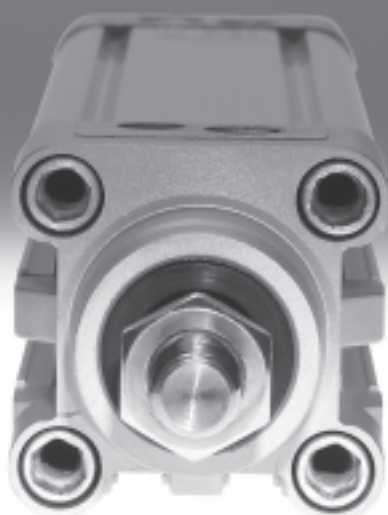


## Standard cylinders DNC, ISO 15552

**FESTO**



## Standard cylinders DNC, ISO 15552

Key features

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### At a glance



DIN



- Standards-based cylinders to ISO 15552 (corresponds to the withdrawn standards ISO 6431, DIN ISO 6431, VDMA 24 562, NF E 49 003.1 and UNI 10290)

- The modern design and construction save up to 11% on fitting space compared to ordinary standard cylinders, thus permitting a considerably more compact system design

- An extensive range of accessories makes it possible to install the cylinder virtually anywhere
- The widest range of variants on the market provides the right DNC cylinder for every application

### Cylinder with clamping units

DNC-KP



- Piston rod can be held or clamped in any position
- Piston rod can be held in position for long periods even with alternating loads, fluctuating operating pressure or leaks in the system

DNCKE



- Suitable for use in safety-related control systems in compliance with EN 954-1, EN 1050, EN 292 and EN 983
- Fail-safe
- Piston rod can be clamped in any position

### Cylinder with end-position locking

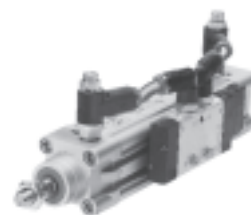
DNC- ... -EL



- Mechanical locking when the end position is reached
- Lock is only automatically released when pressure is supplied to the cylinder
- End-position locking at one or both ends

### Cylinder/valve combination

DNC-V1 ... V6



- The cylinder/valve combination is assembled and fitted with tubing ready for connection
- Particularly suitable for decentralised use in larger systems

### Tandem cylinder

DNCT



- Connection of 2 cylinders with the same piston diameter and stroke in series
- Double the thrust and return force in comparison to a standard cylinder

### Longer service life thanks to the bellows kit DADB



The bellows kit is a leak-free system. To prevent unwanted media being drawn in, the supply and exhaust air must be ducted via a venting hole in the connection part **1**.

The kit protects the piston rod, seal and bearings from a wide range of media, for example:

- dust,
- chips,
- oil,
- grease,
- fuel.

# Standard cylinders DNC, ISO 15552

## Key features

| Variants from the modular product system                                            |                                                       |                                                                                                                                                                                                  |
|-------------------------------------------------------------------------------------|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Symbol                                                                              | Key features                                          | Description                                                                                                                                                                                      |
|    | S2 Through piston rod                                 | For working at both ends with the same force in the forward and return stroke, for attaching external stops                                                                                      |
|    | S6 Heat-resistant seals                               | Temperature resistance up to max. 120 °C                                                                                                                                                         |
|    | S10 Constant motion (slow speed) at low piston speeds | Suitable for slow stroke movements at a constant, stick-slip-free speed over the full stroke of the cylinder.<br>Seal contains silicone grease (not free of paint-wetting impairment substances) |
|    | S11 Low friction                                      | Special seals considerably reduce system wear. This means a considerably lower response pressure.<br>Seal contains silicone grease (not free of paint-wetting impairment substances)             |
|    | S20 Through, hollow piston rod                        | For supplying vacuum, small parts, media, etc.                                                                                                                                                   |
|    | K2 Extended male piston rod thread                    | –                                                                                                                                                                                                |
|    | K3 Female piston rod thread                           | –                                                                                                                                                                                                |
|    | K5 Special piston rod thread                          | Metric standard thread to ISO                                                                                                                                                                    |
|   | K7 Piston rod with external hexagon                   | Special spanner flats                                                                                                                                                                            |
|  | K8 Extended piston rod                                | –                                                                                                                                                                                                |
|  | K10 Smooth anodised aluminium piston rod              | Ideal for use in welding environments:<br>– Protection against welding spatter<br>– Small working loads<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 piston rod is secured in its end position to prevent it from dropping                                  |
|  | Q Square piston rod                                   | Protection against rotation. For correctly 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 (wiper seal)                       | The cylinder is equipped with a hard-chrome plated piston rod and a rigid wiper seal, which protects against dry, dusty media                                                                    |
|  | TT Low temperature                                    | Temperature resistance down to max. –40 °C                                                                                                                                                       |

### Software tools

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

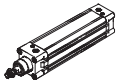
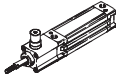
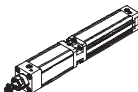
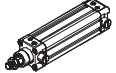
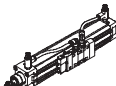
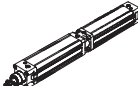
Configuration of Festo modular products

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

# Standard cylinders DNC, ISO 15552

Product range overview

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| Function      | Design                                                                              | Type          | Piston Ø                     | Stroke                                                 | Position sensing | Protection against rotation | Through/hollow piston rod | Extended male piston rod thread | Female piston rod thread | Special piston rod thread |   |
|---------------|-------------------------------------------------------------------------------------|---------------|------------------------------|--------------------------------------------------------|------------------|-----------------------------|---------------------------|---------------------------------|--------------------------|---------------------------|---|
|               |                                                                                     |               | [mm]                         | [mm]                                                   |                  |                             |                           |                                 |                          |                           | A |
| Double-acting | Basic version                                                                       |               |                              |                                                        |                  |                             |                           |                                 |                          |                           |   |
|               |    | DNC           | 32, 40, 50, 63, 80, 100, 125 | 25, 40, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500 | 10 ... 2,000     | ■                           | ■                         | ■                               | ■                        | ■                         | ■ |
|               | Standard hole pattern, with clamping unit                                           |               |                              |                                                        |                  |                             |                           |                                 |                          |                           |   |
|               |    | DNC-KP        | 32, 40, 50, 63, 80, 100, 125 | –                                                      | 10 ... 2,000     | ■                           | ■                         | ■<br>S2                         | ■                        | ■                         | ■ |
|               |   | DNCKE         | 40, 63, 100                  | –                                                      | 10 ... 2,000     | ■                           | –                         | –                               | –                        | –                         | – |
|               | Standard hole pattern, with end-position locking                                    |               |                              |                                                        |                  |                             |                           |                                 |                          |                           |   |
|               |  | DNC-...-EL    | 32, 40, 50, 63, 80, 100      | –                                                      | 10 ... 2,000     | ■                           | –                         | ■<br>S2                         | ■                        | ■                         | ■ |
|               | Standard hole pattern, cylinder/valve combination                                   |               |                              |                                                        |                  |                             |                           |                                 |                          |                           |   |
|               |  | DNC-V1 ... V6 | 32, 40, 50, 63, 80, 100      | –                                                      | 100 ... 2,000    | ■                           | ■                         | ■                               | ■                        | ■                         | ■ |
|               | Standard hole pattern, tandem cylinder                                              |               |                              |                                                        |                  |                             |                           |                                 |                          |                           |   |
|               |  | DNCT          | 32, 40, 50                   | –                                                      | 2 ... 500        | ■                           | –                         | –                               | –                        | –                         | – |
|               |                                                                                     |               | 63, 80, 100, 125             |                                                        | 3 ... 500        |                             |                           |                                 |                          |                           |   |

# Standard cylinders DNC, ISO 15552

Product range overview

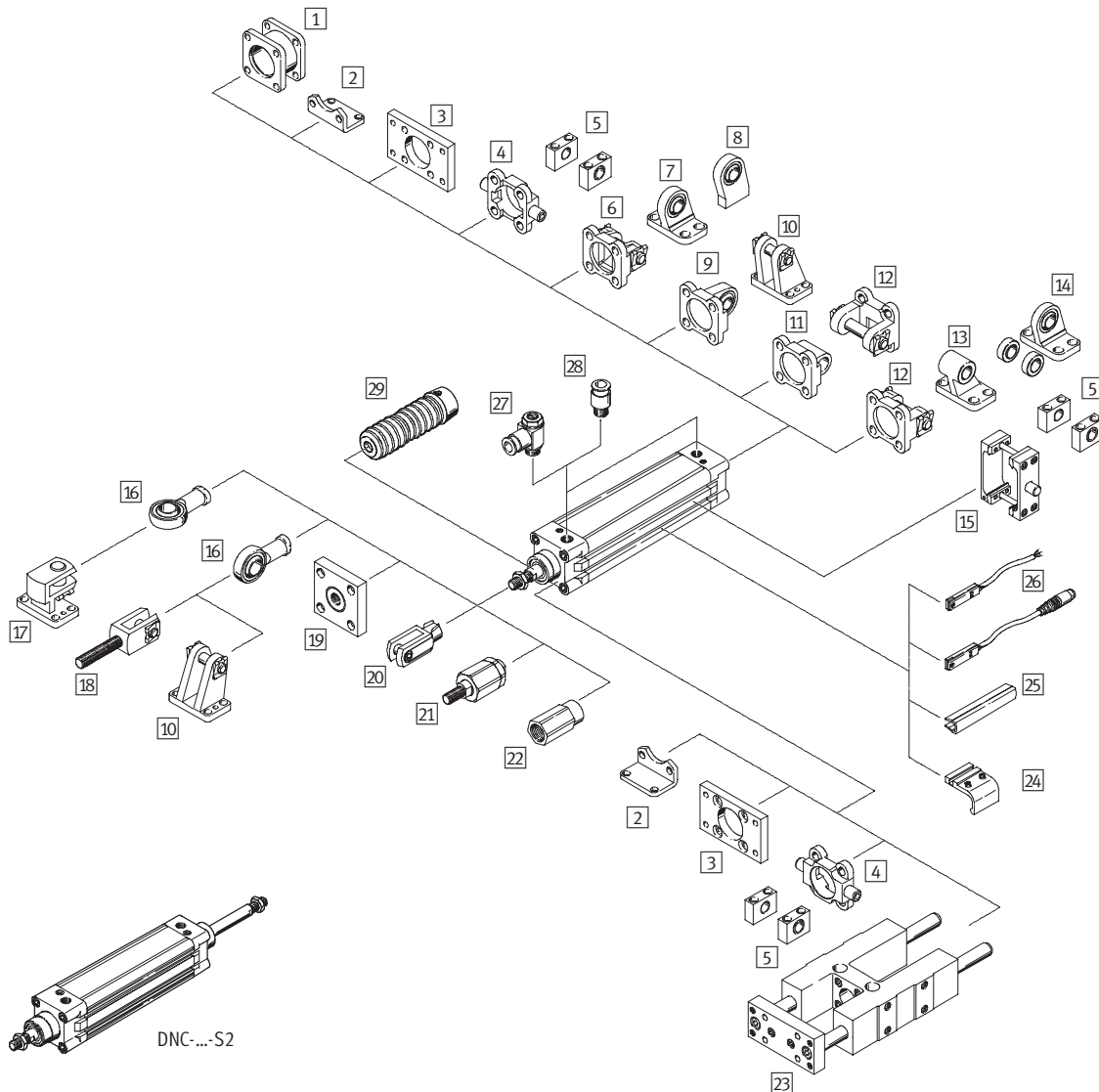
**FESTO**

| Type                                                     | Special spanner flats | Extended piston rod | Smooth anodised piston rod | Heat-resistant seals to max. 120 °C | Slow speed (constant motion) | Low friction | High corrosion protection | Dust protection |  Low temperature | Cylinder/valve combination | → Page/Internet |
|----------------------------------------------------------|-----------------------|---------------------|----------------------------|-------------------------------------|------------------------------|--------------|---------------------------|-----------------|-----------------------------------------------------------------------------------------------------|----------------------------|-----------------|
|                                                          | K7                    | K8                  | K10                        | S6                                  | S10                          | S11          | R3                        | R8              | TT                                                                                                  | V1 ... V6                  |                 |
| <b>Basic version</b>                                     |                       |                     |                            |                                     |                              |              |                           |                 |                                                                                                     |                            |                 |
| DNC                                                      | ■                     | ■                   | ■                          | ■                                   | ■                            | ■            | ■                         | ■               | ■                                                                                                   | -                          | 9               |
| <b>Standard hole pattern, with clamping unit</b>         |                       |                     |                            |                                     |                              |              |                           |                 |                                                                                                     |                            |                 |
| DNC-KP                                                   | ■                     | ■                   | -                          | -                                   | -                            | -            | -                         | -               | -                                                                                                   | ■                          | 23              |
| DNCKE                                                    | -                     | -                   | -                          | -                                   | -                            | -            | -                         | -               | -                                                                                                   | -                          | dncke           |
| <b>Standard hole pattern, with end-position locking</b>  |                       |                     |                            |                                     |                              |              |                           |                 |                                                                                                     |                            |                 |
| DNC-...-EL                                               | -                     | ■                   | -                          | -                                   | -                            | -            | -                         | -               | -                                                                                                   | -                          | 31              |
| <b>Standard hole pattern, cylinder/valve combination</b> |                       |                     |                            |                                     |                              |              |                           |                 |                                                                                                     |                            |                 |
| DNC-V1 ... V6                                            | ■                     | ■                   | ■                          | -                                   | ■                            | ■            | -                         | ■               | -                                                                                                   | ■                          | 38              |
| <b>Standard hole pattern, tandem cylinder</b>            |                       |                     |                            |                                     |                              |              |                           |                 |                                                                                                     |                            |                 |
| DNCT                                                     | -                     | -                   | -                          | ■                                   | -                            | -            | -                         | -               | -                                                                                                   | -                          | dnct            |

# Standard cylinders DNC, ISO 15552

Peripherals overview

FESTO



| Mounting attachments and accessories |                                 |                                                                                                       |                 |                 |           |                     |    |
|--------------------------------------|---------------------------------|-------------------------------------------------------------------------------------------------------|-----------------|-----------------|-----------|---------------------|----|
|                                      | Brief description               | DNC                                                                                                   |                 |                 |           | ➔ Page/<br>Internet |    |
|                                      |                                 | Basic version                                                                                         | KP              | EL              | V1 ... V6 |                     |    |
| 1                                    | Multi-position kit<br>DPNC      | For connecting two cylinders with identical piston diameters to form a multi-position cylinder        | ■ <sup>1)</sup> | ■               | ■         | ■ <sup>1)</sup>     | 47 |
| 2                                    | Foot mounting<br>HNC/CRHNC      | For bearing or end caps                                                                               | ■               | ■               | ■         | ■                   | 48 |
| 3                                    | Flange mounting<br>FNC/CRFNG    | – For bearing or end caps<br>– Cannot be used on the bearing cap in combination with bellows kit DADB | ■               | ■               | ■         | ■                   | 49 |
| 4                                    | Trunnion flange<br>ZNCF/CRZNG   | – For bearing or end caps<br>– Cannot be used on the bearing cap in combination with bellows kit DADB | ■               | ■               | ■         | ■                   | 50 |
| 5                                    | Trunnion support<br>LNZG/CRLNZG | –                                                                                                     | ■               | ■               | ■         | ■                   | 52 |
| 6                                    | Swivel flange<br>SNC            | For end caps                                                                                          | ■ <sup>1)</sup> | ■ <sup>1)</sup> | ■         | ■ <sup>1)</sup>     | 53 |
| 7                                    | Clevis foot<br>LSNG             | With spherical bearing                                                                                | ■ <sup>1)</sup> | ■ <sup>1)</sup> | ■         | ■ <sup>1)</sup>     | 56 |
| 8                                    | Clevis foot<br>LSNSG            | Weld-on, with spherical bearing                                                                       | ■ <sup>1)</sup> | ■ <sup>1)</sup> | ■         | ■ <sup>1)</sup>     | 56 |

# Standard cylinders DNC, ISO 15552

Peripherals overview

FESTO

| Mounting attachments and accessories |                                    |                                                                                                                                                                                                      |                 |                     |           |                     |            |
|--------------------------------------|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------------------|-----------|---------------------|------------|
|                                      | Brief description                  | DNC                                                                                                                                                                                                  |                 |                     |           | → Page/<br>Internet |            |
|                                      |                                    | Basic version                                                                                                                                                                                        | KP              | EL                  | V1 ... V6 |                     |            |
| 9                                    | Swivel flange<br>SNCS              | With spherical bearing for end caps                                                                                                                                                                  | ■ <sup>1)</sup> | ■ <sup>1)</sup>     | ■         | ■ <sup>1)</sup>     | 55         |
| 10                                   | Clevis foot<br>LBG                 | –                                                                                                                                                                                                    | ■ <sup>1)</sup> | ■                   | ■         | ■ <sup>1)</sup>     | 56         |
| 11                                   | Swivel flange<br>SNCL              | For end caps                                                                                                                                                                                         | ■ <sup>1)</sup> | ■ <sup>1)</sup>     | ■         | ■ <sup>1)</sup>     | 55         |
| 12                                   | Swivel flange<br>SNCB/SNCB-...-R3  | For end caps                                                                                                                                                                                         | ■ <sup>1)</sup> | ■ <sup>1)</sup>     | ■         | ■ <sup>1)</sup>     | 54         |
| 13                                   | Clevis foot<br>LNG/CRLNG           | –                                                                                                                                                                                                    | ■ <sup>1)</sup> | ■ <sup>1)</sup>     | ■         | ■ <sup>1)</sup>     | 56         |
| 14                                   | Clevis foot<br>LSN                 | With spherical bearing                                                                                                                                                                               | ■ <sup>1)</sup> | ■ <sup>1)</sup>     | ■         | ■ <sup>1)</sup>     | 56         |
| 15                                   | Trunnion mounting kit<br>ZNCM      | For mounting anywhere along the cylinder profile barrel                                                                                                                                              | ■               | ■                   | ■         | ■                   | 51         |
| 16                                   | Rod eye<br>SGS/CRSGS               | With spherical bearing                                                                                                                                                                               | ■               | ■                   | ■         | ■                   | 57         |
| 17                                   | Right-angle clevis foot<br>LQG     | –                                                                                                                                                                                                    | ■               | ■                   | ■         | ■                   | 56         |
| 18                                   | Rod clevis<br>SGA                  | With male thread                                                                                                                                                                                     | ■               | ■                   | ■         | ■                   | 57         |
| 19                                   | Coupling piece<br>KSG              | To compensate for radial deviations                                                                                                                                                                  | ■               | ■                   | ■         | ■                   | 57         |
|                                      | Coupling piece<br>KSZ              | For cylinders with a non-rotating piston rod to compensate for radial deviations                                                                                                                     | ■               | ■                   | ■         | ■                   | 57         |
| 20                                   | Rod clevis<br>SG/CRSG              | Permits a swivelling movement of the cylinder in one plane                                                                                                                                           | ■               | ■                   | ■         | ■                   | 57         |
| 21                                   | Self-aligning rod coupler<br>FK    | For compensating radial and angular deviations                                                                                                                                                       | ■               | ■                   | ■         | ■                   | 57         |
| 22                                   | Adapter<br>AD                      | For fitting a suction cup on a hollow cylinder piston rod                                                                                                                                            | ■               | –                   | –         | ■                   | 57         |
| 23                                   | Guide unit<br>FENG                 | For protecting standard cylinders against rotation at high torque loads                                                                                                                              | ■               | ■<br>Ø 50 and above | –         | –                   | 62         |
| 24                                   | Mounting kit<br>SMB-8-FENG         | For attaching proximity sensor SMT-8 to cylinders in combination with guide unit FENG                                                                                                                | ■ <sup>2)</sup> | ■<br>Ø 50 and above | ■         | –                   | 62         |
| 25                                   | Slot cover<br>ABP-5-S              | For protecting the sensor cables and keeping dirt out of the sensor slots                                                                                                                            | ■               | ■                   | ■         | ■                   | 63         |
| 26                                   | Proximity sensor<br>SME/SMT-8      | Can be integrated in the cylinder profile barrel                                                                                                                                                     | ■               | ■                   | ■         | ■                   | 63         |
| 27                                   | One-way flow control valve<br>GRLA | For regulating speed                                                                                                                                                                                 | ■               | ■                   | ■         | ■                   | 64         |
| 28                                   | Push-in fitting<br>QS              | For connecting compressed air tubing with standard outside diameter                                                                                                                                  | ■               | ■                   | ■         | ■                   | quick star |
| 29                                   | Bellows kit<br>DADB                | – Protects the cylinder (piston rod, seal and bearings) against a wide range of media and thus prevents premature wear<br>– The kit can only be used in combination with an extended piston rod (K8) | ■               | –                   | ■         | ■                   | 58         |

1) Not with variant S2 or S20

2) For piston Ø 32, 40 mm only with variant R3

# Standard cylinders DNC, ISO 15552

Type codes

FESTO

|                         |                                               |     |   |    |   |     |   |     |   |   |
|-------------------------|-----------------------------------------------|-----|---|----|---|-----|---|-----|---|---|
|                         |                                               | DNC | – | 80 | – | 320 | – | PPV | – | A |
| <b>Type</b>             |                                               |     |   |    |   |     |   |     |   |   |
| Double-acting           |                                               |     |   |    |   |     |   |     |   |   |
| DNC                     | Standard cylinder                             |     |   |    |   |     |   |     |   |   |
| <b>Piston Ø [mm]</b>    |                                               |     |   |    |   |     |   |     |   |   |
| <b>Stroke [mm]</b>      |                                               |     |   |    |   |     |   |     |   |   |
| <b>Cushioning</b>       |                                               |     |   |    |   |     |   |     |   |   |
| P                       | Flexible cushioning rings/pads at both ends   |     |   |    |   |     |   |     |   |   |
| PPV                     | Pneumatic cushioning, adjustable at both ends |     |   |    |   |     |   |     |   |   |
| <b>Position sensing</b> |                                               |     |   |    |   |     |   |     |   |   |
|                         | Without position sensing                      |     |   |    |   |     |   |     |   |   |
| A                       | Via proximity sensor                          |     |   |    |   |     |   |     |   |   |

## Note

The standard cylinder DNC can be ordered using either a fixed part number and type designation or via the modular product system.  
The type code listed above only

applies to the DNC standard cylinder with fixed part number and type designation.  
Variants can only be ordered using the modular product system.

# Standard cylinders DNC, ISO 15552

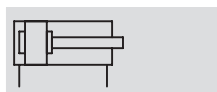
FESTO

Technical data

Function

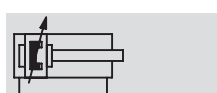
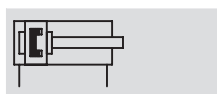
**DNC-...**

Without position sensing



**DNC-...-A-...**

With position sensing



- Ø - Diameter  
32 ... 125 mm

- | - Stroke length  
10 ... 2,000 mm

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

Wearing parts kits  
→ 22



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



DIN



| General technical data                    |                                               |          |         |         |         |         |       |
|-------------------------------------------|-----------------------------------------------|----------|---------|---------|---------|---------|-------|
| Piston Ø                                  | 32                                            | 40       | 50      | 63      | 80      | 100     | 125   |
| Pneumatic connection                      | G1/8                                          | G1/4     | G1/4    | G3/8    | G3/8    | G1/2    | G1/2  |
| Piston rod thread                         | M10x1.25                                      | M12x1.25 | M16x1.5 | M16x1.5 | M20x1.5 | M20x1.5 | M27x2 |
|                                           | K3                                            | M6       | M8      | M10     | M10     | M12     | M16   |
|                                           | K5                                            | M10      | M12     | M16     | M16     | M20     | M27   |
| Constructional design                     | Piston                                        |          |         |         |         |         |       |
|                                           | Piston rod                                    |          |         |         |         |         |       |
|                                           | Profile barrel                                |          |         |         |         |         |       |
| Max. torsional backlash of piston rod [°] | ±0.65                                         | ±0.6     | ±0.45   | ±0.45   | ±0.45   | ±0.45   | –     |
| Cushioning                                | Flexible cushioning rings/pads at both ends   |          |         |         |         |         |       |
|                                           | Pneumatic cushioning, adjustable at both ends |          |         |         |         |         |       |
| Cushioning length PPV [mm]                | 20                                            | 20       | 22      | 22      | 32      | 32      | 42    |
| Position sensing                          | Via proximity sensor                          |          |         |         |         |         |       |
| Type of mounting                          | Via female thread                             |          |         |         |         |         |       |
|                                           | Via accessories                               |          |         |         |         |         |       |
| Mounting position                         | Any                                           |          |         |         |         |         |       |

Note: This product conforms to ISO 1179-1 and to ISO 228-1

# Standard cylinders DNC, ISO 15552

Technical data

**FESTO**

| Operating and environmental conditions          |    |                                                                    |    |            |    |            |            |                  |  |            |  |             |  |
|-------------------------------------------------|----|--------------------------------------------------------------------|----|------------|----|------------|------------|------------------|--|------------|--|-------------|--|
| Piston Ø                                        | 32 | 40                                                                 | 50 | 63         | 80 | 100        | 125        |                  |  |            |  |             |  |
| Operating medium                                |    | Filtered compressed air, lubricated or unlubricated                |    |            |    |            |            |                  |  |            |  |             |  |
| Operating pressure<br>[bar]                     |    | 0.6 ... 12                                                         |    |            |    |            | 0.6 ... 10 |                  |  |            |  |             |  |
|                                                 |    | R8 1.5 ... 12                                                      |    |            |    |            | 1.5 ... 10 |                  |  |            |  |             |  |
|                                                 |    | S11                                                                |    |            |    |            |            |                  |  |            |  |             |  |
|                                                 |    |                                                                    |    |            |    |            |            | After 10 strokes |  |            |  |             |  |
|                                                 |    |                                                                    |    |            |    |            |            | 0.16 ... 12      |  | 0.1 ... 12 |  | 0.06 ... 12 |  |
|                                                 |    | After 24 hours                                                     |    |            |    |            |            |                  |  |            |  |             |  |
|                                                 |    | 0.3 ... 12                                                         |    | 0.2 ... 12 |    | 0.1 ... 12 |            | 0.1 ... 10       |  |            |  |             |  |
| TT                                              |    | 1 ... 12                                                           |    |            |    |            | –          |                  |  |            |  |             |  |
| Ambient temperature <sup>1)</sup><br>[°C]       |    | –20 ... +80                                                        |    |            |    |            |            |                  |  |            |  |             |  |
|                                                 |    | S6 0 ... 120                                                       |    |            |    |            |            |                  |  |            |  |             |  |
|                                                 |    | TT –40 ... +80                                                     |    |            |    |            | –          |                  |  |            |  |             |  |
| Corrosion resistance class<br>CRC <sup>2)</sup> |    | 2                                                                  |    |            |    |            |            |                  |  |            |  |             |  |
|                                                 |    | R3 3                                                               |    |            |    |            |            |                  |  |            |  |             |  |
| Certification                                   |    | Germanischer Lloyd                                                 |    |            |    |            |            |                  |  |            |  |             |  |
| ATEX                                            |    | Specified types ➔ <a href="http://www.festo.com">www.festo.com</a> |    |            |    |            |            |                  |  |            |  |             |  |

1) Note operating range of proximity sensors

2) Corrosion resistance class 2 as per Festo standard 940 070

Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Corrosion resistance class 3 as per Festo standard 940 070

Components requiring higher corrosion resistance. External visible parts in direct contact with industrial atmospheres or media such as solvents and cleaning agents, with a predominantly functional requirement for the surface.

| Force [N] and impact energy [J]                       |     |     |       |       |       |       |       |
|-------------------------------------------------------|-----|-----|-------|-------|-------|-------|-------|
| Piston Ø                                              | 32  | 40  | 50    | 63    | 80    | 100   | 125   |
| Theoretical force at 6 bar, advancing                 | 483 | 754 | 1,178 | 1,870 | 3,016 | 4,712 | 7,363 |
| S2/S20                                                | 415 | 633 | 990   | 1,682 | 2,721 | 4,418 | 6,881 |
| Theoretical force at 6 bar, retracting                | 415 | 633 | 990   | 1,682 | 2,721 | 4,418 | 6,881 |
| S2/S20                                                | 415 | 633 | 990   | 1,682 | 2,721 | 4,418 | 6,881 |
| Max. impact energy at the end positions <sup>1)</sup> | 0.1 | 0.2 | 0.2   | 0.5   | 0.9   | 1.2   | 5     |

1) The permissible impact energy is reduced by approx. 10% for variants K10 and S20

Permissible impact velocity:

$$v_{\text{perm.}} = \sqrt{\frac{2 \times E_{\text{perm.}}}{m_{\text{dead}} + m_{\text{load}}}}$$

Maximum permissible load:

$$m_{\text{load}} = \frac{2 \times E_{\text{perm.}}}{v^2} - m_{\text{dead}}$$

$v_{\text{perm.}}$  Permissible impact velocity

$E_{\text{perm.}}$  Max. impact energy

$m_{\text{Intrinsic}}$  Moving load (drive)

$m_{\text{Load}}$  Moving effective load

## Note

This data represents the maximum values that can be achieved. The maximum permissible impact energy must be observed.

