

# Guide units FEN/FENG for Inch Series cylinders

Overview



- High-precision guiding for types DSNU, DNC and DNG cylinders
- Protects cylinders against rotation due to torque loads
- Plain-bearing and recirculating ball bearing guide versions available

| Product range overview    |      |                                     |                              |               |
|---------------------------|------|-------------------------------------|------------------------------|---------------|
| Function                  | Type | Version                             | For piston Ø [in]            | Stroke [in]   |
| For DSNU cylinders        | FEN  | Plain-bearing guide                 | 5/16, 3/8, 1/2, 5/8, 3/4, 1  | 0.04 ... 10.0 |
|                           |      | KF Recirculating ball bearing guide | 5/16, 3/8, 1/2, 5/8, 3/4, 1  | 0.04 ... 10.0 |
| For DNC and DNG cylinders | FENG | Plain-bearing guide                 | 1-1/4, 1-5/8, 2, 2-1/2, 3, 4 | 0.4 ... 20.0  |
|                           |      | KF Recirculating ball bearing guide | 1-1/4, 1-5/8, 2, 2-1/2, 3, 4 | 0.4 ... 20.0  |

## Position sensing

When the cylinders DSNU-...-A or DNG-...-A are used, the piston position can be detected by proximity

sensors. These sensors require mounting kits which are listed in the table on the right.

| Cylinder   | Piston Ø    | Mounting kits  |
|------------|-------------|----------------|
| DNG-...-A  | 1-1/4 ... 2 | SMB-2-B        |
|            | 2-1/2 ... 4 | SMB-3-B        |
| DSNU-...-A | 5/16 ... 1  | SMBR-...       |
| DNC-...-A  | 1-1/4 ... 4 | SMB-8-FENG-... |

## Note

The cylinders DNC-...-A have integrated sensor slots and thus do not normally require mounting kits. However, when a cylinder DNC-...-A is combined with the guide unit FENG, the

mounting kit SMB-8-FENG-... is required due to the covered front mounting position of the proximity sensor.

## Guide units FEN/FENG for Inch Series cylinders

Technical data

### FEN

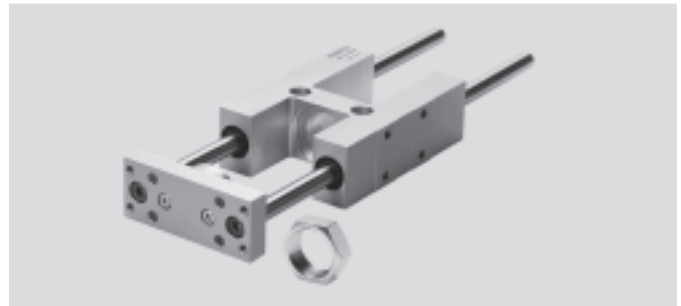
Diameter

5/16 ... 1 inch

- For use with DSNU
- Plain bearing guide
- Recirculating ball bearing guide (KF)

Stroke length

0.0 ... 10 inch



### FENG

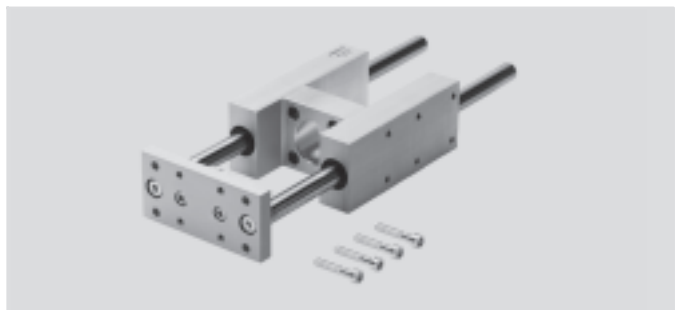
Diameter

1-1/4 ... 4 inch

- For use with DNC or DNG
- Plain bearing guide
- Recirculating ball bearing guide (KF)

Stroke length

0.04 ... 20 inch



### General technical data

|                     |      |                |
|---------------------|------|----------------|
| Ambient temperature | [°F] | -4 ... +176 °F |
|---------------------|------|----------------|

