

## Cantilever axes DGEA, with toothed belt drive

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# Cantilever axes DGEA, with toothed belt drive

Features

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## Key features at a glance

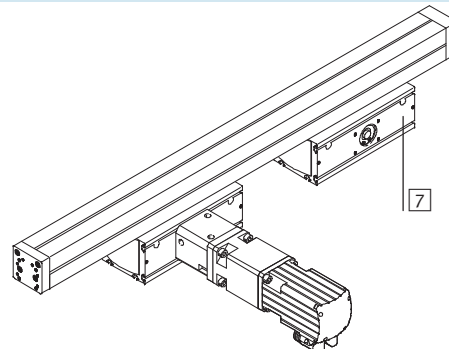
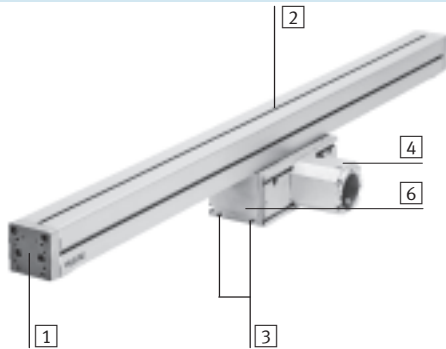
- Super flat  $\Omega$  drive head enabling high mechanical torques.
- Improved dynamics compared to toothed belt axis DGE-ZR in cantilever operation, as the motor, gear unit and drive head are securely mounted and thus the moving load (profile barrel) is considerably reduced.
- Tried and tested motor-controller packages can be utilised.
- Mounting options adapted to the new multi-axis modular system.



| Size                     | 18  | 25  | 40   |
|--------------------------|-----|-----|------|
| Max. working stroke [mm] | 800 | 900 | 1000 |
| Max. working load [kg]   | 7   | 18  | 27   |
| Max. speed [m/s]         | 3   | 3   | 3    |
| Max. feed force [N]      | 230 | 400 | 1000 |

## Variants

### Basic design



1 Mounting interface for working load: thread, centring holes and hole pattern are identical to the end caps on the DGE axes. Both caps can be machined as desired or removed and replaced by others.

2 Profile barrel: 3 sides with slots for external mounting – clearance for tubing and electrical cable throughfeed

3 Mounting interface for cantilever application (matched to DGE-...-KF slide)

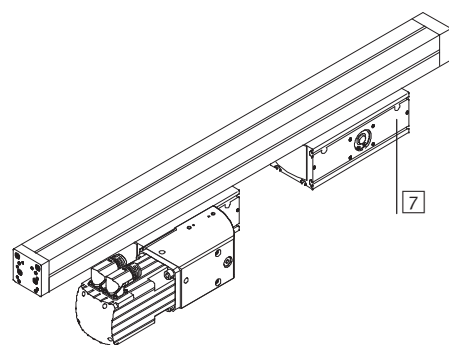
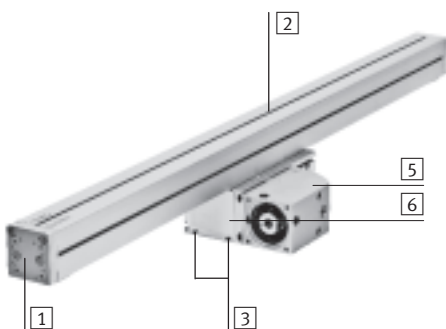
4 Coupling housing

5 Coupling housing with integrated angled gear unit

6 Drive head

7 Optional:  
Additional drive head without drive shaft for increasing mechanical torque resistance

### With angled gear unit



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Features

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## System selection for electromechanical drives

Cantilever axis



Note

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

## Motor kit

Axial kit

→ 22



Axial kit consisting of:

- Motor flange
- Coupling housing
- Coupling
- Screws

## Motor

→ 22



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

## Motor controller

Technical data → Internet: motor controller



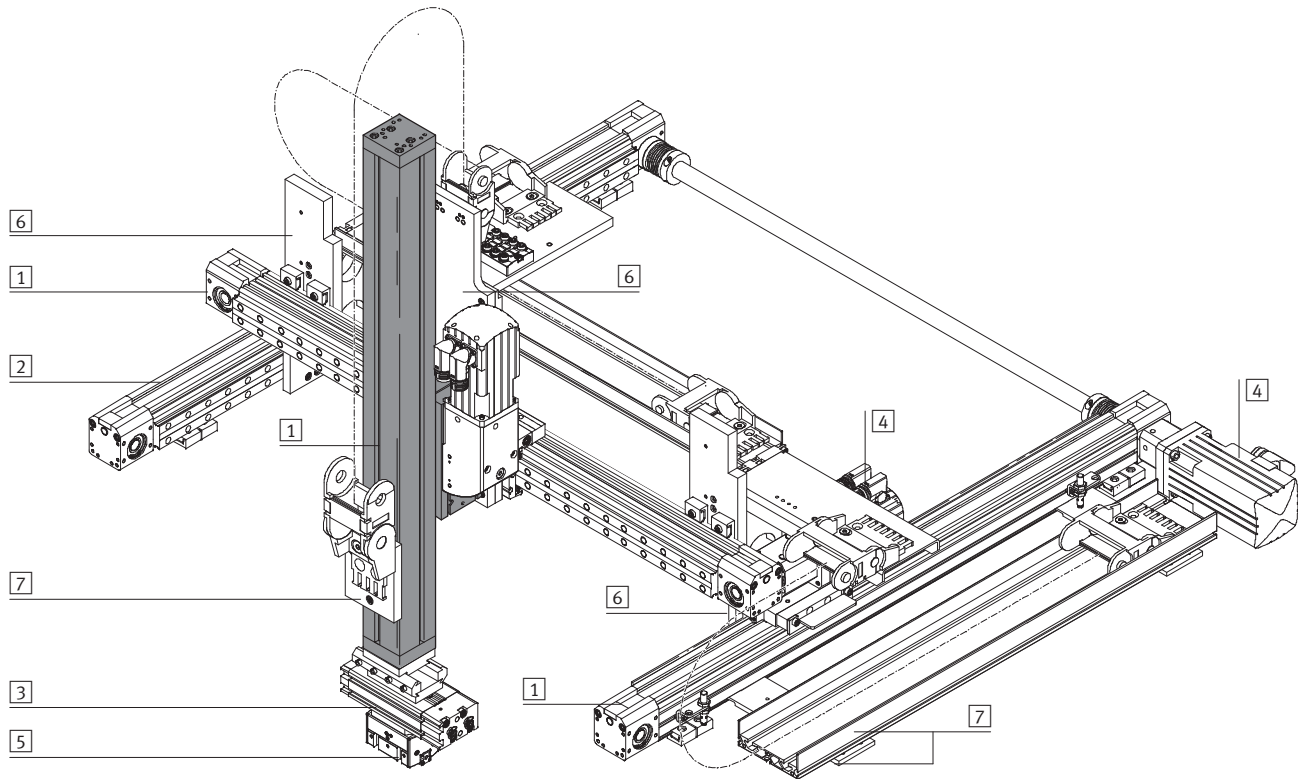
- 1 Servo motor controller CMMP-AS, CMMS-AS
- 2 Stepper motor controller CMMS-ST

# Cantilever axes DGEA, with toothed belt drive

System example

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System product for handling and assembly technology



| System elements and accessories |                                                                           |                        |
|---------------------------------|---------------------------------------------------------------------------|------------------------|
|                                 | Brief description                                                         | → Page/Internet        |
| 1 Axes                          | Wide range of combination options within handling and assembly technology | axes                   |
| 2 Passive guide axis            | To increase force and torque capacity in multi-axis applications          | guide axes             |
| 3 Drive units                   | 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 variation options within handling and assembly technology   | gripper                |
| 6 Adapters                      | For drive/drive and drive/gripper combinations                            | adapter kit            |
| 7 Installation components       | For achieving a clear-cut, safe layout for electrical cables and tubing   | installation component |

# Cantilever axes DGEA, with toothed belt drive

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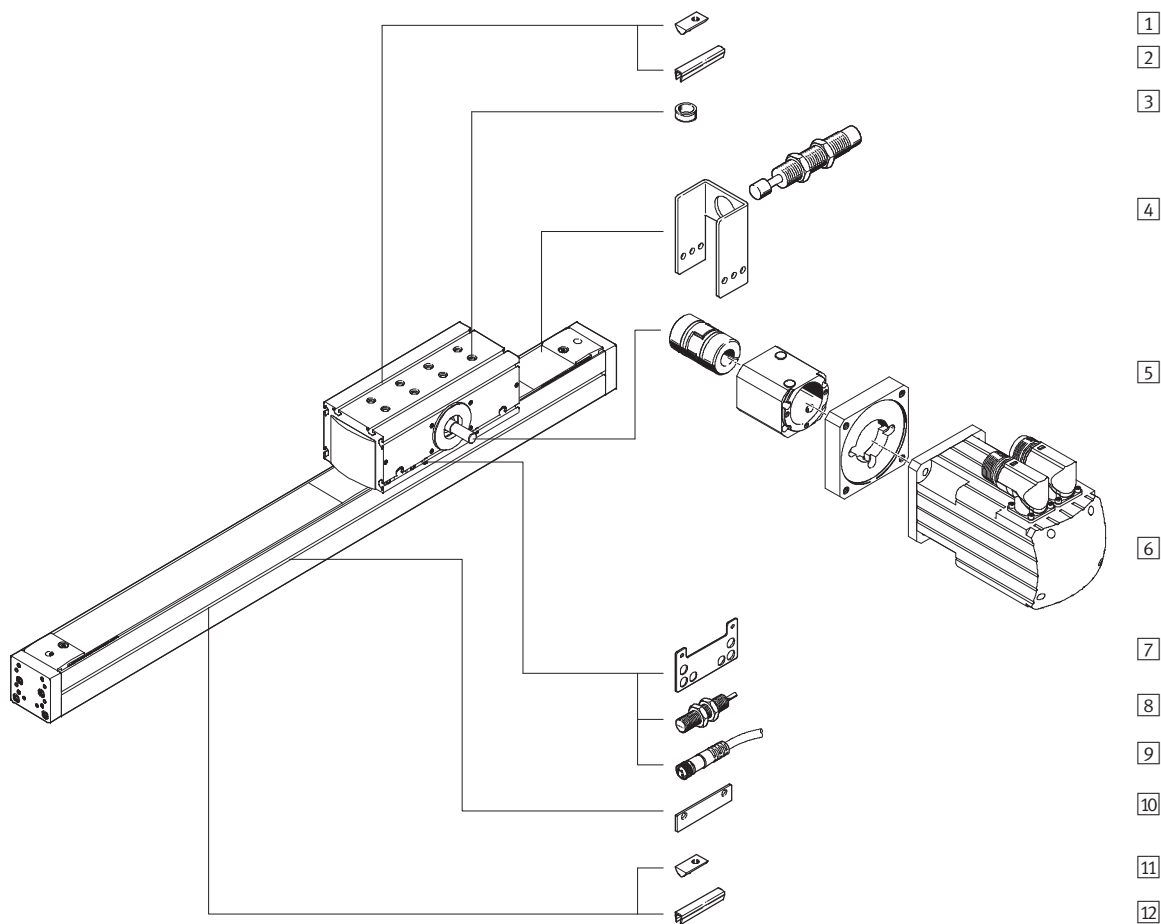
Type codes

