

Parallel grippers HGPD, sealed



Parallel grippers HGPD, sealed

Key features



At a glance

General information

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

Sturdy and precise kinematics for maximum torque resistance and long service life.

The force generated by the linear motion is translated into the gripper jaw movement via a wedge mechanism

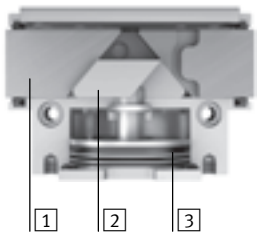
with forced motion sequence. This also guarantees synchronous movement of the gripper jaw. The ground gripper jaws and slideway ensure a virtually backlash-free movement.

Flexible range of applications

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

The technology in detail

Gripper closed



Gripper open



- 1 Gripper jaw
- 2 Wedge with forced guidance
- 3 Piston with magnet

- - Note

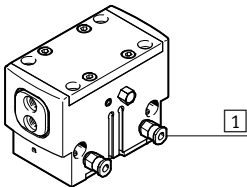
Gripper selection sizing software

→ www.festo.com

Wide range of supply ports

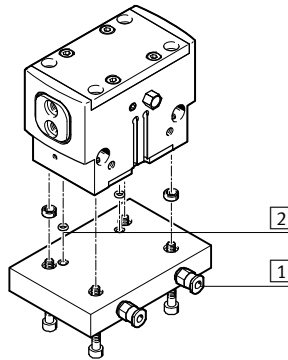
Direct

From the front



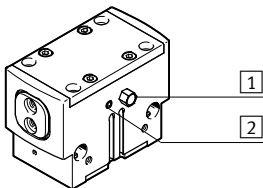
Via adapter plate

From underneath



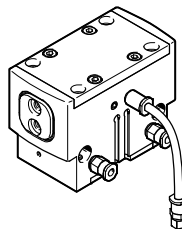
- 1 Supply ports
- 2 O-rings

Other ports



- 1 Exhaust hole or sealing air port
- 2 Port for lubrication nipple

Use in harsh ambient conditions



When using the gripper in damp 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.

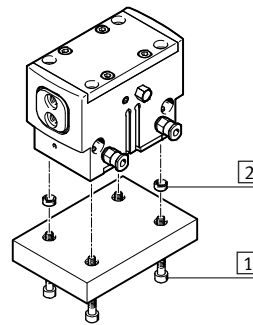
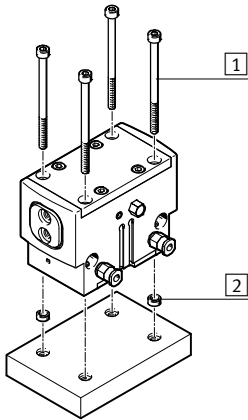
Parallel grippers HGPS, sealed

Key features

Mounting options

Direct mounting
From above

Via adapter plate
From underneath

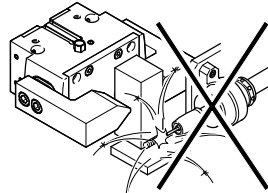


- 1 Mounting screws
- 2 Centring sleeves

Note

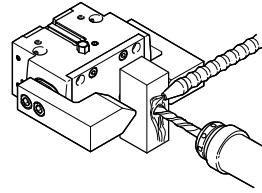
These grippers are not suitable or are of limited suitability for the following sample applications:

Not suitable for:

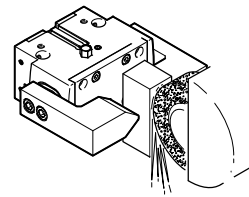


- Welding spatter

Of limited suitability for:



