

## Rotary gripper module EHMD

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# Rotary gripper module EHMD

Key features

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## At a glance

- The rotary gripper module is a compact module for handling small parts
  - The rotary motion is implemented by means of a stepper motor
  - The gripping motion is implemented either electrically with a stepper motor or pneumatically using a cylinder
  - Used together with the motor controller CMMO-ST, the gripper can grip under power. This allows for flexible gripping
- Areas of application:
- Pick and place of small parts from trays
  - For fitting and removing cover caps on vials

## Everything from a single source



Rotary gripper module  
EHMD  
→ Page 5



Motor controller  
CMMO-ST  
→ Page 20



Gripper jaw blanks  
BUB-HGPT  
→ Page 20

- The motor controller CMMO-ST is a closed-loop and open-loop position controller
- Easy activation via:
  - I/O interface
  - IO-Link or I-Port
  - Modbus TCP
- Monitoring of freely defined positions and torque ranges



## The technology in detail

### Rotation

#### Closed loop

- Makes it possible to control the motor torque via the motor current, so the torque can be limited when twisting off a cover cap
- No step loss is possible in the event of overload
- It is possible to use the entire output torque of the motor

#### Open loop

- The motor is activated in microstep operation with a constant, defined phase current
- Reduction of holding current is required to prevent overheating
- A torque reserve is required to prevent step losses

### Homing

- The encoder zero pulse can be used to home the axis of rotation
- One zero pulse per rotation
- Defined angular orientation based on this zero pulse

### Gripping

#### Closed loop

- Makes it possible to control motor torque via the motor current
- The gripping force of the gripper can be set by a limited driving torque of the lead screw

#### Open loop

- The motor is activated in microstep operation with a constant, defined phase current
- Reduction of holding current is required to prevent overheating
- The gripper drive is spring-mounted for force setting, so that defined gripping forces can be set in positioning mode

### Homing

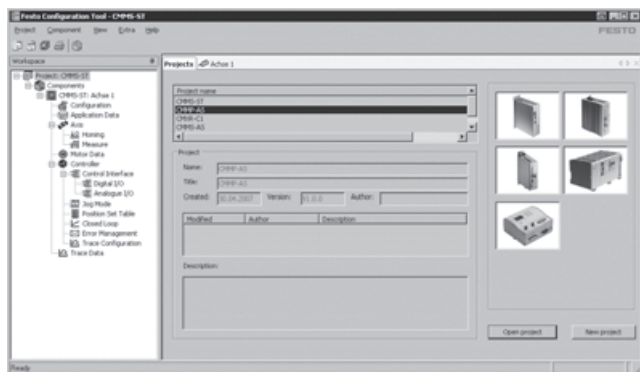
- Gripper motor has an incremental encoder. No limit switch is present
- In the opening direction, homing must be to a stop

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Key features

### FCT software – Festo Configuration Tool

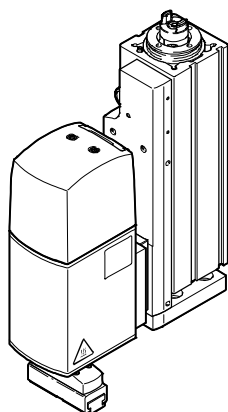
Software platform for electric drives from Festo (→ [www.festo.com/sp/fct](http://www.festo.com/sp/fct))



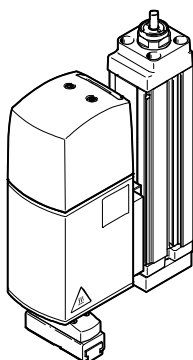
- All drives in a system can be managed and saved in a common project
- Project and data management for all supported types of equipment
- Easy to use thanks to graphically supported parameter entry
- Universal mode of operation for all drives
- Work offline at your desk or online at the machine

### Combinations comprising mini slides EGSC-BS, EGSL and electric slide EGSK

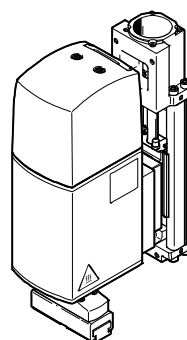
With mini slide EGSC-BS-25/32



With mini slide EGSL-BS-35/45



With electric slide EGSK-20/26



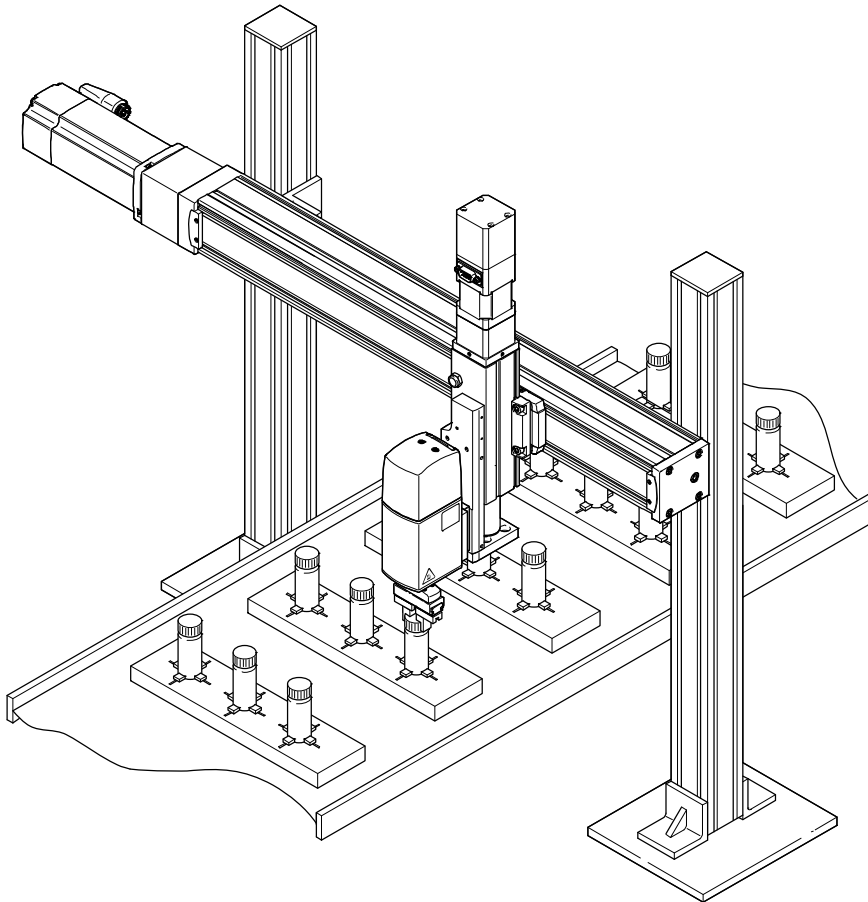
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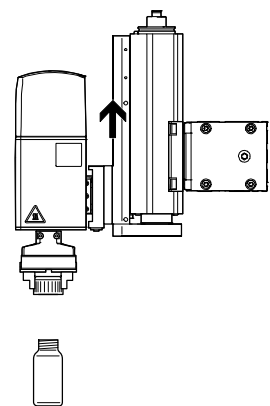
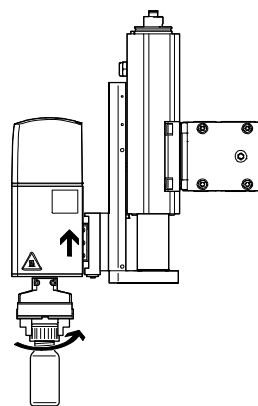
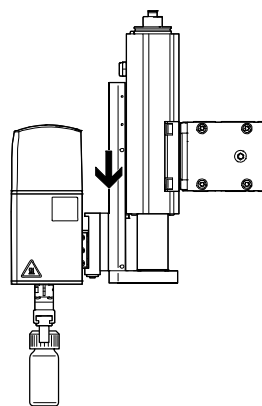
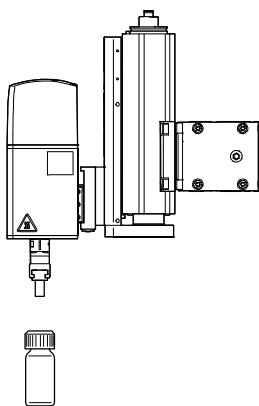
### Application example