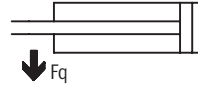
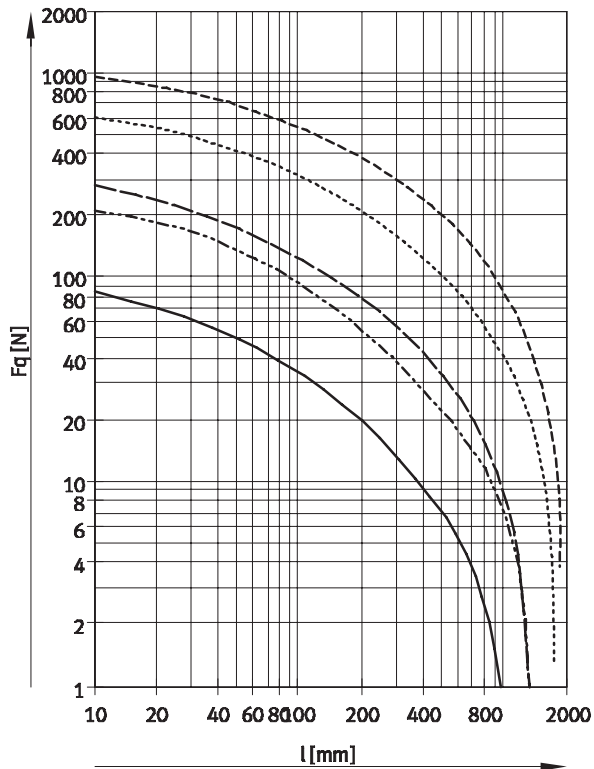
# Standard cylinders DNC, ISO 15552

Technical data

FESTO

## Lateral force $F_q$ as a function of stroke length $l$

Basic version



- $\varnothing 32$
- - -  $\varnothing 40$
- · -  $\varnothing 50/63$
- $\varnothing 80/100$
- - - -  $\varnothing 125$

# Standard cylinders DNC, ISO 15552

Technical data

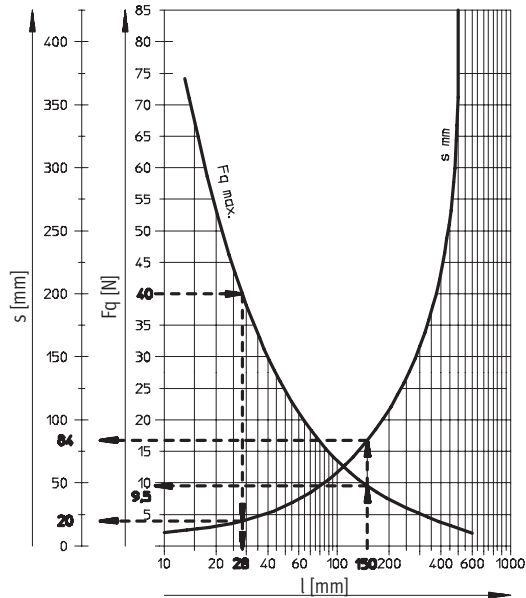
FESTO

## Lateral force $F_q$ as a function of stroke length $l$ and lever arm $s$

Q – Square piston rod

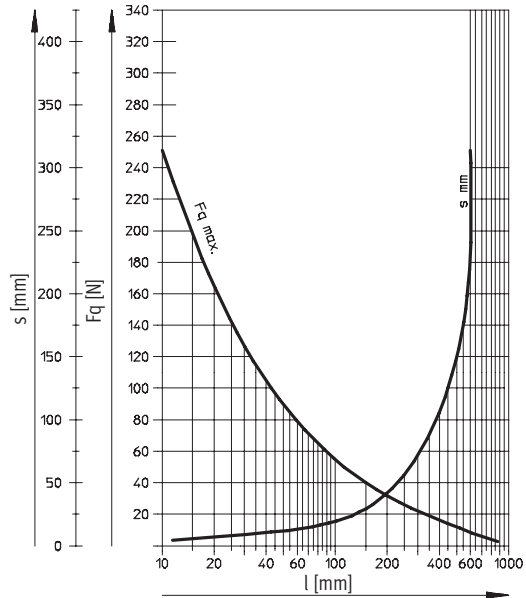
Ø 32

Max. torque = 800 Nmm / Max. stroke = 300 mm



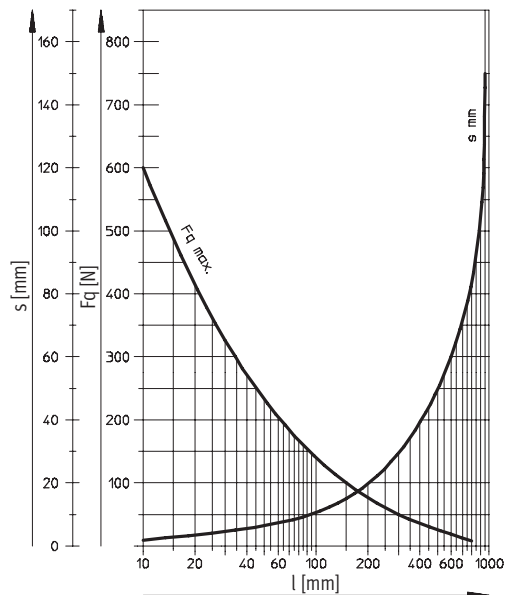
Ø 40

Max. torque = 1,100 Nmm / Max. stroke = 400 mm



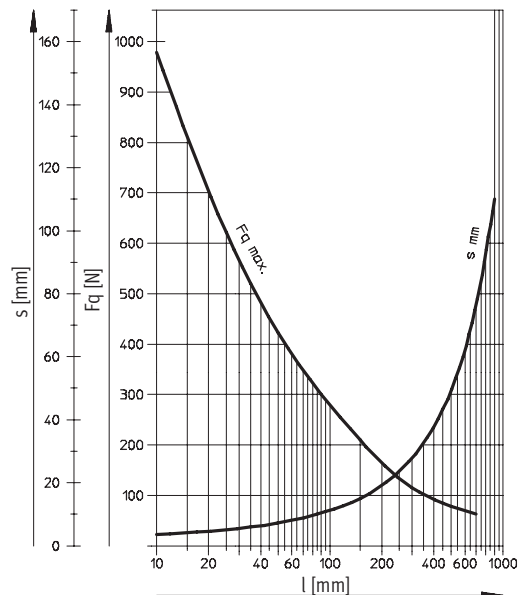
Ø 50/63

Max. torque = 1,500 Nmm / Max. stroke = 500 mm



Ø 80/100

Max. torque = 3,000 Nmm / Max. stroke = 600 mm



## Examples for piston Ø 32 mm

Example 1:

Stroke length  $l$  = 150 mm

Result: permissible

Lateral force  $F_q$  = 9.5 N

Lever arm  $s$  = 84 mm

Example 2:

Lateral force  $F_q$  = 40 N

Result: permissible

Stroke length  $l$  = 28 mm

Lever arm  $s$  = 20 mm

Example 3:

Stroke length  $l$  = 150 mm

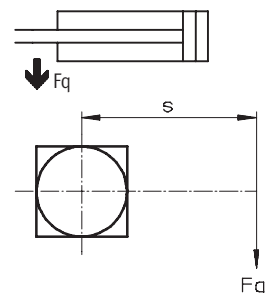
Lever arm  $s$  = 20 mm

$F_q = \frac{\text{Max. torque } 800 \text{ Nmm}}{\text{Lever arm } 100 \text{ mm}}$

= 8 N

Result: permissible

$F_q = 8 \text{ N} < F_{q \text{ max.}} = 9.5 \text{ N}$



# Standard cylinders DNC, ISO 15552

Technical data

**FESTO**

| Weight [g]                                      |     |       |       |       |       |       |       |
|-------------------------------------------------|-----|-------|-------|-------|-------|-------|-------|
| Piston Ø                                        | 32  | 40    | 50    | 63    | 80    | 100   | 125   |
| Basic version                                   |     |       |       |       |       |       |       |
| Product weight with 0 mm stroke                 | 517 | 800   | 1,260 | 1,709 | 2,790 | 4,653 | 6,771 |
| Additional weight per 10 mm stroke              | 30  | 45    | 64    | 73    | 106   | 115   | 168   |
|                                                 |     |       |       |       |       |       |       |
| Moving load with 0 mm stroke                    | 162 | 307   | 538   | 663   | 1,131 | 1,544 | 2,809 |
| Additional load per 10 mm stroke                | 9   | 16    | 25    | 25    | 38    | 38    | 63    |
|                                                 |     |       |       |       |       |       |       |
| Q – Square piston rod                           |     |       |       |       |       |       |       |
| Product weight with 0 mm stroke                 | 504 | 738   | 1,187 | 1,632 | 2,652 | 4,508 | –     |
| Additional weight per 10 mm stroke              | 29  | 41    | 60    | 68    | 99    | 108   | –     |
|                                                 |     |       |       |       |       |       |       |
| Moving load with 0 mm stroke                    | 149 | 244   | 465   | 587   | 994   | 1,399 | –     |
| Additional load per 10 mm stroke                | 8   | 11    | 20    | 20    | 31    | 31    | –     |
|                                                 |     |       |       |       |       |       |       |
| S2 – Through piston rod                         |     |       |       |       |       |       |       |
| Product weight with 0 mm stroke                 | 576 | 895   | 1,390 | 1,917 | 3,114 | 5,297 | 7,529 |
| Additional weight per 10 mm stroke              | 39  | 61    | 89    | 98    | 144   | 153   | 231   |
|                                                 |     |       |       |       |       |       |       |
| Moving load with 0 mm stroke                    | 170 | 330   | 560   | 711   | 1,200 | 1,660 | 2,925 |
| Additional load per 10 mm stroke                | 18  | 32    | 50    | 50    | 76    | 76    | 126   |
|                                                 |     |       |       |       |       |       |       |
| K10 – Smooth anodised piston rod                |     |       |       |       |       |       |       |
| Product weight with 0 mm stroke                 | 443 | 655   | 1,001 | 1,437 | 2,302 | 4,138 | 5,719 |
| Additional weight per 10 mm stroke              | 24  | 35    | 47    | 57    | 81    | 90    | 127   |
|                                                 |     |       |       |       |       |       |       |
| Moving load with 0 mm stroke                    | 88  | 162   | 279   | 391   | 643   | 1,029 | 1,757 |
| Additional load per 10 mm stroke                | 3   | 6     | 8     | 9     | 13    | 13    | 22    |
|                                                 |     |       |       |       |       |       |       |
| S2-K10 – Through, smooth anodised piston rod    |     |       |       |       |       |       |       |
| Product weight with 0 mm stroke                 | 514 | 766   | 1,181 | 1,676 | 2,701 | 4,821 | 6,674 |
| Additional weight per 10 mm stroke              | 27  | 40    | 56    | 65    | 94    | 103   | 148   |
|                                                 |     |       |       |       |       |       |       |
| Moving load with 0 mm stroke                    | 108 | 201   | 351   | 470   | 787   | 1,184 | 2,070 |
| Additional load per 10 mm stroke                | 6   | 11    | 17    | 17    | 26    | 26    | 43    |
|                                                 |     |       |       |       |       |       |       |
| TT – Low temperature                            |     |       |       |       |       |       |       |
| Product weight with 0 mm stroke                 | 520 | 876   | 1,279 | 2,112 | 2,972 | 5,039 | –     |
| Additional weight per 10 mm stroke              | 31  | 46    | 65    | 73    | 108   | 116   | –     |
|                                                 |     |       |       |       |       |       |       |
| Moving load with 0 mm stroke                    | 108 | 204   | 363   | 460   | 802   | 1,045 | –     |
| Additional load per 10 mm stroke                | 9   | 16    | 25    | 25    | 39    | 39    | –     |
|                                                 |     |       |       |       |       |       |       |
| TT-S2 – Low temperature with through piston rod |     |       |       |       |       |       |       |
| Product weight with 0 mm stroke                 | 606 | 1,020 | 1,546 | 2,401 | 3,453 | 5,617 | –     |
| Additional weight per 10 mm stroke              | 40  | 62    | 89    | 98    | 147   | 154   | –     |
|                                                 |     |       |       |       |       |       |       |
| Moving load with 0 mm stroke                    | 169 | 326   | 573   | 687   | 1,199 | 1,473 | –     |
| Additional load per 10 mm stroke                | 18  | 32    | 49    | 49    | 77    | 77    | –     |

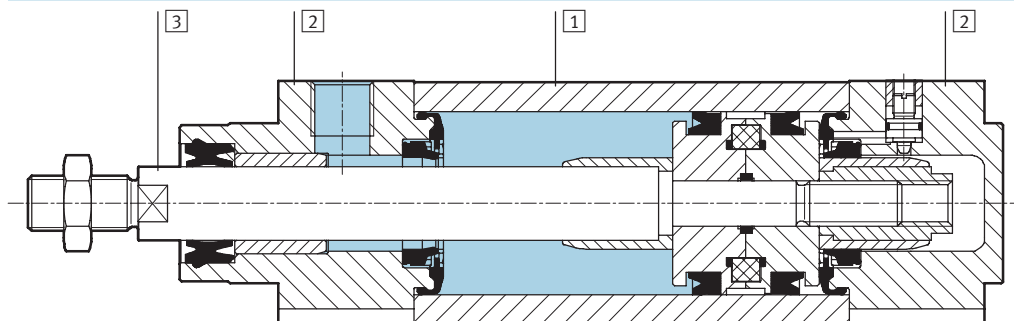
# Standard cylinders DNC, ISO 15552

Technical data

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## Materials

Sectional view



| Standard cylinder      | Basic version                            | K10                               | R3                         |
|------------------------|------------------------------------------|-----------------------------------|----------------------------|
| 1 Profile barrel       | Wrought aluminium alloy, smooth anodised |                                   |                            |
| 2 Bearing and end caps | Die-cast aluminium                       |                                   |                            |
| 3 Piston rod           | High-alloy steel                         | Wrought aluminium alloy, anodised | High-alloy stainless steel |
| – Seals                | Polyurethane, nitrile rubber             |                                   |                            |

| Standard cylinder      | R8                                       | S6               | S10 | S11 | TT               |
|------------------------|------------------------------------------|------------------|-----|-----|------------------|
| 1 Profile barrel       | Wrought aluminium alloy, smooth anodised |                  |     |     |                  |
| 2 Bearing and end caps | Die-cast aluminium                       |                  |     |     | Coated aluminium |
| 3 Piston rod           | Tempered steel, hard-chromium plated     | High-alloy steel |     |     |                  |
| – Seals                | Polyurethane, nitrile rubber             | Fluoro rubber    |     |     | Polyurethane     |

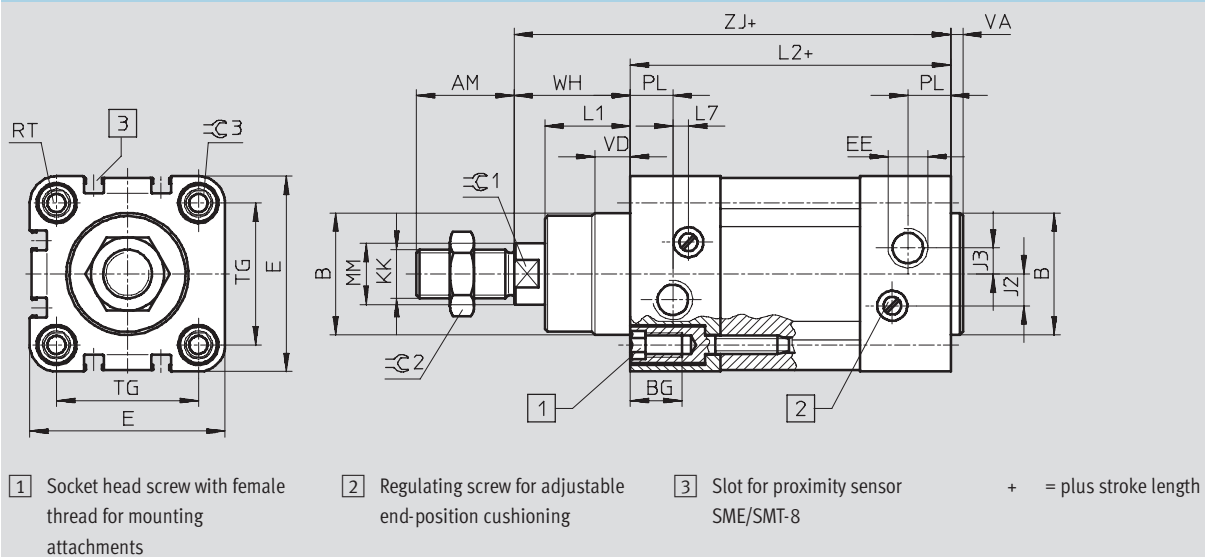
# Standard cylinders DNC, ISO 15552

Technical data

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## Dimensions – Basic version

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



| Ø    | AM | B<br>Ø<br>d11 | BG | E   | EE              | J2   |    | J3  | KK       | L1   | L2  |
|------|----|---------------|----|-----|-----------------|------|----|-----|----------|------|-----|
| [mm] |    |               |    |     |                 |      | TT |     |          |      |     |
| 32   | 22 | 30            | 16 | 45  | G $\frac{1}{8}$ | 6    |    | 5.2 | M10x1.25 | 18   | 94  |
| 40   | 24 | 35            | 16 | 54  | G $\frac{1}{4}$ | 8    |    | 6   | M12x1.25 | 21.5 | 105 |
| 50   | 32 | 40            | 17 | 64  | G $\frac{1}{4}$ | 10.4 | 11 | 8.5 | M16x1.5  | 28   | 106 |
| 63   | 32 | 45            | 17 | 75  | G $\frac{3}{8}$ | 12.4 |    | 10  | M16x1.5  | 28.5 | 121 |
| 80   | 40 | 45            | 17 | 93  | G $\frac{3}{8}$ | 12.5 |    | 8   | M20x1.5  | 34.7 | 128 |
| 100  | 40 | 55            | 17 | 110 | G $\frac{1}{2}$ | 12   |    | 10  | M20x1.5  | 38.2 | 138 |
| 125  | 54 | 60            | 22 | 134 | G $\frac{1}{2}$ | 13   |    | 8   | M27x2    | 46   | 160 |

| Ø    | L7   | MM<br>Ø | PL   | RT  | TG   | VA | VD   | WH | ZJ  | ⌀1 | ⌀2 | ⌀3 |
|------|------|---------|------|-----|------|----|------|----|-----|----|----|----|
| [mm] |      |         |      |     |      |    |      |    |     |    |    |    |
| 32   | 3.3  | 12      | 15.6 | M6  | 32.5 | 4  | 10   | 26 | 120 | 10 | 16 | 6  |
| 40   | 3.6  | 16      | 14   | M6  | 38   | 4  | 10.5 | 30 | 135 | 13 | 18 | 6  |
| 50   | 5.1  | 20      | 14   | M8  | 46.5 | 4  | 11.5 | 37 | 143 | 17 | 24 | 8  |
| 63   | 6.6  | 20      | 17   | M8  | 56.5 | 4  | 15   | 37 | 158 | 17 | 24 | 8  |
| 80   | 10.5 | 25      | 16.4 | M10 | 72   | 4  | 15.7 | 46 | 174 | 22 | 30 | 6  |
| 100  | 8    | 25      | 18.8 | M10 | 89   | 4  | 19.2 | 51 | 189 | 22 | 30 | 6  |
| 125  | 14   | 32      | 18   | M12 | 110  | 6  | 20.5 | 65 | 225 | 27 | 36 | 8  |

Note: This product conforms to ISO 1179-1 and to ISO 228-1

# Standard cylinders DNC, ISO 15552

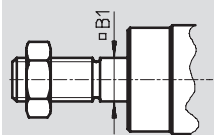
Technical data

**FESTO**

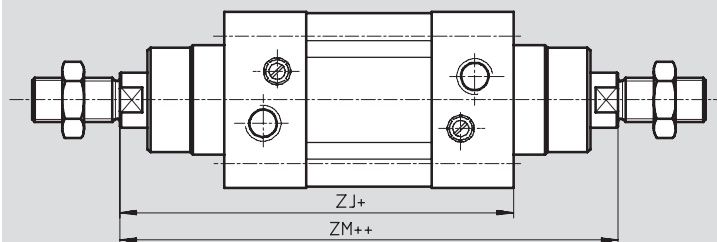
## Dimensions – Variants

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

### Q – Square piston rod

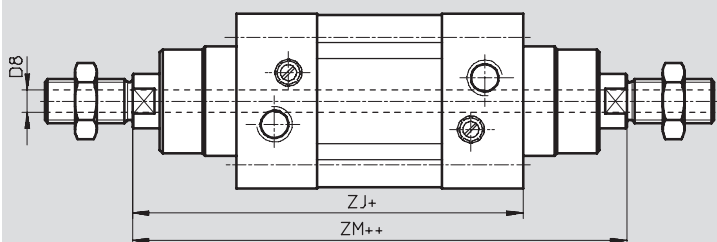


### S2 – Through piston rod



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

### S20 – Through hollow piston rod



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

| Ø<br>[mm] | B1<br>□ | D8<br>Ø         |                    | ZJ  | ZM  |       |
|-----------|---------|-----------------|--------------------|-----|-----|-------|
|           |         |                 | TT                 |     |     | TT    |
| 32        | 10      | 4.5             | 4.5                | 120 | 148 | 146.6 |
| 40        | 12      | 5.5             | 6                  | 135 | 167 | 165.3 |
| 50        | 16      | 8 <sup>1)</sup> | 8                  | 143 | 183 | 180.3 |
| 63        | 16      | 8               | 8                  | 158 | 199 | 195.9 |
| 80        | 20      | 11.7            | 11.7 <sup>2)</sup> | 174 | 222 | 221.1 |
| 100       | 20      | 11.7            | 11.7 <sup>2)</sup> | 189 | 240 | 239.7 |
| 125       | –       | 13              | –                  | 225 | 291 | –     |

1) Internal narrowing to Ø 5.5 mm

2) Internal narrowing to Ø 10.2 mm

# Standard cylinders DNC, ISO 15552

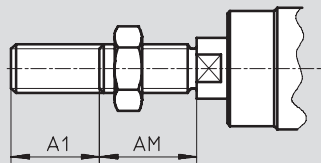
Technical data

**FESTO**

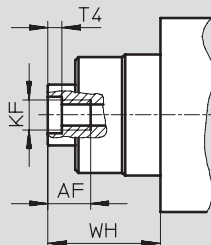
## Dimensions – Variants

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

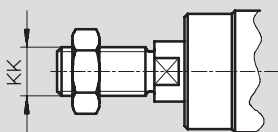
### K2 – Extended male piston rod thread



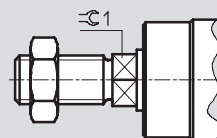
### K3 – Female piston rod thread



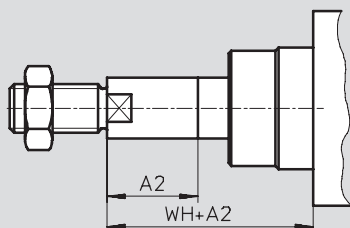
### K5 – Special piston rod thread



### K7 – Piston rod with external hexagon



### K8 – Extended piston rod



#### Note

In combination with variant S2/S20, the piston rod is extended at one

end. In combination with variant Q, the square piston rod is extended.

| Ø<br>[mm] | A1<br>max. | A2<br>max. | AF | AM | KF  | KK           |                              | T4  | WH | ≈1 |
|-----------|------------|------------|----|----|-----|--------------|------------------------------|-----|----|----|
|           |            |            |    |    |     | Basic thread | Special thread <sup>1)</sup> |     |    |    |
| 32        | 35         | 500        | 12 | 22 | M6  | M10x1.25     | M10                          | 2.6 | 26 | 10 |
| 40        | 35         | 500        | 12 | 24 | M8  | M12x1.25     | M12                          | 3.3 | 30 | 13 |
| 50        | 70         | 500        | 16 | 32 | M10 | M16x1.5      | M16                          | 4.7 | 37 | 17 |
| 63        | 70         | 500        | 16 | 32 | M10 | M16x1.5      | M16                          | 4.7 | 37 | 17 |
| 80        | 70         | 500        | 20 | 40 | M12 | M20x1.5      | M20                          | 6.1 | 46 | 22 |
| 100       | 70         | 500        | 20 | 40 | M12 | M20x1.5      | M20                          | 6.1 | 51 | 22 |
| 125       | 70         | 500        | 32 | 54 | M16 | M27x2        | M27                          | 8   | 65 | 27 |

1) The special threads are only available as male threads. The mounting nut on the piston rod thread is included in the scope of delivery

# Standard cylinders DNC, ISO 15552

Technical data

**FESTO**

| Ordering data                                                                     |                  |                |                          |                    |                       |                    |
|-----------------------------------------------------------------------------------|------------------|----------------|--------------------------|--------------------|-----------------------|--------------------|
| Type                                                                              | Piston Ø<br>[mm] | Stroke<br>[mm] | Without position sensing |                    | With position sensing |                    |
|                                                                                   |                  |                | Part No.                 | Type <sup>1)</sup> | Part No.              | Type <sup>1)</sup> |
|  | 32               | 25             | 163 319                  | DNC-32-25-PPV      | 163 305               | DNC-32-25-PPV-A    |
|                                                                                   |                  | 40             | 163 320                  | DNC-32-40-PPV      | 163 306               | DNC-32-40-PPV-A    |
|                                                                                   |                  | 50             | 163 321                  | DNC-32-50-PPV      | 163 307               | DNC-32-50-PPV-A    |
|                                                                                   |                  | 80             | 163 322                  | DNC-32-80-PPV      | 163 308               | DNC-32-80-PPV-A    |
|                                                                                   |                  | 100            | 163 323                  | DNC-32-100-PPV     | 163 309               | DNC-32-100-PPV-A   |
|                                                                                   |                  | 125            | 163 324                  | DNC-32-125-PPV     | 163 310               | DNC-32-125-PPV-A   |
|                                                                                   |                  | 160            | 163 325                  | DNC-32-160-PPV     | 163 311               | DNC-32-160-PPV-A   |
|                                                                                   |                  | 200            | 163 326                  | DNC-32-200-PPV     | 163 312               | DNC-32-200-PPV-A   |
|                                                                                   |                  | 250            | 163 327                  | DNC-32-250-PPV     | 163 313               | DNC-32-250-PPV-A   |
|                                                                                   |                  | 320            | 163 328                  | DNC-32-320-PPV     | 163 314               | DNC-32-320-PPV-A   |
|                                                                                   |                  | 400            | 163 329                  | DNC-32-400-PPV     | 163 315               | DNC-32-400-PPV-A   |
|                                                                                   |                  | 500            | 163 330                  | DNC-32-500-PPV     | 163 316               | DNC-32-500-PPV-A   |
|                                                                                   | 40               | 25             | 163 351                  | DNC-40-25-PPV      | 163 337               | DNC-40-25-PPV-A    |
|                                                                                   |                  | 40             | 163 352                  | DNC-40-40-PPV      | 163 338               | DNC-40-40-PPV-A    |
|                                                                                   |                  | 50             | 163 353                  | DNC-40-50-PPV      | 163 339               | DNC-40-50-PPV-A    |
|                                                                                   |                  | 80             | 163 354                  | DNC-40-80-PPV      | 163 340               | DNC-40-80-PPV-A    |
|                                                                                   |                  | 100            | 163 355                  | DNC-40-100-PPV     | 163 341               | DNC-40-100-PPV-A   |
|                                                                                   |                  | 125            | 163 356                  | DNC-40-125-PPV     | 163 342               | DNC-40-125-PPV-A   |
|                                                                                   |                  | 160            | 163 357                  | DNC-40-160-PPV     | 163 343               | DNC-40-160-PPV-A   |
|                                                                                   |                  | 200            | 163 358                  | DNC-40-200-PPV     | 163 344               | DNC-40-200-PPV-A   |
|                                                                                   |                  | 250            | 163 359                  | DNC-40-250-PPV     | 163 345               | DNC-40-250-PPV-A   |
|                                                                                   |                  | 320            | 163 360                  | DNC-40-320-PPV     | 163 346               | DNC-40-320-PPV-A   |
|                                                                                   |                  | 400            | 163 361                  | DNC-40-400-PPV     | 163 347               | DNC-40-400-PPV-A   |
|                                                                                   |                  | 500            | 163 362                  | DNC-40-500-PPV     | 163 348               | DNC-40-500-PPV-A   |
|                                                                                   | 50               | 25             | 163 383                  | DNC-50-25-PPV      | 163 369               | DNC-50-25-PPV-A    |
|                                                                                   |                  | 40             | 163 384                  | DNC-50-40-PPV      | 163 370               | DNC-50-40-PPV-A    |
|                                                                                   |                  | 50             | 163 385                  | DNC-50-50-PPV      | 163 371               | DNC-50-50-PPV-A    |
|                                                                                   |                  | 80             | 163 386                  | DNC-50-80-PPV      | 163 372               | DNC-50-80-PPV-A    |
|                                                                                   |                  | 100            | 163 387                  | DNC-50-100-PPV     | 163 373               | DNC-50-100-PPV-A   |
|                                                                                   |                  | 125            | 163 388                  | DNC-50-125-PPV     | 163 374               | DNC-50-125-PPV-A   |
|                                                                                   |                  | 160            | 163 389                  | DNC-50-160-PPV     | 163 375               | DNC-50-160-PPV-A   |
|                                                                                   |                  | 200            | 163 390                  | DNC-50-200-PPV     | 163 376               | DNC-50-200-PPV-A   |
|                                                                                   |                  | 250            | 163 391                  | DNC-50-250-PPV     | 163 377               | DNC-50-250-PPV-A   |
|                                                                                   |                  | 320            | 163 392                  | DNC-50-320-PPV     | 163 378               | DNC-50-320-PPV-A   |
|                                                                                   |                  | 400            | 163 393                  | DNC-50-400-PPV     | 163 379               | DNC-50-400-PPV-A   |
|                                                                                   |                  | 500            | 163 394                  | DNC-50-500-PPV     | 163 380               | DNC-50-500-PPV-A   |
|                                                                                   | 63               | 25             | 163 415                  | DNC-63-25-PPV      | 163 401               | DNC-63-25-PPV-A    |
|                                                                                   |                  | 40             | 163 416                  | DNC-63-40-PPV      | 163 402               | DNC-63-40-PPV-A    |
|                                                                                   |                  | 50             | 163 417                  | DNC-63-50-PPV      | 163 403               | DNC-63-50-PPV-A    |
|                                                                                   |                  | 80             | 163 418                  | DNC-63-80-PPV      | 163 404               | DNC-63-80-PPV-A    |
|                                                                                   |                  | 100            | 163 419                  | DNC-63-100-PPV     | 163 405               | DNC-63-100-PPV-A   |
|                                                                                   |                  | 125            | 163 420                  | DNC-63-125-PPV     | 163 406               | DNC-63-125-PPV-A   |
|                                                                                   |                  | 160            | 163 421                  | DNC-63-160-PPV     | 163 407               | DNC-63-160-PPV-A   |
|                                                                                   |                  | 200            | 163 422                  | DNC-63-200-PPV     | 163 408               | DNC-63-200-PPV-A   |
|                                                                                   |                  | 250            | 163 423                  | DNC-63-250-PPV     | 163 409               | DNC-63-250-PPV-A   |
|                                                                                   |                  | 320            | 163 424                  | DNC-63-320-PPV     | 163 410               | DNC-63-320-PPV-A   |
|                                                                                   |                  | 400            | 163 425                  | DNC-63-400-PPV     | 163 411               | DNC-63-400-PPV-A   |
|                                                                                   |                  | 500            | 163 426                  | DNC-63-500-PPV     | 163 412               | DNC-63-500-PPV-A   |

