

## Parallel grippers HGP

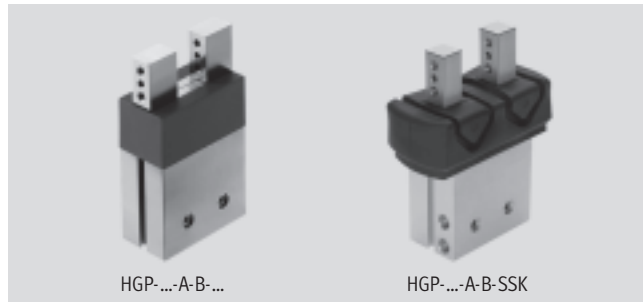
**FESTO**



# Parallel grippers HGP

Key features

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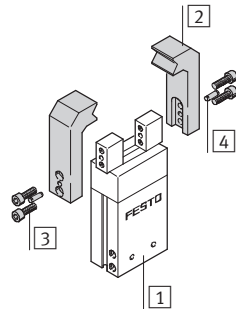
## At a glance

- Double-acting piston drive
- Self-centring
- Variable gripping action:
  - External/internal gripping
- Versatility thanks to externally adaptable gripper fingers
- Wide range of options for mounting on drive units
- High gripping force and compact size
- Max. repetition accuracy
- Gripping force retention
- Internal fixed flow control
- With protective dust cap for use in dusty environments (protection class IP54)
- Sensor technology:
  - Adaptable proximity sensors on the small grippers
  - Integral proximity sensors for medium and large grippers

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

## Mounting options for external gripper fingers (customer-specific)

- 1 Parallel gripper
- 2 External gripper fingers
- 3 Mounting screws
- 4 Centring pins



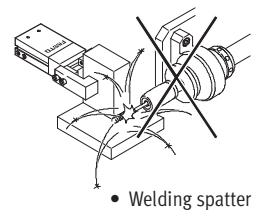
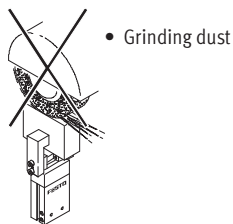
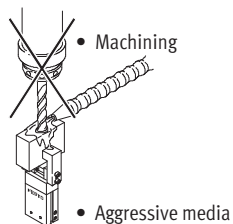
## With protective dust cap

The sizes 16 and 25 can be adapted for use in dusty environments. They fulfil the requirements for protection class IP54.

The technical data corresponds to the data for parallel gripper HGP without protective dust cap.



Note  
Grippers should always be used with exhaust air flow control. They are not suitable for the following, or for similar applications:



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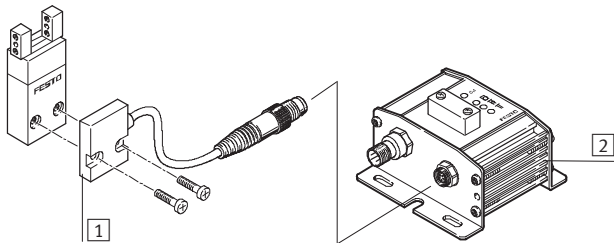
Peripherals overview and type codes

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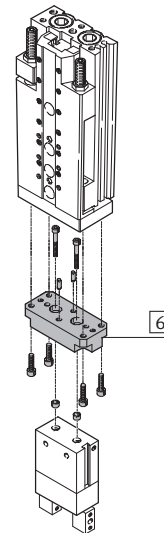
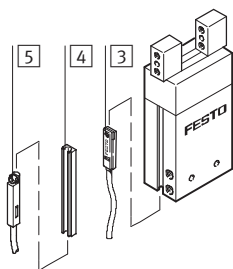
## Peripherals overview

HGP-06

## System product for handling and assembly technology



HGP-10 ... 35



| Accessories |                             |                                                                               |                 |
|-------------|-----------------------------|-------------------------------------------------------------------------------|-----------------|
| Type        | Brief description           |                                                                               | → Page/Internet |
| 1           | Position sensor SMH-S1      | Adaptable and integratable sensor technology, for sensing the piston position | 13              |
| 2           | Evaluation unit SMH-AE1     | For position sensor SMH-S1                                                    | 13              |
| 3           | Proximity sensor SME/SMT-8  | For sensing the piston position                                               | 14              |
| 4           | Bondable sensor rail HGP-SL | Allows the use of proximity sensors SME/SMT-10                                | 13              |
| 5           | Proximity sensor SME/SMT-10 | For sensing the piston position                                               | 15              |
| 6           | –                           | Drive/gripper connections                                                     | adapter kit     |

## Type codes

|                                 |                       |     |   |    |   |   |   |   |   |    |   |     |
|---------------------------------|-----------------------|-----|---|----|---|---|---|---|---|----|---|-----|
|                                 |                       | HGP | – | 16 | – | A | – | B | – | G1 | – | SSK |
| <b>Type</b>                     |                       |     |   |    |   |   |   |   |   |    |   |     |
| HGP                             | Parallel gripper      |     |   |    |   |   |   |   |   |    |   |     |
| <b>Size</b>                     |                       |     |   |    |   |   |   |   |   |    |   |     |
| <b>Position sensing</b>         |                       |     |   |    |   |   |   |   |   |    |   |     |
| A                               | For proximity sensing |     |   |    |   |   |   |   |   |    |   |     |
| <b>Generation</b>               |                       |     |   |    |   |   |   |   |   |    |   |     |
| B                               | B series              |     |   |    |   |   |   |   |   |    |   |     |
| <b>Gripping force retention</b> |                       |     |   |    |   |   |   |   |   |    |   |     |
| G1                              | Opening               |     |   |    |   |   |   |   |   |    |   |     |
| G2                              | Closing               |     |   |    |   |   |   |   |   |    |   |     |
| <b>Protective dust cap</b>      |                       |     |   |    |   |   |   |   |   |    |   |     |
| SSK                             | Protective dust cap   |     |   |    |   |   |   |   |   |    |   |     |