For fitting and removing covers caps on vials



### Screwing covers caps on and removing them from vials

- Mini slide EGSC-BS retracted
- Mounting EHAM-E20
- Mini slide EGSC-BS extends
- Rotary gripper module EHMD grips the cover cap
- Rotary gripper module EHMD unscrews the cover from the vial
- The adapter EHAM-E20 compensates for the thread pitch of caps without the need to move the mini slide (Z-axis)
- When the cover is unscrewed, the mini slide EGSC-BS retracts
- The Z compensation module returns to the lower end position due to the weight



# Rotary gripper module EHMD

Type codes

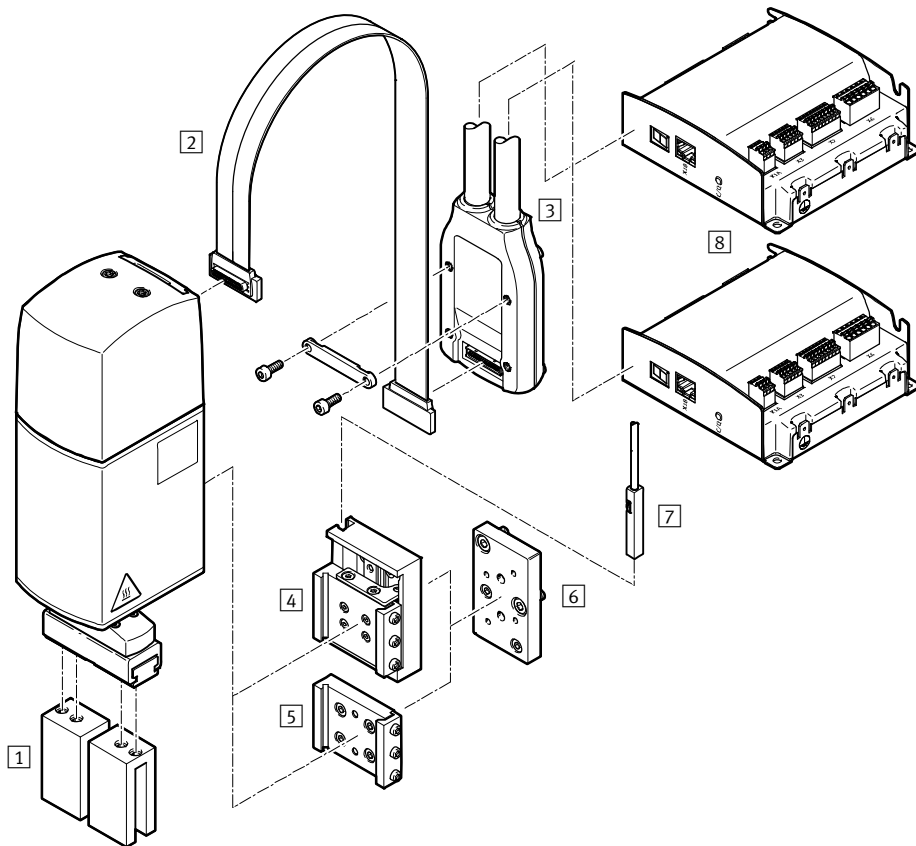
|                                   |                           |      |   |    |   |    |   |    |
|-----------------------------------|---------------------------|------|---|----|---|----|---|----|
|                                   |                           | EHMD | - | 40 | - | RE | - | GE |
| <b>Product type</b>               |                           |      |   |    |   |    |   |    |
| EHMD                              | Electric handling modules |      |   |    |   |    |   |    |
| <b>Size</b>                       |                           |      |   |    |   |    |   |    |
| 40                                | 40 mm                     |      |   |    |   |    |   |    |
| <b>Rotary module drive system</b> |                           |      |   |    |   |    |   |    |
| RE                                | Electrical                |      |   |    |   |    |   |    |
| <b>Gripper drive system</b>       |                           |      |   |    |   |    |   |    |
| GE                                | Electrical                |      |   |    |   |    |   |    |
| GP                                | Pneumatic                 |      |   |    |   |    |   |    |

## Rotary gripper module EHMD

Peripherals overview

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### EHMD-40-RE-GE – Electrical gripping



 **Note**  
The gripper is provided for external gripping only (closing movement).

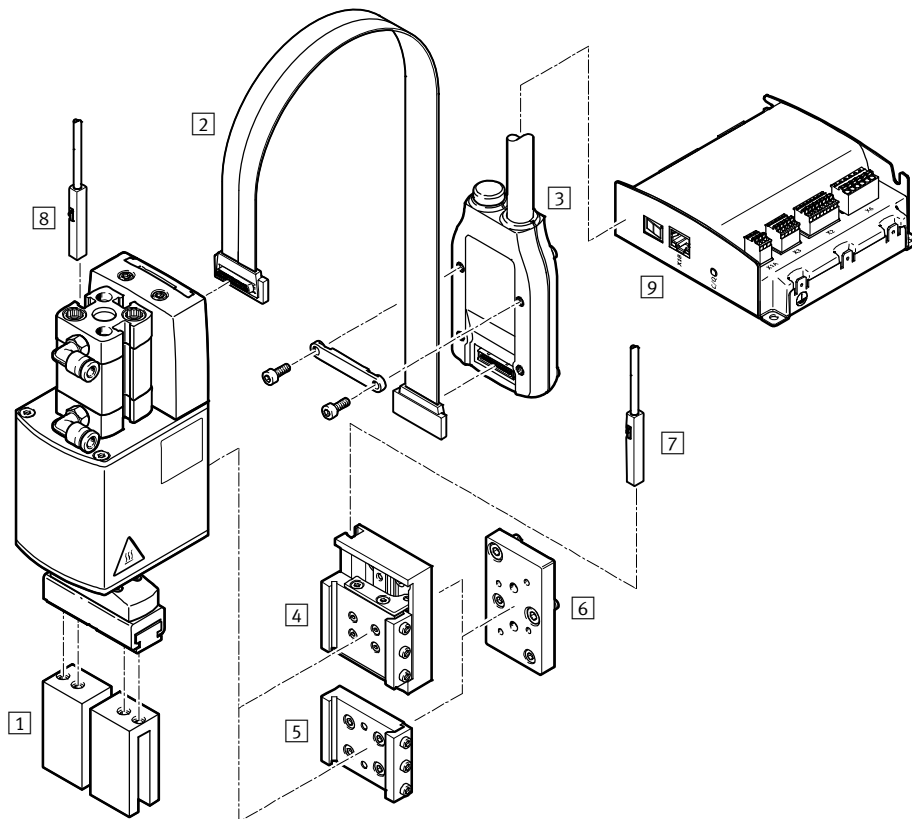
| Accessories                                                                           |                                                 |                                                                                                                                                                                            |                 |
|---------------------------------------------------------------------------------------|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Type/order code                                                                       | Description                                     |                                                                                                                                                                                            | → Page/Internet |
|  1 | Gripper jaw blank<br>BUB-HGPT-16-B              | Unmachined parts specially matched to the gripper jaws for production of gripper fingers                                                                                                   | 20              |
|  2 | Motor cable<br>NEBM-F1W31                       | <ul style="list-style-type: none"> <li>Connecting cable between EHMD and motor cable NEBM-SF1</li> <li>The cable is mandatory for compliance with the EMC Directive</li> </ul>             | 20              |
|  3 | Motor cable<br>NEBM-SF1                         | Cable with adapter between motor cable NEBM-F1 and motor controller CMMO-ST                                                                                                                | 20              |
|  4 | Mounting (with Z compensation)<br>EHAM-E20-40-Z | Mounting option via dovetail mounting.<br>The mounting makes it possible to fit or remove e.g. covers from vials without additional Z-axis (Z compensation = 12 mm).                       | 17              |
|  5 | Mounting (rigid)<br>EHAM-E20-40                 | Mounting option via dovetail mounting                                                                                                                                                      | 18              |
|  6 | Adapter kit<br>EHAM-E20-40-E...                 | For attaching the mountings to the Z-axes: <ul style="list-style-type: none"> <li>Mini slide EGSC-BS-25/32</li> <li>Mini slide EGSL-BS-35/45</li> <li>Electric slide EGSK-20/26</li> </ul> | 19              |
|  7 | Proximity sensor, T-slot<br>SIES-M8             | Inductive proximity sensor for sensing the Z compensation position                                                                                                                         | 21              |
|  8 | Motor controller<br>CMMO-ST                     | For positioning the rotary or gripping motion                                                                                                                                              | 20              |