### Product weight FEN [oz]

| Piston Ø [in]                         | 5/16, 3/8 | 1/2, 5/8 | 3/4  | 1    |
|---------------------------------------|-----------|----------|------|------|
| With plain bearing guide              |           |          |      |      |
| Product weight at 0 inch stroke       | 11.7      | 17.3     | 30.8 | 30.6 |
| Additional weight per 1 inch stroke   | 0.9       | 1.2      | 1.2  | 1.2  |
| With recirculating ball bearing guide |           |          |      |      |
| Product weight at 0 inch stroke       | 10.6      | 15.1     | 29.2 | 28.7 |
| Additional weight per 1 inch stroke   | 1.0       | 1.3      | 1.3  | 1.3  |

### Product weight FENG [oz]

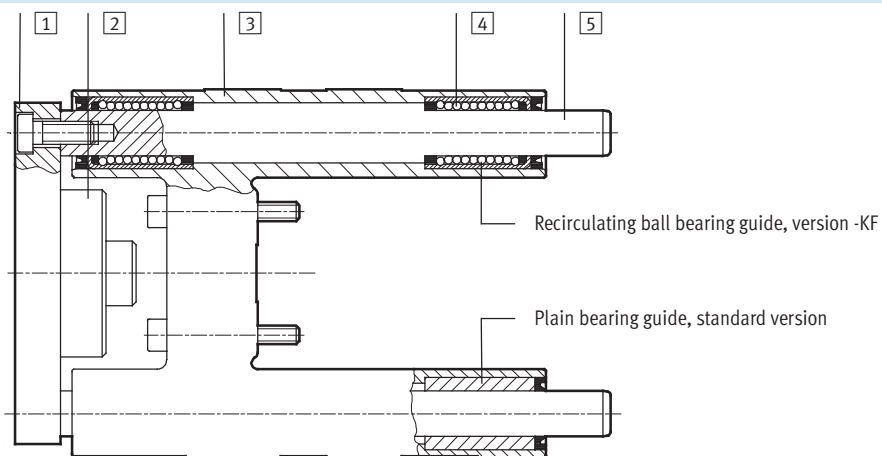
| Piston Ø [in]                         | 1-1/4 | 1-5/8 | 2     | 2-1/2 | 3     | 4     |
|---------------------------------------|-------|-------|-------|-------|-------|-------|
| With plain bearing guide              |       |       |       |       |       |       |
| Product weight at 0 inch stroke       | 55.4  | 87.5  | 147.8 | 195.4 | 378.1 | 473.4 |
| Additional weight per 1 inch stroke   | 1.5   | 2.8   | 4.2   | 4.3   | 6.3   | 6.3   |
| With recirculating ball bearing guide |       |       |       |       |       |       |
| Product weight at 0 inch stroke       | 54.0  | 83.6  | 142.2 | 190.8 | 367.9 | 458.2 |
| Additional weight per 1 inch stroke   | 1.6   | 2.9   | 4.5   | 4.4   | 7.2   | 7.2   |

# Guide units FEN/FENG for Inch Series cylinders

Technical data

## Materials

Sectional view



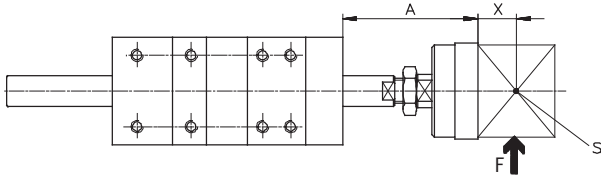
|                    | FEN/FENG with plain bearing guide | FEN/FENG with recirculating ball bearing guide (KF) |
|--------------------|-----------------------------------|---|
| 1 Yoke plate       | Aluminum                          | Aluminum  |
| 2 Coupling         | Steel                             | Steel   |
| 3 Guide            | Aluminum                          | Aluminum  |
| 4 Bearing          | Sintered bronze                   | Steel   |
| 5 Guide rods       | Steel                             | Steel   |
| - Note on material | -                                 | Free of copper, PTFE and silicone                   |

