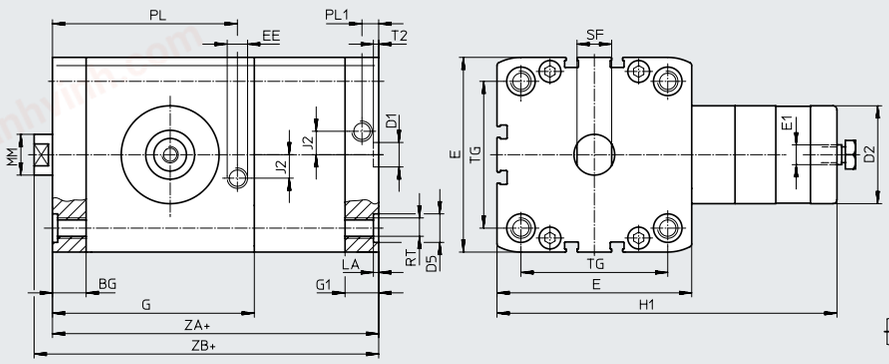
Only direct mounting is possible with this variant.



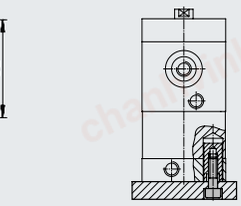
\+ = plus stroke length

**Dimensions – Basic version** Download CAD data ➔ www.festo.com

Ø 80, 100




Only direct mounting is possible with this variant.



\+ = plus stroke length

| Ø [mm] | BG min. | D1 Ø H9 | D2 Ø | D5 Ø | E | E1 | EE | G | G1 | H1 | J2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 | 19.5 | 9 | 20 | $9^{F9}$ | 35.5 +0.3 | M5 | M5 | 49.8 | 12 | 63 | 2.6 |
| 25 | | | | | 39.5 +0.3 | | | 50.6 | | 65 | |
| 32 | 26 | | | | 47 +0.3 | | G1/8 | 56.4 | 15 | 68 | 6 |
| 40 | | | 24 | | 54.5 +0.3 | G1/8 | | 60.4 | | 89 | 8 |
| 50 | 27 | 12 | 30 | $12^{F9}$ | 65.5 +0.3 | | | 67.4 | | 108 | |
| 63 | | | 38 | | 75.5 +0.3 | | | 76.8 | | 120 | 11.5 |
| 80 | 17 | | 48 | 15 | 95.5 +0.6 | | | 99 | 16.5 | 167 | |
| 100 | 21.5 | | | | 113.5 +0.6 | | | 99.6 | 21.5 | 176 | 20 |

| Ø [mm] | PW +0.2 | MM Ø | PL +0.2 | PL1 +0.2 | RT | ST h13 | T2 +0.2 | TG ±0.2 | ZA ±0.6 | ZB +1.2 |
|---|---|---|---|---|---|---|---|---|---|---|
| 20 | 5 | 10 | 42.8 | 6 | M5 | 9 | 2.1 | 22 | 74.8 | 80.8 |
| 25 | | | 44.6 | | | | | 26 | 77.6 | 83.1 |
| 32 | | 12 | 49.6 | 8.2 | M6 | 10 | | 32.5 | 85.4 | 91.4 |
| 40 | | 16 | 53.6 | | | 13 | | 38 | 90.4 | 96.5 |
| 50 | | 20 | 60.6 | | M8 | 17 | 2.6 | 46.5 | 97.4 | 105.6 |
| 63 | | | 70 | | | | | 56.5 | 110.8 | 118.9 |
| 80 | 2.6 | 25 | 90.7 | | M10 | 21 | | 72 | 136.5 | 145.4 |
| 100 | | | 88.6 | 10.5 | | | | 89 | 145.1 | 154.1 |

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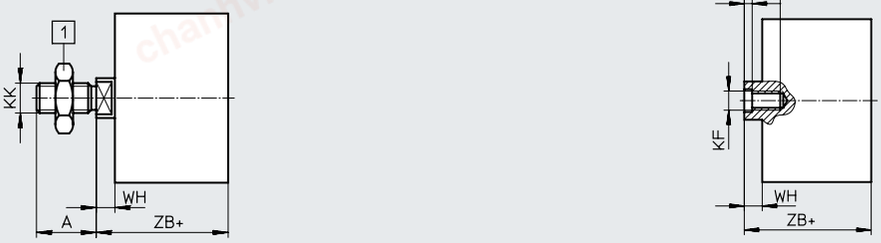
# Datasheet

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

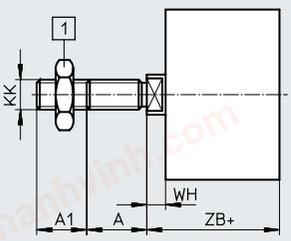
Basic version




[1] Hex nut DIN 439-B only with Ø 32 ... 100

\+ = plus stroke length

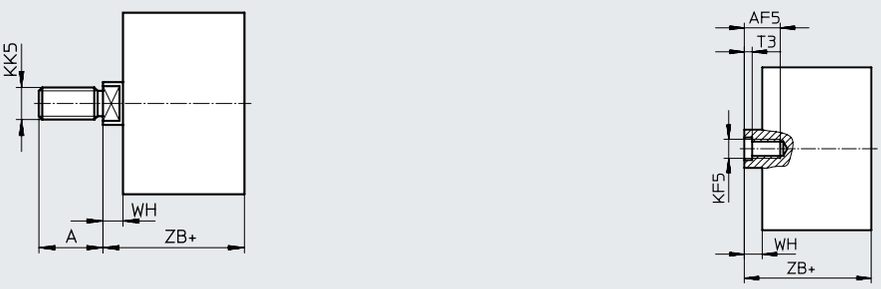
K2 – Extended male piston rod thread




[1] Hex nut DIN 439-B only with Ø 32 ... 100

\+ = plus stroke length

K5 – Special piston rod thread




\+ = plus stroke length

K8 – Extended piston rod




[1] Hex nut DIN 439-B only with Ø 32 ... 100

\+ = plus stroke length

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## Datasheet

| ø [mm] | A –0.5 | A1 | A2 | AF min. | AF5 min. | KF | KF5 |
|---|---|---|---|---|---|---|---|
| 20 | 16 | 1 ... 20 | 1 ... 300 | 14 | 12 | M6 | M5 |
| 25 | | | | | | | |
| 32 | 19 | | 1 ...400 | 16 | 14 | M8 | M6 |
| 40 | | | | | | | |
| 50 | 22 | | | 20 | 16 | M10 | M8 |
| 63 | | | | | | | |
| 80 | 28 | 1 ... 30 | 1 ... 500 | | 20 | M12 | M10 |
| 100 | | | | | | | |

| ø [mm] | KK | KK5 | T3 | T4 | WH +1.3 | ZB +1.2 |
|---|---|---|---|---|---|---|
| 20 | M8 | M10x1.25 | 2 | 2.6 | 5.5 | 80.8 |
| 25 | | M10 | | | | 83.1 |
| 32 | M10x1.25 | M10 | 2.6 | 3.3 | 6 | 91.4 |
| 40 | | M12 | | | 6.1 | 96.5 |
| 50 | M12x1.25 | M12 | 3.3 | 4.7 | 8.2 | 105.6 |
| 63 | | M16 | | | 8.1 | 118.9 |
| 80 | M16x1.5 | M16 | 4.7 | 6.1 | 8.9 | 145.4 |
| 100 | | M20x1.5 M20 | | | 9 | 154.1 |

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# Ordering data – Modular product system

**Ordering table**

| Size | | 20 | 25 | 32 | 40 | Conditions | Code | Enter code |
|---|---|---|---|---|---|---|---|---|
| Module no. | | **548206** | **548207** | **548208** | **548209** | | | |
| Function | | Compact cylinder, double-acting, standard hole pattern, with clamping unit | | | | | **ADN** | ADN |
| Piston ø | [mm] | 20 | 25 | 32 | 40 | | **-...** | |
| Stroke | [mm] | 10 ... 300 | | 10 ... 400 | | | **-...** | |
| Clamping unit | | Attached | | | | | **-KP** | -KP |
| Piston rod thread | | Male thread | | | | | **-A** | |
| | | Female thread | | | | [1] | **-I** | |
| Cushioning | | Elastic cushioning rings/plates at both ends | | | | | **-P** | -P |
| Position sensing | | Via proximity switch | | | | | **-A** | -A |
| Extended male thread | [mm] | Extended male piston rod thread<br>1 ... 20 | | | | | **-...K2** | |
| Special piston rod thread | Male thread | M10x1.25<br>M10 | M10x1.25<br>M10 | M10<br>M12 | M10<br>M12 | | **-"..."K5** | |
| | Female thread | M5 | M5 | M6 | M6 | | | |
| Extended piston rod | [mm] | Extended piston rod<br>1 ... 300 | | 1 ... 400 | | [2] | **-...K8** | |
| Captive rating plate | | Laser-etched rating plate | | | | | **-TL** | |

[1] I Not with extended male thread K2

[2] K8 The sum of the stroke length and piston rod extension must not exceed the maximum permissible stroke length

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# Ordering data – Modular product system

**Ordering table**

| Size | | 50 | 63 | 80 | 100 | Conditions | Code | Enter code |
|---|---|---|---|---|---|---|---|---|
| Module no. | | **548210** | **548211** | **548212** | **548213** | | | |
| Function | | Compact cylinder, double-acting, standard hole pattern, with clamping unit | | | | | **ADN** | ADN |
| Piston ø | [mm] | 50 | 63 | 80 | 100 | | **-...** | |
| Stroke | [mm] | 10 ... 400 | | 10 ... 500 | | | **-...** | |
| Clamping unit | | Attached | | | | | **-KP** | -KP |
| Piston rod thread | | Male thread | | | | | **-A** | |
| | | Female thread | | | | [1] | **-I** | |
| Cushioning | | Elastic cushioning rings/plates at both ends | | | | | **-P** | -P |
| Position sensing | | Via proximity switch | | | | | **-A** | -A |
| Extended male thread | [mm] | Extended male piston rod thread<br>1 ... 20 | | 1 ... 30 | | | **-...K2** | |
| Special piston rod thread | Male thread | M12<br>M16 | M12<br>M16 | M16<br>M20<br>M20x1.5 | M16<br>M20<br>M20x1.5 | | **-"..."K5** | |
| | Female thread | M8 | M8 | M10 | M10 | | | |
| Extended piston rod | [mm] | Extended piston rod<br>1 ... 400 | | 1 ... 500 | | [2] | **-...K8** | |
| Captive rating plate | | Laser-etched rating plate | | | | | **-TL** | |

[1] I Not with extended male thread K2

[2] K8 The sum of the stroke length and piston rod extension must not exceed the maximum permissible stroke length

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## Type codes

| 001 | Series | |
|---|---|---|
| **ADN** | Compact cylinder, double-acting, based on ISO 21287 | |

| 002 | Piston diameter | |
|---|---|---|
| **20** | 20 | |
| **25** | 25 | |
| **32** | 32 | |
| **40** | 40 | |
| **50** | 50 | |
| **63** | 63 | |
| **80** | 80 | |
| **100** | 100 | |

| 003 | Stroke | |
|---|---|---|
| **...** | 10 ... 500 | |

| 004 | End-position locking | |
|---|---|---|
| **ELB** | Both sides | |
| **ELH** | Rear | |
| **ELV** | Front | |

| 005 | Piston rod thread type | |
|---|---|---|
| **A** | Male thread | |
| **I** | Female thread | |

| 006 | Cushioning | |
|---|---|---|
| **P** | Elastic cushioning rings/plates on both sides | |

| 007 | Position sensing | |
|---|---|---|
| **A** | For proximity sensor | |

| 008 | Piston rod thread extension | |
|---|---|---|
| | None | |
| **...K2** | 1 ... 30 mm | |

| 009 | Custom thread | |
|---|---|---|
| **“M6”K5** | M6 | |
| **“M8”K5** | M8 | |
| **“M10”K5** | M10 | |
| **“M10x1,25”K5** | M10x1.25 | |
| **“M12”K5** | M12 | |
| **“M16”K5** | M16 | |
| **“M20x1,5”K5** | M20x1.5 | |
| **“M5”K5** | M5 | |
| **“M20”K5** | M20 | |

| 010 | Piston rod extension | |
|---|---|---|
| | None | |
| **...K8** | 1 ... 500 mm | |

| 011 | Captive rating plate | |
|---|---|---|
| | Rating plate, glued | |
| **TL** | Laser etched rating plate | |

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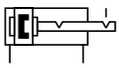
# Datasheet

Function



- Ø - Diameter
  20 ... 100 mm
- Stroke length
  10 ... 500 mm

Variants



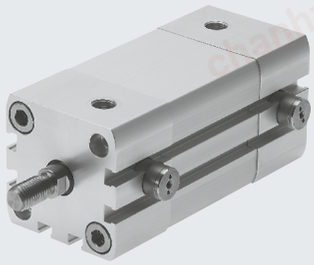
K2



K5



K8



**Note**

Additional measures are required for use in safety-related applications; in Europe, for example, the standards listed under the EC Machinery Directive must be observed.

Without additional measures in accordance with legally specified minimum requirements, the product is not suitable as a safety-related component in control systems.

**General technical data**

| Piston Ø | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 |
|---|---|---|---|---|---|---|---|---|
| Pneumatic connection | M5 | M5 | G1/8 | G1/8 | G1/8 | G1/8 | G1/8 | G1/8 |
| Female piston rod thread | | | | | | | | |
| – | M6 | | M8 | | M10 | | M12 | |
| K5 | M5 | | M6 | | M8 | | M10 | |
| Male piston rod thread | | | | | | | | |
| – | M8 | | M10x1.25 | | M12x1.25 | | M16x1.5 | |
| K5 | M10; M10x1.25 | | M10; M12 | | M12; M16 | | M16; M20; M20x1.5 | |
| Max. axial backlash with end position locked [mm] | 1.3 | | | | | | 2.1 | |
| Design | Piston | | | | | | | |
| | Piston rod | | | | | | | |
| | Cylinder barrel | | | | | | | |
| End-position locking | | | | | | | | |
| ELB | At both ends | | | | | | | |
| ELV | Front | | | | | | | |
| ELH | Rear | | | | | | | |
| Cushioning | Elastic cushioning rings/plates at both ends | | | | | | | |
| Position sensing | Via proximity switch | | | | | | | |
| Type of mounting | With female thread | | | | | | | |
| | With accessories | | | | | | | |
| Mounting position | Any | | | | | | | |

**Note**

- Screws with a head or similar must not be used in place of end-position locking, as there is a risk that the function will be impaired if they are screwed in too deeply.
- The exhaust bore must not be closed.
- The piston rod can be locked in any stroke position once the drive is brought mechanically into its end position.
- End-position locking has been designed to prevent the load from dropping in case of pressure failure.
- Avoid operating the cylinder using a 3-way valve, especially with the function “mid-position closed” and those with “metallic sealing”. The residual pressure that is enclosed on the locking side of the cylinder can release the locking function.
- The cylinder must not be operated with external stops (e.g. shock absorber, buffer, oil brake, etc.):
  – It may not be possible to reliably reach the internal end position.
  – The locking mechanism can wear out prematurely. (If the pressure in the opposite chamber drops to less than the locking pressure, the locking piston will prematurely fall to its lower end position.)

