

## Spindle axes DGE

**FESTO**



# Spindle axes DGE

Key features

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## At a glance

- Precision, rigid guide
- Highly adaptable, thanks to wide choice of mounting and attachment options
- Wide range of options for attaching drive units
- Comprehensive range of mounting accessories for multi-axis combinations
- Optimally adapted motor controller combinations

## Basic version DGE-SP

- Stroke lengths from 100 ... 2000 mm
- Without guide
- Low characteristic load values



## With recirculating ball bearing guide DGE-SP-KF-GK/-GV

- Stroke lengths from 100 ... 2000 mm
- Standard slide or extended slide
- Medium to high characteristic load values



## With protected version DGE-SP-KF-GA

- Stroke lengths from 140 ... 1500 mm
- Guide and slide are fitted with a cover to protect against the ingress of particles from above and from the side



## With heavy-duty guide DGE-SP-HD

- Stroke lengths from 100 ... 1500 mm
- High guide precision
- Sturdy construction
- High characteristic load values



# Spindle axes DGE

Key features

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## System selection for electromechanical drives

Spindle axis



### Note

For the spindle axes and the motors there are matching complete solutions.

Motor kit

Axial kit

Parallel kit

→ 54



Axial kit consisting of:

- Motor flange
- Coupling housing
- Coupling
- Screws

Motor

→ 54



- 1 Servo motor EMMS-AS
- 2 Stepper motor EMMS-ST

Motor controller

Technical data → Internet: motor controller



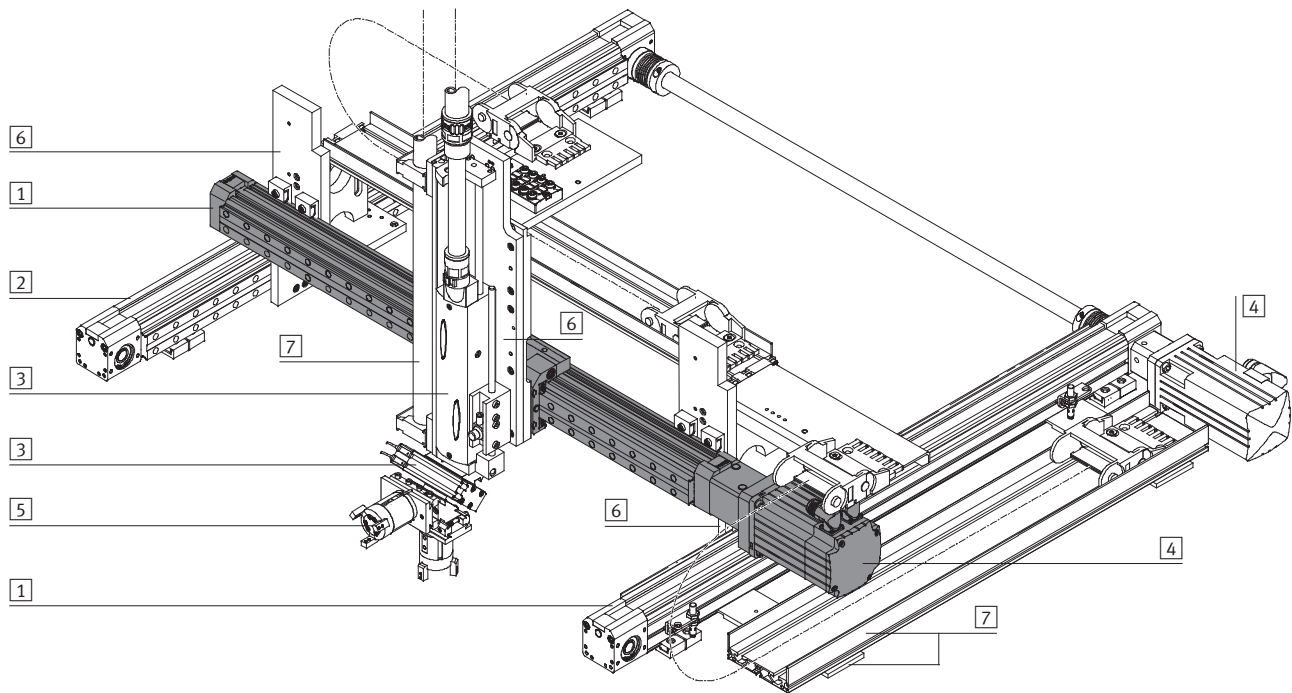
- 1 Servo motor ontroller CMMP-AS, CMMS-AS
- 2 Stepper motor controller CMMS-ST

# Spindle axes DGE

System example

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## System product for handling and assembly technology



| System components and accessories |                                                                           |                        |
|-----------------------------------|---------------------------------------------------------------------------|------------------------|
| Type                              | Brief description                                                         | → Page/Internet        |
| 1 Axes                            | Wide range of combination options within handling and assembly technology | axes                   |
| 2 Passive guide axes              | Diverse possible combinations in handling and assembly technology         | guide axes             |
| 3 Drives                          | Wide range of combination options within handling and assembly technology | drive                  |
| 4 Motors                          | Servo and stepper motors, with or without gearing                         | motor                  |
| 5 Grippers                        | Wide range of combination options within handling and assembly technology | gripper                |
| 6 Adapters                        | For combining drives with drives and drives with grippers                 | adapter kit            |
| 7 Installation components         | For achieving a clear-cut, safe layout for electrical cables and tubing   | installation component |

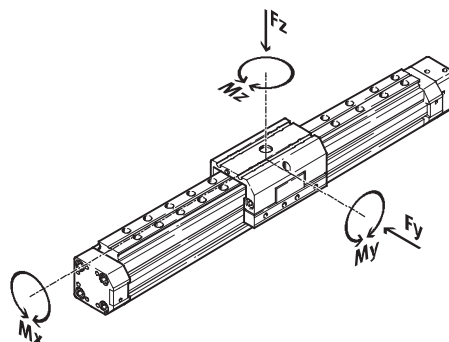
# Spindle axes DGE

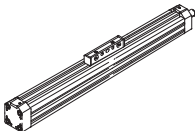
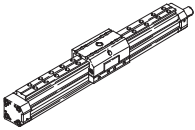
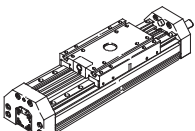
Selection aid

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## Guide characteristics

The data in the table are maximum values. The precise values for each variant can be found in the corresponding data sheet included in the catalogue.

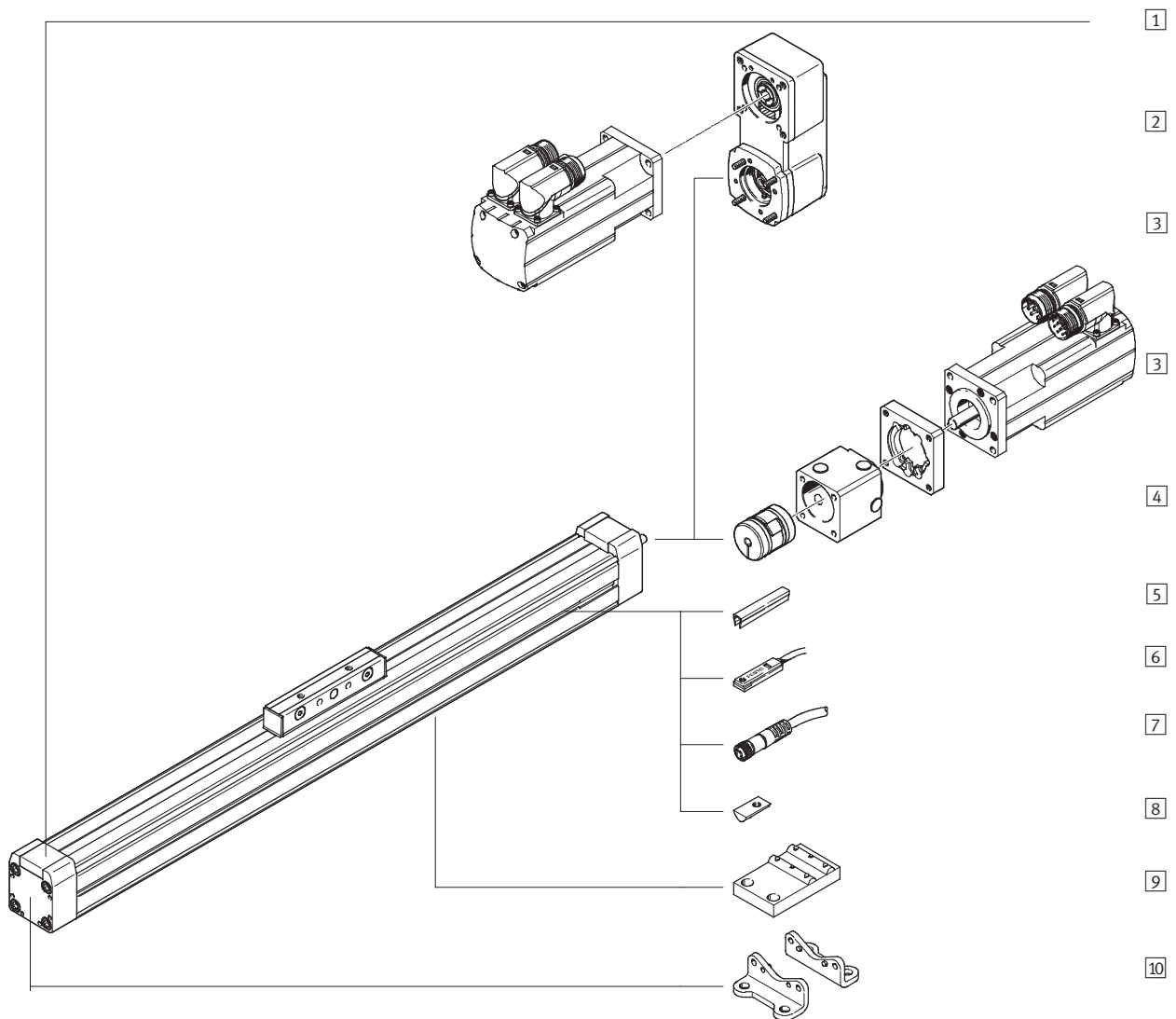


| Version                                                                             | Size | Working stroke<br><br>[mm] | Speed<br><br>[m/s] | Repetitio<br>n<br>accuracy<br>[mm] | Feed<br>force<br>[N] | Forces and torques |       |      |      |      | → Page/Internet |
|-------------------------------------------------------------------------------------|------|----------------------------|--------------------|------------------------------------|----------------------|--------------------|-------|------|------|------|-----------------|
|                                                                                     |      |                            |                    |                                    |                      | Fy                 | Fz    | Mx   | My   | Mz   |                 |
|                                                                                     |      |                            |                    |                                    |                      | [N]                | [N]   | [Nm] | [Nm] | [Nm] |                 |
| Basic version without guide SP                                                      |      |                            |                    |                                    |                      |                    |       |      |      |      |                 |
|   | 18   | 100 ... 500                | 0.2                | ±0.02                              | 140                  | –                  | 1.8   | 0.5  | 0.8  | 0.8  | 6               |
|                                                                                     | 25   | 100 ... 1000               | 0.5                | ±0.02                              | 250                  | –                  | 2     | 1    | 1.5  | 1.5  |                 |
|                                                                                     | 40   | 200 ... 1500               | 1                  | ±0.02                              | 600                  | –                  | 15    | 4    | 4    | 4    |                 |
|                                                                                     | 63   | 300 ... 2000               | 1.2                | ±0.02                              | 1600                 | –                  | 106   | 8    | 18   | 18   |                 |
| With recirculating ball bearing guide SP-KF                                         |      |                            |                    |                                    |                      |                    |       |      |      |      |                 |
|  | 18   | 100 ... 500                | 0.2                | ±0.02                              | 140                  | 930                | 930   | 7    | 45   | 45   | 20              |
|                                                                                     | 25   | 100 ... 1000               | 0.5                | ±0.02                              | 250                  | 3080               | 3080  | 45   | 170  | 170  |                 |
|                                                                                     | 40   | 140 ... 1500               | 1                  | ±0.02                              | 600                  | 7300               | 7300  | 170  | 660  | 660  |                 |
|                                                                                     | 63   | 150 ... 2000               | 1.2                | ±0.02                              | 1600                 | 14050              | 14050 | 580  | 1820 | 1820 |                 |
| With heavy-duty guide SP-HD                                                         |      |                            |                    |                                    |                      |                    |       |      |      |      |                 |
|  | 18   | 100 ... 400                | 0.2                | ±0.02                              | 140                  | 1820               | 1820  | 70   | 115  | 112  | 42              |
|                                                                                     | 25   | 100 ... 900                | 0.5                | ±0.02                              | 250                  | 5400               | 5600  | 260  | 415  | 400  |                 |
|                                                                                     | 40   | 200 ... 1500               | 1                  | ±0.02                              | 600                  | 5400               | 5600  | 375  | 560  | 540  |                 |

# Spindle axes DGE-SP

Peripherals overview

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# Spindle axes DGE-SP

Peripherals overview

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| Variants and accessories          |                                                                                                                                      |                 |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Type                              | Brief description                                                                                                                    | → Page/Internet |
| 1 Spindle axis<br>DGE-SP          | Electromechanical axis without guide                                                                                                 | 8               |
| 2 Parallel kit<br>EAMM-U          | For parallel motor attachment<br>(consisting of: housing, Clamping component, clamping sleeve, toothed belt gearwheel, toothed belt) | 56              |
| 3 Motor<br>EMMS                   | Motors specially matched to the axis, with or without gearing, with or without brake                                                 | 54              |
| 4 Axial kit<br>EAMM-A             | For axial motor attachment<br>(consisting of: coupling housing, clamping component, motor flange)                                    | 54              |
| 5 Slot cover<br>B/S               | For protecting against the ingress of dirt                                                                                           | 64              |
| 6 Proximity sensor<br>G/H/I/J/N   | For use as a signal generator and safety monitoring                                                                                  | 65              |
| 7 Cable with socket<br>V          | For proximity sensors                                                                                                                | 65              |
| 8 Slot nut for mounting slot<br>Y | For mounting attachments                                                                                                             | 64              |
| 9 Central support<br>M            | For mounting the axis                                                                                                                | 57              |
| 10 Foot mounting<br>F             | For mounting the axis                                                                                                                | 57              |

# Spindle axes DGE-SP

Type code

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|                          |                               |     |   |    |   |     |   |    |      |   |  |  |  |  |   |    |  |
|--------------------------|-------------------------------|-----|---|----|---|-----|---|----|------|---|--|--|--|--|---|----|--|
|                          |                               | DGE | - | 25 | - | 500 | - | SP | +ZUB | - |  |  |  |  | F | 2G |  |
| <b>Type</b>              |                               |     |   |    |   |     |   |    |      |   |  |  |  |  |   |    |  |
| DGE                      | Spindle axis                  |     |   |    |   |     |   |    |      |   |  |  |  |  |   |    |  |
| <b>Size</b>              |                               |     |   |    |   |     |   |    |      |   |  |  |  |  |   |    |  |
| <b>Stroke [mm]</b>       |                               |     |   |    |   |     |   |    |      |   |  |  |  |  |   |    |  |
| <b>Drive function</b>    |                               |     |   |    |   |     |   |    |      |   |  |  |  |  |   |    |  |
| SP                       | Spindle                       |     |   |    |   |     |   |    |      |   |  |  |  |  |   |    |  |
| <b>Accessories</b>       |                               |     |   |    |   |     |   |    |      |   |  |  |  |  |   |    |  |
| ZUB                      | Accessories supplied loos     |     |   |    |   |     |   |    |      |   |  |  |  |  |   |    |  |
| <b>Slot cover</b>        |                               |     |   |    |   |     |   |    |      |   |  |  |  |  |   |    |  |
| ...S                     | Sensor slot                   |     |   |    |   |     |   |    |      |   |  |  |  |  |   |    |  |
| ...B                     | Mounting slot                 |     |   |    |   |     |   |    |      |   |  |  |  |  |   |    |  |
| <b>Slot nut</b>          |                               |     |   |    |   |     |   |    |      |   |  |  |  |  |   |    |  |
| ...Y                     | For mounting slot             |     |   |    |   |     |   |    |      |   |  |  |  |  |   |    |  |
| <b>Central support</b>   |                               |     |   |    |   |     |   |    |      |   |  |  |  |  |   |    |  |
| ...M                     | Central support               |     |   |    |   |     |   |    |      |   |  |  |  |  |   |    |  |
| <b>Foot mounting</b>     |                               |     |   |    |   |     |   |    |      |   |  |  |  |  |   |    |  |
| ...F                     | Foot mounting                 |     |   |    |   |     |   |    |      |   |  |  |  |  |   |    |  |
| <b>Proximity sensor</b>  |                               |     |   |    |   |     |   |    |      |   |  |  |  |  |   |    |  |
| ...G                     | With cable, 2.5 m             |     |   |    |   |     |   |    |      |   |  |  |  |  |   |    |  |
| ...H                     | With plug                     |     |   |    |   |     |   |    |      |   |  |  |  |  |   |    |  |
| ...I                     | Contactless with cable, 2.5 m |     |   |    |   |     |   |    |      |   |  |  |  |  |   |    |  |
| ...J                     | Contactless, plug             |     |   |    |   |     |   |    |      |   |  |  |  |  |   |    |  |
| ...N                     | NC contact with cable, 2.5 m  |     |   |    |   |     |   |    |      |   |  |  |  |  |   |    |  |
| <b>Cable with socket</b> |                               |     |   |    |   |     |   |    |      |   |  |  |  |  |   |    |  |
| ...V                     | 2.5 m                         |     |   |    |   |     |   |    |      |   |  |  |  |  |   |    |  |



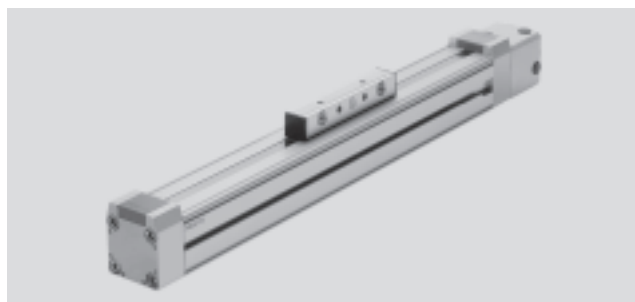
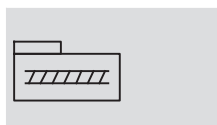
# Spindle axes DGE-SP

Technical data

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Function

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



-N- Size  
18 ... 63  
-T- Stroke length  
100 ... 2000 mm

| General technical data                    |                     |                                                |                            |                            |                            |
|-------------------------------------------|---------------------|------------------------------------------------|----------------------------|----------------------------|----------------------------|
| Size                                      |                     | 18                                             | 25                         | 40                         | 63                         |
| Constructional design                     |                     | Electromechanical axis with spindle and driver |                            |                            |                            |
| Guide                                     |                     | –                                              |                            |                            |                            |
| Mounting position                         |                     | Any                                            |                            |                            |                            |
| Max. working stroke <sup>1)</sup>         | [mm]                | 100 ... 500                                    | 100 ... 1000 <sup>4)</sup> | 200 ... 1500 <sup>4)</sup> | 300 ... 2000 <sup>4)</sup> |
| Max. feed force $F_x$                     | [N]                 | 140                                            | 250                        | 600                        | 1600                       |
| Max. driving torque                       | [Nm]                | 0.1                                            | 0.45                       | 2.1                        | 8.5                        |
| Max. no-load driving torque <sup>2)</sup> | [Nm]                | 0.05                                           | 0.15                       | 0.33                       | 1.15                       |
| Max. radial force <sup>3)</sup>           | [N]                 | 40                                             | 75                         | 250                        | 800                        |
| Max. speed <sup>4)</sup>                  | [m/s]               | 0.2                                            | 0.5                        | 1                          | 1.2                        |
| Max. acceleration                         | [m/s <sup>2</sup> ] | 6                                              |                            |                            |                            |
| Repetition accuracy                       | [mm]                | ±0.02                                          |                            |                            |                            |

1) Total stroke = working stroke + 2x stroke reserve

2) Measured at a speed of 0.2 m/s

3) On drive shaft

4) The maximum speed is dependent on the stroke length → 13

| Operating and environmental conditions |                |    |    |    |
|----------------------------------------|----------------|----|----|----|
| Size                                   | 18             | 25 | 40 | 63 |
| Ambient temperature                    | [°C] 0 ... +40 |    |    |    |
| Protection class                       | IP40           |    |    |    |

| Weights [kg]                                |      |      |      |      |
|---------------------------------------------|------|------|------|------|
| Size                                        | 18   | 25   | 40   | 63   |
| Basic weight with 0 mm stroke <sup>1)</sup> | 0.55 | 1.4  | 4.3  | 12.5 |
| Additional weight per 100 mm stroke         | 0.21 | 0.41 | 0.71 | 2.53 |
| Moving load                                 | 0,13 | 0,25 | 0,67 | 2,17 |

1) Including coupling housing

| Mass moment of inertia             |                          |       |       |       |       |
|------------------------------------|--------------------------|-------|-------|-------|-------|
| Size                               |                          | 18    | 25    | 40    | 63    |
| J <sub>0</sub>                     | [kg cm <sup>2</sup> ]    | 0.007 | 0.029 | 0.364 | 3.15  |
| J <sub>H</sub> per metre stroke    | [kg cm <sup>2</sup> /m]  | 0.031 | 0.121 | 1     | 6.67  |
| J <sub>L</sub> per kg working load | [kg cm <sup>2</sup> /kg] | 0.005 | 0.025 | 0.101 | 0.228 |

The mass moment of inertia  $J_A$  of the entire axis is calculated as follows:

$$J_A = J_0 + J_H \times \text{working stroke [m]} + J_L \times m_{\text{working load [kg]}}$$

# Spindle axes DGE-SP

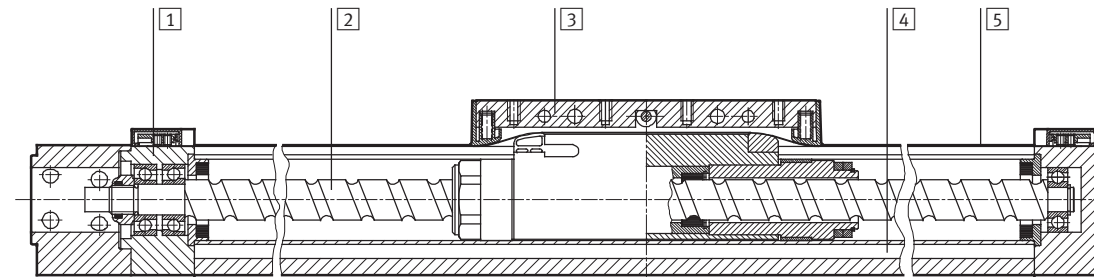
Technical data

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| Spindle  |           |    |    |    |    |
|----------|-----------|----|----|----|----|
| Size     |           | 18 | 25 | 40 | 63 |
| Diameter | [mm]      | 8  | 12 | 20 | 32 |
| Pitch    | [mm/rev.] | 4  | 10 | 20 | 30 |

## Materials

Sectional view



| Axis |             |                                   |
|------|-------------|-----------------------------------|
| 1    | End cap     | Wrought aluminium alloy, anodised |
| 2    | Spindle     | Rolled steel                      |
| 3    | Driver      | Wrought aluminium alloy, anodised |
| 4    | Profile     | Wrought aluminium alloy, anodised |
| 5    | Cover strip | Corrosion resistant steel         |

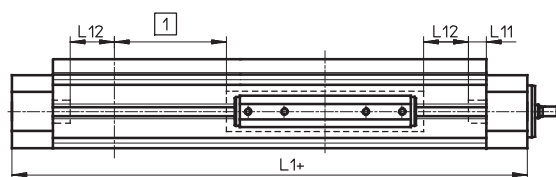
## Stroke reserve

L1+ Overall length of axis  
L11 Internal mechanical stop

1 The working stroke is the effective usable work range. Please quote this in your order.

L12 Stroke reserve:  
Safety distance to mechanical stop, present at both ends of the axis in addition to the stroke.