|                                        |                                                       |      |   |    |   |     |   |    |   |    |   |     |   |  |
|----------------------------------------|-------------------------------------------------------|------|---|----|---|-----|---|----|---|----|---|-----|---|--|
|                                        |                                                       | DGEA | - | 25 | - | 500 | - | ZR | - | WH | - | ZWK | - |  |
| <b>Type</b>                            |                                                       |      |   |    |   |     |   |    |   |    |   |     |   |  |
| DGEA                                   | Cantilever axis                                       |      |   |    |   |     |   |    |   |    |   |     |   |  |
| <b>Size</b>                            |                                                       |      |   |    |   |     |   |    |   |    |   |     |   |  |
| <b>Stroke [mm]</b>                     |                                                       |      |   |    |   |     |   |    |   |    |   |     |   |  |
| <b>Drive function</b>                  |                                                       |      |   |    |   |     |   |    |   |    |   |     |   |  |
| ZR                                     | Toothed belt                                          |      |   |    |   |     |   |    |   |    |   |     |   |  |
| <b>Drive head</b>                      |                                                       |      |   |    |   |     |   |    |   |    |   |     |   |  |
| WH                                     | Drive shaft at rear                                   |      |   |    |   |     |   |    |   |    |   |     |   |  |
| WV                                     | Drive shaft at front                                  |      |   |    |   |     |   |    |   |    |   |     |   |  |
| WB                                     | Drive shaft at both ends                              |      |   |    |   |     |   |    |   |    |   |     |   |  |
| GVL                                    | Integrated angled gear unit/motor at front left       |      |   |    |   |     |   |    |   |    |   |     |   |  |
| GVR                                    | Integrated angled gear unit/motor at front right      |      |   |    |   |     |   |    |   |    |   |     |   |  |
| GHL                                    | Integrated angled gear unit/motor at rear left        |      |   |    |   |     |   |    |   |    |   |     |   |  |
| GHR                                    | Integrated angled gear unit/motor at rear right       |      |   |    |   |     |   |    |   |    |   |     |   |  |
| <b>Additional drive head</b>           |                                                       |      |   |    |   |     |   |    |   |    |   |     |   |  |
| ZWK                                    | Without drive shaft                                   |      |   |    |   |     |   |    |   |    |   |     |   |  |
| <b>Accessories supplied separately</b> |                                                       |      |   |    |   |     |   |    |   |    |   |     |   |  |
| ...S                                   | Slot cover for profile slot                           |      |   |    |   |     |   |    |   |    |   |     |   |  |
| ...B                                   | Slot cover for drive head                             |      |   |    |   |     |   |    |   |    |   |     |   |  |
| ...Y                                   | Slot nut for profile slot                             |      |   |    |   |     |   |    |   |    |   |     |   |  |
| ...X                                   | Slot nut for drive head                               |      |   |    |   |     |   |    |   |    |   |     |   |  |
| ...C                                   | Shock absorber with retainer                          |      |   |    |   |     |   |    |   |    |   |     |   |  |
| ...Z                                   | Centring sleeve                                       |      |   |    |   |     |   |    |   |    |   |     |   |  |
| L                                      | Mounting kit for proximity sensor                     |      |   |    |   |     |   |    |   |    |   |     |   |  |
| ...O                                   | Proximity sensor with cable (normally open contact)   |      |   |    |   |     |   |    |   |    |   |     |   |  |
| ...P                                   | Proximity sensor with cable (normally closed contact) |      |   |    |   |     |   |    |   |    |   |     |   |  |
| ...W                                   | Proximity sensor with plug (normally open contact)    |      |   |    |   |     |   |    |   |    |   |     |   |  |
| ...R                                   | Proximity sensor with plug (normally closed contact)  |      |   |    |   |     |   |    |   |    |   |     |   |  |
| ...V                                   | Cable with socket, 2.5 m                              |      |   |    |   |     |   |    |   |    |   |     |   |  |

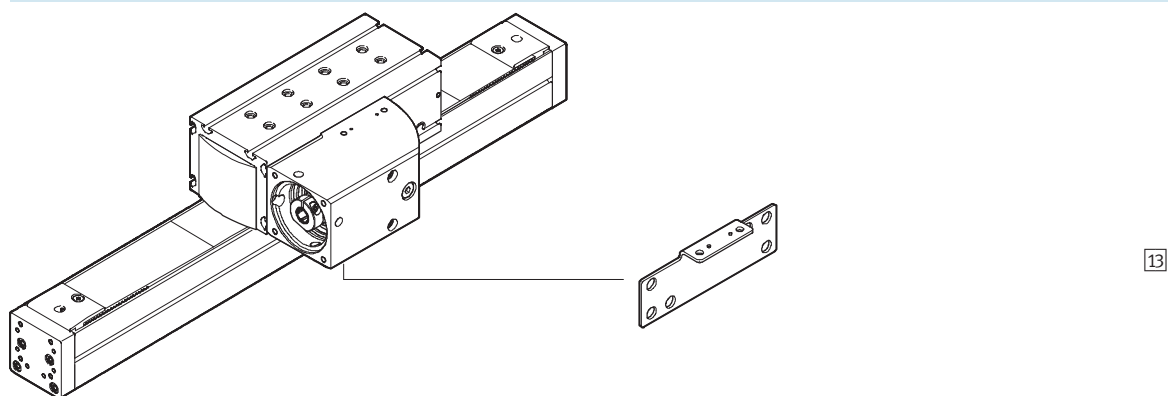
# Cantilever axes DGEA, with toothed belt drive

Peripherals overview

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With angled gear unit



# Cantilever axes DGEA, with toothed belt drive

Peripherals overview

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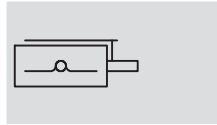
| Variants and accessories         |                                                                                                                                              |              |                  |                 |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|--------------|------------------|-----------------|
| Type                             | Brief description                                                                                                                            | Basic design | Angled gear unit | → Page/Internet |
| 1 Slot nut for drive head X      | For mounting the axis                                                                                                                        | ■            | ■                | 28              |
| 2 Slot cover for drive head B    | For protecting against ingress of dirt                                                                                                       | ■            | ■                | 28              |
| 3 Centring sleeve Z              | To centre the axis                                                                                                                           | ■            | ■                | 28              |
| 4 Shock absorber with retainer C | Prevents damage to the axis in the event of a power failure (in vertical operation), if the axis is driven into the end position by the load | ■            | ■                | 27              |
| 5 Axial kit EAMM-A               | For axial motor attachment (consisting of: coupling housing, clamping component, motor flange)                                               | ■            | –                | 22              |
| 5 Coupling housing KG            | Adapter for mounting the motor on the axis                                                                                                   | ■            | integrated       | 22              |
| 5 Coupling KSE                   | Connecting element between axis and motor                                                                                                    | ■            | integrated       | 22              |
| 5 Motor flange EAMF              | Connecting element between coupling housing and motor                                                                                        | ■            | integrated       | 22              |
| 6 Motor EMMS                     | Motors specially matched to the axis, with or without gearing                                                                                | ■            | ■                | 22              |
| 7 Mounting plate L               | Adapter for mounting the SIEN proximity sensor on the axis (basic design)                                                                    | ■            | –                | 25              |
| 8 Proximity sensor O/P/W/R       | For providing a proximity signal or safety check                                                                                             | ■            | ■                | 28              |
| 9 Cable with socket V            | Via proximity sensor                                                                                                                         | ■            | ■                | 28              |
| 10 Switching lug L               | For sensing the slide position                                                                                                               | ■            | ■                | 25              |
| 11 Slot nut for profile slot Y   | For mounting attachments                                                                                                                     | ■            | ■                | 28              |
| 12 Slot cover for profile slot S | For protecting against ingress of dirt                                                                                                       | ■            | ■                | 28              |
| 13 Mounting plate L              | Adapter for mounting the SIEN proximity sensor on the axis with angled gear unit                                                             | –            | ■                | 26              |

# Cantilever axes DGEA, with toothed belt drive

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Technical data

Function



-  Size  
18, 25, 40
-  Stroke length  
100 ... 1000 mm



| General technical data                                  |                     |                                         |           |            |
|---------------------------------------------------------|---------------------|-----------------------------------------|-----------|------------|
| Size                                                    |                     | 18                                      | 25        | 40         |
| Constructional design                                   |                     | Cantilever axis with toothed belt drive |           |            |
| Guide                                                   |                     | Recirculating ball bearing guide        |           |            |
| Mounting position                                       |                     | Any                                     |           |            |
| Max. working stroke <sup>1)</sup>                       | [mm]                | 1 ... 800                               | 1 ... 900 | 1 ... 1000 |
| Max. working (effective) load, horizontal <sup>2)</sup> | [kg]                | 6                                       | 15        | 40         |
| Max. working load, vertical                             | [kg]                | 10                                      | 20        | 50         |
| Max. feed force F <sub>x</sub>                          | [N]                 | 230                                     | 400       | 1000       |
| Max. speed                                              | [m/s]               | 3                                       |           |            |
| Max. acceleration                                       | [m/s <sup>2</sup> ] | 50                                      |           |            |
| Repetition accuracy                                     | [mm]                | < ±0.05                                 |           |            |
|                                                         |                     |                                         |           |            |
| Basic design                                            |                     |                                         |           |            |
| Max. driving torque                                     | [Nm]                | 3                                       | 5.2       | 19         |
| Max. no-load driving torque <sup>3)</sup>               | [Nm]                | 0.4                                     | 0.4       | 1          |
|                                                         |                     |                                         |           |            |
| Maximum drive speed                                     | [rpm]               | 2222                                    | 2222      | 1500       |
|                                                         |                     |                                         |           |            |
| With angled gear unit                                   |                     |                                         |           |            |
| Max. driving torque                                     | [Nm]                | 1.4                                     | 2.2       | 7.3        |
| Max. no-load driving torque <sup>3)</sup>               | [Nm]                | 0.3                                     | 0.6       | 1.3        |
|                                                         |                     |                                         |           |            |
| Maximum drive speed                                     | [rpm]               | 6666                                    | 6666      | 4500       |
| Gearing type                                            |                     | Crown gear unit                         |           |            |
| Gearing                                                 |                     | Straight                                |           |            |
| Gear ratio                                              |                     | 3                                       |           |            |

1) Total stroke = working stroke + 2x stroke reserve, longer strokes on request

2) At 500 mm stroke and with a centred working load in the middle of the guide. Further values → 12

3) Measured at a speed of 0.2m/s

| Operating and environmental conditions |      |             |    |    |
|----------------------------------------|------|-------------|----|----|
| Size                                   |      | 18          | 25 | 40 |
| Ambient temperature                    | [°C] | -10 ... +60 |    |    |
| Protection class                       |      | IP20        |    |    |