# Guide units FEN/FENG for Inch Series cylinders

Technical data



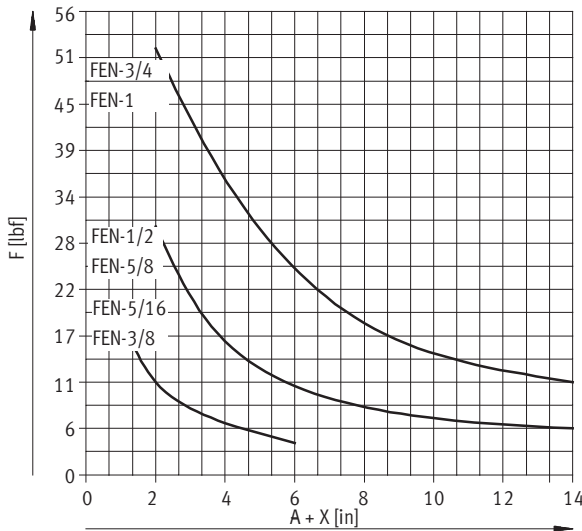
## Max. working load F as a function of cantilever extension A



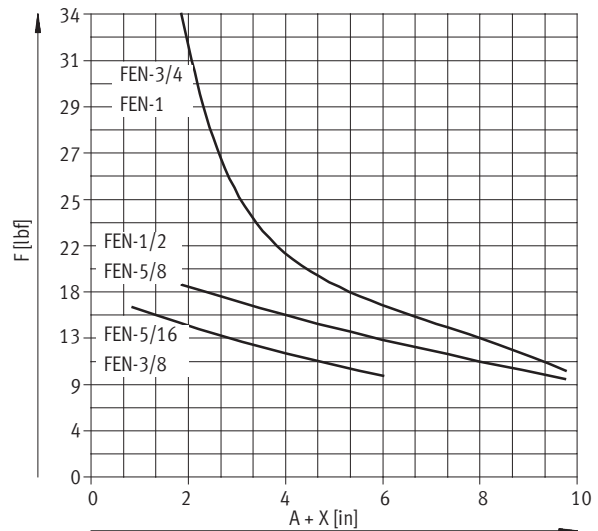
- A = Cantilever extension
- X = Distance for center of gravity of working load
- S = Center of gravity of working load