# Datasheet

| Operating and environmental conditions | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Piston ø | | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 |
| Operating medium | | Compressed air to ISO 8573-1:2010 [7:4:4] | | | | | | | |
| Note on the operating/ pilot medium | | Lubricated operation (Ø 32 ... 63 ch case lubricated operation will always be req Ø 20 ... 25 | | | | | | | |
| Operating pressure | [MPa] | 0.25 ... 1 | | | | 0.15 ... 1 | | | |
| | [bar] | 2.5 ... 10 | | | | 1.5 ... 10 | | | |
| | [psi] | 36.26 ... 145 | | | | 21.76 ... 145 | | | |
| Ambient temperature1) | [°C] | –20 ... +80 | | | | | | | |
| Corrosion resistance class CRC[2)] | | 2 - Moderate corrosion stress | | | | | | | |

1) Note operating range of proximity switches
2) More information www.festo.com/x/topic/crc

| Forces [N] | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Piston ø | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 |
| Theoretical force at 6 bar, advancing | 188 | 295 | 483 | 754 | 1178 | 1870 | 3016 | 4712 |
| Theoretical force at 6 bar, retracting | 141 | 247 | 415 | 686 | 1057 | 1750 | 2827 | 4524 |
| Static holding force | 250 | 500 | | | 2000 | | 5000 | |

## Sizing example

**Note**

When sizing pneumatic cylinders, it is recommended as a basic principle that only 50% of the indicated theoretical forces (see above) be used

**Where:**
Mounting position = vertical
Workpiece load = 44 kg
F = m x g = 44 kg x 9.81 m/s$^2$
= 431.6 N

**To be determined:**
Suitable piston diameter

**Example with piston diameter 32 mm:**
Theoretical force at 6 bar, advancing = 483 N
50% of the theoretical force = 241.5 N
Static holding force with piston diameter 32 mm = 500 N
The static holding force of end-position locking is within the permissible range (max. 500 N) for a workpiece load of 44 kg (431.6 N); however, the cylinder would be at 89% capacity.

**Results:**
A cylinder with a piston diameter of 40 mm is therefore recommended for this application.

| Impact energy [J] | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Piston ø | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 |
| Max. impact energy in the end positions | 0.2 | 0.3 | 0.4 | 0.7 | 1 | 1.3 | 1.8 | 2.5 |

**Note**

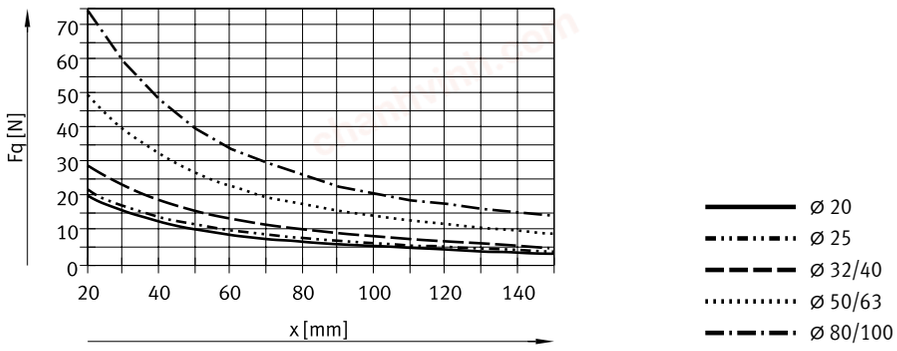
These specifications represent the maximum values that can be achieved. The maximum permissible impact energy must be observed.

Permissible impact velocity: $V = \sqrt{\frac{2 \times E}{m_1 + m_2}}$

Maximum permissible mass: $m_2 = \frac{2 \times E}{v^2} - m_1$

| | |
|---|---|
| V | Perm. impact velocity |
| E | Max. impact energy |
| m1 | Moving mass (drive) |
| m2 | Moving payload |

## Max. lateral force Fq as a function of projection x



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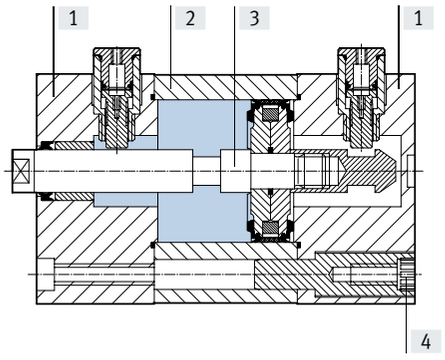
# Datasheet

| Weight [g] | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Piston ø | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 |
| **End position locking at both ends** | | | | | | | | |
| Product weight with 0 mm stroke | 234 | 339 | 518 | 665 | 1334 | 1734 | 3300 | 4735 |
| Additional weight per 10 mm stroke | 22 | 26 | 29 | 38 | 51 | 59 | 79 | 98 |
| Moving mass with 0 mm stroke | 43 | 53 | 85 | 101 | 199 | 248 | 475 | 637 |
| Additional mass per 10 mm stroke | 6 | 6 | 9 | 9 | 16 | 16 | 25 | 25 |
| **End-position locking at the front** | | | | | | | | |
| Product weight with 0 mm stroke | 177 | 248 | 387 | 498 | 922 | 1228 | 2296 | 3448 |
| Additional weight per 10 mm stroke | 22 | 26 | 29 | 38 | 51 | 59 | 79 | 98 |
| Moving mass with 0 mm stroke | 35 | 46 | 75 | 98 | 175 | 225 | 464 | 626 |
| Additional mass per 10 mm stroke | 6 | 6 | 9 | 9 | 16 | 16 | 25 | 25 |
| **End-position locking at the rear** | | | | | | | | |
| Product weight with 0 mm stroke | 181 | 252 | 380 | 505 | 920 | 1217 | 2233 | 3409 |
| Additional weight per 10 mm stroke | 22 | 26 | 29 | 38 | 51 | 59 | 79 | 98 |
| Moving mass with 0 mm stroke | 37 | 45 | 73 | 89 | 168 | 217 | 413 | 582 |
| Additional mass per 10 mm stroke | 6 | 6 | 9 | 9 | 16 | 16 | 25 | 25 |

## Materials

Sectional view




| Compact cylinder | | | |
|---|---|---|---|
| [1] | Cover | | Anodised aluminium |
| [2] | Cylinder barrel | | Anodised aluminium |
| [3] | Piston rod | | High-alloy steel |
| [4] | Flange screws | ø 20 ... 63 | Galvanised steel |
| | | ø 80 ... 100 | Standard screws, galvanised steel |
| – | Seals | | Polyurethane, nitrile rubber |
| – | Note on materials | | RoHs-compliant |

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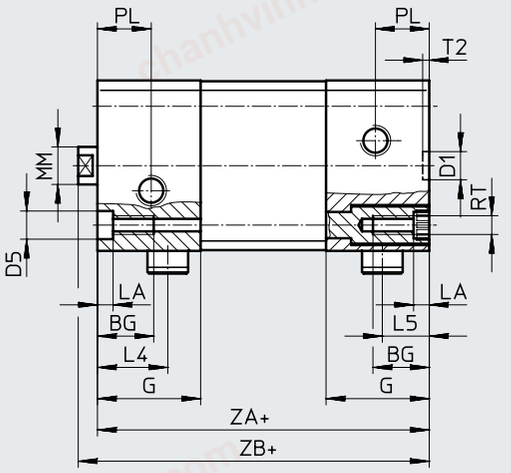
# Datasheet

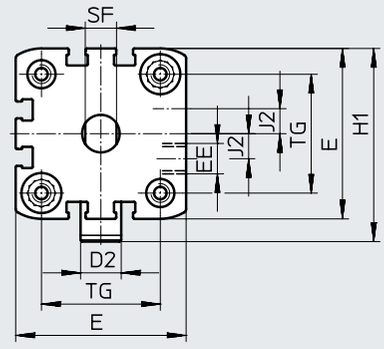
**Dimensions – Basic version** Download CAD data ➔ www.festo.com

ELB – End-position locking at both ends

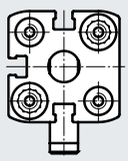
Ø 20 ... 63

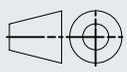



Ø32 ... 63



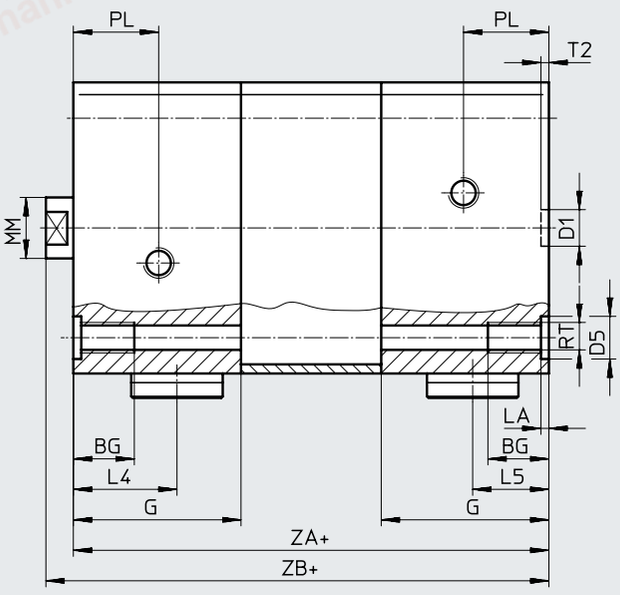

Ø20 ... 25

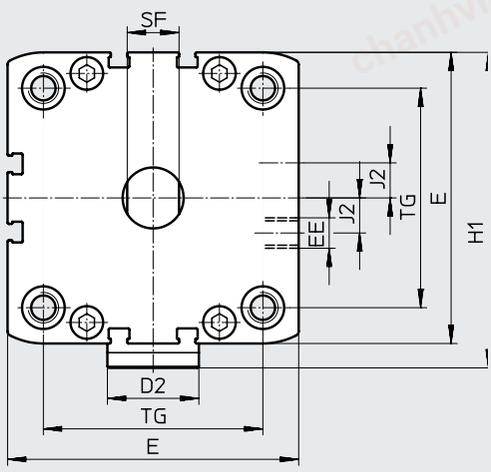


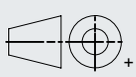


\+ = plus stroke length

Ø 80 ... 100

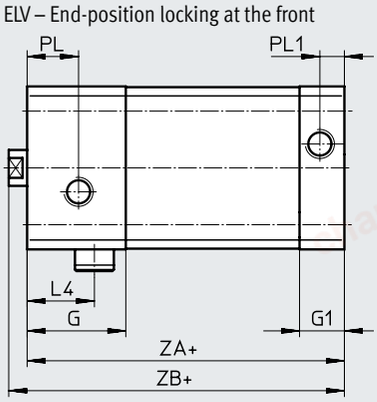


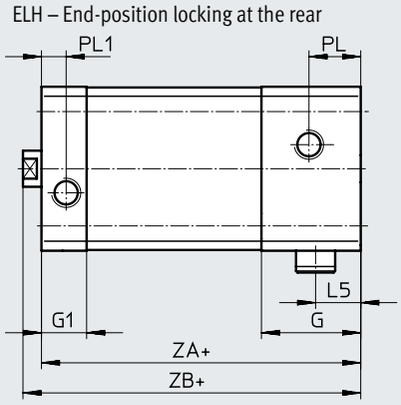



\+ = plus stroke length

ELV – End-position locking at the front




ELH – End-position locking at the rear




\+ = plus stroke length

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## Datasheet

| ø [mm] | BG min. | D1 ø H9 | D2 ø | D5 ø | E | EE | G | G1 | H1 | J2 | L4 | L5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 | 18 | 9 | 9 | $9^{F9}$ | 35.5 $^{+0.3}$ | M5 | 25 | 12 | 45.5 | 2.6 | 18.5 | 12.5 |
| 25 | | | 13 | | 39.5 $^{+0.3}$ | | 29.5 | | 53.3 | | 20.8 | 14 |
| 32 | | | | | 47 $^{+0.3}$ | G1/8 | 33 | 15 | 58 | 6 | 22.5 | 15 |
| 40 | | | | | 54.5 $^{+0.3}$ | | | | 61.8 | 8 | | |
| 50 | 20 | 12 | 20 | $12^{F9}$ | 65.5 $^{+0.3}$ | | 43 | | 77 | | 27.5 | 20.5 |
| 63 | | | | | 75.5 $^{+0.3}$ | | | | 82 | 11.5 | | 21.7 |
| 80 | | | 30 | 15 | 95.5 $^{+0.6}$ | | 55 | 16.5 | 103.5 | | 34 | 25 |
| 100 | | | | | 113.5 $^{+0.6}$ | | 57 | 21.5 | 113.5 | 20 | 35 | 27 |

| ø [mm] | PW +0.2 | MM ø | PL | PL1 | RT | ST h13 | T2 +0.1 | TG ±0.2 | ZA ±0.6 | | ZB +1.2 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | ELB | ELV, ELH | ELB | ELV, ELH |
| 20 | 5 | 10 | 6 | 6 | M5 | 9 | 2.1 | 22 | 63 | 50 | 68.8 | 55.5 |
| 25 | | | | | | | | 26 | 74 | 56.5 | 79.5 | 62 |
| 32 | | 12 | 16 | 8.2 | M6 | 10 | | 32.5 | 80 | 62 | 86 | 68 |
| 40 | | | | | | | | 38 | 81 | 63 | 87.1 | 69 |
| 50 | | 16 | 21 | | M8 | 13 | 2.6 | 46.5 | 101 | 73 | 109.2 | 81.2 |
| 63 | | | | | | | | 56.5 | 105 | 77 | 113.1 | 85.1 |
| 80 | 2.6 | 20 | 28 | | M10 | 17 | | 72 | 131 | 92.5 | 139.9 | 101.4 |
| 100 | | | | 10.5 | | | | 89 | 138 | 102.5 | 147 | 111.5 |

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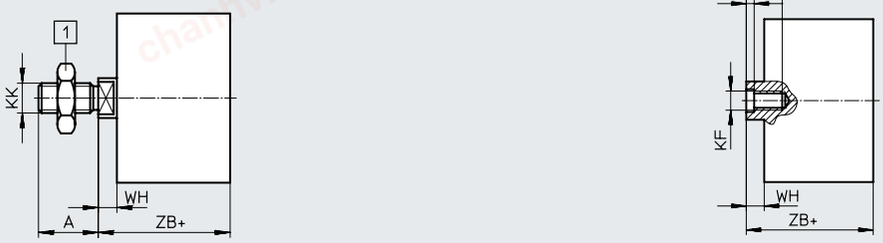
# Datasheet