# Rotary gripper module EHMD

Peripherals overview

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## EHMD-40-RE-GP – Pneumatic gripping



 Note  
The gripper is provided for external gripping only (closing movement).

| Accessories                                                                                                                           |                                                                                                                                                                                                     |                 |  |
|---------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--|
| Type/order code                                                                                                                       | Description                                                                                                                                                                                         | → Page/Internet |  |
|  1 Gripper jaw blank<br>BUB-HGPT-16-B              | Unmachined parts specially matched to the gripper jaws for production of gripper fingers                                                                                                            | 20              |  |
|  2 Motor cable<br>NEBM-F1W31                       | Connecting cable between EHMD and motor cable NEBM-SF1                                                                                                                                              | 20              |  |
|  3 Motor cable<br>NEBM-SF1                         | Cable with adapter between motor cable NEBM-F1 and motor controller CMMO-ST                                                                                                                         | 20              |  |
|  4 Mounting (with Z compensation)<br>EHAM-E20-40-Z | Mounting option via dovetail mounting.<br>The mounting makes it possible to fit or remove e.g. covers from vials without additional Z-axis (Z compensation = 12 mm).                                | 17              |  |
|  5 Mounting (rigid)<br>EHAM-E20-40                 | Mounting option via dovetail mounting                                                                                                                                                               | 18              |  |
|  6 Adapter kit<br>EHAM-E20-40-E...                 | For attaching the mountings to the Z-axes:<br><ul style="list-style-type: none"> <li>• Mini slide EGSC-BS-25/32</li> <li>• Mini slide EGSL-BS-35/45</li> <li>• Electric slide EGSK-20/26</li> </ul> | 19              |  |
|  7 Proximity sensor, T-slot<br>SIES-M8             | Inductive proximity sensor for sensing the Z compensation position                                                                                                                                  | 21              |  |
|  8 Proximity sensor, T-slot<br>SME/SMT-M8          | Proximity sensor for sensing the position of the gripper fingers (open/closed)                                                                                                                      | 21              |  |
|  9 Motor controller<br>CMMO-ST                     | For positioning the rotary or gripping motion                                                                                                                                                       | 20              |  |

## Rotary gripper module EHMD

Technical data

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 Output torque  
0.3 Nm

 Rotation angle  
Infinite

 Total stroke  
10 mm

Activation by:

- Motor controllers CMMO-ST
- Controllers for stepper motors with encoder input



| General technical data         |                                           |                                            |
|--------------------------------|-------------------------------------------|--------------------------------------------|
| Type code                      | EHMD-...                                  |                                            |
|                                | -GE                                       | -GP                                        |
| Design                         | Electric rotary drive<br>Electric gripper | Electric rotary drive<br>Pneumatic gripper |
| Motor type                     | Stepper motor                             |                                            |
| Position sensing               |                                           |                                            |
| Rotation                       | Motor encoder                             |                                            |
| Gripping                       | Motor encoder                             | Slot for proximity sensor                  |
| Homing                         |                                           |                                            |
| Rotation                       | Encoder index                             |                                            |
| Gripping                       | Fixed-stop block                          | –                                          |
| Gripper function               | Parallel                                  |                                            |
| Rotation angle                 | Infinite                                  |                                            |
| Number of gripper jaws         | 2                                         |                                            |
| Stroke per gripper jaw [mm]    | 0 ... 5                                   | 5                                          |
| Nominal load <sup>1)</sup> [g] | 250                                       |                                            |
| Type of mounting               | Via dovetail slot                         |                                            |
| Mounting position              | Any                                       |                                            |
| Product weight [g]             | 681                                       | 577                                        |

1) Rated load = gripper fingers + payload

| Technical data – Rotation                 |                                                  |                       |
|-------------------------------------------|--------------------------------------------------|-----------------------|
| Type code                                 | EHMD-...                                         |                       |
|                                           | -GE                                              | -GP                   |
| Design                                    | Electric rotary drive                            | Electric rotary drive |
| Max. output torque [Nm]                   | 0.3                                              |                       |
| Max. output speed [rpm]                   | 240                                              |                       |
| Functional principle                      | Stepper motor, direct drive                      |                       |
| Nominal voltage [V DC]                    | 24                                               |                       |
| Nominal current [A]                       | 0.9                                              |                       |
| Holding torque at nominal current [Nm]    | 0.3                                              |                       |
| Resistance per phase [Ω]                  | 5.8 ±15%                                         |                       |
| Inductance per phase [mH]                 | 11 ±20%                                          |                       |
| Step angle [°]                            | 1.8 ±5%                                          |                       |
| Moment of inertia [kgm <sup>2</sup> ]     | 1.25 x 10 <sup>-5</sup>                          |                       |
| Electrical connection                     | Plug<br>Connection pattern F1                    |                       |
| Encoder                                   |                                                  |                       |
| Operating voltage [V DC]                  | 5 ±10%                                           |                       |
| Current consumption (without load) [mA]   | 60                                               |                       |
| Pulses/rotation [1/rev]                   | 500                                              |                       |
| Rotor position encoder                    | RS422 TTL AB-channel + zero index<br>Incremental |                       |
| Rotor position sensor measuring principle | Optical                                          |                       |

# Rotary gripper module EHMD

Technical data

| Technical data – Gripping                            |                                   |                   |
|------------------------------------------------------|-----------------------------------|-------------------|
| Type code                                            | EHMD-...                          |                   |
|                                                      | -GE                               | -GP               |
| Design                                               | Electric gripper                  | Pneumatic gripper |
| Gripping force per gripper jaw [N]                   | 7 ... 35                          | 5 ... 35          |
| Max. gripping force                                  |                                   |                   |
| Closed-loop operation [N]                            | 35                                | –                 |
| Open-loop operation [N]                              | 20 ... 25                         | –                 |
| Residual gripping force <sup>1)</sup> [N]            | > 10                              | –                 |
| Gripping force per gripper jaw at 6 bar, closing [N] | –                                 | 25                |
| Minimum gripping force [N]                           | 7                                 | 5                 |
| Pneumatic connection                                 | –                                 | QS-4              |
| Functional principle                                 | Stepper motor with lead screw     | –                 |
| Nominal voltage [V DC]                               | 24                                | –                 |
| Nominal current [A]                                  | 0.5                               | –                 |
| Holding torque at nominal current [Nm]               | 0.043                             | –                 |
| Resistance per phase [Ω]                             | 5.6 ±15%                          | –                 |
| Inductance per phase [mH]                            | 4.0 ±20%                          | –                 |
| Step angle [°]                                       | 1.8 ±5%                           | –                 |
| Moment of inertia [kgm <sup>2</sup> ]                | 9 x 10 <sup>-7</sup>              | –                 |
| Max. motor speed [rpm]                               | 1000                              | –                 |
| Feed constant [mm/rev]                               | 1.478                             | –                 |
| Max. speed per gripper jaw [mm/s]                    | 25                                | –                 |
| Permissible speed for homing to stop [mm/s]          | 2                                 | –                 |
| Reversing backlash [mm]                              | 0.3                               | –                 |
| Electrical connection                                | Plug                              | –                 |
|                                                      | Connection pattern F1             | –                 |
| Encoder                                              |                                   |                   |
| Operating voltage [V DC]                             | 5 ±10%                            | –                 |
| Current consumption (without load) [mA]              | 30                                | –                 |
| Pulses/rotation [1/rev]                              | 500                               | –                 |
| Rotor position encoder                               | RS422 TTL AB-channel + zero index | –                 |
|                                                      | Incremental                       | –                 |
| Rotor position sensor measuring principle            | Optical                           | –                 |

 Note

- 1) In the event of a power failure, a residual gripping force (gripping force backup) is ensured by the mechanical design. However, the maximum gripping force cannot be maintained.