1) The mounting nut on the piston rod thread is included in the scope of delivery

# Standard cylinders DNC, ISO 15552

Technical data

**FESTO**

| Ordering data                                                                     |                  |                |                          |                    |                       |                    |
|-----------------------------------------------------------------------------------|------------------|----------------|--------------------------|--------------------|-----------------------|--------------------|
| Type                                                                              | Piston Ø<br>[mm] | Stroke<br>[mm] | Without position sensing |                    | With position sensing |                    |
|                                                                                   |                  |                | Part No.                 | Type <sup>1)</sup> | Part No.              | Type <sup>1)</sup> |
|  | 80               | 25             | 163 447                  | DNC-80-25-PPV      | 163 433               | DNC-80-25-PPV-A    |
|                                                                                   |                  | 40             | 163 448                  | DNC-80-40-PPV      | 163 434               | DNC-80-40-PPV-A    |
|                                                                                   |                  | 50             | 163 449                  | DNC-80-50-PPV      | 163 435               | DNC-80-50-PPV-A    |
|                                                                                   |                  | 80             | 163 450                  | DNC-80-80-PPV      | 163 436               | DNC-80-80-PPV-A    |
|                                                                                   |                  | 100            | 163 451                  | DNC-80-100-PPV     | 163 437               | DNC-80-100-PPV-A   |
|                                                                                   |                  | 125            | 163 452                  | DNC-80-125-PPV     | 163 438               | DNC-80-125-PPV-A   |
|                                                                                   |                  | 160            | 163 453                  | DNC-80-160-PPV     | 163 439               | DNC-80-160-PPV-A   |
|                                                                                   |                  | 200            | 163 454                  | DNC-80-200-PPV     | 163 440               | DNC-80-200-PPV-A   |
|                                                                                   |                  | 250            | 163 455                  | DNC-80-250-PPV     | 163 441               | DNC-80-250-PPV-A   |
|                                                                                   |                  | 320            | 163 456                  | DNC-80-320-PPV     | 163 442               | DNC-80-320-PPV-A   |
|                                                                                   |                  | 400            | 163 457                  | DNC-80-400-PPV     | 163 443               | DNC-80-400-PPV-A   |
|                                                                                   |                  | 500            | 163 458                  | DNC-80-500-PPV     | 163 444               | DNC-80-500-PPV-A   |
|                                                                                   | 100              | 25             | 163 479                  | DNC-100-25-PPV     | 163 465               | DNC-100-25-PPV-A   |
|                                                                                   |                  | 40             | 163 480                  | DNC-100-40-PPV     | 163 466               | DNC-100-40-PPV-A   |
|                                                                                   |                  | 50             | 163 481                  | DNC-100-50-PPV     | 163 467               | DNC-100-50-PPV-A   |
|                                                                                   |                  | 80             | 163 482                  | DNC-100-80-PPV     | 163 468               | DNC-100-80-PPV-A   |
|                                                                                   |                  | 100            | 163 483                  | DNC-100-100-PPV    | 163 469               | DNC-100-100-PPV-A  |
|                                                                                   |                  | 125            | 163 484                  | DNC-100-125-PPV    | 163 470               | DNC-100-125-PPV-A  |
|                                                                                   |                  | 160            | 163 485                  | DNC-100-160-PPV    | 163 471               | DNC-100-160-PPV-A  |
|                                                                                   |                  | 200            | 163 486                  | DNC-100-200-PPV    | 163 472               | DNC-100-200-PPV-A  |
|                                                                                   |                  | 250            | 163 487                  | DNC-100-250-PPV    | 163 473               | DNC-100-250-PPV-A  |
|                                                                                   |                  | 320            | 163 488                  | DNC-100-320-PPV    | 163 474               | DNC-100-320-PPV-A  |
|                                                                                   |                  | 400            | 163 489                  | DNC-100-400-PPV    | 163 475               | DNC-100-400-PPV-A  |
|                                                                                   |                  | 500            | 163 490                  | DNC-100-500-PPV    | 163 476               | DNC-100-500-PPV-A  |
|                                                                                   | 125              | 25             | 163 511                  | DNC-125-25-PPV     | 163 497               | DNC-125-25-PPV-A   |
|                                                                                   |                  | 40             | 163 512                  | DNC-125-40-PPV     | 163 498               | DNC-125-40-PPV-A   |
|                                                                                   |                  | 50             | 163 513                  | DNC-125-50-PPV     | 163 499               | DNC-125-50-PPV-A   |
|                                                                                   |                  | 80             | 163 514                  | DNC-125-80-PPV     | 163 500               | DNC-125-80-PPV-A   |
|                                                                                   |                  | 100            | 163 515                  | DNC-125-100-PPV    | 163 501               | DNC-125-100-PPV-A  |
|                                                                                   |                  | 125            | 163 516                  | DNC-125-125-PPV    | 163 502               | DNC-125-125-PPV-A  |
|                                                                                   |                  | 160            | 163 517                  | DNC-125-160-PPV    | 163 503               | DNC-125-160-PPV-A  |
|                                                                                   |                  | 200            | 163 518                  | DNC-125-200-PPV    | 163 504               | DNC-125-200-PPV-A  |
|                                                                                   |                  | 250            | 163 519                  | DNC-125-250-PPV    | 163 505               | DNC-125-250-PPV-A  |
|                                                                                   |                  | 320            | 163 520                  | DNC-125-320-PPV    | 163 506               | DNC-125-320-PPV-A  |
|                                                                                   |                  | 400            | 163 521                  | DNC-125-400-PPV    | 163 507               | DNC-125-400-PPV-A  |
|                                                                                   |                  | 500            | 163 522                  | DNC-125-500-PPV    | 163 508               | DNC-125-500-PPV-A  |

| Ordering data – Variable stroke                                                     |                  |                |                          |                    |                       |                    |
|-------------------------------------------------------------------------------------|------------------|----------------|--------------------------|--------------------|-----------------------|--------------------|
| Type                                                                                | Piston Ø<br>[mm] | Stroke<br>[mm] | Without position sensing |                    | With position sensing |                    |
|                                                                                     |                  |                | Part No.                 | Type <sup>1)</sup> | Part No.              | Type <sup>1)</sup> |
|  | 32               | 10 ... 2 000   | 163 318                  | DNC-32-...-PPV     | 163 304               | DNC-32-...-PPV-A   |
|                                                                                     | 40               | 10 ... 2 000   | 163 350                  | DNC-40-...-PPV     | 163 336               | DNC-40-...-PPV-A   |
|                                                                                     | 50               | 10 ... 2 000   | 163 382                  | DNC-50-...-PPV     | 163 368               | DNC-50-...-PPV-A   |
|                                                                                     | 63               | 10 ... 2 000   | 163 414                  | DNC-63-...-PPV     | 163 400               | DNC-63-...-PPV-A   |
|                                                                                     | 80               | 10 ... 2 000   | 163 446                  | DNC-80-...-PPV     | 163 432               | DNC-80-...-PPV-A   |
|                                                                                     | 100              | 10 ... 2 000   | 163 478                  | DNC-100-...-PPV    | 163 464               | DNC-100-...-PPV-A  |
|                                                                                     | 125              | 10 ... 2 000   | 163 510                  | DNC-125-...-PPV    | 163 496               | DNC-125-...-PPV-A  |

1) The mounting nut on the piston rod thread is included in the scope of delivery

# Standard cylinders DNC, ISO 15552

Ordering data – Modular products

FESTO

| M Mandatory data |          |      |              | O Options |                             |     |                      |       |                |       |
|------------------|----------|------|--------------|-----------|-----------------------------|-----|----------------------|-------|----------------|-------|
| Module No.       | Function |      | Stroke       |           | Position sensing            |     | Type of piston rod   |       | Female thread  |       |
|                  | Piston Ø |      | Cushioning   |           | Protection against rotation |     | Extended male thread |       | Special thread |       |
| 163 302          | DNC      | 32   | 10 ... 2,000 | P<br>PPV  | A                           | Q   | S2<br>S20            | ...K2 | K3             | ...K5 |
| 163 334          |          | 40   |              |           |                             |     |                      |       |                |       |
| 163 366          |          | 50   |              |           |                             |     |                      |       |                |       |
| 163 398          |          | 63   |              |           |                             |     |                      |       |                |       |
| 163 430          |          | 80   |              |           |                             |     |                      |       |                |       |
| 163 462          |          | 100  |              |           |                             |     |                      |       |                |       |
| 163 494          | 125      |      |              |           |                             |     |                      |       |                |       |
| Order example    |          |      |              |           |                             |     |                      |       |                |       |
| 163 430          | DNC      | - 80 | - 550        | - PPV     | - A                         | - Q | - S2                 | -     | - K3           | -     |

| Ordering table |                                         |                                                      |         |         |          |         |         |                |        |               |
|----------------|-----------------------------------------|------------------------------------------------------|---------|---------|----------|---------|---------|----------------|--------|---------------|
| Size           | 32                                      | 40                                                   | 50      | 63      | 80       | 100     | 125     | Condition<br>s | Code   | Enter<br>code |
| M              | Module No.                              | 163 302                                              | 163 334 | 163 366 | 163 398  | 163 430 | 163 462 | 163 494        |        |               |
|                | Function                                | Standard cylinder, double-acting, based on ISO 15552 |         |         |          |         |         |                |        | DNC           |
|                | Piston Ø [mm]                           | 32                                                   | 40      | 50      | 63       | 80      | 100     | 125            | -...   |               |
|                | Stroke [mm]                             | 10 ... 2,000                                         |         |         |          |         |         |                |        | -...          |
|                | Cushioning                              | Flexible cushioning rings/pads at both ends          |         |         |          |         |         |                |        | -P            |
|                |                                         | Pneumatic cushioning, adjustable at both ends        |         |         |          |         |         |                | 15     | -PPV          |
| O              | Position sensing                        | Via proximity sensor                                 |         |         |          |         |         |                |        | -A            |
|                | Protection against rotation             | Square piston rod                                    |         |         |          |         |         | –              | 2      | -Q            |
|                | Type of piston rod                      | Through piston rod                                   |         |         |          |         |         |                | 3      | -S2           |
|                |                                         | Through, hollow piston rod                           |         |         |          |         |         |                | 4      | -S20          |
|                | Extended male thread [mm]               | Piston rod with extended male thread                 |         |         |          |         |         |                |        |               |
|                |                                         | 1 ... 35                                             |         |         | 1 ... 70 |         |         |                | 5      | -...K2        |
|                | Female thread                           | Piston rod with female thread                        |         |         |          |         |         |                |        |               |
| Special thread | (M6) (M8) (M10) (M10) (M12) (M12) (M16) |                                                      |         |         |          |         |         | 6              | -K3    |               |
|                | Piston rod with special thread          |                                                      |         |         |          |         |         |                |        |               |
| ↓              | M10                                     | M12                                                  | M16     | M16x2   | M20      | M20     | M27     | 7              | -...K5 |               |

[15] PPV For piston Ø 125 not with S11

[2] Q Max. stroke: 10 ... 1,500 mm.

In combination with S2: square piston rod at bearing cap end only.  
Not with S20, K7, K10, S10, S11, R8

[3] S2 In combination with K2: thread extended at both ends.

In combination with K3: female thread at both ends.

In combination with K5: special thread at both ends.

In combination with K8: piston rod extended at bearing cap end only.

Not with S20, K7, S10, S11

[4] S20 Max. stroke: 850 mm.

In combination with K8: piston rod extended at both ends.

Not with K2, K3, K5, K10, S10, S11, R8

[5] K2 Not with K3, K10

[6] K3 With K5: on request.

Not with K7

[7] K5 Not with K10

## Transfer order code

DNC -  -  -  -  -  -  -  -  -  -

# Standard cylinders DNC, ISO 15552

Ordering data – Modular products

FESTO

## → 0 Options

|                       |       |                              |    |                              |     |                         |    |            |   |
|-----------------------|-------|------------------------------|----|------------------------------|-----|-------------------------|----|------------|---|
| Special spanner flats |       | Improved running performance |    | Low temperature              |     | Running characteristics |    | Wiper seal |   |
| Extended piston rod   |       | Temperature resistance       |    | Slow speed (constant motion) |     | Corrosion protection    |    |            |   |
| K7                    | ...K8 | K10                          | S6 | TT                           | S10 | S11                     | R3 | R8         |   |
| -                     | -     | -                            | -  | -                            | -   | -                       | -  | -          | - |
| 100K8                 |       |                              |    |                              |     |                         |    |            |   |

| Ordering table               |                                                    |    |    |    |    |     |     |             |        |            |
|------------------------------|----------------------------------------------------|----|----|----|----|-----|-----|-------------|--------|------------|
| Size                         | 32                                                 | 40 | 50 | 63 | 80 | 100 | 125 | Condition s | Code   | Enter code |
| ↓ Special spanner flats      | Piston rod with external hexagon                   |    |    |    |    |     |     | 8           | -K7    |            |
| 0 Extended piston rod        | Extended piston rod                                |    |    |    |    |     |     |             | -...K8 |            |
|                              | [mm] 1 ... 500                                     |    |    |    |    |     |     |             |        |            |
| Improved running performance | Smooth anodised aluminium coated piston rod        |    |    |    |    |     |     | 9           | -K10   |            |
| Temperature resistance       | Heat-resistant seals for temperatures up to 120 °C |    |    |    |    |     |     | 10          | -S6    |            |
| Low temperature [°C]         | -40 ... +80                                        |    |    |    |    |     |     | 11          | -TT    |            |
| Slow speed (constant motion) | Slow speed (constant motion at low piston speeds)  |    |    |    |    |     |     | 12          | -S10   |            |
| Running characteristics      | Low friction                                       |    |    |    |    |     |     | 13          | -S11   |            |
| Corrosion protection         | High corrosion protection                          |    |    |    |    |     |     | 14          | -R3    |            |
| Wiper seal                   | Dust protection                                    |    |    |    |    |     |     |             | -R8    |            |

- 8 **K7** Not with Q, S2, K10  
 9 **K10** Max. stroke: 1,000 mm.  
 Not with R3, R8  
 10 **S6** Not with S10, S11, R8  
 11 **TT** Not with P, Q, K7, K10, S6, S10, S11, R8

- 12 **S10** Max. stroke: 500 mm; additional strokes on request.  
 Not with S11, R3, R8  
 13 **S11** Max. stroke: 500 mm; additional strokes on request.  
 Not with R3, R8  
 14 **CT, R3** Not with R8

### Transfer order code

-  -  -  -  -  -  -  -  -  -

## Standard cylinders DNC, ISO 15552

Ordering data

**FESTO**

| Wearing parts kits |               |                     |                                             |
|--------------------|---------------|---------------------|---------------------------------------------|
|                    | Part No.      | Type                |                                             |
| Piston Ø           | Basic version |                     | S6 – Heat-resistant seals up to max. 120 °C |
| 32                 | 369 195       | DNC-32-...-PPV-(A)  | 384 214 DNC-32-...-PPV-(A)-S6               |
| 40                 | 369 196       | DNC-40-...-PPV-(A)  | 384 215 DNC-40-...-PPV-(A)-S6               |
| 50                 | 369 197       | DNC-50-...-PPV-(A)  | 384 216 DNC-50-...-PPV-(A)-S6               |
| 63                 | 369 198       | DNC-63-...-PPV-(A)  | 384 217 DNC-63-...-PPV-(A)-S6               |
| 80                 | 369 199       | DNC-80-...-PPV-(A)  | 384 218 DNC-80-...-PPV-(A)-S6               |
| 100                | 369 200       | DNC-100-...-PPV-(A) | 384 219 DNC-100-...-PPV-(A)-S6              |
| 125                | 369 201       | DNC-125-...-PPV-(A) | 384 220 DNC-125-...-PPV-(A)-S6              |

# Standard cylinders DNC-KP, standard hole pattern, with clamping unit

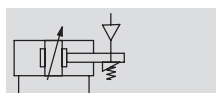
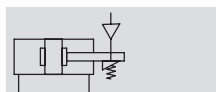
FESTO

Technical data

Function

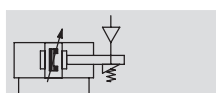
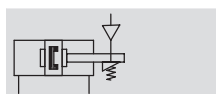
**DNC-...-KP**

Without position sensing



**DNC-...-A-...-KP**

With position sensing



Ø - Diameter  
32 ... 125 mm

- Stroke length  
10 ... 2,000 mm

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

Wearing parts kits  
→ 30



## Note

Additional measures are required for use in safety-related applications; in Europe, for example, the standards Directive must be observed. Without

additional measures in accordance with statutory minimum requirements, the product is not suitable for use in safety-related sections of control systems.

| General technical data                                   |          |                                               |          |         |         |         |         |       |
|----------------------------------------------------------|----------|-----------------------------------------------|----------|---------|---------|---------|---------|-------|
| Piston Ø                                                 |          | 32                                            | 40       | 50      | 63      | 80      | 100     | 125   |
| Pneumatic connection                                     | Cylinder | G1/8                                          | G1/4     | G1/4    | G3/8    | G3/8    | G1/2    | G1/2  |
|                                                          | KP       | M5                                            | G1/8     | G1/8    | G1/8    | G1/8    | G1/8    | G1/8  |
| Piston rod thread                                        |          | M10x1.25                                      | M12x1.25 | M16x1.5 | M16x1.5 | M20x1.5 | M20x1.5 | M27x2 |
|                                                          | K3       | M6                                            | M8       | M10     | M10     | M12     | M12     | M16   |
|                                                          | K5       | M10                                           | M12      | M16     | M16     | M20     | M20     | M27   |
| Max. axial backlash with clamped piston rod without load | [mm]     | 0.5                                           |          | 0.7     |         |         |         | 1     |
| Constructional design                                    |          | Piston                                        |          |         |         |         |         |       |
|                                                          |          | Piston rod                                    |          |         |         |         |         |       |
|                                                          |          | Profile barrel                                |          |         |         |         |         |       |
|                                                          |          | Clamping unit                                 |          |         |         |         |         |       |
| Cushioning                                               |          | Flexible cushioning rings/pads at both ends   |          |         |         |         |         |       |
|                                                          |          | Pneumatic cushioning, adjustable at both ends |          |         |         |         |         |       |
| Cushioning length PPV                                    | [mm]     | 20                                            | 20       | 22      | 22      | 32      | 32      | 42    |
| Position sensing                                         |          | Via proximity sensor                          |          |         |         |         |         |       |
| Type of mounting                                         |          | Via female thread                             |          |         |         |         |         |       |
|                                                          |          | Via accessories                               |          |         |         |         |         |       |
| Mounting position                                        |          | Any                                           |          |         |         |         |         |       |
| Clamping type with effective direction                   |          | At both ends                                  |          |         |         |         |         |       |

Note: This product conforms to ISO 1179-1 and to ISO 228-1

| Operating and environmental conditions       |                                                     |
|----------------------------------------------|-----------------------------------------------------|
| Operating medium                             | Filtered compressed air, lubricated or unlubricated |
| Operating pressure [bar]                     | 1.5 ... 10                                          |
| Min. release pressure [bar]                  | 3                                                   |
| Ambient temperature <sup>1)</sup> [°C]       | -10 ... +80                                         |
| Corrosion resistance class CRC <sup>2)</sup> | 2                                                   |
| Certification                                | Germanischer Lloyd                                  |

1) Note operating range of proximity sensors

2) Corrosion resistance class 2 as per Festo standard 940 070

Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

# Standard cylinders DNC-KP, standard hole pattern, with clamping unit

FESTO

Technical data

| Impact energy [J]                       |     |     |     |     |     |     |     |
|-----------------------------------------|-----|-----|-----|-----|-----|-----|-----|
| Piston Ø                                | 32  | 40  | 50  | 63  | 80  | 100 | 125 |
| Max. impact energy at the end positions | 0.1 | 0.2 | 0.2 | 0.5 | 0.9 | 1.2 | 5   |

Permissible impact velocity:

$$v_{perm.} = \sqrt{\frac{2 \times E_{perm.}}{m_{dead} + m_{load}}}$$

$v_{perm.}$  Permissible impact velocity  
 $E_{perm.}$  Max. impact energy  
 $m_{intrinsic}$  Moving load (drive)  
 $m_{load}$  Moving effective load

Maximum permissible load:

$$m_{load} = \frac{2 \times E_{perm.}}{v^2} - m_{dead}$$

## Note

This data represents the maximum values that can be achieved. The maximum permissible impact energy must be observed.

| Forces [N]                             |     |       |       |       |       |       |       |
|----------------------------------------|-----|-------|-------|-------|-------|-------|-------|
| Piston Ø                               | 32  | 40    | 50    | 63    | 80    | 100   | 125   |
| Theoretical force at 6 bar, advancing  | 483 | 754   | 1,178 | 1,870 | 3,016 | 4,712 | 7,363 |
| S2                                     | 415 | 633   | 990   | 1,682 | 2,721 | 4,418 | 6,881 |
| Theoretical force at 6 bar, retracting | 415 | 633   | 990   | 1,682 | 2,721 | 4,418 | 6,881 |
| S2                                     | 415 | 633   | 990   | 1,682 | 2,721 | 4,418 | 6,881 |
| Static holding force                   | 600 | 1,000 | 1,400 | 2,000 | 5,000 | 5,000 | 7,500 |

## 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.

## Activation:

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

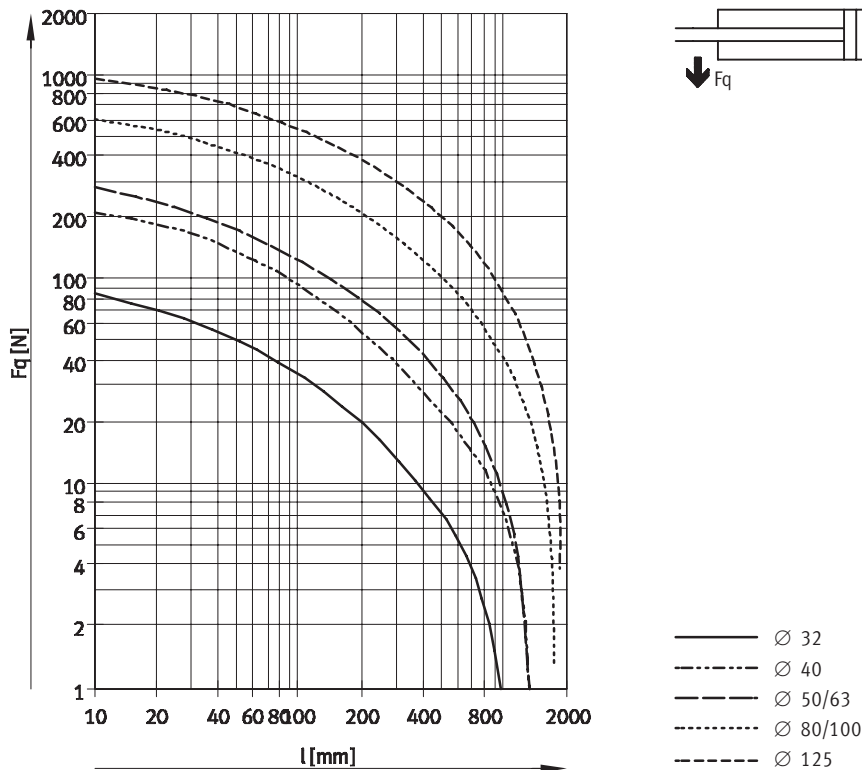
sudden movement of the piston rod. Blocking off the air supply at both ends (e.g. with a 5/3-way valve) does not provide any safety.