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

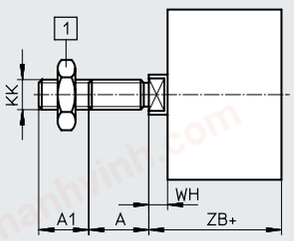
Basic version




[1] Hex nut DIN 439-B only with Ø 32 ... 100

\+ = plus stroke length

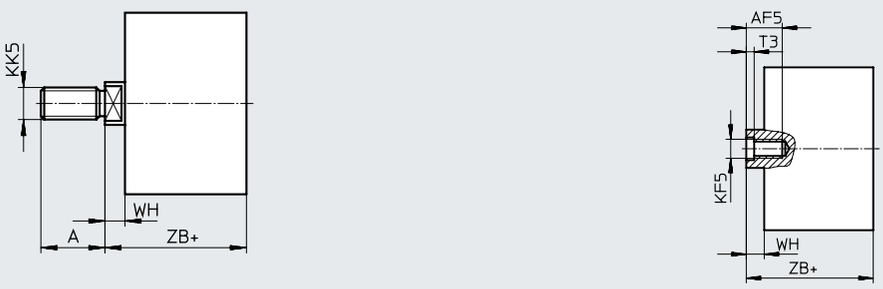
K2 – Extended male piston rod thread




[1] Hex nut DIN 439-B only with Ø 32 ... 100

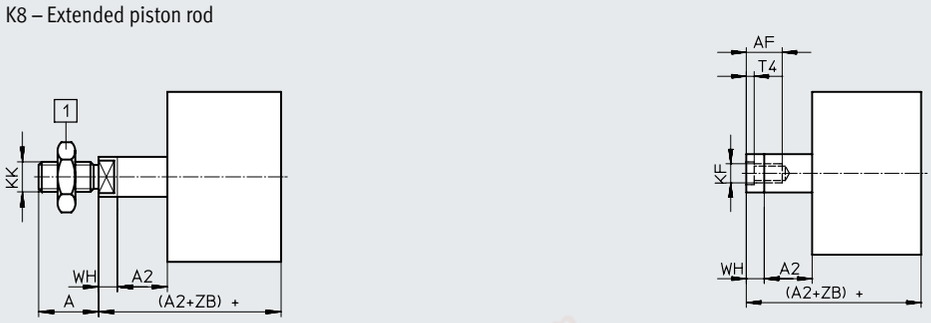
\+ = plus stroke length

K5 – Special piston rod thread




\+ = plus stroke length

K8 – Extended piston rod




[1] Hex nut DIN 439-B only with Ø 32 ... 100

\+ = plus stroke length

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## Datasheet

| ø [mm] | A –0.5 | A1 | A2 | AF min. | AF5 min. | KF | KF5 |
|---|---|---|---|---|---|---|---|
| 20 | 16 | 1 ... 20 | 1 ... 300 | 14 | 12 | M6 | M5 |
| 25 | | | | | | | |
| 32 | 19 | | 1 ...400 | 16 | 14 | M8 | M6 |
| 40 | | | | | | | |
| 50 | 22 | | | 20 | 16 | M10 | M8 |
| 63 | | | | | | | |
| 80 | 28 | 1 ... 30 | 1 ... 500 | | 20 | M12 | M10 |
| 100 | | | | | | | |

| ø [mm] | KK | KK5 | T3 | T4 | WH +1.3 | ZB +1.2 | |
|---|---|---|---|---|---|---|---|
| | | | | | | ELB | ELV, ELH |
| 20 | M8 | M10x1.25 | 2 | 2.6 | 5.5 | 68.8 | 55.5 |
| 25 | | M10 | | | | 79.5 | 62 |
| 32 | M10x1.25 | M10 | 2.6 | 3.3 | 6 | 86 | 68 |
| 40 | | M12 | | | 6.1 | 87.1 | 69 |
| 50 | M12x1.25 | M12 | 3.3 | 4.7 | 8.2 | 109.2 | 81.2 |
| 63 | | M16 | | | 8.1 | 113.1 | 85.1 |
| 80 | M16x1.5 | M16 | 4.7 | 6.1 | 8.9 | 139.9 | 101.4 |
| 100 | | M20x1.5 M20 | | | 9 | 147 | 111.5 |

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## Ordering data – Modular product system

| Ordering table<br>Size | 20 | 25 | 32 | 40 | Conditions | Code | Enter code |
|---|---|---|---|---|---|---|---|
| Module no. | **548214** | **548215** | **548216** | **548217** | | | |
| Function | Compact cylinder, double-acting, standard hole pattern, with end-position locking | | | | | **ADN** | ADN |
| Piston ø [mm] | 20 | 25 | 32 | 40 | | **-...** | |
| Stroke [mm] | 10 ... 300 | | 10 ... 400 | | | **-...** | |
| End-position locking | At both ends | | | | | **-ELB** | |
| | Front | | | | | **-ELV** | |
| | Rear | | | | | **-ELH** | |
| Piston rod thread | Male thread | | | | | **-A** | |
| | Female thread | | | | [1] | **-I** | |
| Cushioning | Elastic cushioning rings/plates at both ends | | | | | **-P** | -P |
| Position sensing | Via proximity switch | | | | | **-A** | -A |
| Extended male thread [mm] | Extended male piston rod thread<br>1 ... 20 | | | | | **-...K2** | |
| Special piston rod thread: Male thread | M10x1.25<br>M10 | M10x1.25<br>M10 | M10<br>M12 | M10<br>M12 | | **-"..."K5** | |
| Special piston rod thread: Female thread | M5 | M5 | M6 | M6 | | | |
| Extended piston rod [mm] | Extended piston rod<br>1 ... 300 | | 1 ... 400 | | [2] | **-...K8** | |
| Captive rating plate | Laser-etched rating plate | | | | | **-TL** | |

[1] I Not with extended male thread K2

[2] K8 The sum of the stroke length and piston rod extension must not exceed the maximum permissible stroke length

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# Ordering data – Modular product system

**Ordering table**

| Size | | 50 | 63 | 80 | 100 | Conditions | Code | Enter code |
|---|---|---|---|---|---|---|---|---|
| Module no. | | **548218** | **548219** | **548220** | **548221** | | | |
| Function | | Compact cylinder, double-acting, standard hole pattern, with end-position locking | | | | | **ADN** | ADN |
| Piston ø | [mm] | 50 | 63 | 80 | 100 | | **-...** | |
| Stroke | [mm] | 10 ... 400 | | 10 ... 500 | | | **-...** | |
| End-position locking | | At both ends | | | | | **-ELB** | |
| | | Front | | | | | **-ELV** | |
| | | Rear | | | | | **-ELH** | |
| Piston rod thread | | Male thread | | | | | **-A** | |
| | | Female thread | | | | [1] | **-I** | |
| Cushioning | | Elastic cushioning rings/plates at both ends | | | | | **-P** | -P |
| Position sensing | | Via proximity switch | | | | | **-A** | -A |
| Extended male thread | | Extended male piston rod thread | | | | | | |
| | [mm] | 1 ... 20 | | 1 ... 30 | | | **-...K2** | |
| Special piston rod thread | Male thread | M12<br>M16 | M12<br>M16 | M16<br>M20<br>M20x1.5 | M16<br>M20<br>M20x1.5 | | **-"..."K5** | |
| | Female thread | M8 | M8 | M10 | M10 | | | |
| Extended piston rod | | Extended piston rod | | | | | | |
| | [mm] | 1 ... 400 | | 1 ... 500 | | [2] | **-...K8** | |
| Captive rating plate | | Laser-etched rating plate | | | | | **-TL** | |

[1] I Not with extended male thread K2

[2] K8 The sum of the stroke length and piston rod extension must not exceed the maximum permissible stroke length

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# Type codes

| 001 | Series | |
|---|---|---|
| **AEN** | Compact cylinder, single-acting, based on ISO 21287 | |

| 002 | Piston diameter [mm] | |
|---|---|---|
| **12** | 12 | |
| **16** | 16 | |
| **20** | 20 | |
| **25** | 25 | |
| **32** | 32 | |
| **40** | 40 | |
| **50** | 50 | |
| **63** | 63 | |
| **80** | 80 | |
| **100** | 100 | |

| 003 | Stroke [mm] | |
|---|---|---|
| **...** | 1 ... 25 | |

| 004 | Piston rod thread type | |
|---|---|---|
| **A** | Male thread | |
| **I** | Female thread | |

| 005 | Cushioning | |
|---|---|---|
| **P** | Elastic cushioning rings/plates on both sides | |

| 006 | Position sensing | |
|---|---|---|
| **A** | For proximity sensor | |

| 007 | Active direction | |
|---|---|---|
| **Z** | Single-acting, pulling | |
| | Single-acting, pushing | |

| 008 | Piston rod thread extension | |
|---|---|---|
| | None | |
| **...K2** | 1 ... 30 mm | |

| 009 | Custom thread | |
|---|---|---|
| **“M5”K5** | M5 | |
| **“M6”K5** | M6 | |
| **“M8”K5** | M8 | |
| **“M10”K5** | M10 | |
| **“M10x1,25”K5** | M10x1.25 | |
| **“M12”K5** | M12 | |
| **“M16”K5** | M16 | |
| **“M20”K5** | M20 | |
| **“M20x1,5”K5** | M20x1.5 | |

| 010 | Piston rod extension | |
|---|---|---|
| | None | |
| **...K8** | 1 ... 25 mm | |

| 011 | Improved running performance | |
|---|---|---|
| | None | |
| **K10** | Smooth anodised aluminium coated piston rod | |

| 012 | Temperature resistance | |
|---|---|---|
| | Standard | |
| **S6** | Heat-resistant seals max. 120 °C | |

| 013 | Captive rating plate | |
|---|---|---|
| | Rating plate, glued | |
| **TL** | Laser etched rating plate | |

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# Datasheet

Function





Pulling

Diameter
12 ... 100 mm

Stroke length
1 ... 25 mm

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Variants



S6



K2



K5



K8

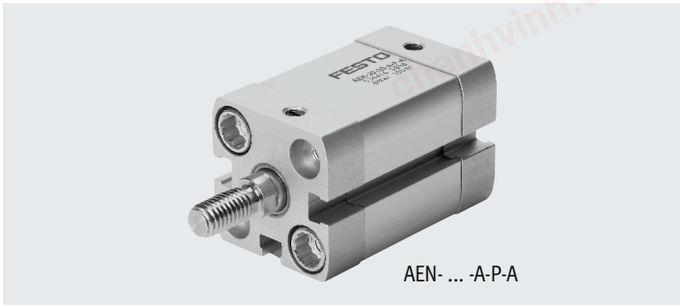


K10

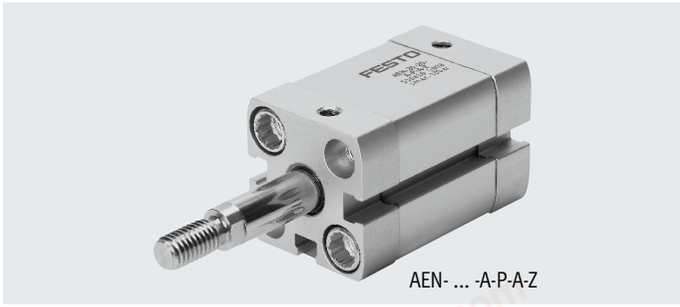


Q

ISO



AEN- ... -A-P-A



AEN- ... -A-P-A-Z

**General technical data**

| Piston ø | 12 | 16 | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 |
|---|---|---|---|---|---|---|---|---|---|---|
| Design | Piston | | | | | | | | | |
| | Piston rod | | | | | | | | | |
| | Cylinder barrel | | | | | | | | | |
| Cushioning | Elastic cushioning rings/plates at both ends | | | | | | | | | |
| Position sensing | Via proximity switch | | | | | | | | | |
| Type of mounting | With through-hole | | | | | | | | | |
| | With female thread | | | | | | | | | |
| | With accessories | | | | | | | | | |
| Mounting position | Any | | | | | | | | | |

**Technical data – Basic version and variants**

| Piston ø | 12 | 16 | 20 | 25 | 32 |
|---|---|---|---|---|---|
| Pneumatic connection | M5 | M5 | M5 | M5 | G1/8 |
| Female piston rod thread | | | | | |
| – | M3 | M4 | M6 | M6 | M8 |
| K5 | – | – | M5 | M5 | M6 |
| Male piston rod thread | | | | | |
| – | M5 | M6 | M8 | M8 | M10x1.25 |
| K5 | M6 | M8 | M10; M10x1.25 | M10; M10x1.25 | M10; M12 |
| Q-K5 | – | M8 | M10; M10x1.25 | M10; M10x1.25 | M10 |

| Piston ø | 40 | 50 | 63 | 80 | 100 |
|---|---|---|---|---|---|
| Pneumatic connection | G1/8 | G1/8 | G1/8 | G1/8 | G1/8 |
| Female piston rod thread | | | | | |
| – | M8 | M10 | M10 | M12 | M12 |
| K5 | M6 | M8 | M8 | M10 | M10 |
| Male piston rod thread | | | | | |
| – | M10x1.25 | M12x1.25 | M12x1.25 | M16x1.5 | M16x1.5 |
| K5 | M10; M12 | M12; M16 | M12; M16 | M16; M20; M20x1.5 | M16; M20; M20x1.5 |
| Q-K5 | M10 | M12 | M12 | M16 | M16 |

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# Datasheet

| Operating and environmental conditions | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Piston ø | 12 | 16 | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 |
| Operating medium | Compressed air to ISO 8573-1:2010 [7:4:4] | | | | | | | | | |
| Note on the operating/ pilot medium | Lubricated operation possible (in which case lubricated operation will always be required) | | | | | | | | | |
| Operating pressure | | | | | | | | | | |
| in [MPa] | | | | | | | | | | |
| – | 0.15 ... 1 | | 0.1 ... 1 | | | | | | | |
| Z | 0.17 ... 1 | 0.22 ... 1 | 0.13 ... 1 | | 0.07 ... 1 | 0.06 ... 1 | | | | |
| Q | 0.15 ... 1 | | 0.1 ... 1 | | | | | | | |
| Q-S6 | 0.15 ... 0.6 | | 0.1 ... 0.6 | | | | | | | |
| in [bar] | | | | | | | | | | |
| – | 1.5 ... 10 | | 1 ... 10 | | | | | | | |
| Z | 1.7 ... 10 | 2.2 ... 10 | 1.3 ... 10 | | 0.7 ... 10 | 0.6 ... 10 | | | | |
| Q | 1.5 ... 10 | | 1 ... 10 | | | | | | | |
| Q-S6 | 1.5 ... 6 | | 1 ... 6 | | | | | | | |
| in [psi] | | | | | | | | | | |
| – | 21.76 ... 145 | | 14.5 ... 145 | | | | | | | |
| Z | 24.66 ... 145 | 31.91 ... 145 | 18.85 ... 145 | | 10.15 ... 145 | 8.7 ... 145 | | | | |
| Q | 21.76 ... 145 | | 14.5 ... 145 | | | | | | | |
| Q-S6 | 21.76 ... 87 | | 14.5 ... 87 | | | | | | | |
| Ambient temperature1) [°C] | | | | | | | | | | |
| – | –20 ... +80 | | | | | | | | | |
| S6 | 0 ... +120 | | | | | | | | | |
| Corrosion resistance class CRC[2)] | 2 - Moderate corrosion stress | | | | | | | | | |

1) Note operating range of proximity switches
2) More information www.festo.com/x/topic/crc

| Forces [N] and impact energy [J] | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Piston ø | 12 | 16 | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 |
| **AEN** | | | | | | | | | | |
| Theoretical force at 6 bar, advancing | 56 | 95 | 162 | 259 | 441 | 702 | 1098 | 1783 | 2899 | 4511 |
| **AEN-...-Z, pulling** | | | | | | | | | | |
| Theoretical force at 6 bar, retracting | 39 | 65 | 115 | 211 | 373 | 634 | 977 | 1663 | 2610 | 4323 |
| Max. impact energy in the end positions | 0.04 | 0.04 | 0.04 | 0.08 | 0.1 | 0.15 | 0.18 | 0.28 | 0.35 | 0.7 |

**Note**

These specifications represent the maximum values that can be achieved. The maximum permissible impact energy must be observed.