# Cantilever axes DGEA, with toothed belt drive

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Technical data

| Weights [kg]          |                                                      |      |      |      |      |      |      |
|-----------------------|------------------------------------------------------|------|------|------|------|------|------|
| Size                  |                                                      | 18   |      | 25   |      | 40   |      |
| Number of drive heads |                                                      | 1    | 2    | 1    | 2    | 1    | 2    |
| Basic design          |                                                      |      |      |      |      |      |      |
| Overall weight        | at 0 mm stroke <sup>1)</sup>                         | 2.8  | 4.7  | 4.9  | 8.5  | 14.3 | 23.2 |
|                       | Additional weight<br>Per 100 mm stroke <sup>1)</sup> | 0.35 | 0.35 | 0.47 | 0.47 | 1    | 1    |
| Moving load           | at 0 mm stroke                                       | 1.5  | 2    | 2.4  | 3.3  | 6.2  | 8.6  |
| With angled gear unit |                                                      |      |      |      |      |      |      |
| Overall weight        | at 0 mm stroke <sup>1)</sup>                         | 3.6  | 5    | 6.6  | 9.3  | 19.5 | 26   |
|                       | Additional weight<br>Per 100 mm stroke <sup>1)</sup> | 0.35 | 0.35 | 0.47 | 0.47 | 1    | 1    |
| Moving load           | at 0 mm stroke <sup>1)</sup>                         | 1.5  | 2    | 2.4  | 3.3  | 6.2  | 8.6  |

1) Without motor, coupling, coupling housing and accessories

| Mass moment of inertia |                                              |      |      |      |      |      |      |
|------------------------|----------------------------------------------|------|------|------|------|------|------|
| Size                   |                                              | 18   |      | 25   |      | 40   |      |
| Number of drive heads  |                                              | 1    | 2    | 1    | 2    | 1    | 2    |
| $J_0$                  | [kg cm <sup>2</sup> ]                        | 2.87 | 4.08 | 4.45 | 6.40 | 28   | 41.5 |
| $J_H$                  | per metre stroke [kg cm <sup>2</sup> /m]     | 6    |      | 8    |      | 36.5 |      |
| $J_L$                  | per kg working load [kg cm <sup>2</sup> /kg] | 1.66 |      | 1.66 |      | 3.65 |      |
| $J_G$                  | angled gear unit [kg cm <sup>2</sup> /m]     | 0.14 |      | 0.26 |      | 2.02 |      |
| i                      | gear ratio                                   | 3    |      | 3    |      | 3    |      |

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

Basic design

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

With angled gear unit

$$J_A = J_G + \frac{J_0 + J_H \times \text{working stroke [m]} + J_L \times m_{\text{working load [kg]}}}{i^2}$$

| Toothed belt                                      |           |       |       |       |
|---------------------------------------------------|-----------|-------|-------|-------|
| Size                                              |           | 18    | 25    | 40    |
| Expansion <sup>1)</sup>                           | [%]       | 0.037 | 0.053 | 0.056 |
| Pitch                                             | [mm]      | 3     | 3     | 5     |
| Effective radius;<br>effective diameter           | [mm]      | 25.78 | 25.78 | 38.2  |
| Feed constant                                     | [mm/rev.] | 81    | 81    | 120   |
| Feed constant with integrated<br>angled gear unit | [mm/rev.] | 27    | 27    | 40    |

1) At max. feed force

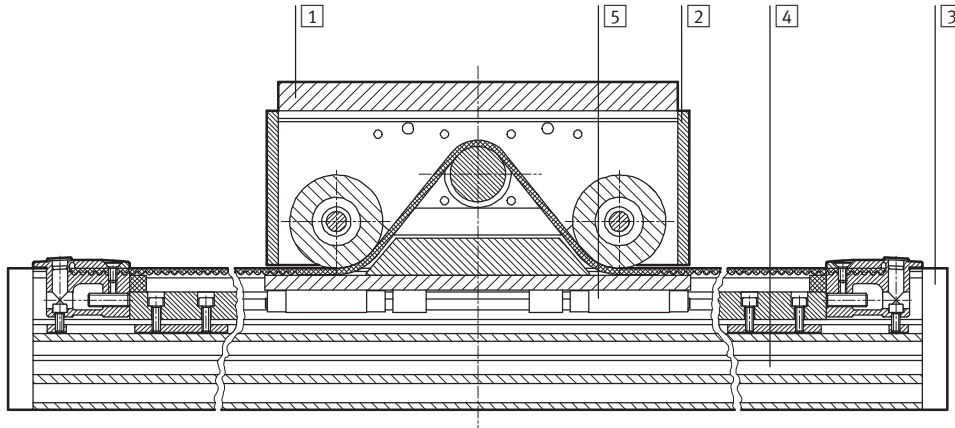
# Cantilever axes DGEA, with toothed belt drive

Technical data

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## Materials

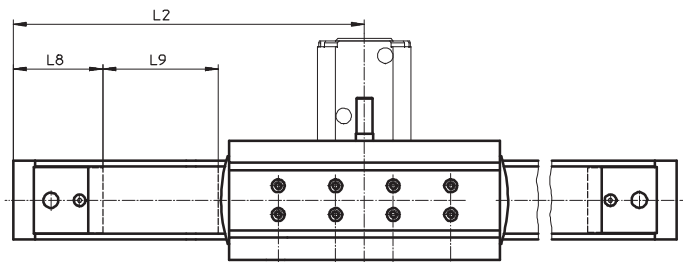
Sectional view



| Axis                   |                                |
|------------------------|--------------------------------|
| 1 Drive head interface | Galvanised steel               |
| 2 Drive head - Housing | Anodised aluminium             |
| 3 End cap              | Anodised aluminium             |
| 4 Profile              | Anodised aluminium             |
| 5 Guide rail           | Rolled steel, corrotect coated |
| - Gearing housing      | Anodised aluminium             |
| - Pinion               | Steel                          |
| - Crown gear           | Steel                          |

## Stroke reserve

- L2 Drive head in the end position of the working stroke
- L8 Distance between mechanical stop and external dimension of the axis
- L9 The stroke reserve is a safety distance available on both sides of the axis in addition to the stroke



Example:  
Type DGEA-25-500-ZR

Working stroke = 500 mm  
Stroke reserve = (2x 81 mm)  
= 162 mm  
Total stroke = 500 mm + 126 mm  
= 662 mm

| Size                     | 18 | 25 | 40  |
|--------------------------|----|----|-----|
| L9 per end position [mm] | 81 | 81 | 120 |

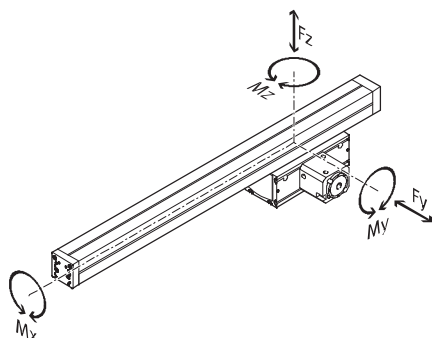
# Cantilever axes DGEA, with toothed belt drive

Technical data

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## Characteristic load values of the guide

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 cantilever axis is simultaneously subjected to several of the forces and torques listed below, the following equation must be satisfied in addition to the indicated maximum loads.

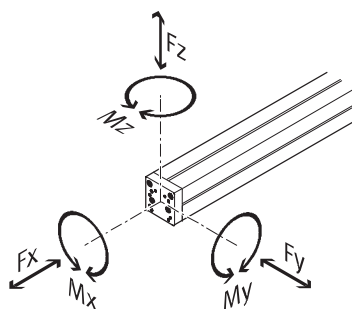
$$\left| \frac{F_y}{F_{y_{\max.}}} \right| + \left| \frac{F_z}{F_{z_{\max.}}} \right| + \left| \frac{M_x}{M_{x_{\max.}}} \right| + \left| \frac{M_y}{M_{y_{\max.}}} \right| + \left| \frac{M_z}{M_{z_{\max.}}} \right| \leq 1$$

## Permissible forces and torques

| Size                          |      | 18   | 25   | 40   |
|-------------------------------|------|------|------|------|
| F <sub>y<sub>max.</sub></sub> | [N]  | 2000 | 3080 | 7300 |
| F <sub>z<sub>max.</sub></sub> | [N]  | 2000 | 3080 | 7300 |
| M <sub>x<sub>max.</sub></sub> | [Nm] | 19   | 28   | 133  |
| M <sub>y<sub>max.</sub></sub> | [Nm] | 94   | 230  | 665  |
| M <sub>z<sub>max.</sub></sub> | [Nm] | 65   | 160  | 460  |

## Characteristic load values of the interface for mounting the effective load

The forces and torques specified refer to the interface for mounting the effective load. They must not be exceeded in the dynamic range. Special attention must be paid to the cushioning phase.



If the cantilever axis is simultaneously subjected to several of the forces and torques listed below, the following equation must be satisfied in addition to the indicated maximum loads.

$$\left| \frac{F_x}{F_{x_{\max.}}} \right| + \left| \frac{F_y}{F_{y_{\max.}}} \right| + \left| \frac{F_z}{F_{z_{\max.}}} \right| + \left| \frac{M_x}{M_{x_{\max.}}} \right| + \left| \frac{M_y}{M_{y_{\max.}}} \right| + \left| \frac{M_z}{M_{z_{\max.}}} \right| \leq 1$$

## Permissible forces and torques

| Size                          |      | 18   | 25   | 40   |
|-------------------------------|------|------|------|------|
| F <sub>x<sub>max.</sub></sub> | [N]  | 6000 | 6000 | 8400 |
| F <sub>y<sub>max.</sub></sub> | [N]  | 2240 | 2240 | 3200 |
| F <sub>z<sub>max.</sub></sub> | [N]  | 2240 | 2240 | 3200 |
| M <sub>x<sub>max.</sub></sub> | [Nm] | 30   | 50   | 118  |
| M <sub>y<sub>max.</sub></sub> | [Nm] | 125  | 230  | 407  |
| M <sub>z<sub>max.</sub></sub> | [Nm] | 185  | 273  | 580  |

- Note

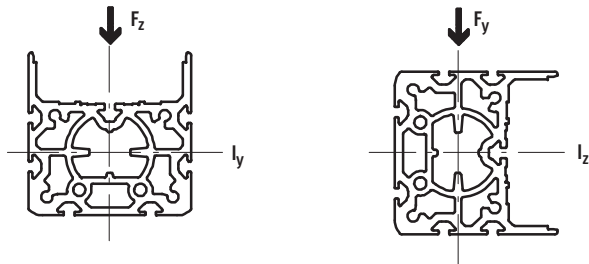
Sizing software  
PositioningDrives  
→ [www.festo.com](http://www.festo.com)

# Cantilever axes DGEA, with toothed belt drive

Technical data

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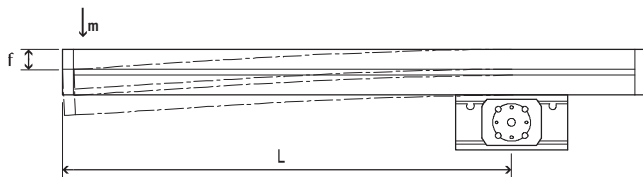
## 2nd moment of area<sup>1)</sup>



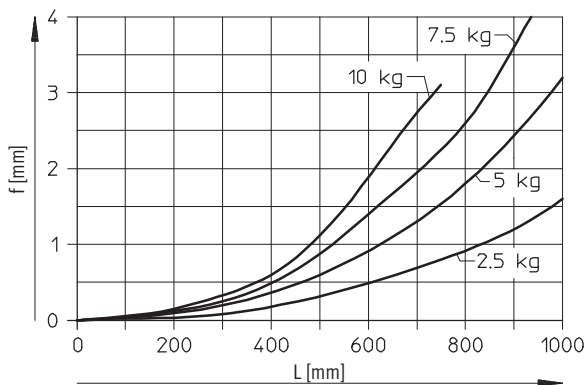
| Size |                    | 18                  | 25                  | 40                   |
|------|--------------------|---------------------|---------------------|----------------------|
| ly   | [mm <sup>4</sup> ] | 173x10 <sup>3</sup> | 432x10 <sup>3</sup> | 1759x10 <sup>3</sup> |
| lz   | [mm <sup>4</sup> ] | 135x10 <sup>3</sup> | 438x10 <sup>3</sup> | 1894x10 <sup>3</sup> |

1) After machining or replacing the end cap, the values become invalid.

