

## Three-point grippers HGDD, sealed

**FESTO**



## Key features

### At a glance

#### General

The fully encapsulated gripper kinematics enable the gripper to be used in extremely harsh ambient conditions.

The sturdy and precise kinematics provide maximum torque resistance and a long service life.

The force generated by the linear motion is translated into the gripper jaw movement via a wedge mechanism with force-guided motion. This also guarantees synchronous movement of the gripper jaws. The virtually backlash-free plain-bearing guide is realised using ground-in gripper jaws.

#### Note

Engineering software

Gripper selection

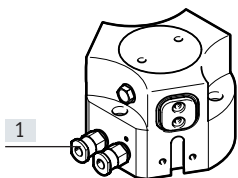
→ [www.festo.com](http://www.festo.com)

#### Flexible range of applications

- Can be used as a double-acting and single-acting gripper
- Compression spring for supplementing or retaining the gripping forces
- Suitable for external and internal gripping

### Wide range of supply ports

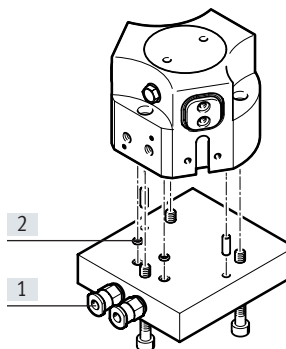
#### Directly from the front



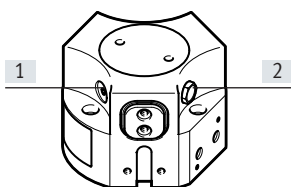
[1] Compressed air supply ports

[2] O-rings

#### Via adapter plate from underneath



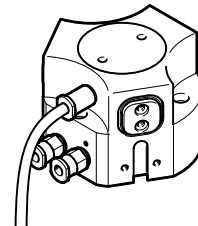
#### Other connections



[1] Port for lubrication nipple

[2] Exhaust hole or sealing air connection

#### Use in harsh ambient conditions

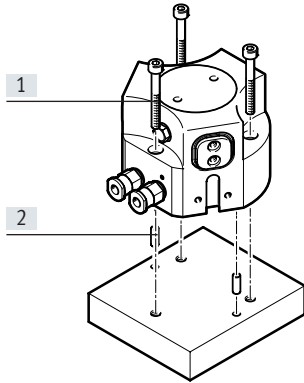


When using the gripper in humid environments or with liquid/gaseous media, make sure that the filter is installed in a neutral environment. The same applies to unused supply ports when operating the gripper as a single-acting gripper.

## Key features

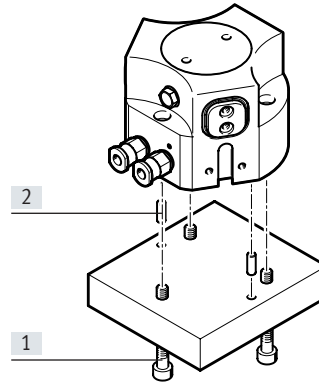
### Mounting options

Direct mounting  
from above



- [1] Mounting screws
- [2] Centring pins

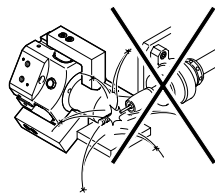
Via adapter plate  
from underneath



### Note

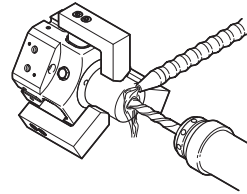
These grippers are not suitable or are of limited suitability for the following application examples:

Not suitable for:

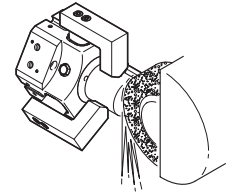


- Welding spatter

Of limited suitability for:



- Aggressive media only possible after consultation with Festo



- Grinding dust

## Three-point grippers HGDD, sealed

### Type codes

| 001         | Series                      |
|-------------|-----------------------------|
| <b>HGDD</b> | Three-point gripper, sealed |

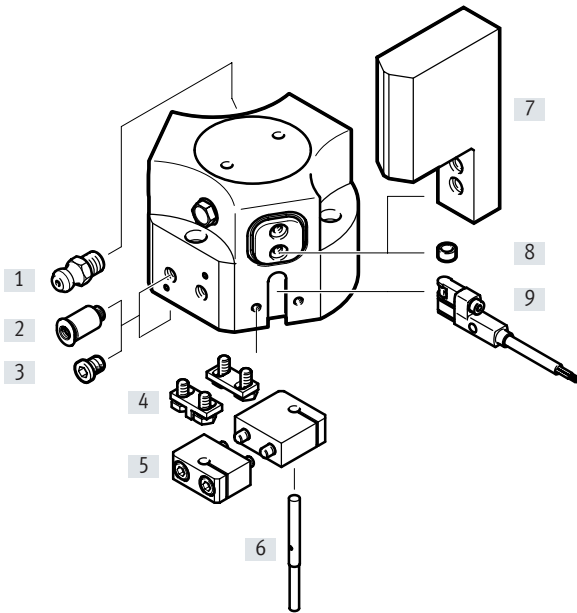
| 002       | Size |
|-----------|------|
| <b>35</b> | 35   |
| <b>40</b> | 40   |
| <b>50</b> | 50   |
| <b>63</b> | 63   |
| <b>80</b> | 80   |

| 003      | Position sensing     |
|----------|----------------------|
| <b>A</b> | For proximity sensor |

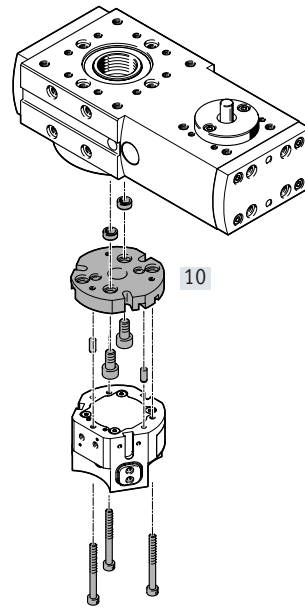
| 004       | Gripping force backup |
|-----------|-----------------------|
|           | None                  |
| <b>G1</b> | Opening               |
| <b>G2</b> | N/O contact           |

Peripherals overview

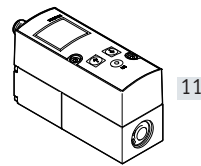
Peripherals overview



System product for handling and assembly technology



Proportional-pressure regulator VPPM

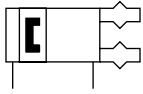


| Accessories                                  |  |                 |
|--|--|-----------------|
| Type   | Description  | → Page/Internet |
| [1] Lubrication nipple                       | Included in the scope of delivery of the gripper   | –               |
| [2] Push-in fitting<br>QS                    | For connecting tubing with standard O.D.   | qs              |
| [3] Blanking plug<br>B                       | For sealing the compressed air supply ports when using the lower compressed air supply ports   | 17              |
| [4] Sensor bracket<br>DASI                   | Switch lug for sensing the gripper jaw position. Mounted on the gripper jaw blank  | 17              |
| [5] Sensor bracket<br>DASI                   | Clamping block for securing the proximity sensors SIEH or SIEN   | 17              |
| [6] Proximity sensor<br>SIEH/SIEN            | For sensing the piston position  | 18              |
| [7] Gripper jaw blank<br>BUB-HGDD            | Unmachined part specially matched to the gripper jaws for custom production of gripper fingers   | 16              |
| [8] Centring sleeve<br>ZBH                   | <ul style="list-style-type: none"> <li>For centring the gripper jaw blanks/gripper fingers on the gripper jaws</li> <li>6 centring sleeves included in the scope of delivery of the gripper</li> </ul> | 17              |
| [9] Proximity sensor<br>SMT-8G               | <ul style="list-style-type: none"> <li>For sensing the piston position, 3 slots available</li> <li>Proximity sensor does not project past the housing at the bottom</li> </ul>                         | 17              |
| [10] Adapter kit<br>DHAA, HAPG               | Connecting plate between drive and gripper   | 14              |
| [11] Proportional-pressure regulator<br>VPPM | For infinite adjustment of the gripping force  | vppm            |

# Three-point grippers HGDD, sealed

## Data sheet

Function  
Double-acting  
HGDD-...