Permissible impact velocity: $V = \sqrt{\frac{2 \times E}{m_1 + m_2}}$

Maximum permissible mass: $m_2 = \frac{2 \times E}{v^2} - m_1$

| | |
|---|---|
| V | Perm. impact velocity |
| E | Max. impact energy |
| m1 | Moving mass (drive) |
| m2 | Moving payload |

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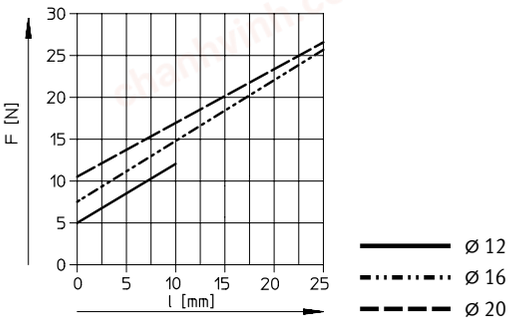
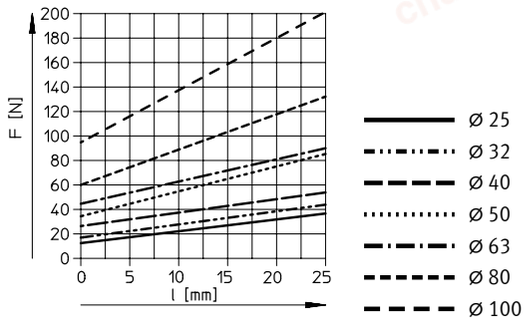
# Datasheet

## Spring return force F as a function of stroke l

Ø 12 ... 20




Ø 25 ... 100




**Note**

The friction depends on the mounting position and the type of load. Single-acting cylinders should as far as possible be operated without lateral loads.

| **Weight [g]** Piston Ø | 12 | 16 | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 |
|---|---|---|---|---|---|---|---|---|---|---|
| **AEN-...** | | | | | | | | | | |
| Product weight with 0 mm stroke | 67 | 78 | 131 | 168 | 273 | 361 | 532 | 752 | 1135 | 1733 |
| Additional weight per 10 mm stroke | 12 | 14 | 22 | 26 | 29 | 38 | 51 | 60 | 80 | 99 |
| Moving mass with 0 mm stroke | 11 | 18 | 32 | 41 | 76 | 103 | 164 | 220 | 425 | 587 |
| Additional mass per 10 mm stroke | 2 | 4 | 6 | 6 | 9 | 9 | 16 | 16 | 25 | 25 |
| **AEN-...-I** | | | | | | | | | | |
| Product weight with 0 mm stroke | 65 | 75 | 122 | 159 | 248 | 336 | 490 | 710 | 1050 | 1648 |
| Additional weight per 10 mm stroke | 12 | 14 | 22 | 26 | 29 | 38 | 51 | 60 | 80 | 99 |
| Moving mass with 0 mm stroke | 9 | 15 | 23 | 32 | 51 | 78 | 122 | 178 | 340 | 502 |
| Additional mass per 10 mm stroke | 2 | 4 | 6 | 6 | 9 | 9 | 16 | 16 | 25 | 25 |
| **AEN-...-Q** | | | | | | | | | | |
| Product weight with 0 mm stroke | – | 78 | 130 | 168 | 270 | 362 | 539 | 754 | 1147 | 1741 |
| Additional weight per 10 mm stroke | – | 14 | 22 | 26 | 28 | 37 | 47 | 55 | 75 | 94 |
| Moving mass with 0 mm stroke | – | 18 | 32 | 41 | 73 | 97 | 155 | 210 | 415 | 567 |
| Additional mass per 10 mm stroke | – | 4 | 6 | 6 | 8 | 8 | 11 | 11 | 20 | 20 |
| **AEN-...-K10** | | | | | | | | | | |
| Product weight with 0 mm stroke | – | – | 134 | 170 | 278 | 366 | 551 | 764 | 1135 | 1725 |
| Additional weight per 10 mm stroke | – | – | 18 | 22 | 23 | 32 | 41 | 47 | 61 | 80 |
| Moving mass with 0 mm stroke | – | – | 35 | 43 | 89 | 108 | 184 | 231 | 425 | 579 |
| Additional mass per 10 mm stroke | – | – | 2 | 2 | 3 | 3 | 5 | 4 | 6 | 6 |
| **AEN-...-K8** | | | | | | | | | | |
| Additional weight and mass per 10 mm piston rod extension | 2 | 4 | 6 | 6 | 9 | 9 | 16 | 16 | 25 | 25 |
| **AEN-...-K2** | | | | | | | | | | |
| Additional weight and mass per 10 mm piston rod thread extension | 2 | 2 | 4 | 4 | 6 | 6 | 9 | 9 | 16 | 16 |
| **AEN-...-Z** | | | | | | | | | | |
| Product weight with 0 mm stroke | 64 | 74 | 125 | 166 | 265 | 361 | 532 | 752 | 1135 | 1733 |
| Additional weight per 10 mm stroke | 12 | 14 | 22 | 26 | 29 | 38 | 51 | 60 | 80 | 99 |
| Moving mass with 0 mm stroke | 11 | 18 | 32 | 41 | 76 | 103 | 164 | 220 | 425 | 587 |
| Additional mass per 10 mm stroke | 2 | 4 | 6 | 6 | 9 | 9 | 16 | 16 | 25 | 25 |

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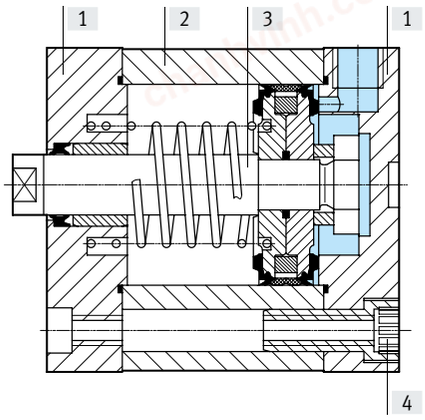
# Datasheet

**Materials**

Sectional view



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## Datasheet

| Compact cylinder | | | Basic version | S6 |
|---|---|---|---|---|
| [1] | Cover | ⌀ 12 ... 80 | Anodised aluminium | |
| | | ⌀ 100 | Coated die-cast aluminum | |
| [2] | Cylinder barrel | | Anodised aluminium | |
| [3] | Piston rod | | High-alloy steel | |
| [4] | Flange screws | ⌀ 12 ... 16 | High-alloy steel | |
| | | ⌀ 20 ... 63 | Galvanised steel | |
| | | ⌀ 80 ... 100 | Standard screws, galvanised steel | |
| – | Seals | | Polyurethane | Fluoro rubber |
| – | Note on materials | | RoHs-compliant | |

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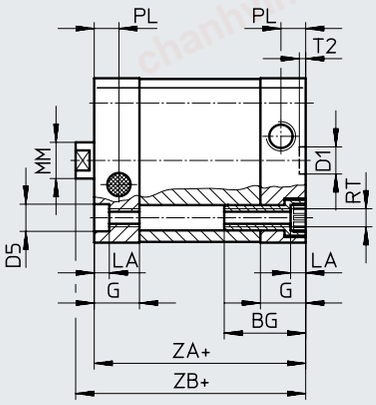
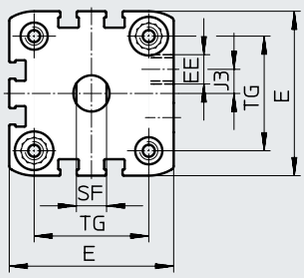
# Datasheet

**Dimensions – Basic version** Download CAD data ➔ www.festo.com

Ø 12 ... 63



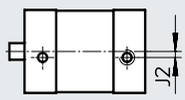

Ø 32 ... 63

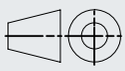



Ø 12 ... 25



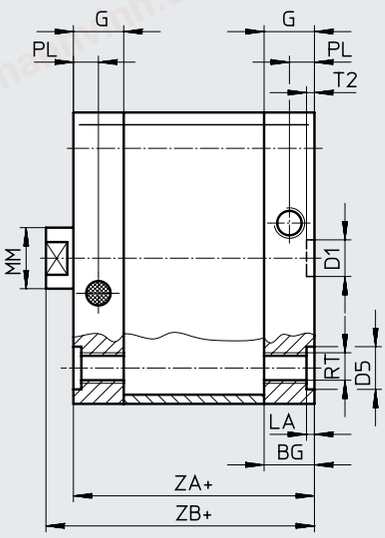
Ø 12

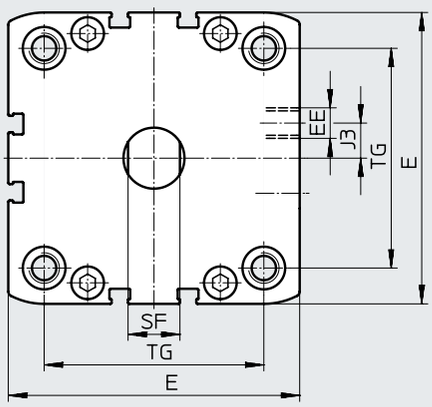


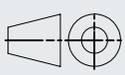



\+ = plus stroke length

Ø 80 ... 100



\+ = plus stroke length

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## Datasheet

| ø<br>[mm] | BG<br>min. | D1<br>ø<br>H9 | D5<br>ø | E | EE | G | J2 | J3 | PW<br>+0.2 |
|---|---|---|---|---|---|---|---|---|---|
| 12 | 17 | 9 | $6^{F9}$ | 27.5 +0.3 | M5 | 10.5 | 2 | – | 3.5 |
| 16 | | | | 29 +0.3 | | 11 | 2.6 | | |
| 20 | 19.5 | | $9^{F9}$ | 35.5 +0.3 | | 12 | | | 5 |
| 25 | | | | 39.5 +0.3 | | | | | |
| 32 | 26 | | | 47 +0.3 | G1/8 | 15 | 6 | | |
| 40 | | | | 54.5 +0.3 | | | 8 | | |
| 50 | 27 | 12 | $12^{F9}$ | 65.5 +0.3 | | | 11.5 | | |
| 63 | | | | 75.5 +0.3 | | | | | |
| 80 | 17 | | 15 | 95.5 +0.6 | | 16.5 | | | 2.6 |
| 100 | 21.5 | | | 113.5 +0.6 | | 21.5 | 20 | | |

| ø<br>[mm] | MM<br>ø | PL<br>+0.2 | RT | ST<br>h13 | T2<br>+0.1 | TG<br>±0.2 | ZA<br>±0.3 | ZB<br>+1.2 |
|---|---|---|---|---|---|---|---|---|
| 12 | 6 | 6 | M4 | 5 | 2.1 | 16 | 35 | 39.2 |
| 16 | 8 | | | 7 | | 18 | | 39.7 |
| 20 | 10 | | M5 | 9 | | 22 | 37 | 42.5 |
| 25 | | | | | | 26 | 39 | 44.5 |
| 32 | 12 | 8.2 | M6 | 10 | | 32.5 | 44 | 50 |
| 40 | | | | | | 38 | 45 | 51.1 |
| 50 | 16 | | M8 | 13 | 2.6 | 46.5 | | 53.2 |
| 63 | | | | | | 56.5 | 49 | 57.1 |
| 80 | 20 | | M10 | 17 | | 72 | 54 | 62.9 |
| 100 | | 10.5 | | | | 89 | 67 | 76 |

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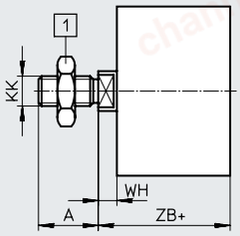
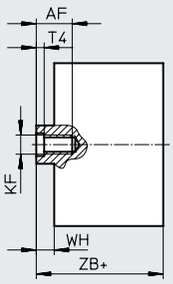
# Datasheet

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

Basic version

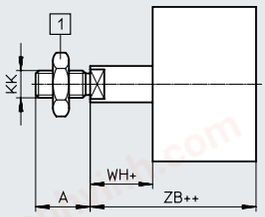


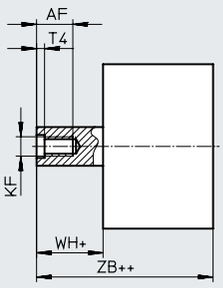




[1] Hex nut DIN 439-B only with Ø 32 ... 100

\+ = plus stroke length

Z – Pulling



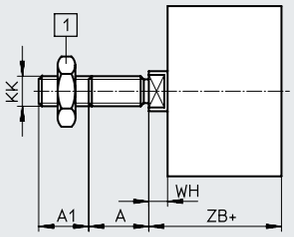




[1] Hex nut DIN 439-B only with Ø 32 ... 100

\+ = plus stroke length

++ = plus 2x stroke length

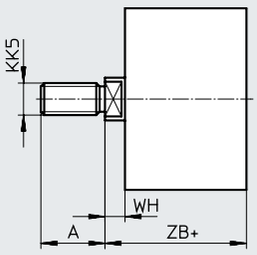
K2 – Extended male piston rod thread

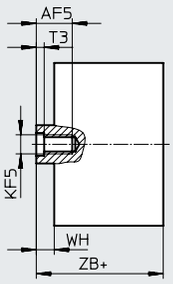



[1] Hex nut DIN 439-B only with Ø 32 ... 100

\+ = plus stroke length

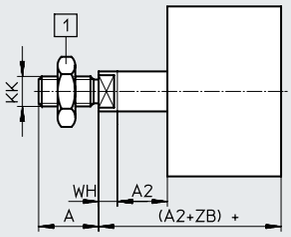
K5 – Special piston rod thread

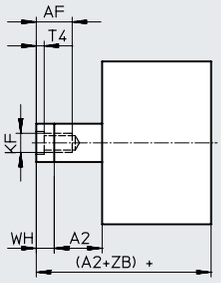



\+ = plus stroke length

K8 – Extended piston rod




[1] Hex nut DIN 439-B only with Ø 32 ... 100

\+ = plus stroke length

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## Datasheet

| ø<br>[mm] | A<br>–0.5 | A1 | A2 | AF<br>min. | AF5<br>min. | KF | KF5 |
|---|---|---|---|---|---|---|---|
| 12 | 10 | 1 ... 10 | 1 ... 300 | 8 | – | M3 | – |
| 16 | 12 | | | 10 | | M4 | |
| 20 | 16 | 1 ... 20 | | 14 | 12 | M6 | M5 |
| 25 | | | | | | | |
| 32 | 19 | | 1 ...400 | 16 | 14 | M8 | M6 |
| 40 | | | | | | | |
| 50 | 22 | | | 20 | 16 | M10 | M8 |
| 63 | | | | | | | |
| 80 | 28 | 1 ... 30 | 1 ... 500 | | 20 | M12 | M10 |
| 100 | | | | | | | |

| ø<br>[mm] | KK | KK5 | T3 | T4 | WH<br>+1.3 | ZB<br>+1.2 |
|---|---|---|---|---|---|---|
| 12 | M5 | M6 | – | 1.5 | 4.2 | 39.2 |
| 16 | M6 | M8 | | | 4.7 | 39.7 |
| 20 | M8 | M10x1.25 | 2 | 2.6 | 5.5 | 42.5 |
| 25 | | M10 | | | | 44.5 |
| 32 | M10x1.25 | M10 | 2.6 | 3.3 | 6 | 50 |
| 40 | | M12 | | | 6.1 | 51.1 |
| 50 | M12x1.25 | M12 | 3.3 | 4.7 | 8.2 | 53.2 |
| 63 | | M16 | | | 8.1 | 57.1 |
| 80 | M16x1.5 | M16 | 4.7 | 6.1 | 8.9 | 62.9 |
| 100 | | M20x1.5<br>M20 | | | 9 | 76 |