# Standard cylinders DNC-KP, standard hole pattern, with clamping unit

Technical data

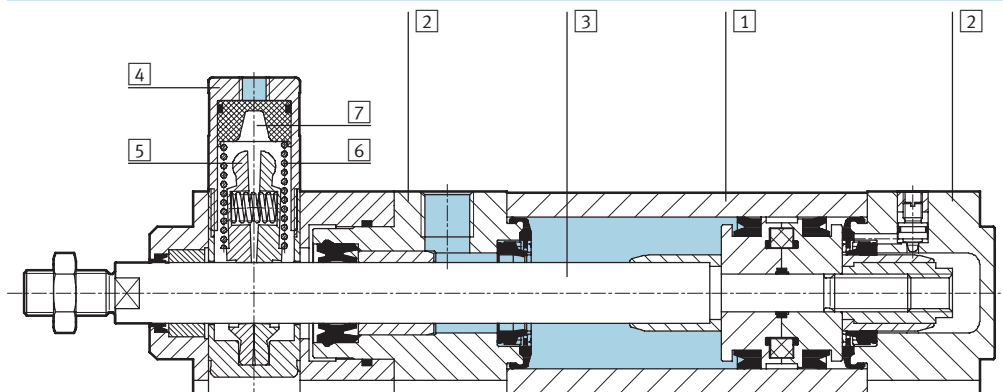
FESTO

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



## Materials

Sectional view



| Standard cylinder |                        |                                          |
|-------------------|------------------------|------------------------------------------|
| 1                 | Profile barrel         | Wrought aluminium alloy, smooth anodised |
| 2                 | Bearing and end caps   | Die-cast aluminium                       |
| 3                 | Piston rod             | High-alloy steel                         |
| 4                 | Housing, clamping unit | Wrought aluminium alloy, anodised        |
| 5                 | Clamping jaws          | Brass                                    |
| 6                 | Spring                 | Spring steel                             |
| 7                 | Piston                 | Polyacetal                               |
| –                 | Seals                  | Polyurethane, nitrile rubber             |

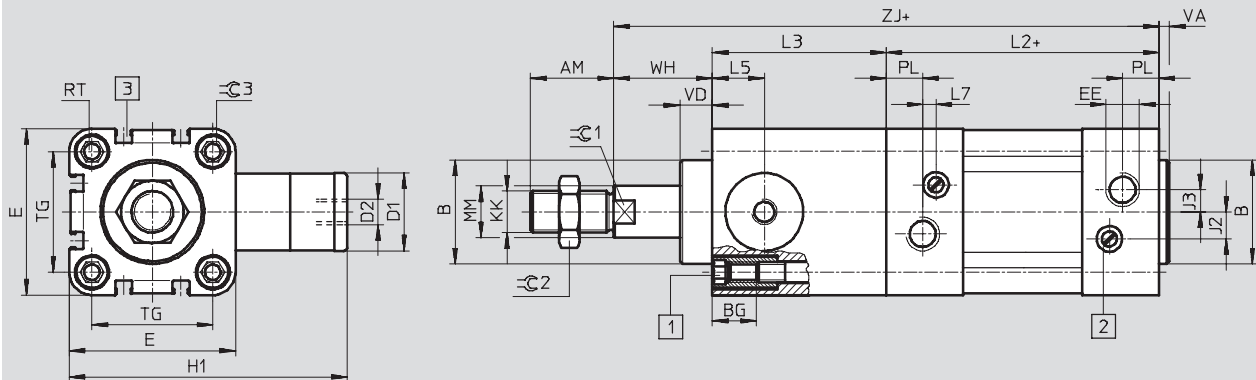
# Standard cylinders DNC-KP, standard hole pattern, with clamping unit

FESTO

Technical data

## Dimensions – Basic version

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



- 1 Socket head screw with female thread for mounting attachments  
 2 Regulating screw for adjustable end-position cushioning  
 3 Slot for proximity sensor SME/SMT-8  
 + = plus stroke length

| Ø<br>[mm] | AM | B<br>Ø<br>d11 | BG | D1<br>Ø<br>f9 | D2   | E   | EE   | H1    | J2   | J3  | KK       | L2  | L3  |
|-----------|----|---------------|----|---------------|------|-----|------|-------|------|-----|----------|-----|-----|
| 32        | 22 | 30            | 16 | 20            | M5   | 45  | G1/8 | 67    | 6    | 5.2 | M10x1.25 | 94  | 45  |
| 40        | 24 | 35            | 16 | 24            | G1/8 | 54  | G1/4 | 88    | 8    | 6   | M12x1.25 | 105 | 53  |
| 50        | 32 | 40            | 17 | 30            | G1/8 | 64  | G1/4 | 107   | 10.4 | 8.5 | M16x1.5  | 106 | 67  |
| 63        | 32 | 45            | 17 | 38            | G1/8 | 75  | G3/8 | 123   | 12.4 | 10  | M16x1.5  | 121 | 76  |
| 80        | 40 | 45            | 17 | 48            | G1/8 | 93  | G3/8 | 165.5 | 12.5 | 8   | M20x1.5  | 128 | 95  |
| 100       | 40 | 55            | 17 | 48            | G1/8 | 110 | G1/2 | 174   | 12   | 10  | M20x1.5  | 138 | 98  |
| 125       | 54 | 60            | 22 | 65            | G1/8 | 134 | G1/2 | 207   | 13   | 8   | M27x2    | 160 | 125 |

| Ø<br>[mm] | L5   | L7   | MM<br>Ø | PL   | RT  | TG   | VA | VD   | WH | ZJ  | ≡C1 | ≡C2 | ≡C3 |
|-----------|------|------|---------|------|-----|------|----|------|----|-----|-----|-----|-----|
| 32        | 14   | 3.3  | 12      | 15.6 | M6  | 32.5 | 4  | 11.5 | 26 | 165 | 10  | 16  | 6   |
| 40        | 16   | 3.6  | 16      | 14   | M6  | 38   | 4  | 11.5 | 30 | 188 | 13  | 18  | 6   |
| 50        | 20   | 5.1  | 20      | 14   | M8  | 46.5 | 4  | 11   | 37 | 210 | 17  | 24  | 8   |
| 63        | 24   | 6.6  | 20      | 17   | M8  | 56.5 | 4  | 11   | 37 | 234 | 17  | 24  | 8   |
| 80        | 31.5 | 10.5 | 25      | 16.4 | M10 | 72   | 4  | 12.5 | 46 | 269 | 22  | 30  | 6   |
| 100       | 31   | 8    | 25      | 18.8 | M10 | 89   | 4  | 12   | 51 | 287 | 22  | 30  | 6   |
| 125       | 42   | 14   | 32      | 18   | M12 | 110  | 6  | 27.5 | 65 | 350 | 27  | 36  | 8   |

Note: This product conforms to ISO 1179-1 and to ISO 228-1

## Note

The dimensions for the cylinder/valve combination are on page  
→ 42

# Standard cylinders DNC-KP, standard hole pattern, with clamping unit

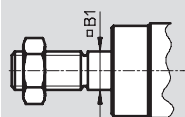
FESTO

Technical data

## Dimensions – Variants

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

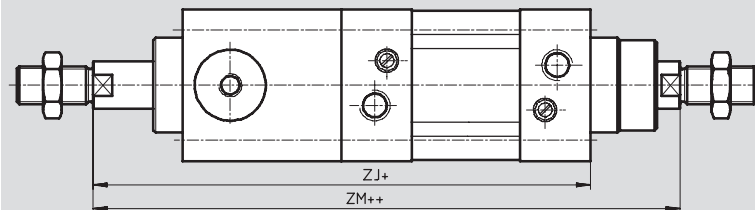
### Q – Square piston rod



#### Note

Clamping unit and variant Q only in combination with S2.

### S2 – Through piston rod



#### Note

The thread types at both piston rod ends are identical.

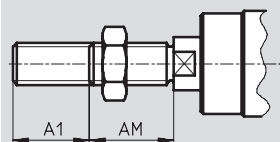
In combination with variant Q, the left-hand piston rod is round,

the right-hand piston rod square. The clamping unit is mounted on

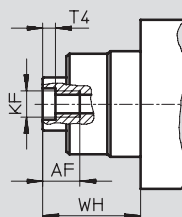
+ = plus stroke length  
++ = plus 2x stroke length

the left-hand, round piston rod.

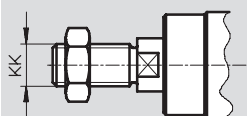
### K2 – Extended male piston rod thread



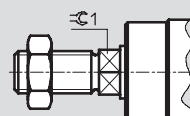
### K3 – Female piston rod thread



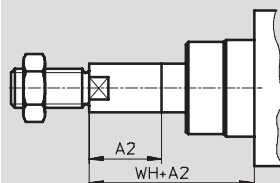
### K5 – Special piston rod thread



### K7 – Piston rod with external hexagon



### K8 – Extended piston rod



#### Note

In combination with variant S2, the piston rod is extended at one end. The clamping unit is mounted on the

side of the piston rod that is not extended. If variant Q is also

required, the extension will only be added to the square piston rod.

| Ø<br>[mm] | A1<br>max. | A2<br>max. | AF | AM | B1<br>□ | KF  | KK              |                                 | T4  | WH | ZJ  | ZM  | ≈G1 |
|-----------|------------|------------|----|----|---------|-----|-----------------|---------------------------------|-----|----|-----|-----|-----|
|           |            |            |    |    |         |     | Basic<br>thread | Special<br>thread <sup>1)</sup> |     |    |     |     |     |
| 32        | 35         | 500        | 12 | 22 | 10      | M6  | M10x1.25        | M10                             | 2.6 | 26 | 165 | 193 | 10  |
| 40        | 35         | 500        | 12 | 24 | 12      | M8  | M12x1.25        | M12                             | 3.3 | 30 | 188 | 220 | 13  |
| 50        | 70         | 500        | 16 | 32 | 16      | M10 | M16x1.5         | M16                             | 4.7 | 37 | 210 | 250 | 17  |
| 63        | 70         | 500        | 16 | 32 | 16      | M10 | M16x1.5         | M16                             | 4.7 | 37 | 234 | 275 | 17  |
| 80        | 70         | 500        | 20 | 40 | 20      | M12 | M20x1.5         | M20                             | 6.1 | 46 | 269 | 317 | 22  |
| 100       | 70         | 500        | 20 | 40 | 20      | M12 | M20x1.5         | M20                             | 6.1 | 51 | 287 | 338 | 22  |
| 125       | 70         | 500        | 32 | 54 | –       | M16 | M27x2           | M27                             | 8   | 65 | 350 | 416 | 27  |

1) The special threads are only available as male threads. The mounting nut on the piston rod thread is included in the scope of delivery

# Standard cylinders DNC-KP, standard hole pattern, with clamping unit

FESTO

Ordering data – Modular products

| M Mandatory data |          |          |              |            | O Options        |                             |                    |  |  |
|------------------|----------|----------|--------------|------------|------------------|-----------------------------|--------------------|--|--|
| Module No.       | Function | Piston Ø | Stroke       | Cushioning | Position sensing | Protection against rotation | Type of piston rod |  |  |
| 163 302          | DNC      | 32       | 10 ... 2,000 | P<br>PPV   | A                | Q                           | S2                 |  |  |
| 163 334          |          | 40       |              |            |                  |                             |                    |  |  |
| 163 366          |          | 50       |              |            |                  |                             |                    |  |  |
| 163 398          |          | 63       |              |            |                  |                             |                    |  |  |
| 163 430          |          | 80       |              |            |                  |                             |                    |  |  |
| 163 462          |          | 100      |              |            |                  |                             |                    |  |  |
| 163 494          |          | 125      |              |            |                  |                             |                    |  |  |
| Order example    |          |          |              |            |                  |                             |                    |  |  |
| 163 430          | DNC      | - 80     | - 550        | - PPV      | - A              | - Q                         | - S2               |  |  |

| Ordering table              |                                                                             |         |         |         |         |         |         |             |      |            |
|-----------------------------|-----------------------------------------------------------------------------|---------|---------|---------|---------|---------|---------|-------------|------|------------|
| Size                        | 32                                                                          | 40      | 50      | 63      | 80      | 100     | 125     | Condition s | Code | Enter code |
| M Module No.                | 163 302                                                                     | 163 334 | 163 366 | 163 398 | 163 430 | 163 462 | 163 494 |             |      |            |
| Function                    | Standard cylinder, double-acting, standard hole pattern, with clamping unit |         |         |         |         |         |         |             | DNC  | DNC        |
| Piston Ø [mm]               | 32                                                                          | 40      | 50      | 63      | 80      | 100     | 125     |             | -... |            |
| Stroke [mm]                 | 10 ... 2,000                                                                |         |         |         |         |         |         |             | -... |            |
| Cushioning                  | Flexible cushioning rings/pads at both ends                                 |         |         |         |         |         |         |             | -P   |            |
|                             | Pneumatic cushioning, adjustable at both ends                               |         |         |         |         |         |         |             | -PPV |            |
| O Position sensing          | Via proximity sensor                                                        |         |         |         |         |         |         |             | -A   |            |
| Protection against rotation | Square piston rod                                                           |         |         |         |         |         |         | -           | 1    | -Q         |
| ↓ Type of piston rod        | Through piston rod                                                          |         |         |         |         |         |         |             | 2    | -S2        |

1 Q Max. stroke: 10 ... 1,500 mm  
In combination with S2: square piston rod at bearing cap end only  
In combination with KP: only supplied with S2  
Not with K7

2 S2 In combination with K2: extended thread at both ends  
In combination with K3: female thread at both ends  
In combination with K5: special thread at both ends  
In combination with K8: piston rod extended at bearing cap end only  
In combination with KP: clamping unit at end cap  
Not with K7

Transfer order code

|  |     |   |  |   |  |   |  |   |  |   |  |   |  |
|--|-----|---|--|---|--|---|--|---|--|---|--|---|--|
|  | DNC | - |  | - |  | - |  | - |  | - |  | - |  |
|--|-----|---|--|---|--|---|--|---|--|---|--|---|--|

# Standard cylinders DNC-KP, standard hole pattern, with clamping unit

FESTO

Ordering data – Modular products

| Options              |               |                |                       |                     |               |                                  |
|----------------------|---------------|----------------|-----------------------|---------------------|---------------|----------------------------------|
| Extended male thread | Female thread | Special thread | Special spanner flats | Extended piston rod | Clamping unit | Cylinder/valve combination       |
| ...K2                | K3            | ...K5          | K7                    | ...K8               | KP            | V1<br>V2<br>V3<br>V4<br>V5<br>V6 |
| -                    | K3            | -              | -                     | 100K8               | - KP          | -                                |

| Ordering table               |                                                                              |          |          |       |       |       |       |            |        |            |     |
|------------------------------|------------------------------------------------------------------------------|----------|----------|-------|-------|-------|-------|------------|--------|------------|-----|
| Size                         | 32                                                                           | 40       | 50       | 63    | 80    | 100   | 125   | Conditions | Code   | Enter code |     |
| Extended male thread<br>[mm] | Piston rod with extended male thread                                         |          |          |       |       |       |       |            |        |            |     |
|                              | 1 ... 35                                                                     |          | 1 ... 70 |       |       |       |       | 3          | -...K2 |            |     |
|                              | Piston rod with female thread                                                |          |          |       |       |       |       |            |        |            |     |
|                              | (M6)                                                                         | (M8)     | (M10)    | (M10) | (M12) | (M12) | (M16) | 4          | -K3    |            |     |
|                              | Piston rod with special thread                                               |          |          |       |       |       |       |            |        |            |     |
|                              | M10                                                                          | M12      | M16      | M16   | M20   | M20   | M27   |            | -...K5 |            |     |
|                              | Piston rod with external hexagon                                             |          |          |       |       |       |       |            | -K7    |            |     |
|                              | Extended piston rod                                                          |          |          |       |       |       |       |            |        |            |     |
|                              | 1 ... 500                                                                    |          |          |       |       |       |       |            | -...K8 |            |     |
|                              | [M]                                                                          | Attached |          |       |       |       |       |            | 5      | -KP        | -KP |
| [O]                          | Single solenoid valve, fitted on right, piston rod retracted when unactuated |          |          |       |       |       |       | -          | 6      | -V1        |     |
|                              | Single solenoid valve, fitted on right, piston rod advanced when unactuated  |          |          |       |       |       |       | -          | 6      | -V2        |     |
|                              | Double solenoid valve, fitted on right                                       |          |          |       |       |       |       | -          | 6      | -V3        |     |
|                              | Single solenoid valve, fitted on left, piston rod retracted when unactuated  |          |          |       |       |       |       | -          | 6      | -V4        |     |
|                              | Single solenoid valve, fitted on left, piston rod advanced when unactuated   |          |          |       |       |       |       | -          | 6      | -V5        |     |
|                              | Double solenoid valve, fitted on left                                        |          |          |       |       |       |       | -          | 6      | -V6        |     |

- [3] K2 Not with K3  
[4] K3 With K5: on request  
Not with K7

- [5] KP Without S2: position of the clamping unit at the bearing cap  
[6] V... Min. stroke: 100 mm

Transfer order code

- [ ] - [ ] - [ ] - [ ] - [ ] - KP - [ ]

## Standard cylinders DNC-KP, standard hole pattern, with clamping unit

**FESTO**

Ordering data

| Wearing parts kits |                |                            |
|--------------------|----------------|----------------------------|
|                    | Part No.       | Type                       |
| Piston Ø           | Basic version  |                            |
| 32                 | <b>369 195</b> | <b>DNC-32-...-PPV-(A)</b>  |
| 40                 | <b>369 196</b> | <b>DNC-40-...-PPV-(A)</b>  |
| 50                 | <b>369 197</b> | <b>DNC-50-...-PPV-(A)</b>  |
| 63                 | <b>369 198</b> | <b>DNC-63-...-PPV-(A)</b>  |
| 80                 | <b>369 199</b> | <b>DNC-80-...-PPV-(A)</b>  |
| 100                | <b>369 200</b> | <b>DNC-100-...-PPV-(A)</b> |
| 125                | <b>369 201</b> | <b>DNC-125-...-PPV-(A)</b> |

# Standard cylinders DNC-EL, standard hole pattern, with end-position locking

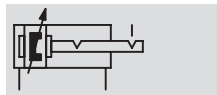
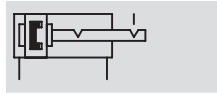
FESTO

Technical data

Function

DNC-...-A-...-EL

With position sensing



Ø - Diameter  
32 ... 100 mm

l - Stroke length  
10 ... 2,000 mm

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

Wearing parts kits  
→ 22



## 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 statutory minimum requirements, the product is not suitable for use in safety-related sections of control systems.

| General technical data                       |          |                                               |          |         |         |         |         |
|----------------------------------------------|----------|-----------------------------------------------|----------|---------|---------|---------|---------|
| Piston Ø                                     |          | 32                                            | 40       | 50      | 63      | 80      | 100     |
| Pneumatic connection                         | Cylinder | G1⁄8                                          | G1⁄4     | G1⁄4    | G3⁄8    | G3⁄8    | G1⁄2    |
|                                              | EL       | M3                                            |          | M5      |         |         |         |
| Piston rod thread                            |          | M10x1.25                                      | M12x1.25 | M16x1.5 | M16x1.5 | M20x1.5 | M20x1.5 |
| Max. axial backlash with end position locked | [mm]     | ≤ 1.3                                         |          |         |         |         | ≤ 2.1   |
| Constructional design                        |          | Piston                                        |          |         |         |         |         |
|                                              |          | Piston rod                                    |          |         |         |         |         |
|                                              |          | Profile barrel                                |          |         |         |         |         |
| End-position locking                         | ELB      | At both ends                                  |          |         |         |         |         |
|                                              | ELV      | At front                                      |          |         |         |         |         |
|                                              | ELH      | At rear                                       |          |         |         |         |         |
| Cushioning                                   |          | Flexible cushioning rings/pads at both ends   |          |         |         |         |         |
|                                              |          | Pneumatic cushioning, adjustable at both ends |          |         |         |         |         |
| Cushioning length PPV [mm]                   |          | 20                                            | 20       | 22      | 22      | 32      | 32      |
|                                              | EL       | 8.2                                           | 8.3      | 7.3     | 10.8    | 9.8     | 11.8    |
| Position sensing                             |          | Via proximity sensor                          |          |         |         |         |         |
| Type of mounting                             |          | Via female thread                             |          |         |         |         |         |
|                                              |          | Via accessories                               |          |         |         |         |         |
| Mounting position                            |          | Any                                           |          |         |         |         |         |

Note: This product conforms to ISO 1179-1 and to ISO 228-1

## Note

- End-position locking should only be operated in conjunction with double-acting cylinders with exhaust air flow control in order to ensure that the lock is always completely released prior to starting the drive movement.
- No screws with a head or similar may 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 hole must not be closed.
- Locking can be performed from any stroke position once the drive is brought mechanically into its end position.
- End-position locking has been designed to prevent the load dropping in case of pressure failure.
- An excessive end-position cushioning setting (more than 50% closed) can result in the locking bolt not engaging reliably, resulting in premature wear.

# Standard cylinders DNC-EL, standard hole pattern, with end-position locking

FESTO

Technical data

| Operating and environmental conditions       |                                                     |    |            |    |    |     |
|----------------------------------------------|-----------------------------------------------------|----|------------|----|----|-----|
| Piston Ø                                     | 32                                                  | 40 | 50         | 63 | 80 | 100 |
| Operating medium                             | Filtered compressed air, lubricated or unlubricated |    |            |    |    |     |
| Operating pressure [bar]                     | 2.5 ... 12                                          |    | 1.5 ... 12 |    |    |     |
| Ambient temperature <sup>1)</sup> [°C]       | -20 ... +80                                         |    |            |    |    |     |
| Corrosion resistance class CRC <sup>2)</sup> | 2                                                   |    |            |    |    |     |
| Certification                                | Germanischer Lloyd                                  |    |            |    |    |     |

1) Note operating range of proximity sensors

2) Corrosion resistance class 2 as per Festo standard 940 070

Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

| Impact energy [J]                       |     |     |     |     |     |     |
|-----------------------------------------|-----|-----|-----|-----|-----|-----|
| Piston Ø                                | 32  | 40  | 50  | 63  | 80  | 100 |
| Max. impact energy at the end positions | 0.1 | 0.2 | 0.2 | 0.5 | 0.9 | 1.2 |

Permissible impact velocity:

$$v_{\text{perm.}} = \sqrt{\frac{2 \times E_{\text{perm.}}}{m_{\text{dead}} + m_{\text{load}}}}$$

$v_{\text{perm.}}$  Permissible impact velocity

$E_{\text{perm.}}$  Max. impact energy

$m_{\text{intrinsic}}$  Moving load (drive)

$m_{\text{Load}}$  Moving effective load

## Note

This data represents the maximum values that can be achieved. The maximum permissible impact energy must be observed.

Maximum permissible load:

$$m_{\text{load}} = \frac{2 \times E_{\text{perm.}}}{v^2} - m_{\text{dead}}$$

| Forces [N]                             |     |     |       |       |       |       |
|----------------------------------------|-----|-----|-------|-------|-------|-------|
| Piston Ø                               | 32  | 40  | 50    | 63    | 80    | 100   |
| Theoretical force at 6 bar, advancing  | 483 | 754 | 1,178 | 1,870 | 3,016 | 4,712 |
| Theoretical force at 6 bar, retracting | 415 | 633 | 990   | 1,682 | 2,721 | 4,418 |
| Static holding force                   | 500 |     | 2,000 |       | 5,000 |       |

## 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.

### Given:

Installation position = Vertical

Workpiece load = 44 kg

$$F = m \times g = 44 \text{ kg} \times 9.81 \text{ m/s}^2 = 431.6 \text{ N}$$

### To be calculated:

Suitable piston Ø

### Example with 32 mm piston Ø:

Theoretical force at 6 bar, advancing = 483 N

50% of the theoretical force = 241.5 N

Static holding force with 32 mm piston Ø = 500 N

The static holding force of end-position locking is within the permissible range (max. 500 N) with a workpiece load of 44 kg (431.6 N), however the cylinder would be at 89% capacity.

### Result:

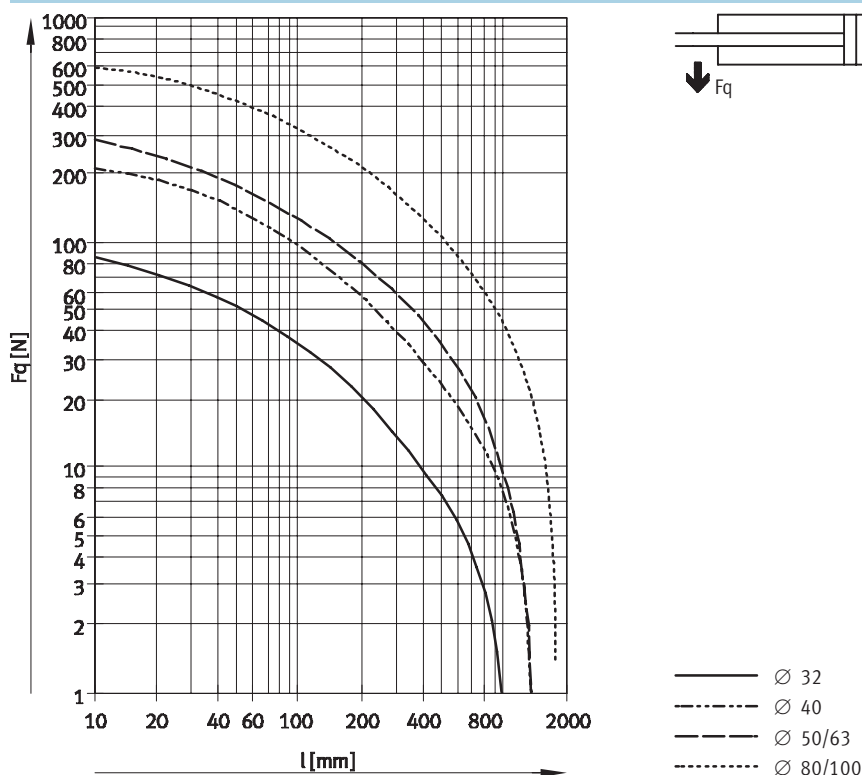
A cylinder with a piston Ø of 40 mm is therefore recommended for this application.

# Standard cylinders DNC-EL, standard hole pattern, with end-position locking

FESTO

Technical data

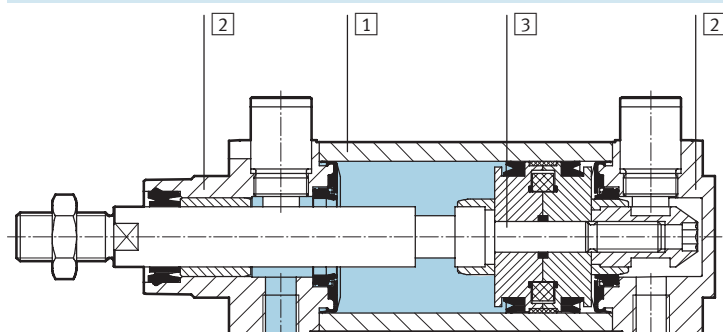
Max. lateral force  $F_q$  as a function of stroke length  $l$



| Weight [g]                         |     |     |       |       |       |       |
|------------------------------------|-----|-----|-------|-------|-------|-------|
| Piston Ø                           | 32  | 40  | 50    | 63    | 80    | 100   |
| Basic version                      |     |     |       |       |       |       |
| Product weight with 0 mm stroke    | 537 | 820 | 1,320 | 1,769 | 2,970 | 4,833 |
| Additional weight per 10 mm stroke | 30  | 45  | 64    | 73    | 106   | 115   |
| S2 – Through piston rod            |     |     |       |       |       |       |
| Product weight with 0 mm stroke    | 596 | 915 | 1,450 | 1,977 | 3,294 | 5,477 |
| Additional weight per 10 mm stroke | 39  | 61  | 89    | 98    | 144   | 153   |

## Materials

Sectional view



| Standard cylinder |                      |                                          |
|-------------------|----------------------|------------------------------------------|
| 1                 | Profile barrel       | Wrought aluminium alloy, smooth anodised |
| 2                 | Bearing and end caps | Die-cast aluminium                       |
| 3                 | Piston rod           | High-alloy steel                         |
| -                 | Seals                | Polyurethane, nitrile rubber             |

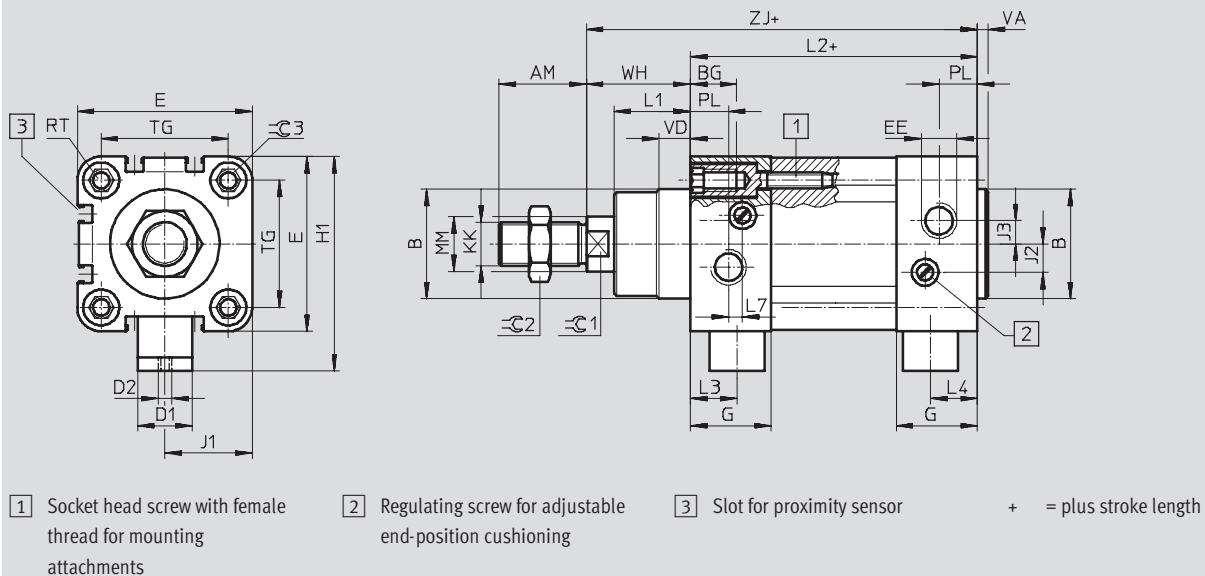
# Standard cylinders DNC-EL, standard hole pattern, with end-position locking

FESTO

Technical data

## Dimensions – Basic version

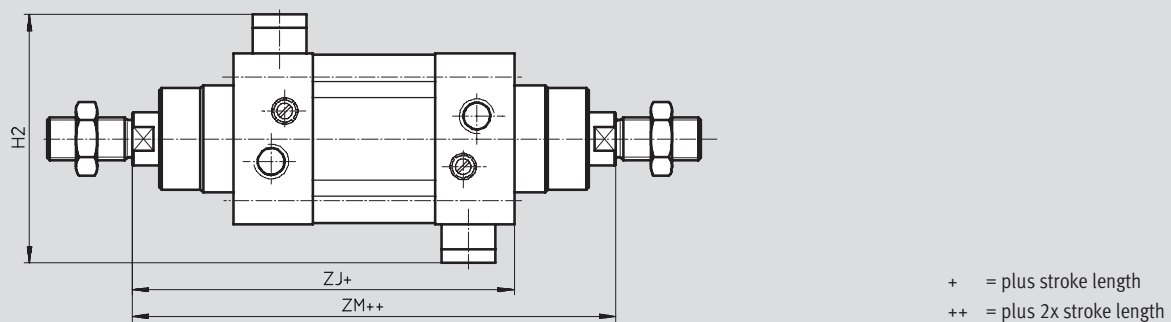
Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)