### FEN-5/16 ... 1

with plain bearing guide

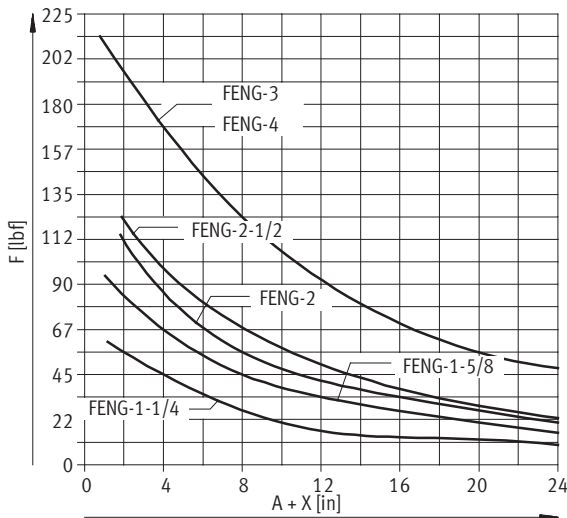


with recirculating ball bearing guide

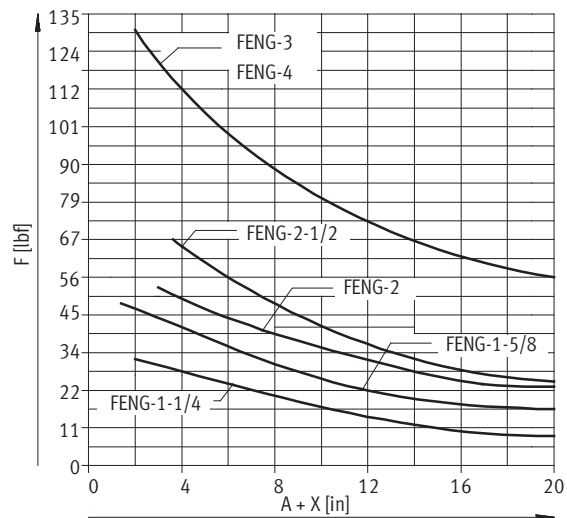


### FENG-1-1/4 ... 4

with plain bearing guide



with recirculating ball bearing guide



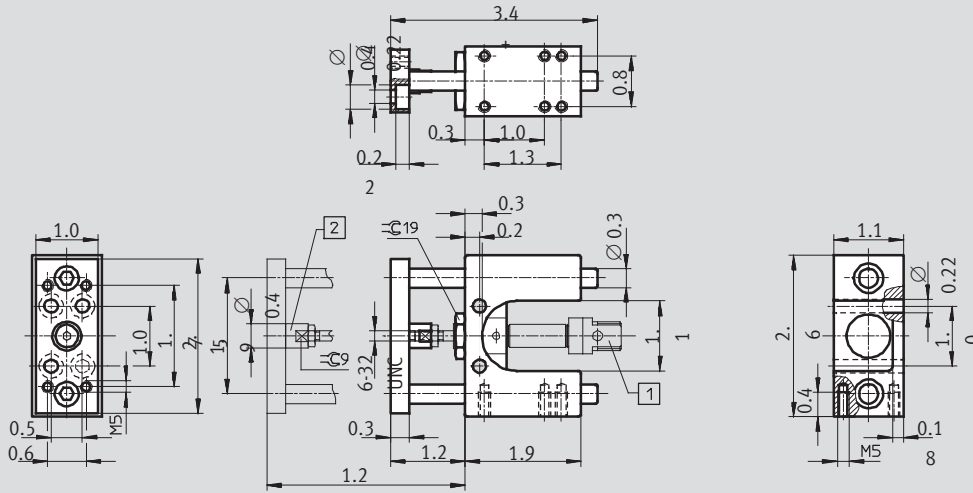
Dimensions are in inch, unless noted otherwise.

# Guide units FEN/FENG for Inch Series cylinders

Technical data

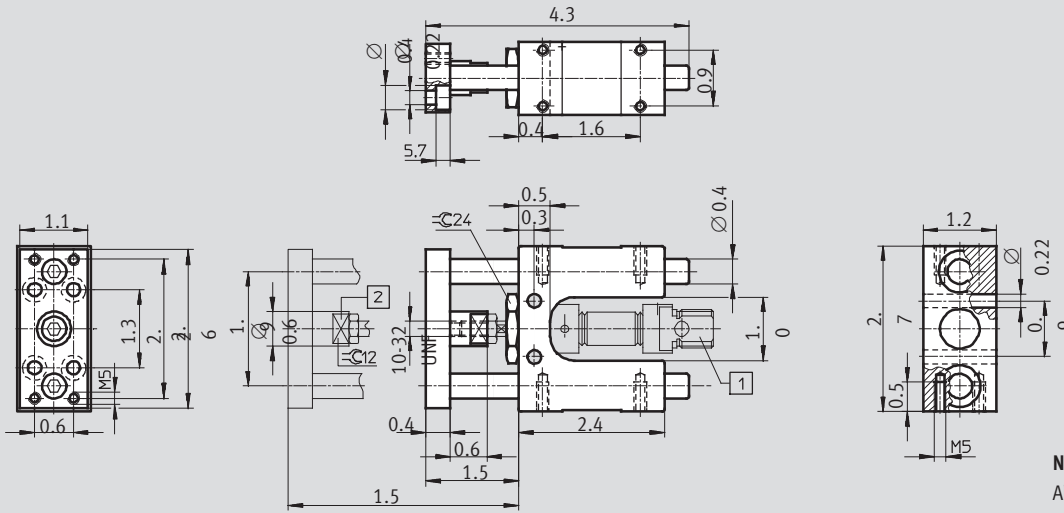
## Dimensions

FEN-5/16, 3/8



**Note**  
All wrench dimensions are metric

FEN-1/2, 5/8



**Note**  
All wrench dimensions are metric

- 1 Cylinders DSNU
  - 2 Compensating coupling for radial and axial alignment
- + = plus stroke length

Dimensions are in inch, unless otherwise noted.