# Rotary gripper module EHMD

Technical data

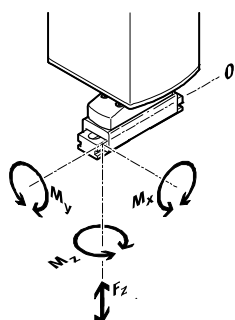
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| Operating and environmental conditions                   |                                                                                             |                                           |
|----------------------------------------------------------|---------------------------------------------------------------------------------------------|-------------------------------------------|
| Type code                                                | EHMD-...                                                                                    |                                           |
|                                                          | -GE                                                                                         | -GP                                       |
| Operating pressure [bar]                                 | –                                                                                           | 1.5 ... 8                                 |
| Operating medium                                         | –                                                                                           | Compressed air to ISO 8573-1:2010 [7:4:4] |
| Note on operating/pilot medium                           | –                                                                                           | Unlubricated compressed air supply        |
| Ambient temperature [°C]                                 | 0 ... +40                                                                                   |                                           |
| Storage temperature [°C]                                 | –20 ... +70                                                                                 |                                           |
| Relative humidity [%]                                    | 0 ... 85 (non-condensing)                                                                   |                                           |
| Degree of protection                                     | IP20                                                                                        |                                           |
| Insulation class                                         | B                                                                                           |                                           |
| Duty cycle [%]                                           | 100                                                                                         |                                           |
| Corrosion resistance class CRC <sup>1)</sup>             | 1                                                                                           |                                           |
| CE marking (see declaration of conformity) <sup>3)</sup> | To EU EMC Directive <sup>2)</sup><br>(with shielded cables and a cable length of max. 30 m) |                                           |
| KC marking                                               | KC-EMV                                                                                      |                                           |
| Certification                                            | RCM trademark                                                                               |                                           |
| Suitable for use in the food industry <sup>3)</sup>      | See additional information on materials                                                     |                                           |

- 1) Corrosion resistance class CRC 1 to Festo standard FN 940070  
Low corrosion stress. For dry indoor applications or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).
- 2) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: [www.festo.com/sp](http://www.festo.com/sp) → User documentation.  
If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.
- 3) Additional information [www.festo.com/sp](http://www.festo.com/sp) → Certificates.

| Materials          |                                              |     |
|--------------------|----------------------------------------------|-----|
| Type code          | EHMD-...                                     |     |
|                    | -GE                                          | -GP |
| Cover              | PA-reinforced                                | PA  |
| Housing            | Anodised wrought aluminium alloy             |     |
| Tie rod            | Stainless steel                              |     |
| Gripper kinematics | Tempered steel                               |     |
| Note on materials  | Contains paint-wetting impairment substances |     |
|                    | RoHS-compliant                               |     |

## Static characteristic load values at the gripper jaws



The indicated permissible forces and torques apply to a single gripper jaw. They include the lever arm, additional weight forces due to the workpiece or external gripper fingers and acceleration forces occurring during movement. The zero coordinate line (gripper jaw guide) must be taken into consideration for the calculation of torques.

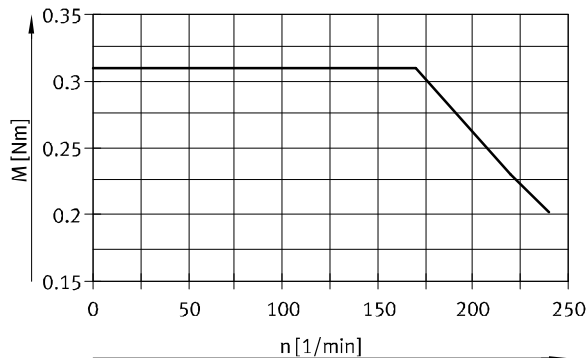
| Type code                          | EHMD-... |     |
|------------------------------------|----------|-----|
|                                    | -GE      | -GP |
| Max. permissible force $F_x$ [N]   | 30       |     |
| Max. permissible force $F_z$ [N]   | 30       |     |
| Max. permissible torque $M_x$ [Nm] | 0.7      |     |
| Max. permissible torque $M_y$ [Nm] | 1.5      |     |
| Max. permissible torque $M_z$ [Nm] | 0.7      |     |

# Rotary gripper module EHMD

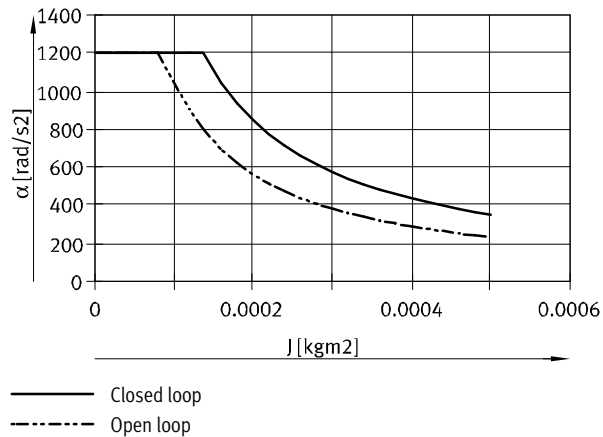
Technical data

## Graphs for rotation

### Torque M as a function of rotational speed n

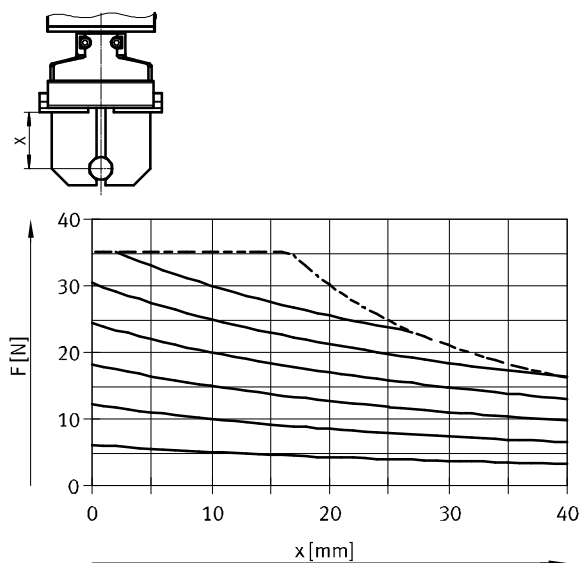


### Angular acceleration $\alpha$ as a function of moment of inertia J



## Graphs for gripping, electric and pneumatic

### Gripping force F in relation to lever arm x



## Graphs for gripping, pneumatic

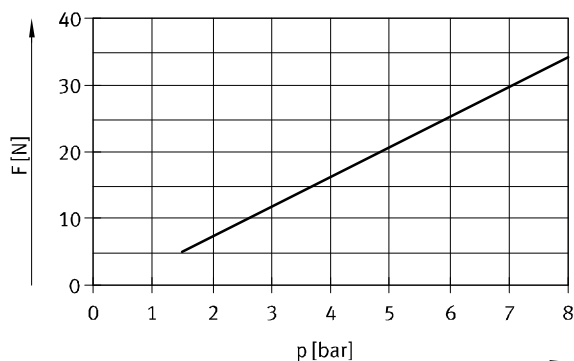
### Gripping force F as a function of operating pressure d

Prerequisite:

- Lever arm = 10 mm

Description:

The gripper has no gripping force backup if the operating pressure fails.



# Rotary gripper module EHMD

Technical data

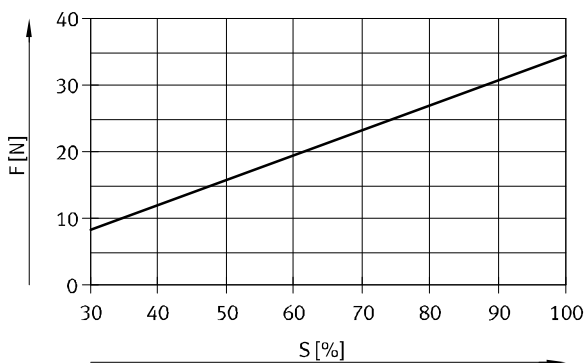
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## Graphs for gripping, electric

### Gripping force $F$ as a function of force setpoint value $S$

Prerequisite:

- Motor controllers CMMO-ST under power
- Lever arm  $x = 10$  mm
- Speed = 2 mm/s



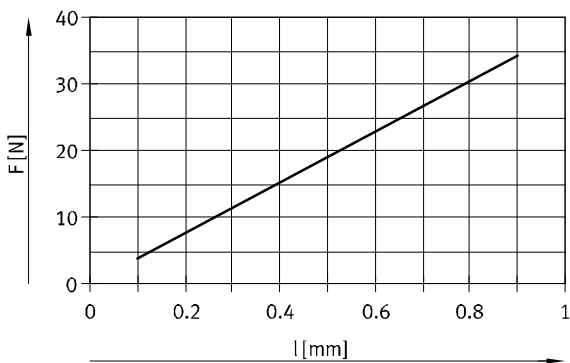
### Gripping force $F$ in relation to additional stroke $l$

Prerequisite:

- Motor controllers CMMO-ST in positioning mode
- Lever arm  $x = 10$  mm

Description:

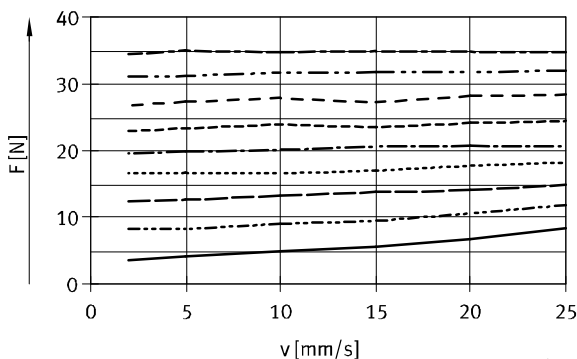
The gripper closes against a spring. The gripping force can be adjusted by means of this additional stroke.