## Dimensions – Variants

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

### S2 – Through piston rod



| Ø<br>[mm] | AM | B<br>Ø<br>d11 | BG | D1<br>Ø<br>f8 | D2 | E   | EE   | G    | H1    | H2  | J1   | J2   | J3  | KK       | L1   |
|-----------|----|---------------|----|---------------|----|-----|------|------|-------|-----|------|------|-----|----------|------|
| 32        | 22 | 30            | 16 | 13            | M3 | 45  | G1/8 | 25.1 | 57.5  | 70  | 22.5 | 6    | 5.2 | M10x1.25 | 18   |
| 40        | 24 | 35            | 16 | 13            | M3 | 54  | G1/4 | 29.6 | 64    | 74  | 27   | 8    | 6   | M12x1.25 | 21.5 |
| 50        | 32 | 40            | 17 | 20            | M5 | 64  | G1/4 | 29.6 | 78.5  | 93  | 32   | 10.4 | 8.5 | M16x1.5  | 28   |
| 63        | 32 | 45            | 17 | 20            | M5 | 75  | G3/8 | 35.6 | 84.5  | 93  | 37.5 | 12.4 | 10  | M16x1.5  | 28.5 |
| 80        | 40 | 45            | 17 | 20            | M5 | 93  | G3/8 | 35.9 | 104.5 | 116 | 46.5 | 12.5 | 8   | M20x1.5  | 34.7 |
| 100       | 40 | 55            | 17 | 20            | M5 | 110 | G1/2 | 38.8 | 113.5 | 116 | 55   | 12   | 10  | M20x1.5  | 38.2 |

| Ø<br>[mm] | L2  | L3   | L4   | L7   | MM<br>Ø | PL   | RT  | TG   | VA | VD   | WH<br>±2 | ZM  | ZJ  | C1 | C2 | C3 |
|-----------|-----|------|------|------|---------|------|-----|------|----|------|----------|-----|-----|----|----|----|
| 32        | 94  | 13.8 | 12   | 3.3  | 12      | 15.6 | M6  | 32.5 | 4  | 10   | 26       | 148 | 120 | 10 | 16 | 6  |
| 40        | 105 | 16.6 | 16.6 | 3.6  | 16      | 14   | M6  | 38   | 4  | 10.5 | 30       | 167 | 135 | 13 | 18 | 6  |
| 50        | 106 | 17.1 | 17.1 | 5.1  | 20      | 14   | M8  | 46.5 | 4  | 11.5 | 37       | 183 | 143 | 17 | 24 | 8  |
| 63        | 121 | 16.6 | 16.6 | 6.6  | 20      | 17   | M8  | 56.5 | 4  | 15   | 37       | 199 | 158 | 17 | 24 | 8  |
| 80        | 128 | 19.9 | 19.9 | 10.5 | 25      | 16.4 | M10 | 72   | 4  | 15.7 | 46       | 222 | 174 | 22 | 30 | 6  |
| 100       | 138 | 22.8 | 22.8 | 8    | 25      | 18.8 | M10 | 89   | 4  | 19.2 | 51       | 240 | 189 | 22 | 30 | 6  |

Note: This product conforms to ISO 1179-1 and to ISO 228-1

# Standard cylinders DNC-EL, standard hole pattern, with end-position locking

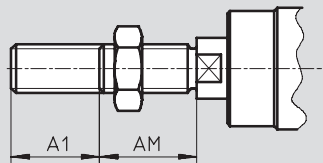
FESTO

Technical data

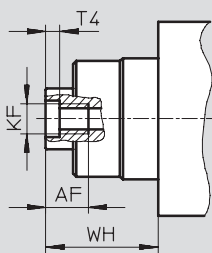
## Dimensions – Variants

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

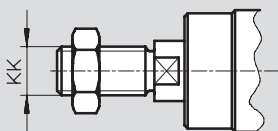
### K2 – Extended male piston rod thread



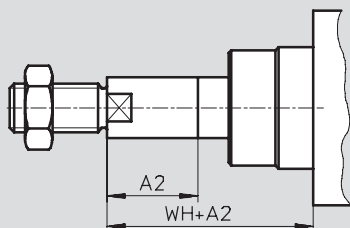
### K3 – Female piston rod thread



### K5 – Special piston rod thread



### K8 – Extended piston rod



#### Note

In combination with variant S2, the piston rod is extended at one end.

| Ø<br>[mm] | A1<br>max. | A2<br>max. | AF | AM | KF  | KK           |                              | T4  | WH | ±C1 |
|-----------|------------|------------|----|----|-----|--------------|------------------------------|-----|----|-----|
|           |            |            |    |    |     | Basic thread | Special thread <sup>1)</sup> |     |    |     |
| 32        | 35         | 500        | 12 | 22 | M6  | M10x1.25     | M10                          | 2.6 | 26 | 10  |
| 40        | 35         | 500        | 12 | 24 | M8  | M12x1.25     | M12                          | 3.3 | 30 | 13  |
| 50        | 70         | 500        | 16 | 32 | M10 | M16x1.5      | M16                          | 4.7 | 37 | 17  |
| 63        | 70         | 500        | 16 | 32 | M10 | M16x1.5      | M16                          | 4.7 | 37 | 17  |
| 80        | 70         | 500        | 20 | 40 | M12 | M20x1.5      | M20                          | 6.1 | 46 | 22  |
| 100       | 70         | 500        | 20 | 40 | M12 | M20x1.5      | M20                          | 6.1 | 51 | 22  |

1) The special threads are only available as male threads. The mounting nut on the piston rod thread is included in the scope of delivery

# Standard cylinders DNC-EL, standard hole pattern, with end-position locking

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Ordering data – Modular products

| M Mandatory data     |          |          |              |            | O Options →      |                    |
|----------------------|----------|----------|--------------|------------|------------------|--------------------|
| Module No.           | Function | Piston Ø | Stroke       | Cushioning | Position sensing | Type of piston rod |
| 163 302              | DNC      | 32       | 10 ... 2,000 | P<br>PPV   | A                | S2                 |
| 163 334              |          | 40       |              |            |                  |                    |
| 163 366              |          | 50       |              |            |                  |                    |
| 163 398              |          | 63       |              |            |                  |                    |
| 163 430              |          | 80       |              |            |                  |                    |
| 163 462              |          | 100      |              |            |                  |                    |
| <b>Order example</b> |          |          |              |            |                  |                    |
| 163 430              | DNC      | 80       | 550          | PPV        | A                | S2                 |

| Ordering table       |                                                                                    |         |         |         |         |         |             |      |            |
|----------------------|------------------------------------------------------------------------------------|---------|---------|---------|---------|---------|-------------|------|------------|
| Size                 | 32                                                                                 | 40      | 50      | 63      | 80      | 100     | Condition s | Code | Enter code |
| M Module No.         | 163 302                                                                            | 163 334 | 163 366 | 163 398 | 163 430 | 163 462 |             |      |            |
| Function             | Standard cylinder, double-acting, standard hole pattern, with end-position locking |         |         |         |         |         |             | DNC  | DNC        |
| Piston Ø [mm]        | 32                                                                                 | 40      | 50      | 63      | 80      | 100     |             | -... |            |
| Stroke [mm]          | 10 ... 2,000                                                                       |         |         |         |         |         |             | -... |            |
| Cushioning           | Flexible cushioning rings/pads at both ends                                        |         |         |         |         |         |             | -P   |            |
|                      | Pneumatic cushioning, adjustable at both ends                                      |         |         |         |         |         |             | -PPV |            |
| O Position sensing   | Via proximity sensor                                                               |         |         |         |         |         |             | -A   |            |
| ↓ Type of piston rod | Through piston rod                                                                 |         |         |         |         |         | 1           | -S2  |            |

- 1 S2 In combination with K2: extended thread at both ends  
In combination with K3: female thread at both ends  
In combination with K5: special thread at both ends

Transfer order code

|  |     |   |  |   |  |   |  |   |  |
|--|-----|---|--|---|--|---|--|---|--|
|  | DNC | - |  | - |  | - |  | - |  |
|--|-----|---|--|---|--|---|--|---|--|

# Standard cylinders DNC-EL, standard hole pattern, with end-position locking

FESTO

Ordering data – Modular products

| Options              |               |                |                     | M                    |
|----------------------|---------------|----------------|---------------------|----------------------|
| Extended male thread | Female thread | Special thread | Extended piston rod | End-position locking |
| ...K2                | K3            | ...K5          | ...K8               | ELB<br>ELV<br>ELH    |
| -                    | - K3          | -              | - 100K8             | -                    |

| Ordering table                                               |                                      |    |    |    |    |     |                |        |               |
|--------------------------------------------------------------|--------------------------------------|----|----|----|----|-----|----------------|--------|---------------|
| Size                                                         | 32                                   | 40 | 50 | 63 | 80 | 100 | Condition<br>s | Code   | Enter<br>code |
| <div> <div>Extended male thread</div> <div>[mm]</div> </div> | Piston rod with extended male thread |    |    |    |    |     | 2              | -...K2 |               |
|                                                              | Piston rod with female thread        |    |    |    |    |     | 3              | -K3    |               |
|                                                              | Piston rod with special thread       |    |    |    |    |     |                | -...K5 |               |
|                                                              | Extended piston rod                  |    |    |    |    |     |                | -...K8 |               |
| <div> <div>End-position locking</div> <div></div> </div>     | At both ends                         |    |    |    |    |     | 4              | -ELB   |               |
|                                                              | At front                             |    |    |    |    |     | 4              | -ELV   |               |
|                                                              | At rear                              |    |    |    |    |     | 4              | -ELH   |               |

- 2 K2 Not with K3  
 3 K3 With K5: on request  
 4 ELB, ELV, ELH In combination with K8 and S2: on request only

Transfer order code

|   |  |   |  |   |  |   |  |   |  |
|---|--|---|--|---|--|---|--|---|--|
| - |  | - |  | - |  | - |  | - |  |
|---|--|---|--|---|--|---|--|---|--|

# Standard cylinders DNC-V1 ... V6, standard hole pattern, cyl./valve combination

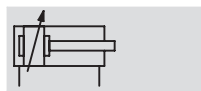
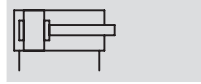
FESTO

Technical data

Function

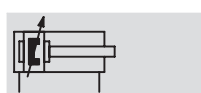
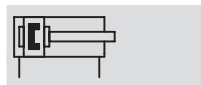
**DNC-...**

Without position sensing



**DNC-...-A-...**

With position sensing

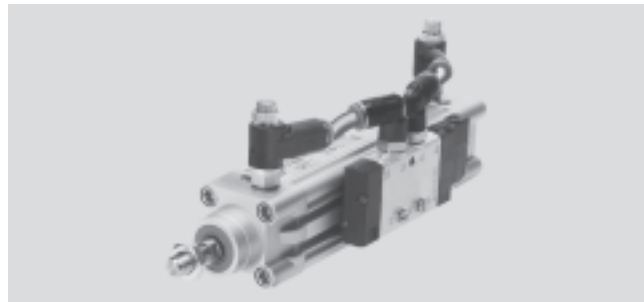


Ø - Diameter  
32 ... 100 mm

Stroke length  
100 ... 2,000 mm

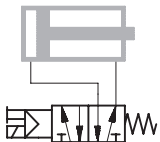
[www.festo.com/en/Spare\\_parts\\_service](http://www.festo.com/en/Spare_parts_service)

Wearing parts kits  
→ 30



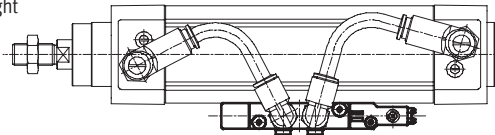
## Valve variants

Single solenoid valve unactuated, piston rod retracted

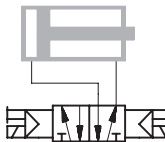


**DNC-...-V1**

fitted on right

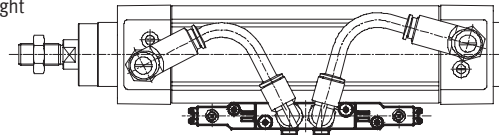


Double solenoid valve unactuated, piston rod retracted



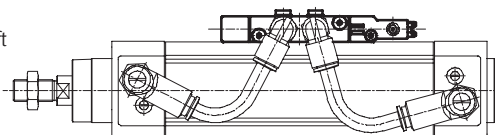
**DNC-...-V3**

fitted on right



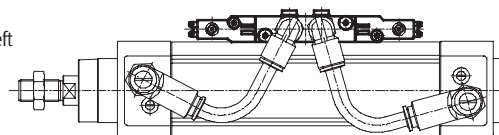
**DNC-...-V4**

fitted on left

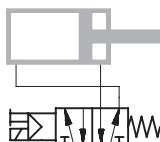


**DNC-...-V6**

fitted on left

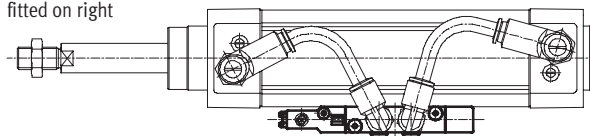


Single solenoid valve unactuated, piston rod advanced



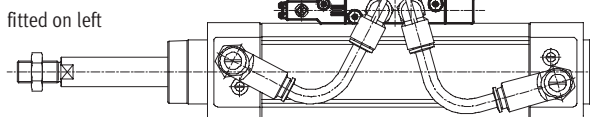
**DNC-...-V2**

fitted on right



**DNC-...-V5**

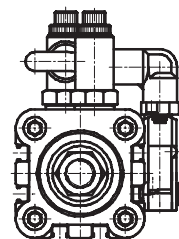
fitted on left



## Note

As viewed from the front of the cylinder (piston rod end) with valve fitted on left or right.

In this example, the valve is fitted on the right.



# Standard cylinders DNC-V1 ... V6, standard hole pattern, cyl./valve combination

**FESTO**

Technical data

| General technical data            |                 |                                               |          |                  |                                             |                  |         |
|-----------------------------------|-----------------|-----------------------------------------------|----------|------------------|---------------------------------------------|------------------|---------|
| Piston ∅                          |                 | 32                                            | 40       | 50               | 63                                          | 80               | 100     |
| Cylinder                          |                 |                                               |          |                  |                                             |                  |         |
| Pneumatic connection              |                 | G1⁄8                                          | G1⁄4     | G1⁄4             | G3⁄8                                        | G3⁄8             | G1⁄2    |
| Piston rod thread                 |                 | M10x1.25                                      | M12x1.25 | M16x1.5          | M16x1.5                                     | M20x1.5          | M20x1.5 |
|                                   | K3              | M6                                            | M8       | M10              | M10                                         | M12              | M12     |
|                                   | K5              | M10                                           | M12      | M16              | M16                                         | M20              | M20     |
| Constructional design             |                 | Piston                                        |          |                  |                                             |                  |         |
|                                   |                 | Piston rod                                    |          |                  |                                             |                  |         |
|                                   |                 | Profile barrel                                |          |                  |                                             |                  |         |
| Cushioning                        |                 | Flexible cushioning rings/pads at both ends   |          |                  |                                             |                  |         |
|                                   |                 | Pneumatic cushioning, adjustable at both ends |          |                  |                                             |                  |         |
| Cushioning length PPV             | [mm]            | 20                                            | 20       | 22               | 22                                          | 32               | 32      |
| Position sensing                  |                 | Via proximity sensor                          |          |                  |                                             |                  |         |
| Type of mounting                  |                 | Via female thread                             |          |                  |                                             |                  |         |
|                                   |                 | Via accessories                               |          |                  |                                             |                  |         |
| Mounting position                 |                 | Any                                           |          |                  |                                             |                  |         |
|                                   |                 |                                               |          |                  |                                             |                  |         |
| Valve                             |                 |                                               |          |                  | Ordering data – Valves and accessories ➔ 46 |                  |         |
| Valve used                        | single solenoid | CPE14-M1BH-5L-1⁄8                             |          | CPE18-M1H-5L-1⁄4 |                                             | CPE24-M1H-5L-3⁄8 |         |
|                                   | double solenoid | CPE14-M1BH-5J-1⁄8                             |          | CPE18-M1H-5J-1⁄4 |                                             | CPE24-M1H-5J-3⁄8 |         |
| Pneumatic connection              |                 | G1⁄8                                          |          | G1⁄4             |                                             | G3⁄8             |         |
| Constructional design             |                 | Piston spool valve                            |          |                  |                                             |                  |         |
| Type of mounting                  |                 | Via mounting kit                              |          |                  |                                             |                  |         |
| Operating voltage                 | [V DC]          | 24 +10/–15%                                   |          |                  |                                             |                  |         |
| Power consumption                 | [W]             | 1                                             |          | 1.5              |                                             |                  |         |
| Duty cycle                        |                 | 100%                                          |          |                  |                                             |                  |         |
| Protection class with plug socket |                 | IP65                                          |          |                  |                                             |                  |         |

Note: This product conforms to ISO 1179-1 and to ISO 228-1

| Operating and environmental conditions       |                                                     |    |            |    |    |     |
|----------------------------------------------|-----------------------------------------------------|----|------------|----|----|-----|
| Piston Ø                                     | 32                                                  | 40 | 50         | 63 | 80 | 100 |
| Operating medium                             | Filtered compressed air, lubricated or unlubricated |    |            |    |    |     |
| Operating pressure [bar]                     | 3 ... 8                                             |    | 2.5 ... 10 |    |    |     |
| Ambient temperature <sup>1)</sup> [°C]       | 0 ... +50                                           |    |            |    |    |     |
| Corrosion resistance class CRC <sup>2)</sup> | 2                                                   |    |            |    |    |     |
| Certification                                | Germanischer Lloyd                                  |    |            |    |    |     |

1) Note operating range of proximity sensors

2) Corrosion resistance class 2 as per Festo standard 940 070

Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

# Standard cylinders DNC-V1 ... V6, standard hole pattern, cyl./valve combination

FESTO

Technical data

| Force [N] and impact energy [J]                       |     |     |       |       |       |       |
|-------------------------------------------------------|-----|-----|-------|-------|-------|-------|
| Piston Ø                                              | 32  | 40  | 50    | 63    | 80    | 100   |
| Theoretical force at 6 bar, advancing                 | 483 | 754 | 1,178 | 1,870 | 3,016 | 4,712 |
| S2/S20                                                | 415 | 633 | 990   | 1,682 | 2,721 | 4,418 |
| Theoretical force at 6 bar, retracting                | 415 | 633 | 990   | 1,682 | 2,721 | 4,418 |
| S2/S20                                                | 415 | 633 | 990   | 1,682 | 2,721 | 4,418 |
| Max. impact energy at the end positions <sup>1)</sup> | 0.1 | 0.2 | 0.2   | 0.5   | 0.9   | 1.2   |

1) The permissible impact energy is reduced by approx. 10% for variants K10 and S20

Permissible impact velocity:

$$v_{perm.} = \sqrt{\frac{2 \times E_{perm.}}{m_{dead} + m_{load}}}$$

$v_{perm.}$  Permissible impact velocity

$E_{perm.}$  Max. impact energy

$m_{intrinsic}$  Moving load (drive)

$m_{load}$  Moving effective load

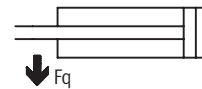
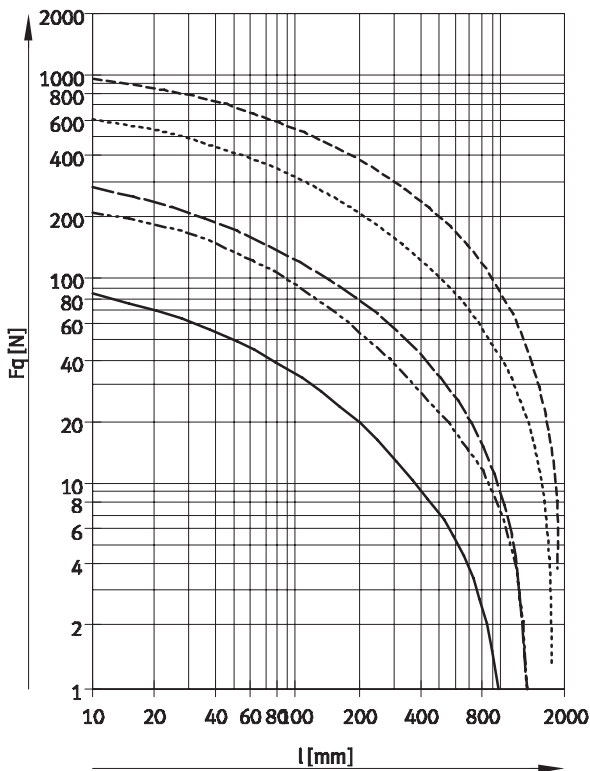
## Note

This data represents the maximum values that can be achieved. The maximum permissible impact energy must be observed.

Maximum permissible load:

$$m_{load} = \frac{2 \times E_{perm.}}{v^2} - m_{dead}$$

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



- $\varnothing 32$
- - -  $\varnothing 40$
- · -  $\varnothing 50/63$
- · ·  $\varnothing 80/100$

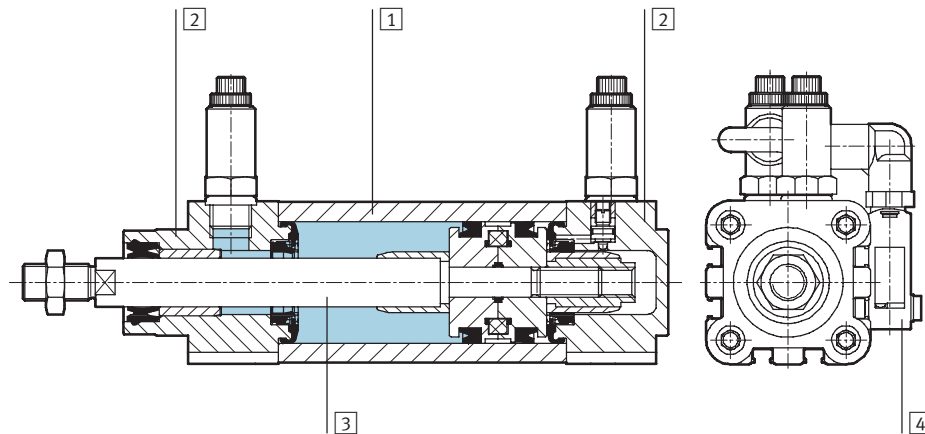
# Standard cylinders DNC-V1 ... V6, standard hole pattern, cyl./valve combination

FESTO

Technical data

## Materials

Sectional view



| Standard cylinder      | Basic version                            | R8             | S10              | S11 | K10                               |
|------------------------|------------------------------------------|----------------|------------------|-----|-----------------------------------|
| 1 Profile barrel       | Wrought aluminium alloy, smooth anodised |                |                  |     |                                   |
| 2 Bearing and end caps | Die-cast aluminium                       |                |                  |     |                                   |
| 3 Piston rod           | High-alloy steel                         | Tempered steel | High-alloy steel |     | Wrought aluminium alloy, anodised |
| – Seals, cylinder      | Polyurethane, nitrile rubber             |                | Fluoro rubber    |     | Polyurethane, nitrile rubber      |
| 4 Housing, valve       | Die-cast aluminium, polyamide, steel     |                |                  |     |                                   |
| – Seals, valve         | Nitrile rubber                           |                |                  |     |                                   |

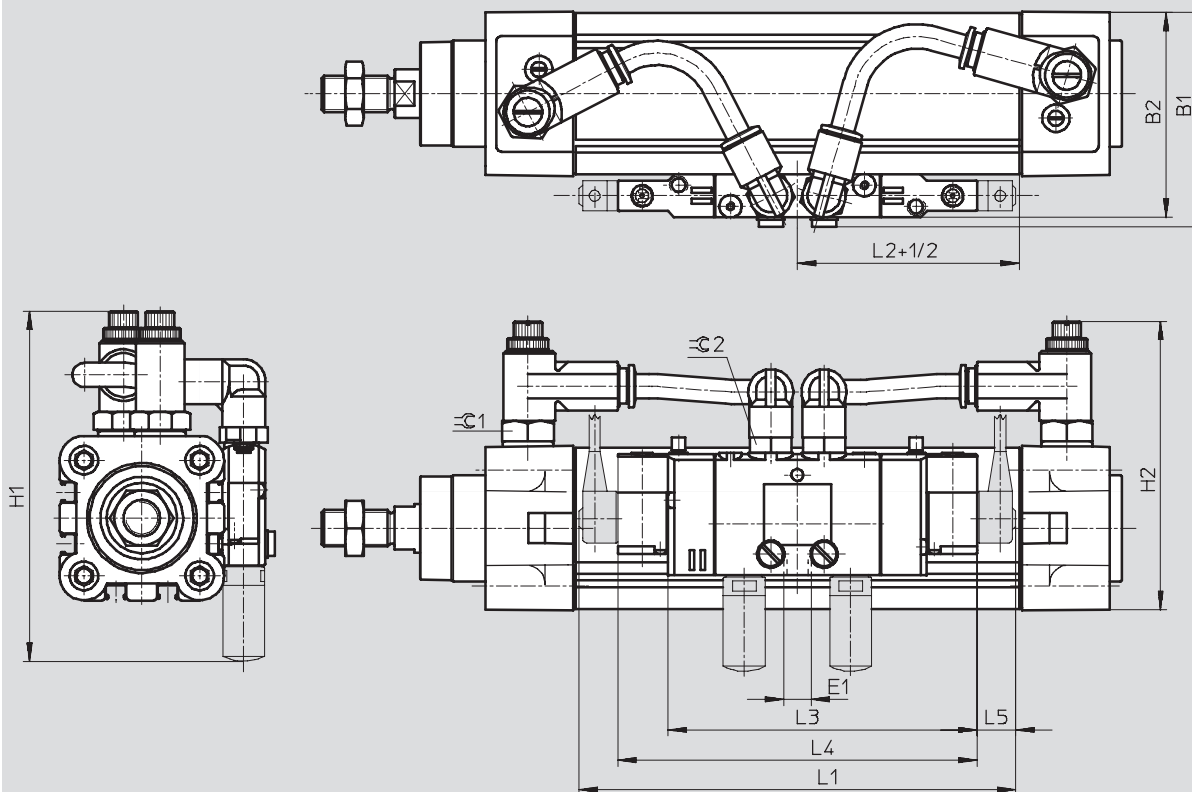
# Standard cylinders DNC-V1 ... V6, standard hole pattern, cyl./valve combination

FESTO

Technical data

## Dimensions

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



1 Plug socket not included in scope of delivery

+1/2 = plus half stroke length

## Standard cylinders DNC-V1 ... V6, standard hole pattern, cyl./valve combination

**FESTO**

Technical data

| Ø<br>[mm] | B1  | B2  | E1   | H1                  | H2                  | L1<br>max. | L2<br>±3 | L3  | L4  | L5 | ≡C1 | ≡C2 |
|-----------|-----|-----|------|---------------------|---------------------|------------|----------|-----|-----|----|-----|-----|
| 32        | 62  | 59  | G1/8 | 109 <sup>+5.5</sup> | 86 <sup>+5.5</sup>  | 152        | 22       | 102 | 118 | 13 | 13  | 14  |
| 40        | 71  | 68  | G1/8 | 114 <sup>+5.5</sup> | 94 <sup>+5.5</sup>  | 152        | 23       | 102 | 118 | 13 | 17  | 14  |
| 50        | 85  | 82  | G1/4 | 131 <sup>+5.5</sup> | 104 <sup>+5.5</sup> | 215        | 24       | 138 | 163 | 25 | 17  | 14  |
| 63        | 96  | 93  | G1/4 | 142 <sup>+5.5</sup> | 115 <sup>+5.5</sup> | 215        | 25       | 138 | 163 | 25 | 19  | 14  |
| 80        | 123 | 119 | G3/8 | 194 <sup>+5.5</sup> | 133 <sup>+5.5</sup> | 242        | 28       | 165 | 165 | 25 | 19  | 17  |
| 100       | 140 | 136 | G3/8 | 213 <sup>+2</sup>   | 158 <sup>+2</sup>   | 242        | 30       | 165 | 165 | 25 | 27  | 17  |

Note: This product conforms to ISO 1179-1 and to ISO 228-1

### Note

Additional dimensions relating to the basic version and its variants are provided on  
 page ➔ 15,  
 with clamping unit on  
 page ➔ 26.