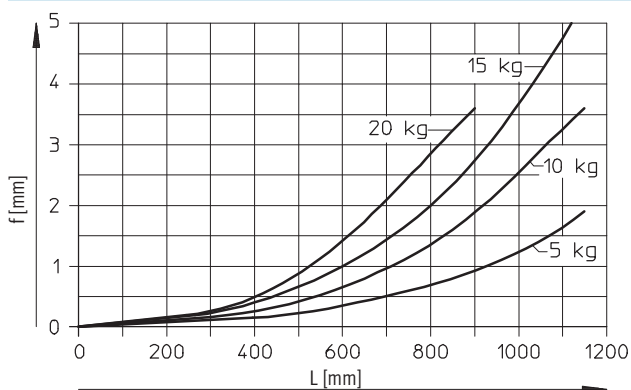
## Deflection f of the profile as a function of the distance L and the effective load m



### DGEA-18



### DGEA-25



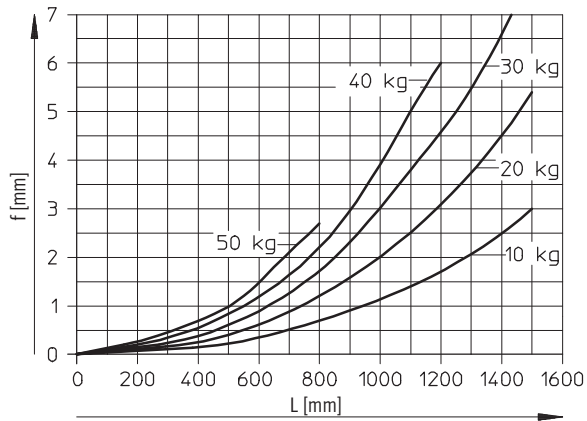
## Cantilever axes DGEA, with toothed belt drive

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Deflection  $f$  of the profile as a function of the distance  $L$  and the effective load  $m$

DGEA-40



# Cantilever axes DGEA, with toothed belt drive

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Technical data

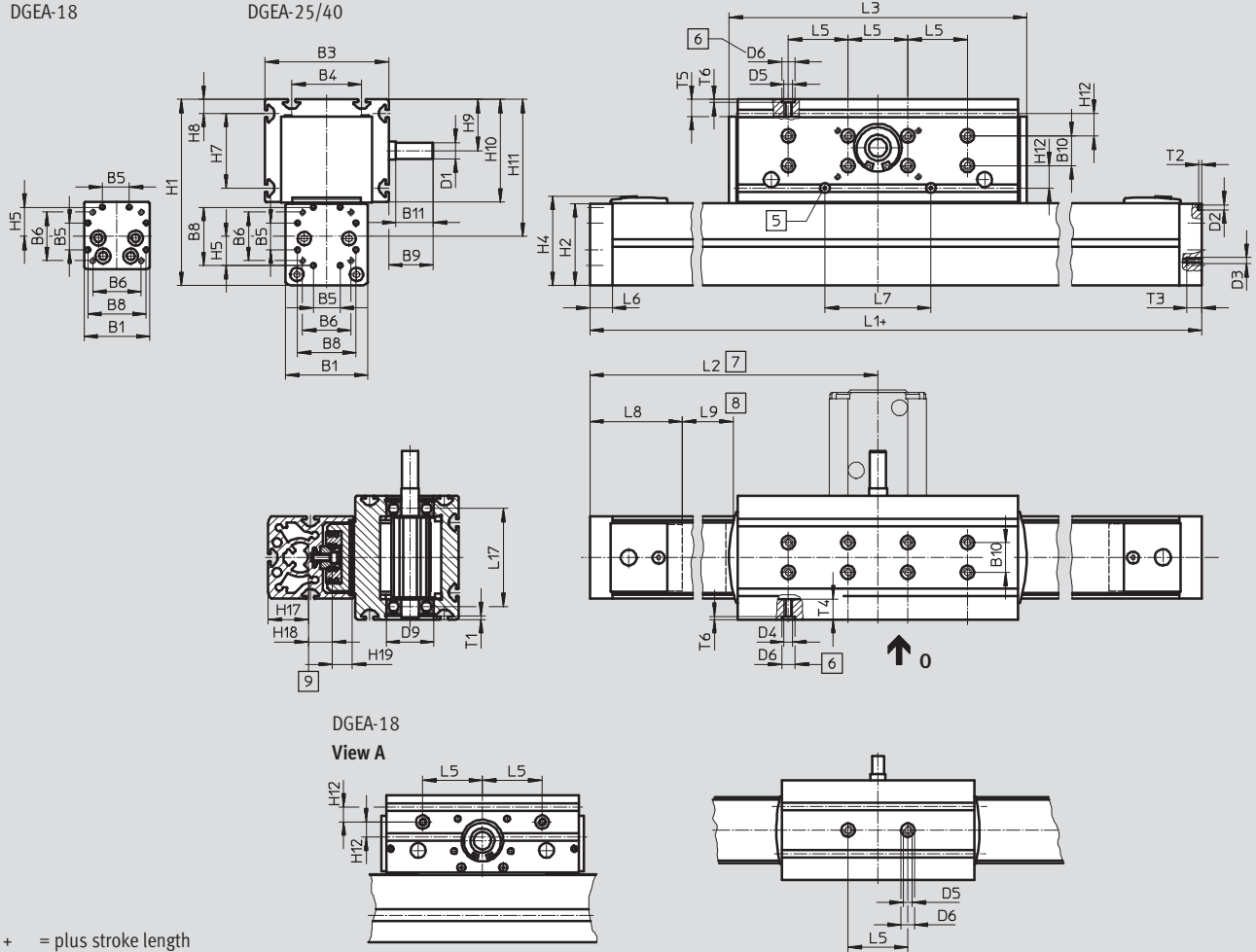
## Dimensions

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

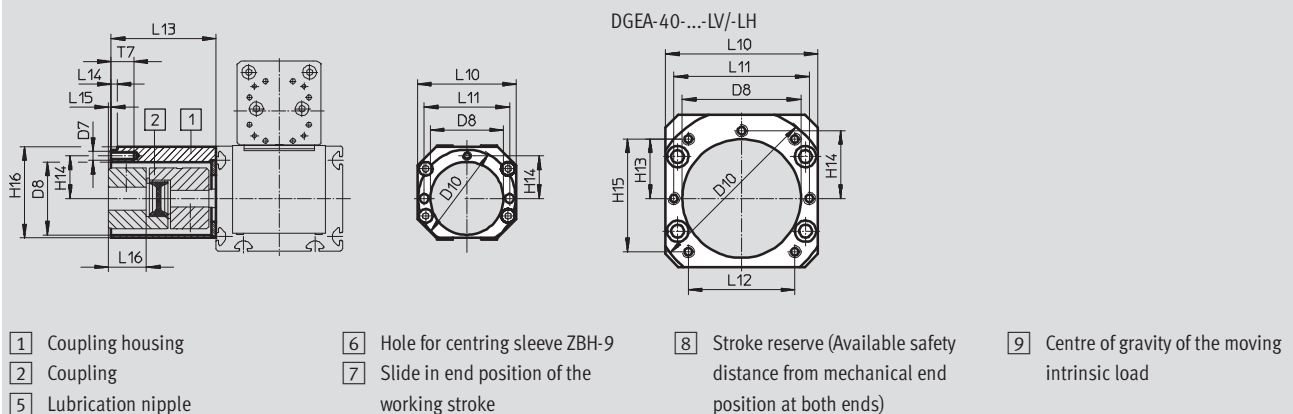
### Basic design

DGEA-18

DGEA-25/40



### Coupling housing



# Cantilever axes DGEA, with toothed belt drive

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Technical data

| Size | Variant | B1 | B3    | B4 | B5<br>±0.1 | B6   | B8   | B9   | B10 | B11 | D1<br>Ø<br>h6 | D2<br>Ø | D3 |
|------|---------|----|-------|----|------------|------|------|------|-----|-----|---------------|---------|----|
| 18   | KV/KH   | 44 | 67    | 32 | 18         | 32.5 | 39.1 | 16   | –   | 12  | 8             | 3.3     | M4 |
| 25   | KV/KH   | 55 | 83    | 47 | 18         | 32.5 | 39.1 | 29.8 | 20  | 25  | 11            | 3.3     | M4 |
| 40   | KV/KH   | 80 | 111.8 | 72 | 28         | 49   | 53   | 30.1 | 40  | 25  | 15            | 4       | M5 |
|      | LV/LH   |    |       |    |            |      |      |      |     |     |               |         |    |

| Size | Variant | D4 | D5 | D6<br>Ø<br>H7 | D7 | D8<br>Ø | D9<br>Ø<br>H7 | D10<br>Ø<br>g7 | H1  | H2   | H4   | H5    | H7 |
|------|---------|----|----|---------------|----|---------|---------------|----------------|-----|------|------|-------|----|
| 18   | KV/KH   | M6 | M6 | 9             | M4 | 32      | 28            | 44             | 99  | 45   | 50.8 | 19.55 | 20 |
| 25   | KV/KH   | M6 | M6 | 9             | M6 | 48      | 32            | 64             | 128 | 57.7 | 63.1 | 19.55 | 50 |
| 40   | KV/KH   | M6 | M6 | 9             | M6 | 48      | 40            | 64             | 197 | 85   | 91.3 | 26.5  | 72 |
|      | LV/LH   |    |    |               | M8 | 78      |               | 118            |     |      |      |       |    |

| Size | Variant | H8   | H9   | H10 | H11 | H12 | H13 | H14<br>±0.1 | H15 | H16 | H17  | H18  | H19  |
|------|---------|------|------|-----|-----|-----|-----|-------------|-----|-----|------|------|------|
| 18   | KV/KH   | 8    | 30.5 | 52  | 77  | 10  | –   | 19          | –   | 45  | 19.6 | 10   | 14.3 |
| 25   | KV/KH   | 9.5  | 32.5 | 69  | 95  | 15  | –   | 28          | –   | 60  | 27.1 | 16   | 13.3 |
| 40   | KV/KH   | 15.5 | 55.5 | 110 | 153 | 16  | –   | 28          | –   | 60  | 42.8 | 21.5 | 18   |
|      | LV/LH   |      |      |     |     |     | 39  | 44.5        | 74  | 100 |      |      |      |

| Size | Variant | L1    | L2  | L3  | L5 | L6 | L7 | L8 | L9  | L10 | L11 | L12 | L13 |
|------|---------|-------|-----|-----|----|----|----|----|-----|-----|-----|-----|-----|
| 18   | KV/KH   | 419.5 | 210 | 138 | 40 | 13 | 28 | 58 | 81  | 45  | 38  | –   | 40  |
| 25   | KV/KH   | 487.5 | 244 | 202 | 40 | 15 | 71 | 60 | 81  | 65  | 56  | –   | 65  |
| 40   | KV/KH   | 662   | 331 | 256 | 40 | 15 | 94 | 81 | 120 | 65  | 56  | –   | 65  |
|      | LV/LH   |       |     |     |    |    |    |    |     | 100 | 89  | 70  | 96  |

| Size | Variant | L14 | L15  | L16  | L17  | T1  | T2 | T3 | T4<br>min. | T5<br>min. | T6  | T7 |
|------|---------|-----|------|------|------|-----|----|----|------------|------------|-----|----|
| 18   | KV/KH   | 3.2 | –3.6 | 14.6 | 53   | 1.6 | 2  | 9  | 11         | 11         | 2.1 | 10 |
| 25   | KV/KH   | 4   | 2.2  | 22.8 | 65.6 | 2.3 | 2  | 10 | 11         | 11         | 2.1 | 13 |
| 40   | KV/KH   | 4   | 2.2  | 22.8 | 90   | 2.8 | 3  | 10 | 11         | 11         | 2.1 | 13 |
|      | LV/LH   | 5   | –0.9 | 35.9 |      |     |    |    |            |            |     | 18 |