- Size  
35 ... 80 mm
- Total stroke  
4 ... 12 mm

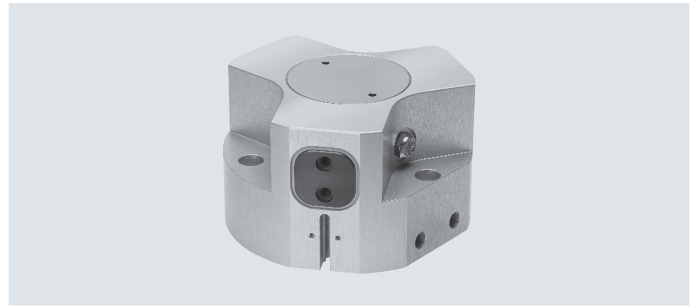
www.festo.com

Function – Variant  
Single-acting or with gripping force retention

opening: HGDD-...-G1



closing: HGDD-...-G2



| General technical data                      |   |         |     |      |      |        |    |  |    |  |  |
|---|---|---------|-----|------|------|--------|----|--|----|--|--|
| Size  | 35  |         | 40  |      | 50   |        | 63 |  | 80 |  |  |
| Design                                      | Wedge-shaped actuator<br>Force-guided motion                        |         |     |      |      |        |    |  |    |  |  |
| Mode of operation                           | Double-acting   |         |     |      |      |        |    |  |    |  |  |
| Gripper function                            | 3-point   |         |     |      |      |        |    |  |    |  |  |
| Number of gripper jaws                      | 3   |         |     |      |      |        |    |  |    |  |  |
| Max. load per gripper finger <sup>1)</sup>  | [g]   | 57      | 130 | 276  | 440  | 790    |    |  |    |  |  |
| Stroke per gripper jaw                      | [mm]  | 4       | 6   | 8    | 10   | 12     |    |  |    |  |  |
| Pneumatic connection                        |   | M5      | M5  | G1/8 | G1/8 | G1/8   |    |  |    |  |  |
| Pneumatic connection for sealing air        |   | M3      | M3  | M5   | M5   | G1/8   |    |  |    |  |  |
| Pneumatic connection for lubrication nipple |   | M3      | M3  | M5   | M5   | M5     |    |  |    |  |  |
| Repetition accuracy <sup>2)</sup>           | [mm]  | ≤ 0.03  |     |      |      | ≤ 0.05 |    |  |    |  |  |
| Max. interchangeability                     | [mm]  | ≤ ±0.2  |     |      |      |        |    |  |    |  |  |
| Max. operating frequency                    | [Hz]  | ≤ 4     |     |      |      |        |    |  |    |  |  |
| Rotational symmetry                         | [mm]  | < Ø 0.2 |     |      |      |        |    |  |    |  |  |
| Position sensing                            | Via proximity sensor  |         |     |      |      |        |    |  |    |  |  |
| Type of mounting                            | With through-hole and dowel pin<br>With female thread and dowel pin |         |     |      |      |        |    |  |    |  |  |
| Mounting position                           | Any   |         |     |      |      |        |    |  |    |  |  |

- 1) Applies to unthrottled operation
- 2) Under constant exposure to operating conditions, end-position drift occurs, concentric to the central shaft, at 100 consecutive strokes

| Operating and environmental conditions       |  |            |
|--|--|------------|
| Min. operating pressure                      |  |            |
| HGDD-...-A                                   | [bar]  | 3          |
| HGDD-...-A-G                                 | [bar]  | 4          |
| Max. operating pressure                      | [bar]  | 8          |
| Operating pressure for sealing air           | [bar]  | 0 ... 0.5  |
| Operating medium                             | Compressed air to ISO 8573-1:2010 [7:4:4]  |            |
| Note on the operating/pilot medium           | Lubricated operation possible (in which case lubricated operation will always be required) |            |
| Ambient temperature <sup>1)</sup>            | [°C]   | +5 ... +60 |
| Degree of protection                         | IP65   |            |
| Corrosion resistance class CRC <sup>2)</sup> | 2  |            |

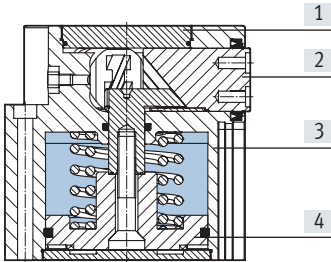
- 1) Note operating range of proximity sensors
- 2) Corrosion resistance class CRC 2 to Festo standard FN 940070  
Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

Data sheet

| Weight [g]   |     |     |      |      |      |
|--------------|-----|-----|------|------|------|
| Size         | 35  | 40  | 50   | 63   | 80   |
| HGDD-...-A   | 309 | 599 | 1117 | 2175 | 3522 |
| HGDD-...-A-G | 370 | 775 | 1495 | 2848 | 4788 |

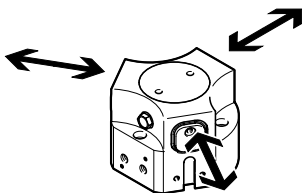
Sectional view

Materials



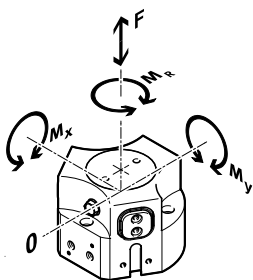
| Size                | 35                         | 40 | 50 | 63 | 80 |
|---------------------|----------------------------|----|----|----|----|
| [1] Cover cap       | High-alloy stainless steel |    |    |    |    |
| [2] Gripper jaw     | Hardened steel             |    |    |    |    |
| [3] Housing         | Anodised aluminium         |    |    |    |    |
| [4] Piston          | Hard-anodised aluminium    |    |    |    |    |
| - Seals             | Nitrile rubber             |    |    |    |    |
| - Note on materials | Free of copper and PTFE    |    | -  |    |    |
|                     | RoHS-compliant             |    |    |    |    |

Gripping force [N] at 6 bar



| Size                                  | 35      | 40  | 50  | 63   | 80   |      |
|---------------------------------------|---------|-----|-----|------|------|------|
| <b>Gripping force per gripper jaw</b> |         |     |     |      |      |      |
| HGDD-...-A                            | Opening | 122 | 216 | 371  | 582  | 943  |
|                                       | Closing | 112 | 200 | 348  | 553  | 915  |
| <b>Total gripping force</b>           |         |     |     |      |      |      |
| HGDD-...-A                            | Opening | 366 | 648 | 1113 | 1746 | 2829 |
|                                       | Closing | 336 | 600 | 1044 | 1659 | 2745 |

Characteristic load values at the gripper jaws



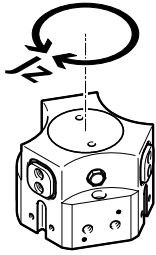
The indicated permissible forces and torques apply to a single gripper jaw. They include the lever arm, additional applied loads due to the workpiece or external gripper fingers and acceleration forces occurring during movement.