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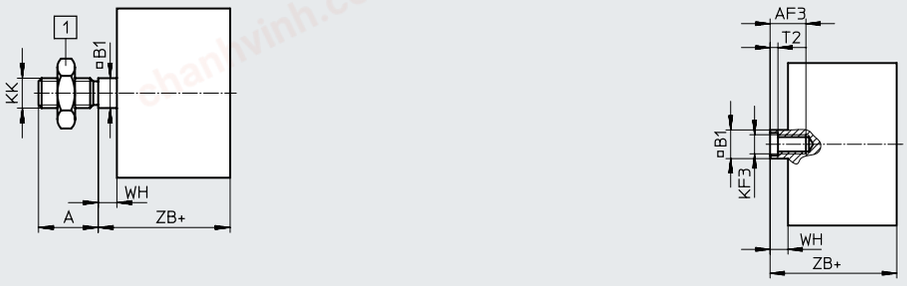
# Datasheet

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

Q – Square piston rod

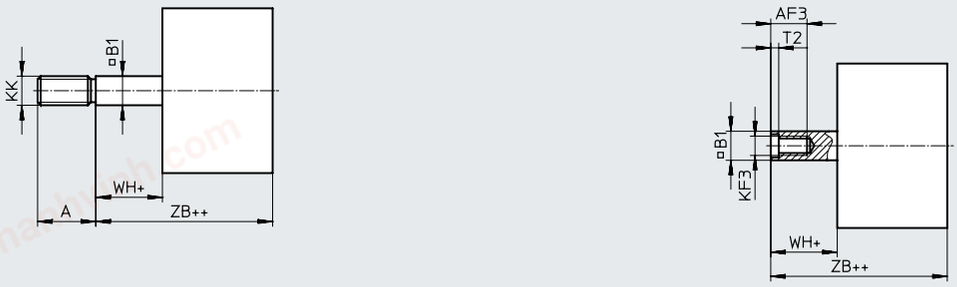



[1] Hex nut DIN 439-B only with Ø 32 ... 100

\+ = plus stroke length

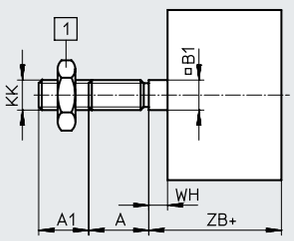
++ = plus 2x stroke length

Q – Z – Pulling




\+ = plus stroke length

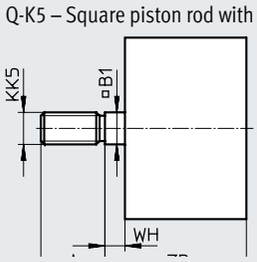
Q-K2 – Square piston rod with extended male thread




[1] Hex nut DIN 439-B only with Ø 32 ... 100

\+ = plus stroke length

Q-K5 – Square piston rod with special piston rod thread




\+ = plus stroke length

Q-K8 – Square, extended piston rod




[1] Hex nut DIN 439-B only with Ø 32 ... 100

\+ = plus stroke length

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## Datasheet

| ø [mm] | A –0.5 | A1 | A2 | AF3 min. | B1 □ | KF3 |
|---|---|---|---|---|---|---|
| 16 | 12 | 1 ... 10 | 1 ... 300 | 10 | 7 | M4 |
| 20 | 16 | 1 ... 20 | | 12 | 9 | M5 |
| 25 | | | | | | |
| 32 | 19 | | 1 ...400 | 14 | 10 | M6 |
| 40 | | | | | | |
| 50 | 22 | | | 16 | 12 | M8 |
| 63 | | | | | | |
| 80 | 28 | 1 ... 30 | 1 ... 500 | 20 | 16 | M10 |
| 100 | | | | | | |

| ø [mm] | KK | KK5 | T2 | WH +1.3 | ZB +1.2 |
|---|---|---|---|---|---|
| 16 | M6 | M8 | 1.5 | 4.7 | 39.7 |
| 20 | M8 | M10x1.25 | 2 | 5.5 | 42.5 |
| 25 | | M10 | | | 44.5 |
| 32 | M10x1.25 | M10 | 2.6 | 6 | 50 |
| 40 | | | | 6.1 | 51.1 |
| 50 | M12x1.25 | M12 | 3.3 | 8.2 | 53.2 |
| 63 | | | | 8.1 | 57.1 |
| 80 | M16x1.5 | M16 | 4.7 | 8.9 | 62.9 |
| 100 | | | | 9 | 76 |

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# Ordering data – Modular product system, basic version and variants

**Ordering table**

| Size | | 12 | 16 | 20 | 25 | 32 | Conditions | Code | Enter code |
|---|---|---|---|---|---|---|---|---|---|
| Module no. | | **536414** | **536415** | **536416** | **536417** | **536418** | | | |
| Function | | Compact cylinder, single-acting | | | | | | **AEN** | AEN |
| Standard | | Based on ISO 21287 | | Conforms to ISO 21287 | | | | | |
| Piston ø | [mm] | 12 | 16 | 20 | 25 | 32 | | **-...** | |
| Stroke | [mm] | 1 ... 10 | 1 ... 25 | | | | | **-...** | |
| Thread type | | Male thread | | | | | | **-A** | |
| | | Female thread | | | | | [1] | **-I** | |
| Cushioning | | Elastic cushioning rings/plates at both ends | | | | | | **-P** | -P |
| Position sensing | | Via proximity switch | | | | | | **-A** | -A |
| Effective direction | | Single-acting, pulling | | | | | | **-Z** | |
| Extended male thread | [mm] | Extended male piston rod thread<br>1 ... 10 | | 1 ... 20 | | | [2] | **-...K2** | |
| Special piston rod thread | Male thread | M6 | M8 | M10x1.25<br>M10 | M10x1.25<br>M10 | M10<br>M12 | [2] | **-"..."K5** | |
| | Female thread | – | – | M5 | M5 | M6 | | | |
| Extended piston rod | [mm] | Extended piston rod<br>1 ... 10 | 1 ... 25 | | | | | **-...K8** | |
| Improved running performance | | – | – | Smooth anodised aluminium piston rod | | | | **-K10** | |
| Temperature resistance | | Heat-resistant seals max. 120 °C | | | | | | **-S6** | |
| Captive rating plate | | Laser-etched rating plate | | | | | | **-TL** | |

[1] I Not with extended male thread K2

[2] K2, K5 Not with improved running performance K10

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# Ordering data – Modular product system, basic version and variants

**Ordering table**

| Size | | 40 | 50 | 63 | 80 | 100 | Conditions | Code | Enter code |
|---|---|---|---|---|---|---|---|---|---|
| Module no. | | **536419** | **536420** | **536421** | **536422** | **536423** | | | |
| Function | | Compact cylinder, single-acting | | | | | | **AEN** | AEN |
| Standard | | Conforms to ISO 21287 | | | | | | | |
| Piston ø | [mm] | 40 | 50 | 63 | 80 | 100 | | **-...** | |
| Stroke | [mm] | 1 ... 25 | | | | | | **-...** | |
| Thread type | | Male thread | | | | | | **-A** | |
| | | Female thread | | | | | [1] | **-I** | |
| Cushioning | | Elastic cushioning rings/plates at both ends | | | | | | **-P** | -P |
| Position sensing | | Via proximity switch | | | | | | **-A** | -A |
| Effective direction | | Single-acting, pulling | | | | | | **-Z** | |
| Extended male thread | | Extended male piston rod thread | | | | | | | |
| | [mm] | 1 ... 20 | | | 1 ... 30 | | [2] | **-...K2** | |
| Special piston rod thread | Male thread | M10<br>M12 | M12<br>M16 | M12<br>M16 | M16<br>M20<br>M20x1.5 | M16<br>M20<br>M20x1.5 | [2] | **-"..."K5** | |
| | Female thread | M6 | M8 | M8 | M10 | M10 | | | |
| Extended piston rod | | Extended piston rod | | | | | | | |
| | [mm] | 1 ... 25 | | | | | | **-...K8** | |
| Improved running performance | | Smooth anodised aluminium piston rod | | | | | | **-K10** | |
| Temperature resistance | | Heat-resistant seals max. 120 °C | | | | | | **-S6** | |
| Captive rating plate | | Laser-etched rating plate | | | | | | **-TL** | |

[1] I Not with extended male thread K2

[2] K2, K5 Not with improved running performance K10

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# Ordering data – Modular product system, Q – Square piston rod, non-rotating

**Ordering table**

| Size | 16 | 20 | 25 | 32 | Conditions | Code | Enter code |
|---|---|---|---|---|---|---|---|
| Module no. | **536415** | **536416** | **536417** | **536418** | | | |
| Function | Compact cylinder, single-acting | | | | | **AEN** | AEN |
| Standard | Based on ISO 21287 | Conforms to ISO 21287 | | | | | |
| Piston ø [mm] | 16 | 20 | 25 | 32 | | **-...** | |
| Stroke [mm] | 1 ... 25 | | | | | **-...** | |
| Thread type | Male thread | | | | | **-A** | |
| | Female thread | | | | [1] | **-I** | |
| Cushioning | Elastic cushioning rings/plates at both ends | | | | | **-P** | -P |
| Position sensing | Via proximity switch | | | | | **-A** | -A |
| Effective direction | Single-acting, pulling | | | | | **-Z** | |
| Protection against rotation | Square piston rod | | | | | **-Q** | -Q |
| Extended male thread [mm] | Extended male piston rod thread<br>1 ... 10 | 1 ... 20 | | | | **-...K2** | |
| Special piston rod thread Male thread | M8 | M10x1.25<br>M10 | M10x1.25<br>M10 | M10 | | **-"...”K5** | |
| Extended piston rod [mm] | Extended piston rod<br>1 ... 25 | | | | | **-...K8** | |
| Temperature resistance | Heat-resistant seals max. 120 °C | | | | | **-S6** | |
| Captive rating plate | Laser-etched rating plate | | | | | **-TL** | |

[1] I Not with extended male thread K2

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# Ordering data – Modular product system, Q – Square piston rod, non-rotating

**Ordering table**

| Size | 40 | 50 | 63 | 80 | 100 | Conditions | Code | Enter code |
|---|---|---|---|---|---|---|---|---|
| Module no. | **536419** | **536420** | **536421** | **536422** | **536423** | | | |
| Function | Compact cylinder, single-acting | | | | | | **AEN** | AEN |
| Standard | Conforms to ISO 21287 | | | | | | | |
| Piston ø [mm] | 40 | 50 | 63 | 80 | 100 | | **-...** | |
| Stroke [mm] | 1 ... 25 | | | | | | **-...** | |
| Thread type | Male thread | | | | | | **-A** | |
| | Female thread | | | | | [1] | **-I** | |
| Cushioning | Elastic cushioning rings/plates at both ends | | | | | | **-P** | -P |
| Position sensing | Via proximity switch | | | | | | **-A** | -A |
| Effective direction | Single-acting, pulling | | | | | | **-Z** | |
| Protection against rotation | Square piston rod | | | | | | **-Q** | -Q |
| Extended male thread [mm] | Extended male piston rod thread<br>1 ... 20 | | | 1 ... 30 | | | **-...K2** | |
| Special piston rod thread Male thread | M10 | M12 | M12 | M16 | M16 | | **-"..."K5** | |
| Extended piston rod [mm] | Extended piston rod<br>1 ... 25 | | | | | | **-...K8** | |
| Temperature resistance | Heat-resistant seals max. 120 °C | | | | | | **-S6** | |
| Captive rating plate | Laser-etched rating plate | | | | | | **-TL** | |

[1] I Not with extended male thread K2

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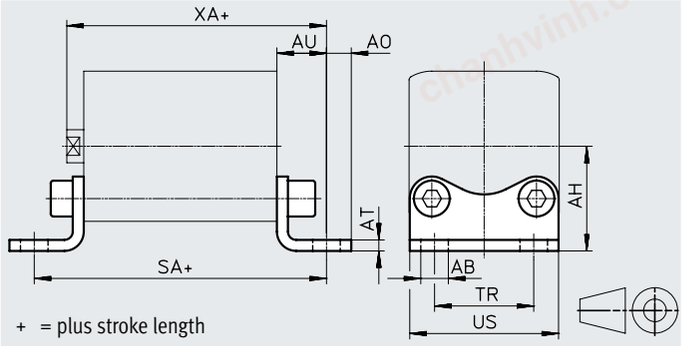
# Accessories

**Foot mounting HNA/HNA-...-R3**

Material:
HNA: Galvanised steel
HNA-...-R3: steel,
with protective coating
RoHs-compliant






**Dimensions and ordering data**

| For Ø [mm] | AB Ø H14 | AH JS14 | AO | AT ±0.5 | AU ±0.2 | SA | TR ±0.2 | US –0.5 | XA |
|---|---|---|---|---|---|---|---|---|---|
| 12 | 5.8 | 21 | 5 | 3 | 13 | 61 | 16 | 26 | 52.2 |
| 16 | | 22 | 4.75 | | | | 18 | 27.5 | 52.9 |
| 20 | 7 | 27 | 6.25 | 4 | 16 | 69 | 22 | 34.5 | 58.7 |
| 25 | | 29 | | | | 71 | 26 | 38.5 | 60.7 |
| 32 | | 33.5 | 7 | | | 76 | 32 | 46 | 66.2 |
| 40 | 10 | 38 | 9 | | 18 | 81 | 36 | 54 | 69.2 |
| 50 | | 45 | 8 | 5 | 21 | 87 | 45 | 64 | 74.2 |
| 63 | | 50 | | | | 91 | 50 | 75 | 78.2 |
| 80 | 12 | 63 | 10.5 | 6 | 26 | 106 | 63 | 93 | 89 |
| 100 | 14.5 | 74 | 12.5 | | 27 | 121 | 75 | 110 | 103 |

| For Ø | Basic version | | | | R3 – High corrosion protection | | | |
|---|---|---|---|---|---|---|---|---|
| | CRC[1] | Weight [g] | Part no. | Type | CRC[1] | Weight [g] | Part no. | Type |
| [mm] | | | | | | | | |
| 12 | 1 - low | 39 | **537237** | **HNA-12** | 3 | 39 | **537252** | **HNA-12-R3** |
| 16 | 1 - low | 42 | **537238** | **HNA-16** | 3 | 42 | **537253** | **HNA-16-R3** |
| 20 | 1 - low | 84 | **537239** | **HNA-20** | 3 | 84 | **537254** | **HNA-20-R3** |
| 25 | 1 - low | 90 | **537240** | **HNA-25** | 3 | 90 | **537255** | **HNA-25-R3** |
| 32 | 1 - low | 123 | **537241** | **HNA-32** | 3 | 123 | **537256** | **HNA-32-R3** |
| 40 | 1 - low | 157 | **537242** | **HNA-40** | 3 | 157 | **537257** | **HNA-40-R3** |
| 50 | 1 - low | 278 | **537243** | **HNA-50** | 3 | 278 | **537258** | **HNA-50-R3** |
| 63 | 1 - low | 328 | **537244** | **HNA-63** | 3 | 328 | **537259** | **HNA-63-R3** |
| 80 | 1 - low | 634 | **537249** | **HNA-80** | 3 | 634 | **537260** | **HNA-80-R3** |
| 100 | 1 - low | 814 | **537250** | **HNA-100** | 3 | 814 | **537261** | **HNA-100-R3** |