# Cantilever axes DGEA, with toothed belt drive

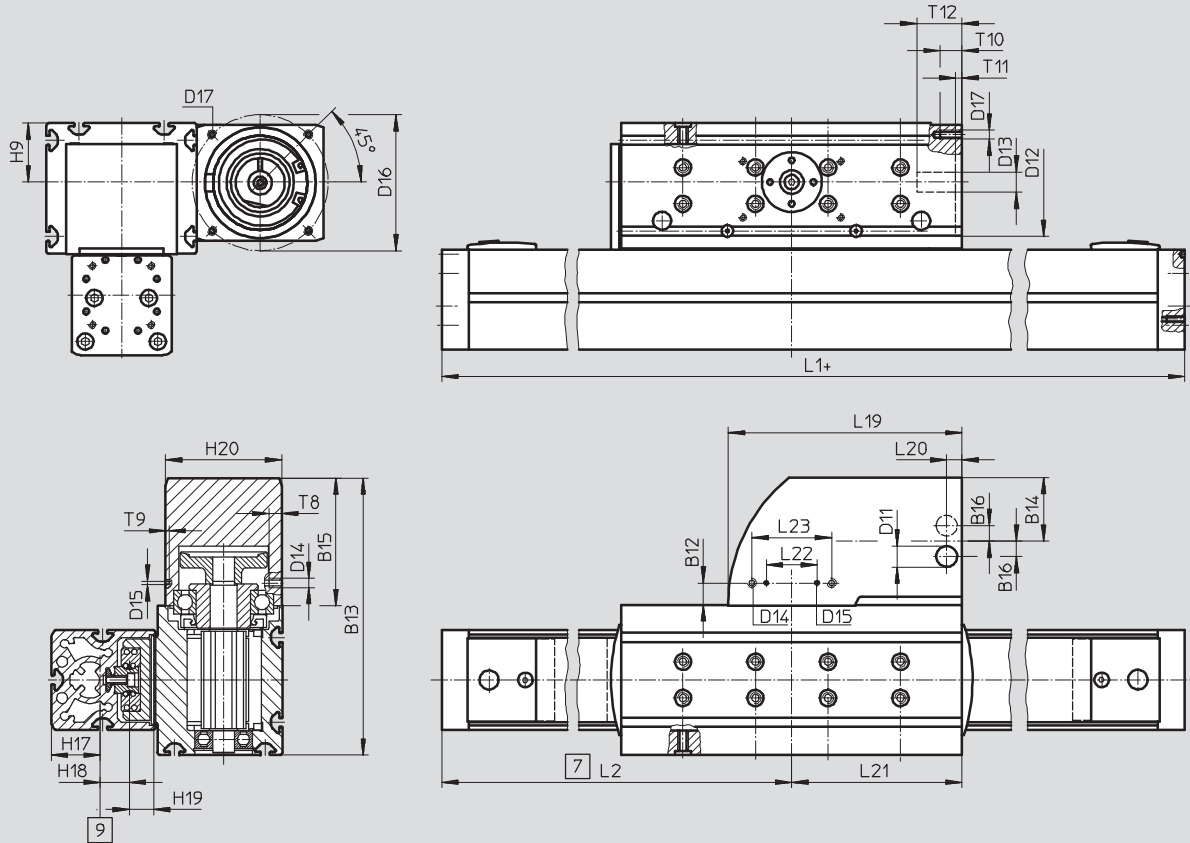
FESTO

Technical data

## Dimensions

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

With angled gear unit



+ = plus stroke length

7 Slide in end position of the nominal stroke

9 Centre of gravity of the moving intrinsic load

| Size | B12 | B13   | B14  | B15 | B16 | D11<br>Ø | D12<br>Ø<br>+0.05/+0.08 | D13<br>Ø | D14 | D15<br>Ø<br>±0.05 |
|------|-----|-------|------|-----|-----|----------|-------------------------|----------|-----|-------------------|
| 18   | 11  | 122   | 27.5 | 55  | 9   | 11.5     | 40                      | 9        | M4  | 2                 |
| 25   | 12  | 153   | 35   | 70  | 9   | 11.5     | 60                      | 11       | M5  | 2                 |
| 40   | 16  | 211.8 | 50   | 100 | 17  | 11.9     | 95                      | 19       | M5  | 3                 |

| Size | D16<br>Ø | D17 | H9   | H17  | H18  | H19  | H20 | L1    | L2  | L19 |
|------|----------|-----|------|------|------|------|-----|-------|-----|-----|
| 18   | 63       | M5  | 30.5 | 19.6 | 10   | 14.3 | 55  | 419.5 | 210 | 97  |
| 25   | 75       | M5  | 32.5 | 27.1 | 16   | 13.3 | 64  | 487.5 | 244 | 129 |
| 40   | 115      | M8  | 55.5 | 42.8 | 21.5 | 18   | 100 | 662   | 331 | 173 |

| Size | L20  | L21  | L22<br>±0.1 | L23<br>±0.1 | T8 | T9 | T10 | T11 | T12 |
|------|------|------|-------------|-------------|----|----|-----|-----|-----|
| 18   | 8.5  | 64.5 | 18          | 34          | 5  | 2  | 12  | 3.5 | 24  |
| 25   | 8.5  | 94   | 28          | 44          | 7  | 2  | 12  | 3.5 | 25  |
| 40   | 11.5 | 120  | 44          | 68          | 5  | 2  | 12  | 3.5 | 40  |



# Cantilever axes DGEA, with toothed belt drive

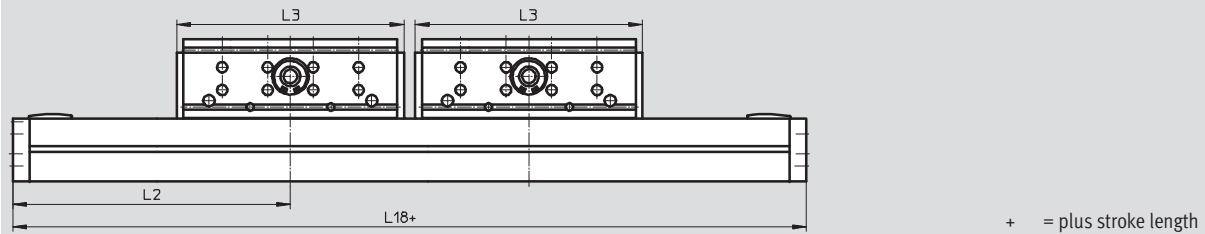
Technical data

**FESTO**

## Dimensions

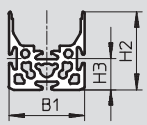
Download CAD data → [www.festo.com](http://www.festo.com)

with additional drive head

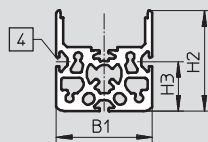


## Profile barrel

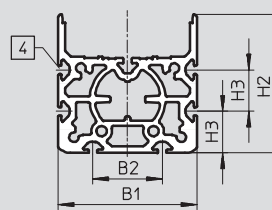
### Size 18



### Size 25



### Size 40



4 Mounting slot for slot nut NST

| Size | B1 | B2 | H2   | H3   | L2  | L3  | L18   |
|------|----|----|------|------|-----|-----|-------|
| 18   | 44 | –  | 45   | 18   | 210 | 138 | 569.5 |
| 25   | 55 | –  | 57.7 | 28.4 | 244 | 202 | 697.5 |
| 40   | 80 | 40 | 85   | 24   | 331 | 256 | 926   |