Example:  
Type DGE-25-500-SP  
Working stroke = 500 mm  
Stroke reserve = (2x 10 mm)  
= 20 mm  
Total stroke  
520 mm = 500 mm + 20 mm



| Size                 |      | 18  | 25 | 40 | 63 |
|----------------------|------|-----|----|----|----|
| L12 per end position | [mm] | 6.5 | 10 | 20 | 30 |

# Spindle axes DGE-SP

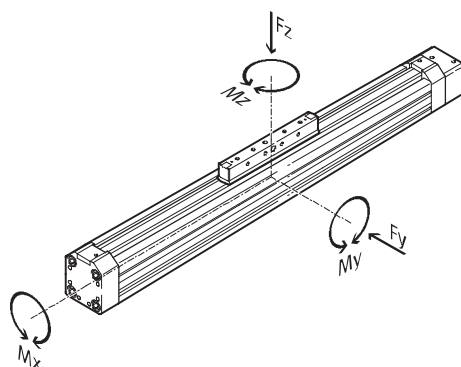
Technical data

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## Characteristic load values

The indicated forces and torques refer to the centre line of the internal diameter of the profile.

They must not be exceeded in the dynamic range. Special attention must be paid to the cushioning phase.



If the axis is subjected to more than two of the indicated forces and torques simultaneously, the following equations must be satisfied in addition to the indicated maximum loads:

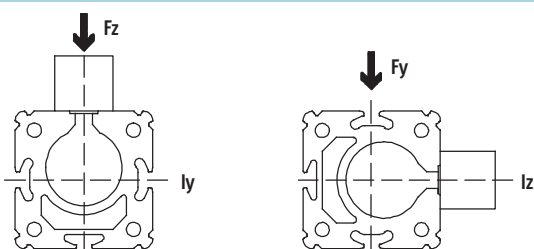
$$\frac{F_z}{F_{z_{\max}}} + \frac{M_y}{M_{y_{\max}}} + \frac{M_z}{M_{z_{\max}}} \leq 1$$

$$\frac{M_x}{M_{x_{\max}}} \leq 1$$

## Permissible forces and torques

| Size                                | 18  | 25  | 40 | 63  |
|-------------------------------------|-----|-----|----|-----|
| F <sub>y</sub> <sub>max.</sub> [N]  | –   | –   | –  | –   |
| F <sub>z</sub> <sub>max.</sub> [N]  | 1.8 | 2   | 15 | 106 |
| M <sub>x</sub> <sub>max.</sub> [Nm] | 0.5 | 1   | 4  | 8   |
| M <sub>y</sub> <sub>max.</sub> [Nm] | 0.8 | 1.5 | 4  | 18  |
| M <sub>z</sub> <sub>max.</sub> [Nm] | 0.8 | 1.5 | 4  | 18  |

## 2nd moment of area



| Size                              | 18                   | 25                  | 40                  | 63                   |
|-----------------------------------|----------------------|---------------------|---------------------|----------------------|
| I <sub>y</sub> [mm <sup>4</sup> ] | 69.8x10 <sup>3</sup> | 224x10 <sup>3</sup> | 673x10 <sup>3</sup> | 5688x10 <sup>3</sup> |
| I <sub>z</sub> [mm <sup>4</sup> ] | 72.3x10 <sup>3</sup> | 240x10 <sup>3</sup> | 748x10 <sup>3</sup> | 6031x10 <sup>3</sup> |

## Note

Sizing software  
PositioningDrives  
➔ [www.festo.com](http://www.festo.com)

# Spindle axes DGE-SP

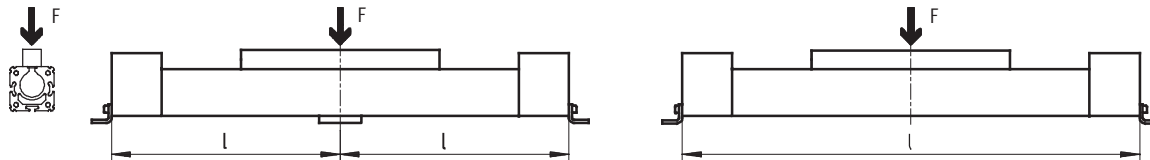
Technical data

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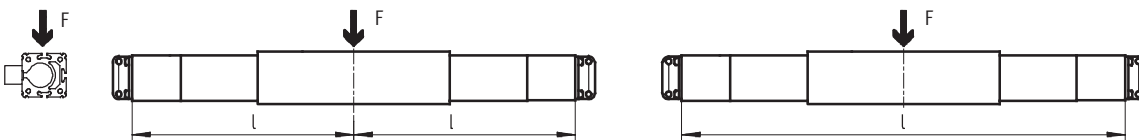
## Maximum permissible support span $l$ as a function of the force $F$

The axis may need to be supported with central supports in order to restrict deflection with long stroke lengths. The following diagrams serve to determine the maximum permissible support span  $l$  as a function of the force acting upon the axis  $F$ .

### 1 Force on the surface of the driver

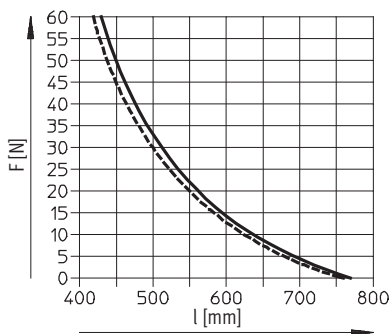


### 2 Force on the front of the driver

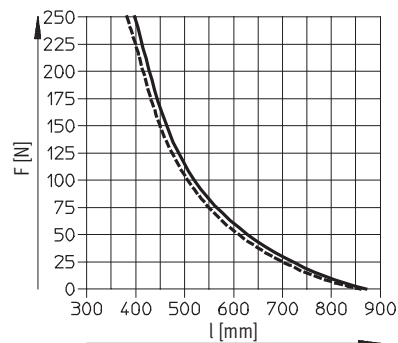


## Maximum permissible support span $l$ (without central support) as a function of the force $F$

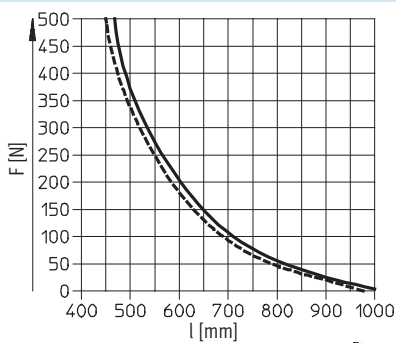
DGE-18



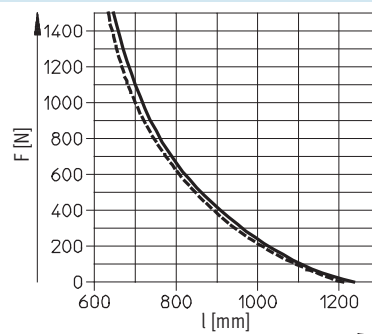
DGE-25



DGE-40



DGE-63



— 1  
- - - 2

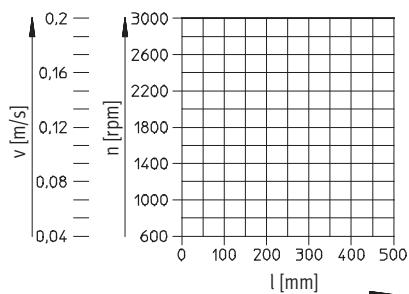
# Spindle axes DGE-SP

Technical data

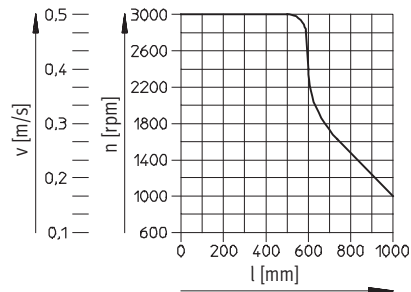
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## Maximum permissible speed $v$ or drive rpm $n$ as a function of the stroke $l$

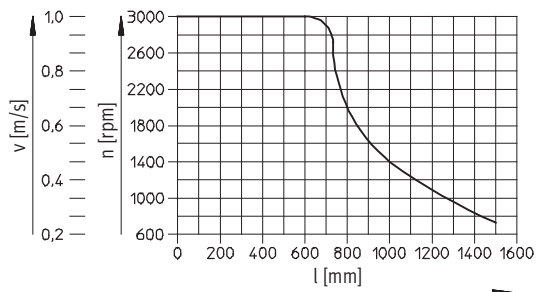
DGE-18



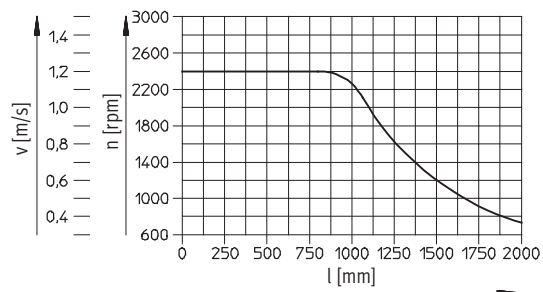
DGE-25



DGE-40

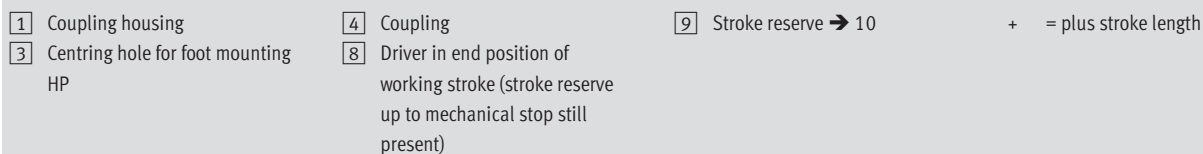


DGE-63



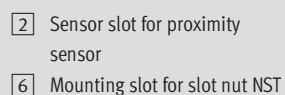
### Technical data

## Size 18



## Profile

## Size 18



# Spindle axes DGE-SP

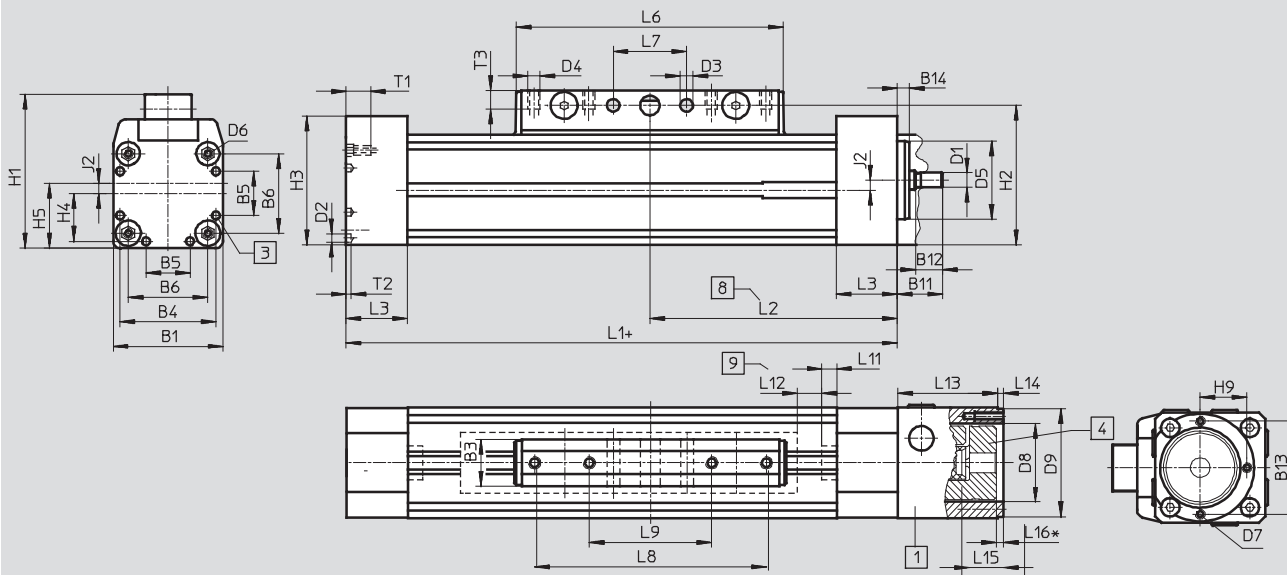
Technical data

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## Dimensions

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

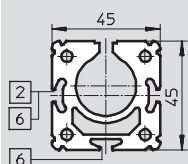
### Size 25 ... 63



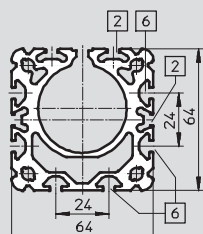
- 1 Coupling housing  
3 Centring hole for foot mounting HP  
4 Coupling  
8 Driver in end position of working stroke (stroke reserve up to mechanical stop still present)  
9 Stroke reserve → 10 + = plus stroke length

## Profile

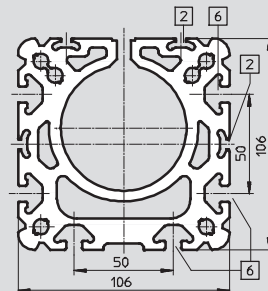
### Size 25



### Size 40



### Size 63



- 2 Sensor slot for proximity sensor  
6 Mounting slot for slot nut NST

| Size | B1  | B3<br>+0.2 | B4   | B5 | B6   | B11  | B12 | B13 | B14 | D1<br>Ø<br>h6 | D2<br>Ø | D3<br>Ø<br>+0.2 | D4 | D5<br>Ø<br>g7 | D6 | D7 | D8<br>Ø | D9<br>Ø<br>g7 | H1  | H2  | H3   |
|------|-----|------------|------|----|------|------|-----|-----|-----|---------------|---------|-----------------|----|---------------|----|----|---------|---------------|-----|-----|------|
| 25   | 45  | 19         | 39.1 | 18 | 32.5 | 18.5 | 11  | 38  | 4   | 6             | 3.3     | 5.2             | M5 | 32            | M4 | M4 | 32      | 44            | 63  | 57  | 52.8 |
| 40   | 64  | 21         | 53   | 28 | 49   | 22.5 | 12  | 38  | 5   | 12            | 4.4     | 6.5             | M6 | 48            | M5 | M4 | 32      | 44            | 86  | 78  | 71.8 |
| 63   | 106 | 24         | 89   | 44 | 83   | 47.5 | 25  | 56  | 7   | 20            | 6.4     | 8.5             | M8 | 72            | M8 | M6 | 48      | 64            | 131 | 122 | 115  |

| Size | H4   | H5   | H9 | J2 | L1  | L2    | L3 | L6  | L7<br>±0.1 | L8<br>±0.1 | L9<br>±0.1 | L11 | L12 | L13 | L14 | L15  | L16 <sup>1)</sup> | T1 | T2 | T3   |
|------|------|------|----|----|-----|-------|----|-----|------------|------------|------------|-----|-----|-----|-----|------|-------------------|----|----|------|
| 25   | 19.6 | 26.5 | 19 | 4  | 213 | 101.5 | 25 | 109 | 30         | –          | 50         | 6   | 10  | 43  | 2.5 | 14   | 3                 | 13 | 2  | 7.5  |
| 40   | 26.5 | 37   | 19 | 5  | 315 | 153   | 31 | 171 | 70         | 130        | 40         | 7   | 20  | 46  | 3   | 14.5 | 3.5               | 13 | 3  | 10.5 |
| 63   | 44.5 | 61   | 28 | 8  | 410 | 200   | 36 | 234 | 110        | 190        | 70         | 9   | 30  | 83  | 4   | 23   | –2                | 21 | 4  | 12.5 |

1) Negative dimension: Protrudes beyond coupling housing

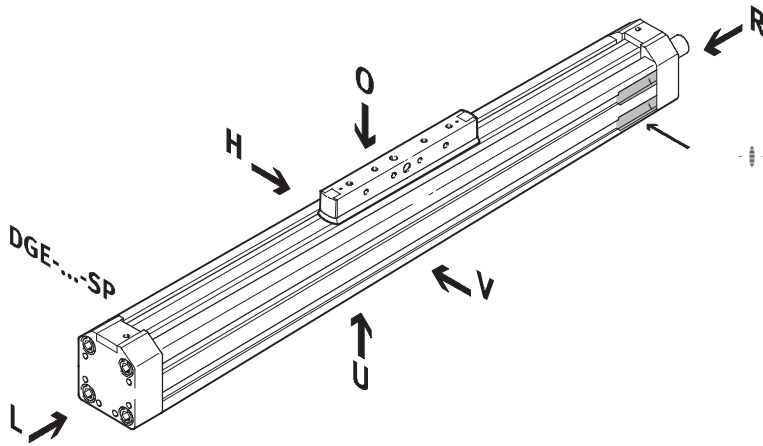
## Spindle axes DGE-SP

Ordering data – Modular products

FESTO

### Order code

Mandatory data



### Note

The insertion point for the proximity sensor is located on the right-hand side of the spindle axis DGE-...-SP

|   |            |
|---|------------|
| O | top        |
| U | underneath |
| V | front      |
| H | rear       |
| R | right      |
| L | left       |



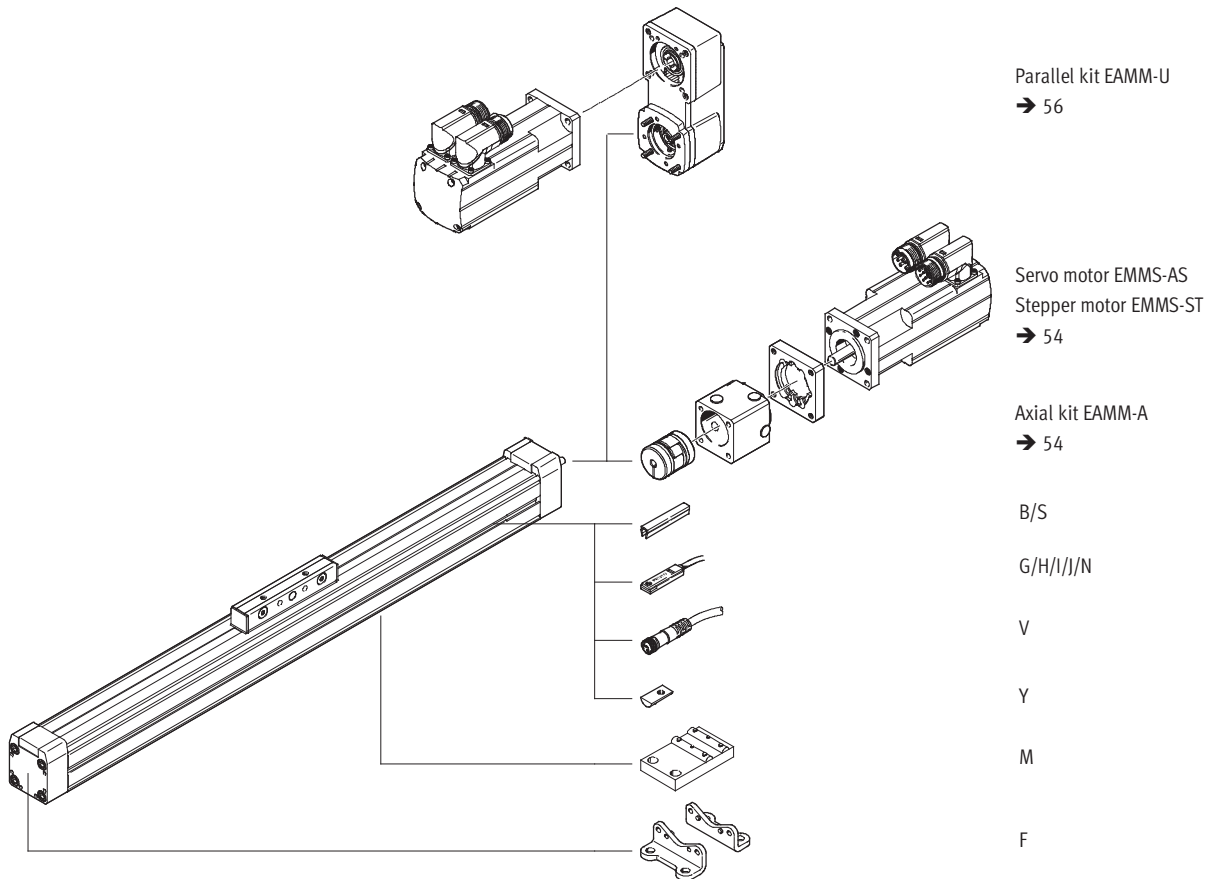
# Spindle axes DGE-SP

Ordering data – Modular products

FESTO

## Order code

## Options



# Spindle axes DGE-SP

Ordering data – Modular products

FESTO

## M Mandatory data →

| Module No.              | Design     | Size        | Stroke       | Drive function |
|-------------------------|------------|-------------|--------------|----------------|
| 193 745                 | DGE        | 18          | 1 ... 2 000  | SP             |
| 193 746                 |            | 25          |              |                |
| 193 747                 |            | 40          |              |                |
| 193 748                 |            | 63          |              |                |
| <b>Ordering example</b> |            |             |              |                |
| <b>193 747</b>          | <b>DGE</b> | <b>- 40</b> | <b>- 800</b> | <b>- SP</b>    |

| Ordering table      |                                         |                                                   |                                                      |                                                             |            |            |            |
|---------------------|-----------------------------------------|---------------------------------------------------|------------------------------------------------------|-------------------------------------------------------------|------------|------------|------------|
| Size                | 18                                      | 25                                                | 40                                                   | 63                                                          | Conditions | Code       | Enter code |
| <b>M</b> Module No. | <b>193 745</b>                          | <b>193 746</b>                                    | <b>193 747</b>                                       | <b>193 748</b>                                              |            |            |            |
| Design              | Electromechanical linear axis           |                                                   |                                                      |                                                             |            | <b>DGE</b> | DGE        |
| Size                | 18                                      | 25                                                | 40                                                   | 63                                                          |            | -...       |            |
| Stroke [mm]         | 100, 200, 300, 400, 500                 | 100, 200, 300, 400, 500, 600, 700, 800, 900, 1000 | 200, 300, 400, 500, 600, 800, 1000, 1200, 1400, 1500 | 300, 400, 500, 600, 800, 1000, 1200, 1400, 1500, 1800, 2000 |            | -...       |            |
|                     | -                                       | 1 ... 990                                         | 1 ... 1487                                           | 1 ... 1982                                                  |            |            |            |
| Drive function      | Electromechanical drive with ball screw |                                                   |                                                      |                                                             |            | <b>-SP</b> | -SP        |

Transfer order code

|  |     |   |  |   |  |   |    |
|--|-----|---|--|---|--|---|----|
|  | DGE | - |  | - |  | - | SP |
|--|-----|---|--|---|--|---|----|

# Spindle axes DGE-SP

Ordering data – Modular products

**FESTO**

## Options

| Accessories | Slot cover   | Slot nut | Central support | Foot mounting | Proximity sensor                     | Plug socket |
|-------------|--------------|----------|-----------------|---------------|--------------------------------------|-------------|
| ZUB         | ...S<br>...B | ...Y     | ...M            | ...F          | ...G<br>...H<br>...I<br>...J<br>...N | ...V        |
| ZUB         | 2S2B         | 10Y      |                 | F             | 2G                                   |             |