The zero coordinate line (gripper jaws point of rotation) must be taken into consideration for the calculation of torques.

| Size                          | 35   | 40  | 50  | 63   | 80   |      |
|-------------------------------|------|-----|-----|------|------|------|
| Max. permissible force $F_z$  | [N]  | 300 | 700 | 1300 | 2300 | 3600 |
| Max. permissible torque $M_x$ | [Nm] | 12  | 25  | 45   | 70   | 100  |
| Max. permissible torque $M_y$ | [Nm] | 8   | 18  | 30   | 45   | 65   |
| Max. permissible torque $M_r$ | [Nm] | 8   | 20  | 30   | 50   | 75   |

Data sheet

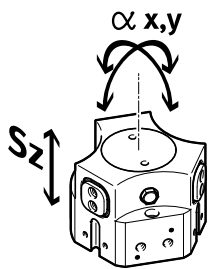
Mass moments of inertia [kgcm<sup>2</sup>]



Mass moment of inertia of the three-point gripper in relation to the central axis, without external gripper fingers, without load.

| Size         | 35   | 40   | 50    | 63    | 80    |
|--------------|------|------|-------|-------|-------|
| HGDD-...-A   | 1.01 | 3.31 | 9.65  | 29    | 70.22 |
| HGDD-...-A-G | 1.37 | 5.01 | 15.07 | 45.05 | 109   |

Gripper jaw backlash



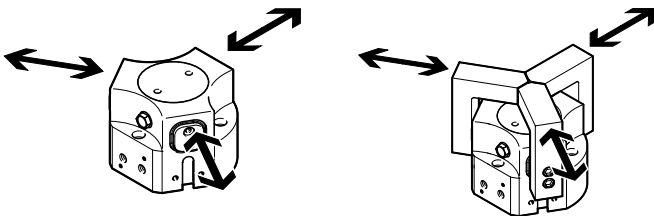
The plain-bearing guide used in the grippers means that there is backlash between the gripper jaws and the guide element. The backlash values listed in the table have been calculated based on the traditional accumulative tolerance method.

| Size                                     | 35   | 40   | 50 | 63 | 80 |
|--|------|------|----|----|----|
| Max. gripper jaw backlash Sz             | [mm] | 0.05 |    |    |    |
| Max. gripper jaw angular backlash ax, ay | [°]  | 0.1  |    |    |    |

Opening and closing times [ms] at 6 bar

Without external gripper fingers

With external gripper fingers



The indicated opening and closing times [ms] were measured at room temperature at an operating pressure of 6 bar with a horizontally mounted gripper without additional gripper fingers. The grippers must be throttled for larger loads [g]. Opening and closing times must then be adjusted accordingly.

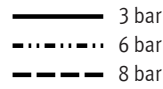
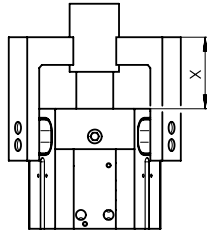
| Size  | 35      | 40  | 50  | 63  | 80  |     |
|---|---------|-----|-----|-----|-----|-----|
| <b>Without external gripper fingers</b>   |         |     |     |     |     |     |
| HGDD-...-A  | Opening | 44  | 78  | 93  | 115 | 152 |
|   | Closing | 52  | 106 | 128 | 145 | 142 |
| HGDD-...-A-G1   | Opening | 38  | 70  | 25  | 48  | 72  |
|   | Closing | 85  | 211 | 160 | 190 | 246 |
| HGDD-...-A-G2   | Opening | 81  | 144 | 111 | 135 | 159 |
|   | Closing | 42  | 110 | 87  | 68  | 107 |
| <b>With external gripper fingers (as a function of the load per gripper finger)</b> |         |     |     |     |     |     |
| HGDD-...  | 200 g   | 52  | -   | -   | -   | -   |
|   | 400 g   | 74  | 70  | -   | -   | -   |
|   | 500 g   | 83  | 78  | -   | -   | -   |
|   | 800 g   | 105 | 99  | 106 | -   | -   |
|   | 1000 g  | -   | 111 | 118 | 128 | -   |
|   | 1500 g  | -   | -   | 145 | 157 | 209 |
|   | 1800 g  | -   | -   | -   | 172 | 229 |
|   | 2000 g  | -   | -   | -   | 181 | 241 |
|   | 2200 g  | -   | -   | -   | -   | 253 |
|   | 2400 g  | -   | -   | -   | -   | 264 |



## Data sheet

### Gripping force $F_H$ per gripper jaw as a function of operating pressure and lever arm $x$

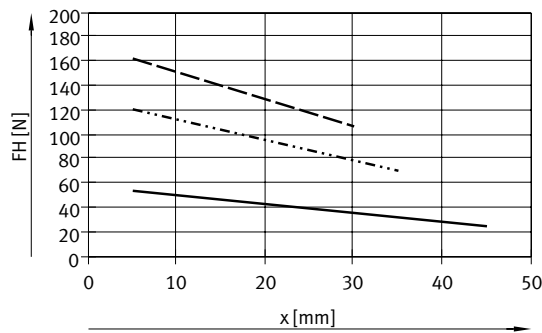
The gripping forces as a function of the operating pressure and lever arm can be determined from the following graphs.



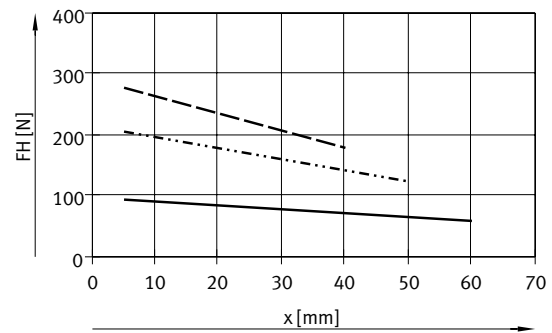
**Note**  
 Engineering software  
 Gripper selection  
 → [www.festo.com](http://www.festo.com)

### External gripping (closing)

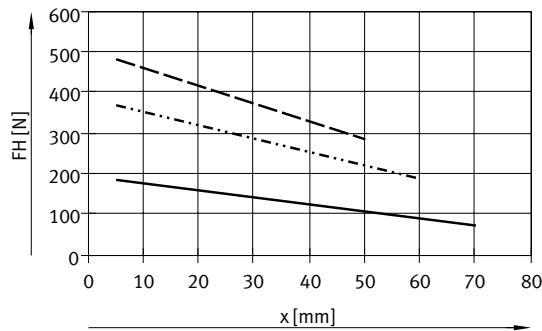
HGDD-35-A



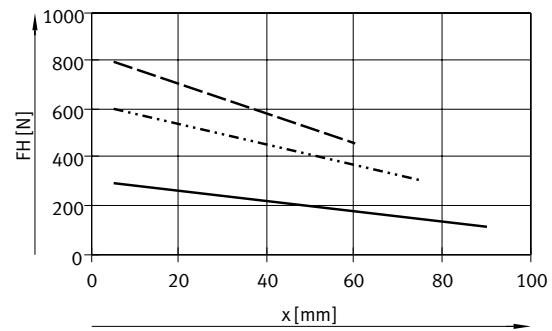
HGDD-40-A



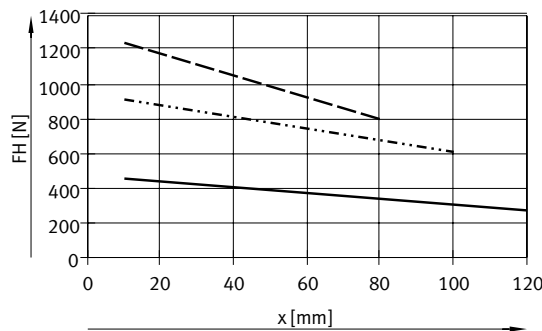
HGDD-50-A



HGDD-63-A



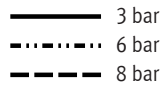
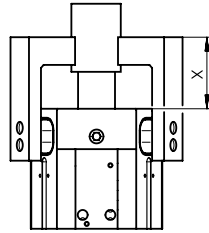
HGDD-80-A