# Parallel grippers HGP

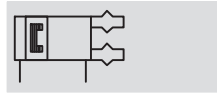
Technical data

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## Function

Double-acting

HGP-06-A, HGP-...-A-B



Size  
6 ... 35 mm

Stroke  
4 ... 25 mm

## Variants

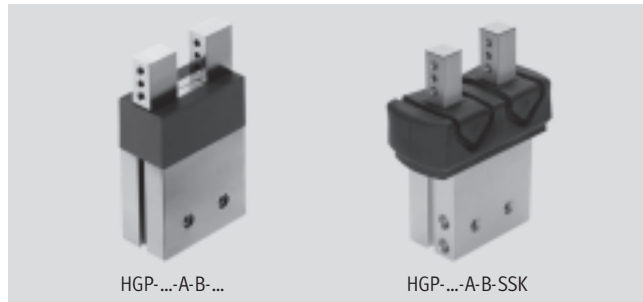
- With gripping force retention...  
... opening HGP-...-G1  
... closing HGP-...-G2
- With protective dust cap



www.festo.com

Wearing parts kits

→ 12



| General technical data                                      |                                        |                                       |     |     |     |      |      |
|-------------------------------------------------------------|----------------------------------------|---------------------------------------|-----|-----|-----|------|------|
| Size                                                        | 6                                      | 10                                    | 16  | 20  | 25  | 35   |      |
| Design                                                      | Wedge-shaped                           | Lever mechanism                       |     |     |     |      |      |
| Mode of operation                                           | Double-acting                          |                                       |     |     |     |      |      |
| Gripper function                                            | Parallel                               |                                       |     |     |     |      |      |
| Number of gripper jaws                                      | 2                                      |                                       |     |     |     |      |      |
| Max. weight force per external gripper finger <sup>1)</sup> | [N]                                    | 0.1                                   | 0.2 | 0.4 | 0.6 | 0.8  | 1.2  |
| Stroke per gripper jaw                                      | [mm]                                   | 2                                     | 3   | 5   | 6.5 | 7.5  | 12.5 |
| Pneumatic connection                                        | M3                                     |                                       |     | M5  |     | G1/8 |      |
| Repetition accuracy <sup>2)</sup>                           | [mm]                                   | ≤ 0.04                                |     |     |     |      |      |
| Max. interchangeability                                     | [mm]                                   | 0.2                                   |     |     |     |      |      |
| Max. operating frequency                                    | [Hz]                                   | 4                                     |     |     |     |      |      |
| Position sensing                                            | For proximity sensing                  |                                       |     |     |     |      |      |
| Type of mounting                                            | With female thread and centring sleeve |                                       |     |     |     |      |      |
|                                                             | –                                      | Via through-holes and centring sleeve |     |     |     |      |      |

1) Valid for unthrottled operation

2) End position drift under constant conditions of use with 100 consecutive strokes in the direction of movement of the gripper jaws

Note: This product conforms to ISO 1179-1 and to ISO 228-1

| Operating and environmental conditions       |              |       |                                                     |    |    |    |    |    |
|----------------------------------------------|--------------|-------|-----------------------------------------------------|----|----|----|----|----|
| Size                                         |              |       | 6                                                   | 10 | 16 | 20 | 25 | 35 |
| Min. operating pressure                      | HGP-...-A/-B | [bar] | 2                                                   |    |    |    |    |    |
|                                              | HGP-...-G... | [bar] | 5                                                   |    |    |    |    |    |
| Max. operating pressure                      |              | [bar] | 8                                                   |    |    |    |    |    |
| Operating medium                             |              |       | Filtered compressed air, lubricated or unlubricated |    |    |    |    |    |
| Ambient temperature                          |              | [°C]  | +5 ... +60                                          |    |    |    |    |    |
| Corrosion resistance class CRC <sup>1)</sup> |              |       | 2                                                   |    | 1  |    |    |    |

1) Corrosion resistance class 1 according to Festo standard 940 070

Components requiring low corrosion resistance. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

Corrosion resistance class 2 according to Festo standard 940 070

Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents

| Weights [g]              |    |    |     |     |     |       |
|--------------------------|----|----|-----|-----|-----|-------|
| Size                     | 6  | 10 | 16  | 20  | 25  | 35    |
| HGP-...-A                | 18 | 75 | 194 | 396 | 725 | 1 369 |
| HGP-...-G1               | –  | 76 | 197 | 402 | 737 | 1 387 |
| HGP-...-G2               | –  | 76 | 197 | 402 | 737 | 1 387 |
| With protective dust cap |    |    |     |     |     |       |
| HGP-...-SSK              | –  | –  | 197 | –   | 737 | –     |

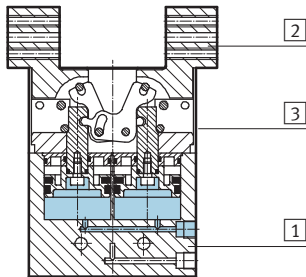
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Technical data

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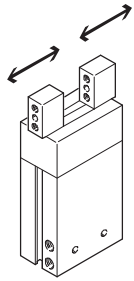
## Materials

Sectional view



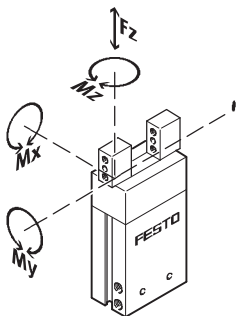
| Parallel gripper          | 6                              | 10                      | 16                        | 20 | 25                        | 35 |
|---------------------------|--------------------------------|-------------------------|---------------------------|----|---------------------------|----|
| 1 Body                    | Nickel-plated aluminium        | Hard anodised aluminium |                           |    |                           |    |
| 2 Gripper jaw             | Nickel-plated steel            | High-alloy steel        |                           |    |                           |    |
| 3 Cover cap               | Polyamide                      |                         |                           |    |                           |    |
| – Protective dust cap SSK | –                              |                         | Thermoplastic vulcanizate | –  | Thermoplastic vulcanizate | –  |
| – Note on materials       | Copper, PTFE and silicone-free |                         |                           |    |                           |    |
|                           | Conforms to RoHS               |                         |                           |    |                           |    |

## Gripping force [N] at 6 bar



| Size                           | 6  | 10 | 16  | 20  | 25  | 35  |
|--------------------------------|----|----|-----|-----|-----|-----|
| Gripping force per gripper jaw |    |    |     |     |     |     |
| Opening                        | 10 | 22 | 70  | 120 | 185 | 375 |
| Closing                        | 10 | 17 | 80  | 115 | 170 | 350 |
| Total gripping force           |    |    |     |     |     |     |
| Opening                        | 20 | 44 | 140 | 240 | 370 | 750 |
| Closing                        | 20 | 34 | 160 | 230 | 340 | 700 |

## Characteristic load values per gripper jaw



The indicated permissible forces and torques apply to a single gripper jaw. The indicated values include the lever arm, additional applied loads caused

by the workpiece or external gripper fingers, as well as forces which occur during movement.

The zero co-ordinate line (gripper jaw guide) must be taken into consideration for the calculation of torques.