- Aggressive media only possible after consultation with Festo



- Grinding dust

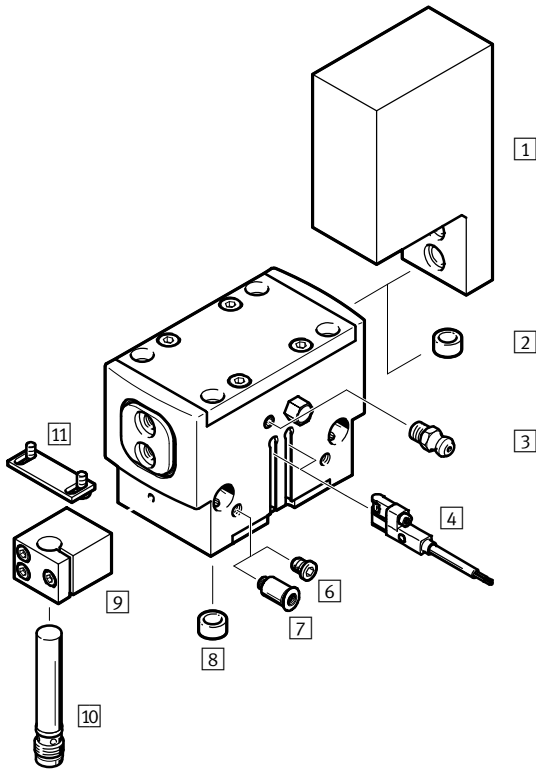
Parallel grippers HGPD, sealed

Type codes and peripherals overview

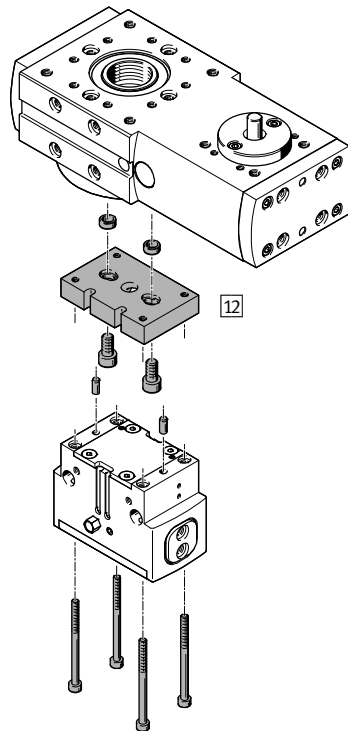
Type codes

| | | | | |
|---------------------------------|----------------------|----|---|--|
| HGPD | | 16 | A | |
| Type | | | | |
| HGPD | Parallel gripper | | | |
| Size | | | | |
| Position sensing | | | | |
| A | Via proximity sensor | | | |
| Gripping force retention | | | | |
| G1 | Opening | | | |
| G2 | Closing | | | |

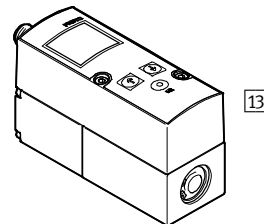
Peripherals overview



System product for handling and assembly technology



Proportional pressure regulator VPPM



Parallel grippers HGPS, sealed

Peripherals overview

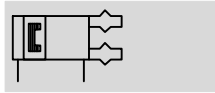
| Accessories | | | |
|-------------|---|---|-----------------|
| | Type | Brief description | → Page/Internet |
| 1 | Gripper jaw blank BUB-HGPS | Blank specially matched to the gripper jaws for custom fabrication of gripper fingers | 20 |
| 2 | Centring pin/sleeve ZBS/ZBH | <ul style="list-style-type: none"> • For centring gripper jaw blanks/gripper fingers on the gripper jaws • 4 centring pins/sleeves included in the scope of delivery of the gripper | 21 |
| 3 | Lubrication nipple | Included in the scope of delivery of the gripper | – |
| 4 | Proximity sensor SMT-8G/SMT-10G | <ul style="list-style-type: none"> • For sensing the piston position • Proximity sensor does not project past the housing at the bottom | 22 |
| 6 | Blanking plug B | For sealing the supply ports when using the lower supply ports | 21 |
| 7 | Push-in fitting QS | For connecting compressed air tubing with standard O.D. | quick star |
| 8 | Centring sleeve ZBH | For centring the gripper when mounting | 21 |
| 9 | Sensor bracket DASI | Clamping block for securing the proximity sensors SIEH or SIEN | 21 |
| 10 | Proximity sensor SIEH/SIEN | For sensing the piston position | 22 |
| 11 | Sensor bracket DASI | Switch lug for sensing the gripper jaw position. Mounted on the gripper jaw blank | 21 |
| 12 | Adapter kit DHAA | Connecting plate between drive and gripper | 17 |
| 13 | Proportional pressure regulator VPPM | For infinite adjustment of the gripping force | vppm |

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Technical data

FESTO

Function
Double-acting
HGPD-...-A

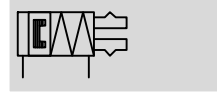


Size
16 ... 80 mm

Total stroke
6 ... 40 mm

www.festo.com

Function – Variants
Single-acting or
with gripping force retention ...
... opening HGPD-...-G1