### Gripping force $F$ as a function of speed $v$

Prerequisite:

- Motor controllers CMMO-ST under power
- Ambient temperature = 25 °C



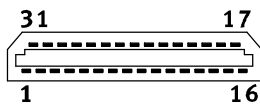
|                         |                         |
|-------------------------|-------------------------|
| Force specification of: | Force specification of: |
| — 20%                   | ----- 70%               |
| ..... 30%               | - - - - - 80%           |
| ----- 40%               | - . - . - 90%           |
| ..... 50%               | ----- 100%              |
| - - - - - 60%           |                         |

# Rotary gripper module EHMD

Technical data

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## Pin allocation



| PIN | Function<br>EHMD-...-GE  | EHMD-...-GP              |
|-----|--------------------------|--------------------------|
| 1   | Encoder rotation I       | Encoder rotation I       |
| 2   | Encoder rotation B       | Encoder rotation B       |
| 3   | Encoder rotation A       | Encoder rotation A       |
| 4   | Encoder gripper I        | –                        |
| 5   | Encoder gripper B        | –                        |
| 6   | Encoder gripper A        | –                        |
| 7   | Screened                 | Screened                 |
| 8   | +5 V DC encoder gripper  | –                        |
| 9   | +5 V DC encoder rotation | +5 V DC encoder rotation |
| 10  | Screened                 | Screened                 |
| 11  | Motor rotation phase B   | Motor rotation phase B   |
| 12  | Motor rotation phase B   | Motor rotation phase B   |
| 13  | Motor rotation phase A   | Motor rotation phase A   |
| 14  | Motor rotation phase A   | Motor rotation phase A   |
| 15  | Motor gripper phase B    | –                        |
| 16  | Motor gripper phase A    | –                        |
| 17  | Motor gripper phase A/   | –                        |
| 18  | Motor gripper phase B/   | –                        |
| 19  | Motor rotation phase A/  | Motor rotation phase A/  |
| 20  | Motor rotation phase A/  | Motor rotation phase A/  |
| 21  | Motor rotation phase B/  | Motor rotation phase B/  |
| 22  | Motor rotation phase B/  | Motor rotation phase B/  |
| 23  | Screened                 | Screened                 |
| 24  | GND encoder              | GND encoder              |
| 25  | Screened                 | Screened                 |
| 26  | Encoder gripper A/       | –                        |
| 27  | Encoder gripper B/       | –                        |
| 28  | Encoder gripper I/       | –                        |
| 29  | Encoder rotation A/      | Encoder rotation A/      |
| 30  | Encoder rotation B/      | Encoder rotation B/      |
| 31  | Encoder rotation I/      | Encoder rotation I/      |

# Rotary gripper module EHMD

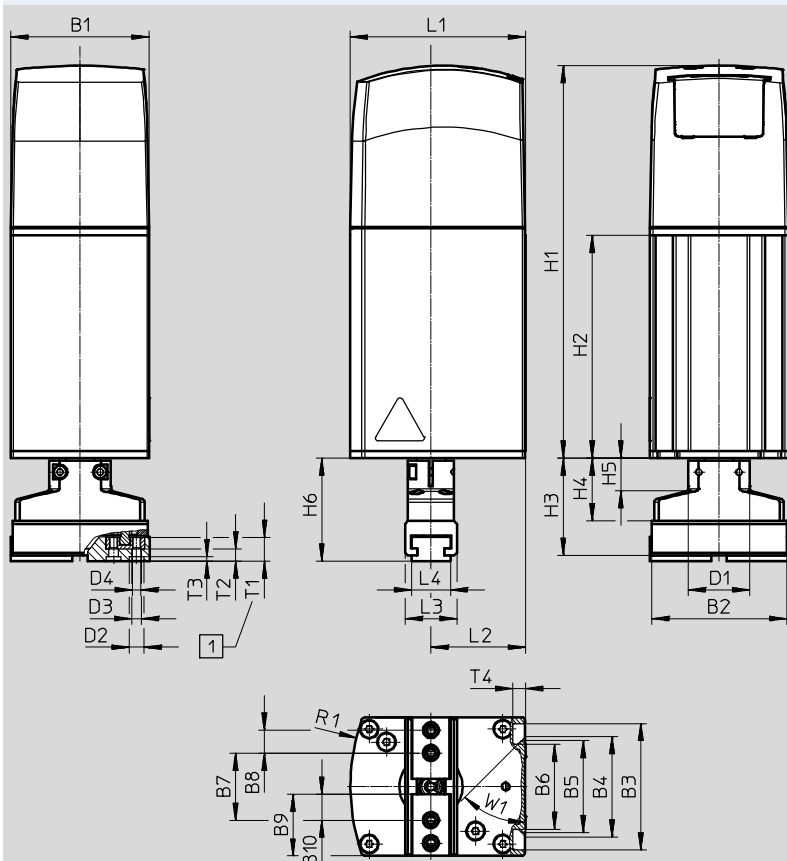
Technical data

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## Dimensions

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

EHMD-...-GE



- 1 Max. screw-in depth  
Included in the scope of delivery:
- 4x screws M3x12
  - 4x centring sleeves ZBH-5 (for gripper fingers)

| Type code   | B1 | B2 | B3 | B4          | B5 | B6   | B7   |      | B8         | B9   |
|-------------|----|----|----|-------------|----|------|------|------|------------|------|
|             |    |    |    |             |    |      | min. | max. |            |      |
| EHMD-...-GE | 48 | 47 | 44 | ±0.15<br>35 | 32 | 29.6 | 18   | 28   | ±0.08<br>8 | 21.5 |

| Type code   | B10 | D1<br>Ø | D2<br>Ø<br>H9 | D3<br>Ø | D4 | H1    | H2   | H3   | H4   | H5   | H6   |
|-------------|-----|---------|---------------|---------|----|-------|------|------|------|------|------|
| EHMD-...-GE | 9   | 21.5    | 5             | 3.4     | M3 | 136.6 | 77.5 | 33.8 | 21.8 | 11.3 | 35.8 |

| Type code   | L1 | L2 | L3 | L4   | R1 | T1  | T2  | T3  | T4  | W1  |
|-------------|----|----|----|------|----|-----|-----|-----|-----|-----|
| EHMD-...-GE | 61 | 33 | 18 | 13.5 | 70 | 8.3 | 4.3 | 1.5 | 4.5 | 45° |