Data sheet

Gripping force  $F_H$  per gripper jaw as a function of operating pressure and lever arm  $x$

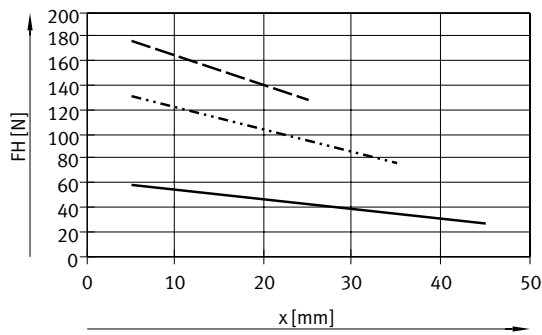
The gripping forces as a function of the operating pressure and lever arm can be determined from the following graphs.



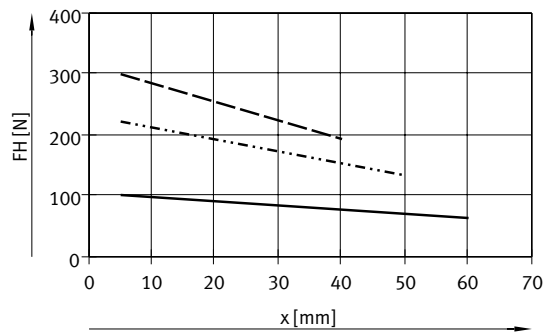
**Note**  
 Engineering software  
 Gripper selection  
 → [www.festo.com](http://www.festo.com)

Internal gripping (opening)

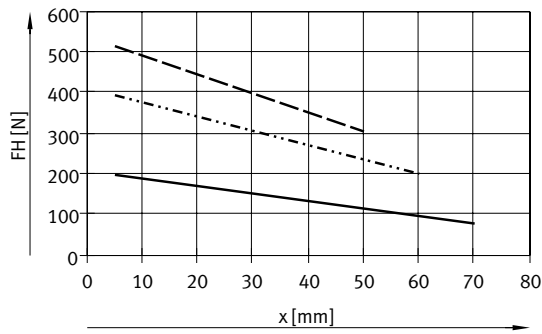
HGDD-35-A



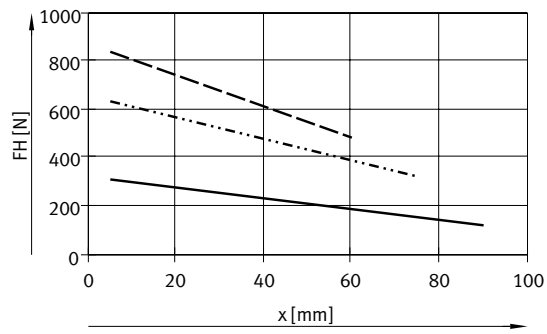
HGDD-40-A



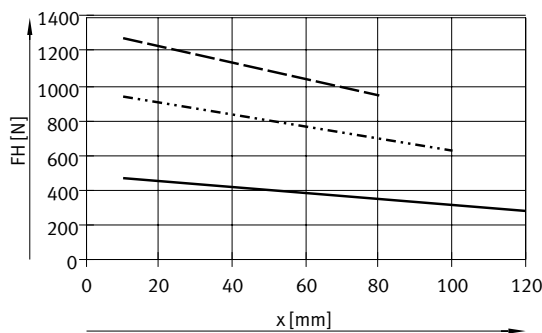
HGDD-50-A



HGDD-63-A



HGDD-80-A

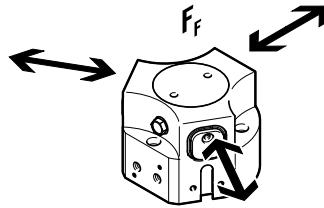


## Data sheet

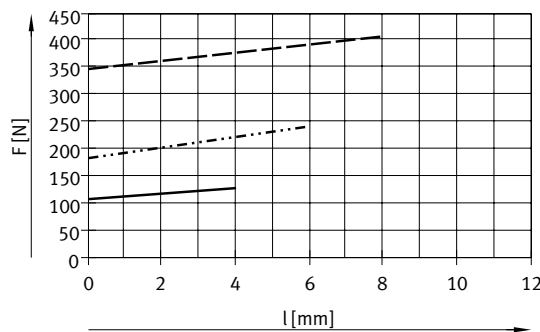
### Spring force $F_F$ as a function of size and gripper jaw stroke $l$ per gripper finger

Gripping force retention for HGDD-...-G...

The spring forces  $F_F$  as a function of the gripper jaw stroke can be determined from the following graph.

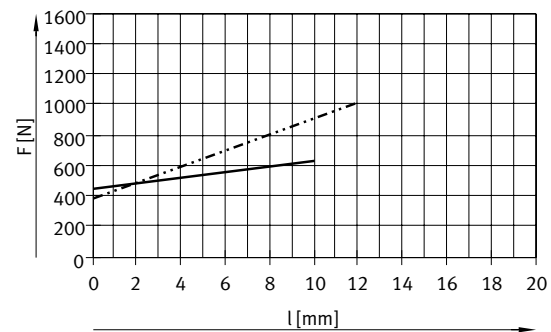


Size 35 ... 50



— HGDD-35-A-G  
 ..... HGDD-40-A-G  
 - - - - HGDD-50-A-G

Size 63 ... 80



— HGDD-63-A-G  
 ..... HGDD-80-A-G

### Spring force $F_F$ as a function of size, gripper jaw stroke $l$ and lever arm $x$ per gripper finger

The lever arm  $x$  must be taken into consideration when determining the actual spring force  $F_{\text{Total}}$ .

The formulae for calculating the spring force are provided in the table below.

| Gripping force retention | Size | $F_{\text{Total}}$ per gripper finger |
|--------------------------|------|---------------------------------------|
| G1                       | 35   | $-0.85 \cdot x + 0.45 \cdot F_F$      |
|                          | 40   | $-0.55 \cdot x + 0.35 \cdot F_F$      |
|                          | 50   | $-2.5 \cdot x + 0.75 \cdot F_F$       |
|                          | 63   | $-0.2 \cdot x + 0.4 \cdot F_F$        |
|                          | 80   | $-1.5 \cdot x + 0.35 \cdot F_F$       |
| Gripping force retention | Size | $F_{\text{Total}}$ per gripper finger |
| G2                       | 35   | $-0.6 \cdot x + 0.45 \cdot F_F$       |
|                          | 40   | $-0.55 \cdot x + 0.35 \cdot F_F$      |
|                          | 50   | $-2.5 \cdot x + 0.6 \cdot F_F$        |
|                          | 63   | $-1.0 \cdot x + 0.4 \cdot F_F$        |
|                          | 80   | $-4.0 \cdot x + 0.85 \cdot F_F$       |

### Determining the actual gripping forces $F_{\text{Gr}}$ per gripper finger for HGDD-...-G1 and HGDD-...-G2 as a function of application

The three-point grippers with integrated spring type HGDD-...-G1 (opening gripping force retention) and HGDD-...-G2 (closing gripping force retention) can be used as

- single-acting grippers
- grippers with supplementary gripping force and
- grippers with gripping force retention

In order to calculate the available gripping forces  $F_{\text{Gr}}$  (per gripper finger), the data for gripping force  $F_H$  and spring force  $F_{\text{Total}}$  must be combined accordingly.