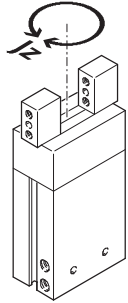
| Size                               | 6   | 10  | 16  | 20  | 25  | 35  |
|------------------------------------|-----|-----|-----|-----|-----|-----|
| Max. permissible force $F_z$ [N]   | 14  | 25  | 90  | 150 | 240 | 380 |
| Max. permissible torque $M_x$ [Nm] | 0.1 | 0.5 | 3.3 | 6   | 11  | 25  |
| Max. permissible torque $M_y$ [Nm] | 0.1 | 0.5 | 3.3 | 6   | 11  | 25  |
| Max. permissible torque $M_z$ [Nm] | 0.1 | 0.5 | 3.3 | 6   | 11  | 25  |

# Parallel grippers HGP

Technical data

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## Mass moment of inertia [kgm<sup>2</sup>x10<sup>-4</sup>]



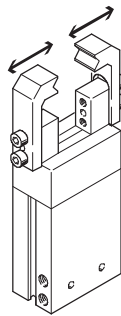
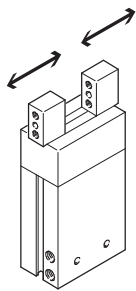
Mass moment of inertia [kgm<sup>2</sup>x10<sup>-4</sup>]  
for parallel grippers in relation to the  
central axis, without external gripper  
fingers, without load.

| Size       | 6    | 10   | 16   | 20   | 25   | 35    |
|------------|------|------|------|------|------|-------|
| HGP-...-A  | 0.01 | 0.08 | 0.47 | 1.49 | 3.83 | 12.70 |
| HGP-...-G1 | –    | 0.08 | 0.47 | 1.52 | 3.92 | 12.83 |
| HGP-...-G2 | –    | 0.08 | 0.47 | 1.49 | 3.84 | 12.73 |

## Opening and closing times [ms] at 6 bar

without external gripper fingers

with external gripper fingers



The indicated opening and closing  
times [ms] have been measured at  
room temperature and 6 bar operating  
pressure without external gripper  
fingers.

The grippers must be throttled for  
greater applied loads. Opening and  
closing times must then be adjusted  
accordingly.

| Size                                                          |         | 6  | 10  | 16  | 20  | 25  | 35  |
|---------------------------------------------------------------|---------|----|-----|-----|-----|-----|-----|
| Without external gripper fingers                              |         |    |     |     |     |     |     |
| HGP-...-A                                                     | Opening | 5  | 22  | 44  | 32  | 47  | 77  |
|                                                               | Closing | 5  | 31  | 60  | 44  | 50  | 77  |
| HGP-...-G1                                                    | Opening | –  | 17  | 39  | 30  | 39  | 71  |
|                                                               | Closing | –  | 29  | 62  | 48  | 60  | 82  |
| HGP-...-G2                                                    | Opening | –  | 33  | 66  | 39  | 62  | 90  |
|                                                               | Closing | –  | 29  | 44  | 42  | 49  | 72  |
| With external gripper fingers (as a function of weight force) |         |    |     |     |     |     |     |
| HGP                                                           | 0.06 N  | 5  | –   | –   | –   | –   | –   |
|                                                               | 0.08 N  | 10 | –   | –   | –   | –   | –   |
|                                                               | 0.10 N  | 20 | –   | –   | –   | –   | –   |
|                                                               | 0.20 N  | 50 | –   | –   | –   | –   | –   |
|                                                               | 0.50 N  | –  | 100 | –   | –   | –   | –   |
|                                                               | 1.00 N  | –  | 200 | 100 | –   | –   | –   |
|                                                               | 1.25 N  | –  | –   | –   | 100 | –   | –   |
|                                                               | 1.50 N  | –  | 300 | 200 | –   | 100 | –   |
|                                                               | 1.75 N  | –  | –   | –   | 200 | –   | –   |
|                                                               | 2.00 N  | –  | –   | 300 | –   | 200 | 100 |
|                                                               | 2.50 N  | –  | –   | –   | 300 | –   | –   |
|                                                               | 3.00 N  | –  | –   | –   | –   | 300 | 200 |
|                                                               | 4.00 N  | –  | –   | –   | –   | –   | 300 |

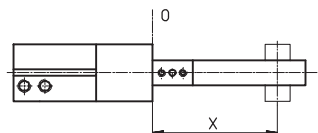
# Parallel grippers HGP

Technical data

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## Gripping force $F_{Grip}$ per gripper jaw as a function of operating pressure and lever arm $x$

External and internal gripping (closing and opening)

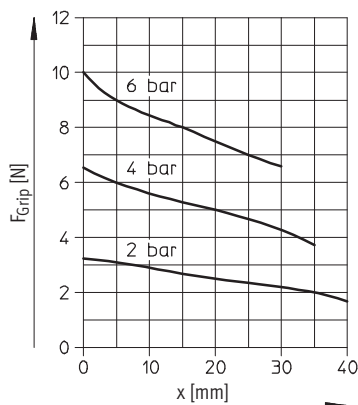


Gripping forces can be determined with the following diagrams for the various sizes in relation to operating

pressure and lever arm (distance from the zero co-ordinate line shown

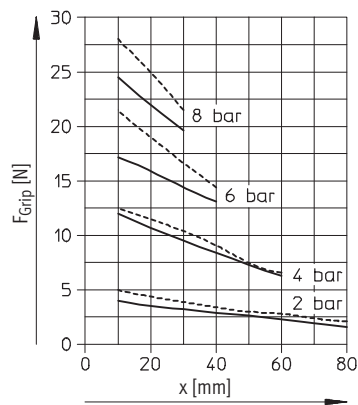
opposite to the pressure point at which the fingers grip the workpiece).

### HGP-06-A<sup>1)</sup>

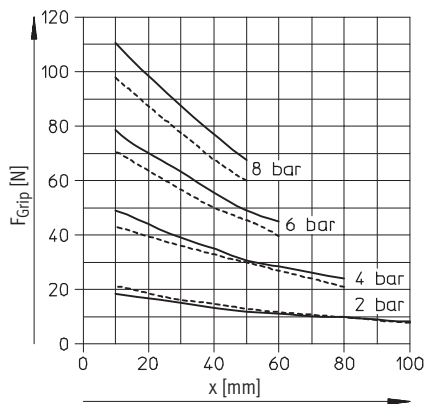


1) Due to the design, the opening and closing gripping forces for HGP-06-A are identical