## Ordering table

| Size                     | 18                               | 25       | 40 | 63       | Condition<br>s | Code | Enter<br>code |
|--------------------------|----------------------------------|----------|----|----------|----------------|------|---------------|
| ↓ Accessories            | Supplied separately              |          |    |          |                | ZUB- | ZUB-          |
| 0 Slot cover             | Sensor slot                      | 1 ... 10 |    |          |                | ...S |               |
|                          | Mounting slot                    | –        | –  | 1 ... 10 |                | ...B |               |
| Slot nut                 | for mounting slot                | 1 ... 10 |    |          |                | ...Y |               |
| Central support          |                                  | 1 ... 10 |    |          |                | ...M |               |
| Foot mounting (kit)      |                                  | 1 ... 10 |    |          |                | ...F |               |
| Proximity sensor         | with cable, 2.5 m                | 1 ... 10 |    |          |                | ...G |               |
|                          | with plug                        | 1 ... 10 |    |          |                | ...H |               |
|                          | contactless with<br>cable, 2.5 m | 1 ... 10 |    |          |                | ...I |               |
|                          | contactless, plug                | 1 ... 10 |    |          |                | ...J |               |
|                          | NC contact with<br>cable, 2.5 m  | 1 ... 10 |    |          |                | ...N |               |
| Cable with socket, 2.5 m |                                  | 1 ... 10 |    |          |                | ...V |               |

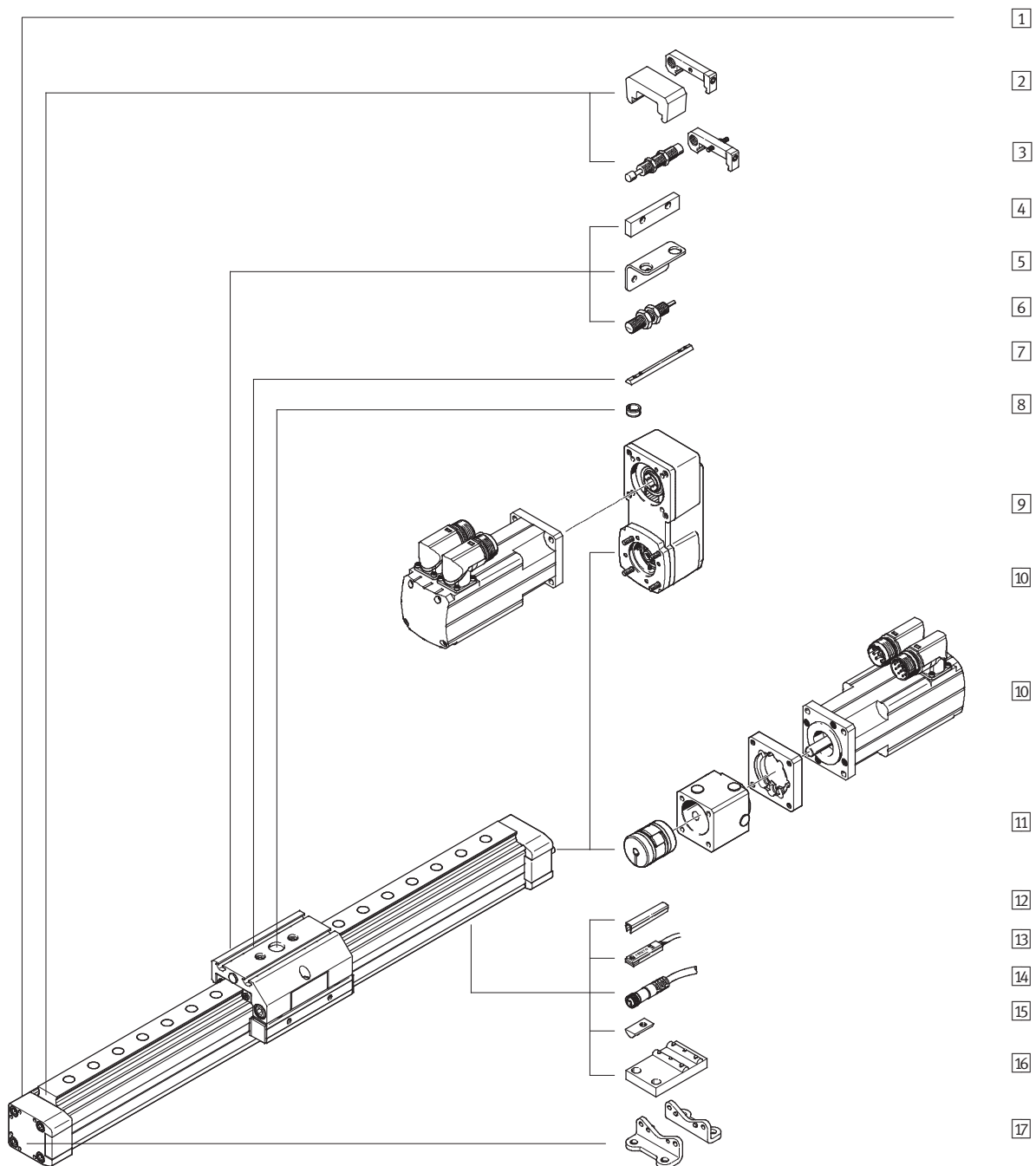
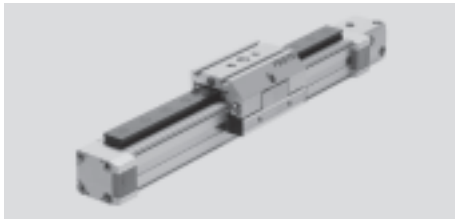
## Transfer order code

|     |   |  |  |  |  |  |
|-----|---|--|--|--|--|--|
| ZUB | – |  |  |  |  |  |
|-----|---|--|--|--|--|--|

# Spindle axes DGE-SP-KF, with recirculating ball bearing guide

Peripherals overview

FESTO



# Spindle axes DGE-SP-KF, with recirculating ball bearing guide

Peripherals overview

| Variants and accessories                            |                                                                                                                                      |       |    |                 |  |
|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|-------|----|-----------------|--|
| Type                                                | Brief description                                                                                                                    | GK/GV | GA | → Page/Internet |  |
| 1 Spindle axis<br>DGE-SP-KF                         | Electromechanical axis with spindle and recirculating ball bearing guide                                                             | ■     | ■  | 22              |  |
| 2 Emergency buffer with retainer <sup>1)</sup><br>A | For avoiding damage at the end stop in the event of malfunction                                                                      | ■     | ■  | 60              |  |
| 3 Shock absorber kit<br>C                           | For avoiding damage at the end stop in the event of malfunction                                                                      | ■     | –  | 59              |  |
| 3 Shock absorber kit<br>E                           | For avoiding damage at the end stop in the event of malfunction                                                                      | –     | ■  | 60              |  |
| 4 Switching lug<br>L                                | For sensing the slide position                                                                                                       | ■     | –  | 62              |  |
| 5 Sensor bracket<br>T                               | Adapter for mounting the inductive proximity sensors on the axis                                                                     | ■     | –  | 62              |  |
| 6 Inductive proximity sensor<br>O/P/R/W             | For use as a signal generator and safety monitoring                                                                                  | ■     | –  | 65              |  |
| 7 Slot nut for slide<br>X                           | For mounting loads and attachments on the slide                                                                                      | ■     | ■  | 64              |  |
| 8 Centring pins/sleeves<br>Z                        | For centring loads and attachments on the slide                                                                                      | ■     | ■  | 64              |  |
| 9 Parallel kit<br>EAMM-U                            | For parallel motor attachment<br>(consisting of: housing, Clamping component, clamping sleeve, toothed belt gearwheel, toothed belt) | ■     | ■  | 56              |  |
| 10 Motor<br>EMMS                                    | Motors specially matched to the axis, with or without gearing, with or without brake                                                 | ■     | ■  | 54              |  |
| 11 Axial kit<br>EAMM-A                              | For axial motor attachment<br>(consisting of: coupling housing, clamping component, motor flange)                                    | ■     | ■  | 54              |  |
| 12 Slot cover<br>B/S                                | For protecting against the ingress of dirt                                                                                           | ■     | ■  | 64              |  |
| 13 Proximity sensor<br>G/H/I/J/N                    | For use as a signal or safety check                                                                                                  | ■     | ■  | 65              |  |
| 14 Cable with socket<br>V                           | For proximity sensors                                                                                                                | ■     | ■  | 65              |  |
| 15 Slot nut for mounting slot<br>Y                  | For mounting attachments                                                                                                             | ■     | ■  | 64              |  |
| 16 Central support<br>M                             | For mounting the axis                                                                                                                | ■     | ■  | 57              |  |
| 17 Foot mounting<br>F                               | For mounting the axis                                                                                                                | ■     | ■  | 57              |  |

1) Fitted as standard for GV and GA.

# Spindle axes DGE-SP-KF, with recirculating ball bearing guide

FESTO

Type code

|                                  |                                  |   |    |   |     |   |    |   |    |   |    |   |    |   |  |
|----------------------------------|----------------------------------|---|----|---|-----|---|----|---|----|---|----|---|----|---|--|
|                                  | DGE                              | - | 25 | - | 500 | - | SP | - | KF | - | GK | - | SV | - |  |
| <b>Type</b>                      |                                  |   |    |   |     |   |    |   |    |   |    |   |    |   |  |
| DGE                              | Spindle axis                     |   |    |   |     |   |    |   |    |   |    |   |    |   |  |
| <b>Size</b>                      |                                  |   |    |   |     |   |    |   |    |   |    |   |    |   |  |
| <b>Stroke [mm]</b>               |                                  |   |    |   |     |   |    |   |    |   |    |   |    |   |  |
| <b>Drive function</b>            |                                  |   |    |   |     |   |    |   |    |   |    |   |    |   |  |
| SP                               | Spindle                          |   |    |   |     |   |    |   |    |   |    |   |    |   |  |
| <b>Guide</b>                     |                                  |   |    |   |     |   |    |   |    |   |    |   |    |   |  |
| KF                               | Recirculating ball bearing guide |   |    |   |     |   |    |   |    |   |    |   |    |   |  |
| <b>Slide</b>                     |                                  |   |    |   |     |   |    |   |    |   |    |   |    |   |  |
| GK                               | Standard slide                   |   |    |   |     |   |    |   |    |   |    |   |    |   |  |
| GV                               | Extended slide                   |   |    |   |     |   |    |   |    |   |    |   |    |   |  |
| GA                               | Protected version                |   |    |   |     |   |    |   |    |   |    |   |    |   |  |
| <b>Slide attachment position</b> |                                  |   |    |   |     |   |    |   |    |   |    |   |    |   |  |
| SV                               | At front                         |   |    |   |     |   |    |   |    |   |    |   |    |   |  |
| SH                               | At rear                          |   |    |   |     |   |    |   |    |   |    |   |    |   |  |
| <b>Additional slide</b>          |                                  |   |    |   |     |   |    |   |    |   |    |   |    |   |  |
| KL                               | Left                             |   |    |   |     |   |    |   |    |   |    |   |    |   |  |
| KR                               | Right                            |   |    |   |     |   |    |   |    |   |    |   |    |   |  |

# Spindle axes DGE-SP-KF, with recirculating ball bearing guide

FESTO

Type code

➔

+ ZUB

-

2S

-

M

-

F

Z

2H

2V

| Accessories                   |                                 |
|-------------------------------|---------------------------------|
| ZUB                           | Accessories supplied loose      |
| Slot cover                    |                                 |
| ...S                          | Sensor slot                     |
| ...B                          | Mounting slot                   |
| Slot nut                      |                                 |
| ...Y                          | For mounting slot               |
| ...X                          | For slide                       |
| Central support               |                                 |
| ...M                          | Central support                 |
| Foot mounting                 |                                 |
| ...F                          | Foot mounting                   |
| Emergency buffer and retainer |                                 |
| ...A                          | Emergency buffer                |
| Shock absorber kit            |                                 |
| ...C                          | Plus retainer for GK/GV         |
| ...E                          | For GA                          |
| Centring sleeve               |                                 |
| ...Z                          | For slide                       |
| Proximity sensor              |                                 |
| ...G                          | With cable, 2.5 m               |
| ...H                          | With plug                       |
| ...I                          | Contactless with cable, 2.5 m   |
| ...J                          | Contactless, plug               |
| ...N                          | NC contact with cable, 2.5 m    |
| Cable with socket             |                                 |
| ...V                          | 2.5 m                           |
| Sensor bracket                |                                 |
| ...T                          | For inductive proximity sensors |
| Switching lug                 |                                 |
| L                             | Switching lug                   |
| Inductive sensor              |                                 |
| ...O                          | NO contact, cable               |
| ...P                          | NC contact, cable               |
| ...W                          | NO contact, plug                |
| ...R                          | NC contact, plug                |

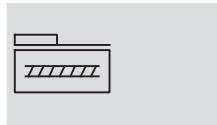
# Spindle axes DGE-SP-KF, with recirculating ball bearing guide

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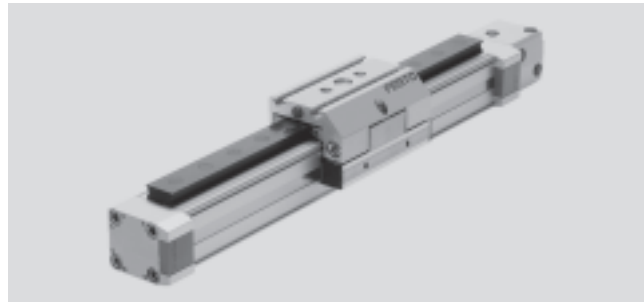
Technical data

Function

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



-N- Size  
18 ... 63  
-T- Stroke length  
100 ... 2000 mm



| General technical data                    |                     |                                                                          |                            |                            |                            |
|-------------------------------------------|---------------------|--------------------------------------------------------------------------|----------------------------|----------------------------|----------------------------|
| Size                                      |                     | 18                                                                       | 25                         | 40                         | 63                         |
| Constructional design                     |                     | Electromechanical axis with spindle and recirculating ball bearing guide |                            |                            |                            |
| Guide                                     |                     | Recirculating ball bearing guide                                         |                            |                            |                            |
| Mounting position                         |                     | Any                                                                      |                            |                            |                            |
| Max. working stroke <sup>1)</sup>         | GK [mm]             | 100 ... 500                                                              | 100 ... 1000 <sup>4)</sup> | 200 ... 1500 <sup>4)</sup> | 300 ... 2000 <sup>4)</sup> |
|                                           | GV [mm]             | 110 ... 410                                                              | 170 ... 870 <sup>4)</sup>  | 170 ... 1270 <sup>4)</sup> | 150 ... 1650 <sup>4)</sup> |
|                                           | GA [mm]             | –                                                                        | 170 ... 970 <sup>4)</sup>  | 140 ... 1440 <sup>4)</sup> | –                          |
| Max. working load                         | [kg]                | 6                                                                        | 25                         | 50                         | 150                        |
| Max. feed force $F_x$                     | [N]                 | 140                                                                      | 250                        | 600                        | 1600                       |
| Max. driving torque                       | [Nm]                | 0.1                                                                      | 0.45                       | 2.1                        | 8.5                        |
| Max. no-load driving torque <sup>2)</sup> | [Nm]                | 0.05                                                                     | 0.15                       | 0.33                       | 1.15                       |
| Max. radial force <sup>3)</sup>           | [N]                 | 40                                                                       | 75                         | 250                        | 800                        |
| Max. speed <sup>4)</sup>                  | [m/s]               | 0.2                                                                      | 0.5                        | 1                          | 1.2                        |
| Max. acceleration                         | [m/s <sup>2</sup> ] | 6                                                                        |                            |                            |                            |
| Repetition accuracy                       | [mm]                | ±0.02                                                                    |                            |                            |                            |

- 1) Total stroke = working stroke + 2x stroke reserve → 28  
 2) Measured at a speed of 0.2 m/s  
 3) On drive shaft  
 4) The maximum speed is dependent on the stroke length → 30

| Operating and environmental conditions |                |    |    |    |
|----------------------------------------|----------------|----|----|----|
| Size                                   | 18             | 25 | 40 | 63 |
| Ambient temperature                    | [°C] 0 ... +40 |    |    |    |
| Protection class                       | IP40           |    |    |    |

| Weights [kg]                                |       |      |      |       |      |
|---------------------------------------------|-------|------|------|-------|------|
| Size                                        |       | 18   | 25   | 40    | 63   |
| Basic weight with 0 mm stroke <sup>1)</sup> | GK    | 1    | 2.1  | 6.4   | 18.1 |
|                                             | GV    | 1.52 | 3.26 | 10.04 | 32.2 |
|                                             | GA    | –    | 3.1  | 8.97  | –    |
| Additional weight per 100 mm stroke         | GK    | 0.3  | 0.56 | 1.14  | 3.31 |
|                                             | GV    | 0.3  | 0.56 | 1.14  | 3.31 |
|                                             | GA    | –    | 0.65 | 1.26  | –    |
| Moving load                                 | GK    | 0,45 | 0,68 | 1,82  | 5,38 |
|                                             | GV    | 0,61 | 0,94 | 2,54  | 7,84 |
|                                             | GA    | –    | 1,24 | 3,19  | –    |
| Additional slide                            | KL/KR | 0.25 | 0.38 | 1.06  | 3.1  |

- 1) Including coupling housing and slide



# Spindle axes DGE-SP-KF, with recirculating ball bearing guide

FESTO

Technical data

| Mass moment of inertia     |    |                       | 18                       | 25     | 40     | 63    |
|----------------------------|----|-----------------------|--------------------------|--------|--------|-------|
| Size                       |    |                       |                          |        |        |       |
| $J_0$                      | GK | [kg cm <sup>2</sup> ] | 0.008                    | 0.04   | 0.48   | 3.88  |
|                            | GV | [kg cm <sup>2</sup> ] | 0.0117                   | 0.0617 | 0.782  | 6.77  |
|                            | GA | [kg cm <sup>2</sup> ] | –                        | 0.0573 | 0.678  | –     |
| $J_H$ per metre stroke     |    |                       | [kg cm <sup>2</sup> /m]  | 0.031  | 0.121  | 1     |
| $J_L$ per kg working load  |    |                       | [kg cm <sup>2</sup> /kg] | 0.005  | 0.025  | 0.101 |
| $J_W$ for additional slide |    |                       | [kg cm <sup>2</sup> ]    | 0.001  | 0.0096 | 0.107 |

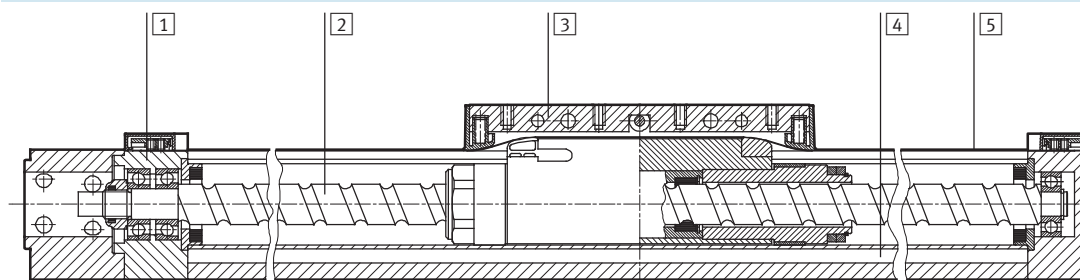
The mass moment of inertia  $J_A$  of the entire axis is calculated as follows:

$$J_A = J_0 + J_H \times \text{working stroke [m]} + J_L \times m_{\text{working load [kg]}}$$

| Spindle  |           |    |    |    |    |
|----------|-----------|----|----|----|----|
| Size     |           | 18 | 25 | 40 | 63 |
| Diameter | [mm]      | 8  | 12 | 20 | 32 |
| Pitch    | [mm/rev.] | 4  | 10 | 20 | 30 |

## Materials

Sectional view



| Axis |             |                                   |
|------|-------------|-----------------------------------|
| 1    | End cap     | Wrought aluminium alloy, anodised |
| 2    | Spindle     | Rolled steel                      |
| 3    | Slide       | Wrought aluminium alloy, anodised |
| 4    | Profile     | Wrought aluminium alloy, anodised |
| 5    | Cover strip | Corrosion resistant steel         |

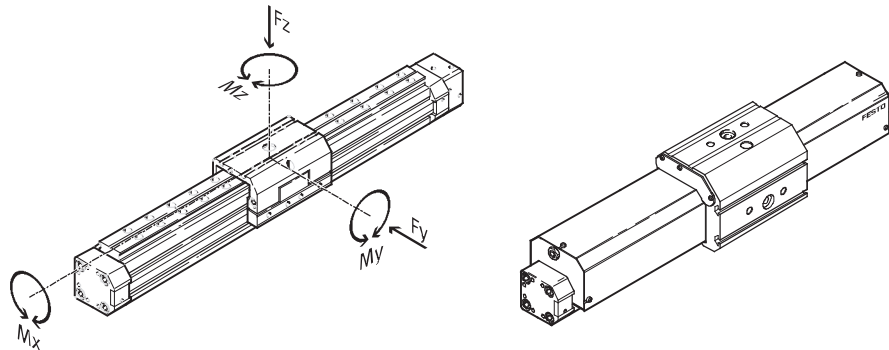
# Spindle axes DGE-SP-KF, with recirculating ball bearing guide

Technical data

FESTO

## Characteristic load values for axis with standard slide GK or protected version GA

The indicated forces and torques refer to the centre of the guide rail. They must not be exceeded in the dynamic range. Special attention must be paid to the cushioning phase.

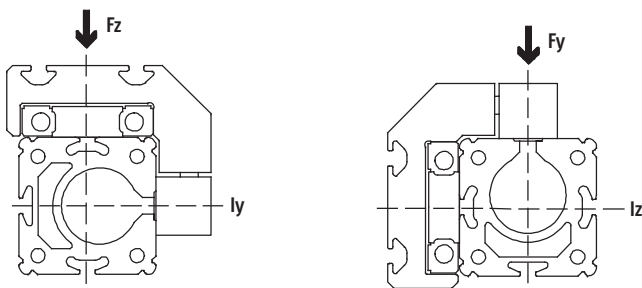


If the drive is subjected to more than two of the indicated forces and torques simultaneously, the following equations must be satisfied in addition to the indicated maximum loads:

$$\frac{F_y}{F_{y_{\max}}} + \frac{F_z}{F_{z_{\max}}} + \frac{M_x}{M_{x_{\max}}} + \frac{M_y}{M_{y_{\max}}} + \frac{M_z}{M_{z_{\max}}} \leq 1$$

| Permissible forces and torques GK/-GA |      |     |      |      |       |
|---------------------------------------|------|-----|------|------|-------|
| Size                                  |      | 18  | 25   | 40   | 63    |
| F <sub>y</sub> <sub>max.</sub>        | [N]  | 930 | 3080 | 7300 | 14050 |
| F <sub>z</sub> <sub>max.</sub>        | [N]  | 930 | 3080 | 7300 | 14050 |
| M <sub>x</sub> <sub>max.</sub>        | [Nm] | 7   | 45   | 170  | 580   |
| M <sub>y</sub> <sub>max.</sub>        | [Nm] | 23  | 85   | 330  | 910   |
| M <sub>z</sub> <sub>max.</sub>        | [Nm] | 23  | 85   | 330  | 910   |

## 2nd moment of area



| Size           |                    | 18                    | 25                  | 40                   | 63                    |
|----------------|--------------------|-----------------------|---------------------|----------------------|-----------------------|
| I <sub>y</sub> | [mm <sup>4</sup> ] | 172.3x10 <sup>3</sup> | 551x10 <sup>3</sup> | 1908x10 <sup>3</sup> | 13677x10 <sup>3</sup> |
| I <sub>z</sub> | [mm <sup>4</sup> ] | 73.7x10 <sup>3</sup>  | 250x10 <sup>3</sup> | 875x10 <sup>3</sup>  | 6987x10 <sup>3</sup>  |

## Note

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

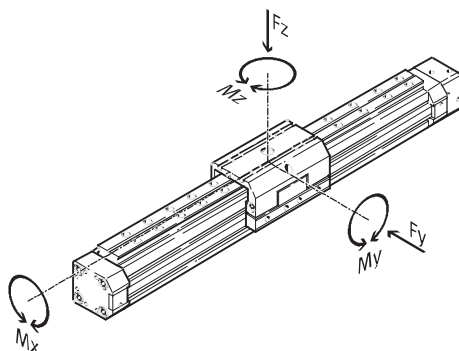
# Spindle axes DGE-SP-KF, with recirculating ball bearing guide

FESTO

Technical data

## Characteristic load values for axis with extended slide GV

The indicated forces and torques refer to the centre of the guide rail. They must not be exceeded in the dynamic range. Special attention must be paid to the cushioning phase.