# Cantilever axes DGEA, with toothed belt drive

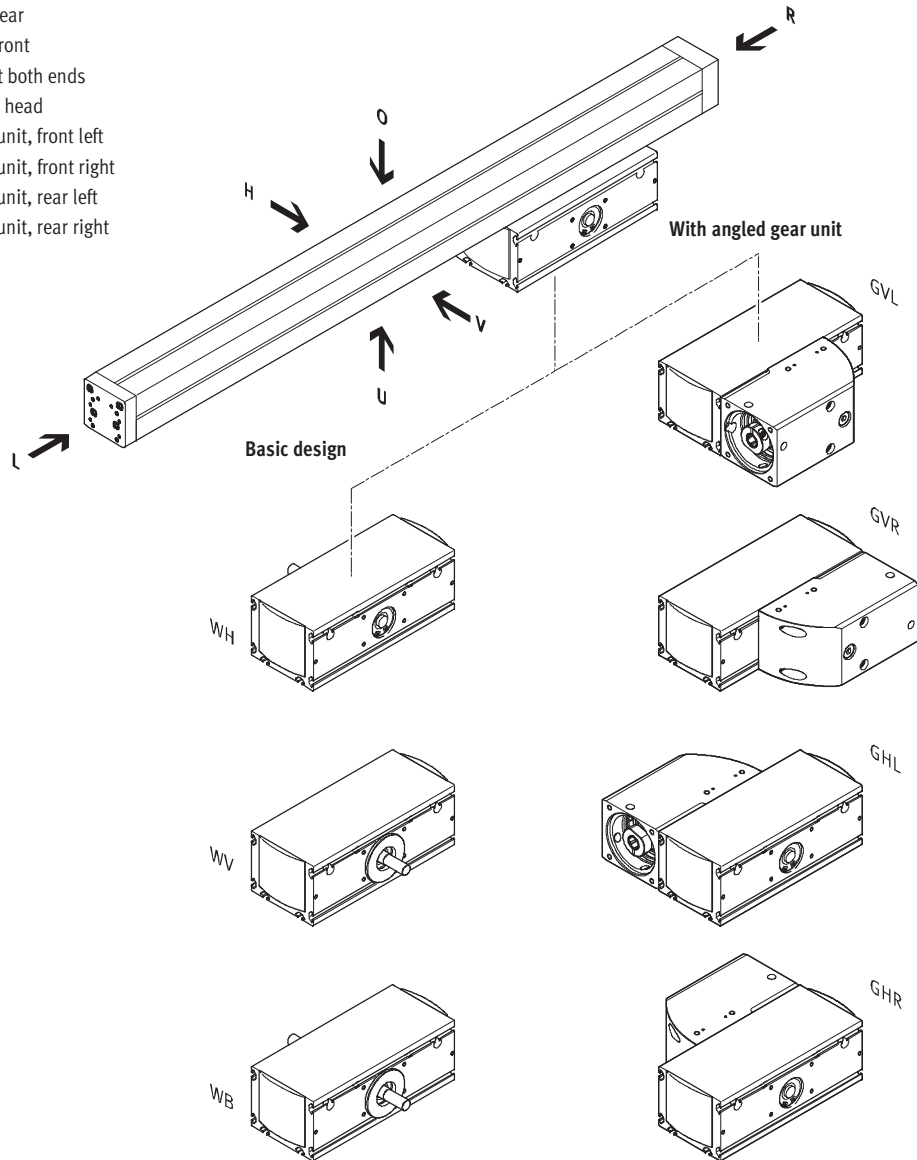
Ordering data – Modules

FESTO

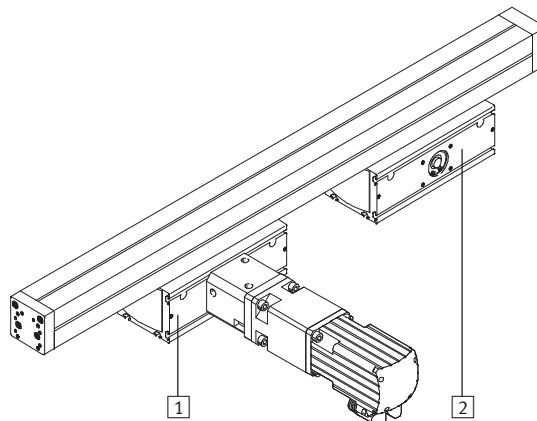
## Order code

### Mandatory data/options

|     |                               |
|-----|-------------------------------|
| WH  | Drive shaft, rear             |
| WV  | Drive shaft, front            |
| WB  | Drive shaft at both ends      |
| ZWK | Second drive head             |
| GVL | Angled gear unit, front left  |
| GVR | Angled gear unit, front right |
| GHL | Angled gear unit, rear left   |
| GHR | Angled gear unit, rear right  |



- 1 Drive head
- 2 Optionally:  
Additional drive head  
(to increase the mechanical  
torque resistance)



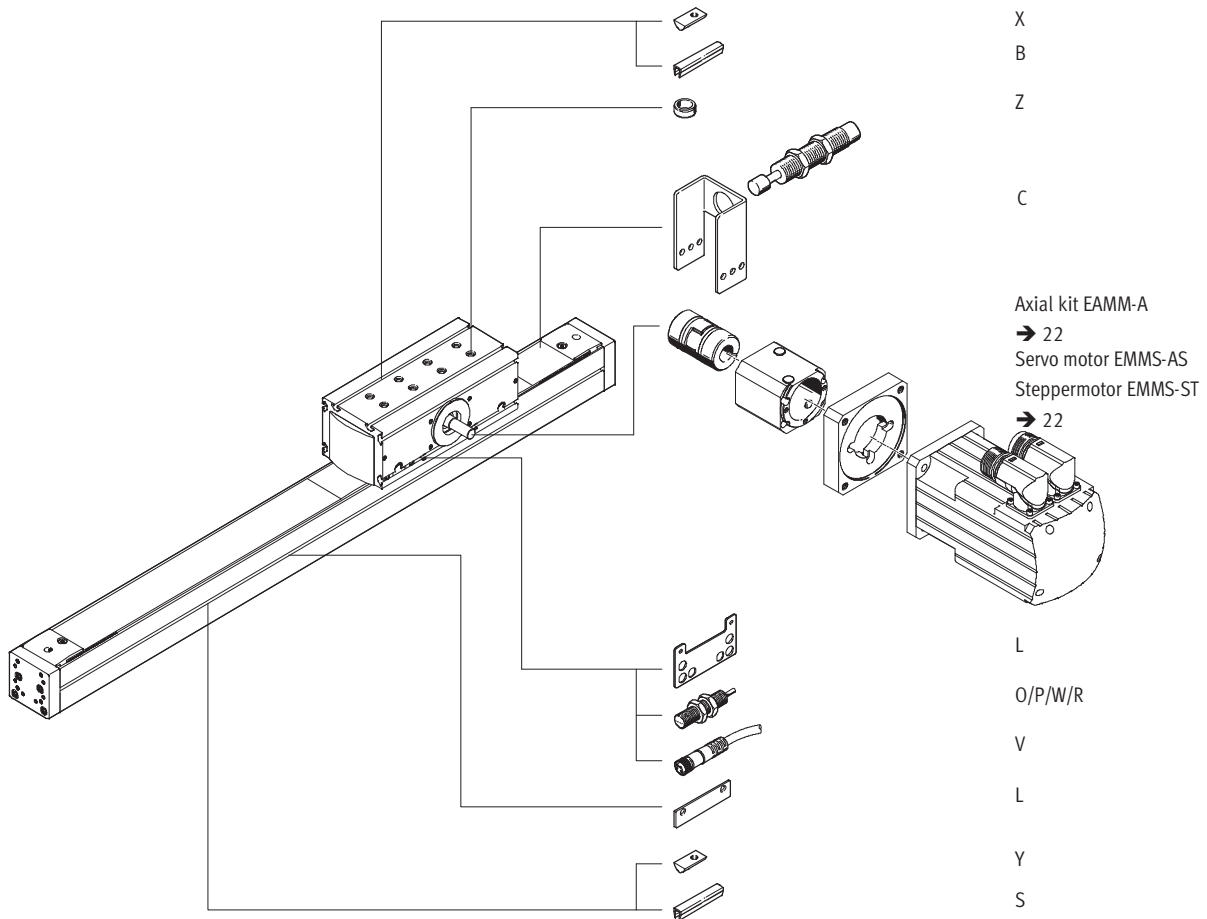
# Cantilever axes DGEA, with toothed belt drive

FESTO

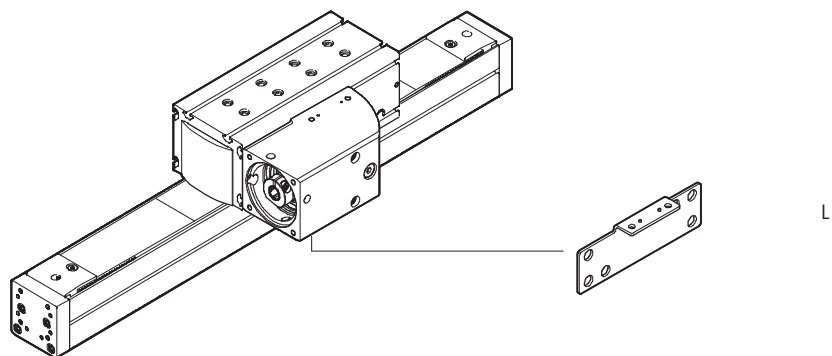
Ordering data – Modules

## Order code

## Options



## With angled gear unit



# Cantilever axes DGEA, with toothed belt drive

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Ordering data – Modules

| M Mandatory data              |              |                |            |                |                                            | Options →             |
|-------------------------------|--------------|----------------|------------|----------------|--------------------------------------------|-----------------------|
| Module No.                    | Construction | Size           | Stroke     | Drive function | Drive head                                 | Additional drive head |
| 195 611<br>195 612<br>195 613 | DGEA         | 18<br>25<br>40 | 1 ... 1000 | ZR             | WH<br>WV<br>WB<br>GVL<br>GVR<br>GHL<br>GHR | ZWK                   |
| Ordering example              |              |                |            |                |                                            |                       |
| 195 612                       | DGEA         | 25             | 850        | ZR             | WV                                         |                       |

| Ordering table        |                                                                     |           |            |                 |      |               |
|-----------------------|---------------------------------------------------------------------|-----------|------------|-----------------|------|---------------|
| Size                  | 18                                                                  | 25        | 40         | Condi-<br>tions | Code | Enter<br>code |
| M Module No.          | 195 611                                                             | 195 612   | 195 613    |                 |      |               |
| Construction          | Cantilever axis with toothed belt drive                             |           |            |                 | DGEA | DGEA          |
| Size                  | 18                                                                  | 25        | 40         |                 | -... |               |
| Stroke [mm]           | 1 ... 800                                                           | 1 ... 900 | 1 ... 1000 |                 | -... |               |
| Drive function        | Electromechanical drive with toothed belt drive                     |           |            |                 | -ZR  | -ZR           |
| Drive head            | Drive shaft at rear                                                 |           |            |                 | -WH  |               |
|                       | Drive shaft at front                                                |           |            |                 | -WV  |               |
|                       | Drive shaft at both ends                                            |           |            |                 | -WB  |               |
|                       | Integrated angled gear unit for arrangement of motor at front left  |           |            |                 | -GVL |               |
|                       | Integrated angled gear unit for arrangement of motor at front right |           |            |                 | -GVR |               |
|                       | Integrated angled gear unit for arrangement of motor at rear left   |           |            |                 | -GHL |               |
|                       | Integrated angled gear unit for arrangement of motor at rear right  |           |            |                 | -GHR |               |
| Additional drive head | Without drive shaft                                                 |           |            |                 | -ZWK |               |

Transfer order code

|  |      |   |  |   |  |   |    |   |  |   |  |   |  |
|--|------|---|--|---|--|---|----|---|--|---|--|---|--|
|  | DGEA | - |  | - |  | - | ZR | - |  | - |  | - |  |
|--|------|---|--|---|--|---|----|---|--|---|--|---|--|

# Cantilever axes DGEA, with toothed belt drive

FESTO

Ordering data – Modules

| Options     |              |              |                              |                 |                                      |                              |                   |
|-------------|--------------|--------------|------------------------------|-----------------|--------------------------------------|------------------------------|-------------------|
| Accessories | Slot cover   | Slot nut     | Shock absorber with retainer | Centring sleeve | Retaining plate for proximity sensor | Inductive proximity sensor   | Cable with socket |
| ZUB         | ...S<br>...B | ...Y<br>...X | ...C                         | ...Z            | L                                    | ...O<br>...P<br>...W<br>...R | ...V              |
| ZUB         | – 2B         |              | 2C                           | 10Z             | L                                    | 2P2W                         | 2V                |

| Ordering table                                                         |                   |                                    |    |    |                 |      |               |
|------------------------------------------------------------------------|-------------------|------------------------------------|----|----|-----------------|------|---------------|
| Size                                                                   |                   | 18                                 | 25 | 40 | Condi-<br>tions | Code | Enter<br>code |
| ↓ Accessories                                                          |                   | Supplied separately                |    |    |                 | ZUB- | ZUB-          |
| 0 Slot cover                                                           | for profile slot  | 1 ... 10                           |    |    |                 | ...S |               |
|                                                                        | for drive head    | 1 ... 10                           |    |    |                 | ...B |               |
| Slot nut                                                               | for profile slot  | 1 ... 10                           |    |    |                 | ...Y |               |
|                                                                        | for drive head    | 1 ... 10                           |    |    |                 | ...X |               |
| Shock absorber with retainer                                           |                   | 1 ... 2                            |    |    |                 | ...C |               |
| Centring sleeve                                                        |                   | 10, 20, 30, 40, 50, 60, 70, 80, 90 |    |    |                 | ...Z |               |
| Retaining plate for inductive proximity switch, incl. 2 switching lugs |                   | 1                                  |    |    |                 | L    |               |
| Inductive proximity sensor                                             | NO contact, cable | 1 ... 5                            |    |    |                 | ...O |               |
|                                                                        | NC contact, cable | 1 ... 5                            |    |    |                 | ...P |               |
|                                                                        | NO contact, plug  | 1 ... 5                            |    |    |                 | ...W |               |
|                                                                        | NC contact, plug  | 1 ... 5                            |    |    |                 | ...R |               |
| Cable with socket                                                      |                   | 1 ... 10                           |    |    |                 | ...V |               |

-  - Note

Cantilever axes DGEA offer the same mounting options (on the end cap of the profile and drive head) as the electromechanical axes  
DGE-...-ZR-KF/-SP-KF

Note however that there is no 1:1 conformity with regard to size.  
Example:  
Profile dimension DGEA-18 corresponds to DGE-25.