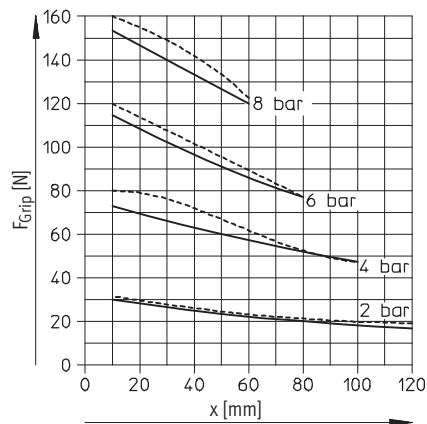
### HGP-10-A-B



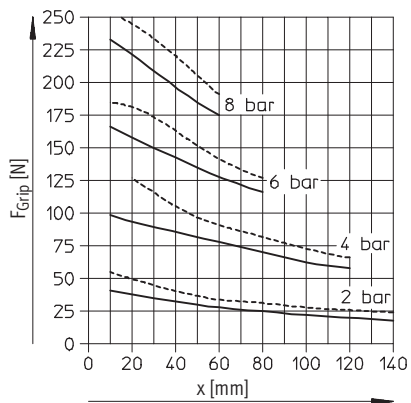
### HGP-16-A-B



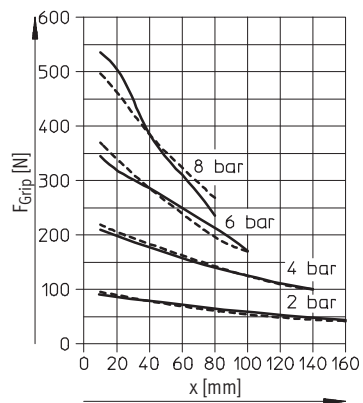
### HGP-20-A-B



### HGP-25-A-B



### HGP-35-A-B



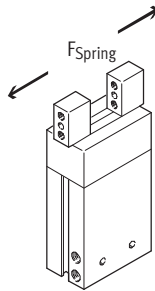
— Closing  
- - - Opening

# Parallel grippers HGP

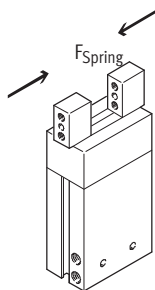
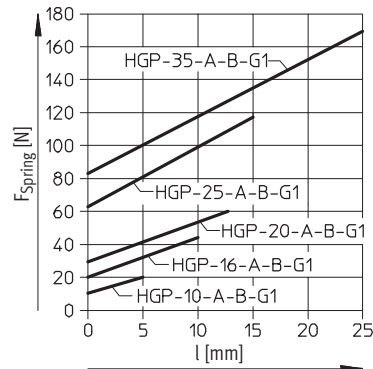
Technical data

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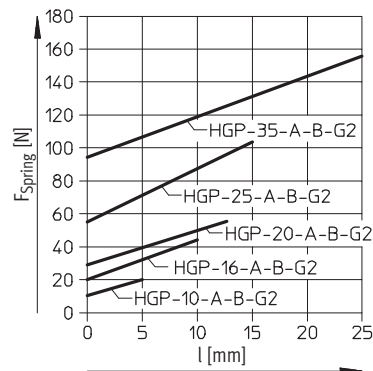
## Spring force $F_{\text{Spring}}$ as a function of the gripper size and overall stroke length $l$



Gripper retention force, opening:  
the spring forces  $F_{\text{Spring}}$  of the parallel gripper HGP-...-G1 can be determined from the following graphs.



Gripper retention force, closing:  
the spring forces  $F_{\text{Spring}}$  of the parallel gripper HGP-...-G2 can be determined from the following graphs.



## Determination of actual gripping forces for parallel grippers HGP-...-G1 and HGP-...-G2 depending upon the application

The parallel grippers with integrated spring can be used as:

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

In order to calculate available gripping forces  $F_{\text{Gr}}$  (per gripper jaw), the gripping force  $F_{\text{Grip}}$  and spring

force ( $F_{\text{Spring}}$ ) must be combined accordingly.

| Application                                                                                                                                                                                                                                                                         |         | Single-acting                                                                                                                                          | Supplementary gripping force                                                                                                                                      | Gripping force retention                                                                                                           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| The resulting gripping force $F_{\text{Gr}}$ , conditional on the application, depends on the gripping action (external/internal gripping) and the gripper design (with/without spring return). The spring force is supplemented in accordance with the design and gripping action. | Opening | <ul style="list-style-type: none"> <li>• Gripping with spring force:<br/><math>F_{\text{Gr}} = F_{\text{Spring}}</math></li> </ul>                     | <ul style="list-style-type: none"> <li>• Gripping with pressure and spring force:<br/><math>F_{\text{Gr}} = F_{\text{Grip}} + F_{\text{Spring}}</math></li> </ul> | <ul style="list-style-type: none"> <li>• Gripping with spring force:<br/><math>F_{\text{Gr}} = F_{\text{Spring}}</math></li> </ul> |
|                                                                                                                                                                                                                                                                                     | Closing | <ul style="list-style-type: none"> <li>• Gripping with pressure force:<br/><math>F_{\text{Gr}} = F_{\text{Grip}} - F_{\text{Spring}}</math></li> </ul> |                                                                                                                                                                   |                                                                                                                                    |
| HGP-...-G1                                                                                                                                                                                                                                                                          | Opening | $F_{\text{Gr}} = F_{\text{Grip}} + F_{\text{Spring}}$                                                                                                  |                                                                                                                                                                   | $F_{\text{Gr}} = F_{\text{Spring}}$                                                                                                |
|                                                                                                                                                                                                                                                                                     | Closing | $F_{\text{Gr}} = F_{\text{Grip}} - F_{\text{Spring}}$                                                                                                  |                                                                                                                                                                   | $F_{\text{Gr}} = 0$                                                                                                                |
| HGP-...-G2                                                                                                                                                                                                                                                                          | Opening | $F_{\text{Gr}} = F_{\text{Grip}} - F_{\text{Spring}}$                                                                                                  |                                                                                                                                                                   | $F_{\text{Gr}} = 0$                                                                                                                |
|                                                                                                                                                                                                                                                                                     | Closing | $F_{\text{Gr}} = F_{\text{Grip}} + F_{\text{Spring}}$                                                                                                  |                                                                                                                                                                   | $F_{\text{Gr}} = F_{\text{Spring}}$                                                                                                |

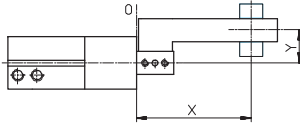
# Parallel grippers HGP

Technical data

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## Gripping force $F_{Grip}$ per gripper jaw at 6 bar as a function of lever arm $x$ and eccentricity $y$

External and internal gripping (closing and opening)



Gripping forces can be determined with the following diagrams for the various sizes at 6 bar in relation to

eccentric application of force (distance from the zero co-ordinate line shown opposite to the pressure point at

which the fingers grip the workpiece) and the maximum permissible off-centre point at which force is applied.