### Application forces per gripper finger

Single-acting

Supplementary gripping force

Gripping force retention

- Gripping with spring force:

$$F_{\text{Gr}} = F_{\text{Total}}$$

- Gripping with pressure force:

$$F_{\text{Gr}} = F_H - F_{\text{Total}}$$

- Gripping with pressure and spring force:

$$F_{\text{Gr}} = F_H + F_{\text{Total}}$$

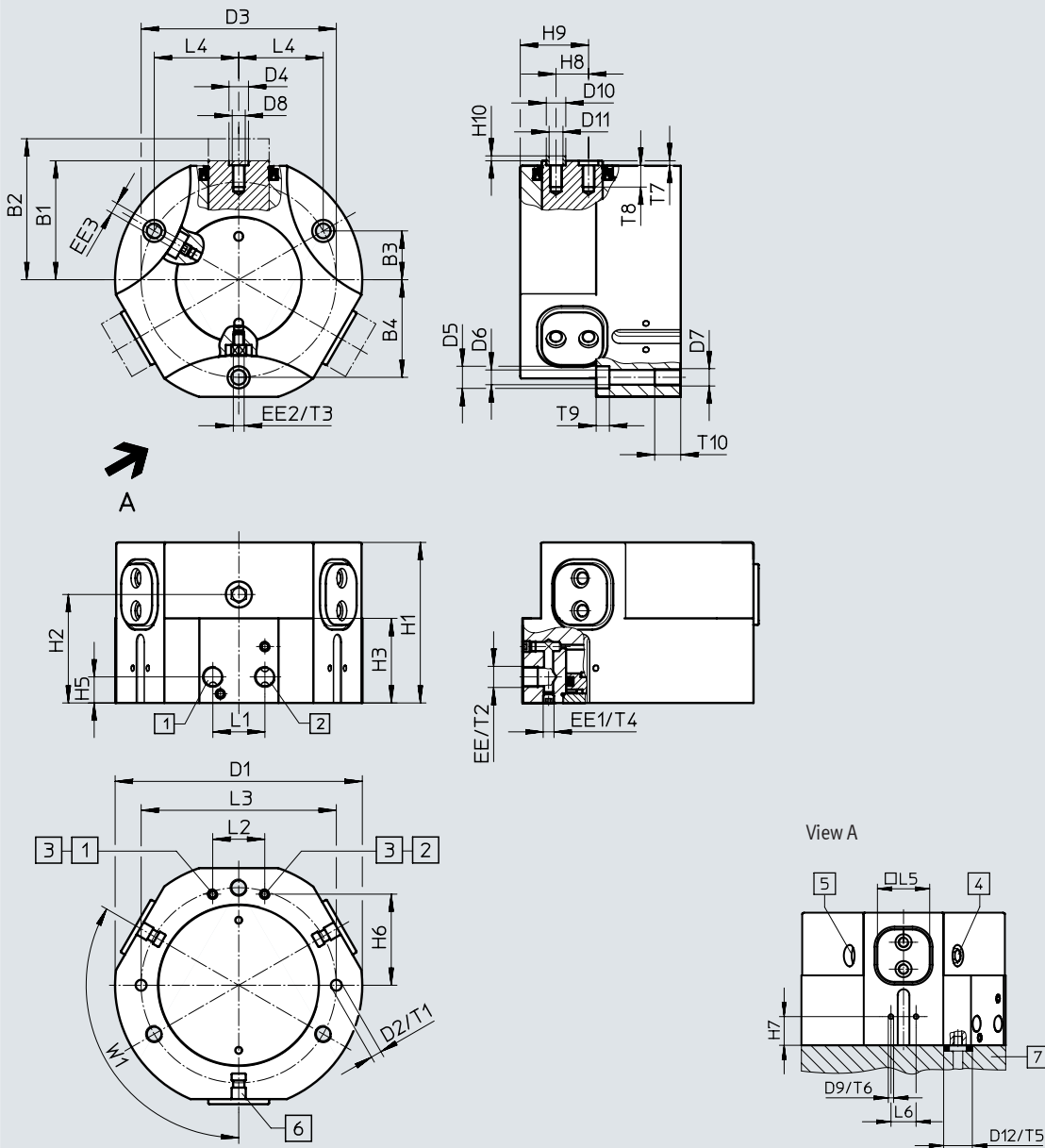
- Gripping with spring force:

$$F_{\text{Gr}} = F_{\text{Total}}$$

Data sheet

Dimensions

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



- [1] Supply port, opening
  - [2] Supply port, closing
  - [3] Alternative air supply port (supplied sealed)
  - [4] Exhaust hole (filter integrated)
  - [5] Lubrication nipple (supplied sealed)
  - [6] Slot for proximity sensor
  - [7] O-ring for three-point gripper
- HGDD-35:  $\varnothing 3 \times 1.5$   
 HGDD-40 ... 80:  $\varnothing 5 \times 1.5$

## Data sheet

| Size | B1   | B2   | B3   | B4 | D1        | D2      | D3        | D4      | D5       | D6       | D7  | D8 | D9 |
|------|------|------|------|----|-----------|---------|-----------|---------|----------|----------|-----|----|----|
| [mm] | ±0.5 | ±0.5 |      |    | ∅<br>±0.1 | ∅<br>H8 | ∅<br>±0.1 | ∅<br>H8 | ∅<br>H13 | ∅<br>H13 |     |    |    |
| 35   | 28   | 32   | 11   | 22 | 58        | 3       | 44        | 5       | 5.9      | 3.3      | M4  | M3 | M3 |
| 40   | 36   | 42   | 14   | 28 | 74        | 4       | 56        | 7       | 9.4      | 5.1      | M6  | M4 | M3 |
| 50   | 44.5 | 52.5 | 17.5 | 35 | 93        | 5       | 70        | 9       | 10.2     | 6.8      | M8  | M6 | M3 |
| 63   | 55   | 65   | 22.5 | 45 | 114       | 5       | 90        | 9       | 10.2     | 6.8      | M8  | M6 | M3 |
| 80   | 68   | 80   | 28   | 56 | 139       | 6       | 112       | 9       | 13.5     | 8.4      | M10 | M6 | M3 |

| Size | D10 | D11 | D12 | EE   | EE1 | EE2  | EE3 | H1      |           | H2         |                  |
|------|-----|-----|-----|------|-----|------|-----|---------|-----------|------------|------------------|
|      |     |     |     |      |     |      |     | ∅<br>H7 | ∅<br>+0.2 | ∅<br>±0.05 | ∅<br>-G<br>±0.05 |
| 35   | 5   | 3.2 | 6   | M5   | M3  | M3   | M3  | 41      | 51        | 29         | 39               |
| 40   | 7   | 5.3 | 8   | M5   | M5  | M3   | M3  | 48.5    | 66        | 34.5       | 52               |
| 50   | 9   | 6.4 | 8   | G1/8 | M5  | M5   | M5  | 58.5    | 83.5      | 40.4       | 65.4             |
| 63   | 9   | 6.4 | 8   | G1/8 | M5  | M5   | M5  | 74      | 104       | 50         | 80               |
| 80   | 9   | 6.4 | 8   | G1/8 | M5  | G1/8 | M5  | 83.5    | 120.5     | 55.5       | 92.5             |