... closing HGPD-...-G2



| General technical data | | | | | | | | | |
|---|---|-----------------|-----------------|-----|----------|-----------------|-----------------|-----------------|--|
| Size | 16 | 20 | 25 | 35 | 40 | 50 | 63 | 80 | |
| Design | Wedge-shaped actuator Forced motion sequence | | | | | | | | |
| Mode of operation | Double-acting | | | | | | | | |
| Gripper function | Parallel | | | | | | | | |
| Number of gripper jaws | 2 | | | | | | | | |
| Max. load per external gripper finger ¹⁾ [g] | 25 | 57 | 138 | 278 | 445 | 813 | 1,340 | 2,170 | |
| Stroke per gripper jaw [mm] | 3 | 4 | 6 | 8 | 10 | 12 | 16 | 20 | |
| Pneumatic connection | M5 | M5 | M5 | M5 | M5 | G $\frac{1}{8}$ | G $\frac{1}{8}$ | G $\frac{1}{4}$ | |
| Pneumatic connection for sealing air | M3 | M3 | M5 | M5 | M5 | M5 | M5 | M5 | |
| Pneumatic connection for lubrication nipple | M3 | M3 | M5 | M5 | M5 | M5 | M5 | M5 | |
| Repetition accuracy ²⁾ [mm] | $\leq \pm 0.03$ | $\leq \pm 0.04$ | $\leq \pm 0.05$ | | | | | | |
| Max. interchangeability [mm] | $\leq \pm 0.2$ | | | | | | | | |
| Max. operating frequency [Hz] | ≤ 1 | | | | ≤ 2 | | | | |
| Rotational symmetry [mm] | $< \varnothing 0.2$ | | | | | | | | |
| Position sensing | Via proximity sensor, position transmitter | | | | | | | | |
| Type of mounting | Via through-hole and dowel pin/centring sleeve Via female thread and dowel pin/centring sleeve | | | | | | | | |
| Mounting position | Any | | | | | | | | |

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

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

1) Note operating range of proximity sensors

2) Corrosion resistance class 2 according to Festo standard 940 070

Components subject to moderate corrosion stress. 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.

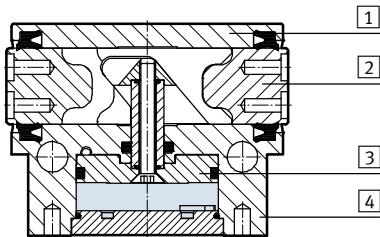
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Technical data

| Weight [g] | | | | | | | | |
|-------------|-----|-----|-----|-----|-------|-------|-------|-------|
| Size | 16 | 20 | 25 | 35 | 40 | 50 | 63 | 80 |
| HGPD-...A | 100 | 163 | 327 | 572 | 1,044 | 1,766 | 3,365 | 6,252 |
| HGPD-...A-G | 117 | 182 | 361 | 682 | 1,223 | 2,150 | 3,998 | 7,484 |

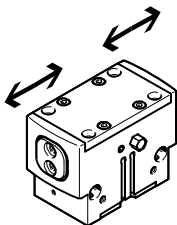
Materials

Sectional view



| Size | 16 | 20 | 25 | 35 | 40 | 50 | 63 | 80 |
|---------------------|----------------------------|----|----|----|----|----|----|----|
| 1 Cover cap | High-alloy stainless steel | | | | | | | |
| 2 Gripper jaw | Hardened steel | | | | | | | |
| 3 Piston | Hard anodised aluminium | | | | | | | |
| 4 Housing | Anodised aluminium | | | | | | | |
| - Seals | Nitrile rubber | | | | | | | |
| - Note on materials | Free of copper and PTFE | | - | | | | | |
| | RoHS-compliant | | | | | | | |

Gripping force [N] at 6 bar

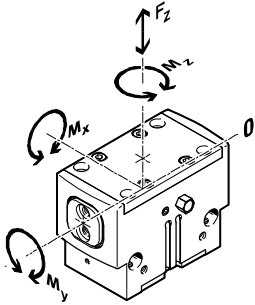


| Size | 16 | 20 | 25 | 35 | 40 | 50 | 63 | 80 | |
|--------------------------------|---------|-----|-----|-----|-----|-----|-----|-------|-------|
| Gripping force per gripper jaw | | | | | | | | | |
| HGPD-...A | Opening | 54 | 80 | 144 | 291 | 315 | 472 | 967 | 1,961 |
| | Closing | 47 | 75 | 133 | 267 | 267 | 447 | 928 | 1,858 |
| Total gripping force | | | | | | | | | |
| HGPD-...A | Opening | 107 | 159 | 288 | 581 | 630 | 944 | 1,935 | 3,922 |
| | Closing | 94 | 150 | 266 | 534 | 598 | 894 | 1,856 | 3,716 |