# Standard cylinders DNC-V1 ... V6, standard hole pattern, cyl./valve combination

FESTO

Ordering data – Modular products

| M Mandatory data                                               |          |                                   |               |            | O Options        |                             |                    | → |
|----------------------------------------------------------------|----------|-----------------------------------|---------------|------------|------------------|-----------------------------|--------------------|---|
| Module No.                                                     | Function | Piston Ø                          | Stroke        | Cushioning | Position sensing | Protection against rotation | Type of piston rod |   |
| 163 302<br>163 334<br>163 366<br>163 398<br>163 430<br>163 462 | DNC      | 32<br>40<br>50<br>63<br>80<br>100 | 100 ... 2,000 | P<br>PPV   | A                | Q                           | S2<br>S20          |   |
| <b>Order example</b>                                           |          |                                   |               |            |                  |                             |                    |   |
| 163 430                                                        | DNC      | - 80                              | - 550         | - PPV      | - A              | - Q                         | - S2               |   |

| Ordering table              |                                                                                     |         |         |         |         |         |             |      |            |
|-----------------------------|-------------------------------------------------------------------------------------|---------|---------|---------|---------|---------|-------------|------|------------|
| Size                        | 32                                                                                  | 40      | 50      | 63      | 80      | 100     | Condition s | Code | Enter code |
| M Module No.                | 163 302                                                                             | 163 334 | 163 366 | 163 398 | 163 430 | 163 462 |             |      |            |
| Function                    | Standard cylinder, double-acting, standard hole pattern, cylinder/valve combination |         |         |         |         |         |             | DNC  | DNC        |
| Piston Ø [mm]               | 32                                                                                  | 40      | 50      | 63      | 80      | 100     |             | -... |            |
| Stroke [mm]                 | 100 ... 2,000                                                                       |         |         |         |         |         |             | -... |            |
| Cushioning                  | Flexible cushioning rings/pads at both ends                                         |         |         |         |         |         |             | -P   |            |
|                             | Pneumatic cushioning, adjustable at both ends                                       |         |         |         |         |         |             | -PPV |            |
| O Position sensing          | Via proximity sensor                                                                |         |         |         |         |         |             | -A   |            |
| Protection against rotation | Square piston rod                                                                   |         |         |         |         |         | 1           | -Q   |            |
| Type of piston rod          | Through piston rod                                                                  |         |         |         |         |         | 2           | -S2  |            |
|                             | Through, hollow piston rod                                                          |         |         |         |         |         | 3           | -S20 |            |

1 Q Max. stroke: 100 ... 1,500 mm  
In combination with S2: square piston rod at bearing cap end only  
In combination with KP: only supplied with S2  
Not with S20, K7, K10, S10, S11

2 S2 In combination with K2: extended thread at both ends  
In combination with K3: female thread at both ends  
In combination with K5: special thread at both ends  
In combination with K8: piston rod extended at bearing cap end only  
In combination with KP: clamping unit at end cap  
Not with S20, K7, S10, S11

3 S20 Max. stroke: 850 mm  
In combination with K8: piston rod extended at both ends  
Not with K2, K3, K5, K10, KP, S10, S11

Transfer order code

|  |     |   |  |   |  |   |  |   |  |   |  |
|--|-----|---|--|---|--|---|--|---|--|---|--|
|  | DNC | - |  | - |  | - |  | - |  | - |  |
|--|-----|---|--|---|--|---|--|---|--|---|--|

# Standard cylinders DNC-V1 ... V6, standard hole pattern, cyl./valve combination

FESTO

Ordering data – Modular products

| → 0 Options          |               |                |                       |                     |                              |               |                              |                         | M                                |
|----------------------|---------------|----------------|-----------------------|---------------------|------------------------------|---------------|------------------------------|-------------------------|----------------------------------|
| Extended male thread | Female thread | Special thread | Special spanner flats | Extended piston rod | Improved running performance | Clamping unit | Slow speed (constant motion) | Running characteristics | Cylinder/valve combination       |
| ...K2                | K3            | ...K5          | K7                    | ...K8               | K10                          | KP            | S10                          | S11                     | V1<br>V2<br>V3<br>V4<br>V5<br>V6 |
| -                    | -             | -              | -                     | 100K8               | -                            | -             | -                            | -                       | V2                               |

| Ordering table               |                              |                                                   |                                                                              |      |          |       |       |            |      |            |  |
|------------------------------|------------------------------|---------------------------------------------------|------------------------------------------------------------------------------|------|----------|-------|-------|------------|------|------------|--|
| Size                         |                              | 32                                                | 40                                                                           | 50   | 63       | 80    | 100   | Conditions | Code | Enter code |  |
| ↓<br>0                       | Extended male thread         |                                                   | Piston rod with extended male thread                                         |      |          |       |       |            |      |            |  |
|                              | [mm]                         |                                                   | 1 ... 35                                                                     |      | 1 ... 70 |       |       |            | 4    | -...K2     |  |
|                              | Female thread                |                                                   | Piston rod with female thread                                                |      |          |       |       |            |      |            |  |
|                              |                              |                                                   | (M6)                                                                         | (M8) | (M10)    | (M10) | (M12) | (M12)      | 5    | -K3        |  |
|                              | Special thread               |                                                   | Piston rod with special thread                                               |      |          |       |       |            |      |            |  |
|                              |                              |                                                   | M10                                                                          | M12  | M16      | M16   | M20   | M20        | 6    | -...K5     |  |
|                              | Special spanner flats        |                                                   | Piston rod with external hexagon                                             |      |          |       |       |            | 7    | -K7        |  |
|                              | Extended piston rod          |                                                   | Extended piston rod                                                          |      |          |       |       |            |      |            |  |
|                              | [mm]                         |                                                   | 1 ... 500                                                                    |      |          |       |       |            |      | -...K8     |  |
|                              | Improved running performance |                                                   | Smooth anodised aluminium coated piston rod                                  |      |          |       |       |            | 8    | -K10       |  |
| Clamping unit                |                              | Attached                                          |                                                                              |      |          |       |       | 9          | -KP  |            |  |
| Slow speed (constant motion) |                              | Slow speed (constant motion at low piston speeds) |                                                                              |      |          |       |       | 10         | -S10 |            |  |
| Running characteristics      |                              | Low friction                                      |                                                                              |      |          |       |       | 11         | -S11 |            |  |
| M                            | Cylinder/valve combination   |                                                   | Single solenoid valve, fitted on right, piston rod retracted when unactuated |      |          |       |       |            |      | -V1        |  |
|                              |                              |                                                   | Single solenoid valve, fitted on right, piston rod advanced when unactuated  |      |          |       |       |            |      | -V2        |  |
|                              |                              |                                                   | Double solenoid valve, fitted on right                                       |      |          |       |       |            |      | -V3        |  |
|                              |                              |                                                   | Single solenoid valve, fitted on left, piston rod retracted when unactuated  |      |          |       |       |            |      | -V4        |  |
|                              |                              |                                                   | Single solenoid valve, fitted on left, piston rod advanced when unactuated   |      |          |       |       |            |      | -V5        |  |
|                              |                              |                                                   | Double solenoid valve, fitted on left                                        |      |          |       |       |            |      | -V6        |  |

- 4 K2 Not with K3, K10  
 5 K3 With K5: on request  
 Not with K7  
 6 K5 Not with K10  
 7 K7 Not with Q, S2, K10

- 8 K10 Max. stroke: 1,000 mm  
 Not with KP  
 9 KP Without S2: position of the clamping unit at the bearing cap  
 Not with S10, S11  
 10 S10 Max. stroke: 500 mm; additional strokes on request  
 Not with S11  
 11 S11 Max. stroke: 500 mm; additional strokes on request

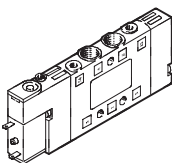
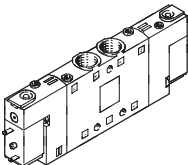
Transfer order code

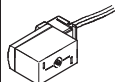
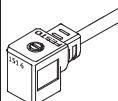
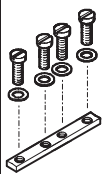
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# Standard cylinders DNC-V1 ... V6, standard hole pattern, cyl./valve combination

**FESTO**

Accessories

| Ordering data – Valves                                                            |               |                      | Technical data → Internet: cpe |          |                   |
|-----------------------------------------------------------------------------------|---------------|----------------------|--------------------------------|----------|-------------------|
|                                                                                   | For Ø<br>[mm] | Pneumatic connection | Protection class               | Part No. | Type              |
| Single solenoid                                                                   |               |                      |                                |          |                   |
|  | 32            | G1/8                 | IP65                           | 196 941  | CPE14-M1BH-5L-1/8 |
|                                                                                   | 40            |                      |                                |          |                   |
|                                                                                   | 50            | G1/4                 | IP65                           | 163 142  | CPE18-M1H-5L-1/4  |
|                                                                                   | 63            |                      |                                |          |                   |
|                                                                                   | 80            | G3/8                 | IP65                           | 163 166  | CPE24-M1H-5L-3/8  |
|                                                                                   | 100           |                      |                                |          |                   |
| Double solenoid                                                                   |               |                      |                                |          |                   |
|  | 32            | G1/8                 | IP65                           | 196 939  | CPE14-M1BH-5J-1/8 |
|                                                                                   | 40            |                      |                                |          |                   |
|                                                                                   | 50            | G1/4                 | IP65                           | 163 143  | CPE18-M1H-5J-1/4  |
|                                                                                   | 63            |                      |                                |          |                   |
|                                                                                   | 80            | G3/8                 | IP65                           | 163 167  | CPE24-M1H-5J-3/8  |
|                                                                                   | 100           |                      |                                |          |                   |

| Ordering data – Valve accessories                                                   |           |                                    |          |                   |                  |
|-------------------------------------------------------------------------------------|-----------|------------------------------------|----------|-------------------|------------------|
|                                                                                     | For valve |                                    | Part No. | Type              | PU <sup>1)</sup> |
| Technical data → Internet: quick star                                               |           |                                    |          |                   |                  |
|  | CPE14     |                                    | 153 015  | QS-1/8-8-I        | 10               |
|                                                                                     | CPE18     |                                    | 153 018  | QS-1/4-10-I       | 10               |
|                                                                                     | CPE24     |                                    | 153 020  | QS-3/8-12-I       | 10               |
| Plug socket KMYZ/KMEB                                                               |           |                                    |          |                   |                  |
| Technical data → Internet: plug socket with cable                                   |           |                                    |          |                   |                  |
|  | CPE14     | 24 V DC, with PVC cable 0.5 m      | 185 519  | KMYZ-4-24-0,5     | –                |
|                                                                                     |           | 24 V DC, with PVC cable 2.5 m      | 185 520  | KMYZ-4-24-2,5     | –                |
|  | CPE18     | 24 V DC, with PVC cable 2.5 m, LED | 151 688  | KMEB-1-24-2,5-LED | –                |
|                                                                                     | CPE24     | 24 V DC, with PVC cable 5 m, LED   | 151 689  | KMEB-1-24-5-LED   | –                |
|                                                                                     |           | 24 V DC, with PVC cable 10 m, LED  | 193 457  | KMEB-1-24-10-LED  | –                |
| Mounting kit ZVB                                                                    |           |                                    |          |                   |                  |
|  | CPE14     |                                    | 185 705  | ZVB-8-14/18       | –                |
|                                                                                     | CPE18     |                                    |          |                   |                  |
|                                                                                     | CPE24     |                                    | 187 388  | ZVB-8-24          | –                |

1) Packaging unit quantity

# Standard cylinders DNC, ISO 15552

FESTO

Accessories

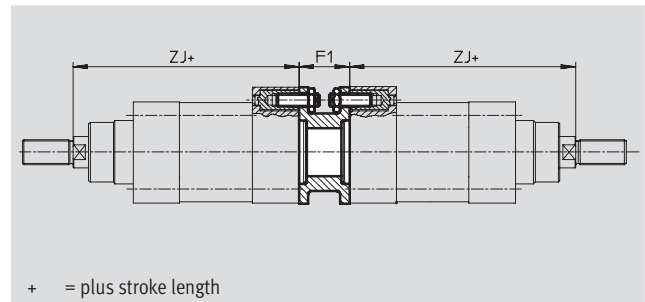
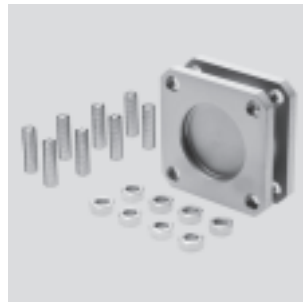
## Multi-position kit DPNC

Material:

Flange: Wrought aluminium alloy

Threaded studs, hex nuts:

Galvanised steel



| Dimensions and ordering data |    |               |     |                            |        |                  |
|------------------------------|----|---------------|-----|----------------------------|--------|------------------|
| For Ø                        | F1 | ZJ            |     | Max. overall stroke length | Weight | Part No. Type    |
| [mm]                         |    | Basic version | KP  | [mm]                       | [g]    |                  |
| 32                           | 27 | 120           | 165 | 1,000                      | 85     | 174 418 DPNC-32  |
| 40                           | 27 | 135           | 188 | 1,000                      | 115    | 174 419 DPNC-40  |
| 50                           | 32 | 143           | 210 | 1,000                      | 210    | 174 420 DPNC-50  |
| 63                           | 28 | 158           | 234 | 1,000                      | 360    | 174 421 DPNC-63  |
| 80                           | 38 | 174           | 269 | 1,000                      | 620    | 174 422 DPNC-80  |
| 100                          | 38 | 189           | 287 | 1,000                      | 1,190  | 174 423 DPNC-100 |
| 125                          | 48 | 225           | 350 | 1,000                      | 1,600  | 174 424 DPNC-125 |

### Note

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

## Connecting two cylinders with identical piston diameter as a 3 or 4-position cylinder

A 3 or 4-position cylinder consists of two separate cylinders whose piston rods advance in opposing directions.

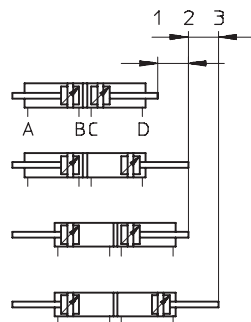
This means that depending on actuation and stroke division, this type of cylinder can assume up to four

positions. In each case the cylinder is driven precisely against a stop. Note that when one end of the piston rod is

fixed, the cylinder barrel executes the movement. The cylinder's connections must be flexible.

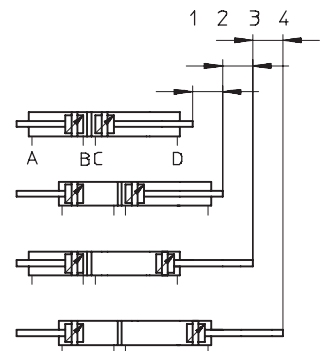
### To achieve 3 positions

Two cylinders with identical stroke length must be connected together.



### To achieve 4 positions

Two cylinders with different stroke lengths must be connected together.



# Standard cylinders DNC, ISO 15552

Accessories

FESTO

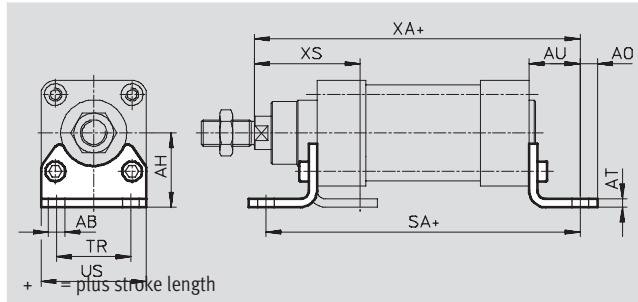
## Foot mounting HNC/CRHNC

Material:

HNC: Galvanised steel

CRHNC: High-alloy steel

Free of copper, PTFE and silicone



| Dimensions and ordering data |         |    |      |    |    |               |     |    |     |               |     |     |
|------------------------------|---------|----|------|----|----|---------------|-----|----|-----|---------------|-----|-----|
| For Ø                        | AB<br>Ø | AH | AO   | AT | AU | SA            |     | TR | US  | XA            |     | XS  |
| [mm]                         |         |    |      |    |    | Basic version | KP  |    |     | Basic version | KP  |     |
| 32                           | 7       | 32 | 6.5  | 4  | 24 | 142           | 187 | 32 | 45  | 144           | 189 | 45  |
| 40                           | 10      | 36 | 9    | 4  | 28 | 161           | 214 | 36 | 54  | 163           | 216 | 53  |
| 50                           | 10      | 45 | 9.5  | 5  | 32 | 170           | 237 | 45 | 64  | 175           | 242 | 62  |
| 63                           | 10      | 50 | 12.5 | 5  | 32 | 185           | 261 | 50 | 75  | 190           | 266 | 63  |
| 80                           | 12      | 63 | 15   | 6  | 41 | 210           | 305 | 63 | 93  | 215           | 310 | 81  |
| 100                          | 14.5    | 71 | 17.5 | 6  | 41 | 220           | 318 | 75 | 110 | 230           | 328 | 86  |
| 125                          | 16.5    | 90 | 22   | 8  | 45 | 250           | 375 | 90 | 131 | 270           | 395 | 102 |

| For Ø<br>[mm] | Basic version     |               |                |                | High corrosion protection |               |                |                  |
|---------------|-------------------|---------------|----------------|----------------|---------------------------|---------------|----------------|------------------|
|               | CRC <sup>1)</sup> | Weight<br>[g] | Part No.       | Type           | CRC <sup>1)</sup>         | Weight<br>[g] | Part No.       | Type             |
| 32            | 2                 | 135           | <b>174 369</b> | <b>HNC-32</b>  | 4                         | 135           | <b>176 937</b> | <b>CRHNC-32</b>  |
| 40            | 2                 | 180           | <b>174 370</b> | <b>HNC-40</b>  | 4                         | 180           | <b>176 938</b> | <b>CRHNC-40</b>  |
| 50            | 2                 | 325           | <b>174 371</b> | <b>HNC-50</b>  | 4                         | 325           | <b>176 939</b> | <b>CRHNC-50</b>  |
| 63            | 2                 | 405           | <b>174 372</b> | <b>HNC-63</b>  | 4                         | 405           | <b>176 940</b> | <b>CRHNC-63</b>  |
| 80            | 2                 | 820           | <b>174 373</b> | <b>HNC-80</b>  | 4                         | 820           | <b>176 941</b> | <b>CRHNC-80</b>  |
| 100           | 2                 | 1,000         | <b>174 374</b> | <b>HNC-100</b> | 4                         | 1,000         | <b>176 942</b> | <b>CRHNC-100</b> |
| 125           | 2                 | 1,840         | <b>174 375</b> | <b>HNC-125</b> | 4                         | 1,840         | <b>176 943</b> | <b>CRHNC-125</b> |

1) Corrosion resistance class 2 as per Festo standard 940 070

Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Corrosion resistance class 4 as per Festo standard 940 070

Components requiring higher corrosion resistance. Parts used with aggressive media, e.g. food or chemical industry. These applications should be supported with special tests with the media if required.

# Standard cylinders DNC, ISO 15552

FESTO

Accessories

## Flange mounting FNC/CRFNG

Material:

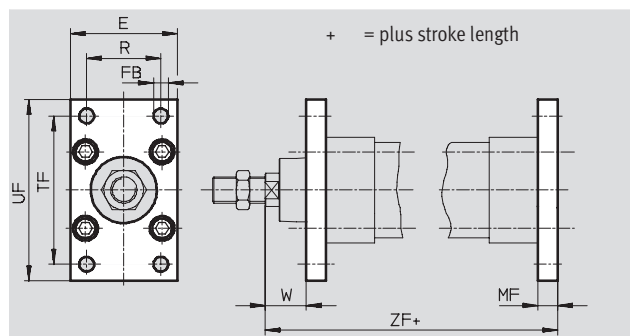
FNC: Galvanised steel

CRFNG: High-alloy steel

Free of copper, PTFE and silicone

Cannot be used on the bearing cap in combination with the bellows kit

DADB



| Dimensions and ordering data |     |          |    |    |     |     |    |               |     |
|------------------------------|-----|----------|----|----|-----|-----|----|---------------|-----|
| For Ø                        | E   | FB       | MF | R  | TF  | UF  | W  | ZF            |     |
| [mm]                         |     | Ø<br>H13 |    |    |     |     |    | Basic version | KP  |
| 32                           | 45  | 7        | 10 | 32 | 64  | 80  | 16 | 130           | 175 |
| 40                           | 54  | 9        | 10 | 36 | 72  | 90  | 20 | 145           | 198 |
| 50                           | 65  | 9        | 12 | 45 | 90  | 110 | 25 | 155           | 222 |
| 63                           | 75  | 9        | 12 | 50 | 100 | 120 | 25 | 170           | 246 |
| 80                           | 93  | 12       | 16 | 63 | 126 | 150 | 30 | 190           | 285 |
| 100                          | 110 | 14       | 16 | 75 | 150 | 175 | 35 | 205           | 303 |
| 125                          | 132 | 16       | 20 | 90 | 180 | 210 | 45 | 245           | 370 |

| For Ø | Basic version     |        |                |                | High corrosion protection |        |                |                  |
|-------|-------------------|--------|----------------|----------------|---------------------------|--------|----------------|------------------|
|       | CRC <sup>1)</sup> | Weight | Part No.       | Type           | CRC <sup>1)</sup>         | Weight | Part No.       | Type             |
| [mm]  |                   | [g]    |                |                |                           | [g]    |                |                  |
| 32    | 2                 | 240    | <b>174 376</b> | <b>FNC-32</b>  | 4                         | 240    | <b>161 846</b> | <b>CRFNG-32</b>  |
| 40    | 2                 | 280    | <b>174 377</b> | <b>FNC-40</b>  | 4                         | 300    | <b>161 847</b> | <b>CRFNG-40</b>  |
| 50    | 2                 | 520    | <b>174 378</b> | <b>FNC-50</b>  | 4                         | 550    | <b>161 848</b> | <b>CRFNG-50</b>  |
| 63    | 2                 | 690    | <b>174 379</b> | <b>FNC-63</b>  | 4                         | 710    | <b>161 849</b> | <b>CRFNG-63</b>  |
| 80    | 2                 | 1,650  | <b>174 380</b> | <b>FNC-80</b>  | 4                         | 1,680  | <b>161 850</b> | <b>CRFNG-80</b>  |
| 100   | 2                 | 2,400  | <b>174 381</b> | <b>FNC-100</b> | 4                         | 2,450  | <b>161 851</b> | <b>CRFNG-100</b> |
| 125   | 2                 | 3,750  | <b>174 382</b> | <b>FNC-125</b> | 4                         | 3,660  | <b>185 363</b> | <b>CRFNG-125</b> |

1) Corrosion resistance class 2 as per Festo standard 940 070

Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Corrosion resistance class 4 as per Festo standard 940 070

Components requiring higher corrosion resistance. Parts used with aggressive media, e.g. food or chemical industry. These applications should be supported with special tests with the media if required.

# Standard cylinders DNC, ISO 15552

Accessories

**FESTO**

## Trunnion flange ZNCF/CRZNG

Material:

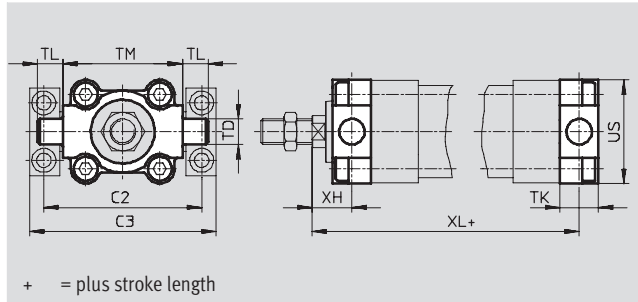
ZNCF: Special steel casting

CRZNG: Electrolytically polished special steel casting

Free of copper, PTFE and silicone

Cannot be used on the bearing cap in combination with the bellows kit

DADB



| Dimensions and ordering data |     |     |               |    |    |     |     |    |               |     |
|------------------------------|-----|-----|---------------|----|----|-----|-----|----|---------------|-----|
| For Ø                        | C2  | C3  | TD<br>Ø<br>e9 | TK | TL | TM  | US  | XH | XL            |     |
| [mm]                         |     |     |               |    |    |     |     |    | Basic version | KP  |
| 32                           | 71  | 86  | 12            | 16 | 12 | 50  | 45  | 18 | 128           | 173 |
| 40                           | 87  | 105 | 16            | 20 | 16 | 63  | 54  | 20 | 145           | 198 |
| 50                           | 99  | 117 | 16            | 24 | 16 | 75  | 64  | 25 | 155           | 222 |
| 63                           | 116 | 136 | 20            | 24 | 20 | 90  | 75  | 25 | 170           | 246 |
| 80                           | 136 | 156 | 20            | 28 | 20 | 110 | 93  | 32 | 188           | 283 |
| 100                          | 164 | 189 | 25            | 38 | 25 | 132 | 110 | 32 | 208           | 306 |
| 125                          | 192 | 217 | 25            | 50 | 25 | 160 | 131 | 40 | 250           | 375 |

| For Ø<br>[mm] | Basic version     |               |                         | High corrosion protection |               |                          |  |
|---------------|-------------------|---------------|-------------------------|---------------------------|---------------|--------------------------|--|
|               | CRC <sup>1)</sup> | Weight<br>[g] | Part No. Type           | CRC <sup>1)</sup>         | Weight<br>[g] | Part No. Type            |  |
| 32            | 2                 | 130           | <b>174 411 ZNCF-32</b>  | 4                         | 150           | <b>161 852 CRZNG-32</b>  |  |
| 40            | 2                 | 240           | <b>174 412 ZNCF-40</b>  | 4                         | 260           | <b>161 853 CRZNG-40</b>  |  |
| 50            | 2                 | 390           | <b>174 413 ZNCF-50</b>  | 4                         | 430           | <b>161 854 CRZNG-50</b>  |  |
| 63            | 2                 | 600           | <b>174 414 ZNCF-63</b>  | 4                         | 640           | <b>161 855 CRZNG-63</b>  |  |
| 80            | 2                 | 1,150         | <b>174 415 ZNCF-80</b>  | 4                         | 1,300         | <b>161 856 CRZNG-80</b>  |  |
| 100           | 2                 | 2,030         | <b>174 416 ZNCF-100</b> | 4                         | 2,400         | <b>161 857 CRZNG-100</b> |  |
| 125           | 2                 | 3,490         | <b>174 417 ZNCF-125</b> | 4                         | 3,600         | <b>185 362 CRZNG-125</b> |  |

1) Corrosion resistance class 2 as per Festo standard 940 070

Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Corrosion resistance class 4 as per Festo standard 940 070

Components requiring higher corrosion resistance. Parts used with aggressive media, e.g. food or chemical industry. These applications should be supported with special tests with the media if required.

# Standard cylinders DNC, ISO 15552

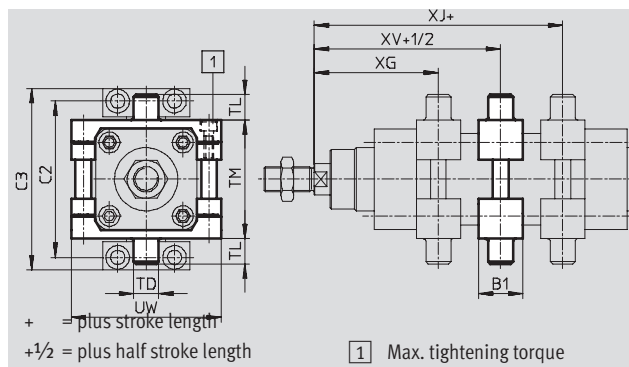
Accessories

**FESTO**

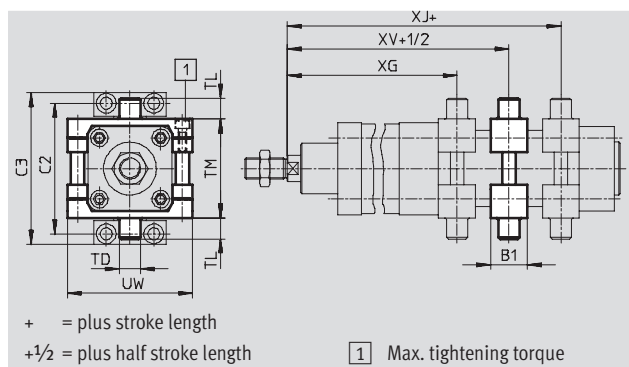
## Trunnion mounting kit ZNCM for basic version DNC

The mounting kit can be attached at any position along the profile barrel of a cylinder.