| Size | H3        |                 | H5 | H6   | H7        |           | H8 <sup>1)</sup> | H9   | H10 | L1 | L2 | L3  | L4    |
|------|-----------|-----------------|----|------|-----------|-----------|------------------|------|-----|----|----|-----|-------|
|      | ∅<br>-0.2 | ∅<br>-G<br>-0.2 |    |      | ∅<br>±0.1 | ∅<br>±0.1 |                  |      |     |    |    |     |       |
| 35   | 23        | 33              | 9  | 18.5 | 7         | 17        | 7                | 15.5 | 1.2 | 12 | 15 | 45  | 19.05 |
| 40   | 27.5      | 45              | 9  | 25   | 10        | 27.5      | 10               | 19   | 1.4 | 12 | 18 | 56  | 24.25 |
| 50   | 32.5      | 57.5            | 12 | 32   | 12.5      | 37.5      | 12               | 24.1 | 1.9 | 24 | 18 | 70  | 30.31 |
| 63   | 39        | 69              | 12 | 42   | 16        | 46        | 15               | 31.5 | 1.9 | 24 | 24 | 90  | 38.97 |
| 80   | 43        | 80              | 12 | 53   | 21        | 58        | 18               | 37   | 1.9 | 30 | 30 | 112 | 48.5  |

| Size | L5    | L6   | T1   | T2   | T3   | T4   | T5   | T6   | T7   | T8   | T9   | T10  | W1   |
|------|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| [mm] | -0.02 | ±0.1 | min. | min. | min. | min. | +0.1 | min. | +0.1 | min. | +0.2 | min. |      |
| 35   | 14    | 12   | 5    | 5    | 3    | 3    | 1.2  | 4    | 1.3  | 5    | 3.2  | 8    | 120° |
| 40   | 18    | 12   | 6    | 6    | 3    | 5    | 1.2  | 5    | 1.6  | 6    | 5    | 10   | 120° |
| 50   | 22    | 12   | 8    | 7    | 6    | 5    | 1.2  | 5    | 2.1  | 10   | 6.1  | 12   | 120° |
| 63   | 28    | 14   | 8    | 7    | 6    | 5    | 1.2  | 5    | 2.1  | 10   | 6.1  | 12   | 120° |
| 80   | 32    | 14   | 10   | 8    | 10   | 5    | 1.2  | 5    | 2.1  | 10   | 8    | 15   | 120° |

1) Tolerance for centring hole ±0.02 mm  
Tolerance for thread ±0.1 mm

| Size | Double-acting              |           | Single-acting or with gripping force retention |              |          |              |
|------|----------------------------|-----------|--|--------------|----------|--------------|
|      | Without compression spring |           | Opening  |              | Closing  |              |
| [mm] | Part no.                   | Type      | Part no.                                       | Type         | Part no. | Type         |
| 35   | 1163037                    | HGDD-35-A | 1163038  | HGDD-35-A-G1 | 1163039  | HGDD-35-A-G2 |
| 40   | 1163040                    | HGDD-40-A | 1163041  | HGDD-40-A-G1 | 1163042  | HGDD-40-A-G2 |
| 50   | 1163043                    | HGDD-50-A | 1163044  | HGDD-50-A-G1 | 1163045  | HGDD-50-A-G2 |
| 63   | 1163046                    | HGDD-63-A | 1163047  | HGDD-63-A-G1 | 1163048  | HGDD-63-A-G2 |
| 80   | 1163049                    | HGDD-80-A | 1163050  | HGDD-80-A-G1 | 1163051  | HGDD-80-A-G2 |

## Accessories

Adapter kit  
DHAA, HAPG

Material:  
Wrought aluminium alloy  
Free of copper and PTFE  
RoHS-compliant

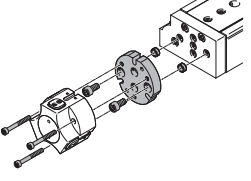
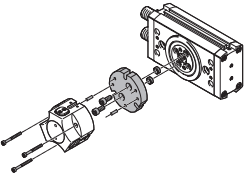


**Note**

The kit includes the individual mounting interface as well as the necessary mounting material.

**Permissible drive/gripper combinations with adapter kit**

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

| Combination  | Actuator Size   | Grippers Size     | Adapter kit       |             |                           |                      |
|--|---|-------------------|-------------------|-------------|---------------------------|----------------------|
|  |   |                   | CRC <sup>1)</sup> | Part no.    | Type                      |                      |
|  | <b>DGSL</b>   | <b>HGDD</b>       | <b>DHAA</b>       |             |                           |                      |
|  | 16, 20, 25  | 35                | 2                 | 2371422     | DHAA-G-G3-20-B13-35       |                      |
|  | 20, 25  | 40                |                   | 2373773     | DHAA-G-H2-16-B13-40       |                      |
|  | 25  | 50                |                   | 2377625     | DHAA-G-H2-20-B13-50       |                      |
|  | <b>DGSL</b>   | <b>HGDD-G1/G2</b> | <b>DHAA, HAPG</b> |             |                           |                      |
|  | 16, 20, 25  | 35                | 2                 | 542436      | HAPG-94                   |                      |
|  | 20, 25  | 40                |                   | 542437      | HAPG-95                   |                      |
|  | 25  | 50                |                   | 2378415     | DHAA-G-H2-20-B13G-50      |                      |
|  |  | <b>DRRD</b>       | <b>HGDD</b>       | <b>DHAA</b> |                           |                      |
|  |   | 20                | 35                | 2           | 2075498                   | DHAA-G-Q11-20-B13-35 |
| 25   |   | 35                | 1718041           |             | DHAA-G-Q11-25-B13-35      |                      |
| 25   |   | 40                | 1718564           |             | DHAA-G-Q11-25-B13-40      |                      |
| 32   |   | 40                | 2077119           |             | DHAA-G-Q11-32-B13-40      |                      |
| 32   |   | 50                | 2078975           |             | DHAA-G-Q11-32-B13-50      |                      |
| 35   |   | 50                | 2079171           |             | DHAA-G-Q11-35-B13-50      |                      |
| 35, 40   |   | 63                | 2079579           |             | DHAA-G-Q11-3 5/40-B13-63  |                      |
| <b>DRRD</b>  |   | <b>HGDD-G1/G2</b> | <b>DHAA</b>       |             |                           |                      |
| 20   |   | 35                | 2                 | 2837144     | DHAA-G-Q11-20-B13G-35     |                      |
| 25   |   | 35                |                   | 2837169     | DHAA-G-Q11-25-B13G-35     |                      |
| 25   |   | 40                |                   | 2837182     | DHAA-G-Q11-25-B13G-40     |                      |
| 32   |   | 40                |                   | 2837254     | DHAA-G-Q11-32-B13G-40     |                      |
| 32   |   | 50                |                   | 2837269     | DHAA-G-Q11-32-B13G-50     |                      |
| 35   |   | 50                |                   | 2837283     | DHAA-G-Q11-35-B13G-50     |                      |
| 35, 40   |   | 63                |                   | 2837337     | DHAA-G-Q11-3 5/40-B13G-63 |                      |