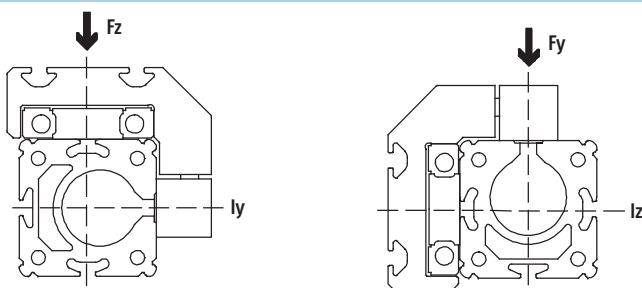


If the drive is subjected to more than two of the indicated forces and torques simultaneously, the following equations must be satisfied in addition to the indicated maximum loads:

$$\frac{F_y}{F_{y_{\max}}} + \frac{F_z}{F_{z_{\max}}} + \frac{M_x}{M_{x_{\max}}} + \frac{M_y}{M_{y_{\max}}} + \frac{M_z}{M_{z_{\max}}} \leq 1$$

| Permissible forces and torques |      |     |      |      |       |
|--------------------------------|------|-----|------|------|-------|
| Size                           |      | 18  | 25   | 40   | 63    |
| F <sub>y</sub> <sub>max.</sub> | [N]  | 930 | 3080 | 7300 | 14050 |
| F <sub>z</sub> <sub>max.</sub> | [N]  | 930 | 3080 | 7300 | 14050 |
| M <sub>x</sub> <sub>max.</sub> | [Nm] | 7   | 45   | 170  | 580   |
| M <sub>y</sub> <sub>max.</sub> | [Nm] | 45  | 170  | 660  | 1820  |
| M <sub>z</sub> <sub>max.</sub> | [Nm] | 45  | 170  | 660  | 1820  |

## 2nd moment of area



| Size           |                    | 18                    | 25                  | 40                   | 63                    |
|----------------|--------------------|-----------------------|---------------------|----------------------|-----------------------|
| I <sub>y</sub> | [mm <sup>4</sup> ] | 172.3x10 <sup>3</sup> | 551x10 <sup>3</sup> | 1908x10 <sup>3</sup> | 13677x10 <sup>3</sup> |
| I <sub>z</sub> | [mm <sup>4</sup> ] | 73.7x10 <sup>3</sup>  | 250x10 <sup>3</sup> | 875x10 <sup>3</sup>  | 6987x10 <sup>3</sup>  |

# Spindle axes DGE-SP-KF, with recirculating ball bearing guide

FESTO

Technical data

## Stroke reserve

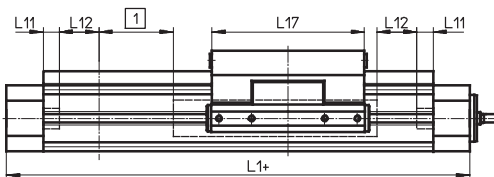
L11 Internal mechanical stop  
L1+ Overall length of axis  
L17 Slide length

1 The working stroke is the effective usable work range.  
Please quote this in your order.

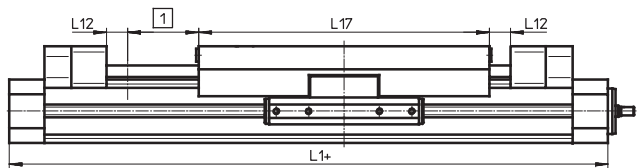
L12 The stroke reserve is a safety distance available on both sides of the axis in addition to the stroke.

Example:  
Type DGE-25-500-SP  
Working stroke = 500 mm  
Stroke reserve = (2x 10 mm)  
= 20 mm  
Total stroke:  
520 mm = 500 mm + 20 mm

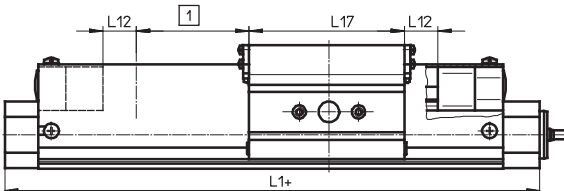
### for standard slide GK



### for extended slide GV



### for protected version GA

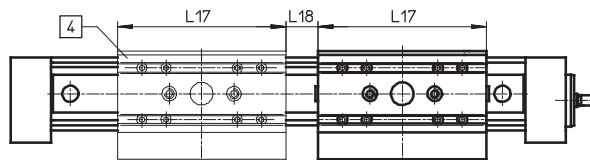


### Stroke reserve L12 [mm] per end position

| Size Variant         | 18  | 25 | 40 | 63 |
|----------------------|-----|----|----|----|
| Standard slide GK    | 6.5 | 10 | 20 | 30 |
| Extended slide GV    | 3.5 | 0  | 1  | 0  |
| Protected version GA | –   | 0  | 1  | –  |

## Working stroke reduction with standard slide GK or extended slide GV and additional slide KL/KR

L17 = Slide/additional slide length  
L18 = Distance between both slides  
4 Additional slide

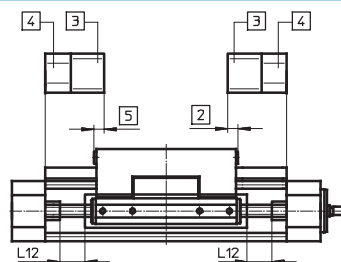


For a spindle axis with additional slide, the working stroke is reduced by the length of the additional slide and the distance between both slides.

Example:  
Type DGE-25-500-SP-...-KF-GK-KL  
Working stroke without additional slide = 500 mm  
L18 = 20 mm  
L17 = 105 mm  
Working stroke with additional slide = 375 mm  
(500 mm – 20 mm – 105 mm)

## Working stroke reduction with standard slide GK with optional emergency buffer

2 Reduction of working stroke  
5 Reduction of working stroke  
3 Emergency buffer  
4 Shock absorber retainer  
L12 Stroke reserve



For a spindle axis with optional emergency buffer, the working stroke is reduced, as the stroke reserve is smaller than the overall dimensions of the emergency buffer and shock absorber retainer. The working stroke reduction varies depending on the size of the axis.

|        | 18 | 25 | 40   | 63 |
|--------|----|----|------|----|
| 2 [mm] | –5 | 20 | 33.5 | 55 |
| 5 [mm] | 8  | 10 | 24.5 | 45 |

# Spindle axes DGE-SP-KF, with recirculating ball bearing guide

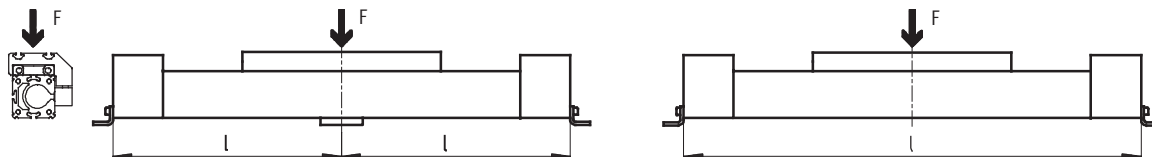
FESTO

Technical data

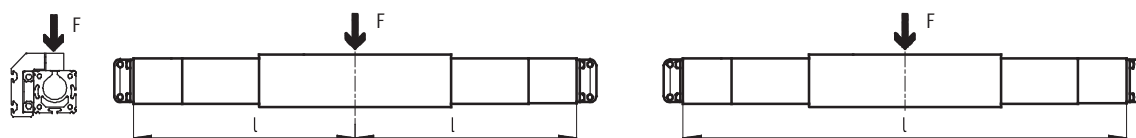
## Maximum permissible support span $l$ as a function of the force $F$

The axis may need to be supported with central supports in order to restrict deflection with long stroke lengths. The following diagrams serve to determine the maximum permissible support span  $l$  as a function of the force acting upon the axis  $F$ .

### 1 Force on the surface of the slide

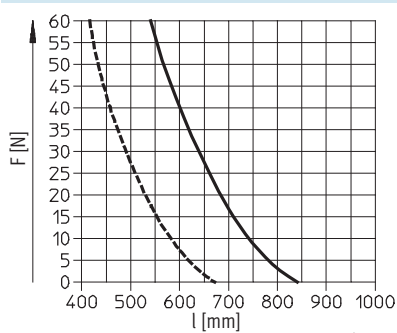


### 2 Force on the front of the slide

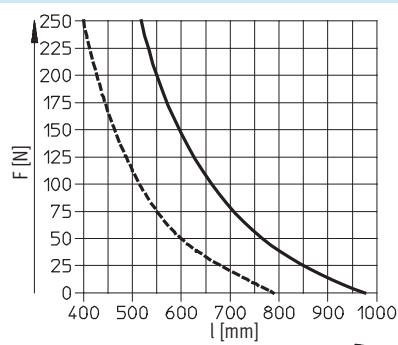


## Maximum permissible support span $l$ (without central support) as a function of the force $F$

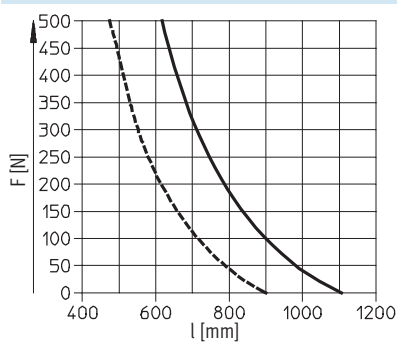
DGE-18



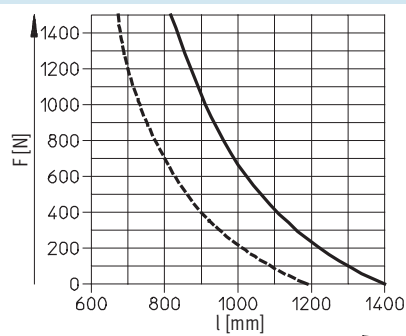
DGE-25



DGE-40



DGE-63



— 1  
- - - 2

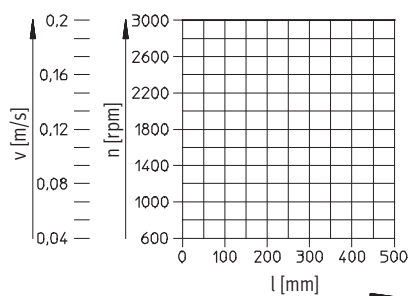
# Spindle axes DGE-SP-KF, with recirculating ball bearing guide

FESTO

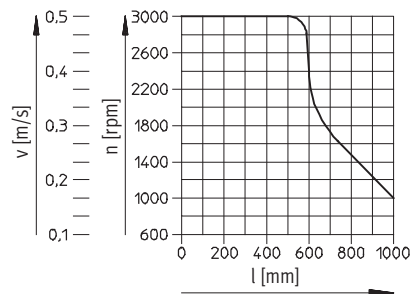
Technical data

Maximum permissible speed  $v$  or drive rpm  $n$  as a function of the stroke  $l$

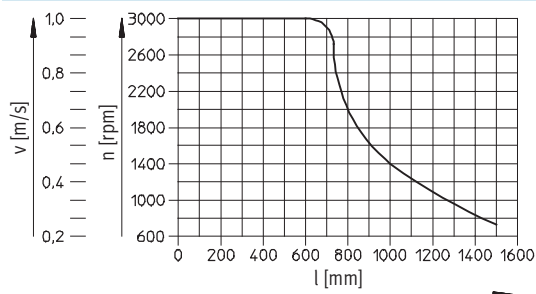
DGE-18



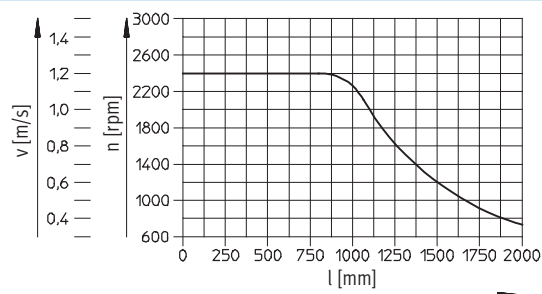
DGE-25



DGE-40



DGE-63



# Spindle axes DGE-SP-KF, with recirculating ball bearing guide

Technical data

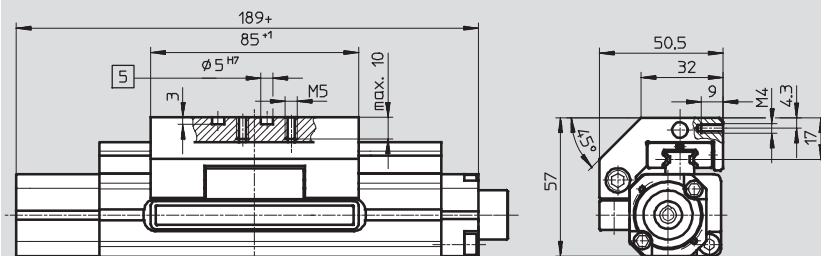
**FESTO**

## Dimensions

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

Standard slide GK

Size 18



- [5] Hole for centring pin ZBS-5
- + = plus stroke length

Basic dimensions

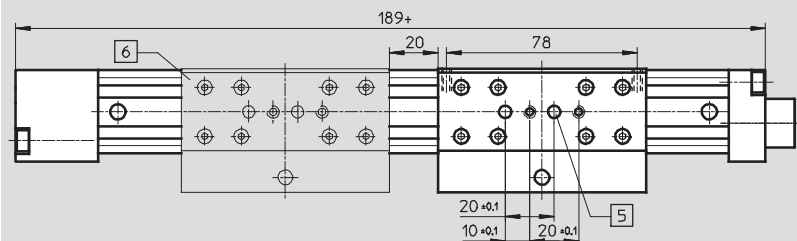
→ 14

Stroke reserve

→ 28

Additional slide KL/KR

Size 18



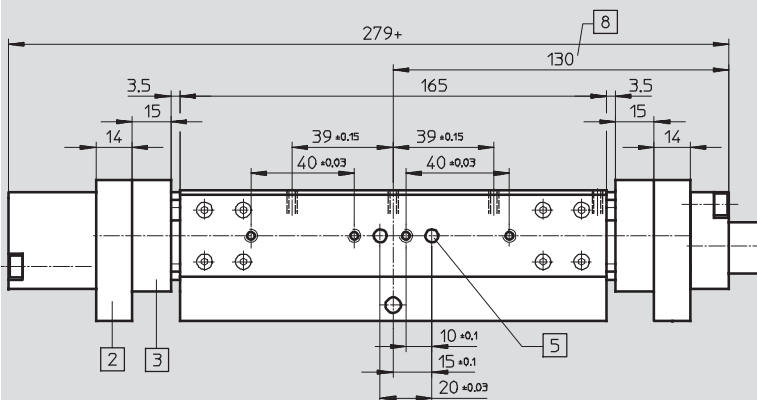
- [5] Hole for centring pin ZBS-5
- [6] Additional slide
- DGE-18-...-KL/KR
- + = plus stroke length

Reduction of working stroke

→ 28

Extended slide GV

Size 18



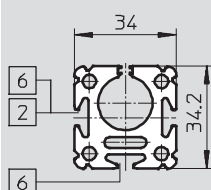
- [2] Shock absorber retainer KYP
- [3] Emergency buffer NPE
- [5] Hole for centring pin ZBS-5
- [8] Driver in end position of working stroke (stroke reserve up to mechanical stop still present)
- + = plus stroke length

Stroke reserve

→ 28

Profile

Size 18



- [2] Sensor slot for proximity sensor
- [6] Mounting slot for slot nut NST

# Spindle axes DGE-SP-KF, with recirculating ball bearing guide

Technical data

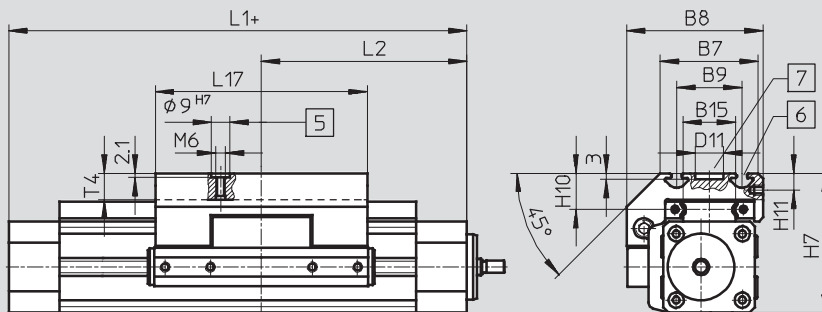
**FESTO**

## Dimensions

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

Standard slide GK

Size 25 ... 63



- 5 Hole for centring sleeve ZBH-9
- 6 Mounting slot for slot nut NSTL
- 7 Hole for central mounting SLZZ
- + = plus stroke length

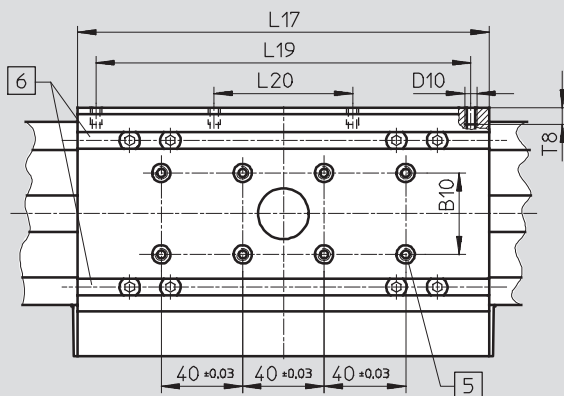
Basic dimensions

→ 15

Stroke reserve

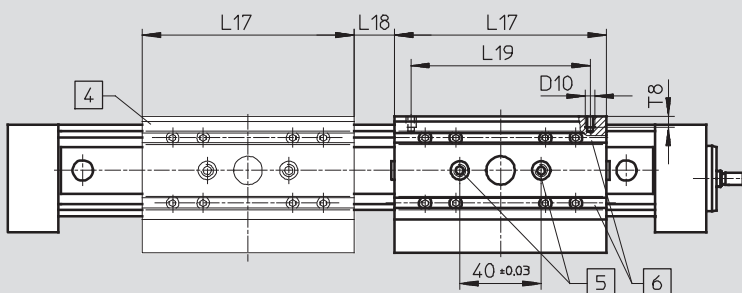
→ 28

Size 40/63



- 5 Hole for centring sleeve ZBH-9
- 6 Mounting slot for slot nut NSTL
- + = plus stroke length

Size 25 ... 63



- 4 Additional slide  
DGE-...-...-KL/KR
- 5 Hole for centring sleeve ZBH-9
- 6 Mounting slot for slot nut NSTL
- + = plus stroke length

Reduction of working stroke

→ 28



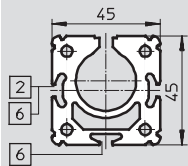
# Spindle axes DGE-SP-KF, with recirculating ball bearing guide

Technical data

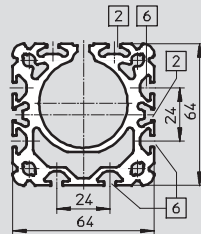
**FESTO**

## Profile

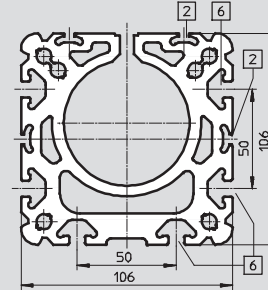
### Size 25



### Size 40



### Size 63



- 2 Sensor slot for proximity sensor
- 6 Mounting slot for slot nut NST

| Size | B7   | B8   | B9<br>±0.2 | B10 | B15  | D10 | D11<br>Ø<br>G7 | H7    | H10  |
|------|------|------|------------|-----|------|-----|----------------|-------|------|
| 25   | 48   | 67   | 32         | –   | 23.5 | M5  | 14             | 68.5  | 18.5 |
| 40   | 78.5 | 96.5 | 55         | 20  | 42   | M5  | 25             | 90.5  | 20   |
| 63   | 121  | 142  | 90         | 40  | 71   | M8  | 25             | 144.5 | 30   |

| Size | H11  | L1  | L2    | L17 | L18 <sup>1)</sup> | L19<br>±0.1 | L20<br>±0.1 | T4<br>max. | T8   |
|------|------|-----|-------|-----|-------------------|-------------|-------------|------------|------|
| 25   | 8.2  | 213 | 101.5 | 105 | 20                | 88          | –           | 12.5       | 8.5  |
| 40   | 7    | 315 | 153   | 167 | 20                | 150         | 58          | 12.5       | 8.5  |
| 63   | 12.5 | 410 | 200   | 230 | 27                | 200         | 72          | 20.5       | 10.5 |

1) Recommended minimum distance for access to lubrication nipple

# Spindle axes DGE-SP-KF, with recirculating ball bearing guide

Technical data

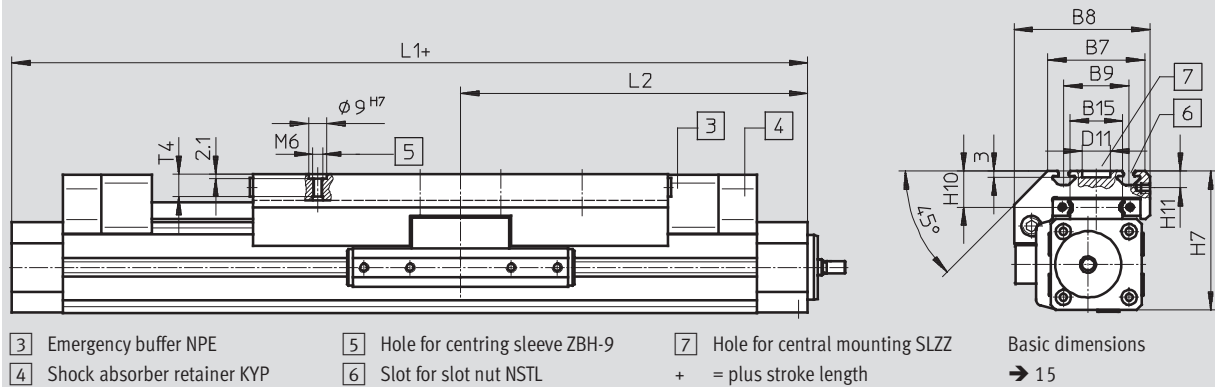
FESTO

## Dimensions

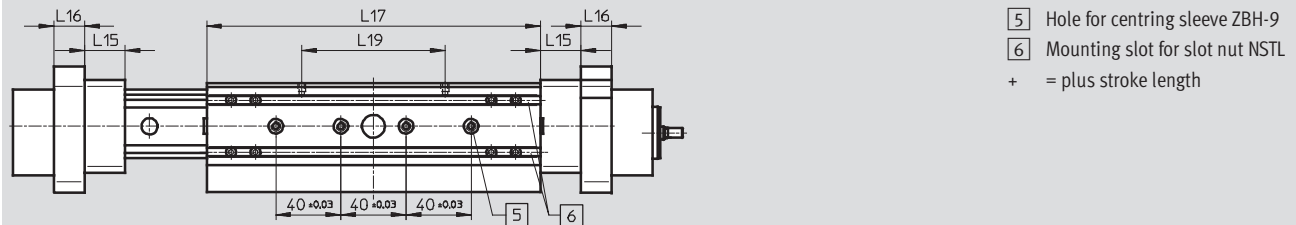
Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)