1) More information www.festo.com/x/topic/crc

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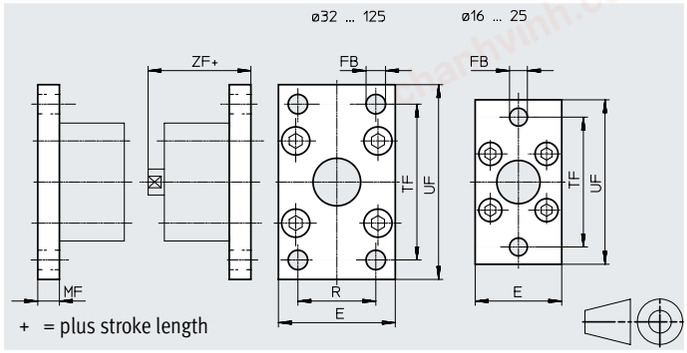
# Accessories

**Flange mounting FNC**

Material:
Galvanised steel
RoHs-compliant






**Dimensions and ordering data**

| For ø [mm] | E | FB ø | MF | R | TF | UF ±1 | ZF | CRC[1] | Weight [g] | Part no. | Type |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 | 28 | 5.5 | 8 | – | 40 | 50 | 47.2 | 1 - low | 79 | **537245** | **FNC-12** |
| 16 | 29 | | | | 43 | 55 | 47.9 | 1 - low | 88 | **537246** | **FNC-16** |
| 20 | 36 | 6.6 | | | 55 | 70 | 50.7 | 1 - low | 141 | **537247** | **FNC-20** |
| 25 | 40 | | | | 60 | 76 | 52.7 | 1 - low | 165 | **537248** | **FNC-25** |
| 32 | 45 | 7 | 10 | 32 | 64 | 80 | 60.2 | 1 - low | 221 | **174376** | **FNC-32** |
| 40 | 54 | 9 | | 36 | 72 | 90 | 61.2 | 1 - low | 291 | **174377** | **FNC-40** |
| 50 | 65 | | 12 | 45 | 90 | 110 | 65.2 | 1 - low | 536 | **174378** | **FNC-50** |
| 63 | 75 | | | 50 | 100 | 120 | 69.2 | 1 - low | 679 | **174379** | **FNC-63** |
| 80 | 93 | 12 | 16 | 63 | 126 | 150 | 79 | 1 - low | 1495 | **174380** | **FNC-80** |
| 100 | 110 | 14 | | 75 | 150 | 175 | 92 | 1 - low | 2041 | **174381** | **FNC-100** |
| 125 | 132 | 16 | 20 | 90 | 180 | 210 | 112 | 1 - low | 3775 | **174382** | **FNC-125** |

1) More information www.festo.com/x/topic/crc

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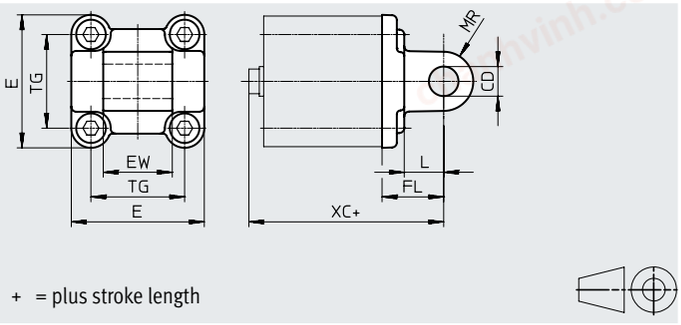
# Accessories

**Swivel flange**
**SNCL/SNCL-...-R3**

Material:
SNCL 12 ... 25:
Wrought aluminium alloy
SNCL 32 ... 125:
Die-cast aluminium
SNCL-...-R3: Wrought aluminium alloy with protective coating
RoHs-compliant






\+ = plus stroke length

**Dimensions and ordering data**

| For Ø [mm] | CD Ø H10 | E | EW | FL ±0.2 | L | MR | TG | XC |
|---|---|---|---|---|---|---|---|---|
| 12 | 6 | $25_{-0.6}$ | $12_{h12}$ | 16 | 10 | 6 | 16 | 55.2 |
| 16 | | $27.5_{-0.6}$ | | | | | 18 | 55.9 |
| 20 | 8 | $34.5_{-0.6}$ | $16_{h12}$ | 20 | 14 | 8 | 22 | 62.7 |
| 25 | | $38.5_{-0.6}$ | | | | | 26 | 64.7 |
| 32 | 10 | $45_{+0.2/-0.5}$ | $26_{-0.2/-0.6}$ | 22 | 13 | 10 | 32.5 | 72.2 |
| 40 | 12 | $54_{-0.5}$ | $28_{-0.2/-0.6}$ | 25 | 16 | 12 | 38 | 75.2 |
| 50 | | $64_{-0.6}$ | $32_{-0.2/-0.6}$ | 27 | | | 46.5 | 80.2 |
| 63 | 16 | $75_{-0.6}$ | $40_{-0.2/-0.6}$ | 32 | 21 | 16 | 56.5 | 89.2 |
| 80 | | $93_{-0.8}$ | $50_{-0.2/-0.6}$ | 36 | 22 | | 72 | 99 |
| 100 | 20 | $110_{+0.3/-0.8}$ | $60_{-0.2/-0.6}$ | 41 | 27 | 20 | 89 | 117 |
| 125 | 25 | $131_{-0.8}$ | $70_{-0.2/-0.6}$ | 50 | 30 | 25 | 110 | 142 |

| For Ø [mm] | Basic version | | | | R3 – High corrosion protection | | | |
|---|---|---|---|---|---|---|---|---|
| | CRC[1] | Weight [g] | Part no. | Type | CRC[1] | Weight [g] | Part no. | Type |
| 12 | 2 - moderate | 20 | **537790** | **SNCL-12** | 3 | 20 | **537794** | **SNCL-12-R3** |
| 16 | 2 - moderate | 21 | **537791** | **SNCL-16** | 3 | 21 | **537795** | **SNCL-16-R3** |
| 20 | 2 - moderate | 38 | **537792** | **SNCL-20** | 3 | 38 | **537796** | **SNCL-20-R3** |
| 25 | 2 - moderate | 41 | **537793** | **SNCL-25** | 3 | 41 | **537797** | **SNCL-25-R3** |
| 32 | 1 - low | 71 | **174404** | **SNCL-32** | – | – | – | |
| 40 | 1 - low | 95 | **174405** | **SNCL-40** | – | – | – | |
| 50 | 1 - low | 158 | **174406** | **SNCL-50** | – | – | – | |
| 63 | 1 - low | 225 | **174407** | **SNCL-63** | – | – | – | |
| 80 | 1 - low | 436 | **174408** | **SNCL-80** | – | – | – | |
| 100 | 1 - low | 606 | **174409** | **SNCL-100** | – | – | – | |
| 125 | 1 - low | 1135 | **174410** | **SNCL-125** | – | – | – | |

1) More information www.festo.com/x/topic/crc

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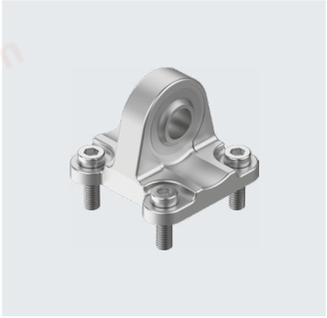
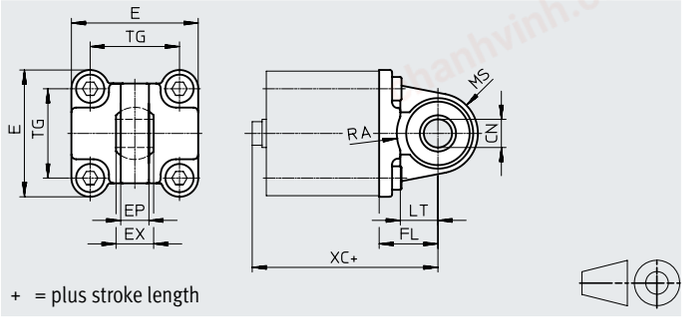
# Accessories

**Swivel flange**
**SNCS/CRSNCS/SNCS-...-R3**

Material:
SNCS 32 ... 50: Die-cast aluminium
SNCS 63 ... 125: Wrought aluminium alloy
CRSNCS 32 ... 80:
High-alloy stainless steel
SNCS-...-R3 100 ... 125:
Wrought aluminium alloy with protective coating
RoHs-compliant






**Dimensions and ordering data**

| For Ø | CN Ø | | E | | EP | EX | FL |
|---|---|---|---|---|---|---|---|
| [mm] | ADN-... | ADN-...-R3 | ADN-... | ADN-...-R3 | ±0.2 | | ±0.2 |
| 32 | $10^{+0.013}$ | 10+0.015/–0.04 | 45+0.2/–0.5 | $45_{-0.5}$ | 10.5 | 14 | 22 |
| 40 | $12^{+0.015}$ | 12+0.018/–0.04 | $54_{-0.5}$ | $54_{-0.5}$ | 12 | 16 | 25 |
| 50 | $16^{+0.015}$ | 16+0.018/–0.04 | $64_{-0.6}$ | $64_{-0.6}$ | 15 | 21 | 27 |
| 63 | $16^{+0.015}$ | 16+0.018/–0.04 | 74.5±0.5 | $75_{-0.6}$ | 15 | 21 | 32 |
| 80 | $20^{+0.018}$ | 20+0.021/–0.04 | 92.2±0.8 | $93_{-0.8}$ | 18 | 25 | 36 |
| 100 | $20^{+0.018}$ | 20+0.021/–0.04 | 109+1/–0.7 | 109+1/–0.7 | 18 | 25 | 41 |
| 125 | $30^{+0.018}$ | 30+0.021/–0.04 | 132+1/–0.7 | 132+1/–0.7 | 25 | 37 | 50 |

| For Ø | LT | MS | | RA | | TG | XC |
|---|---|---|---|---|---|---|---|
| | | ADN-... | ADN-...-R3 | ADN-... +1 | ADN-...-R3 +1 | | |
| [mm] | | | | | | | |
| 32 | 13 | $15^{+0.5}$ | $15^{+0.5}$ | 14.5 | 14.5 | 32.5 | 72.2 |
| 40 | 16 | $17^{+0.5}$ | $17^{+0.5}$ | 17.5 | 17.5 | 38 | 75.2 |
| 50 | 16 | $20^{+0.5}$ | $20^{+0.5}$ | 18.5 | 19 | 46.5 | 80.2 |
| 63 | 21 | $23_{-0.5}$ | $22^{+0.5}$ | 23 | 23 | 56.5 | 89.2 |
| 80 | 22 | $28_{-0.5}$ | $27^{+0.5}$ | 25 | 25 | 72 | 99 |
| 100 | 27 | 30±0.5 | 30±0.5 | 95 | 100 | 89 | 117 |
| 125 | 30 | 39±0.5 | 39±0.5 | 100 | 100 | 110 | 142 |

| For Ø | Basic version | | | | High corrosion protection | | | |
|---|---|---|---|---|---|---|---|---|
| | CRC[1] | Weight | Part no. | Type | CRC[1] | Weight | Part no. | Type |
| [mm] | | [g] | | | | [g] | | |
| 32 | 1 - low | 86 | **174397** | **SNCS-32** | 4 | 161 | **2895920** | **CRSNCS-32** |
| 40 | 1 - low | 122 | **174398** | **SNCS-40** | 4 | 239 | **2895921** | **CRSNCS-40** |
| 50 | 1 - low | 216 | **174399** | **SNCS-50** | 4 | 403 | **2895922** | **CRSNCS-50** |
| 63 | 2 - moderate | 281 | **174400** | **SNCS-63** | 4 | 576 | **2895923** | **CRSNCS-63** |
| 80 | 2 - moderate | 557 | **174401** | **SNCS-80** | 4 | 1173 | **2895924** | **CRSNCS-80** |
| 100 | 2 - moderate | 683 | **174402** | **SNCS-100** | 3 | 684 | **2895925** | **SNCS-100-R3** |
| 125 | 2 - moderate | 1369 | **174403** | **SNCS-125** | 3 | 1369 | **2895926** | **SNCS-125-R3** |

1) More information www.festo.com/x/topic/crc

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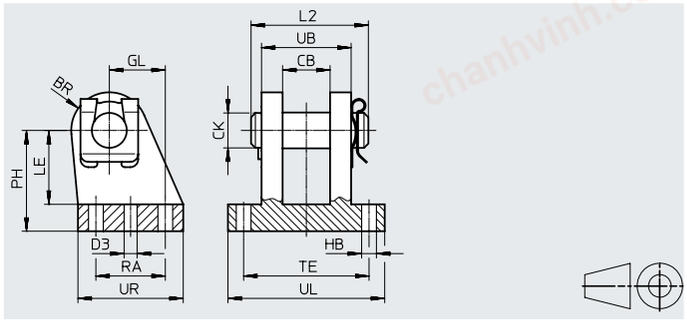
# Accessories

**Clevis foot LBG/LBG-...-R3**
The pivot pin is secured against rotation with a spring pin.

Material:
LBG 32 ... 63: Stainless steel casting
LBG 80 ... 125: Spheroidal graphite cast iron
LBG-...-R3: High-alloy stainless steel
RoHs-compliant






**Dimensions and ordering data**

| For Ø [mm] | BR | ADN-...-R3 | CB | CK Ø | D3 Ø | GL | HB Ø | L2 | LE | PH | RA | TE | UB | UL | UR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 32 | 12 | 12 | 14.1 | 10 | 4.8 | 16 | 6.8 | 35 | 24 | 32 | 20 | 42 | 28 | 56 | 36 |
| 40 | 14 | 14 | 16.1 | 12 | 5.8 | 20 | 6.8 | 39 | 26 | 36 | 26 | 44 | 30 | 58 | 41.5 |
| 50 | 15 | 15 | 21.1 | 16 | 5.8 | 25 | 9.2 | 50 | 33 | 45 | 31 | 56 | 40 | 70 | 47 |
| 63 | 17 | 17 | 21.1 | 16 | 7.8 | 25 | 9.2 | 50 | 38 | 50 | 31 | 56 | 40 | 70 | 49 |
| 80 | 17 | 17 | 25.1 | 20 | 7.8 | 30 | 11 | 60 | 49 | 63 | 36 | 70 | 50 | 89 | 55 |
| 100 | 20 | 22 | 25.1 | 20 | 9.8 | 41 | 11 | 60 | 56 | 71 | 46 | 70 | 50 | 89 | 65 |
| 125 | 25 | 25 | 37.2 | 30 | 11.8 | 60 | 14 | 89 | 70 | 90 | 70 | 106 | 80 | 128 | 96 |

| For Ø [mm] | Basic version | | | | R3 – High corrosion protection | | | |
|---|---|---|---|---|---|---|---|---|
| | CRC[1] | Weight [g] | Part no. | Type | CRC[1] | Weight [g] | Part no. | Type |
| 32 | 2 - moderate | 220 | **31761** | **LBG-32** | 3 | 220 | **2078790** | **LBG-32-R3** |
| 40 | 2 - moderate | 300 | **31762** | **LBG-40** | 3 | 300 | **2078792** | **LBG-40-R3** |
| 50 | 2 - moderate | 540 | **31763** | **LBG-50** | 3 | 540 | **2078794** | **LBG-50-R3** |
| 63 | 2 - moderate | 580 | **31764** | **LBG-63** | 3 | 580 | **2078795** | **LBG-63-R3** |
| 80 | 2 - moderate | 1050 | **31765** | **LBG-80** | 3 | 1050 | **2078797** | **LBG-80-R3** |
| 100 | 2 - moderate | 1375 | **31766** | **LBG-100** | 3 | 1375 | **2078799** | **LBG-100-R3** |
| 125 | 2 - moderate | 4140 | **31767** | **LBG-125** | 3 | 4140 | **2078837** | **LBG-125-R3** |

1) More information www.festo.com/x/topic/crc

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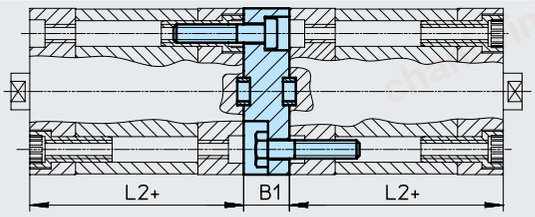
# Accessories

**Multi-position kit DPNA**

Material:
Flange:
Wrought aluminium alloy
Screws: Galvanised steel
RoHs-compliant






\+ = plus stroke length

**Note**

The maximum total stroke length must not be exceeded when combining cylinders and multi-position kits.