### Calculation example

Given:

HGP-16-A-B

Lever arm  $x = 20$  mm

Eccentricity  $y = 22$  mm

To be found:

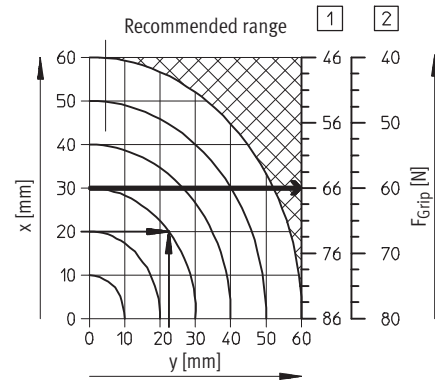
Gripping force at 6 bar

Procedure:

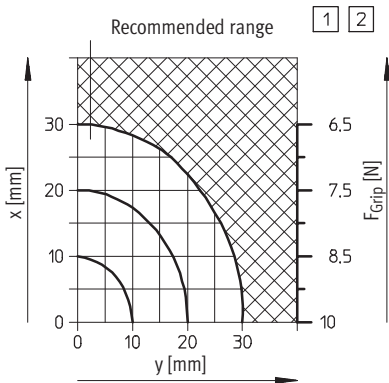
- Determine the intersection  $xy$  between lever arm  $x$  and eccentricity  $y$  in the graph for HGP-16-A-B
- Draw an arc (with centre at origin) through intersection  $xy$
- Determine the intersection between the arc and the  $X$  axis
- Read the gripping force

Result:

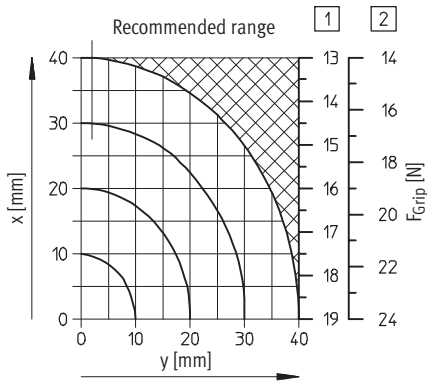
Gripping force = approx. 66 N



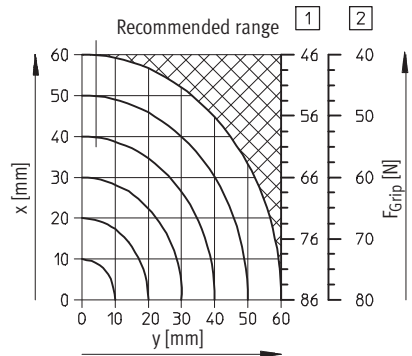
### HGP-06-A



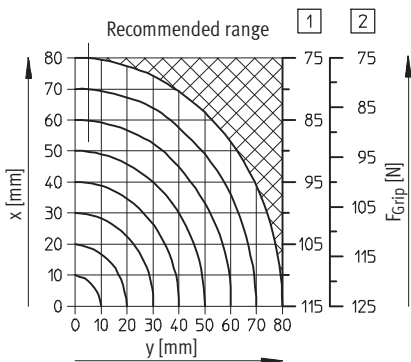
### HGP-10-A-B



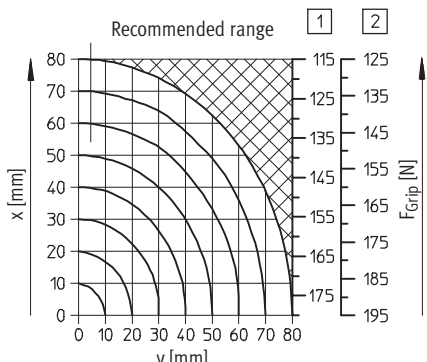
### HGP-16-A-B



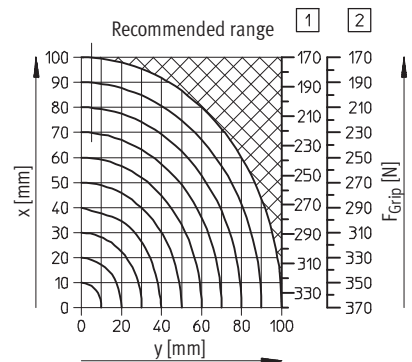
### HGP-20-A



### HGP-25-A-B



### HGP-35-A-B



- 1 Closing  
2 Opening

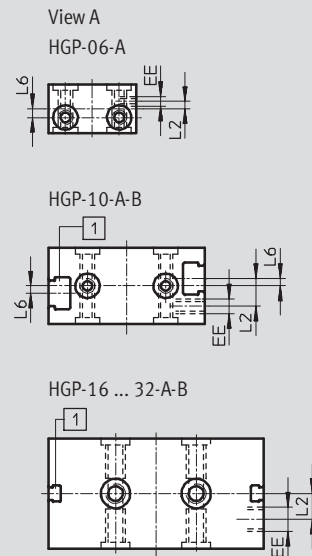
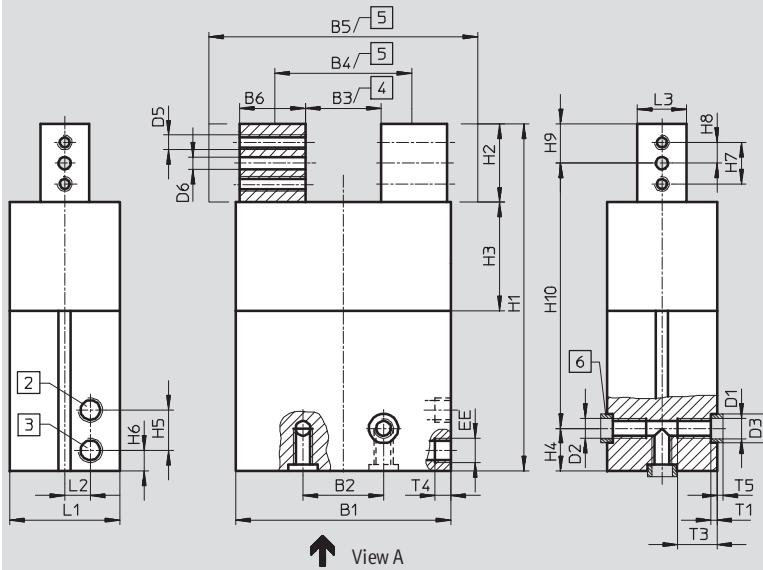
# Parallel grippers HGP

Technical data

FESTO

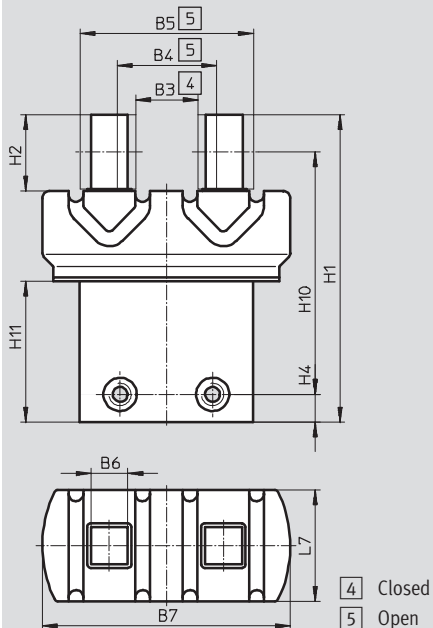
## Dimensions

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



- |                                                                                                                                                                                                   |                                                                                                                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1 Sensor slot for proximity sensor SME/SMT-8 (not with HGP-06-A). Proximity sensors SME/SMT-10 can also be used in combination with the sensor strip HGP-SL-... (can be glued into place).</p> | <p>2 Compressed air connection, opening</p> <p>3 Compressed air connection, closing</p> <p>4 Closed</p> <p>5 Open</p> <p>6 Centring sleeves ZBH (2 included in scope of delivery)</p> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## With protective dust cap HGP-...-SSK