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Technical data

Characteristic load values at the gripper jaws



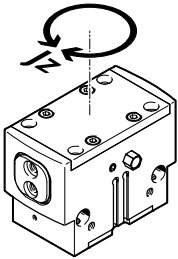
The indicated permissible forces and torques apply to a single gripper jaw. They include the lever arm, additional applied loads due to the workpiece or external gripper fingers and

acceleration forces occurring during movement.

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

| Size | | 16 | 20 | 25 | 35 | 40 | 50 | 63 | 80 |
|-------------------------------|------|-----|-----|-----|-----|-------|-------|-------|-------|
| Max. permissible force F_z | [N] | 150 | 250 | 500 | 750 | 1,200 | 2,000 | 3,000 | 6,000 |
| Max. permissible torque M_x | [Nm] | 8 | 12 | 30 | 40 | 70 | 90 | 120 | 170 |
| Max. permissible torque M_y | [Nm] | 4 | 7 | 25 | 30 | 45 | 60 | 80 | 130 |
| Max. permissible torque M_z | [Nm] | 3 | 6 | 15 | 25 | 35 | 50 | 65 | 110 |

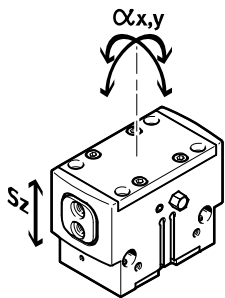
Mass moment of inertia [kgcm²]



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

| Size | | 16 | 20 | 25 | 35 | 40 | 50 | 63 | 80 |
|--------------|--|------|------|------|------|-------|-------|--------|--------|
| HGPD-...-A | | 0.22 | 0.40 | 1.32 | 3.56 | 10.10 | 26.19 | 80.33 | 236.48 |
| HGPD-...-A-G | | 0.27 | 0.52 | 1.72 | 4.88 | 14.09 | 36.74 | 116.19 | 319.95 |

Gripper jaw backlash



The plain-bearing guide used in the grippers means that there is backlash between the gripper jaws and the housing. The values entered in the table for the backlash were calculated in accordance with the traditional accumulative tolerance method.

| Size | | 16 | 20 | 25 | 35 | 40 | 50 | 63 | 80 |
|--|------|------|----|----|----|----|----|----|----|
| Max. gripper jaw backlash S_z | [mm] | 0.02 | | | | | | | |
| Max. gripper jaw angular backlash α_x, α_y | [°] | 0.1 | | | | | | | |

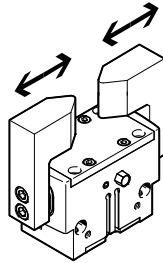
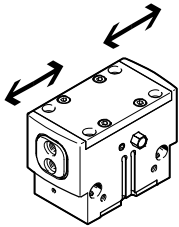
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Technical data

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 horizontally mounted grippers without additional gripper

fingers. The grippers must be throttled for greater loads [g]. Opening and closing times must then be adjusted accordingly.

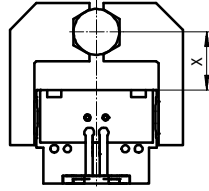
| Size | | 16 | 20 | 25 | 35 | 40 | 50 | 63 | 80 |
|---|---------|----|----|----|----|-----|-----|-----|-----|
| Without external gripper fingers | | | | | | | | | |
| HGPD-...-A | Opening | 15 | 28 | 29 | 33 | 73 | 90 | 150 | 214 |
| | Closing | 17 | 31 | 35 | 37 | 77 | 100 | 162 | 218 |
| HGPD-...-A-G1 | Opening | 15 | 13 | 24 | 31 | 73 | 85 | 170 | 235 |
| | Closing | 32 | 25 | 51 | 62 | 157 | 176 | 328 | 353 |
| HGPD-...-A-G2 | Opening | 30 | 35 | 48 | 50 | 143 | 170 | 294 | 379 |
| | Closing | 15 | 18 | 28 | 36 | 71 | 87 | 185 | 240 |
| With external gripper fingers (as a function of the load) | | | | | | | | | |
| HGPD-... | 50 g | 20 | - | - | - | - | - | - | - |
| | 100 g | 28 | 26 | - | - | - | - | - | - |
| | 200 g | 40 | 37 | 30 | - | - | - | - | - |
| | 300 g | - | 46 | 37 | 34 | - | - | - | - |
| | 400 g | - | - | 43 | 40 | 46 | - | - | - |
| | 500 g | - | - | - | 55 | 52 | - | - | - |
| | 600 g | - | - | - | - | 57 | - | - | - |
| | 800 g | - | - | - | - | 66 | 125 | - | - |
| | 1,000 g | - | - | - | - | - | 133 | - | - |
| | 1,200 g | - | - | - | - | - | 140 | - | - |
| | 1,500 g | - | - | - | - | - | - | 183 | - |
| | 1,800 g | - | - | - | - | - | - | 201 | - |
| | 2,000 g | - | - | - | - | - | - | 211 | 259 |
| | 2,200 g | - | - | - | - | - | - | - | 272 |
| | 2,400 g | - | - | - | - | - | - | - | 284 |