# Rotary gripper module EHMD

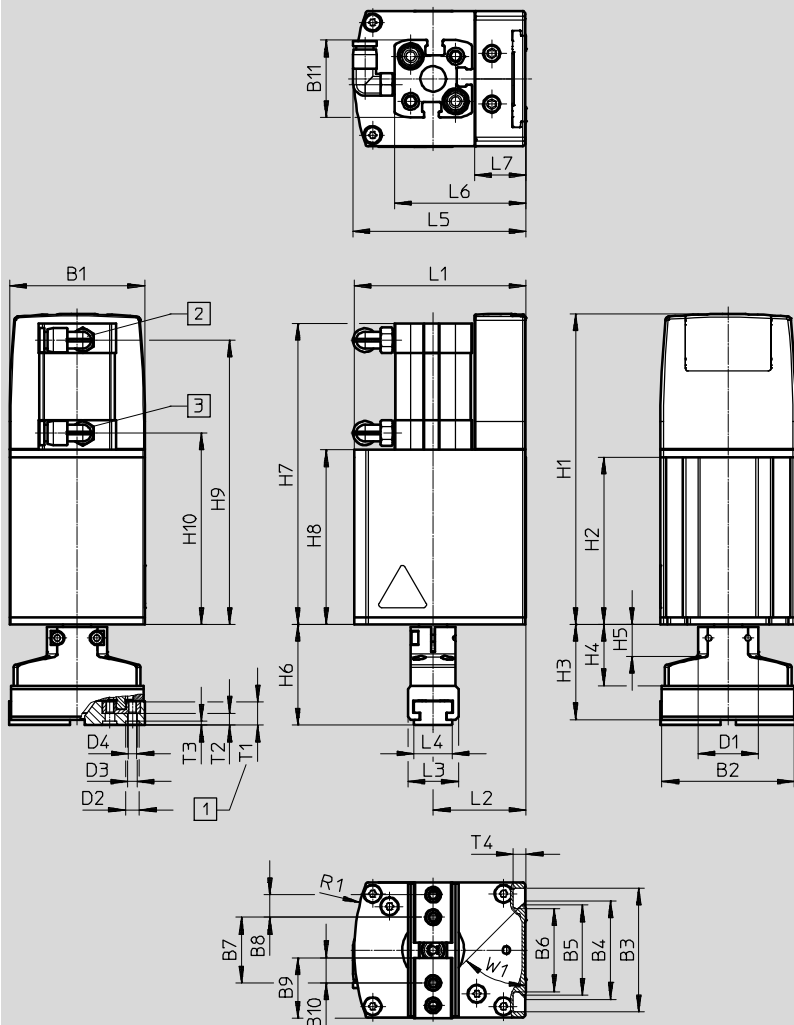
Technical data

**FESTO**

## Dimensions

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

EHMD-...-GP



- 1 Max. screw-in depth  
Included in the scope of delivery:
- 4x screws M3x12
  - 4x centring sleeves ZBH-5 (for gripper fingers)
- Push-in fitting for
- 2 Opening the gripper
- 3 Closing the gripper

| Type code   | B1 | B2 | B3 | B4<br>±0.15 | B5 | B6   | B7   |      | B8<br>±0.08 | B9   | B10 | B11  | D1<br>Ø |
|-------------|----|----|----|-------------|----|------|------|------|-------------|------|-----|------|---------|
|             |    |    |    |             |    |      | min. | max. |             |      |     |      |         |
| EHMD-...-GP | 48 | 47 | 44 | 35          | 32 | 29.6 | 18   | 28   | 8           | 21.5 | 9   | 27.5 | 21.5    |

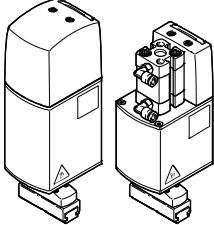
| Type code   | D2<br>Ø<br>H9 | D3<br>Ø | D4 | H1    | H2   | H3   | H4   | H5   | H6   | H7  | H8 | H9  | H10 |
|-------------|---------------|---------|----|-------|------|------|------|------|------|-----|----|-----|-----|
| EHMD-...-GP | 5             | 3.4     | M3 | 110.3 | 59.5 | 33.8 | 21.8 | 11.3 | 35.8 | 107 | 62 | 101 | 68  |

| Type code   | L1 | L2 | L3 | L4   | L5   | L6   | L7   | R1 | T1  | T2  | T3  | T4  | W1  |
|-------------|----|----|----|------|------|------|------|----|-----|-----|-----|-----|-----|
| EHMD-...-GP | 61 | 33 | 18 | 13.5 | 61.5 | 46.8 | 18.3 | 70 | 8.3 | 4.3 | 1.5 | 4.5 | 45° |

## Rotary gripper module EHMD

Technical data

**FESTO**

| Ordering data                                                                     |              |            |                |                      |
|-----------------------------------------------------------------------------------|--------------|------------|----------------|----------------------|
|                                                                                   | Drive system |            | Part No.       | Type code            |
|                                                                                   | Rotation     | Gripping   |                |                      |
|  | Electrical   | Electrical | <b>4788875</b> | <b>EHMD-40-RE-GE</b> |
|                                                                                   | Electrical   | Pneumatic  | <b>4790698</b> | <b>EHMD-40-RE-GP</b> |
|                                                                                   |              |            |                |                      |

# Rotary gripper module EHMD

Accessories

## Mounting EHAM-E20-40-Z

Mounting position: Vertical

Materials:

Wrought aluminium alloy

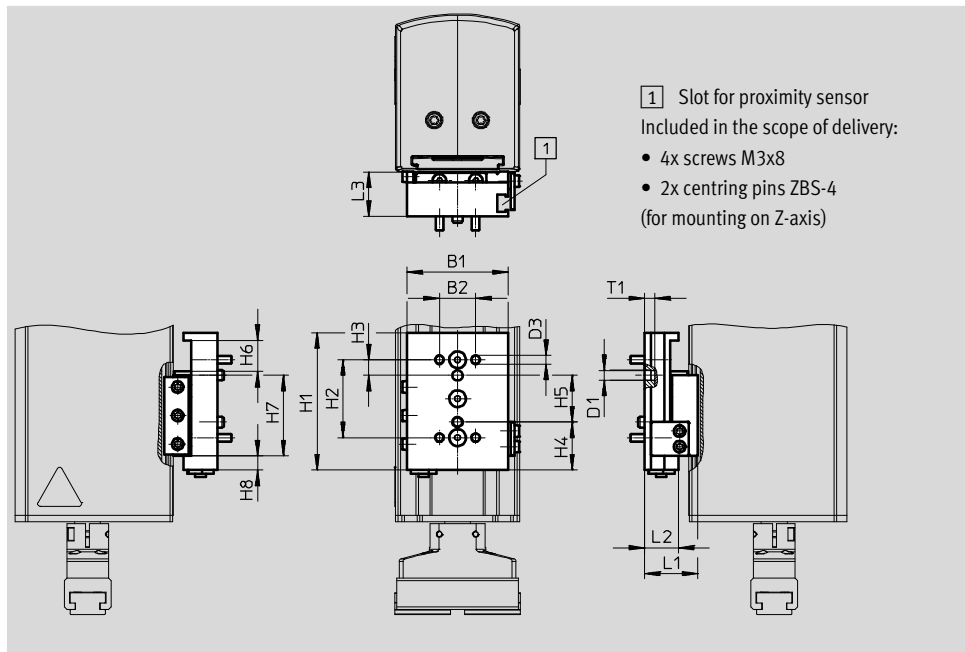
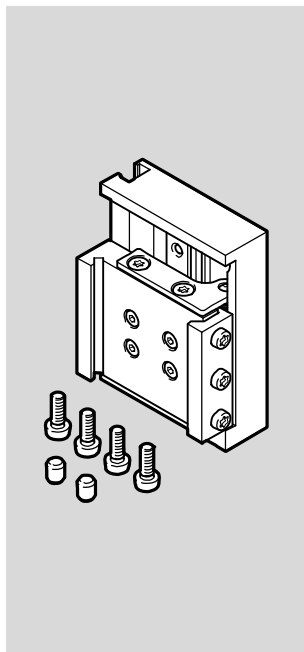
RoHS-compliant

Contains paint-wetting impairment substances

Mounting option via dovetail mounting.

The mounting compensates for the thread pitch when turning (fitting/removing) covers on vials without needing additional movement of the Z-axis.