Extended slide GV

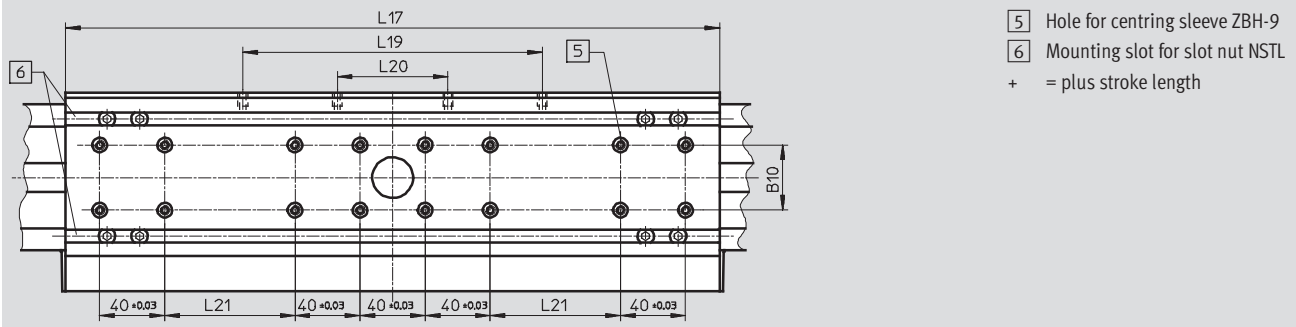
Size 25 ... 63



Size 25



Size 40/63



## Spindle axes DGE-SP-KF, with recirculating ball bearing guide

**FESTO**

Technical data

| Size | B7   | B8   | B9<br>±0.2 | B10 | B15  | D10 | D11<br>Ø<br>G7 | H7    | H10  | H11  |
|------|------|------|------------|-----|------|-----|----------------|-------|------|------|
| 25   | 48   | 67   | 32         | –   | 23.5 | M5  | 14             | 68.5  | 18.5 | 8.2  |
| 40   | 78.5 | 96.5 | 55         | 20  | 42   | M5  | 25             | 90.5  | 20   | 7    |
| 63   | 121  | 142  | 90         | 40  | 71   | M8  | 25             | 144.5 | 30   | 12.5 |

| Size | L1  | L2    | L15 | L16 | L17<br>±0.2 | L19<br>±0.1 | L20<br>±0.1 | L21<br>±0.1 | T4<br>max. | T8   |
|------|-----|-------|-----|-----|-------------|-------------|-------------|-------------|------------|------|
| 25   | 343 | 171.5 | 25  | 19  | 205         | 88          | –           | –           | 12.5       | 8.5  |
| 40   | 545 | 271.5 | 40  | 32  | 337         | 150         | 58          | 40          | 12.5       | 8.5  |
| 63   | 760 | 380   | 60  | 44  | 480         | 200         | 72          | 120         | 20.5       | 10.5 |

# Spindle axes DGE-SP-KF, with recirculating ball bearing guide

Technical data

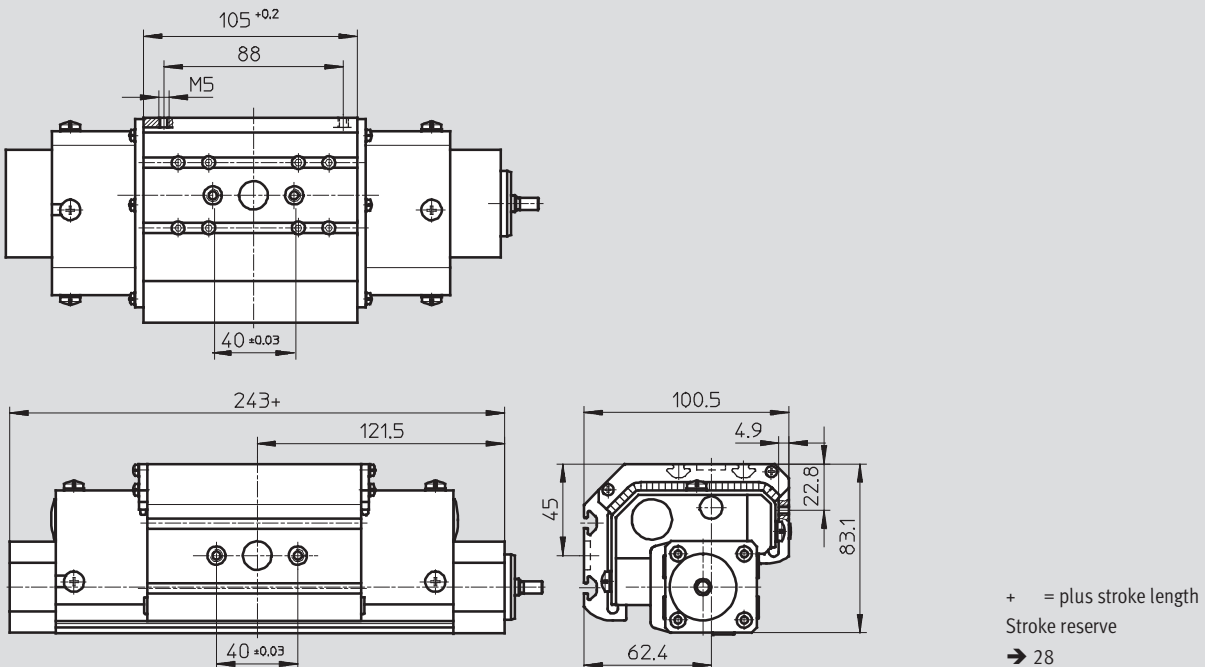
FESTO

## Dimensions

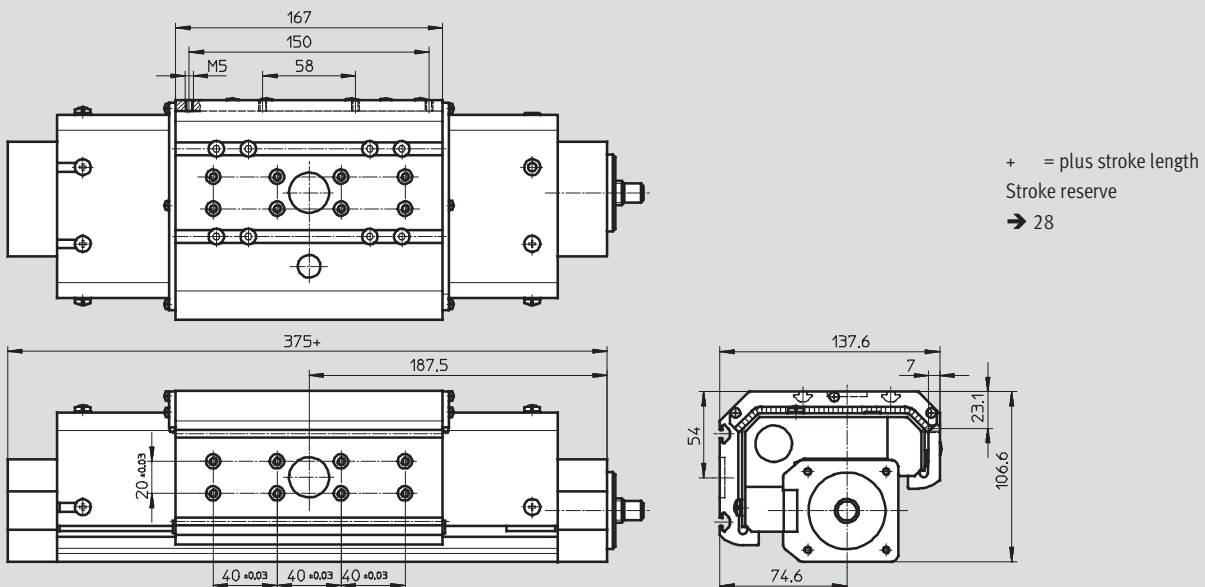
Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)

Protected version GA

### Size 25



### Size 40



# Spindle axes DGE-SP-KF, with recirculating ball bearing guide

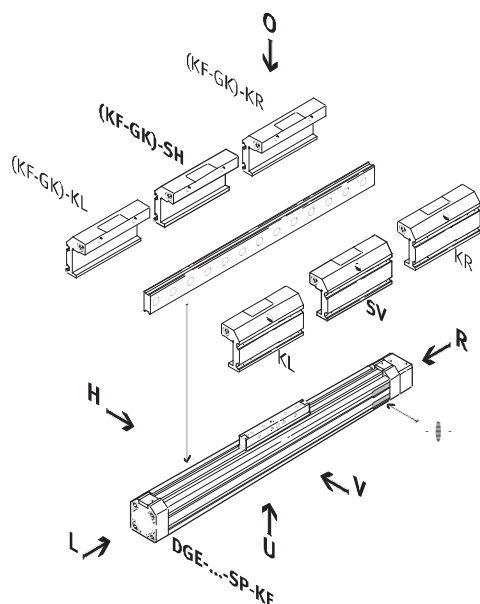
FESTO

Ordering data – Modular products

## Order code

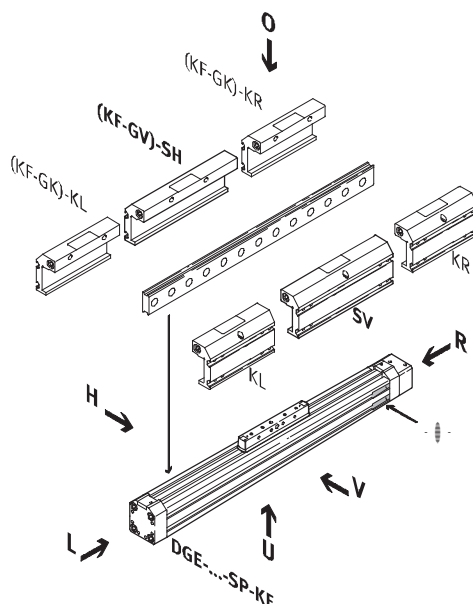
### Mandatory data

Standard slide GK



- KF Recirculating ball bearing guide
- KL Additional slide at left
- KR Additional slide at right
- SV Slide at front
- SH Slide at rear

Extended slide GV

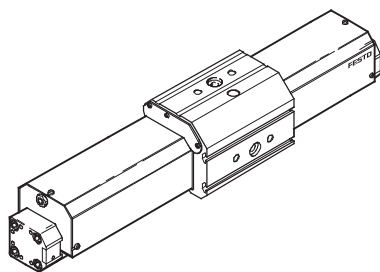


## Note

The insertion point for the proximity sensor is located on the right-hand side of the spindle drive DGE-...-SP-KF

- U = underneath
- O = top
- R = right
- L = left
- V = front
- H = rear

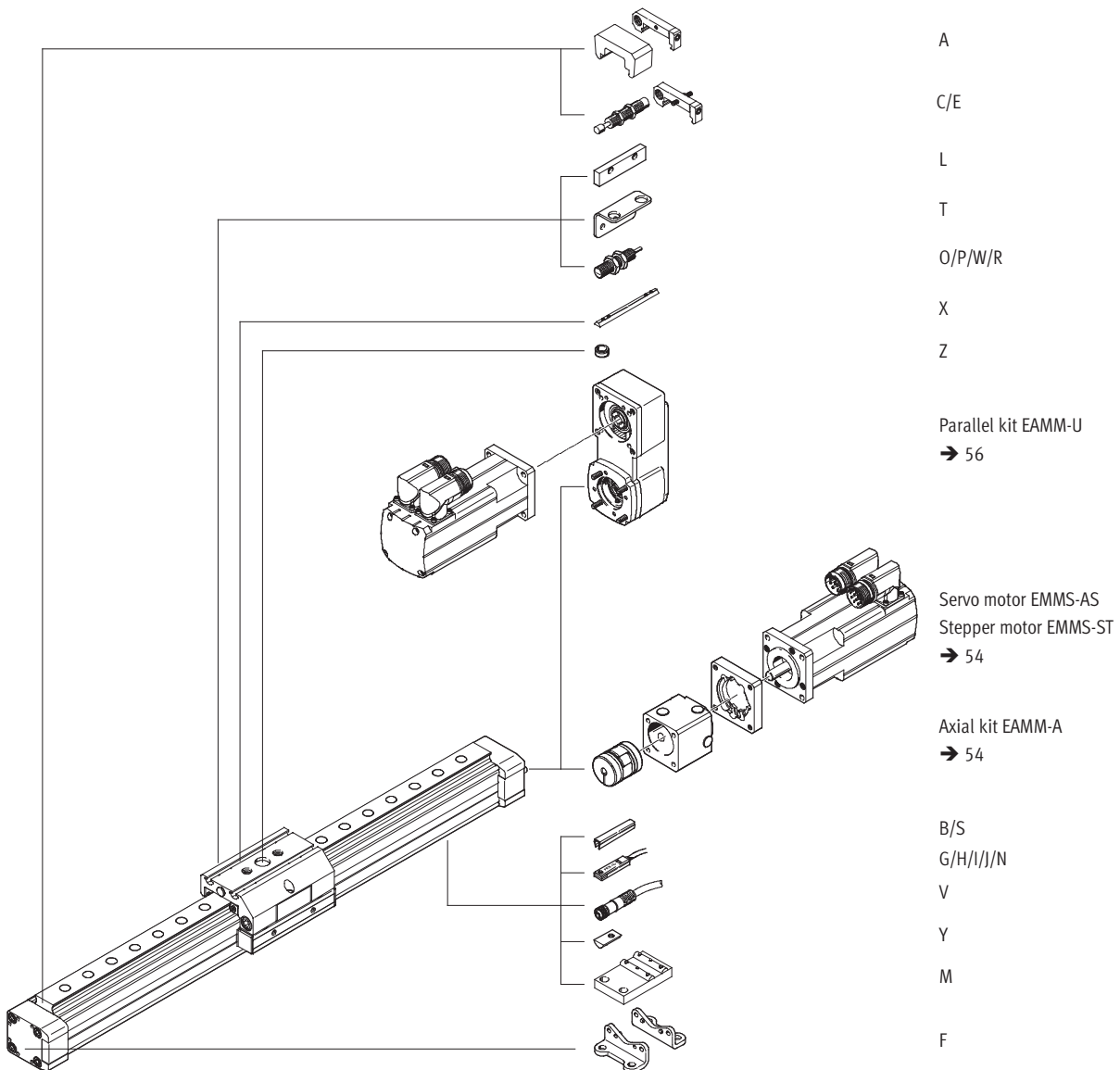
Protected version GA



# Spindle axes DGE-SP-KF, with recirculating ball bearing guide

Ordering data – Modular products

**FESTO**



# Spindle axes DGE-SP-KF, with recirculating ball bearing guide

FESTO

Ordering data – Modular products

| M Mandatory data →                       |        |                      |            |                |
|------------------------------------------|--------|----------------------|------------|----------------|
| Module No.                               | Design | Size                 | Stroke     | Drive function |
| 193 745<br>193 746<br>193 747<br>193 748 | DGE    | 18<br>25<br>40<br>63 | 1 ... 2000 | SP             |
| <b>Ordering example</b>                  |        |                      |            |                |
| 193 745                                  | DGE    | - 18                 | - 410      | - SP           |

| Ordering table                |                                         |                                                   |                                                      |                                                             |             |      |            |
|-------------------------------|-----------------------------------------|---------------------------------------------------|------------------------------------------------------|-------------------------------------------------------------|-------------|------|------------|
| Size                          | 18                                      | 25                                                | 40                                                   | 63                                                          | Condition s | Code | Enter code |
| M Module No.                  | 193 745                                 | 193 746                                           | 193 747                                              | 193 748                                                     |             |      |            |
| Design                        | Electromechanical linear axis           |                                                   |                                                      |                                                             |             | DGE  | DGE        |
| Size                          | 18                                      | 25                                                | 40                                                   | 63                                                          |             | -... |            |
| Stroke [mm] Standard slide GK | 100, 200, 300, 400, 500                 | 100, 200, 300, 400, 500, 600, 700, 800, 900, 1000 | 200, 300, 400, 500, 600, 800, 1000, 1200, 1400, 1500 | 300, 400, 500, 600, 800, 1000, 1200, 1400, 1500, 1800, 2000 |             | -... |            |
|                               | -                                       | 1 ... 990                                         | 1 ... 1487                                           | 1 ... 1982                                                  |             |      |            |
|                               | Extended slide GV                       | 110, 210, 310, 410                                | 170, 270, 370, 470, 570, 670, 770, 870               | 150, 250, 450, 650, 850, 1050, 1150, 1450, 1650             |             | -... |            |
|                               | -                                       | 1 ... 860                                         | 1 ... 1257                                           | 1 ... 1632                                                  |             |      |            |
| Protected version GA          | -                                       | 170, 270, 370, 470, 570, 670, 770, 870, 970       | 140, 240, 340, 440, 540, 740, 940, 1140, 1340, 1440  | -                                                           |             | -... |            |
|                               | -                                       | 1 ... 960                                         | 1 ... 1427                                           | -                                                           |             |      |            |
| Drive function                | Electromechanical drive with ball screw |                                                   |                                                      |                                                             |             | -SP  | -SP        |

Transfer order code

|  |     |   |  |   |  |   |    |
|--|-----|---|--|---|--|---|----|
|  | DGE | - |  | - |  | - | SP |
|--|-----|---|--|---|--|---|----|

# Spindle axes DGE-SP-KF, with recirculating ball bearing guide

FESTO

Ordering data – Modular products

| 0 Options |                |                           |                  |
|-----------|----------------|---------------------------|------------------|
| Guide     | Slide          | Slide attachment position | Additional slide |
| KF        | GK<br>GV<br>GA | SV<br>SH                  | KL<br>KR         |
| - KF      | - GV           | - SV                      | -                |

| Ordering table |                           |                                    |                                                                |                    |    |            |      |            |  |
|----------------|---------------------------|------------------------------------|----------------------------------------------------------------|--------------------|----|------------|------|------------|--|
| Size           |                           | 18                                 | 25                                                             | 40                 | 63 | Conditions | Code | Enter code |  |
| 0              | Guide                     |                                    | Recirculating ball bearing guide                               |                    |    | 1          | -KF  |            |  |
|                | Slide                     | Standard                           | Standard                                                       |                    |    | 2          | -GK  |            |  |
|                |                           | Extended                           | Extended                                                       |                    |    | 3          | -GV  |            |  |
|                |                           | Dust protection                    | –                                                              | Dust-proof version |    | –          | 3    |            |  |
| ↓              | Slide attachment position |                                    | Slide at front                                                 |                    |    |            | -SV  |            |  |
|                |                           |                                    | Slide at rear                                                  |                    |    |            | -SH  |            |  |
|                | Additional slide          | left (effective stroke reduction)  | Standard slide at left (85 mm*) (105 mm*) (167 mm*) (230 mm*)  |                    |    | 4          | -KL  |            |  |
|                |                           | right (effective stroke reduction) | Standard slide at right (85 mm*) (105 mm*) (167 mm*) (230 mm*) |                    |    | 4          | -KR  |            |  |

\* Plus working tolerance between slide and additional slide.

1 KF Only with slide GK, GV, GA.

2 GK Only with slide attachment position SV, SH.  
Emergency buffer recommended → Accessory option "A".

3 GV, GA Only with slide attachment position SV, SH.

Emergency buffer included in delivery.

4 KL, KR Not with slide GA.

Emergency buffer recommended → Accessory option "A".

Transfer order code

|      |   |  |   |  |   |  |
|------|---|--|---|--|---|--|
| - KF | - |  | - |  | - |  |
|------|---|--|---|--|---|--|



# Spindle axes DGE-SP-KF, with recirculating ball bearing guide

FESTO

Ordering data – Modular products

| 0 Options   |              |              |                 |               |                               |                |                       |                                      |             |                |               |                              |
|-------------|--------------|--------------|-----------------|---------------|-------------------------------|----------------|-----------------------|--------------------------------------|-------------|----------------|---------------|------------------------------|
| Accessories | Slot cover   | Slot nut     | Central support | Foot mounting | Emergency buffer and retainer | Shock absorber | Centring pins/sleeves | Proximity sensor                     | Plug socket | Sensor bracket | Switching lug | Inductive sensor             |
| ZUB         | ...S<br>...B | ...Y<br>...X | ...M            | ...F          | ...A                          | ...C<br>...E   | ...Z                  | ...G<br>...H<br>...I<br>...J<br>...N | ...V        | ...T           | L             | ...O<br>...P<br>...W<br>...R |
| ZUB         | – 2S         | 10Y          |                 | F             |                               |                |                       | 2G                                   |             |                |               |                              |

| Ordering table |                                      |                                                                 |                                    |          |          |          |            |      |            |
|----------------|--------------------------------------|-----------------------------------------------------------------|------------------------------------|----------|----------|----------|------------|------|------------|
| Size           |                                      |                                                                 | 18                                 | 25       | 40       | 63       | Conditions | Code | Enter code |
| ↓<br>0         | Accessories                          |                                                                 | Supplied separately                |          |          |          |            | ZUB- | ZUB-       |
|                | Slot cover                           | Sensor slot                                                     | 1 ... 10                           |          |          |          |            | ...S |            |
|                |                                      | Mounting slot                                                   | –                                  | –        | 1 ... 10 |          |            | ...B |            |
|                | Slot nut                             | for mounting slot                                               | 1 ... 10                           |          |          |          |            | ...Y |            |
|                |                                      | for slide                                                       | –                                  | 1 ... 10 |          |          | ...X       |      |            |
|                | Central support                      |                                                                 | 1 ... 10                           |          |          |          |            | ...M |            |
|                | Foot mounting (kit)                  |                                                                 | 1 ... 10                           |          |          |          |            | ...F |            |
|                | Emergency buffer and retainer for KF | (effective stroke reduction with emergency buffer at both ends) | 1 ... 2<br>(10 mm)                 | (30 mm)  | (60 mm)  | (100 mm) | 9          | ...A |            |
|                |                                      |                                                                 |                                    |          |          |          |            |      |            |
|                | Shock absorber                       | and retainer for KF-GK, KF-GV                                   | 1 ... 2                            |          |          |          | 10         | ...C |            |
|                |                                      | for KF-GA                                                       | –                                  | 1 ... 2  |          | –        | 11         | ...E |            |
|                | Centring pins/sleeves (pack of 10)   |                                                                 | 10, 20, 30, 40, 50, 60, 70, 80, 90 |          |          |          |            | ...Z |            |
|                | Proximity sensor                     | with cable, 2.5 m                                               | 1 ... 10                           |          |          |          |            | ...G |            |
|                |                                      | with plug                                                       | 1 ... 10                           |          |          |          |            | ...H |            |
|                |                                      | contactless with cable, 2.5 m                                   | 1 ... 10                           |          |          |          |            | ...I |            |
|                |                                      | contactless, plug                                               | 1 ... 10                           |          |          |          |            | ...J |            |
|                |                                      | NC contact with cable, 2.5 m                                    | 1 ... 10                           |          |          |          |            | ...N |            |
|                | Cable with socket, 2.5 m             |                                                                 | 1 ... 10                           |          |          |          |            | ...V |            |
|                | Sensor bracket for inductive sensors |                                                                 | 1 ... 5                            |          |          |          | 10         | ...T |            |
|                | Switching lug                        |                                                                 | 1                                  |          |          |          | 10         | L    |            |
|                | Inductive sensor                     | NO contact, cable                                               | 1 ... 5                            |          |          |          | 10         | ...O |            |
|                |                                      | NC contact, cable                                               | 1 ... 5                            |          |          |          | 10         | ...P |            |
|                |                                      | NO contact, plug                                                | 1 ... 5                            |          |          |          | 10         | ...W |            |
|                |                                      | NC contact, plug                                                | 1 ... 5                            |          |          |          | 10         | ...R |            |