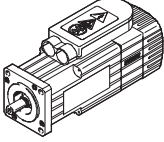
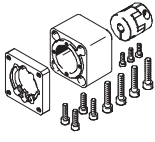
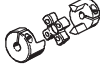
Transfer order code

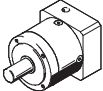
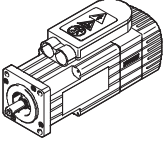
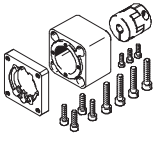
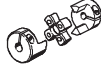
ZUB –

# Cantilever axes DGEA, with toothed belt drive

Accessories

**FESTO**

| Permissible combinations with axial kit – Basic design without gear unit          |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 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>DGEA-18</b>                                                                    |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| With stepper motor                                                                |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| EMMS-ST-57-...                                                                    | 550 956<br>EAMM-A-F28-57A                                                         | 530 081<br>EAMF-A-44A/B-57A                                                       | 530 088<br>EAMC-30-35-6.35-8                                                       | 530 468<br>EAMK-A-F28-44A                                                           |
| EMMS-ST-87-...                                                                    | 550 958<br>EAMM-A-F28-87A                                                         | 530 082<br>EAMF-A-44A/B-87A                                                       | 123 042<br>EAMC-30-35-8-11                                                         | 530 468<br>EAMK-A-F28-44A                                                           |
| <b>DGEA-25</b>                                                                    |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| With stepper motor                                                                |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
| EMMS-ST-87-...                                                                    | 550 960<br>EAMM-A-F32-87A                                                         | 533 140<br>EAMF-A-64A/B-87A                                                       | 530 090<br>EAMC-40-66-11-11                                                        | 530 469<br>EAMK-A-F32-64A                                                           |

| Permissible combinations with axial kit – Basic design with gear unit               |                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 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>DGEA-18</b>                                                                      |                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |
| With servo motor                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |
| EMGA-60-P-G...-SAS-55                                                               | EMMS-AS-55-...                                                                      | 550 957<br>EAMM-A-F28-60G                                                           | 529 944<br>EAMF-A-44A/B-60G                                                         | 123 042<br>EAMC-30-35-8-11                                                            | 530 468<br>EAMK-A-F28-44A                                                             |
| With stepper motor                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |
| EMGA-60-P-G...-SST-57                                                               | EMMS-ST-57-...                                                                      | 550 957<br>EAMM-A-F28-60G                                                           | 529 944<br>EAMF-A-44A/B-60G                                                         | 123 042<br>EAMC-30-35-8-11                                                            | 530 468<br>EAMK-A-F28-44A                                                             |
| <b>DGEA-25</b>                                                                      |                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |
| With servo motor                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |
| EMGA-60-P-G...-SAS-70                                                               | EMMS-AS-70-...                                                                      | 550 959<br>EAMM-A-F32-60G                                                           | 550 987<br>EAMF-A-64A/B-60G                                                         | 530 090<br>EAMC-40-66-11-11                                                           | 530 469<br>EAMK-A-F32-64A                                                             |
| <b>DGEA-40</b>                                                                      |                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |
| With servo motor                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |
| EMGA-80-P-G...-SAS-100                                                              | EMMS-AS-100-...                                                                     | 550 935<br>EAMM-A-F40-80G                                                           | 533 139<br>EAMF-A-64A/C-80G                                                         | 123 845<br>EAMC-40-66-15-20                                                           | 124 629<br>EAMK-A-F40-64A                                                             |
| With stepper motor                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |
| EMGA-80-P-G...-SST-87                                                               | EMMS-ST-87-...                                                                      | 550 935<br>EAMM-A-F40-80G                                                           | 533 139<br>EAMF-A-64A/C-80G                                                         | 123 845<br>EAMC-40-66-15-20                                                           | 124 629<br>EAMK-A-F40-64A                                                             |

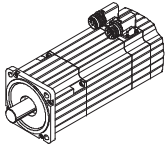
## Cantilever axes DGEA, with toothed belt drive

Accessories

**FESTO**

### Permissible combinations with angled gear unit

Motor



Type

#### DGEA-18

With servo motor

**EMMS-AS-55-...**

#### DGEA-25

With servo motor

**EMMS-AS-70-...**

#### DGEA-40

With servo motor

**EMMS-AS-100-...**



Note

The basic design of the gear units facilitates a reduction of 4 : 1 and that of the angled gear unit a reduction ratio of 3: 1.

# Cantilever axes DGEA, with toothed belt drive

Accessories

FESTO

## Axial kit EAMM-A-...

Material:

Coupling housing, coupling hubs:

Aluminium

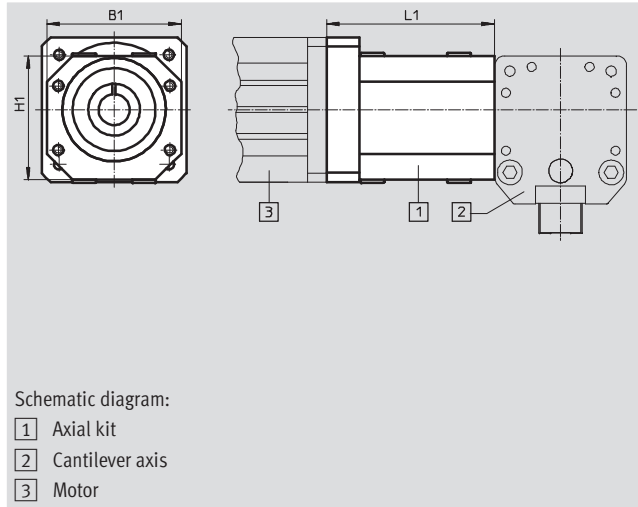
Clamping component:

Steel, corrosion resistant

Motor flange:

Wrought aluminium alloy

Screws: Galvanised steel



| General technical data |                      |      |     |     |      |     |
|------------------------|----------------------|------|-----|-----|------|-----|
| EAMM-A-...             |                      | F28- |     |     | F32- |     |
|                        |                      | 57A  | 87A | 60G | 87A  | 60G |
| Transferable torque    | [Nm]                 | 7.5  | 8   |     | 17   |     |
| Massenträgheitsmoment  | [kgmm <sup>2</sup> ] | 6.1  |     |     | 42.3 |     |
| Max. speed             | [1/min]              | 8000 |     |     | 6500 |     |
| Mounting position      |                      | Any  |     |     |      |     |

| Operating and environmental conditions |      |             |
|----------------------------------------|------|-------------|
| Ambient temperature                    | [°C] | 0 ... 50    |
| Storage temperature                    | [°C] | -25 ... +60 |
| Protection class <sup>1)</sup>         |      | IP40        |
| Relative air humidity                  | [%]  | 0 ... 95    |

1) Only with combined attachment of motor and axis

| Dimensions and ordering data |    |    |      |            |           |                |
|------------------------------|----|----|------|------------|-----------|----------------|
| Type                         | B1 | H1 | L1   | Weight [g] | Part No.. | Type           |
| EAMM-A-F28-57A               | 45 | 45 | 52.7 | 282        | 550 956   | EAMM-A-F28-57A |
| EAMM-A-F28-87A               |    |    | 56.2 | 454        | 550 958   | EAMM-A-F28-87A |
| EAMM-A-F28-60G               |    |    | 60.7 | 345        | 550 957   | EAMM-A-F28-60G |
| EAMM-A-F32-87A               | 65 | 60 | 82.7 | 773        | 550 960   | EAMM-A-F32-87A |
| EAMM-A-F32-60G               |    |    | 89.4 | 918        | 550 959   | EAMM-A-F32-60G |
| EAMM-A-F40-80G               | 65 | 60 | 89.4 | 890        | 550 935   | EAMM-A-F40-80G |

-  - Note

Permissible axis/motor combinations  
→ 22



## Cantilever axes DGEA, with toothed belt drive

Accessories

**FESTO**

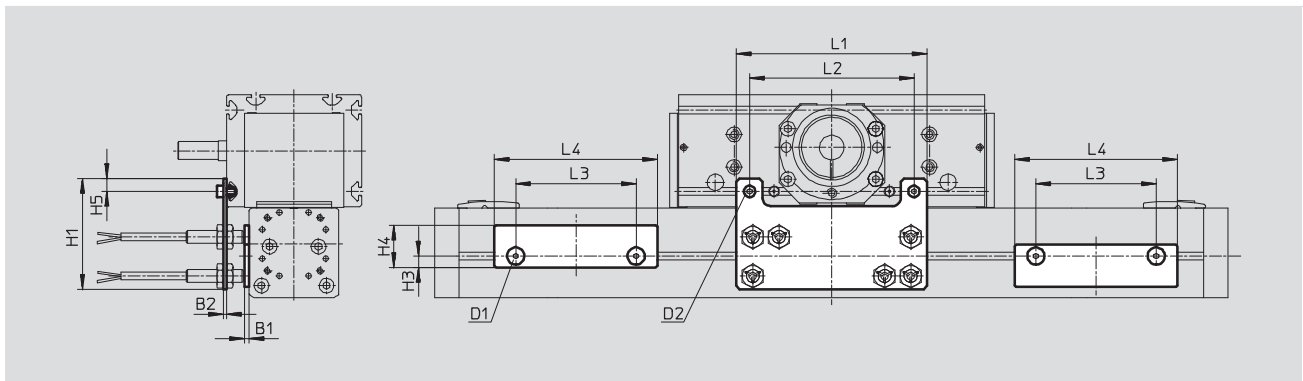
Mounting kit for proximity sensor  
(DGEA in basic design)

DGEA-...-SIE-M8

(Order code: L)

Material:

Galvanised steel



### Dimensions and ordering data

| For size | B1 | B2 | D1 | D2 | H1 | H3 | H4 |
|----------|----|----|----|----|----|----|----|
| 18       | 3  | 2  | M4 | M4 | 77 | 5  | 21 |
| 25       | 3  | 2  | M4 | M5 | 68 | 7  | 26 |
| 40       | 3  | 7  | M4 | M5 | 92 | 7  | 26 |

| For size | H5  | L1  | L2  | L3    | L4  | Weights<br>[g] | Part No. | Type           |
|----------|-----|-----|-----|-------|-----|----------------|----------|----------------|
| 18       | 7.5 | 114 | 90  | 74    | 84  | 200            | 525 868  | DGEA-18-SIE-M8 |
| 25       | 8   | 117 | 101 | 85    | 100 | 250            | 525 869  | DGEA-25-SIE-M8 |
| 40       | 10  | 190 | 133 | 124.5 | 145 | 600            | 525 870  | DGEA-40-SIE-M8 |