- |                               |
|-------------------------------|
| <p>4 Closed</p> <p>5 Open</p> |
|-------------------------------|

# Parallel grippers HGP

Technical data

FESTO

| Type                     | B1   | B2 <sup>1)</sup> | B3   | B4   | B5   | B6    | B7   | D1<br>Ø | D2 | D3<br>Ø<br>H8/h7 | D5 | D6<br>Ø<br>H8 | EE              | H1    | H2   | H3   | H4 <sup>2)</sup> |
|--------------------------|------|------------------|------|------|------|-------|------|---------|----|------------------|----|---------------|-----------------|-------|------|------|------------------|
|                          |      | ±0.1             | ±0.5 | ±0.5 | ±0.5 | -0.03 | ±0.5 |         |    |                  |    |               |                 |       |      |      | ±0.1             |
| HGP-06-A                 | 18   | 11               | 6    | 10   | 21   | 5.5   | -    | 3.2     | M3 | 5                | M2 | 1.5           | M3              | 45.5  | 9.9  | 10.2 | 7.5              |
| HGP-10-A-B               | 32   | 16               | 15.8 | 21.8 | 35.8 | 7     | -    | 3.2     | M3 | 5                | M3 | 2             | M3              | 66    | 15   | 16   | 7.5              |
| HGP-16-A-B               | 47   | 25               | 17.8 | 27.8 | 53.8 | 13    | -    | 5.3     | M4 | 7                | M4 | 3             | M3              | 80    | 20   | 21.9 | 7.5              |
| HGP-20-A-B               | 55.6 | 25               | 17.4 | 30.4 | 65.4 | 17.5  | -    | 5.3     | M4 | 7                | M4 | 4             | M5              | 101   | 24.9 | 26.1 | 7.5              |
| HGP-25-A-B               | 68.2 | 29               | 21   | 36   | 80   | 22    | -    | 6.4     | M6 | 9                | M5 | 4             | G $\frac{1}{8}$ | 121   | 30   | 32.2 | 17.5             |
| HGP-35-A-B               | 88   | 33               | 31   | 56   | 110  | 27    | -    | 8.4     | M8 | 12               | M6 | 5             | G $\frac{1}{8}$ | 142   | 31.9 | 44.8 | 17.5             |
| With protective dust cap |      |                  |      |      |      |       |      |         |    |                  |    |               |                 |       |      |      |                  |
| HGP-16-A-B-SSK           | 47   | 25               | 16.4 | 26.4 | 46.4 | 10    | 67   | 5.3     | M4 | 7                | M4 | 3             | M3              | 83    | 20.5 | 21.9 | 7.5              |
| HGP-25-A-B-SSK           | 68.2 | 29               | 21   | 36   | 66   | 15    | 101  | 6.4     | M6 | 9                | M5 | 4             | G $\frac{1}{8}$ | 126.8 | 31.5 | 32.2 | 17.5             |

| Type                     | H5   | H6   | H7  | H8  | H9   | H10   | H11  | L1   | L2   | L3    | L6  | L7 | T1   | T3  | T4   | T5   |
|--------------------------|------|------|-----|-----|------|-------|------|------|------|-------|-----|----|------|-----|------|------|
|                          |      |      |     |     |      | ±0.2  |      |      |      | -0.03 |     |    | +0.1 | +1  | +0.5 | -0.3 |
| HGP-06-A                 | 7    | 4    | 5.8 | 2.9 | 5    | 33    | -    | 10   | 1.5  | 5     | 1.8 | -  | 1.2  | -   | 3.5  | 1.2  |
| HGP-10-A-B               | 7    | 4    | 8   | 4   | 7.5  | 51    | -    | 15.5 | 4.2  | 7     | 1.5 | -  | 1.2  | 6   | 3.5  | 1.2  |
| HGP-16-A-B               | 7    | 4    | 11  | 5.5 | 10   | 62.5  | -    | 22   | 5.7  | 10    | -   | -  | 1.6  | 7.5 | 3.5  | 1.4  |
| HGP-20-A-B               | 10.5 | 11.5 | 14  | 7   | 12.5 | 81    | -    | 30   | 9    | 12    | -   | -  | 1.6  | 8   | 6    | 1.4  |
| HGP-25-A-B               | 16.5 | 8.3  | 16  | 8   | 15   | 88.5  | -    | 37   | 10.5 | 15    | -   | -  | 2.1  | 15  | 6.5  | 1.9  |
| HGP-35-A-B               | 16.5 | 8.5  | 17  | 8.5 | 16   | 108.5 | -    | 45   | 10.5 | 20    | -   | -  | 2.6  | 16  | 6.5  | 2.4  |
| With protective dust cap |      |      |     |     |      |       |      |      |      |       |     |    |      |     |      |      |
| HGP-16-A-B-SSK           | 7    | 4    | 11  | 5.5 | 10   | 65.5  | 38.1 | 22   | 5.7  | 10    | -   | 30 | 1.6  | 7.5 | 3.5  | 1.4  |
| HGP-25-A-B-SSK           | 16.5 | 8.3  | 16  | 8   | 15   | 94.3  | 58.8 | 37   | 10.5 | 15    | -   | 47 | 2.1  | 15  | 6.5  | 1.9  |

1) Tolerance for centring hole: ±0.02

2) Tolerance for centring hole: -0.05

-  Note: This product conforms to ISO 1179-1 and to ISO 228-1



Note

Due to the distance H5 between the two air connections on types HGP-06/-10/-16 which measures 7 mm, only the following tube fittings can be used

- QSM-M3-3
- QSML-M3-3
- QSMLL-M3-3
- CN-M3-PK-3
- LCN-M3-PK-3

→ Internet: fitting

# Parallel grippers HGP

Technical data

**FESTO**

| Ordering data            |                            |                |                            |               |                            |               |
|--------------------------|----------------------------|----------------|----------------------------|---------------|----------------------------|---------------|
| Size                     | Double-acting              |                | Gripper retention force G1 |               | Gripper retention force G2 |               |
|                          | Without compression spring |                | Opening                    |               | Closing                    |               |
| [mm]                     | Part No.                   | Type           | Part No.                   | Type          | Part No.                   | Type          |
| 6                        | 174 815                    | HGP-06-A       | –                          |               | –                          |               |
| 10                       | 197 542                    | HGP-10-A-B     | 197 543                    | HGP-10-A-B-G1 | 197 544                    | HGP-10-A-B-G2 |
| 16                       | 197 545                    | HGP-16-A-B     | 197 546                    | HGP-16-A-B-G1 | 197 547                    | HGP-16-A-B-G2 |
| 20                       | 525 889                    | HGP-20-A-B     | 525 890                    | HGP-20-A-B-G1 | 525 891                    | HGP-20-A-B-G2 |
| 25                       | 197 548                    | HGP-25-A-B     | 197 549                    | HGP-25-A-B-G1 | 197 550                    | HGP-25-A-B-G2 |
| 35                       | 197 551                    | HGP-35-A-B     | 197 552                    | HGP-35-A-B-G1 | 197 553                    | HGP-35-A-B-G2 |
|                          |                            |                |                            |               |                            |               |
| With protective dust cap |                            |                |                            |               |                            |               |
| 16                       | 539 636                    | HGP-16-A-B-SSK | –                          |               | –                          |               |
| 25                       | 539 635                    | HGP-25-A-B-SSK | –                          |               | –                          |               |