**Dimensions and ordering data**

| For Ø [mm] | L2 | B1 | Max. overall stroke length [mm] | CRC[1] | Weight [g] | Part no. | Type[1] |
|---|---|---|---|---|---|---|---|
| 12 | 35 | 13 | 600 | 2 - moderate | 28 | **537263** | **DPNA-12** |
| 16 | | | | | 33 | **537264** | **DPNA-16** |
| 20 | 37 | | | | 50 | **537265** | **DPNA-20** |
| 25 | 39 | | | | 60 | **537266** | **DPNA-25** |
| 32 | 44 | 15 | 800 | | 99 | **537267** | **DPNA-32** |
| 40 | 45 | | | | 129 | **537268** | **DPNA-40** |
| 50 | | | | | 16 | **537269** | **DPNA-50** |
| 63 | 49 | | | | 249 | **537270** | **DPNA-63** |
| 80 | 54 | 17 | 1000 | | 474 | **537271** | **DPNA-80** |
| 100 | 67 | 19.5 | | | 712 | **537272** | **DPNA-100** |

1) More information www.festo.com/x/topic/crc

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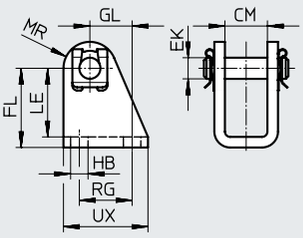
# Accessories

**Clevis foot LBN**

Material:
Galvanised steel
RoHs-compliant






**Dimensions and ordering data**

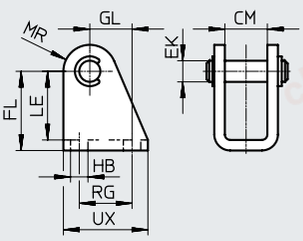
| For Ø [mm] | CM | EK Ø | FL | GL | HB Ø | LE | MR | RG | UX | CRC[1] | Weight [g] | Part no. | Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12/16 | 12.1 | 6 | 27 +0.3/–0.2 | 13 | 5.5 | 24 | 7 | 15 | 25 | 1 - low | 40 | **6058** | **LBN-12/16** |
| 20/25 | 16.1 | 8 | 30 +0.4/–0.2 | 16 | 6.6 | 26 | 10 | 20 | 32 | 1 - low | 84 | **6059** | **LBN-20/25** |

1) More information www.festo.com/x/topic/crc

**Clevis foot CRLBN, stainless steel**

Material:
High-alloy steel
RoHs-compliant






**Dimensions and ordering data**

| For Ø [mm] | CM | EK Ø | FL | GL | HB Ø | LE | MR | RG | UX | CRC[1] | Weight [g] | Part no. | Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12/16 | 12.1 | 6 | 27 +0.3/–0.2 | 13 | 5.5 | 24 | 7 | 15 | 25 | 4 - very high | 39 | **161862** | **CRLBN-12/16** |
| 20/25 | 16.1 | 8 | 30 +0.4/–0.2 | 16 | 6.6 | 26 | 10 | 20 | 32 | 4 - very high | 82 | **161863** | **CRLBN-20/25** |

1) More information www.festo.com/x/topic/crc

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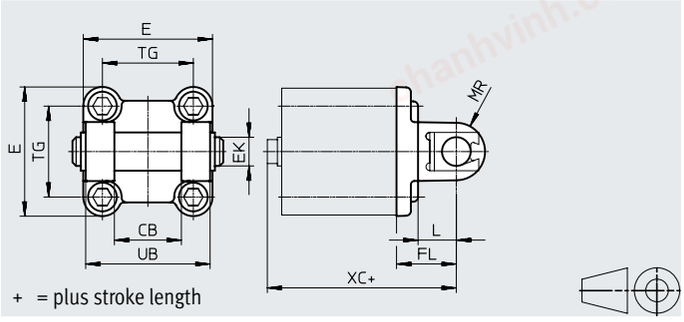
# Accessories

**Swivel flange**
**SNCB/SNCB-...-R3**

Material:
SNCB: Die-cast aluminium
SNCB-...-R3: Die-cast aluminium with protective coating
RoHs-compliant






**Dimensions and ordering data**

| For Ø [mm] | CB H14 | E | EK Ø H9/e8 | FL ±0.2 | L | MR –0.5 | TG | UB h14 | XC |
|---|---|---|---|---|---|---|---|---|---|
| 32 | 26 | 45+0.2/–0.5 | 10 | 22 | 13 | 8.5 | 32.5 | 45 | 72 |
| 40 | 28 | 54–0.5 | 12 | 25 | 16 | 12 | 38 | 52 | 76 |
| 50 | 32 | 64–0.6 | 12 | 27 | 16 | 12 | 46.5 | 60 | 80 |
| 63 | 40 | 75–0.6 | 16 | 32 | 21 | 16 | 56.5 | 70 | 89 |
| 80 | 50 | 93–0.8 | 16 | 36 | 22 | 16 | 72 | 90 | 99 |
| 100 | 60 | 110+0.3/–0.8 | 20 | 41 | 27 | 20 | 89 | 110 | 117 |
| 125 | 70 | 131–0.8 | 25 | 50 | 30 | 25 | 110 | 130 | 142 |

| For Ø | Basic version | | | | R3 – High corrosion protection | | | |
|---|---|---|---|---|---|---|---|---|
| [mm] | CRC[1] | Weight [g] | Part no. | Type | CRC[1] | Weight [g] | Part no. | Type |
| 32 | 1 - low | 103 | **174390** | **SNCB-32** | 3 | 100 | **176944** | **SNCB-32-R3** |
| 40 | 1 - low | 155 | **174391** | **SNCB-40** | 3 | 151 | **176945** | **SNCB-40-R3** |
| 50 | 1 - low | 233 | **174392** | **SNCB-50** | 3 | 228 | **176946** | **SNCB-50-R3** |
| 63 | 1 - low | 375 | **174393** | **SNCB-63** | 3 | 371 | **176947** | **SNCB-63-R3** |
| 80 | 1 - low | 636 | **174394** | **SNCB-80** | 3 | 632 | **176948** | **SNCB-80-R3** |
| 100 | 1 - low | 1035 | **174395** | **SNCB-100** | 3 | 986 | **176949** | **SNCB-100-R3** |
| 125 | 1 - low | 1860 | **174396** | **SNCB-125** | 3 | 1776 | **176950** | **SNCB-125-R3** |

1) More information www.festo.com/x/topic/crc

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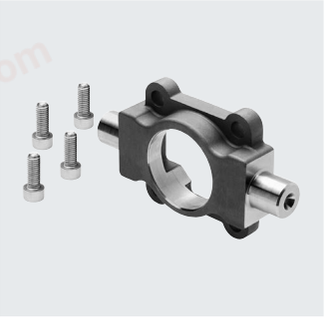
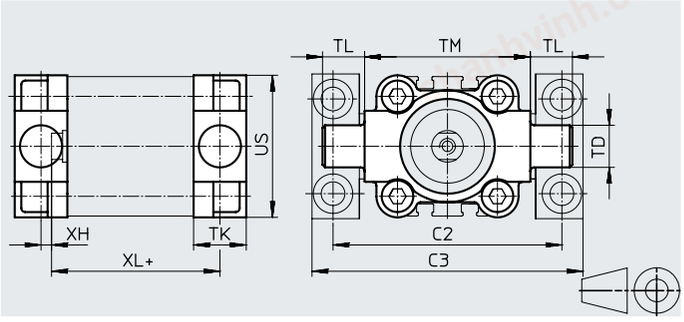
# Accessories

**Trunnion flange ZNCF/CRZNG**

Material:
ZNCF: Stainless steel casting
CRZNG: Electropolished stainless steel casting
RoHs-compliant






**Dimensions and ordering data**

| For Ø [mm] | C2) | C3) | TD Ø e9 | TK | TL | TM | US | XH | XL |
|---|---|---|---|---|---|---|---|---|---|
| 32 | 71 | 86 | 12 | 16 | 12 | 50 | 45 | 2 | 58 |
| 40 | 87 | 105 | 16 | 20 | 16 | 63 | 54 | 4 | 61.1 |
| 50 | 99 | 117 | 16 | 24 | 16 | 75 | 64 | 4 | 64.7 |
| 63 | 116 | 136 | 20 | 24 | 20 | 90 | 75 | 4 | 68.5 |
| 80 | 136 | 156 | 20 | 28 | 20 | 110 | 93 | 5 | 76.9 |
| 100 | 164 | 189 | 25 | 38 | 25 | 132 | 110 | 10 | 95 |
| 125 | 192 | 217 | 25 | 50 | 25 | 160 | 131 | 14 | 117 |

| For Ø | Basic version | | | | R3 – High corrosion protection | | | |
|---|---|---|---|---|---|---|---|---|
| [mm] | CRC[1] | Weight [g] | Part no. | Type | CRC[1] | Weight [g] | Part no. | Type |
| 32 | 2 - moderate | 150 | **174411** | **ZNCF-32** | 4 | 150 | **161852** | **CRZNG-32** |
| 40 | 2 - moderate | 285 | **174412** | **ZNCF-40** | 4 | 285 | **161853** | **CRZNG-40** |
| 50 | 2 - moderate | 473 | **174413** | **ZNCF-50** | 4 | 473 | **161854** | **CRZNG-50** |
| 63 | 2 - moderate | 687 | **174414** | **ZNCF-63** | 4 | 687 | **161855** | **CRZNG-63** |
| 80 | 2 - moderate | 1296 | **174415** | **ZNCF-80** | 4 | 1296 | **161856** | **CRZNG-80** |
| 100 | 2 - moderate | 2254 | **174416** | **ZNCF-100** | 4 | 2254 | **161857** | **CRZNG-100** |
| 125 | 2 - moderate | 3484 | **174417** | **ZNCF-125** | 4 | 3484 | **185362** | **CRZNG-125** |

1) More information www.festo.com/x/topic/crc

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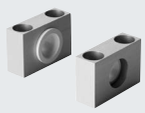
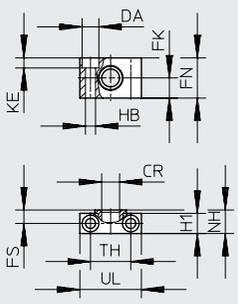
# Accessories

**Trunnion support LNZG**

Material:
Trunnion support: Anodised aluminium
Plain bearing: Plastic
RoHs-compliant






**Dimensions and ordering data**

| For ø [mm] | CR ø D11 | DA ø H13 | FK ø ±0.1 | FN | FS | H1 | HB ø H13 | KE | NH | TH ±0.2 | UL | CRC[1] | Weight [g] | Part no. | Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 32 | 12 | 11 | 15 | 30 | 10.5 | 15 | 6.6 | 6.8 | 18 | 32 | 46 | 2 - moderate | 83 | **32959** | **LNZG-32** |
| 40, 50 | 16 | 15 | 18 | 36 | 12 | 18 | 9 | 9 | 21 | 36 | 55 | 2 - moderate | 129 | **32960** | **LNZG-40/50** |
| 63, 80 | 20 | 18 | 20 | 40 | 13 | 20 | 11 | 11 | 23 | 42 | 65 | 2 - moderate | 178 | **32961** | **LNZG-63/80** |
| 100, 125 | 25 | 20 | 25 | 50 | 16 | 24.5 | 14 | 13 | 28.5 | 50 | 75 | 2 - moderate | 306 | **32962** | **LNZG-100/125** |

1) More information www.festo.com/x/topic/crc

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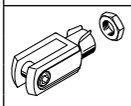
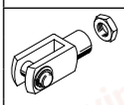
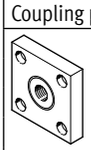
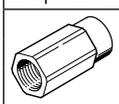
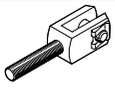
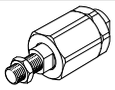
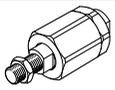
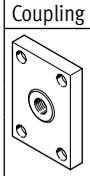
# Accessories