1) Corrosion resistance class CRC 2 to Festo standard FN 940070

Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

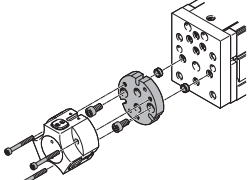
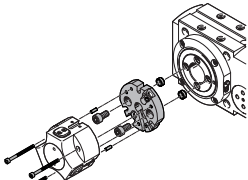
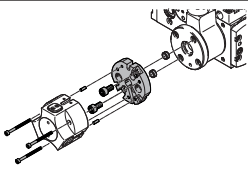
## Accessories

### Adapter kit DHAA/HAPG

Material:  
Wrought aluminium alloy  
Free of copper and PTFE  
RoHS-compliant

 **Note**

The kit includes the individual mounting interface as well as the necessary mounting material.

| Permissible drive/gripper combinations with adapter kit                             |               |                   |                   | Download CAD data → <a href="http://www.festo.com">www.festo.com</a> |                     |  |
|---|---------------|-------------------|-------------------|--|---------------------|--|
| Combination   | Actuator Size | Grippers Size     | Adapter kit       |  |                     |  |
|   |               |                   | CRC <sup>1)</sup> | Part no.   | Type                |  |
|    | <b>EGSL</b>   | <b>HGDD</b>       | <b>DHAA</b>       |  |                     |  |
|   | 45, 55, 75    | 35                | 2                 | 2371422  | DHAA-G-G3-20-B13-35 |  |
|   | 75            | 40                |                   | 2373773  | DHAA-G-H2-16-B13-40 |  |
|   | 75            | 50                |                   | 2377625  | DHAA-G-H2-20-B13-50 |  |
|   | <b>EGSL</b>   | <b>HGDD-G1/G2</b> | <b>DHAA, HAPG</b> |  |                     |  |
|   | 45, 55, 75    | 35                | 2                 | 542436   | HAPG-94             |  |
|   | 75            | 40                |                   | 542437   | HAPG-95             |  |
| 75  | 50            | 2378415           |                   | DHAA-G-H2-20-B13G-50   |                     |  |
|   | <b>ERMB</b>   | <b>HGDD</b>       | <b>DHAA</b>       |  |                     |  |
|   | 20, 25, 32    | 35                | 2                 | 2376297  | DHAA-G-Q5-20-B13-35 |  |
|   | 25, 32        | 40                |                   | 2376728  | DHAA-G-Q5-25-B13-40 |  |
|   | 32            | 50                |                   | 2377625  | DHAA-G-H2-20-B13-50 |  |
|   | <b>ERMB</b>   | <b>HGDD-G1/G2</b> | <b>DHAA, HAPG</b> |  |                     |  |
|   | 20, 25, 32    | 35                | 2                 | 542441   | HAPG-SD2-34         |  |
|   | 25, 32        | 40                |                   | 542442   | HAPG-SD2-35         |  |
| 32  | 50            | 2378415           |                   | DHAA-G-H2-20-B13G-50   |                     |  |
|  | <b>EHMB</b>   | <b>HGDD</b>       | <b>DHAA</b>       |  |                     |  |
|   | 20            | 35                | 2                 | 2376297  | DHAA-G-Q5-20-B13-35 |  |
|   | 20            | 40                |                   | 2376728  | DHAA-G-Q5-25-B13-40 |  |
|   | 20            | 50                |                   | 2377625  | DHAA-G-H2-20-B13-50 |  |
|   | <b>EHMB</b>   | <b>HGDD-G1/G2</b> | <b>DHAA, HAPG</b> |  |                     |  |
|   | 20            | 35                | 2                 | 542441   | HAPG-SD2-34         |  |
|   | 20            | 40                |                   | 542442   | HAPG-SD2-35         |  |
| 20  | 50            | 2378415           |                   | DHAA-G-H2-20-B13G-50   |                     |  |

1) Corrosion resistance class CRC 2 to Festo standard FN 940070

Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

## Accessories

### Gripper jaw blank BUB-HGDD

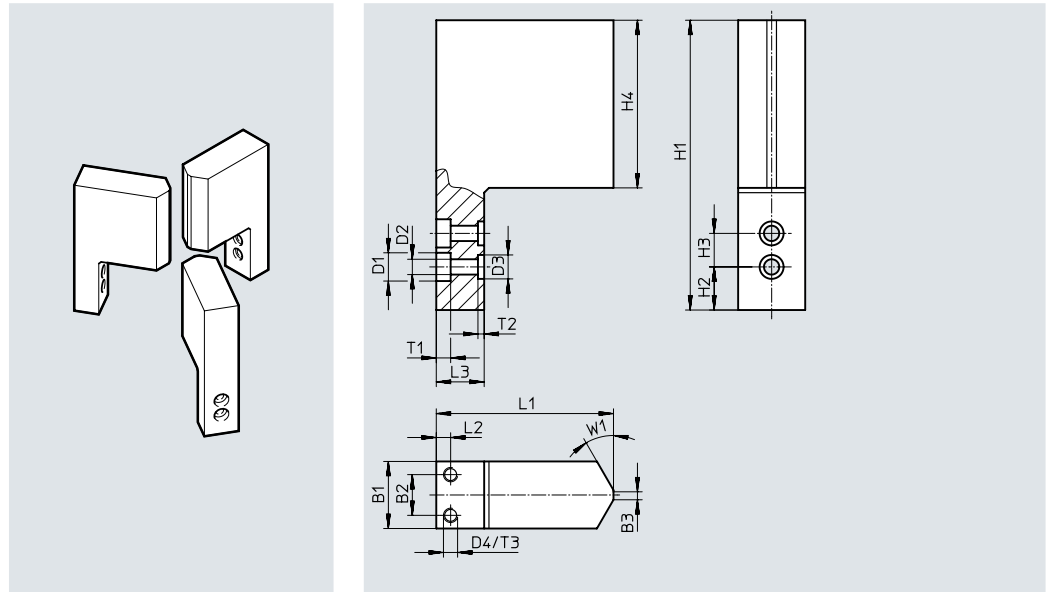
(3 included in the scope of delivery)

Material:

Wrought aluminium alloy

Free of copper and PTFE

RoHS-compliant



#### Dimensions and ordering data

| For size | B1    | B2  | B3 | D1       | D2       | D3      | D4 |
|----------|-------|-----|----|----------|----------|---------|----|
| [mm]     | ±0.05 |     |    | ∅<br>H13 | ∅<br>H13 | ∅<br>H8 |    |
| 35       | 14    | 8.5 | 2  | 5.9      | 3.2      | 5       | M3 |
| 40       | 20    | 14  | 2  | 7.4      | 4.3      | 7       | M3 |
| 50       | 29    | 23  | 2  | 10.4     | 6.4      | 9       | M3 |
| 63       | 32    | 26  | 2  | 10.4     | 6.4      | 9       | M3 |
| 80       | 35    | 26  | 2  | 10.4     | 6.4      | 9       | M3 |

| For size | H1    | H2    | H3 <sup>1)</sup> | H4  | L1    | L2 | L3 |
|----------|-------|-------|------------------|-----|-------|----|----|
| [mm]     | ±0.05 | ±0.02 |                  |     | ±0.05 |    |    |
| 35       | 60.5  | 9     | 7                | 35  | 37    | 3  | 10 |
| 40       | 77    | 7     | 10               | 50  | 45    | 5  | 10 |
| 50       | 96    | 11    | 12               | 60  | 55    | 6  | 12 |
| 63       | 121   | 13.5  | 15               | 75  | 64    | 6  | 12 |
| 80       | 153.5 | 15.5  | 18               | 100 | 79.4  | 10 | 15 |