| Ordering data – Wearing parts kits |          |          |
|------------------------------------|----------|----------|
| Size<br>[mm]                       |          |          |
|                                    | Part No. | Type     |
| 6                                  | 378 516  | HGP-06-A |
| 10                                 | 397 376  | HGP-10   |
| 16                                 | 397 377  | HGP-16   |
| 20                                 | 397 378  | HGP-20   |
| 25                                 | 397 397  | HGP-25   |
| 32                                 | 397 380  | HGP-35   |

# Parallel grippers HGP

Accessories

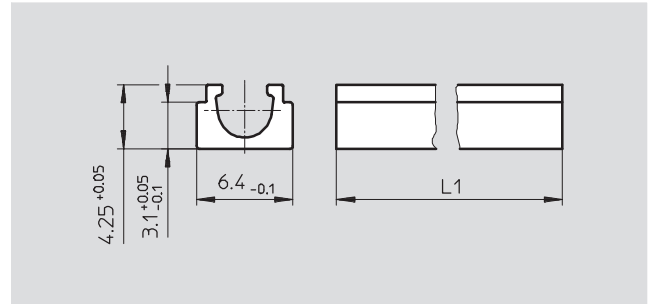
FESTO

## Sensor rail HGP-SL

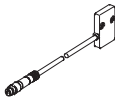
can be glued into place

Material:

Wrought aluminium alloy



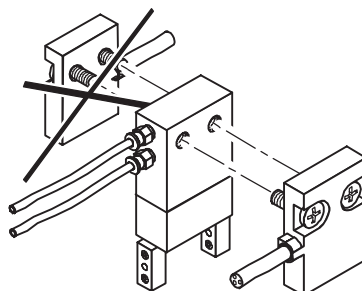
| Dimensions and ordering data |    |               |          |              |  |
|------------------------------|----|---------------|----------|--------------|--|
| For size<br>[mm]             | L1 | Weight<br>[g] | Part No. | Type         |  |
| 10                           | 35 | 1.4           | 535 582  | HGP-SL-10-10 |  |
| 16                           | 38 | 1.5           | 535 583  | HGP-SL-10-16 |  |
| 20                           | 50 | 2.0           | 535 584  | HGP-SL-10-20 |  |
| 25                           | 58 | 2.3           | 535 585  | HGP-SL-10-25 |  |
| 35                           | 65 | 2.6           | 535 586  | HGP-SL-10-35 |  |

| Ordering data                                                                       |          |               |                                   |                 |                  |  |
|-------------------------------------------------------------------------------------|----------|---------------|-----------------------------------|-----------------|------------------|--|
| Type                                                                                | For size | Weight<br>[g] | Part No.                          | Type            | PU <sup>1)</sup> |  |
| Position sensor SMH-S1                                                              |          |               | Technical data → Internet: smh-s1 |                 |                  |  |
|  | 6        | 20            | 175 710                           | SMH-S1-HGP06    | 1                |  |
|                                                                                     |          |               |                                   |                 |                  |  |
| Evaluation unit SMH-AE1                                                             |          |               | Technical data → Internet: smh-ae |                 |                  |  |
|  | 6        | 170           | 175 708                           | SMH-AE1-PS3-M12 | 1                |  |
|                                                                                     |          |               | 175 709                           | SMH-AE1-NS3-M12 |                  |  |
|                                                                                     |          |               |                                   |                 |                  |  |
| Centring sleeve ZBH                                                                 |          |               | Technical data → Internet: zbh    |                 |                  |  |
|  | 6, 10    | 1             | 189 652                           | ZBH-5           | 10               |  |
|                                                                                     | 16, 20   |               | 186 717                           | ZBH-7           |                  |  |
|                                                                                     | 25       |               | 150 927                           | ZBH-9           |                  |  |
|                                                                                     | 35       |               | 189 653                           | ZBH-12          |                  |  |

1) Packaging unit quantity

## Installation instructions for position sensor SMH-S1

In order to ensure the correct functioning of the position sensor the outlet cables and the compressed air tubing must be mounted in the same direction.

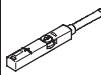


## Parallel grippers HGP

Accessories

**FESTO**

| Ordering data – Proximity sensors for T-slot, magneto-resistive                   |                                                                    |               |                       |                  | Technical data → Internet: <a href="#">smt</a> |                         |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------|---------------|-----------------------|------------------|------------------------------------------------|-------------------------|
|                                                                                   | Type of mounting                                                   | Switch output | Electrical connection | Cable length [m] | Part No.                                       | Type                    |
| N/O contact                                                                       |                                                                    |               |                       |                  |                                                |                         |
|  | Insertable in the slot from above, flush with cylinder profile     | PNP           | Cable, 3-wire         | 2.5              | 543 867                                        | SMT-8M-PS-24V-K-2,5-OE  |
|                                                                                   |                                                                    |               | Plug M8x1, 3-pin      | 0.3              | 543 866                                        | SMT-8M-PS-24V-K-0,3-M8D |
|                                                                                   |                                                                    |               | Plug M12x1, 3-pin     | 0.3              | 543 869                                        | SMT-8M-PS-24V-K-0,3-M12 |
|                                                                                   |                                                                    | NPN           | Cable, 3-wire         | 2.5              | 543 870                                        | SMT-8M-NS-24V-K-2,5-OE  |
|                                                                                   |                                                                    |               | Plug M8x1, 3-pin      | 0.3              | 543 871                                        | SMT-8M-NS-24V-K-0,3-M8D |
|  | Insertable in the slot lengthwise, flush with the cylinder profile | PNP           | Cable, 3-wire         | 2.5              | 175 436                                        | SMT-8-PS-K-LED-24-B     |
|                                                                                   |                                                                    |               | Plug M8x1, 3-pin      | 0.3              | 175 484                                        | SMT-8-PS-S-LED-24-B     |
| N/C contact                                                                       |                                                                    |               |                       |                  |                                                |                         |
|  | Insertable in the slot from above, flush with cylinder profile     | PNP           | Cable, 3-wire         | 7.5              | 543 873                                        | SMT-8M-PO-24V-K7,5-OE   |