Parallel grippers HGPD, sealed

Technical data

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

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

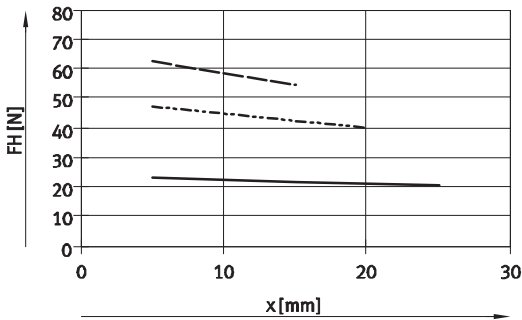


- 3 bar
- - - 6 bar
- · - 8 bar

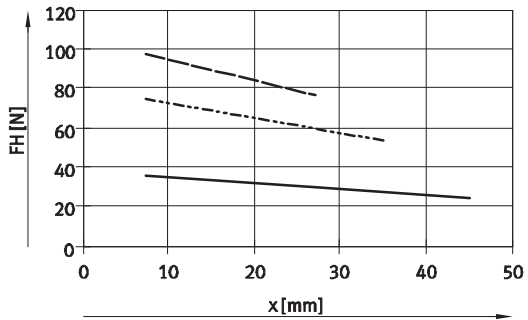
Note
Gripper selection
sizing software
→ www.festo.com

External gripping (closing)