(Z compensation = 12 mm)



| Dimensions and ordering data |    |    |               |         |    |    |    |      |             |    |
|------------------------------|----|----|---------------|---------|----|----|----|------|-------------|----|
| For size                     | B1 | B2 | D1<br>Ø<br>H8 | D3<br>Ø | H1 | H2 | H3 | H4   | H5<br>±0.05 | H6 |
| 40                           | 39 | 14 | 4             | 3.4     | 53 | 30 | 6  | 18.5 | 18          | 12 |

| For size | H7 | H8  | L1   | L2 | L3 | T1  | Weight<br>[g] | Part No. | Type code     |
|----------|----|-----|------|----|----|-----|---------------|----------|---------------|
| 40       | 31 | 5.5 | 20.5 | 13 | 17 | 2.5 | 82            | 5293408  | EHAM-E20-40-Z |

## Rotary gripper module EHMD

Accessories

**FESTO**

### Mounting EHAM-E20-40

Mounting position: Any

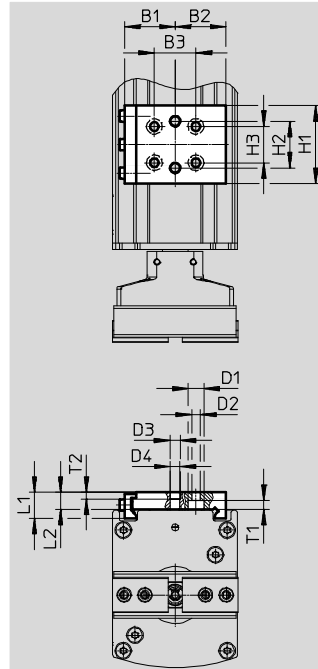
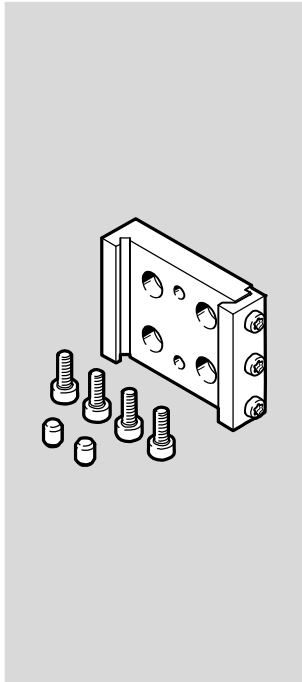
Materials:

Wrought aluminium alloy

RoHS-compliant

Contains paint-wetting impairment substances

Rigid mounting option via dovetail mounting.



Included in the scope of delivery:

- 4x screws M3x8
- 2x centring pins ZBS-4 (for mounting on Z-axis)

### Dimensions and ordering data

| For size | B1   | B2   | B3 | D1<br>Ø | D2<br>Ø | D3<br>Ø<br>H8 | D4<br>Ø | H1 |
|----------|------|------|----|---------|---------|---------------|---------|----|
| 40       | 19.5 | 19.5 | 16 | 6       | 3.4     | 4             | 3.8     | 30 |

| For size | H2    | H3 | L1 | L2  | T1  | T2  | Weight | Part No.       | Type code          |
|----------|-------|----|----|-----|-----|-----|--------|----------------|--------------------|
|          | ±0.05 |    |    |     |     |     | [g]    |                |                    |
| 40       | 18    | 14 | 10 | 6.5 | 3.4 | 2.5 | 26     | <b>4991965</b> | <b>EHAM-E20-40</b> |

# Rotary gripper module EHMD

Accessories

## Mounting EHAM-E20-40-E...

Mounting position: Any

Materials:

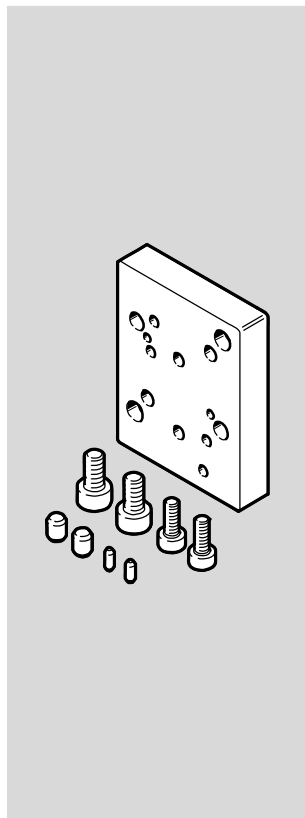
Wrought aluminium alloy

RoHS-compliant

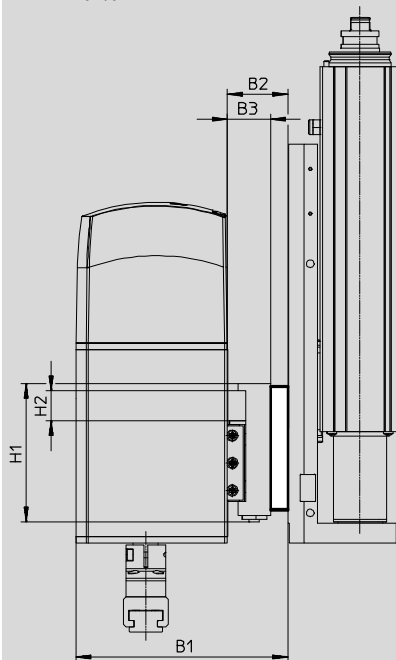
Contains paint-wetting impairment substances

For attaching the mountings to the Z-axes:

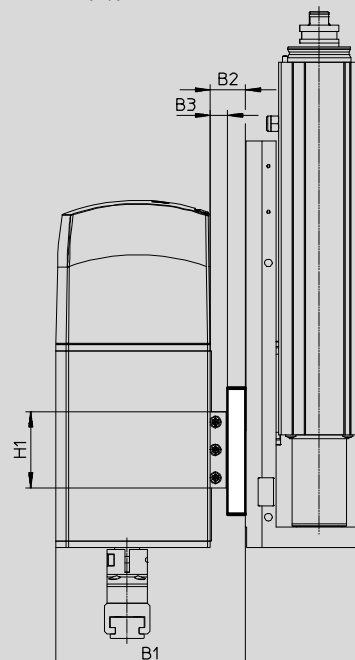
- Mini slide EGSC-BS-25/32
- Mini slide EGSL-BS-35/45
- Electric slide EGSK-20/26



With Z compensation  
EAHM-E20-40-Z



With rigid mounting  
EAHM-E20-40



Suitable screws and centring pins/  
sleeves included in scope of delivery.

| Dimensions and ordering data        |      |      |      |      |                  |               |          |                    |
|-------------------------------------|------|------|------|------|------------------|---------------|----------|--------------------|
| For Z-axis                          | B1   | B2   | B3   | H1   | H2 <sup>1)</sup> | Weight<br>[g] | Part No. | Type code          |
| And flexible mounting EHAM-E20-40-Z |      |      |      |      |                  |               |          |                    |
| EGSC-BS-25/32                       | 85   | 24.3 | 17.3 | 55.6 | 12               | 30            | 8080760  | EHAM-E20-40-E19-25 |
| EGSL-BS-35/45                       |      |      |      |      |                  | 24            | 8081015  | EHAM-E20-40-E8-35  |
| EGSK-20/26                          |      |      |      |      |                  | 36            | 8081016  | EHAM-E20-40-E9-20  |
|                                     |      |      |      |      |                  |               |          |                    |
| And rigid mounting EHAM-E20-40      |      |      |      |      |                  |               |          |                    |
| EGSC-BS-25/32                       | 74.5 | 13.8 | 6.8  | 30   | –                | 30            | 8080760  | EHAM-E20-40-E19-25 |
| EGSL-BS-35/45                       |      |      |      |      |                  | 24            | 8081015  | EHAM-E20-40-E8-35  |
| EGSK-20/26                          |      |      |      |      |                  | 36            | 8081016  | EHAM-E20-40-E9-20  |

1) Automatic Z-stroke compensation.

## Rotary gripper module EHMD

Accessories

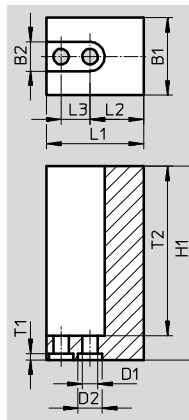
**FESTO**

### Gripper jaw blank BUB-HGPT

(2 included in delivery)

Materials:

Aluminium



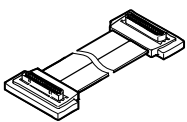
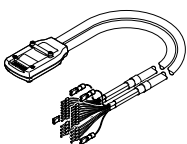
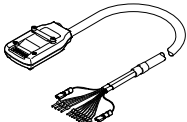
Note

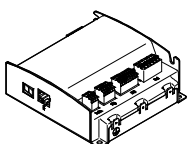
Use the matching screws and centring sleeves included with the rotary gripper EHMD to mount it.

| Dimensions and ordering data |       |     |       |      |       |       |       |
|------------------------------|-------|-----|-------|------|-------|-------|-------|
| For size                     | B1    | B2  | D1    | D2   | D3    | H1    | L1    |
|                              | ±0.05 | H13 | Ø H13 | Ø H8 | Ø H13 | ±0.05 | ±0.05 |
| 40                           | 16    | 6   | 3.2   | 5    | –     | 40    | 21    |

| For size | L2 <sup>1)</sup> | L3 <sup>1)</sup> | T1   | T2 | Weight per blank [g] | Part No. | Type code     |
|----------|------------------|------------------|------|----|----------------------|----------|---------------|
|          |                  |                  | +0.1 |    |                      |          |               |
| 40       | 10               | 8                | 1.3  | 35 | 29                   | 560244   | BUB-HGPT-16-B |