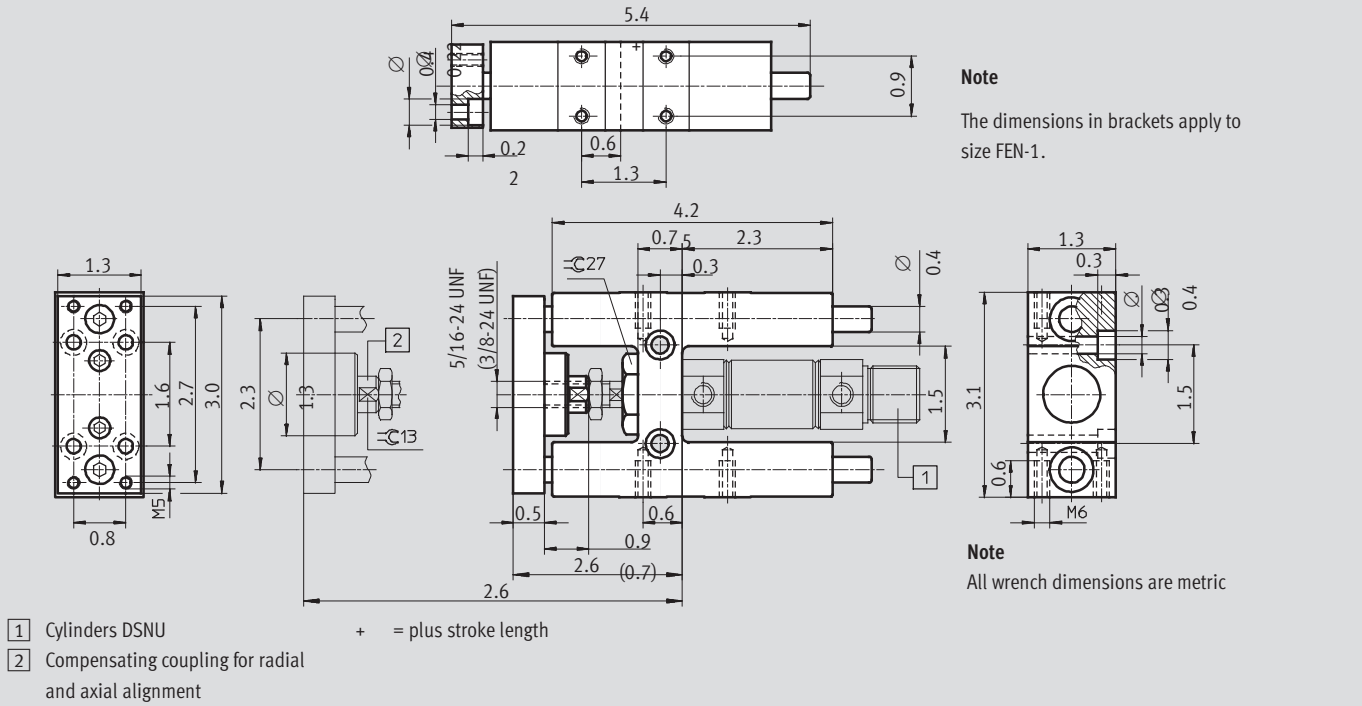
# Guide units FEN/FENG for Inch Series cylinders