| Ordering data – Proximity sensors for T-slot, magnetic reed                         |                                                                    |               |                       |                  | Technical data → Internet: sme |                         |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------|---------------|-----------------------|------------------|--------------------------------|-------------------------|
|                                                                                     | Type of mounting                                                   | Switch output | Electrical connection | Cable length [m] | Part No.                       | Type                    |
| N/O contact                                                                         |                                                                    |               |                       |                  |                                |                         |
|   | Insertable in the slot from above, flush with cylinder profile     | Contacting    | Cable, 3-wire         | 2.5              | 543 862                        | SME-8M-DS-24V-K-2,5-OE  |
|                                                                                     |                                                                    |               |                       | 5.0              | 543 863                        | SME-8M-DS-24V-K-5,0-OE  |
|                                                                                     |                                                                    |               | Cable, 3-wire         | 2.5              | 543 872                        | SME-8M-ZS-24V-K-2,5-OE  |
|                                                                                     |                                                                    |               | Plug M8x1, 3-pin      | 0.3              | 543 861                        | SME-8M-DS-24V-K-0,3-M8D |
|  | Insertable in the slot lengthwise, flush with the cylinder profile | Contacting    | Cable, 3-wire         | 2.5              | 150 855                        | SME-8-K-LED-24          |
|                                                                                     |                                                                    |               | Plug M8x1, 3-pin      | 0.3              | 150 857                        | SME-8-S-LED-24          |
|                                                                                     |                                                                    |               |                       |                  |                                |                         |
| N/C contact                                                                         |                                                                    |               |                       |                  |                                |                         |
|  | Insertable in the slot lengthwise, flush with the cylinder profile | Contacting    | Cable, 3-wire         | 7.5              | 160 251                        | SME-8-O-K-LED-24        |

| Ordering data – Connecting cables                                                   |                               |                              |                  | Technical data → Internet: nebu |                      |
|-------------------------------------------------------------------------------------|-------------------------------|------------------------------|------------------|---------------------------------|----------------------|
|                                                                                     | Electrical connection, left   | Electrical connection, right | Cable length [m] | Part No.                        | Type                 |
|  | Straight socket, M8x1, 3-pin  | Cable, open end, 3-wire      | 2.5              | 541 333                         | NEBU-M8G3-K-2.5-LE3  |
|                                                                                     |                               |                              | 5                | 541 334                         | NEBU-M8G3-K-5-LE3    |
|                                                                                     | Straight socket, M12x1, 5-pin | Cable, open end, 3-wire      | 2.5              | 541 363                         | NEBU-M12G5-K-2.5-LE3 |
|                                                                                     |                               |                              | 5                | 541 364                         | NEBU-M12G5-K-5-LE3   |
|  | Angled socket, M8x1, 3-pin    | Cable, open end, 3-wire      | 2.5              | 541 338                         | NEBU-M8W3-K-2.5-LE3  |
|                                                                                     |                               |                              | 5                | 541 341                         | NEBU-M8W3-K-5-LE3    |
|                                                                                     | Angled socket, M12x1, 5-pin   | Cable, open end, 3-wire      | 2.5              | 541 367                         | NEBU-M12W5-K-2.5-LE3 |
|                                                                                     |                               |                              | 5                | 541 370                         | NEBU-M12W5-K-5-LE3   |

## Parallel grippers HGP

Accessories

**FESTO**

| Ordering data – Proximity sensors for C-slot, magneto-resistive                   |                                                                |               |                                             |                  | Technical data → Internet: smt |                          |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------|---------------|---------------------------------------------|------------------|--------------------------------|--------------------------|
|                                                                                   | Type of mounting                                               | Switch output | Electrical connection, connection direction | Cable length [m] | Part No.                       | Type                     |
| N/O contact                                                                       |                                                                |               |                                             |                  |                                |                          |
|  | Insertable in the slot from above, flush with cylinder profile | PNP           | Cable, 3-wire, in-line                      | 2.5              | 525 915                        | SMT-10F-PS-24V-K2,5L-OE  |
|                                                                                   |                                                                |               | Plug M8x1, 3-pin, in-line                   | 0.3              | 525 916                        | SMT-10F-PS-24V-K0,3L-M8D |
|                                                                                   |                                                                |               | Plug M8x1, 3-pin, lateral                   | 0.3              | 526 675                        | SMT-10F-PS-24V-K0,3Q-M8D |
|  | Insertable in the slot lengthwise                              | PNP           | Plug M8x1, 3-pin, in-line                   | 0.3              | 173 220                        | SMT-10-PS-SL-LED-24      |
|                                                                                   |                                                                |               | Cable, 3-wire, in-line                      | 2.5              | 173 218                        | SMT-10-PS-KL-LED-24      |

| Ordering data – Proximity sensors for C-slot, magnetic reed                       |                                                                |               |                                             |                  | Technical data → Internet: sme |                          |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------|---------------|---------------------------------------------|------------------|--------------------------------|--------------------------|
|                                                                                   | Type of mounting                                               | Switch output | Electrical connection, connection direction | Cable length [m] | Part No.                       | Type                     |
| N/O contact                                                                       |                                                                |               |                                             |                  |                                |                          |
|  | Insertable in the slot from above, flush with cylinder profile | Contacting    | Plug M8x1, 3-pin, in-line                   | 0.3              | 525 914                        | SME-10F-DS-24V-K0,3L-M8D |
|                                                                                   |                                                                |               | Cable, 3-wire, in-line                      | 2.5              | 525 913                        | SME-10F-DS-24V-K2,5L-OE  |
|                                                                                   |                                                                |               | Cable, 2-wire, in-line                      | 2.5              | 526 672                        | SME-10F-ZS-24V-K2,5L-OE  |
|  | Insertable in the slot lengthwise                              | Contacting    | Plug M8x1, 3-pin, in-line                   | 0.3              | 173 212                        | SME-10-SL-LED-24         |
|                                                                                   |                                                                |               | Cable, 3-wire, in-line                      | 2.5              | 173 210                        | SME-10-KL-LED-24         |

| Ordering data – Connecting cables                                                   |                              |                              |                  | Technical data → Internet: nebu |                     |
|-------------------------------------------------------------------------------------|------------------------------|------------------------------|------------------|---------------------------------|---------------------|
|                                                                                     | Electrical connection, left  | Electrical connection, right | Cable length [m] | Part No.                        | Type                |
|  | Straight socket, M8x1, 3-pin | Cable, open end, 3-wire      | 2.5              | 541 333                         | NEBU-M8G3-K-2.5-LE3 |
|                                                                                     |                              |                              | 5                | 541 334                         | NEBU-M8G3-K-5-LE3   |
|  | Angled socket, M8x1, 3-pin   | Cable, open end, 3-wire      | 2.5              | 541 338                         | NEBU-M8W3-K-2.5-LE3 |
|                                                                                     |                              |                              | 5                | 541 341                         | NEBU-M8W3-K-5-LE3   |