# Cantilever axes DGEA, with toothed belt drive

Accessories

FESTO

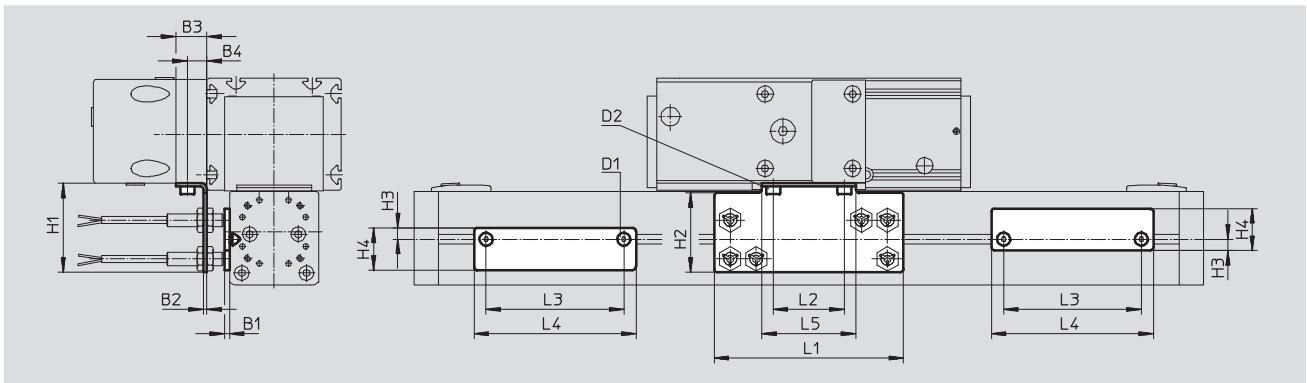
Mounting kit for proximity sensor  
(DGEA with angled gear unit)

DGEA-...-G...-SIE-M8

(Order code: L)

Material:

Galvanised steel



| Dimensions and ordering data |    |    |    |    |    |    |    |    |    |
|------------------------------|----|----|----|----|----|----|----|----|----|
| For size                     | B1 | B2 | B3 | B4 | D1 | D2 | H1 | H2 | H3 |
| 18                           | 3  | 2  | 17 | 11 | M4 | M4 | 40 | 34 | 5  |
| 25                           | 3  | 2  | 19 | 12 | M4 | M5 | 55 | 49 | 7  |
| 40                           | 3  | 4  | 23 | 16 | M4 | M5 | 64 | 52 | 7  |

| For size | H4 | L1  | L2 | L3    | L4  | L5 | Weights<br>[g] | Part No. | Type                |
|----------|----|-----|----|-------|-----|----|----------------|----------|---------------------|
| 18       | 21 | 114 | 34 | 74    | 84  | 46 | 170            | 539 935  | DGEA-18-G...-SIE-M8 |
| 25       | 26 | 117 | 44 | 85    | 100 | 58 | 250            | 539 936  | DGEA-25-G...-SIE-M8 |
| 40       | 26 | 153 | 68 | 124.5 | 145 | 82 | 520            | 539 937  | DGEA-40-G...-SIE-M8 |

# Cantilever axes DGEA, with toothed belt drive

FESTO

Accessories

## Shock absorber kit

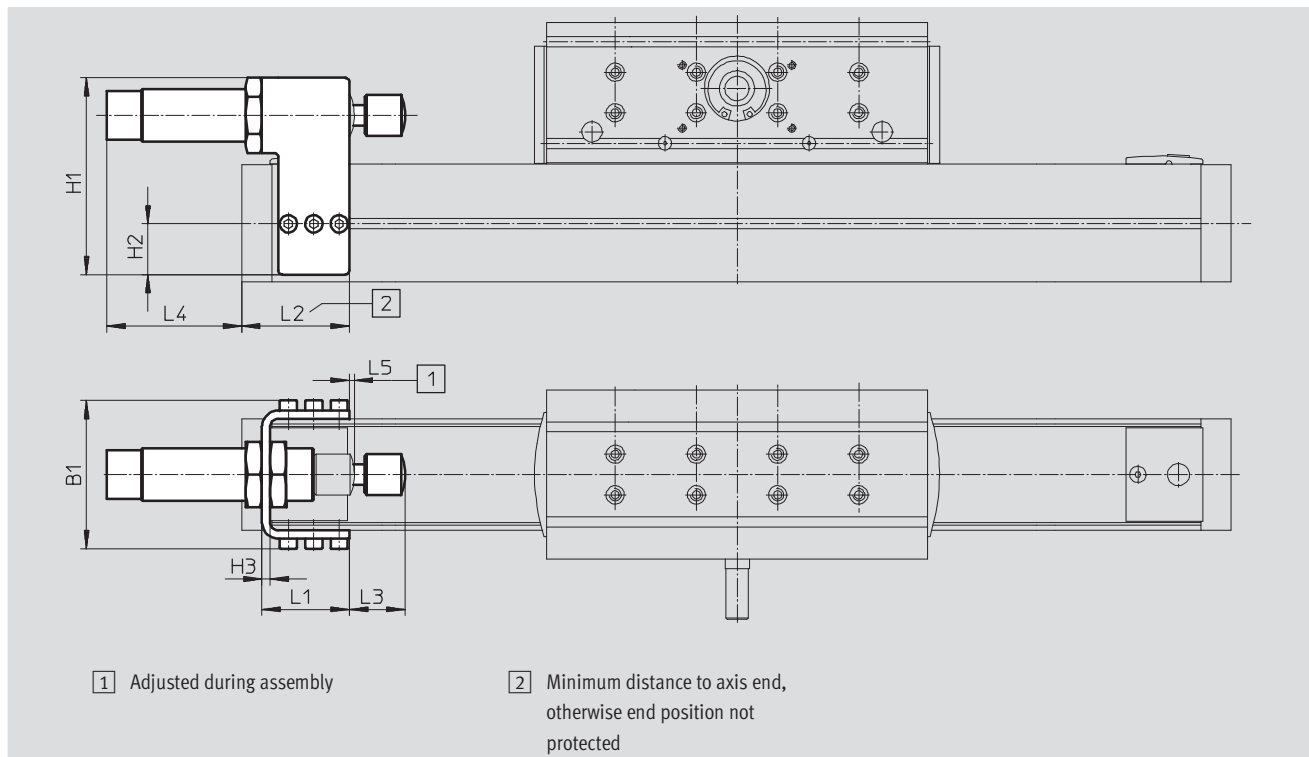
DGEA-...-YSR

(Order code: C)

Material:

Galvanised steel

Copper, PTFE and silicone-free



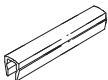
| Dimensions and ordering data |    |     |    |    |      |          |    |    |          |                |                        |
|------------------------------|----|-----|----|----|------|----------|----|----|----------|----------------|------------------------|
| For size                     | B1 | H1  | H2 | H3 | L1   | L2<br>+1 | L3 | L4 | L5<br>+1 | Weights<br>[g] | Part No.    Type       |
| 18                           | 59 | 80  | 15 | 3  | 44   | 67       | 1) | 1) | 2        | 390            | 525 865    DGEA-18-YSR |
| 25                           | 73 | 97  | 25 | 4  | 43   | 60       | 1) | 1) | 2        | 630            | 525 866    DGEA-25-YSR |
| 40                           | 98 | 122 | 14 | 4  | 70.5 | 81       | 1) | 1) | 2        | 1200           | 525 867    DGEA-40-YSR |

1) Dimension is related to the size of the shock absorber and the mounting position of the shock absorber kit

# Cantilever axes DGEA, with toothed belt drive

Accessories

**FESTO**

| Ordering data                                                                     |            |                            |            | Technical data → Internet: mounting attachment |                   |                  |
|-----------------------------------------------------------------------------------|------------|----------------------------|------------|------------------------------------------------|-------------------|------------------|
|                                                                                   | For size   | Remarks                    | Order code | Part No.                                       | Type              | PU <sup>1)</sup> |
| <b>Slot nut NST</b>                                                               |            |                            |            |                                                |                   |                  |
|  | 18         | for profile slot           | Y          | <b>526 091</b>                                 | <b>NST-HMV-M4</b> | 1                |
|                                                                                   | 25, 40     |                            |            | <b>150 914</b>                                 | <b>NST-5-M5</b>   | 1                |
|                                                                                   | 18, 25, 40 | for drive head             | X          | <b>150 914</b>                                 | <b>NST-5-M5</b>   | 1                |
| <b>Centring sleeve ZBH</b>                                                        |            |                            |            |                                                |                   |                  |
|  | 18, 25, 40 | for drive head             | Z          | <b>150 927</b>                                 | <b>ZBH-9</b>      | 10               |
| <b>Slot cover ABP/ABP-S</b>                                                       |            |                            |            |                                                |                   |                  |
|  | 18         | for profile slot           | S          | <b>151 680</b>                                 | <b>ABP-5-S</b>    | 2                |
|                                                                                   | 25, 40     | every 0.5 m                |            | <b>151 681</b>                                 | <b>ABP-5</b>      | 2                |
|                                                                                   | 18, 25, 40 | for drive head every 0.5 m | B          | <b>151 681</b>                                 | <b>ABP-5</b>      | 2                |

1) Packaging unit quantity

| Ordering data – Inductive proximity sensors M8                                      |                       |         |               |     |                  | Technical data ➔ Internet: sien |                 |
|-------------------------------------------------------------------------------------|-----------------------|---------|---------------|-----|------------------|---------------------------------|-----------------|
|                                                                                     | Electrical connection |         | Switch output | LED | Cable length [m] | Part No.                        | Type            |
|                                                                                     | Cables                | M8 plug |               |     |                  |                                 |                 |
| NO contact                                                                          |                       |         |               |     |                  |                                 |                 |
|  | 3-core                | –       | PNP           | ■   | 2.5              | 150 386                         | SIEN-M8B-PS-K-L |
|  | –                     | 3-pin   | PNP           | ■   |                  | 150 387                         | SIEN-M8B-PS-S-L |
|                                                                                     |                       |         |               |     |                  |                                 |                 |
| NC contact                                                                          |                       |         |               |     |                  |                                 |                 |
|  | 3-core                | –       | PNP           | ■   | 2.5              | 150 390                         | SIEN-M8B-PO-K-L |
|  | –                     | 3-pin   | PNP           | ■   |                  | 150 391                         | SIEN-M8B-PO-S-L |

| 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> NEBU-M8G3-K-2.5-LE3 |
|                                                                                     |                              |  |                              | 5                               | <b>541 334</b> NEBU-M8G3-K-5-LE3   |
|  | Angled socket, M8x1, 3-pin   |  | Cable, open end, 3-wire      | 2.5                             | <b>541 338</b> NEBU-M8W3-K-2.5-LE3 |
|                                                                                     |                              |  |                              | 5                               | <b>541 341</b> NEBU-M8W3-K-5-LE3   |