9 A Only with slide GK.  
Mounted as standard for slide GV, GA

11 E Only with slide GA.

10 C, T, L, O, P, W, R.  
Not with slide GA.

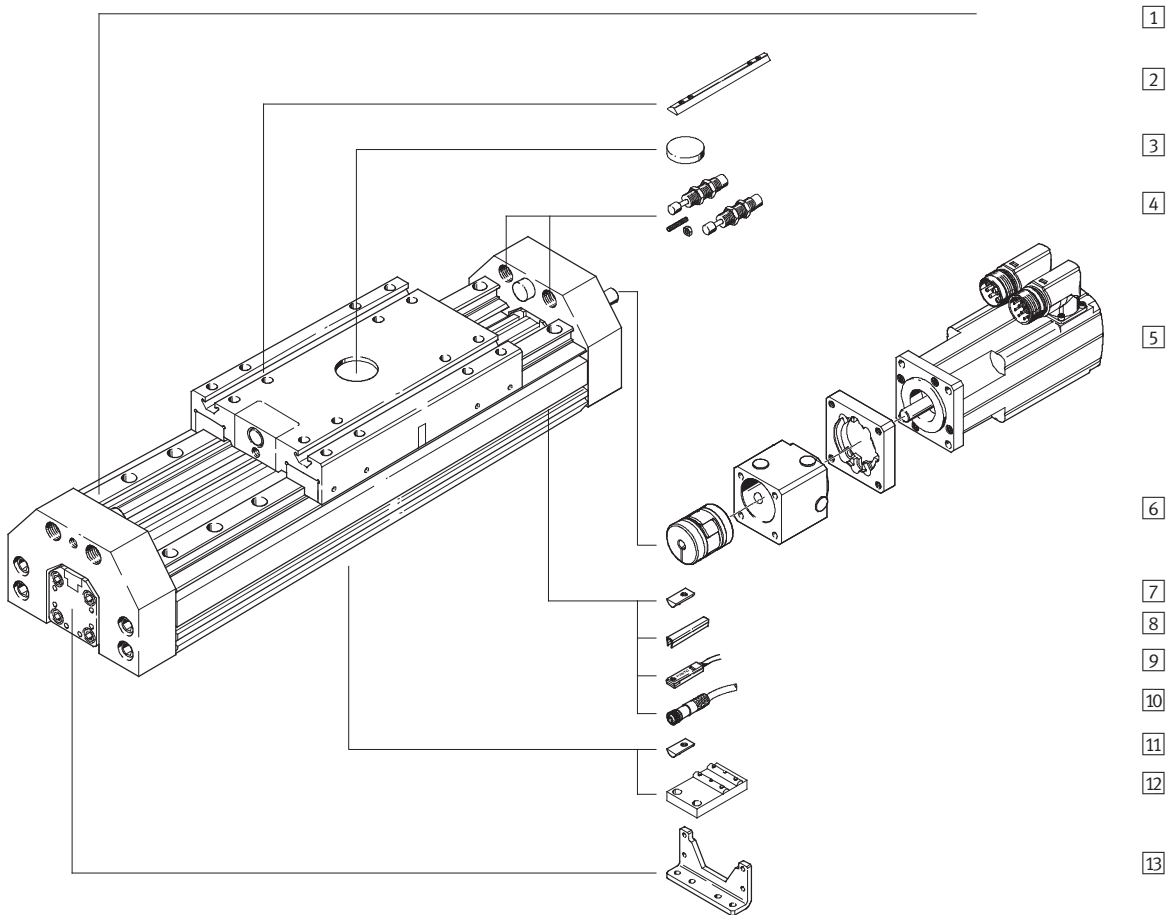
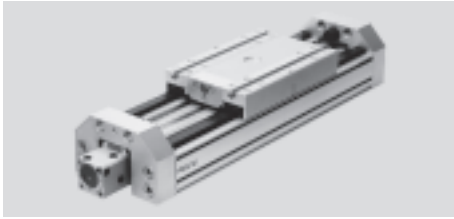
## Transfer order code

ZUB –

# Spindle axes DGE-SP-HD, with heavy-duty guide

Peripherals overview

FESTO



# Spindle axes DGE-SP-HD, with heavy-duty guide

Peripherals overview

| Variants and accessories           |                                                                                                   |                 |
|------------------------------------|---------------------------------------------------------------------------------------------------|-----------------|
| Type                               | Brief description                                                                                 | → Page/Internet |
| 1 Spindle axis<br>DGE-SP-HD        | Electromechanical axis with heavy-duty guide                                                      | 44              |
| 2 Slot nut for slide<br>X          | For mounting loads and attachments on the slide                                                   | 64              |
| 3 Centring disc<br>Q               | For centring loads and attachments on the slide                                                   | 64              |
| 4 Shock absorber kits<br>D         | For avoiding damage at the end stop in the event of malfunction                                   | 61              |
| 5 Axial kit<br>EAMM-A              | For axial motor attachment<br>(consisting of: coupling housing, clamping component, motor flange) | 54              |
| 6 Motor<br>EMMS                    | Motors specially matched to the axis, with or without gearing, with or without brake              | 54              |
| 7 Slot nut for mounting slot<br>Y  | For mounting attachments                                                                          | 64              |
| 8 Slot cover<br>B/S                | For protecting against the ingress of dirt                                                        | 64              |
| 9 Proximity sensor<br>G/H/I/J/N    | For use as a signal generator and safety monitoring                                               | 65              |
| 10 Cable with socket<br>V          | For proximity sensors                                                                             | 65              |
| 11 Slot nut for HD underneath<br>U | For mounting attachments                                                                          | 64              |
| 12 Central support<br>M            | For mounting the axis                                                                             | 58              |
| 13 Foot mounting<br>F              | For mounting the axis                                                                             | 58              |

## Spindle axes DGE-SP-HD, with heavy-duty guide

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Type code

|                       |                  |     |   |    |   |     |   |    |   |    |   |    |
|-----------------------|------------------|-----|---|----|---|-----|---|----|---|----|---|----|
|                       |                  | DGE | - | 25 | - | 500 | - | SP | - | HD | - | GK |
| <b>Type</b>           |                  |     |   |    |   |     |   |    |   |    |   |    |
| DGE                   | Spindle axis     |     |   |    |   |     |   |    |   |    |   |    |
| <b>Size</b>           |                  |     |   |    |   |     |   |    |   |    |   |    |
| <b>Stroke [mm]</b>    |                  |     |   |    |   |     |   |    |   |    |   |    |
| <b>Drive function</b> |                  |     |   |    |   |     |   |    |   |    |   |    |
| SP                    | Spindle          |     |   |    |   |     |   |    |   |    |   |    |
| <b>Guide</b>          |                  |     |   |    |   |     |   |    |   |    |   |    |
| HD                    | Heavy-duty guide |     |   |    |   |     |   |    |   |    |   |    |
| <b>Slide</b>          |                  |     |   |    |   |     |   |    |   |    |   |    |
| GK                    | Standard slide   |     |   |    |   |     |   |    |   |    |   |    |

# Spindle axes DGE-SP-HD, with heavy-duty guide

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Type code

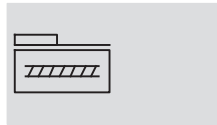
|                          |                               | + ZUB | - |  |  | F |  | Q | 2H | 2V |
|--------------------------|-------------------------------|-------|---|--|--|---|--|---|----|----|
| <b>Accessories</b>       |                               |       |   |  |  |   |  |   |    |    |
| ZUB                      | Accessories supplied loose    |       |   |  |  |   |  |   |    |    |
| <b>Slot cover</b>        |                               |       |   |  |  |   |  |   |    |    |
| ...S                     | Sensor slot                   |       |   |  |  |   |  |   |    |    |
| ...B                     | Mounting slot                 |       |   |  |  |   |  |   |    |    |
| <b>Slot nut</b>          |                               |       |   |  |  |   |  |   |    |    |
| ...Y                     | For mounting slot             |       |   |  |  |   |  |   |    |    |
| ...X                     | For slide                     |       |   |  |  |   |  |   |    |    |
| ...U                     | For HD underneath             |       |   |  |  |   |  |   |    |    |
| <b>Central support</b>   |                               |       |   |  |  |   |  |   |    |    |
| ...M                     | Central support               |       |   |  |  |   |  |   |    |    |
| <b>Foot mounting</b>     |                               |       |   |  |  |   |  |   |    |    |
| ...F                     | Foot mounting                 |       |   |  |  |   |  |   |    |    |
| <b>Shock absorber</b>    |                               |       |   |  |  |   |  |   |    |    |
| ...D                     | Kit for HD                    |       |   |  |  |   |  |   |    |    |
| <b>Central mounting</b>  |                               |       |   |  |  |   |  |   |    |    |
| ...Q                     | Central mounting              |       |   |  |  |   |  |   |    |    |
| <b>Proximity sensor</b>  |                               |       |   |  |  |   |  |   |    |    |
| ...G                     | With cable, 2.5 m             |       |   |  |  |   |  |   |    |    |
| ...H                     | With plug                     |       |   |  |  |   |  |   |    |    |
| ...I                     | Contactless with cable, 2.5 m |       |   |  |  |   |  |   |    |    |
| ...J                     | Contactless, plug             |       |   |  |  |   |  |   |    |    |
| ...N                     | NC contact with cable, 2.5 m  |       |   |  |  |   |  |   |    |    |
| <b>Cable with socket</b> |                               |       |   |  |  |   |  |   |    |    |
| ...V                     | 2.5 m                         |       |   |  |  |   |  |   |    |    |

# Spindle axes DGE-SP-HD, with heavy-duty guide

FESTO

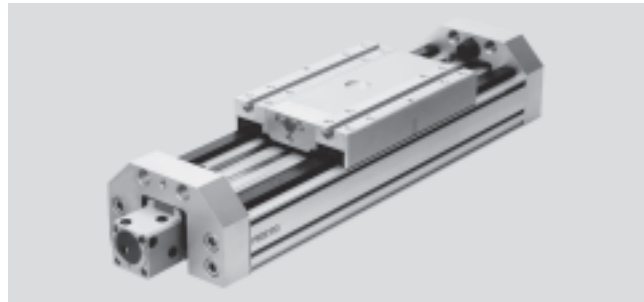
Technical data

Function



-N- Size  
18 ... 40

-T- Stroke length  
1 ... 1500 mm



| General technical data          |                     |                                              |           |           |            |
|---------------------------------|---------------------|----------------------------------------------|-----------|-----------|------------|
| Size                            |                     | 18-HD18                                      | 25-HD25   | 25-HD40   | 40-HD40    |
| Constructional design           |                     | Electromechanical axis with heavy-duty guide |           |           |            |
| Guide                           |                     | Recirculating ball bearing guide             |           |           |            |
| Mounting position               |                     | Any                                          |           |           |            |
| Max. working stroke             | [mm]                | 100 ... 400                                  | 1 ... 900 | 1 ... 900 | 1 ... 1500 |
| Max. working load               | [kg]                | 6                                            | 25        | 25        | 50         |
| Max. feed force F <sub>x</sub>  | [N]                 | 140                                          | 250       | 250       | 600        |
| Max. driving torque             | [Nm]                | 0.1                                          | 0.45      | 0.45      | 2.1        |
| No-load torque <sup>1)</sup>    | [Nm]                | 0.05                                         | 0.2       | 0.2       | 0.43       |
| Max. radial force <sup>2)</sup> | [N]                 | 40                                           | 75        | 250       | 800        |
| Max. speed                      | [m/s]               | 0.2                                          | 0.5       | 0.5       | 1          |
| Max. acceleration               | [m/s <sup>2</sup> ] | 6                                            |           |           |            |
| Repetition accuracy             | [mm]                | ±0.02                                        |           |           |            |

1) Measured at a speed of 0.2 m/s

2) On drive shaft

| Operating and environmental conditions |      |           |         |         |         |
|----------------------------------------|------|-----------|---------|---------|---------|
| Size                                   |      | 18-HD18   | 25-HD25 | 25-HD40 | 40-HD40 |
| Ambient temperature                    | [°C] | 0 ... +40 |         |         |         |
| Protection class                       |      | IP40      |         |         |         |

| Weights [kg]                                |         |         |         |         |
|---------------------------------------------|---------|---------|---------|---------|
| Size                                        | 18-HD18 | 25-HD25 | 25-HD40 | 40-HD40 |
| Basic weight with 0 mm stroke <sup>1)</sup> | 4.31    | 7.04    | 16.13   | 19.02   |
| Additional weight per 100 mm stroke         | 0.32    | 1.6     | 2.19    | 2.62    |

1) Including coupling housing and slide

| Mass moment of inertia             |                          |         |         |         |         |
|------------------------------------|--------------------------|---------|---------|---------|---------|
| Size                               |                          | 18-HD18 | 25-HD25 | 25-HD40 | 40-HD40 |
| J <sub>0</sub>                     | [kg cm <sup>2</sup> ]    | 0.013   | 0.086   | 0.375   | 0.698   |
| J <sub>H</sub> per metre stroke    | [kg cm <sup>2</sup> /m]  | 0.031   | 0.121   | 0.121   | 1       |
| J <sub>L</sub> per kg working load | [kg cm <sup>2</sup> /kg] | 0.005   | 0.025   | 0.025   | 0.101   |

The mass moment of inertia  $J_A$  of the entire axis is calculated as follows:

$$J_A = J_0 + J_H \times \text{working stroke [m]} + J_L \times m_{\text{working load [kg]}}$$

## Spindle axes DGE-SP-HD, with heavy-duty guide

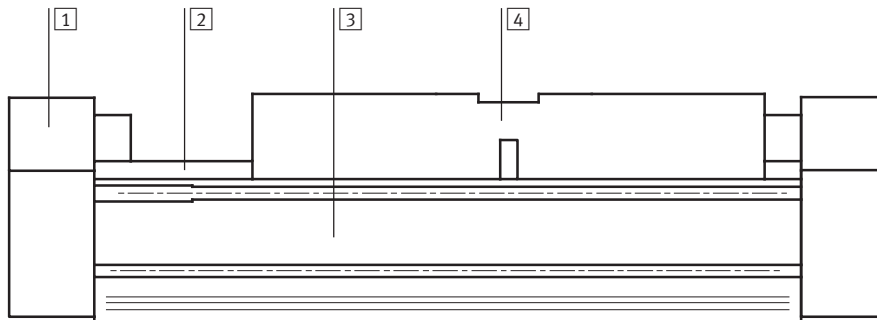
**FESTO**

Technical data

| Spindle  |           |         |         |         |         |
|----------|-----------|---------|---------|---------|---------|
| Size     |           | 18-HD18 | 25-HD25 | 25-HD40 | 40-HD40 |
| Diameter | [mm]      | 8       | 12      | 12      | 20      |
| Pitch    | [mm/rev.] | 4       | 10      | 10      | 20      |

### Materials

Sectional view



| Axis |         |                    |
|------|---------|--------------------|
| 1    | End cap | Anodised aluminium |
| 2    | Guide   | Rolled steel       |
| 3    | Profile | Anodised aluminium |
| 4    | Slide   | Anodised aluminium |

# Spindle axes DGE-SP-HD, with heavy-duty guide

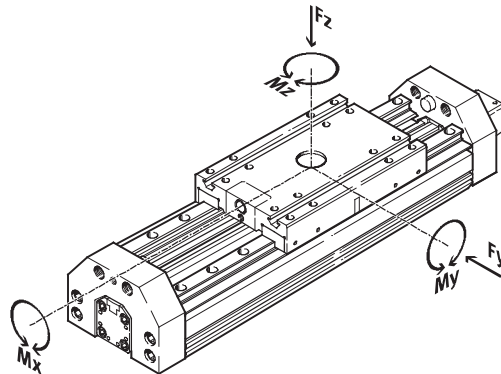
Technical data

FESTO

## Characteristic load values

The indicated forces and torques refer to the centre of the heavy-duty guide.

They must not be exceeded in the dynamic range. Special attention must be paid to the cushioning phase.



If the drive is subjected to more than two of the indicated forces and torques simultaneously, the following equations must be satisfied in addition to the indicated maximum loads:

$$\frac{F_y}{F_{y_{\max}}} + \frac{F_z}{F_{z_{\max}}} + \frac{M_x}{M_{x_{\max}}} + \frac{M_y}{M_{y_{\max}}} + \frac{M_z}{M_{z_{\max}}} \leq 1$$

| Permissible forces and torques |      |         |         |         |         |
|--------------------------------|------|---------|---------|---------|---------|
| Size                           |      | 18-HD18 | 25-HD25 | 25-HD40 | 40-HD40 |
| $F_{y_{\max}}$                 | [N]  | 1820    | 5400    | 5400    | 5400    |
| $F_{z_{\max}}$                 | [N]  | 1820    | 5600    | 5600    | 5600    |
| $M_{x_{\max}}$                 | [Nm] | 70      | 260     | 375     | 375     |
| $M_{y_{\max}}$                 | [Nm] | 115     | 415     | 560     | 560     |
| $M_{z_{\max}}$                 | [Nm] | 112     | 400     | 540     | 540     |

## Note

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



# Spindle axes DGE-SP-HD, with heavy-duty guide

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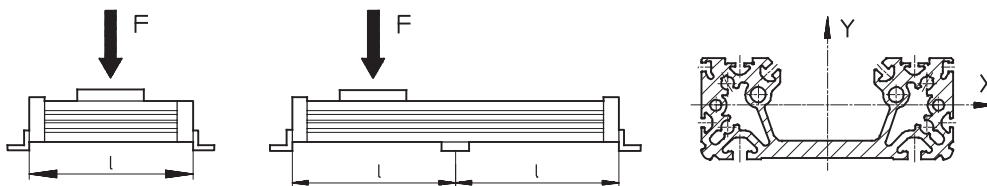
Technical data

## Maximum permissible support span $l$ as a function of the force $F$

The drive may need to be supported in order to restrict deflection with long stroke lengths. The following diagrams serve to determine the

maximum permissible support span  $l$  as a function of the force acting upon the axis  $F$ .

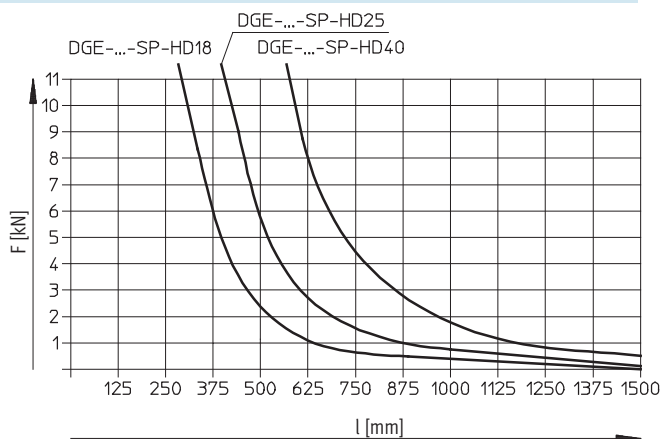
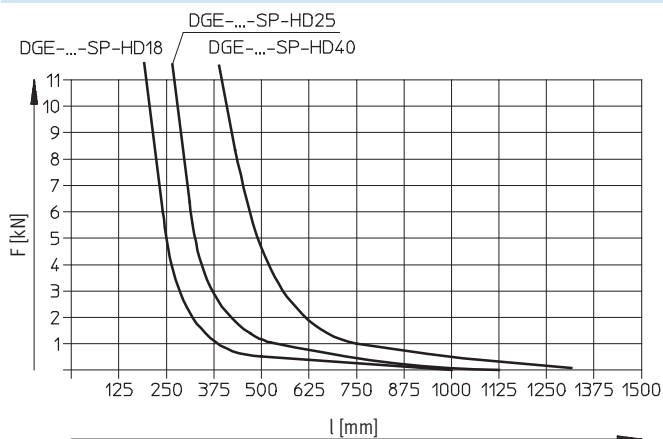
## Force on the surface of the slide



## Maximum permissible support span $l$ (without central support) as a function of the force $F$

Deflection around the X axis

Deflection around the Y axis



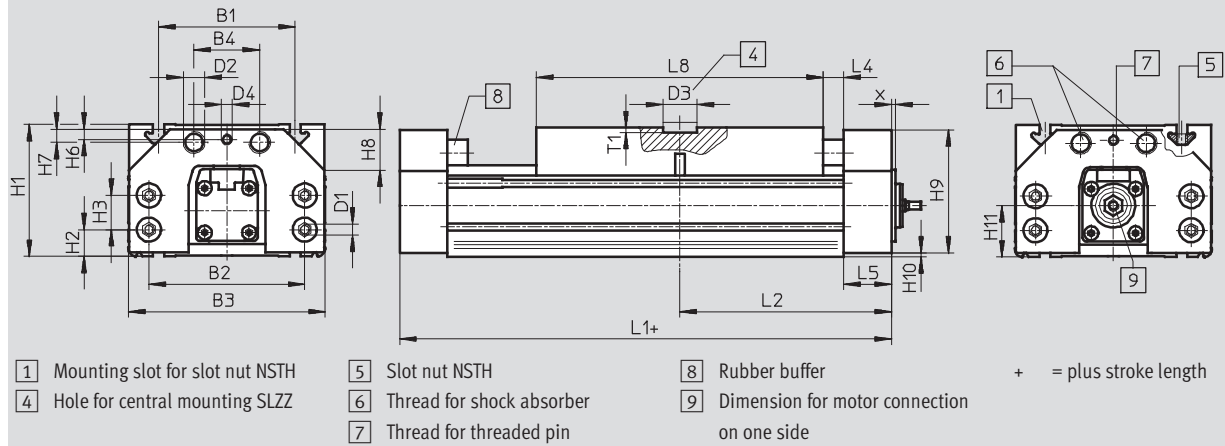
# Spindle axes DGE-SP-HD, with heavy-duty guide

Technical data

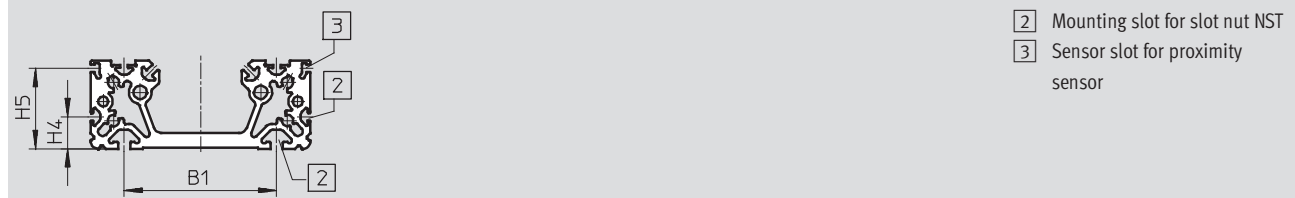
**FESTO**

## Dimensions

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



## Profile



| Size     | B1       | B2   | B3  | B4 | D1 | D2      | D3      | D4 | D5   | H1    | H2   | H3       | H4 |
|----------|----------|------|-----|----|----|---------|---------|----|------|-------|------|----------|----|
|          |          | ±0,2 |     |    |    |         | Ø<br>G7 |    |      |       |      |          |    |
| 18-HD18  | 80±0,3   | 85   | 116 | 40 | M5 | M12x1   | 25      | M6 | M5   | 70    | 12.8 | 19.5±0,1 | 14 |
| 25-HD-25 | 100±0,3  | 114  | 144 | 48 | M8 | M16x1   | 25      | M8 | G1/8 | 93.5  | 18.5 | 25±0,2   | 21 |
| 25-HD40  | 140±0,35 | 156  | 185 | 54 | M8 | M22x1.5 | 25      | M8 | G1/8 | 124.5 | 21   | 48±0,2   | 35 |
| 40-HD40  | 140±0,35 | 156  | 185 | 54 | M8 | M22x1.5 | 25      | M8 | G1/4 | 124.5 | 21   | 48±0,2   | 35 |

| Size    | H5   | H6  | H7   | H8     | H9  | H10 | H11  | L1  | L2  | L4 | L5 | L8  | T1  | X  |
|---------|------|-----|------|--------|-----|-----|------|-----|-----|----|----|-----|-----|----|
| 18-HD18 | 42.3 | 5.9 | 8.7  | 20x45° | 68  | 0.8 | 30.3 | 240 | 120 | 15 | 25 | 160 | 3.5 | 49 |
| 25-HD25 | 52.8 | 9   | 9.8  | 30x45° | 90  | 2   | 37   | 310 | 155 | 15 | 35 | 210 | 3.5 | 3  |
| 25-HD40 | 82.8 | 5.5 | 15.5 | 35x45° | 120 | 2   | 63   | 354 | 177 | 15 | 32 | 260 | 4   | –  |
| 40-HD40 | 82.8 | 5.5 | 15.5 | 35x45° | 120 | 2   | 52.5 | 354 | 177 | 15 | 32 | 260 | 4   | –7 |