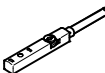
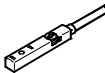
1) Tolerance for centring hole ±0.02 mm  
Tolerance for through-hole ±0.1 mm

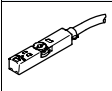
| Ordering data – Cables                                                              |                                                                                                                                                        |                  |                                                     |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------------------------------------------|
|                                                                                     | Description                                                                                                                                            | Cable length [m] | Part No. Type code                                  |
| Motor cable                                                                         |                                                                                                                                                        |                  |                                                     |
|  | <ul style="list-style-type: none"> <li>Connecting cable between EHMD and motor cable NEBM-SF1</li> <li>For EHMD-...-GE and EHMD-...-GP</li> </ul>      | 0.5              | <b>8079819</b> <b>NEBM-F1W31-EC-Q3-F1N-DF1W31</b>   |
| Motor cable                                                                         |                                                                                                                                                        |                  |                                                     |
|  | <ul style="list-style-type: none"> <li>Cable with adapter between motor cable NEBM-F1 and motor controller CMMO-ST</li> <li>For EHMD-...-GE</li> </ul> | 2.6              | <b>5213342</b> <b>NEBM-SF1W31-EH-2.6-Q15N-LE-28</b> |
|  | <ul style="list-style-type: none"> <li>Cable with adapter between motor cable NEBM-F1 and motor controller CMMO-ST</li> <li>For EHMD-...-GP</li> </ul> | 2.6              | <b>5213343</b> <b>NEBM-SF1W31-EH-2.6-Q15N-LE-14</b> |

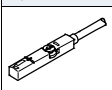
| Ordering data – Motor controller                                                    |                            |                | Technical data → Internet: cmmo |
|-------------------------------------------------------------------------------------|----------------------------|----------------|---------------------------------|
|                                                                                     | Description                | Part No.       | Type code                       |
|  | With I/O interface         |                |                                 |
|                                                                                     | Switching input/output PNP | <b>1512316</b> | <b>CMMO-ST-C5-1-DIOP</b>        |
|                                                                                     | Switching input/output NPN | <b>1512317</b> | <b>CMMO-ST-C5-1-DION</b>        |
|                                                                                     | With IO-Link®              |                |                                 |
|                                                                                     | Switching input/output PNP | <b>1512320</b> | <b>CMMO-ST-C5-1-LKP</b>         |

# Rotary gripper module EHMD

Accessories

| Ordering data – Proximity sensor for T-slot, inductive                            |                                                                  |                  |                       |                  | Technical data ➔ Internet: <a href="#">sies</a> |                                 |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------|------------------|-----------------------|------------------|-------------------------------------------------|---------------------------------|
|                                                                                   | Type of mounting                                                 | Switching output | Electrical connection | Cable length [m] | Part No.                                        | Type code                       |
| N/O contact                                                                       |                                                                  |                  |                       |                  |                                                 |                                 |
|  | Inserted in the slot from above, flush with the cylinder profile | PNP              | Cable, 3-wire         | 7.5              | <b>551386</b>                                   | <b>SIES-8M-PS-24V-K-7,5-OE</b>  |
|                                                                                   |                                                                  |                  | Plug M8x1, 3-pin      | 0.3              | <b>551387</b>                                   | <b>SIES-8M-PS-24V-K-0,3-M8D</b> |
|                                                                                   |                                                                  | NPN              | Cable, 3-wire         | 7.5              | <b>551396</b>                                   | <b>SIES-8M-NS-24V-K-7,5-OE</b>  |
|                                                                                   |                                                                  |                  | Plug M8x1, 3-pin      | 0.3              | <b>551397</b>                                   | <b>SIES-8M-NS-24V-K-0,3-M8D</b> |
|                                                                                   |                                                                  |                  |                       |                  |                                                 |                                 |
| N/C contact                                                                       |                                                                  |                  |                       |                  |                                                 |                                 |
|  | Inserted in the slot from above, flush with the cylinder profile | PNP              | Cable, 3-wire         | 7.5              | <b>551391</b>                                   | <b>SIES-8M-PO-24V-K-7,5-OE</b>  |
|                                                                                   |                                                                  |                  | Plug M8x1, 3-pin      | 0.3              | <b>551392</b>                                   | <b>SIES-8M-PO-24V-K-0,3-M8D</b> |
|                                                                                   |                                                                  | NPN              | Cable, 3-wire         | 7.5              | <b>551401</b>                                   | <b>SIES-8M-NO-24V-K-7,5-OE</b>  |
|                                                                                   |                                                                  |                  | Plug M8x1, 3-pin      | 0.3              | <b>551402</b>                                   | <b>SIES-8M-NO-24V-K-0,3-M8D</b> |

| Ordering data – Proximity sensor for T-slot, magneto-resistive                     |                                                                                |                  |                       |                  | Technical data → Internet: smt |                           |
|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|------------------|-----------------------|------------------|--------------------------------|---------------------------|
|                                                                                    | Type of mounting                                                               | Switching output | Electrical connection | Cable length [m] | Part No.                       | Type code                 |
| N/O contact                                                                        |                                                                                |                  |                       |                  |                                |                           |
|  | Inserted in the slot from above, flush with the cylinder profile, short design | PNP              | Cable, 3-wire         | 2.5              | 574335                         | SMT-8M-A-PS-24V-E-2,5-OE  |
|                                                                                    |                                                                                |                  | Plug M8x1, 3-pin      | 0.3              | 574334                         | SMT-8M-A-PS-24V-E-0,3-M8D |
|                                                                                    |                                                                                |                  | Plug M12x1, 3-pin     | 0.3              | 574337                         | SMT-8M-A-PS-24V-E-0,3-M12 |
|                                                                                    |                                                                                | NPN              | Cable, 3-wire         | 2.5              | 574338                         | SMT-8M-A-NS-24V-E-2,5-OE  |
|                                                                                    |                                                                                |                  | Plug M8x1, 3-pin      | 0.3              | 574339                         | SMT-8M-A-NS-24V-E-0,3-M8D |

| 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 code               |
| N/O contact                                                                         |                                                                  |                  |                       |                  |                                |                         |
|  | Inserted in the slot from above, flush with the cylinder profile | Contacting       | Cable, 3-wire         | 2.5              | 543862                         | SME-8M-DS-24V-K-2,5-OE  |
|                                                                                     |                                                                  |                  |                       | 5.0              | 543863                         | SME-8M-DS-24V-K-5,0-OE  |
|                                                                                     |                                                                  |                  | Cable, 2-wire         | 2.5              | 543872                         | SME-8M-ZS-24V-K-2,5-OE  |
|                                                                                     |                                                                  |                  |                       | 0.3              | 543861                         | SME-8M-DS-24V-K-0,3-M8D |

| Ordering data – Connecting cables                                                   |                              |                              |                  | Technical data → Internet: nebu |                     |
|-------------------------------------------------------------------------------------|------------------------------|------------------------------|------------------|---------------------------------|---------------------|
|                                                                                     | Electrical connection, left  | Electrical connection, right | Cable length [m] | Part No.                        | Type code           |
|  | Straight socket, M8x1, 3-pin | Cable, open end, 3-wire      | 2.5              | 541333                          | NEBU-M8G3-K-2.5-LE3 |
|                                                                                     |                              |                              | 5                | 541334                          | NEBU-M8G3-K-5-LE3   |
|  | Angled socket, M8x1, 3-pin   | Cable, open end, 3-wire      | 2.5              | 541338                          | NEBU-M8W3-K-2.5-LE3 |
|                                                                                     |                              |                              | 5                | 541341                          | NEBU-M8W3-K-5-LE3   |

| Ordering data – Centring sleeve                                                     |                                              |          |           |                  |  |
|-------------------------------------------------------------------------------------|----------------------------------------------|----------|-----------|------------------|--|
|                                                                                     | Description                                  | Part No. | Type code | PU <sup>1)</sup> |  |
|  | For mountings EHMD and gripper jaw blank BUB | 562959   | ZBS-4     | 10               |  |
|                                                                                     |                                              | 189652   | ZBH-5     |                  |  |

1) Packaging unit

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