**Ordering data – Piston rod attachments**

Datasheets → Internet: piston rod attachment

| Designation | For ⌀ | Part no. | Type |
|---|---|---|---|
| Rod eye SGS | | | |
|  | 16 | **9254** | **SGS-M6** |
| | 20, 25 | **9255** | **SGS-M8** |
| | 32, 40 | **9261** | **SGS-M10x1.25** |
| | 50, 63 | **9262** | **SGS-M12x1.25** |
| | 80, 100 | **9263** | **SGS-M16x1.5** |
| | 125 | **9264** | **SGS-M20x1.5** |
| Rod clevis SG | | | |
|  | 12 | – | |
| | 16 | **3110** | **SG-M6** |
| | 20, 25 | **3111** | **SG-M8** |
| | 32, 40 | **6144** | **SG-M10x1.25** |
| | 50, 63 | **6145** | **SG-M12x1.25** |
| | 80, 100 | **6146** | **SG-M16x1.5** |
|  | 125 | **6147** | **SG-M20x1.5** |
| Coupling piece KSG | | | |
|  | 12, 16, 20, 25 | – | |
| | 32, 40 | **32963** | **KSG-M10x1.25** |
| | 50, 63 | **32964** | **KSG-M12x1.25** |
| | 80, 100 | **32965** | **KSG-M16x1.5** |
| | 125 | **32966** | **KSG-M20x1.5** |
| Adapter AD | | | |
|  | 12 | – | |
| | 16 | **157328** | **AD-M6-M5** |
| | | **157329** | **AD-M6-1/8** |
| | | **157330** | **AD-M6-1/4** |
| | 20 | **157331** | **AD-M8-1/8** |
| | 25 | **157332** | **AD-M8-1/4** |
| | 32 | **157333** | **AD-M10x1.25-1/8** |
| | 40 | **157334** | **AD-M10x1.25-1/4** |
| | 50 | **160256** | **AD-M12x1.25-1/4** |
| | 63 | **160257** | **AD-M12x1.25-3/8** |

| Designation | For ⌀ | Part no. | Type |
|---|---|---|---|
| Rod clevis SGA for rod eye SGS | | | |
|  | 12, 16, 20, 25 | – | |
| | 32, 40 | **32954** | **SGA-M10x1.25** |
| | 50, 63 | **10767** | **SGA-M12x1.25** |
| | 80, 100 | **10768** | **SGA-M16x1.5** |
| | 125 | **10769** | **SGA-M20x1.5** |
| Self-aligning rod coupler FK | | | |
|  | 12 | **30984** | **FK-M5** |
| | 16 | **2061** | **FK-M6** |
| | 20, 25 | **2062** | **FK-M8** |
| | 32, 40 | **6140** | **FK-M10x1.25** |
| | 50, 63 | **6141** | **FK-M12x1.25** |
| | 80, 100 | **6142** | **FK-M16x1.5** |
| | 125 | **6143** | **FK-M20x1.5** |
| Self-aligning rod coupler DARP | | | |
|  | 12 | **8170112** | **DARP-M5-F** |
| | 16 | **8170115** | **DARP-M6-F** |
| | 20, 25 | **8170116** | **DARP-M8-F** |
| | 32, 40 | **8170119** | **DARP-M10P-F** |
| | 50, 63 | **8170120** | **DARP-M12P-F** |
| | 80, 100 | **8170121** | **DARP-M16P-F** |
| | 125 | **8170124** | **DARP-M20P-F** |
| Coupling piece KSZ | | | |
|  | 12 | – | |
| | 16 | **36123** | **KSZ-M6** |
| | 20, 25 | **36124** | **KSZ-M8** |
| | 32, 40 | **36125** | **KSZ-M10x1.25** |
| | 50, 63 | **36126** | **KSZ-M12x1.25** |
| | 80, 100 | **36127** | **KSZ-M16x1.5** |
| | 125 | **36128** | **KSZ-M20x1.5** |

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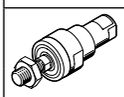
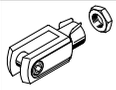
# Accessories

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

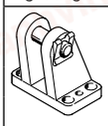
Datasheets → Internet: piston rod attachment

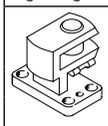
| Designation | For ⌀ | Part no. | Type |
|---|---|---|---|
| Rod eye CRSGS | | | |
|  | 12 | – | |
| | 16 | **195580** | **CRSGS-M6** |
| | 20, 25 | **195581** | **CRSGS-M8** |
| | 32, 40 | **195582** | **CRSGS-M10x1.25** |
| | 50, 63 | **195583** | **CRSGS-M12x1.25** |
| | 80, 100 | **195584** | **CRSGS-M16x1.5** |
| | 125 | **195585** | **CRSGS-M20x1.5** |
| Self-aligning rod coupler CRFK | | | |
|  | 32, 40 | **2305778** | **CRFK-M10x1.25** |
| | 50, 63 | **2305779** | **CRFK-M12x1.25** |
| | 80, 100 | **2490673** | **CRFK-M16x1.5** |
| | 125 | **2545677** | **CRFK-M20x1.5** |

| Designation | For ⌀ | Part no. | Type |
|---|---|---|---|
| Rod clevis CRSG | | | |
|  | 12 | – | |
| | 16, 20 | **13567** | **CRSG-M6** |
| | 20, 25 | **13568** | **CRSG-M8** |
| | 32, 40 | **13569** | **CRSG-M10x1.25** |
| | 50, 63 | **13570** | **CRSG-M12x1.25** |
| | 80, 100 | **13571** | **CRSG-M16x1.5** |
| | 125 | **13572** | **CRSG-M20x1.5** |

**Ordering data – Mounting components**

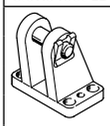
Datasheets → Internet: clevis foot

| Designation | For ⌀ | Part no. | Type |
|---|---|---|---|
| Right-angle clevis foot LBG for rod eye SGS | | | |
|  | 32, 40 | **31761** | **LBG-32** |
| | 50, 63 | **31762** | **LBG-40** |
| | 80, 100 | **31763** | **LBG-50** |
| | | **31764** | **LBG-63** |
| | 125 | **31765** | **LBG-80** |
| | | **31766** | **LBG-100** |

| Designation | For ⌀ | Part no. | Type |
|---|---|---|---|
| Right-angle clevis foot LQG for rod eye SGS | | | |
|  | 32, 40 | **31768** | **LQG-32** |
| | 50, 63 | **31769** | **LQG-40** |
| | 80, 100 | **31770** | **LQG-50** |
| | | **31771** | **LQG-63** |
| | 125 | **31772** | **LQG-80** |
| | | **31773** | **LQG-100** |

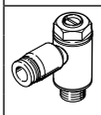
**Ordering data – Mounting components, high corrosion protection**

Datasheets → Internet: clevis foot

| Designation | For ⌀ | Part no. | Type |
|---|---|---|---|
| Clevis foot LBG-R3 for rod eye CRSGS | | | |
|  | 32, 40 | **2078790** | **LBG-32-R3** |
| | 50, 63 | **2078792** | **LBG-40-R3** |
| | 80, 100 | **2078794** | **LBG-50-R3** |
| | | **2078795** | **LBG-63-R3** |
| | 125 | **2078797** | **LBG-80-R3** |
| | | **2078799** | **LBG-100-R3** |

**Ordering data – One-way flow control valves**

Datasheets → Internet: grla

| | Connection | | Material | Part no. | Type |
|---|---|---|---|---|---|
| | For ⌀ | For tubing O.D. | | | |
| **For exhaust air** | | | | | |
|  | 12, 16, 20, 25 | 3 | Metal design | **193137** | **GRLA-M5-QS-3-D** |
| | | 4 | | **193138** | **GRLA-M5-QS-4-D** |
| | | 6 | | **193139** | **GRLA-M5-QS-6-D** |
| | 32, 40, 50, 63, 80, 100 | 3 | | **193142** | **GRLA-1/8-QS-3-D** |
| | | 4 | | **193143** | **GRLA-1/8-QS-4-D** |
| | | 6 | | **193144** | **GRLA-1/8-QS-6-D** |
| | | 8 | | **193145** | **GRLA-1/8-QS-8-D** |
| | 125 | 6 | | **193146** | **GRLA-1/4-QS-6-D** |
| | | 8 | | **193147** | **GRLA-1/4-QS-8-D** |
| | | 10 | | **193148** | **GRLA-1/4-QS-10-D** |

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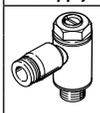
# Accessories

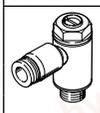
**Ordering data – One-way flow control valves**

Datasheets → Internet: grlz

| | Connection | | Material | Part no. | Type |
|---|---|---|---|---|---|
| | For Ø | For tubing O.D. | | | |
| **For supply air** | | | | | |
|  | 12, 16, 20, 25 | 3 | Metal design | **193153** | **GRLZ-M5-QS-3-D** |
| | | 4 | | **193154** | **GRLZ-M5-QS-4-D** |
| | | 6 | | **193155** | **GRLZ-M5-QS-6-D** |
| | 32, 40, 50, 63, 80, 100 | 3 | | **193156** | **GRLZ-1/8-QS-3-D** |
| | | 4 | | **193157** | **GRLZ-1/8-QS-4-D** |
| | | 6 | | **193158** | **GRLZ-1/8-QS-6-D** |
| | | 8 | | **193159** | **GRLZ-1/8-QS-8-D** |
| | 125 | – | | **151195** | **GRLZ-1/4-B** |

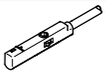
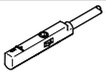
**Ordering data – One-way flow control valves for cylinders ADNH and ADNM**

Datasheets → Internet: grla

| | Connection | | Material | Part no. | Type |
|---|---|---|---|---|---|
| | For Ø | For tubing O.D. | | | |
| **For exhaust air** | | | | | |
|  | 25, 40 | 3 | Metal design | **193137** | **GRLA-M5-QS-3-D** |
| | | 4 | | **193138** | **GRLA-M5-QS-4-D** |
| | 63, 100 | 4 | | **193143** | **GRLA-1/8-QS-4-D** |
| | | 6 | | **193144** | **GRLA-1/8-QS-6-D** |
| | | 8 | | **193145** | **GRLA-1/8-QS-8-D** |

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

Datasheets → Internet: smta

| | Type of mounting | Switching output | Electrical connection | Cable length [m] | Part no. | Type |
|---|---|---|---|---|---|---|
| **N/O** | | | | | | |
|  | Inserted in the slot from above, flush with the cylinder profile, short design | PNP | Cable, 3-core | 2.5 | **574335** | **SMT-8M-A-PS-24V-E-2.5-OE** |
| | | | Plug M8x1, 3-pin | 0.3 | **574334** | **SMT-8M-A-PS-24V-E-0.3-M8D** |
| | | | Plug M12x1, 3-pin | 0.3 | **574337** | **SMT-8M-A-PS-24V-E-0.3-M12** |
| | | NPN | Cable, 3-core | 2.5 | **574338** | **SMT-8M-A-NS-24V-E-2.5-OE** |
| | | | Plug M8x1, 3-pin | 0.3 | **574339** | **SMT-8M-A-NS-24V-E-0.3-M8D** |
| **N/C** | | | | | | |
|  | Inserted in the slot from above, flush with the cylinder profile, short design | PNP | Cable, 3-core | 7.5 | **574340** | **SMT-8M-A-PO-24V-E-7.5-OE** |

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

Datasheets → Internet: smta

| | Type of mounting | Electrical connection, outlet direction of connection | Switching output | Cable length [m] | Part no. | Type |
|---|---|---|---|---|---|---|
| **N/O** | | | | | | |
|  | Inserted into the slot lengthwise | Cable, 3-core, crosswise | PNP | 2.5 | **547859** | **SMT-8G-PS-24V-E-2.5Q-OE** |
| | | Plug M8x1, 3-pin, crossways | | 0.3 | **547860** | **SMT-8G-PS-24V-E-0.3Q-M8D** |
| | | Cable, 3-core, crosswise | NPN | 2.5 | **8065028** | **SMT-8G-NS-24V-E-2.5Q-OE** |
| | | Plug M8x1, 3-pin, crossways | | 0.3 | **8065027** | **SMT-8G-NS-24V-E-0.3Q-M8D** |

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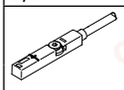
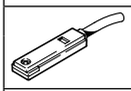
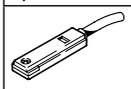
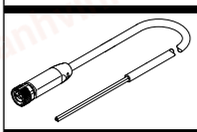
# Accessories

**Ordering data – Proximity switch for T-slot, magnetic reed**

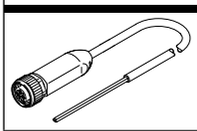
Datasheets → Internet: sme

| | Type of mounting | Switching output | Electrical connection | Cable length [m] | Part no. | Type |
|---|---|---|---|---|---|---|
| **N/O** | | | | | | |
|  | Inserted in the slot from above, flush with the cylinder profile | Contacting | Cable, 3-core | 2.5 | **543862** | **SME-8M-DS-24V-K-2.5-OE** |
| | | | | 5.0 | **543863** | **SME-8M-DS-24V-K-5.0-OE** |
| | | | Cable, 2-core | 2.5 | **543872** | **SME-8M-ZS-24V-K-2.5-OE** |
| | | | Plug M8x1, 3-pin | 0.3 | **543861** | **SME-8M-DS-24V-K-0.3-M8D** |
|  | Inserted in the slot lengthwise, flush with the cylinder profile | Contacting | Cable, 3-core | 2.5 | **150855** | **SME-8-K-LED-24** |
| | | | Plug M8x1, 3-pin | 0.3 | **150857** | **SME-8-S-LED-24** |
| **N/C** | | | | | | |
|  | Inserted in the slot lengthwise, flush with the cylinder profile | Contacting | Cable, 3-core | 7.5 | **160251** | **SME-8-O-K-LED-24** |

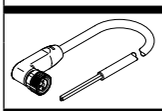
**Connecting cables NEBA, straight, M8 connection**

| | 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 | 3 | 2.5 m | **8078223** | **NEBA-M8G3-U-2.5-N-LE3** |
| | | | | 5 m | **8078224** | **NEBA-M8G3-U-5-N-LE3** |

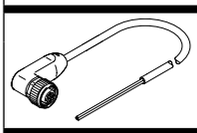
**Connecting cables NEBA, straight, M12 connection**

| | Electrical connection 1, connection technology | Electrical connection 2, connection technology | Electrical connection 2, number of pins/cores | Cable length | Part no. | Type |
|---|---|---|---|---|---|---|
|  | M12x1, A-coded to EN 61076-2-101 | Open end | 3 | 2.5 m | **8078236** | **NEBA-M12G5-U-2.5-N-LE3** |
| | | | | 5 m | **8078237** | **NEBA-M12G5-U-5-N-LE3** |

**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 | 3 | 2.5 m | **8078230** | **NEBA-M8W3-U-2.5-N-LE3** |
| | | | | 5 m | **8078231** | **NEBA-M8W3-U-5-N-LE3** |

**Connecting cables NEBA, angled, M12 connection**

| | Electrical connection 1, connection technology | Electrical connection 2, connection technology | Electrical connection 2, number of pins/cores | Cable length | Part no. | Type |
|---|---|---|---|---|---|---|
|  | M12x1, A-coded to EN 61076-2-101 | Open end | 3 | 2.5 m | **8078245** | **NEBA-M12W5-U-2.5-N-LE3** |
| | | | | 5 m | **8078246** | **NEBA-M12W5-U-5-N-LE3** |

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# Accessories

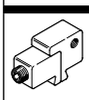
**Ordering data – Proximity switch, cuboid shape, pneumatic**

Datasheets → Internet: smpoa

| | Pneumatic connection | Part no. | Type |
|---|---|---|---|
| **3/2-way valve, normally closed** | | | |
|  | Female thread M5 | **178563** | **SMPO-8E** |

**Ordering data – Mounting kit for proximity switch SMPO-8E**

Datenblätter → Internet: smb

| | Mounting | Part no. | Type |
|---|---|---|---|
|  | Clamped in T-slot | **178230** | **SMB-8E** |

**Ordering data – Slot cover for T-slot**

| | Mounting | Length | Part no. | Type |
|---|---|---|---|---|
|  | Can be inserted | 2x 0.5 m | **151680** | **ABP-5-S** |