# Spindle axes DGE-SP-HD, with heavy-duty guide

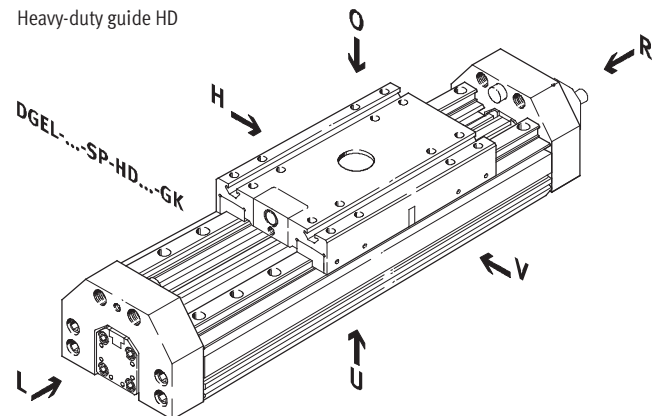
Ordering data – Modular products

FESTO

## Order code

## Mandatory data

Heavy-duty guide HD



## Note

The insertion point for the proximity sensor is located on the right-hand side of the heavy-duty guide

U = underneath

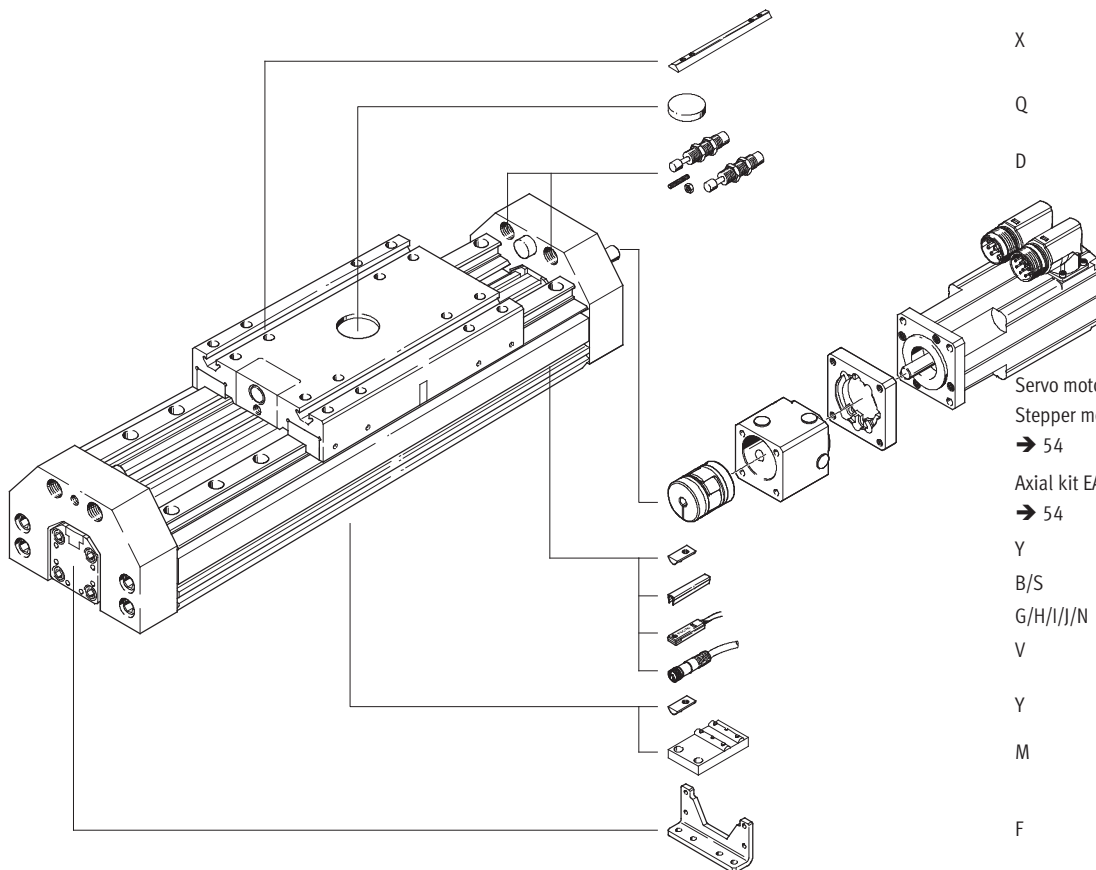
O = top

R = right

L = left

V = front

H = rear



Servo motor EMMS-AS  
Stepper motor EMMS-ST  
→ 54

Axial kit EAMM-A  
→ 54

Y  
B/S  
G/H/I/J/N  
V

Y

M

F

# Spindle axes DGE-SP-HD, with heavy-duty guide

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Ordering data – Modular products

| M Mandatory data              |        |                |             |                | O Options →          |       |
|-------------------------------|--------|----------------|-------------|----------------|----------------------|-------|
| Module No.                    | Design | Size           | Stroke      | Drive function | Guide                | Slide |
| 193 745<br>193 746<br>193 747 | DGE    | 18<br>25<br>40 | 1 ... 1 500 | SP             | HD18<br>HD25<br>HD40 | GK    |
| Ordering example              |        |                |             |                |                      |       |
| 193 747                       | DGE    | 40             | 800         | SP             | HD40                 | GK    |

| Ordering table |                                         |                                             |                                                      |             |       |            |
|----------------|-----------------------------------------|---------------------------------------------|------------------------------------------------------|-------------|-------|------------|
| Size           | 18                                      | 25                                          | 40                                                   | Condition s | Code  | Enter code |
| M Module No.   | 193 745                                 | 193 746                                     | 193 747                                              |             |       |            |
| Design         | Electromechanical linear axis           |                                             |                                                      |             | DGE   | DGE        |
| Size           | 18                                      | 25                                          | 40                                                   |             | ...   |            |
| Stroke [mm]    | 100, 200, 300, 400                      | 100, 200, 300, 400, 500, 600, 700, 800, 900 | 200, 300, 400, 500, 600, 800, 1000, 1200, 1400, 1500 |             | ...   |            |
|                | –                                       | 1 ... 890                                   | 1 ... 1487                                           |             |       |            |
| Drive function | Electromechanical drive with ball screw |                                             |                                                      |             | -SP   | -SP        |
| O Guide        | Heavy-duty guide HD18                   | –                                           | –                                                    |             | -HD18 | -HD...     |
|                | –                                       | Heavy-duty guide HD25                       | –                                                    |             | -HD25 |            |
|                | –                                       | Heavy-duty guide HD40                       | Heavy-duty guide HD40                                |             | -HD40 |            |
| ↓ Slide        | Standard                                |                                             |                                                      | 1           | -GK   | -GK        |

1 GK Emergency buffer recommended → Accessory option "A".

Transfer order code

|  |     |   |  |   |    |   |       |   |    |
|--|-----|---|--|---|----|---|-------|---|----|
|  | DGE | – |  | – | SP | – | HD... | – | GK |
|--|-----|---|--|---|----|---|-------|---|----|

# Spindle axes DGE-SP-HD, with heavy-duty guide

Ordering data – Modular products

**FESTO**

## Options

| Accessories | Slot cover   | Slot nut             | Central support | Foot mounting | Shock absorber | Central mounting | Proximity sensor                     | Plug socket |
|-------------|--------------|----------------------|-----------------|---------------|----------------|------------------|--------------------------------------|-------------|
| ZUB         | ...S<br>...B | ...Y<br>...X<br>...U | ...M            | ...F          | ...D           | ...Q             | ...G<br>...H<br>...I<br>...J<br>...N | ...V        |
| <b>ZUB</b>  | <b>2SB</b>   | <b>10Y2X</b>         | <b>M</b>        | <b>F</b>      |                | <b>Q</b>         | <b>2J</b>                            | <b>2V</b>   |

## Ordering table

| Size                     | 18                            | 25       | 40 | Conditions | Code        | Enter code |
|--------------------------|-------------------------------|----------|----|------------|-------------|------------|
| ↓ Accessories            | Supplied separately           |          |    |            | <b>ZUB-</b> | ZUB-       |
| 0 Slot cover             | Sensor slot                   | 1 ... 10 |    |            | <b>...S</b> |            |
|                          | Mounting slot                 | 1 ... 10 |    |            | <b>...B</b> |            |
| Slot nut                 | for mounting slot             | 1 ... 10 |    |            | <b>...Y</b> |            |
|                          | for slide                     | 1 ... 10 |    |            | <b>...X</b> |            |
|                          | for HD underneath             | 1 ... 10 |    |            | <b>...U</b> |            |
| Central support          |                               | 1 ... 10 |    |            | <b>...M</b> |            |
| Foot mounting (kit)      |                               | 1 ... 10 |    |            | <b>...F</b> |            |
| Shock absorber           | Kit for HD                    | 1 ... 2  |    |            | <b>...D</b> |            |
| Central mounting         |                               | 1 ... 10 |    |            | <b>...Q</b> |            |
| Proximity sensor         | with cable, 2.5 m             | 1 ... 10 |    |            | <b>...G</b> |            |
|                          | with plug                     | 1 ... 10 |    |            | <b>...H</b> |            |
|                          | contactless with cable, 2.5 m | 1 ... 10 |    |            | <b>...I</b> |            |
|                          | contactless, plug             | 1 ... 10 |    |            | <b>...J</b> |            |
|                          | NC contact with cable, 2.5 m  | 1 ... 10 |    |            | <b>...N</b> |            |
| Cable with socket, 2.5 m |                               | 1 ... 10 |    |            | <b>...V</b> |            |

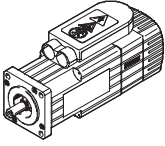
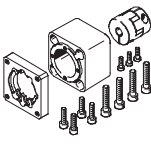
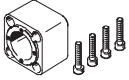
## Transfer order code

|            |   |  |  |  |  |  |  |  |
|------------|---|--|--|--|--|--|--|--|
| <b>ZUB</b> | - |  |  |  |  |  |  |  |
|------------|---|--|--|--|--|--|--|--|

# Spindle axes DGE

Accessories

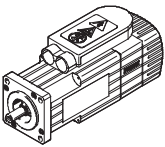
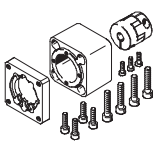
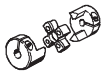
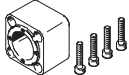
**FESTO**

| Permissible axis/motor combinations with axial kit – Without gear unit            |                                                                                   |                                                                                   |                                                                                     | Technical data → Internet: eamm-a                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Motor                                                                             | Axial kit                                                                         | Axial kit consisting of:                                                          |                                                                                     |                                                                                     |
|                                                                                   |                                                                                   | Motor flange                                                                      | Coupling                                                                            | Coupling housing                                                                    |
|  |  |  |  |  |
| Type                                                                              | Part No.<br>Type                                                                  | Part No.<br>Type                                                                  | Part No.<br>Type                                                                    | Part No.<br>Type                                                                    |
| <b>DGE-18</b>                                                                     |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| With servo motor                                                                  |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| EMMS-AS-40-...                                                                    | 550 961<br>EAMM-A-E20-40A                                                         | 552 163<br>EAMF-A-28B-40A                                                         | 540 751<br>EAMC-15-22-5-6                                                           | 170 374<br>EAMK-A-E20-28B                                                           |
| EMMS-AS-55-...                                                                    | 550 963<br>EAMM-A-E20-55A                                                         | 529 946<br>EAMF-A-28A/B-55A                                                       | 529 953<br>EAMC-15-22-5-9                                                           | 170 374<br>EAMK-A-E20-28B                                                           |
| With stepper motor                                                                |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| EMMS-ST-42-...                                                                    | 550 962<br>EAMM-A-E20-42A                                                         | 552 164<br>EAMF-A-28B-42A                                                         | 530 085<br>EAMC-15-22-5-5                                                           | 170 374<br>EAMK-A-E20-28B                                                           |
| With motor unit                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| MTR-DCI-32S-...                                                                   | 556 991<br>EAMM-A-E20-32B                                                         | –                                                                                 | 533 707<br>EAMC-15-20-5-6                                                           | 533 703<br>EAMK-A-E20-32B                                                           |
| <b>DGE-25</b>                                                                     |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| With servo motor                                                                  |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| EMMS-AS-40-...                                                                    | 550 964<br>EAMM-A-E32-40A                                                         | 550 985<br>EAMF-A-44A/B-40A                                                       | 123 040<br>EAMC-30-35-6-6                                                           | 124 631<br>EAMK-A-E32-44A                                                           |
| EMMS-AS-55-...                                                                    | 550 965<br>EAMM-A-E32-55A                                                         | 529 942<br>EAMF-A-44A/B-55A                                                       | 530 941<br>EAMC-30-35-6-9                                                           | 124 631<br>EAMK-A-E32-44A                                                           |
| With stepper motor                                                                |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| EMMS-ST-57-...                                                                    | 550 966<br>EAMM-A-E32-57A                                                         | 530 081<br>EAMF-A-44A/B-57A                                                       | 530 087<br>EAMC-30-35-6-6.35                                                        | 124 631<br>EAMK-A-E32-44A                                                           |
| With motor unit                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| MTR-DCI-42S-...-G07                                                               | 556 992<br>EAMM-A-E32-42B                                                         | –                                                                                 | 533 708<br>EAMC-30-32-6-8                                                           | 533 704<br>EAMK-A-E32-42B                                                           |
| MTR-DCI-42S-...-G14                                                               | 556 993<br>EAMM-A-E32-42C                                                         | –                                                                                 | 533 708<br>EAMC-30-32-6-8                                                           | 538 578<br>EAMK-A-E32-42C                                                           |

# Spindle axes DGE

Accessories

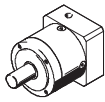
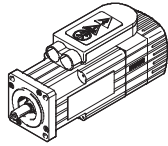
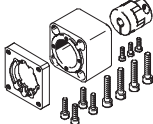
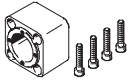
**FESTO**

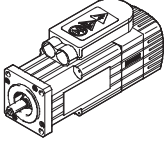
| Permissible axis/motor combinations with axial kit – Without gear unit            |                                                                                   |                                                                                   |                                                                                     | Technical data → Internet: eamm-a                                                   |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Motor                                                                             | Axial kit                                                                         | Axial kit consisting of:                                                          |                                                                                     |                                                                                     |
|                                                                                   |                                                                                   | Motor flange                                                                      | Coupling                                                                            | Coupling housing                                                                    |
|  |  |  |  |  |
| Type                                                                              | Part No.<br>Type                                                                  | Part No.<br>Type                                                                  | Part No.<br>Type                                                                    | Part No.<br>Type                                                                    |
| <b>DGE-40</b>                                                                     |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| With servo motor                                                                  |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| EMMS-AS-55-...                                                                    | 550 969<br>EAMM-A-E48-55A                                                         | 529 942<br>EAMF-A-44A/B-55A                                                       | 550 996<br>EAMC-30-35-9-12                                                          | 124 632<br>EAMK-A-E48-44A                                                           |
| EMMS-AS-70-...                                                                    | 550 971<br>EAMM-A-E48-44A-70A                                                     | 529 943<br>EAMF-A-44A/B-70A                                                       | 123 051<br>EAMC-30-35-11-12                                                         | 124 632<br>EAMK-A-E48-44A                                                           |
| EMMS-AS-100-...                                                                   | 550 973<br>EAMM-A-E48-100A                                                        | 529 947<br>EAMF-A-64A/C-100A                                                      | 529 952<br>EAMC-40-66-12-19                                                         | 529 940<br>EAMK-A-E48-64A                                                           |
| With stepper motor                                                                |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| EMMS-ST-57-...                                                                    | 550 970<br>EAMM-A-E48-57A                                                         | 530 081<br>EAMF-A-44A/B-57A                                                       | 550 995<br>EAMC-30-35-6.35-12                                                       | 124 632<br>EAMK-A-E48-44A                                                           |
| EMMS-ST-87-...                                                                    | 550 972<br>EAMM-A-E48-87A                                                         | 533 140<br>EAMF-A-64A/B-87A                                                       | 525 864<br>EAMC-40-66-11-12                                                         | 529 940<br>EAMK-A-E48-64A                                                           |
| With motor unit                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| MTR-DCI-52S-...-G07                                                               | 556 994<br>EAMM-A-E48-52B                                                         | –                                                                                 | 533 709<br>EAMC-42-50-12-12                                                         | 533 705<br>EAMK-A-E48-52B                                                           |
| MTR-DCI-52S-...-G14                                                               | 556 995<br>EAMM-A-E48-52C                                                         | –                                                                                 | 533 709<br>EAMC-42-50-12-12                                                         | 538 579<br>EAMK-A-E48-52C                                                           |
| <b>DGE-63</b>                                                                     |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| With servo motor                                                                  |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| EMMS-AS-70-...                                                                    | 550 975<br>EAMM-A-E72-70A                                                         | 529 945<br>EAMF-A-64A/B-70A                                                       | 550 999<br>EAMC-40-66-11-20                                                         | 529 941<br>EAMK-A-E72-64A                                                           |
| EMMS-AS-100-...                                                                   | 550 978<br>EAMM-A-E72-100A                                                        | 529 947<br>EAMF-A-64A/C-100A                                                      | 123 847<br>EAMC-40-66-19-20                                                         | 529 941<br>EAMK-A-E72-64A                                                           |
| With stepper motor                                                                |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| EMMS-ST-87-...                                                                    | 550 977<br>EAMM-A-E72-87A                                                         | 533 140<br>EAMF-A-64A/B-87A                                                       | 550 999<br>EAMC-40-66-11-20                                                         | 529 941<br>EAMK-A-E72-64A                                                           |
| With motor unit                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| MTR-DCI-62S-...                                                                   | 556 996<br>EAMM-A-E72-62B                                                         | –                                                                                 | 533 710<br>EAMC-42-50-14-20                                                         | 533 706<br>EAMK-A-E72-62B                                                           |

# Spindle axes DGE

Accessories

**FESTO**

| Permissible axis/motor combinations with axial kit – With gear unit               |                                                                                   |                                                                                   |                                                                                   | Technical data → Internet: eamm-a                                                   |                                                                                     |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Gear unit                                                                         | Motor                                                                             | Axial kit                                                                         | Axial kit consisting of:                                                          |                                                                                     |                                                                                     |
|                                                                                   |                                                                                   |                                                                                   | Motor flange                                                                      | Coupling                                                                            | Coupling housing                                                                    |
|  |  |  |  |  |  |
| Type                                                                              | Type                                                                              | Part No.<br>Type                                                                  | Part No.<br>Type                                                                  | Part No.<br>Type                                                                    | Part No.<br>Type                                                                    |
| <b>DGE-40</b>                                                                     |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| With servo motor                                                                  |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| <b>EMGA-40-P-G...-SAS-40</b>                                                      | <b>EMMS-AS-40-...</b>                                                             | 550 968<br>EAMM-A-E48-40G                                                         | 550 986<br>EAMF-A-44A/B-40G                                                       | 552 640<br>EAMC-30-35-10-12                                                         | 124 632<br>EAMK-A-E48-44A                                                           |
| <b>DGE-63</b>                                                                     |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| With servo motor                                                                  |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| <b>EMGA-60-P-G...-SAS-70</b>                                                      | <b>EMMS-AS-70-S-...</b>                                                           | 550 974<br>EAMM-A-E72-60G                                                         | 550 987<br>EAMF-A-64A/B-60G                                                       | 550 999<br>EAMC-40-66-11-20                                                         | 529 941<br>EAMK-A-E72-64A                                                           |
| <b>EMGA-80-P-G...-SAS-70</b>                                                      | <b>EMMS-AS-70-M-...</b>                                                           | 550 976<br>EAMM-A-E72-80G                                                         | 533 139<br>EAMF-A-64A/C-80G                                                       | 123 849<br>EAMC-40-66-20-20                                                         | 529 941<br>EAMK-A-E72-64A                                                           |
| With stepper motor                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| <b>EMGA-80-P-G...-SST-87</b>                                                      | <b>EMMS-ST-87-...</b>                                                             | 550 976<br>EAMM-A-E72-80G                                                         | 533 139<br>EAMF-A-64A/C-80G                                                       | 123 849<br>EAMC-40-66-20-20                                                         | 529 941<br>EAMK-A-E72-64A                                                           |

| Permissible axis/motor combinations with parallel kit – Without gear unit           |                                                                                     |                | Technical data → Internet: eamm-u |  |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------|-----------------------------------|--|
| Motor                                                                               | Parallel kit                                                                        |                |                                   |  |
|  |  |                |                                   |  |
| Type                                                                                | Part No.                                                                            | Type           |                                   |  |
| <b>DGE-25</b>                                                                       |                                                                                     |                |                                   |  |
| With servo motor                                                                    |                                                                                     |                |                                   |  |
| <b>EMMS-AS-55-...</b>                                                               | 543 230                                                                             | EAMM-U-E32-55A |                                   |  |
| With motor unit                                                                     |                                                                                     |                |                                   |  |
| <b>MTR-DCI-42S-...-G07</b>                                                          | 543 228                                                                             | EAMM-U-E32-42B |                                   |  |
| <b>MTR-DCI-42S-...-G14</b>                                                          | 543 229                                                                             | EAMM-U-E32-42C |                                   |  |
| <b>DGE-40</b>                                                                       |                                                                                     |                |                                   |  |
| With servo motor                                                                    |                                                                                     |                |                                   |  |
| <b>EMMS-AS-70-...</b>                                                               | 543 234                                                                             | EAMM-U-E48-70A |                                   |  |
| With motor unit                                                                     |                                                                                     |                |                                   |  |
| <b>MTR-DCI-52S-...-G07</b>                                                          | 543 232                                                                             | EAMM-U-E48-52B |                                   |  |
| <b>MTR-DCI-52S-...-G14</b>                                                          | 543 233                                                                             | EAMM-U-E48-52C |                                   |  |



# Spindle axes DGE

Accessories

FESTO

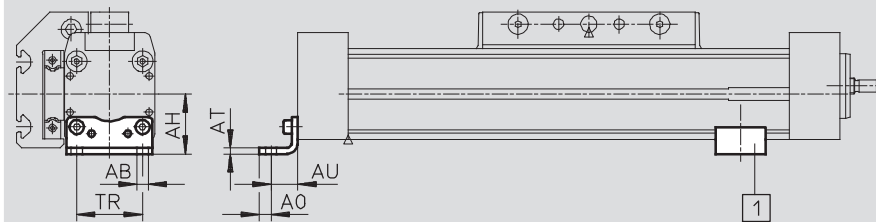
## Foot mounting HP (order code F)



HP-25

Material:  
Galvanised steel  
Free of copper, PTFE and silicone

DGE-18-...-63



| Dimensions and ordering data |         |      |      |    |      |      |               |          |       |
|------------------------------|---------|------|------|----|------|------|---------------|----------|-------|
| For size                     | AB<br>Ø | AH   | A0   | AT | AU   | TR   | Weight<br>[g] | Part No. | Type  |
| 18                           | 5.5     | 24   | 4.8  | 3  | 13.3 | 24   | 70            | 158 472  | HP-18 |
| 25                           | 5.5     | 29.5 | 6    | 3  | 13   | 32.5 | 61            | 150 731  | HP-25 |
| 40                           | 6.6     | 46   | 8.5  | 5  | 17.5 | 45   | 188           | 150 733  | HP-40 |
| 63                           | 11      | 69   | 13.5 | 6  | 28   | 75   | 305           | 150 735  | HP-63 |