Technical data



## Dimensions

FEN-3/4, 1



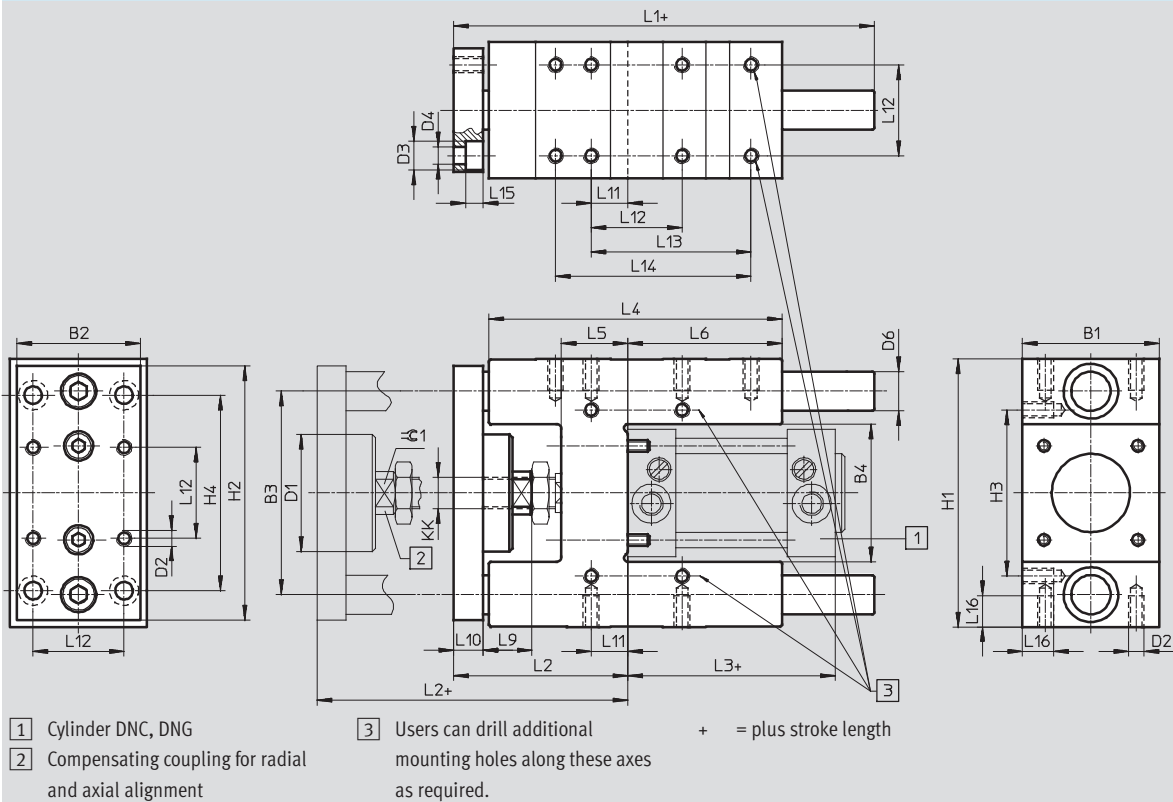
Dimensions are in inch, unless otherwise noted.

# Guide units FEN/FENG for Inch Series cylinders

Technical data

## Dimensions

FENG-1-1/4 ... 4



| ∅ [in] | B1  | B2  | B3  | B4  | D1 ∅ | D2  | D3 ∅ | D4 ∅ | D6 <sup>1)</sup> ∅ | H1  | H2  | H3  | H4  | KK         |
|--------|-----|-----|-----|-----|------|-----|------|------|--------------------|-----|-----|-----|-----|------------|
| 1-1/4  | 2.0 | 1.8 | 2.9 | 2.0 | 1.7  | M6  | 0.4  | 0.3  | 0.5                | 3.8 | 3.5 | 2.4 | 3.1 | 3/8-24 UNF |
| 1-5/8  | 2.3 | 2.1 | 3.4 | 2.3 | 1.7  | M6  | 0.4  | 0.3  | 0.6                | 4.5 | 4.3 | 2.7 | 3.3 | 1/2-20 UNF |
| 2      | 2.8 | 2.5 | 4.1 | 2.8 | 2.4  | M8  | 0.6  | 0.4  | 0.8                | 5.4 | 5.1 | 3.3 | 3.9 | 5/8-18 UNF |
| 2-1/2  | 3.3 | 3.1 | 4.7 | 3.4 | 2.4  | M8  | 0.6  | 0.4  | 0.8                | 6.0 | 5.7 | 3.9 | 4.1 | 5/8-18 UNF |
| 3      | 4.1 | 3.9 | 5.8 | 4.2 | 3.1  | M10 | 0.7  | 0.4  | 1.0                | 7.4 | 7.1 | 4.1 | 5.1 | 3/4-16 UNF |
| 4      | 5.1 | 4.7 | 6.8 | 5.2 | 3.1  | M10 | 0.7  | 0.4  | 1.0                | 8.4 | 7.9 | 5.1 | 5.9 | 3/4-16 UNF |