Material:  
Tempered steel



for DNC-KP



| Dimensions and ordering data |    |     |     |               |    |     |     |               |       |
|------------------------------|----|-----|-----|---------------|----|-----|-----|---------------|-------|
| For Ø                        | B1 | C2  | C3  | TD<br>Ø<br>e9 | TL | TM  | UW  | XG            |       |
| [mm]                         |    |     |     |               |    |     |     | Basic version | KP    |
| 32                           | 30 | 71  | 86  | 12            | 12 | 50  | 65  | 66.1          | 111.1 |
| 40                           | 32 | 87  | 105 | 16            | 16 | 63  | 75  | 75.6          | 128.6 |
| 50                           | 34 | 99  | 117 | 16            | 16 | 75  | 95  | 83.6          | 150.6 |
| 63                           | 41 | 116 | 136 | 20            | 20 | 90  | 105 | 93.1          | 169.1 |
| 80                           | 44 | 136 | 156 | 20            | 20 | 110 | 130 | 103.9         | 198.9 |
| 100                          | 48 | 164 | 189 | 25            | 25 | 132 | 145 | 113.8         | 211.8 |
| 125                          | 50 | 192 | 217 | 25            | 25 | 160 | 175 | 134.7         | 259.7 |

| For Ø | XJ    |       | XV   |       | Max. tightening torque | CRC <sup>1)</sup> | Weight | Part No. | Type     |
|-------|-------|-------|------|-------|------------------------|-------------------|--------|----------|----------|
| [mm]  |       | KP    |      | KP    | [Nm]                   |                   | [g]    |          |          |
| 32    | 79.9  | 124.9 | 73   | 118   | 4+1                    | 2                 | 210    | 163 525  | ZNCM-32  |
| 40    | 89.4  | 142.4 | 82.5 | 135.5 | 8+1                    | 2                 | 385    | 163 526  | ZNCM-40  |
| 50    | 96.4  | 163.4 | 90   | 157   | 8+2                    | 2                 | 595    | 163 527  | ZNCM-50  |
| 63    | 101.9 | 177.9 | 97.5 | 173.5 | 18+2                   | 2                 | 890    | 163 528  | ZNCM-63  |
| 80    | 116.1 | 211.1 | 110  | 205   | 28+2                   | 2                 | 1,450  | 163 529  | ZNCM-80  |
| 100   | 126.2 | 224.2 | 120  | 218   | 28+2                   | 2                 | 2,045  | 163 530  | ZNCM-100 |
| 125   | 155.3 | 280.3 | 145  | 270   | 40+2                   | 2                 | 2,940  | 163 531  | ZNCM-125 |

1) Corrosion resistance class 2 as per Festo standard 940 070

Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

# Standard cylinders DNC, ISO 15552

Accessories

**FESTO**

## Trunnion support LNZG

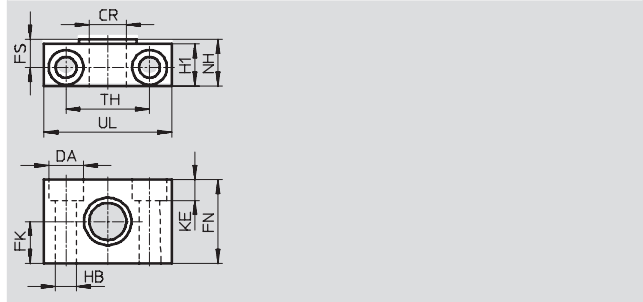
Material:

Trunnion support:

Anodised aluminium

Plain bearing: Polymer

Free of copper, PTFE and silicone



| Dimensions and ordering data |    |    |    |    |      |      |     |     |      |      |    |                   |        |                            |
|------------------------------|----|----|----|----|------|------|-----|-----|------|------|----|-------------------|--------|----------------------------|
| For Ø                        | CR | DA | FK | FN | FS   | H1   | HB  | KE  | NH   | TH   | UL | CRC <sup>1)</sup> | Weight | Part No. Type              |
| [mm]                         | Ø  | Ø  | Ø  |    |      |      | Ø   |     |      | ±0.2 |    |                   | [g]    |                            |
| 32                           | 12 | 11 | 15 | 30 | 10.5 | 15   | 6.6 | 6.8 | 18   | 32   | 46 | 2                 | 125    | <b>32 959 LNZG-32</b>      |
| 40, 50                       | 16 | 15 | 18 | 36 | 12   | 18   | 9   | 9   | 21   | 36   | 55 | 2                 | 400    | <b>32 960 LNZG-40/50</b>   |
| 63, 80                       | 20 | 18 | 20 | 40 | 13   | 20   | 11  | 11  | 23   | 42   | 65 | 2                 | 480    | <b>32 961 LNZG-63/80</b>   |
| 100, 125                     | 25 | 20 | 25 | 50 | 16   | 24.5 | 14  | 13  | 28.5 | 50   | 75 | 2                 | 960    | <b>32 962 LNZG-100/125</b> |

1) Corrosion resistance class 2 as per Festo standard 940 070

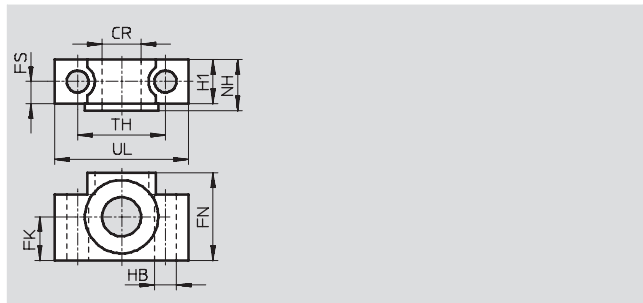
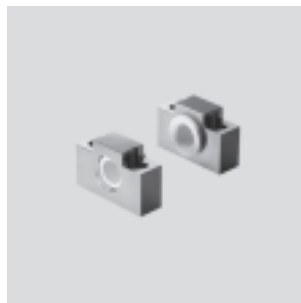
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

## Trunnion support CRLNZG

Material:

High-alloy steel

Free of copper, PTFE and silicone



| Dimensions and ordering data |         |         |    |      |      |         |      |      |    |                   |        |          |              |
|------------------------------|---------|---------|----|------|------|---------|------|------|----|-------------------|--------|----------|--------------|
| For Ø                        | CR<br>Ø | FK<br>Ø | FN | FS   | H1   | HB<br>Ø | NH   | TH   | UL | CRC <sup>1)</sup> | Weight | Part No. | Type         |
| [mm]                         | D11     | ±0.1    |    |      |      | H13     |      | ±0.2 |    |                   | [g]    |          |              |
| 32                           | 12      | 15      | 30 | 10.5 | 15   | 6.6     | 18   | 32   | 46 | 4                 | 200    | 161 874  | CRLNZG-32    |
| 40, 50                       | 16      | 18      | 36 | 12   | 18   | 9       | 21   | 36   | 55 | 4                 | 330    | 161 875  | CRLNZG-40/50 |
| 63, 80                       | 20      | 20      | 40 | 13   | 20   | 11      | 23   | 42   | 65 | 4                 | 440    | 161 876  | CRLNZG-63/80 |
| 100, 125                     | 25      | 25      | 50 | 16   | 24.5 | 14      | 28.5 | 50   | 75 | 4                 | 740    | 161 877  | CRLNZG-100   |

1) Corrosion resistance class 4 as per Festo standard 940 070

Components requiring higher corrosion resistance. Parts used with aggressive media, e.g. food or chemical industry. These applications should be supported with special tests with the media if required.

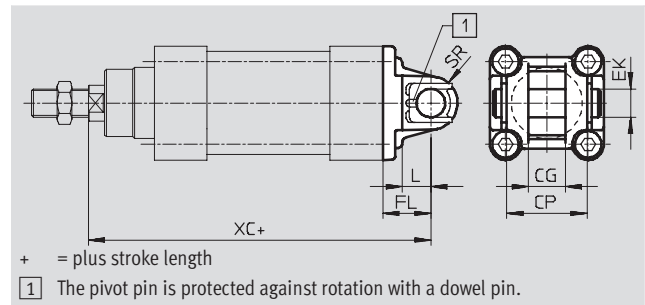
# Standard cylinders DNC, ISO 15552

Accessories

**FESTO**

## Swivel flange SNC

Material:  
Die-cast aluminium



| Dimensions and ordering data |     |     |         |            |    |    |     |     |                   |        |                        |
|------------------------------|-----|-----|---------|------------|----|----|-----|-----|-------------------|--------|------------------------|
| For Ø                        | CG  | CP  | EK<br>Ø | FL<br>±0.2 | L  | SR | XC  |     | CRC <sup>1)</sup> | Weight | Part No. Type          |
| [mm]                         | H14 | h14 | H9      |            |    |    |     | KP  |                   | [g]    |                        |
| 32                           | 14  | 34  | 10      | 22         | 13 | 10 | 142 | 187 | 2                 | 90     | <b>174 383 SNC-32</b>  |
| 40                           | 16  | 40  | 12      | 25         | 16 | 12 | 160 | 213 | 2                 | 120    | <b>174 384 SNC-40</b>  |
| 50                           | 21  | 45  | 16      | 27         | 16 | 12 | 170 | 237 | 2                 | 240    | <b>174 385 SNC-50</b>  |
| 63                           | 21  | 51  | 16      | 32         | 21 | 16 | 190 | 266 | 2                 | 320    | <b>174 386 SNC-63</b>  |
| 80                           | 25  | 65  | 20      | 36         | 22 | 16 | 210 | 305 | 2                 | 625    | <b>174 387 SNC-80</b>  |
| 100                          | 25  | 75  | 20      | 41         | 27 | 20 | 230 | 328 | 2                 | 830    | <b>174 388 SNC-100</b> |
| 125                          | 37  | 97  | 30      | 50         | 30 | 25 | 275 | 400 | 2                 | 1,785  | <b>174 389 SNC-125</b> |

- 1) Corrosion resistance class 2 as per Festo standard 940 070  
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

# Standard cylinders DNC, ISO 15552

Accessories

FESTO

## Swivel flange

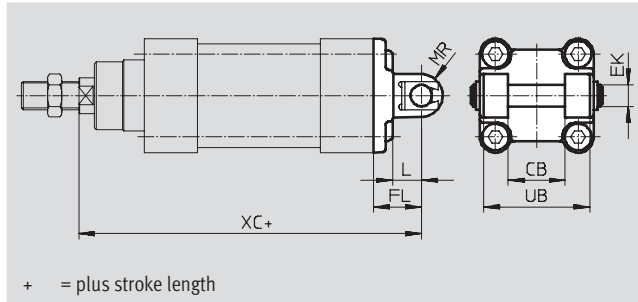
SNCB/SNCB-...-R3

Material:

SNCB: Die-cast aluminium

SNCB-...-R3: Die-cast aluminium with protective coating, high corrosion protection

Free of copper, PTFE and silicone



| Dimensions and ordering data |     |         |      |    |     |     |     |     |
|------------------------------|-----|---------|------|----|-----|-----|-----|-----|
| For Ø                        | CB  | EK      | FL   | L  | MR  | UB  | XC  |     |
| [mm]                         | H14 | Ø<br>e8 | ±0.2 |    |     | h14 |     | KP  |
| 32                           | 26  | 10      | 22   | 13 | 8.5 | 45  | 142 | 187 |
| 40                           | 28  | 12      | 25   | 16 | 12  | 52  | 160 | 213 |
| 50                           | 32  | 12      | 27   | 16 | 12  | 60  | 170 | 237 |
| 63                           | 40  | 16      | 32   | 21 | 16  | 70  | 190 | 266 |
| 80                           | 50  | 16      | 36   | 22 | 16  | 90  | 210 | 305 |
| 100                          | 60  | 20      | 41   | 27 | 20  | 110 | 230 | 328 |
| 125                          | 70  | 25      | 50   | 30 | 25  | 130 | 275 | 400 |

| For Ø | Basic version     |        |          |          | Variant R3 – High corrosion protection |        |          |             |
|-------|-------------------|--------|----------|----------|----------------------------------------|--------|----------|-------------|
|       | CRC <sup>1)</sup> | Weight | Part No. | Type     | CRC <sup>1)</sup>                      | Weight | Part No. | Type        |
| [mm]  |                   | [g]    |          |          |                                        | [g]    |          |             |
| 32    | 2                 | 100    | 174 390  | SNCB-32  | 3                                      | 100    | 176 944  | SNCB-32-R3  |
| 40    | 2                 | 150    | 174 391  | SNCB-40  | 3                                      | 150    | 176 945  | SNCB-40-R3  |
| 50    | 2                 | 225    | 174 392  | SNCB-50  | 3                                      | 225    | 176 946  | SNCB-50-R3  |
| 63    | 2                 | 365    | 174 393  | SNCB-63  | 3                                      | 365    | 176 947  | SNCB-63-R3  |
| 80    | 2                 | 610    | 174 394  | SNCB-80  | 3                                      | 610    | 176 948  | SNCB-80-R3  |
| 100   | 2                 | 925    | 174 395  | SNCB-100 | 3                                      | 925    | 176 949  | SNCB-100-R3 |
| 125   | 2                 | 1,785  | 174 396  | SNCB-125 | 3                                      | 1,785  | 176 950  | SNCB-125-R3 |

1) Corrosion resistance class 2 as per Festo standard 940 070

Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Corrosion resistance class 3 as per Festo standard 940 070

Components requiring higher corrosion resistance. External visible parts in direct contact with industrial atmospheres or media such as solvents and cleaning agents, with a predominantly functional requirement for the surface.

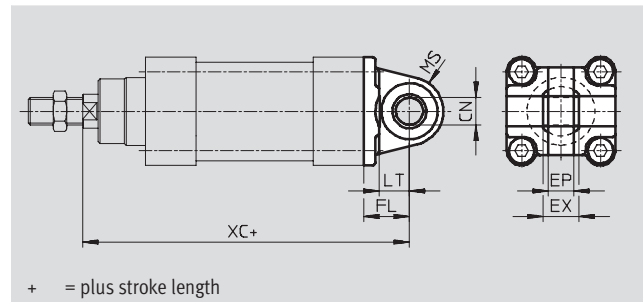
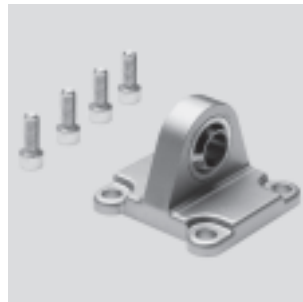
# Standard cylinders DNC, ISO 15552

Accessories

**FESTO**

## Swivel flange SNCS

Material:  
Die-cast aluminium

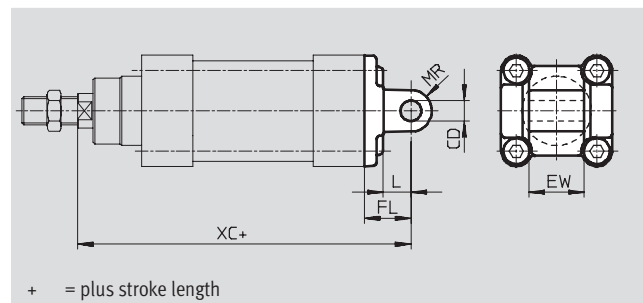
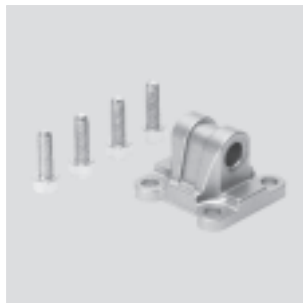


| Dimensions and ordering data |         |      |    |      |    |    |     |     |                   |        |                         |
|------------------------------|---------|------|----|------|----|----|-----|-----|-------------------|--------|-------------------------|
| For Ø                        | CN      | EP   | EX | FL   | LT | MS | XC  |     | CRC <sup>1)</sup> | Weight | Part No. Type           |
| [mm]                         | Ø<br>H7 | ±0.2 |    | ±0.2 |    |    |     | KP  |                   | [g]    |                         |
| 32                           | 10      | 10.5 | 14 | 22   | 13 | 15 | 142 | 187 | 2                 | 85     | <b>174 397 SNCS-32</b>  |
| 40                           | 12      | 12   | 16 | 25   | 16 | 17 | 160 | 213 | 2                 | 125    | <b>174 398 SNCS-40</b>  |
| 50                           | 16      | 15   | 21 | 27   | 16 | 20 | 170 | 237 | 2                 | 210    | <b>174 399 SNCS-50</b>  |
| 63                           | 16      | 15   | 21 | 32   | 21 | 22 | 190 | 266 | 2                 | 280    | <b>174 400 SNCS-63</b>  |
| 80                           | 20      | 18   | 25 | 36   | 22 | 27 | 210 | 305 | 2                 | 540    | <b>174 401 SNCS-80</b>  |
| 100                          | 20      | 18   | 25 | 41   | 27 | 29 | 230 | 328 | 2                 | 700    | <b>174 402 SNCS-100</b> |
| 125                          | 30      | 25   | 37 | 50   | 30 | 39 | 275 | 400 | 2                 | 1,410  | <b>174 403 SNCS-125</b> |

1) Corrosion resistance class 2 as per Festo standard 940 070  
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

## Swivel flange SNCL

Material:  
Die-cast aluminium  
Free of copper, PTFE and silicone



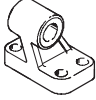
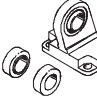
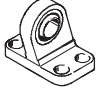
| Dimensions and ordering data |         |           |      |    |    |     |     |                   |        |          |          |
|------------------------------|---------|-----------|------|----|----|-----|-----|-------------------|--------|----------|----------|
| For Ø                        | CD<br>Ø | EW        | FL   | L  | MR | XC  |     | CRC <sup>1)</sup> | Weight | Part No. | Type     |
| [mm]                         | H9      | -0.2/-0.6 | ±0.2 |    |    |     | KP  |                   | [g]    |          |          |
| 32                           | 10      | 26        | 22   | 13 | 10 | 142 | 187 | 2                 | 75     | 174 404  | SNCL-32  |
| 40                           | 12      | 28        | 25   | 16 | 12 | 160 | 213 | 2                 | 100    | 174 405  | SNCL-40  |
| 50                           | 12      | 32        | 27   | 16 | 12 | 170 | 237 | 2                 | 160    | 174 406  | SNCL-50  |
| 63                           | 16      | 40        | 32   | 21 | 16 | 190 | 266 | 2                 | 250    | 174 407  | SNCL-63  |
| 80                           | 16      | 50        | 36   | 22 | 16 | 210 | 305 | 2                 | 405    | 174 408  | SNCL-80  |
| 100                          | 20      | 60        | 41   | 27 | 20 | 230 | 328 | 2                 | 655    | 174 409  | SNCL-100 |
| 125                          | 25      | 70        | 50   | 30 | 20 | 275 | 400 | 2                 | 1,245  | 174 410  | SNCL-125 |

1) Corrosion resistance class 2 as per Festo standard 940 070  
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

# Standard cylinders DNC, ISO 15552

Accessories

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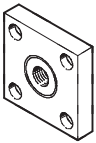
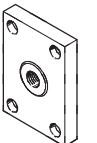
| Ordering data – Mounting attachments                                               |       |          |          | Technical data → Internet: clevis foot                                             |       |          |           |
|------------------------------------------------------------------------------------|-------|----------|----------|------------------------------------------------------------------------------------|-------|----------|-----------|
| Designation                                                                        | For Ø | Part No. | Type     | Designation                                                                        | For Ø | Part No. | Type      |
| <b>Clevis foot LNG</b>                                                             |       |          |          | <b>Clevis foot LSN</b>                                                             |       |          |           |
|   | 32    | 33 890   | LNG-32   |   | 32    | 5 561    | LSN-32    |
|                                                                                    | 40    | 33 891   | LNG-40   |                                                                                    | 40    | 5 562    | LSN-40    |
|                                                                                    | 50    | 33 892   | LNG-50   |                                                                                    | 50    | 5 563    | LSN-50    |
|                                                                                    | 63    | 33 893   | LNG-63   |                                                                                    | 63    | 5 564    | LSN-63    |
|                                                                                    | 80    | 33 894   | LNG-80   |                                                                                    | 80    | 5 565    | LSN-80    |
|                                                                                    | 100   | 33 895   | LNG-100  |                                                                                    | 100   | 5 566    | LSN-100   |
|                                                                                    | 125   | 33 896   | LNG-125  |                                                                                    | 125   | 6 987    | LSN-125   |
| <b>Clevis foot LSNG</b>                                                            |       |          |          | <b>Clevis foot for welding LSNSG</b>                                               |       |          |           |
|   | 32    | 31 740   | LSNG-32  |   | 32    | 31 747   | LSNSG-32  |
|                                                                                    | 40    | 31 741   | LSNG-40  |                                                                                    | 40    | 31 748   | LSNSG-40  |
|                                                                                    | 50    | 31 742   | LSNG-50  |                                                                                    | 50    | 31 749   | LSNSG-50  |
|                                                                                    | 63    | 31 743   | LSNG-63  |                                                                                    | 63    | 31 750   | LSNSG-63  |
|                                                                                    | 80    | 31 744   | LSNG-80  |                                                                                    | 80    | 31 751   | LSNSG-80  |
|                                                                                    | 100   | 31 745   | LSNG-100 |                                                                                    | 100   | 31 752   | LSNSG-100 |
|                                                                                    | 125   | 31 746   | LSNG-125 |                                                                                    | 125   | 31 753   | LSNSG-125 |
| <b>Clevis foot LBG</b>                                                             |       |          |          | <b>Right-angle clevis foot LQG</b>                                                 |       |          |           |
|  | 32    | 31 761   | LBG-32   |  | 32    | 31 768   | LQG-32    |
|                                                                                    | 40    | 31 762   | LBG-40   |                                                                                    | 40    | 31 769   | LQG-40    |
|                                                                                    | 50    | 31 763   | LBG-50   |                                                                                    | 50    | 31 770   | LQG-50    |
|                                                                                    | 63    | 31 764   | LBG-63   |                                                                                    | 63    | 31 771   | LQG-63    |
|                                                                                    | 80    | 31 765   | LBG-80   |                                                                                    | 80    | 31 772   | LQG-80    |
|                                                                                    | 100   | 31 766   | LBG-100  |                                                                                    | 100   | 31 773   | LQG-100   |
|                                                                                    | 125   | 31 767   | LBG-125  |                                                                                    | 125   | 31 774   | LQG-125   |

| Ordering data – Mounting attachments, corrosion-resistant                           |       |          |           | Technical data → Internet: crlng |       |          |      |
|-------------------------------------------------------------------------------------|-------|----------|-----------|----------------------------------|-------|----------|------|
| Designation                                                                         | For Ø | Part No. | Type      | Designation                      | For Ø | Part No. | Type |
| <b>Clevis foot CRLNG</b>                                                            |       |          |           |                                  |       |          |      |
|  | 32    | 161 840  | CRLNG-32  |                                  |       |          |      |
|                                                                                     | 40    | 161 841  | CRLNG-40  |                                  |       |          |      |
|                                                                                     | 50    | 161 842  | CRLNG-50  |                                  |       |          |      |
|                                                                                     | 63    | 161 843  | CRLNG-63  |                                  |       |          |      |
|                                                                                     | 80    | 161 844  | CRLNG-80  |                                  |       |          |      |
|                                                                                     | 100   | 161 845  | CRLNG-100 |                                  |       |          |      |
|                                                                                     | 125   | 176 951  | CRLNG-125 |                                  |       |          |      |

# Standard cylinders DNC, ISO 15552

Accessories

**FESTO**

| Ordering data – Piston rod attachments                                              |       |          |                 | Technical data → Internet: piston rod attachment                                   |       |          |              |
|-------------------------------------------------------------------------------------|-------|----------|-----------------|------------------------------------------------------------------------------------|-------|----------|--------------|
| Designation                                                                         | For Ø | Part No. | Type            | Designation                                                                        | For Ø | Part No. | Type         |
| <b>Rod eye SGS</b>                                                                  |       |          |                 | <b>Rod clevis SGA</b>                                                              |       |          |              |
|    | 32    | 9 261    | SGS-M10x1,25    |   | 32    | 32 954   | SGA-M10x1,25 |
|                                                                                     | 40    | 9 262    | SGS-M12x1,25    |                                                                                    | 40    | 10 767   | SGA-M12x1,25 |
|                                                                                     | 50    | 9 263    | SGS-M16x1,5     |                                                                                    | 50    | 10 768   | SGA-M16x1,5  |
|                                                                                     | 63    |          |                 |                                                                                    | 63    |          |              |
|                                                                                     | 80    | 9 264    | SGS-M20x1,5     |                                                                                    | 80    | 10 769   | SGA-M20x1,5  |
|                                                                                     | 100   |          |                 |                                                                                    | 100   |          |              |
|                                                                                     | 125   | 10 774   | SGS-M27x2       |                                                                                    | 125   | 10 770   | SGA-M27x2    |
| <b>Rod clevis SG</b>                                                                |       |          |                 | <b>Self-aligning rod coupler FK</b>                                                |       |          |              |
|    | 32    | 6 144    | SG-M10x1,25     |   | 32    | 6 140    | FK-M10x1,25  |
|                                                                                     | 40    | 6 145    | SG-M12x1,25     |                                                                                    | 40    | 6 141    | FK-M12x1,25  |
|                                                                                     | 50    | 6 146    | SG-M16x1,5      |                                                                                    | 50    | 6 142    | FK-M16x1,5   |
|                                                                                     | 63    |          |                 |                                                                                    | 63    |          |              |
|                                                                                     | 80    | 6 147    | SG-M20x1,5      |                                                                                    | 80    | 6 143    | FK-M20x1,5   |
|                                                                                     | 100   |          |                 |                                                                                    | 100   |          |              |
|                                                                                     | 125   | 14 987   | SG-M27x2-B      |                                                                                    | 125   | 10 485   | FK-M27x2     |
| <b>Coupling piece KSG</b>                                                           |       |          |                 | <b>Coupling piece KSZ</b>                                                          |       |          |              |
|   | 32    | 32 963   | KSG-M10x1,25    |  | 32    | 36 125   | KSZ-M10x1,25 |
|                                                                                     | 40    | 32 964   | KSG-M12x1,25    |                                                                                    | 40    | 36 126   | KSZ-M12x1,25 |
|                                                                                     | 50    | 32 965   | KSG-M16x1,5     |                                                                                    | 50    | 36 127   | KSZ-M16x1,5  |
|                                                                                     | 63    |          |                 |                                                                                    | 63    |          |              |
|                                                                                     | 80    | 32 966   | KSG-M20x1,5     |                                                                                    | 80    | 36 128   | KSZ-M20x1,5  |
|                                                                                     | 100   |          |                 |                                                                                    | 100   |          |              |
|                                                                                     | 125   | 32 967   | KSG-M27x2       |                                                                                    | 125   | –        | –            |
| <b>Adapter AD</b>                                                                   |       |          |                 |                                                                                    |       |          |              |
|  | 32    | 157 333  | AD-M10x1,25-1/8 |                                                                                    |       |          |              |
|                                                                                     |       | 157 334  | AD-M10x1,25-1/4 |                                                                                    |       |          |              |
|                                                                                     | 40    | 160 256  | AD-M12x1,25-1/4 |                                                                                    |       |          |              |
|                                                                                     |       | 160 257  | AD-M12x1,25-3/8 |                                                                                    |       |          |              |

| Ordering data – Piston rod attachments, corrosion-resistant                         |       |          |                | Technical data → Internet: crsg                                                     |       |          |               |
|-------------------------------------------------------------------------------------|-------|----------|----------------|-------------------------------------------------------------------------------------|-------|----------|---------------|
| Designation                                                                         | For Ø | Part No. | Type           | Designation                                                                         | For Ø | Part No. | Type          |
| <b>Rod eye CRS GS</b>                                                               |       |          |                | <b>Rod clevis CRS G</b>                                                             |       |          |               |
|  | 32    | 195 582  | CRSGS-M10x1,25 |  | 32    | 13 569   | CRSG-M10x1,25 |
|                                                                                     | 40    | 195 583  | CRSGS-M12x1,25 |                                                                                     | 40    | 13 570   | CRSG-M12x1,25 |
|                                                                                     | 50    | 195 584  | CRSGS-M16x1,5  |                                                                                     | 50    | 13 571   | CRSG-M16x1,5  |
|                                                                                     | 63    |          |                |                                                                                     | 63    |          |               |
|                                                                                     | 80    | 195 585  | CRSGS-M20x1,5  |                                                                                     | 80    | 13 572   | CRSG-M20x1,5  |
|                                                                                     | 100   |          |                |                                                                                     | 100   |          |               |
|                                                                                     | 125   | 195 586  | CRSGS-M27x2    |                                                                                     | 125   | 185 361  | CRSG-M27x2    |

## Standard cylinders DNC, ISO 15552

Accessories

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### Bellows kit DADB



| General technical data                       |      |                                                               |            |            |            |            |            |
|----------------------------------------------|------|---------------------------------------------------------------|------------|------------|------------|------------|------------|
| Type DADB-V6-                                |      | 32                                                            | 40         | 50         | 63         | 80         | 100        |
| Max. cylinder stroke range <sup>1)</sup>     | [mm] | 10 ... 500                                                    | 10 ... 500 | 10 ... 500 | 10 ... 500 | 10 ... 500 | 10 ... 500 |
| Type of mounting                             |      | Via threaded pin                                              |            |            |            |            |            |
| Mounting position                            |      | Any                                                           |            |            |            |            |            |
| Resistance to media                          |      | Dust, chips, oil, grease, fuel (➔ Internet: media resistance) |            |            |            |            |            |
| Ambient temperature <sup>2)</sup>            | [°C] | -10 ... +80                                                   |            |            |            |            |            |
| Protection class                             |      | IP54                                                          |            |            |            |            |            |
| Corrosion resistance class CRC <sup>3)</sup> |      | 3                                                             |            |            |            |            |            |

1) In combination with the bellows kit DADB

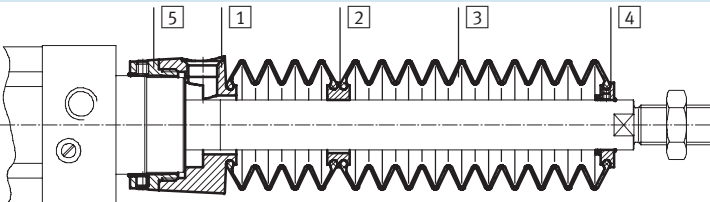
2) Note operating range of proximity sensors and cylinder

Corrosion resistance class 3 as per Festo standard 940 070

Components with heavy corrosion exposure. Externally visible components in direct contact with normal industrial atmosphere or media such as solvents and cleaning agents, where the surface requirement is predominantly functional.

### Materials

#### Sectional view



| Bellows           |                    |                         |
|-------------------|--------------------|-------------------------|
| 1                 | Connection         | Polyamide               |
| 2                 | Intermediate piece | Polyamide               |
| 3                 | Bellows            | Nitrile rubber          |
| 4                 | End piece          | Polyamide               |
| 5                 | Connector          | Polyamide               |
| -                 | O-ring             | Nitrile rubber          |
| Note on materials |                    | Free of copper and PTFE |
|                   |                    | RoHS-compliant          |

| Weight [g]                   |     |     |     |     |     |     |
|------------------------------|-----|-----|-----|-----|-----|-----|
| Type DADB-V6-<br>Stroke [mm] | 32  | 40  | 50  | 63  | 80  | 100 |
| 10 ... 50                    | 29  | 42  | 71  | 69  | 99  | 124 |
| 51 ... 125                   | 41  | 56  | 91  | 89  | 127 | 152 |
| 126 ... 175                  | 52  | 68  | 105 | 103 | 140 | 165 |
| 176 ... 250                  | 66  | 85  | 129 | 127 | 193 | 218 |
| 251 ... 300                  | 79  | 100 | 147 | 145 | 231 | 255 |
| 301 ... 350                  | 92  | 115 | 166 | 164 | 268 | 293 |
| 351 ... 375                  | 92  | 115 | 167 | 165 | 259 | 284 |
| 376 ... 425                  | 104 | 129 | 185 | 183 | 296 | 321 |
| 426 ... 475                  | 117 | 144 | 204 | 202 | 334 | 359 |
| 476 ... 500                  | 117 | 144 | 205 | 203 | 324 | 349 |

## Standard cylinders DNC, ISO 15552

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### Travel velocity $v$ as a function of tubing length $l$



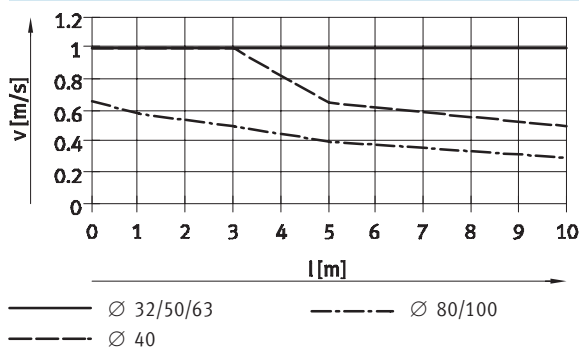
The bellows kit is a leak-free system. To prevent unwanted media being drawn in, the supply and exhaust air must be ducted via a venting hole in

the connection part **1**.