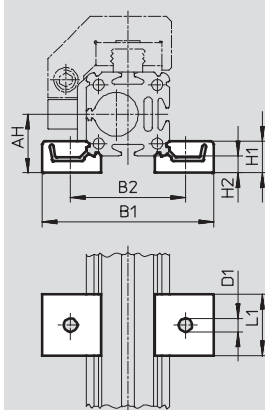
## Central support MUP (order code M)



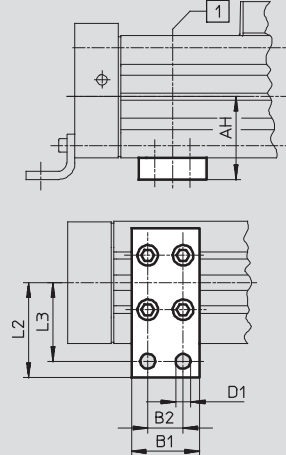
MUP-40

Material:  
Galvanised steel  
Free of copper, PTFE and silicone

DGE-18-...-25



DGE-40-...-63



1 Position of the central support along the profile is freely selectable

| Dimensions and ordering data |      |      |    |         |    |    |    |    |    |               |                   |
|------------------------------|------|------|----|---------|----|----|----|----|----|---------------|-------------------|
| For size                     | AH   | B1   | B2 | D1<br>Ø | H1 | H2 | L1 | L2 | L3 | Weight<br>[g] | Part No. Type     |
| 18                           | 24   | 70.5 | 47 | 5.5     | 13 | 7  | 25 | –  | –  | 33            | 150 736 MUP-18/25 |
| 25                           | 29.5 | 81   | 58 | 5.5     | 13 | 7  | 25 | –  | –  | 33            | 150 736 MUP-18/25 |
| 40                           | 46   | 35   | 22 | 6.6     | –  | –  | –  | 47 | 40 | 126           | 150 738 MUP-40    |
| 63                           | 69   | 50   | 26 | 11      | –  | –  | –  | 77 | 65 | 340           | 150 800 MUP-63    |

# Spindle axes DGE

Accessories

FESTO

## Foot mounting HHP

for heavy-duty guide

(order code F)

Material:

Galvanised steel



## Central support MUP

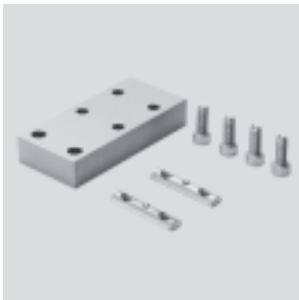
for heavy-duty guide

(order code M)

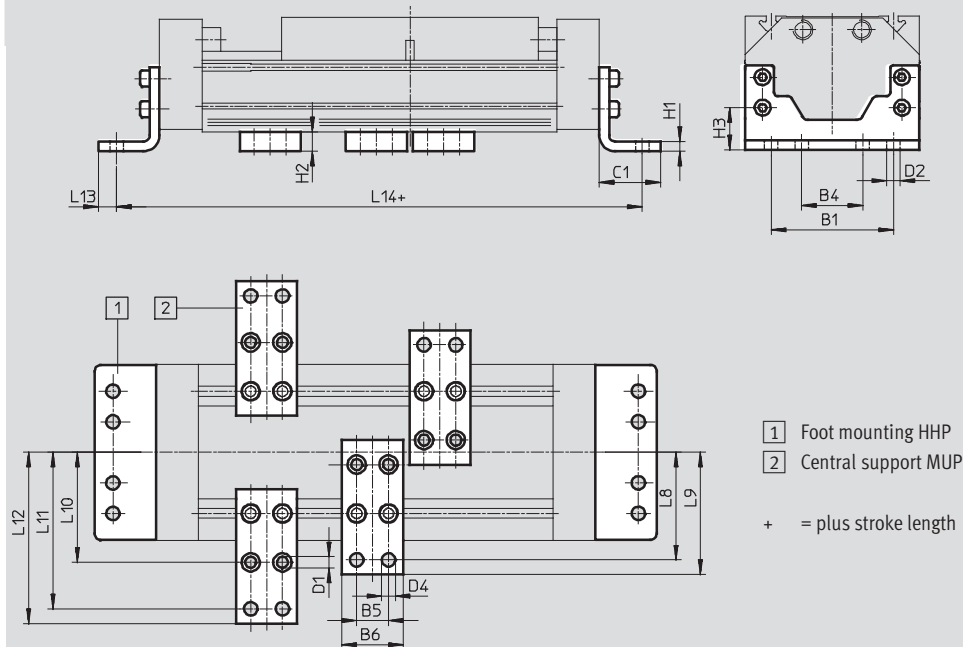
Material:

Galvanised steel

Free of copper, PTFE and silicone



DGE-...-HD18/-HD25/-HD40



## Dimensions and ordering data

| For heavy-duty guide | B1  | B4 | B5 | B6 | C1 | D1  | D2  | D4  | H1 | H2 | H3   |
|----------------------|-----|----|----|----|----|-----|-----|-----|----|----|------|
| HD18                 | 80  | 40 | 22 | 35 | 34 | 5.5 | 6.6 | 6.6 | 8  | 14 | 26.8 |
| HD25                 | 100 | 50 | 26 | 50 | 50 | 9   | 11  | 11  | 8  | 16 | 34.5 |
| HD40                 | 140 | 70 | 26 | 50 | 50 | 9   | 11  | 11  | 10 | 16 | 37   |

| For heavy-duty guide | L8  | L9  | L10 | L11 | L12 | L13 | L14 | Weight<br>[g] | Part No. | Type   |
|----------------------|-----|-----|-----|-----|-----|-----|-----|---------------|----------|--------|
| HD18                 | 68  | 75  | 64  | 92  | 99  | 9   | 290 | 357           | 161 993  | HHP-18 |
|                      |     |     |     |     |     |     |     | 126           | 150 738  | MUP-40 |
| HD25                 | 88  | 100 | 90  | 128 | 140 | 15  | 380 | 794           | 161 994  | HHP-25 |
|                      |     |     |     |     |     |     |     | 347           | 150 739  | MUP-50 |
| HD40                 | 108 | 120 | 110 | 148 | 160 | 15  | 424 | 1,318         | 161 995  | HHP-40 |
|                      |     |     |     |     |     |     |     | 347           | 150 739  | MUP-50 |

## Spindle axes DGE

Accessories

**FESTO**

### Shock absorber YSR-...-C (order code C)

Materials:

Housing: Galvanised steel; piston rod:  
high-alloy steel

Seals: nitrile rubber, polyurethane

Free of copper, PTFE and silicone



#### Note

Shock absorber YSRW with  
progressive characteristics

→ Internet: ysrw

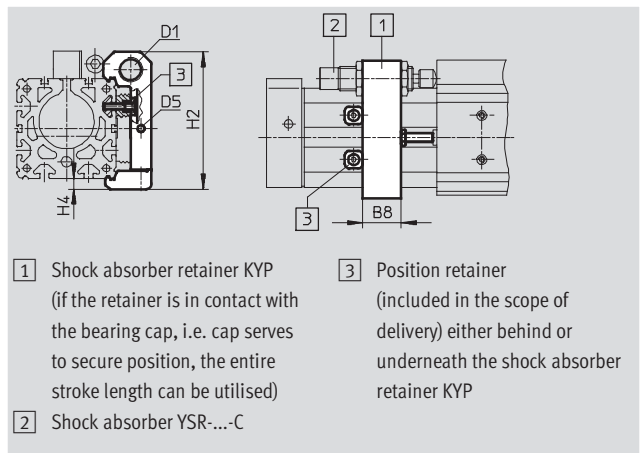
| Ordering data |               |          |             |
|---------------|---------------|----------|-------------|
| For size      | Weight<br>[g] | Part No. | Type        |
| 18            | 30            | 34 571   | YSR-8-8-C   |
| 25            | 70            | 34 572   | YSR-12-12-C |
| 40            | 140           | 34 573   | YSR-16-20-C |
| 63            | 240           | 34 574   | YSR-20-25-C |

### Shock absorber retainer KYP (order code C)

Materials:

Retainer: Aluminium

Sleeve: Corrosion-resistant steel



| Dimensions and ordering data |    |         |     |       |      |               |                |
|------------------------------|----|---------|-----|-------|------|---------------|----------------|
| For size                     | B8 | D1      | D5  | H2    | H4   | Weight<br>[g] | Part No. Type  |
| 18                           | 14 | M12x1   | M4  | 50.5  | 4.5  | 66            | 158 907 KYP-18 |
| 25                           | 19 | M16x1   | M5  | 69.5  | 6    | 95            | 158 908 KYP-25 |
| 40                           | 32 | M22x1.5 | M5  | 102   | 8    | 209           | 158 910 KYP-40 |
| 63                           | 44 | M26x1.5 | M10 | 152.5 | 11.5 | 609           | 158 912 KYP-63 |

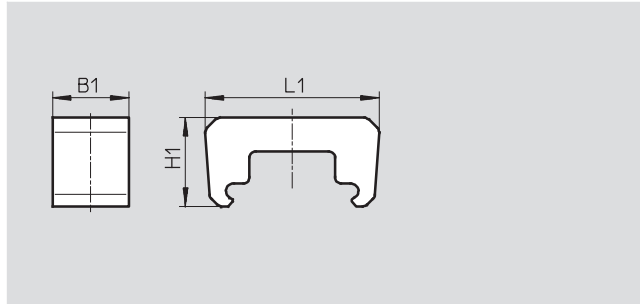
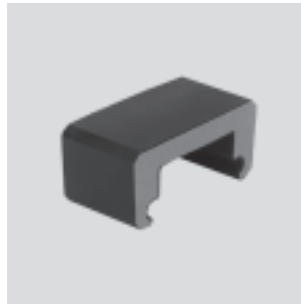
## Spindle axes DGE

Accessories

FESTO

### Emergency buffer NPE (order code A)

Material:  
Polyurethane



| Dimensions and ordering data |    |       |      |            |          |        |
|------------------------------|----|-------|------|------------|----------|--------|
| For size                     | B1 | L1    | H1   | Weight [g] | Part No. | Type   |
| 18                           | 15 | 43.1  | 28.5 | 6          | 193 901  | NPE-18 |
| 25                           | 25 | 57    | 29   | 12         | 193 902  | NPE-25 |
| 40                           | 40 | 80.5  | 36   | 41         | 193 904  | NPE-40 |
| 63                           | 60 | 128.6 | 55   | 152        | 193 906  | NPE-63 |

#### Note

The emergency buffer can only be used in combination with shock absorber retainer KYP. → 59  
(A threaded stud and nut are not required.)

### Shock absorber DG-GA

for protected version GA  
(order code E)

Materials:  
Housing: Galvanised steel; piston rod: high-alloy steel  
Seals: nitrile rubber, polyurethane  
Free of copper, PTFE and silicone



| Ordering data |            |          |              |
|---------------|------------|----------|--------------|
| For size      | Weight [g] | Part No. | Type         |
| 25            | 70         | 192 875  | DG-GA-25-YSR |
| 40            | 140        | 192 877  | DG-GA-40-YSR |

## Spindle axes DGE

Accessories

FESTO

### Shock absorber kit YHD

for heavy-duty guide

(order code D)

Materials:

Housing: Galvanised steel

Seals: TPE-U(PU), NBR

Free of copper, PTFE and silicone



| Ordering data        |        |          |        |
|----------------------|--------|----------|--------|
| For heavy-duty guide | Weight | Part No. | Type   |
|                      | [g]    |          |        |
| HD18                 | 203    | 174 544  | YHD-18 |
| HD25                 | 293    | 174 545  | YHD-25 |
| HD40                 | 515    | 174 546  | YHD-40 |

# Spindle axes DGE

Accessories

FESTO

## Sensor bracket HWS

for inductive proximity sensors

(order code T)

Material:

Galvanised steel



## Switch lug SF

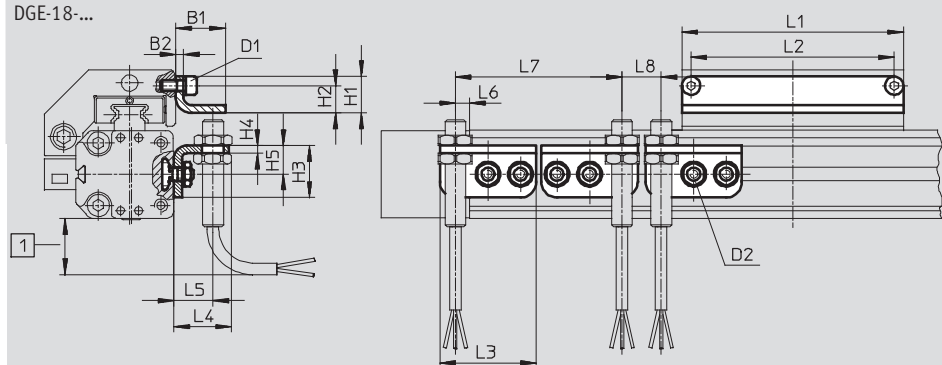
(order code L)

Material:

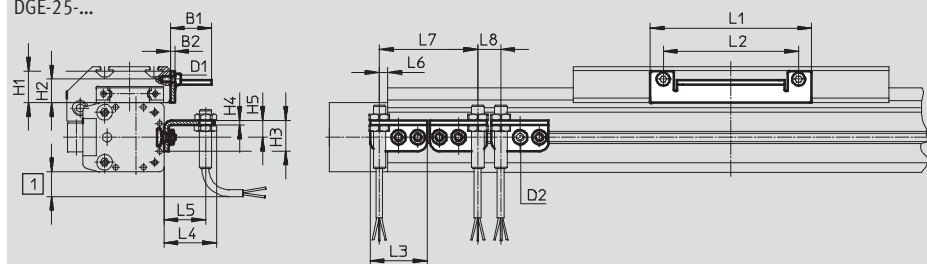
Galvanised steel



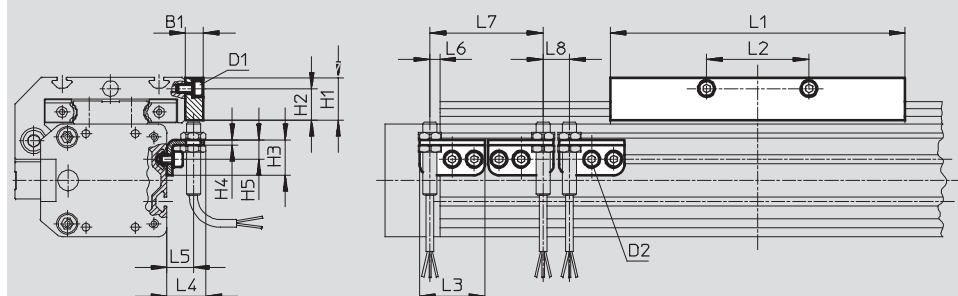
DGE-18-...



DGE-25-...



DGE-40/-63-...



1 Protruding sensor cable, ensure sufficient installation space

## Note

Cannot be used in combination with the variant DGE-...-GA (protected version).

# Spindle axes DGE

Accessories

**FESTO**

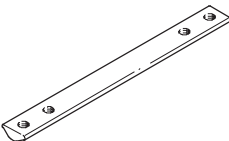
| Dimensions and ordering data |    |    |    |    |      |      |    |    |    |     |    |    |      |    |
|------------------------------|----|----|----|----|------|------|----|----|----|-----|----|----|------|----|
| For size                     | D1 | D2 | B1 | B2 | H1   | H2   | H3 | H4 | H5 | L1  | L2 | L3 | L4   | L5 |
| 18                           | M4 | M5 | 19 | 3  | 14   | 10.5 | 20 | 3  | 11 | 85  | 78 | 37 | 22.5 | 15 |
| 25                           | M5 | M5 | 27 | 3  | 20.5 | 15.3 | 20 | 3  | 11 | 105 | 88 | 37 | 34.5 | 27 |
| 40                           | M5 | M5 | 10 | –  | 24   | 18   | 20 | 3  | 11 | 167 | 58 | 37 | 22.5 | 15 |
| 63                           | M8 | M5 | 10 | –  | 35   | 25   | 20 | 3  | 11 | 230 | 72 | 37 | 22.5 | 15 |

| For size | L6<br>max. | L7<br>min. | L8<br>min. | Weight<br>[g] | Part No.       | Type                 |
|----------|------------|------------|------------|---------------|----------------|----------------------|
| 18       | 5.5        | 64         | 15         | 30            | <b>188 968</b> | <b>HWS-18/25-M8</b>  |
|          |            |            |            | 60            | <b>188 964</b> | <b>SF-18</b>         |
| 25       | 5.5        | 64         | 15         | 30            | <b>540 780</b> | <b>HWS-25-MAB-M8</b> |
|          |            |            |            | 80            | <b>540 430</b> | <b>SF-25-MAB</b>     |
| 40       | 5.5        | 64         | 15         | 40            | <b>188 969</b> | <b>HWS-40-M8</b>     |
|          |            |            |            | 310           | <b>188 966</b> | <b>SF-40</b>         |
| 63       | 5.5        | 64         | 15         | 40            | <b>188 970</b> | <b>HWS-63-M8</b>     |
|          |            |            |            | 630           | <b>188 967</b> | <b>SF-63</b>         |

# Spindle axes DGE

Accessories

FESTO

| Ordering data                                                                       |            |                                                          | Technical data → Internet: mounting attachment |          |            |                  |
|-------------------------------------------------------------------------------------|------------|----------------------------------------------------------|------------------------------------------------|----------|------------|------------------|
|                                                                                     | For size   | Comment                                                  | Order code                                     | Part No. | Type       | PU <sup>1)</sup> |
| Slot nut NST                                                                        |            |                                                          |                                                |          |            |                  |
|    | 18, 25     | For mounting slot                                        | Y                                              | 526 091  | NST-HMV-M4 | 1                |
|                                                                                     | 40         |                                                          |                                                | 150 914  | NST-5-M5   | 1                |
|                                                                                     | 63         |                                                          |                                                | 150 915  | NST-8-M6   | 1                |
|                                                                                     | HD18, HD25 | For heavy-duty guide: mounting slot                      | Y                                              | 150 914  | NST-5-M5   | 1                |
|                                                                                     | HD40       |                                                          |                                                | 150 915  | NST-8-M6   | 1                |
|                                                                                     | HD18       | For heavy-duty guide: HD underneath                      | U                                              | 150 914  | NST-5-M5   | 1                |
|                                                                                     | HD25, HD40 |                                                          |                                                | 150 915  | NST-8-M6   | 1                |
| Slot nut NSTL                                                                       |            |                                                          |                                                |          |            |                  |
|    | 25         | For slide                                                | X                                              | 158 410  | NSTL-25    | 1                |
|                                                                                     | 40         |                                                          |                                                | 158 412  | NSTL-40    | 1                |
|                                                                                     | 63         |                                                          |                                                | 158 414  | NSTL-63    | 1                |
|                                                                                     | HD18       | For heavy-duty guide: slide                              | X                                              | 161 020  | NSTH-18    | 1                |
|                                                                                     | HD25       |                                                          |                                                | 161 021  | NSTH-25    | 1                |
|                                                                                     | HD40       |                                                          |                                                | 161 022  | NSTH-40    | 1                |
| Centring pin/sleeve ZBS/ZBH                                                         |            |                                                          |                                                |          |            |                  |
|   | 18         | For slide                                                | Z                                              | 150 928  | ZBS-5      | 10               |
|                                                                                     | 25 ... 63  |                                                          |                                                | 150 927  | ZBH-9      | 10               |
| Central mounting SLZZ                                                               |            |                                                          |                                                |          |            |                  |
|  | HD18       | For heavy-duty guide: slide                              | Q                                              | 150 901  | SLZZ-25/16 | 1                |
|                                                                                     | HD25       |                                                          |                                                |          |            |                  |
|                                                                                     | HD40       |                                                          |                                                |          |            |                  |
| Slot cover ABP                                                                      |            |                                                          |                                                |          |            |                  |
|  | 40         | For mounting slot every 0.5 m                            | B                                              | 151 681  | ABP-5      | 2                |
|                                                                                     | 63         |                                                          |                                                | 151 682  | ABP-8      |                  |
|                                                                                     | HD18, HD25 | For mounting slot on the side and underneath, each 0.5 m |                                                | 151 681  | ABP-5      |                  |
|                                                                                     | HD40       |                                                          |                                                | 151 682  | ABP-8      |                  |
| Slot cover ABP-S                                                                    |            |                                                          |                                                |          |            |                  |
|  | 18 ... 63  | For sensor slot every 0.5 m                              | S                                              | 151 680  | ABP-5-S    | 2                |

1) Packaging unit



# Spindle axes DGE

Accessories

**FESTO**

| 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 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 – Proximity sensors for T-slot, magneto-resistive                   |                                                                    |                  |                       |                  |                | Technical data → Internet: <a href="#">smt</a> |  |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------|------------------|-----------------------|------------------|----------------|------------------------------------------------|--|
|                                                                                   | Type of mounting                                                   | Switching output | Electrical connection | Cable length [m] | Part No.       | Type                                           |  |
| N/O contact                                                                       |                                                                    |                  |                       |                  |                |                                                |  |
|  | Insertable in the slot lengthwise, flush with the cylinder profile | PNP              | Cable, 3-wire         | 2.5              | <b>175 436</b> | <b>SMT-8-PS-K-LED-24-B</b>                     |  |
|                                                                                   |                                                                    |                  | Plug M8x1, 3-pin      | 0.3              | <b>175 484</b> | <b>SMT-8-PS-S-LED-24-B</b>                     |  |
|                                                                                   |                                                                    |                  |                       |                  |                |                                                |  |
| N/C contact                                                                       |                                                                    |                  |                       |                  |                |                                                |  |
|  | Insertable in the slot from above, flush with the cylinder profile | PNP              | Cable, 3-wire         | 7.5              | <b>543 873</b> | <b>SMT-8M-PO-24V-K7,5-OE</b>                   |  |

| Ordering data – Inductive proximity sensors M8                                      |                       |         |                  |     |                  | Technical data → Internet: sien       |
|-------------------------------------------------------------------------------------|-----------------------|---------|------------------|-----|------------------|---------------------------------------|
|                                                                                     | Electrical connection |         | Switching output | LED | Cable length [m] | Part No. Type                         |
|                                                                                     | Cable                 | Plug M8 |                  |     |                  |                                       |
| N/O contact                                                                         |                       |         |                  |     |                  |                                       |
|  | 3-wire                | –       | PNP              | ■   | 2.5              | <b>150 386</b> <b>SIEN-M8B-PS-K-L</b> |
|  | –                     | 3-pin   | PNP              | ■   | –                | <b>150 387</b> <b>SIEN-M8B-PS-S-L</b> |
| N/C contact                                                                         |                       |         |                  |     |                  |                                       |
|  | 3-wire                | –       | PNP              | ■   | 2.5              | <b>150 390</b> <b>SIEN-M8B-PO-K-L</b> |
|  | –                     | 3-pin   | PNP              | ■   | –                | <b>150 391</b> <b>SIEN-M8B-PO-S-L</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              | <b>541 333</b> | <b>NEBU-M8G3-K-2.5-LE3</b>      |
|                                                                                     |                              |                              | 5                | <b>541 334</b> | <b>NEBU-M8G3-K-5-LE3</b>        |
|  | Angled socket, M8x1, 3-pin   | Cable, open end, 3-wire      | 2.5              | <b>541 338</b> | <b>NEBU-M8W3-K-2.5-LE3</b>      |
|                                                                                     |                              |                              | 5                | <b>541 341</b> | <b>NEBU-M8W3-K-5-LE3</b>        |

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