| ∅ [in] | L1   | L2  | L3  | L4  | L5  | L6  | L9  | L10 | L11 | L12 | L13 | L14 | L15 | L16 | ≈C1 [mm] |
|--------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------|
| 1-1/4  | 6.1  | 2.6 | 3.7 | 4.9 | 0.9 | 3.0 | 0.8 | 0.5 | 0.2 | 1.3 | 2.8 | 3.1 | 0.3 | 0.5 | 15       |
| 1-5/8  | 6.7  | 3.0 | 4.1 | 5.5 | 1.1 | 3.2 | 0.9 | 0.5 | 0.4 | 1.5 | 3.3 | -   | 0.3 | 0.6 | 15       |
| 2      | 7.4  | 3.5 | 4.2 | 5.9 | 1.3 | 3.1 | 1.0 | 0.6 | 0.7 | 1.8 | 3.2 | 3.9 | 0.4 | 0.6 | 19       |
| 2-1/2  | 8.7  | 3.5 | 4.8 | 7.2 | 1.3 | 4.4 | 1.0 | 0.6 | 0.6 | 2.2 | 4.1 | -   | 0.4 | 0.6 | 19       |
| 3      | 10.2 | 4.4 | 5.0 | 8.5 | 1.6 | 5.0 | 1.3 | 0.8 | 0.8 | 2.8 | -   | -   | 0.4 | 0.8 | 27       |
| 4      | 10.4 | 4.6 | 5.4 | 8.7 | 1.6 | 5.0 | 1.3 | 0.8 | 1.0 | 3.5 | -   | -   | 0.4 | 0.8 | 27       |

Dimensions are in inch, unless otherwise noted.

# Guide units FEN/FENG for Inch Series cylinders



Ordering Data

| M Mandatory data                        |  |             |              |
|---|--|-------------|--------------|
| Function                                | Piston Ø                               | Stroke      | Bearing type |
| FEN (For use with DSNU cylinders)       | 5/16-3/8<br>1/2-5/8<br>3/4<br>1        | 0.0 ... 20  | KF           |
| FENG (For use with DNC & DNG cylinders) | 1-1/4<br>1-5/8<br>2<br>2-1/2<br>3<br>4 |             |              |
| <b>FEN</b>                              | <b>5/16"-3/8"</b>                      | <b>3.5"</b> | <b>KF</b>    |

| Ordering table |                             |           |            |     |            |       |       |       |       |   |      |            |  |
|----------------|-----------------------------|-----------|------------|-----|------------|-------|-------|-------|-------|---|------|------------|--|
| Size           | 5/16-3/8                    | 1/2-5/8   | 3/4        | 1   | 1-1/4      | 1-5/8 | 2     | 2-1/2 | 3     | 4 | Code | Enter code |  |
| M Function     | Guide unit                  |           |            |     |            |       |       |       |       |   |      | FEN        |  |
|                |                             |           |            |     |            |       |       |       |       |   |      | FENG       |  |
| Piston Ø [In]  | FEN                         | 5/16-3/8  | 1/2-5/8    | 3/4 | 1          | -     | -     | -     | -     | - | -    |            |  |
|                | FENG                        | -         | -          | -   | -          | 1-1/4 | 1-5/8 | 2     | 2-1/2 | 3 | 4    |            |  |
| Stroke [in]    | 0.0 ... 4                   | 0.0 ... 8 | 0.0 ... 10 |     | 0.4 ... 20 |       |       |       |       |   | -... |            |  |
| Bearing type   | Plain bearing guide         |           |            |     |            |       |       |       |       |   |      |            |  |
|                | Recirculating bearing guide |           |            |     |            |       |       |       |       |   |      | -KF        |  |

### Note

FEN-5/16-3/8-... is used with 2 cylinder sizes (DSNU-5/16-... and DSNU-3/8-...).

FEN-1/2-5/8-... is used with 2 cylinder sizes (DSNU-1/2-... and DSNU-5/8-...).

Transfer order code

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



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Subject to change