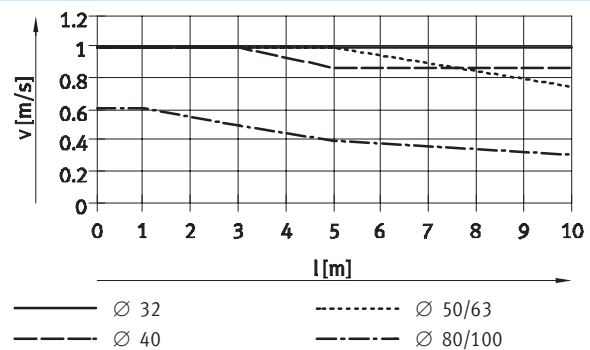
The pressure generated in the bellows kit by the positioning motion is primarily defined by travel velocity

and tubing length. The recommended tubing length based on the travel velocity of the drive can be read from the graph.

#### Advancing



#### Returning



#### Note

The push-in fittings opposite must be used for the venting hole. Silencers can also be used as an alternative. This reduces the travel velocity slightly.

#### Tubing size and push-in fitting for venting hole

| Ø<br>[mm]       | Tubing O.D.<br>[mm] | Push-in fitting |                           |
|-----------------|---------------------|-----------------|---------------------------|
|                 |                     | Part No.        | Type                      |
| 32, 40          | 8                   | 186 109         | QS-G $\frac{1}{8}$ -8-I   |
|                 |                     | 533 929         | QS-F-G $\frac{1}{8}$ -8-I |
|                 |                     | 533 880         | QS-F-G $\frac{1}{8}$ -8H  |
| 50, 63, 80, 100 | 12                  | 186 350         | QS-G $\frac{1}{4}$ -12    |
|                 |                     | 533 848         | QS-F-G $\frac{1}{4}$ -12  |
|                 |                     | 533 884         | QS-F-G $\frac{1}{4}$ -12H |

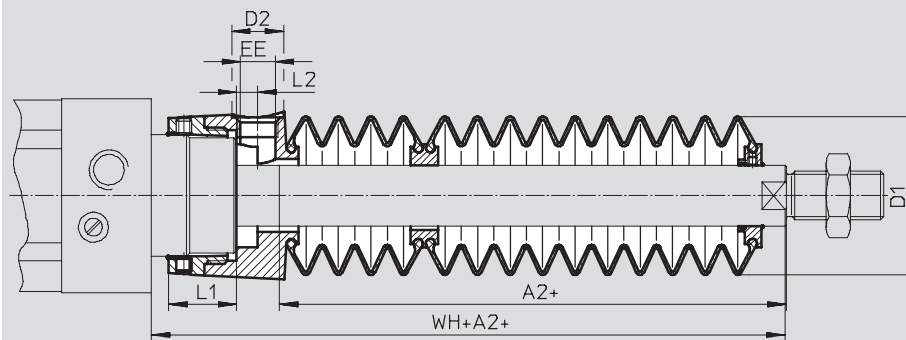
## Standard cylinders DNC, ISO 15552

Accessories

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### Dimensions

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



+ = plus stroke length

| Ø<br>Stroke<br>[mm] | 32               |            |    |                               |      |     |       | 40               |            |    |                               |      |     |       |
|---------------------|------------------|------------|----|-------------------------------|------|-----|-------|------------------|------------|----|-------------------------------|------|-----|-------|
|                     | A2 <sup>1)</sup> | D1<br>max. | D2 | EE                            | L1   | L2  | WH+A2 | A2 <sup>1)</sup> | D1<br>max. | D2 | EE                            | L1   | L2  | WH+A2 |
| 10 ... 50           | 29               | 38         | 14 | G <sup>1</sup> / <sub>8</sub> | 12.9 | 5.4 | 55    | 28               | 46         | 14 | G <sup>1</sup> / <sub>8</sub> | 16.3 | 5.4 | 58    |
| 51 ... 125          | 47               |            |    |                               |      |     | 73    | 43               |            |    |                               |      |     | 73    |
| 126 ... 175         | 61               |            |    |                               |      |     | 87    | 56               |            |    |                               |      |     | 86    |
| 176 ... 250         | 80               |            |    |                               |      |     | 106   | 72               |            |    |                               |      |     | 102   |
| 251 ... 300         | 96               |            |    |                               |      |     | 122   | 86               |            |    |                               |      |     | 116   |
| 301 ... 350         | 112              |            |    |                               |      |     | 138   | 100              |            |    |                               |      |     | 130   |
| 351 ... 375         | 114              |            |    |                               |      |     | 140   | 101              |            |    |                               |      |     | 131   |
| 376 ... 425         | 130              |            |    |                               |      |     | 156   | 115              |            |    |                               |      |     | 145   |
| 426 ... 475         | 145              |            |    |                               |      |     | 171   | 130              |            |    |                               |      |     | 160   |
| 476 ... 500         | 147              |            |    |                               |      |     | 173   | 131              |            |    |                               |      |     | 161   |

| Ø<br>Stroke<br>[mm] | 50               |            |    |                               |       |    |       | 63               |            |    |                               |      |    |       |
|---------------------|------------------|------------|----|-------------------------------|-------|----|-------|------------------|------------|----|-------------------------------|------|----|-------|
|                     | A2 <sup>1)</sup> | D1<br>max. | D2 | EE                            | L1    | L2 | WH+A2 | A2 <sup>1)</sup> | D1<br>max. | D2 | EE                            | L1   | L2 | WH+A2 |
| 10 ... 50           | 28               | 57         | 17 | G <sup>1</sup> / <sub>4</sub> | 22.35 | 7  | 65    | 28               | 57         | 17 | G <sup>1</sup> / <sub>4</sub> | 22.4 | 7  | 65    |
| 51 ... 125          | 46               |            |    |                               |       |    | 83    | 46               |            |    |                               |      |    | 83    |
| 126 ... 175         | 56               |            |    |                               |       |    | 93    | 56               |            |    |                               |      |    | 93    |
| 176 ... 250         | 73               |            |    |                               |       |    | 110   | 73               |            |    |                               |      |    | 110   |
| 251 ... 300         | 86               |            |    |                               |       |    | 123   | 86               |            |    |                               |      |    | 123   |
| 301 ... 350         | 97               |            |    |                               |       |    | 134   | 97               |            |    |                               |      |    | 134   |
| 351 ... 375         | 105              |            |    |                               |       |    | 142   | 105              |            |    |                               |      |    | 142   |
| 376 ... 425         | 116              |            |    |                               |       |    | 153   | 116              |            |    |                               |      |    | 153   |
| 426 ... 475         | 126              |            |    |                               |       |    | 163   | 126              |            |    |                               |      |    | 163   |
| 476 ... 500         | 134              |            |    |                               |       |    | 171   | 134              |            |    |                               |      |    | 171   |

| Ø<br>Stroke<br>[mm] | 80               |            |    |                               |    |    |       | 100              |            |    |                               |    |    |       |
|---------------------|------------------|------------|----|-------------------------------|----|----|-------|------------------|------------|----|-------------------------------|----|----|-------|
|                     | A2 <sup>1)</sup> | D1<br>max. | D2 | EE                            | L1 | L2 | WH+A2 | A2 <sup>1)</sup> | D1<br>max. | D2 | EE                            | L1 | L2 | WH+A2 |
| 10 ... 50           | 25               | 93         | 17 | G <sup>1</sup> / <sub>4</sub> | 28 | 4  | 71    | 25               | 93         | 17 | G <sup>1</sup> / <sub>4</sub> | 28 | 4  | 71    |
| 51 ... 125          | 37               |            |    |                               |    |    | 83    | 37               |            |    |                               |    |    | 83    |
| 126 ... 175         | 49               |            |    |                               |    |    | 95    | 49               |            |    |                               |    |    | 95    |
| 176 ... 250         | 62               |            |    |                               |    |    | 108   | 62               |            |    |                               |    |    | 108   |
| 251 ... 300         | 74               |            |    |                               |    |    | 120   | 74               |            |    |                               |    |    | 120   |
| 301 ... 350         | 86               |            |    |                               |    |    | 132   | 86               |            |    |                               |    |    | 132   |
| 351 ... 375         | 87               |            |    |                               |    |    | 133   | 87               |            |    |                               |    |    | 133   |
| 376 ... 425         | 98               |            |    |                               |    |    | 144   | 98               |            |    |                               |    |    | 144   |
| 426 ... 475         | 110              |            |    |                               |    |    | 156   | 110              |            |    |                               |    |    | 156   |
| 476 ... 500         | 111              |            |    |                               |    |    | 157   | 111              |            |    |                               |    |    | 157   |

1) The dimension corresponds to the K8 value (extended piston rod) of the drive

# Standard cylinders DNC, ISO 15552

Accessories

## Ordering data – Bellows kit

An extended piston rod (order code K8) is absolutely necessary when using a bellows kit.  
 → Ordering data – Modular products.

The necessary dimension for K8 as a function of piston diameter and cylinder stroke as well as the associated bellows kit is indicated in the following table:

### Order example:

Selected standard cylinder:

DNC-32-320-PPV-A-...

Dimension for the corresponding K8 value (see table):  
 112 mm

Complete type designation for the standard cylinder:

DNC-32-320-PPV-A-...-112K8

Associated bellows kit:

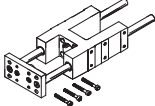
DADB-V6-32-S301-350

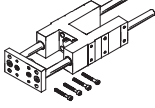
| Cylinder data |             |                  | Bellows kit |                      |
|---------------|-------------|------------------|-------------|----------------------|
| Ø             | Stroke      | Dimension for K8 | Part No.    | Type                 |
| [mm]          | [mm]        | [mm]             |             |                      |
| 32            | 10 ... 50   | 29               | 553 271     | DADB-V6-32-S10-50    |
|               | 51 ... 125  | 47               | 553 273     | DADB-V6-32-S51-125   |
|               | 126 ... 175 | 61               | 553 275     | DADB-V6-32-S126-175  |
|               | 176 ... 250 | 80               | 553 277     | DADB-V6-32-S176-250  |
|               | 251 ... 300 | 96               | 553 279     | DADB-V6-32-S251-300  |
|               | 301 ... 350 | 112              | 553 281     | DADB-V6-32-S301-350  |
|               | 351 ... 375 | 114              | 553 283     | DADB-V6-32-S351-375  |
|               | 376 ... 425 | 130              | 553 285     | DADB-V6-32-S376-425  |
|               | 426 ... 475 | 145              | 553 287     | DADB-V6-32-S426-475  |
|               | 476 ... 500 | 147              | 553 289     | DADB-V6-32-S476-500  |
| 50            | 10 ... 50   | 28               | 553 311     | DADB-V6-50-S10-50    |
|               | 51 ... 125  | 46               | 553 313     | DADB-V6-50-S51-125   |
|               | 126 ... 175 | 56               | 553 315     | DADB-V6-50-S126-175  |
|               | 176 ... 250 | 73               | 553 317     | DADB-V6-50-S176-250  |
|               | 251 ... 300 | 86               | 553 319     | DADB-V6-50-S251-300  |
|               | 301 ... 350 | 97               | 553 321     | DADB-V6-50-S301-350  |
|               | 351 ... 375 | 105              | 553 323     | DADB-V6-50-S351-375  |
|               | 376 ... 425 | 116              | 553 325     | DADB-V6-50-S376-425  |
|               | 426 ... 475 | 126              | 553 327     | DADB-V6-50-S426-475  |
|               | 476 ... 500 | 134              | 553 329     | DADB-V6-50-S476-500  |
| 63            | 10 ... 50   | 28               | 553 331     | DADB-V6-63-S10-50    |
|               | 51 ... 125  | 46               | 553 333     | DADB-V6-63-S51-125   |
|               | 126 ... 175 | 56               | 553 335     | DADB-V6-63-S126-175  |
|               | 176 ... 250 | 73               | 553 337     | DADB-V6-63-S176-250  |
|               | 251 ... 300 | 86               | 553 339     | DADB-V6-63-S251-300  |
|               | 301 ... 350 | 97               | 553 341     | DADB-V6-63-S301-350  |
|               | 351 ... 375 | 105              | 553 343     | DADB-V6-63-S351-375  |
|               | 376 ... 425 | 116              | 553 345     | DADB-V6-63-S376-425  |
|               | 426 ... 475 | 126              | 553 347     | DADB-V6-63-S426-475  |
|               | 476 ... 500 | 134              | 553 349     | DADB-V6-63-S476-500  |
| 80            | 10 ... 50   | 25               | 553 351     | DADB-V6-80-S10-50    |
|               | 51 ... 125  | 37               | 553 353     | DADB-V6-80-S51-125   |
|               | 126 ... 175 | 49               | 553 355     | DADB-V6-80-S126-175  |
|               | 176 ... 250 | 62               | 553 357     | DADB-V6-80-S176-250  |
|               | 251 ... 300 | 74               | 553 359     | DADB-V6-80-S251-300  |
|               | 301 ... 350 | 86               | 553 361     | DADB-V6-80-S301-350  |
|               | 351 ... 375 | 87               | 553 363     | DADB-V6-80-S351-375  |
|               | 376 ... 425 | 98               | 553 365     | DADB-V6-80-S376-425  |
|               | 426 ... 475 | 110              | 553 367     | DADB-V6-80-S426-475  |
|               | 476 ... 500 | 111              | 553 369     | DADB-V6-80-S476-500  |
| 100           | 10 ... 50   | 25               | 553 371     | DADB-V6-100-S10-50   |
|               | 51 ... 125  | 37               | 553 373     | DADB-V6-100-S51-125  |
|               | 126 ... 175 | 49               | 553 375     | DADB-V6-100-S126-175 |
|               | 176 ... 250 | 62               | 553 377     | DADB-V6-100-S176-250 |
|               | 251 ... 300 | 74               | 553 379     | DADB-V6-100-S251-300 |
|               | 301 ... 350 | 86               | 553 381     | DADB-V6-100-S301-350 |
|               | 351 ... 375 | 87               | 553 383     | DADB-V6-100-S351-375 |
|               | 376 ... 425 | 98               | 553 385     | DADB-V6-100-S376-425 |
|               | 426 ... 475 | 110              | 553 387     | DADB-V6-100-S426-475 |
|               | 476 ... 500 | 111              | 553 389     | DADB-V6-100-S476-500 |

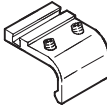
# Standard cylinders DNC, ISO 15552

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| Ordering data – Guide units for fixed strokes (recirculating ball bearing guide only) |                |          |                | Technical data → Internet: feng |                |                        |
|---------------------------------------------------------------------------------------|----------------|----------|----------------|---------------------------------|----------------|------------------------|
|                                                                                       | Stroke<br>[mm] | Part No. | Type           |                                 | Stroke<br>[mm] | Part No. Type          |
|      | For Ø 32 mm    |          |                |                                 | For Ø 40 mm    |                        |
|                                                                                       | 10 ... 50      | 34 493   | FENG-32-50-KF  |                                 | 10 ... 50      | 34 499 FENG-40-50-KF   |
|                                                                                       | 10 ... 100     | 34 494   | FENG-32-100-KF |                                 | 10 ... 100     | 34 500 FENG-40-100-KF  |
|                                                                                       | 10 ... 160     | 34 495   | FENG-32-160-KF |                                 | 10 ... 160     | 34 501 FENG-40-160-KF  |
|                                                                                       | 10 ... 200     | 34 496   | FENG-32-200-KF |                                 | 10 ... 200     | 34 502 FENG-40-200-KF  |
|                                                                                       | 10 ... 250     | 150 289  | FENG-32-250-KF |                                 | 10 ... 250     | 34 503 FENG-40-250-KF  |
|                                                                                       | 10 ... 320     | 34 497   | FENG-32-320-KF |                                 | 10 ... 320     | 34 504 FENG-40-320-KF  |
|                                                                                       | 10 ... 400     | 150 290  | FENG-32-400-KF |                                 | 10 ... 400     | 150 291 FENG-40-400-KF |
|                                                                                       | 10 ... 500     | 34 498   | FENG-32-500-KF |                                 | 10 ... 500     | 34 505 FENG-40-500-KF  |
|                                                                                       | For Ø 50 mm    |          |                |                                 | For Ø 63 mm    |                        |
|                                                                                       | 10 ... 50      | 34 506   | FENG-50-50-KF  |                                 | 10 ... 50      | 34 513 FENG-63-50-KF   |
|                                                                                       | 10 ... 100     | 34 507   | FENG-50-100-KF |                                 | 10 ... 100     | 34 514 FENG-63-100-KF  |
|                                                                                       | 10 ... 160     | 34 508   | FENG-50-160-KF |                                 | 10 ... 160     | 34 515 FENG-63-160-KF  |
|                                                                                       | 10 ... 200     | 34 509   | FENG-50-200-KF |                                 | 10 ... 200     | 34 516 FENG-63-200-KF  |
|                                                                                       | 10 ... 250     | 34 510   | FENG-50-250-KF |                                 | 10 ... 250     | 34 517 FENG-63-250-KF  |
|                                                                                       | 10 ... 320     | 34 511   | FENG-50-320-KF |                                 | 10 ... 320     | 34 518 FENG-63-320-KF  |
|                                                                                       | 10 ... 400     | 150 292  | FENG-50-400-KF |                                 | 10 ... 400     | 34 519 FENG-63-400-KF  |
|                                                                                       | 10 ... 500     | 34 512   | FENG-50-500-KF |                                 | 10 ... 500     | 34 520 FENG-63-500-KF  |
|                                                                                       | For Ø 80 mm    |          |                |                                 | For Ø 100 mm   |                        |
|                                                                                       | 10 ... 50      | 34 521   | FENG-80-50-KF  |                                 | 10 ... 50      | 34 529 FENG-100-50-KF  |
|                                                                                       | 10 ... 100     | 34 522   | FENG-80-100-KF |                                 | 10 ... 100     | 34 530 FENG-100-100-KF |
|                                                                                       | 10 ... 160     | 34 523   | FENG-80-160-KF |                                 | 10 ... 160     | 34 531 FENG-100-160-KF |
|                                                                                       | 10 ... 200     | 34 524   | FENG-80-200-KF |                                 | 10 ... 200     | 34 532 FENG-100-200-KF |
|                                                                                       | 10 ... 250     | 34 525   | FENG-80-250-KF |                                 | 10 ... 250     | 34 533 FENG-100-250-KF |
|                                                                                       | 10 ... 320     | 34 526   | FENG-80-320-KF |                                 | 10 ... 320     | 34 534 FENG-100-320-KF |
|                                                                                       | 10 ... 400     | 34 527   | FENG-80-400-KF |                                 | 10 ... 400     | 34 535 FENG-100-400-KF |
|                                                                                       | 10 ... 500     | 34 528   | FENG-80-500-KF |                                 | 10 ... 500     | 34 536 FENG-100-500-KF |

| Ordering data – Guide units for variable strokes                                    |               |                |                                                        | Technical data → Internet: feng           |  |
|-------------------------------------------------------------------------------------|---------------|----------------|--------------------------------------------------------|-------------------------------------------|--|
|                                                                                     | For Ø<br>[mm] | Stroke<br>[mm] | With recirculating ball bearing guide<br>Part No. Type | With plain-bearing guide<br>Part No. Type |  |
|  | 32            | 10 ... 500     | 34 487 FENG-32-...-KF                                  | 34 481 FENG-32-...                        |  |
|                                                                                     | 40            | 10 ... 500     | 34 488 FENG-40-...-KF                                  | 34 482 FENG-40-...                        |  |
|                                                                                     | 50            | 10 ... 500     | 34 489 FENG-50-...-KF                                  | 34 483 FENG-50-...                        |  |
|                                                                                     | 63            | 10 ... 500     | 34 490 FENG-63-...-KF                                  | 34 484 FENG-63-...                        |  |
|                                                                                     | 80            | 10 ... 500     | 34 491 FENG-80-...-KF                                  | 34 485 FENG-80-...                        |  |
|                                                                                     | 100           | 10 ... 500     | 34 492 FENG-100-...-KF                                 | 34 486 FENG-100-...                       |  |

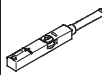
| Ordering data – Mounting kits for proximity sensors SMT-8                           |            |                           | Technical data → Internet: smb |  |
|-------------------------------------------------------------------------------------|------------|---------------------------|--------------------------------|--|
|                                                                                     | For Ø [mm] | Part No. Type             |                                |  |
|  | 32         | 175 705 SMB-8-FENG-32/40  |                                |  |
|                                                                                     | 40         |                           |                                |  |
|                                                                                     | 50         | 175 706 SMB-8-FENG-50/63  |                                |  |
|                                                                                     | 63         |                           |                                |  |
|                                                                                     | 80         | 175 707 SMB-8-FENG-80/100 |                                |  |
|                                                                                     | 100        |                           |                                |  |

# Standard cylinders DNC, ISO 15552

Accessories

**FESTO**

| Ordering data – Proximity sensors for T-slot, magneto-resistive                   |                                                                    |                  |                       |                  | Technical data ➔ Internet: smt |                         |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------|------------------|-----------------------|------------------|--------------------------------|-------------------------|
|                                                                                   | Type of mounting                                                   | Switching output | Electrical connection | Cable length [m] | Part No.                       | Type                    |
| N/O contact                                                                       |                                                                    |                  |                       |                  |                                |                         |
|  | Insertable in the slot from above, flush with the cylinder profile | PNP              | Cable, 3-wire         | 2.5              | 543 867                        | SMT-8M-PS-24V-K-2,5-OE  |
|                                                                                   |                                                                    |                  | Plug M8x1, 3-pin      | 0.3              | 543 866                        | SMT-8M-PS-24V-K-0,3-M8D |
|                                                                                   |                                                                    |                  | Plug M12x1, 3-pin     | 0.3              | 543 869                        | SMT-8M-PS-24V-K-0,3-M12 |
|                                                                                   |                                                                    | NPN              | Cable, 3-wire         | 2.5              | 543 870                        | SMT-8M-NS-24V-K-2,5-OE  |
|                                                                                   |                                                                    |                  | Plug M8x1, 3-pin      | 0.3              | 543 871                        | SMT-8M-NS-24V-K-0,3-M8D |
|  | Insertable in the slot lengthwise, flush with the cylinder profile | PNP              | Cable, 3-wire         | 2.5              | 175 436                        | SMT-8-PS-K-LED-24-B     |
|                                                                                   |                                                                    |                  | Plug M8x1, 3-pin      | 0.3              | 175 484                        | SMT-8-PS-S-LED-24-B     |
| N/C contact                                                                       |                                                                    |                  |                       |                  |                                |                         |
|  | Insertable in the slot from above, flush with the cylinder profile | PNP              | Cable, 3-wire         | 7.5              | 543 873                        | SMT-8M-PO-24V-K7,5-OE   |

| Ordering data – Proximity sensors for T-slot, magnetic reed                         |                                                                    |                  |                       |                  | Technical data → Internet: sme |                                |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------|------------------|-----------------------|------------------|--------------------------------|--------------------------------|
|                                                                                     | Type of mounting                                                   | Switching output | Electrical connection | Cable length [m] | Part No.                       | Type                           |
| N/O contact                                                                         |                                                                    |                  |                       |                  |                                |                                |
|   | Insertable in the slot from above, flush with the cylinder profile | Contacting       | Cable, 3-wire         | 2.5              | <b>543 862</b>                 | <b>SME-8M-DS-24V-K-2,5-OE</b>  |
|                                                                                     |                                                                    |                  |                       | 5.0              | <b>543 863</b>                 | <b>SME-8M-DS-24V-K-5,0-OE</b>  |
|                                                                                     |                                                                    |                  | Cable, 2-wire         | 2.5              | <b>543 872</b>                 | <b>SME-8M-ZS-24V-K-2,5-OE</b>  |
|                                                                                     |                                                                    |                  | Plug M8x1, 3-pin      | 0.3              | <b>543 861</b>                 | <b>SME-8M-DS-24V-K-0,3-M8D</b> |
|  | Insertable in the slot lengthwise, flush with the cylinder profile | Contacting       | Cable, 3-wire         | 2.5              | <b>150 855</b>                 | <b>SME-8-K-LED-24</b>          |
|                                                                                     |                                                                    |                  | Plug M8x1, 3-pin      | 0.3              | <b>150 857</b>                 | <b>SME-8-S-LED-24</b>          |
|                                                                                     |                                                                    |                  |                       |                  |                                |                                |
| N/C contact                                                                         |                                                                    |                  |                       |                  |                                |                                |
|  | Insertable in the slot lengthwise, flush with the cylinder profile | Contacting       | Cable, 3-wire         | 7.5              | <b>160 251</b>                 | <b>SME-8-O-K-LED-24</b>        |

| Ordering data – Connecting cables                                                   |                               |                              |                  | Technical data → Internet: nebu |                      |
|-------------------------------------------------------------------------------------|-------------------------------|------------------------------|------------------|---------------------------------|----------------------|
|                                                                                     | Electrical connection, left   | Electrical connection, right | Cable length [m] | Part No.                        | Type                 |
|  | Straight socket, M8x1, 3-pin  | Cable, open end, 3-wire      | 2.5              | 541 333                         | NEBU-M8G3-K-2.5-LE3  |
|                                                                                     |                               |                              | 5                | 541 334                         | NEBU-M8G3-K-5-LE3    |
|                                                                                     | Straight socket, M12x1, 5-pin | Cable, open end, 3-wire      | 2.5              | 541 363                         | NEBU-M12G5-K-2.5-LE3 |
|                                                                                     |                               |                              | 5                | 541 364                         | NEBU-M12G5-K-5-LE3   |
|  | Angled socket, M8x1, 3-pin    | Cable, open end, 3-wire      | 2.5              | 541 338                         | NEBU-M8W3-K-2.5-LE3  |
|                                                                                     |                               |                              | 5                | 541 341                         | NEBU-M8W3-K-5-LE3    |
|                                                                                     | Angled socket, M12x1, 5-pin   | Cable, open end, 3-wire      | 2.5              | 541 367                         | NEBU-M12W5-K-2.5-LE3 |
|                                                                                     |                               |                              | 5                | 541 370                         | NEBU-M12W5-K-5-LE3   |

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

# Standard cylinders DNC, ISO 15552

Accessories

**FESTO**

| Ordering data – One-way flow control valves                                       |                 |                 |              | Technical data → Internet: grla |                              |
|-----------------------------------------------------------------------------------|-----------------|-----------------|--------------|---------------------------------|------------------------------|
|                                                                                   | Connection      |                 | Material     | Part No.                        | Type                         |
|                                                                                   | Thread          | For tubing O.D. |              |                                 |                              |
|  | G $\frac{1}{8}$ | 3               | Metal design | 193 142                         | GRLA- $\frac{1}{8}$ -QS-3-D  |
|                                                                                   |                 | 4               |              | 193 143                         | GRLA- $\frac{1}{8}$ -QS-4-D  |
|                                                                                   |                 | 6               |              | 193 144                         | GRLA- $\frac{1}{8}$ -QS-6-D  |
|                                                                                   |                 | 8               |              | 193 145                         | GRLA- $\frac{1}{8}$ -QS-8-D  |
|                                                                                   | G $\frac{1}{4}$ | 6               |              | 193 146                         | GRLA- $\frac{1}{4}$ -QS-6-D  |
|                                                                                   |                 | 8               |              | 193 147                         | GRLA- $\frac{1}{4}$ -QS-8-D  |
|                                                                                   |                 | 10              |              | 193 148                         | GRLA- $\frac{1}{4}$ -QS-10-D |
|                                                                                   |                 |                 |              | 193 149                         | GRLA- $\frac{3}{8}$ -QS-6-D  |
|                                                                                   | G $\frac{3}{8}$ | 6               |              | 193 150                         | GRLA- $\frac{3}{8}$ -QS-8-D  |
|                                                                                   |                 | 8               |              | 193 151                         | GRLA- $\frac{3}{8}$ -QS-10-D |
|                                                                                   |                 | 10              |              | 193 152                         | GRLA- $\frac{1}{2}$ -QS-12-D |
|                                                                                   | G $\frac{1}{2}$ | 12              |              |                                 |                              |

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