| For size | T1                  | T2   | T3 | W1  | Weight per blank [g] | Part no. | Type        |
|----------|---------------------|------|----|-----|----------------------|----------|-------------|
| [mm]     |                     | +0.1 |    |     |                      |          |             |
| 35       | 3 <sup>+0.2</sup>   | 1.3  | 5  | 30° | 57                   | 1180955  | BUB-HGDD-35 |
| 40       | 4 <sup>+0.2</sup>   | 1.6  | 5  | 30° | 131                  | 1180956  | BUB-HGDD-40 |
| 50       | 6.1 <sup>+0.1</sup> | 2.1  | 5  | 30° | 276                  | 1180957  | BUB-HGDD-50 |
| 63       | 6.1 <sup>+0.1</sup> | 2.1  | 5  | 30° | 440                  | 1180958  | BUB-HGDD-63 |
| 80       | 6.1 <sup>+0.1</sup> | 2.1  | 5  | 30° | 793                  | 1180959  | BUB-HGDD-80 |

1) ±0.02 and ±0.01 apply to the centring hole D3  
±0.1 applies to the through-holes D1 and D2



## Accessories

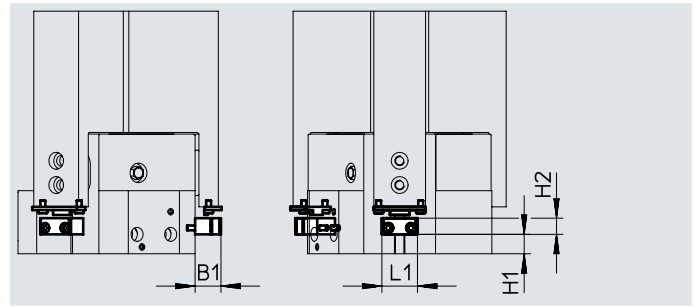
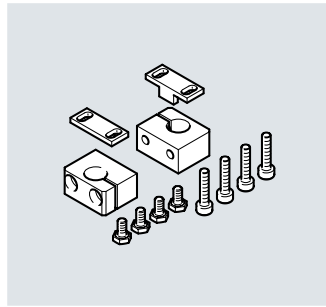
### Sensor bracket DASI

(1 included in the scope of delivery)

Material:

Wrought aluminium alloy

RoHS-compliant



| Dimensions and ordering data |    |     |      |    |    |        |          |                |
|------------------------------|----|-----|------|----|----|--------|----------|----------------|
| For size                     | B1 | H1  |      | H2 | L1 | Weight | Part no. | Type           |
| [mm]                         |    |     | -G   |    |    | [g]    |          |                |
| 35                           | 13 | 3   | 13   | 8  | 21 | 20     | 1435236  | DASI-B13-35-S3 |
| 40                           | 16 | 6   | 23.5 | 10 | 20 | 27     | 1435232  | DASI-B13-40-S8 |
| 50                           | 16 | 8.5 | 33.5 | 10 | 20 | 30     | 1435233  | DASI-B13-50-S8 |
| 63                           | 16 | 10  | 36   | 10 | 22 | 35     | 1435234  | DASI-B13-63-S8 |
| 80                           | 22 | 10  | 47   | 15 | 22 | 45     | 1435235  | DASI-B13-80-S8 |

| Ordering data  |               |   |            |          |         |                  |
|--|---------------|---|------------|----------|---------|------------------|
|  | For size [mm] | Comment   | Weight [g] | Part no. | Type    | PU <sup>1)</sup> |
| Centring sleeve ZBH <span style="float: right;">Data sheets → Internet: zbh</span>       |               |   |            |          |         |                  |
|  | 35            | For centring the gripper jaw blanks/gripper fingers on the gripper jaws | 1          | 8146543  | ZBH-5-B | 10               |
|  | 40            |   | 1          | 8146544  | ZBH-7-B |                  |
|  | 50, 63, 80    |   | 1          | 8137184  | ZBH-9-B |                  |
| Blanking plug B <span style="float: right;">Data sheets → Internet: blanking plug</span> |               |   |            |          |         |                  |
|  | 35, 40        | For sealing the compressed air supply ports                             | 1          | 174308   | B-M5-B  | 10               |
|  | 50, 63, 80    |   | 5          | 3568     | B-1/8   |                  |

1) Packaging unit

| Ordering data – Proximity sensor for T-slot, magneto-resistive <span style="float: right;">Data sheets → Internet: smt</span> |                                 |   |                  |                  |          |                          |
|---|---------------------------------|---|------------------|------------------|----------|--------------------------|
|   | Type of mounting                | Electrical connection, outlet direction of connection | Switching output | Cable length [m] | Part no. | Type                     |
| <b>N/O contact</b>  |                                 |   |                  |                  |          |                          |
|   | Inserted in the slot lengthwise | Cable, 3-wire, lateral                                | PNP              | 2.5              | 547859   | SMT-8G-PS-24V-E-2.5Q-OE  |
|   |                                 | Plug M8x1, 3-pin, lateral                             |                  | 0.3              | 547860   | SMT-8G-PS-24V-E-0.3Q-M8D |
|   |                                 | Cable, 3-wire, lateral                                | NPN              | 2.5              | 8065028  | SMT-8G-NS-24V-E-2.5Q-OE  |
|   |                                 | Plug M8x1, 3-pin, lateral                             |                  | 0.3              | 8065027  | SMT-8G-NS-24V-E-0.3Q-M8D |


| Ordering data – Connecting cables <span style="float: right;">Data sheets → Internet: nebu</span> |                              |                              |                  |          |                     |  |
|---|------------------------------|------------------------------|------------------|----------|---------------------|--|
|   | Electrical connection, left  | Electrical connection, right | Cable length [m] | Part no. | Type                |  |
|   | 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   |  |

Accessories

Proximity sensor for size 35

Ordering data – Proximity sensor 3 mm (round design), inductive

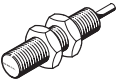
Data sheets → Internet: [sieh](#)

|  | Electrical connection | LED | Switching output | Cable length [m] | Part no. | Type           |
|--|-----------------------|-----|------------------|------------------|----------|----------------|
| <b>N/O contact</b>   |                       |     |                  |                  |          |                |
|  | Cable, 3-wire         | ■   | PNP              | 2.5              | 538264   | SIEH-3B-PS-K-L |
|  | Plug M8x1, 3-pin      | ■   |                  | –                | 538263   | SIEH-3B-PS-S-L |

Proximity sensor for size 40 ... 80



Ordering data – Proximity sensor M8 (round design), inductive

Data sheets → Internet: [sien](#)

|  | Electrical connection | LED | Switching output | Cable length [m] | Part no. | Type            |
|--|-----------------------|-----|------------------|------------------|----------|-----------------|
| <b>N/O contact</b>   |                       |     |                  |                  |          |                 |
|  | Cable, 3-wire         | ■   | PNP              | 2.5              | 150386   | SIEN-M8B-PS-K-L |
|  | Plug M8x1, 3-pin      | ■   |                  | –                | 150387   | SIEN-M8B-PS-S-L |

Ordering data – Connecting cables

Data sheets → 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              | 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   |

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