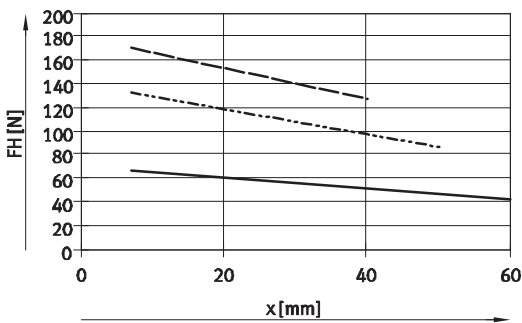
HGPD-16-A



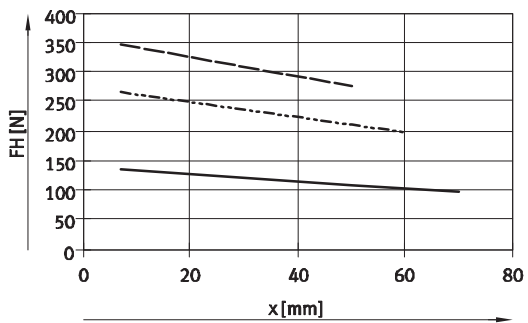
HGPD-20-A



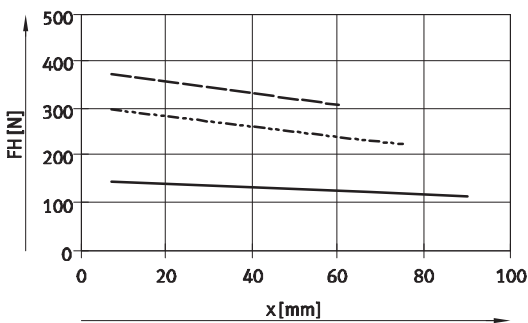
HGPD-25-A



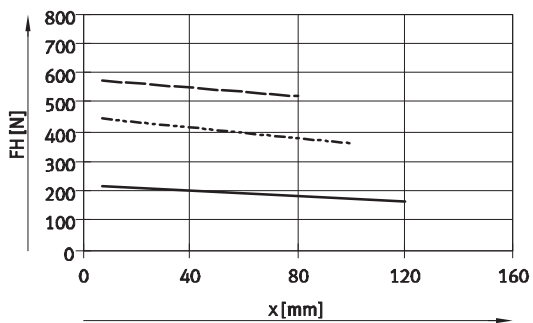
HGPD-35-A



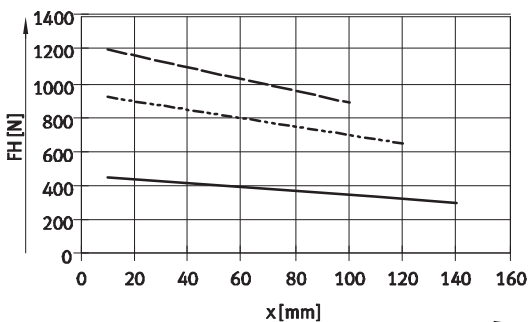
HGPD-40-A



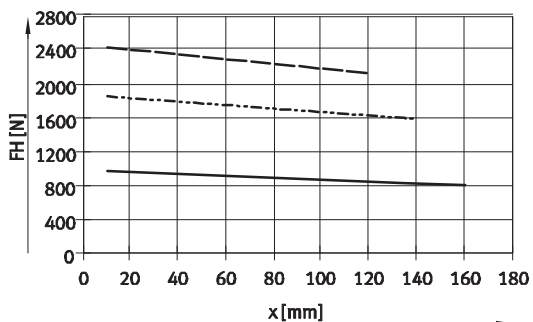
HGPD-50-A



HGPD-63-A



HGPD-80-A

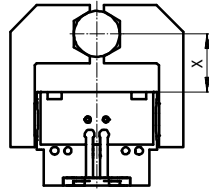


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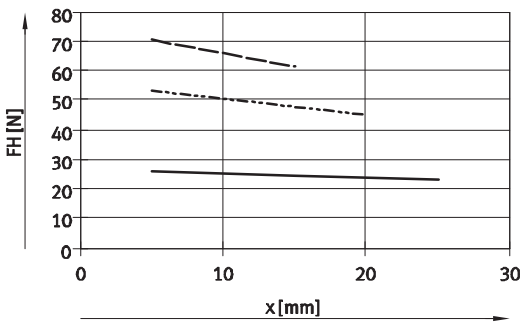


- 3 bar
- - - 6 bar
- · - 8 bar

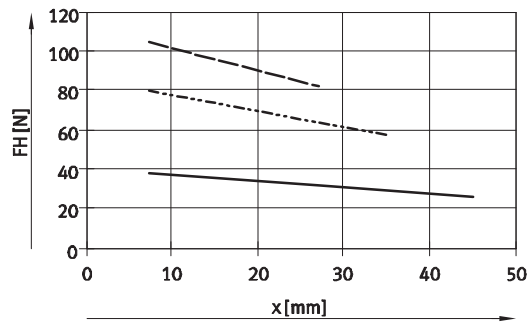
Note
Gripper selection
sizing software
→ www.festo.com

Internal gripping (opening)

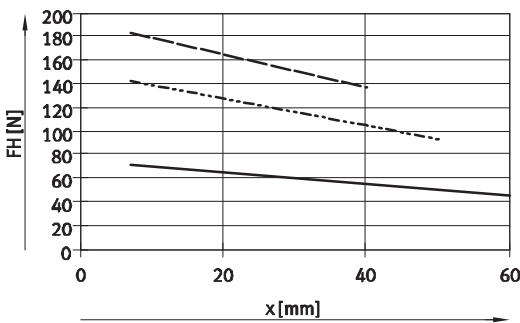
HGPD-16-A



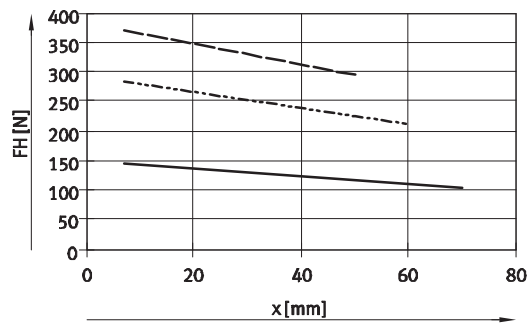
HGPD-20-A



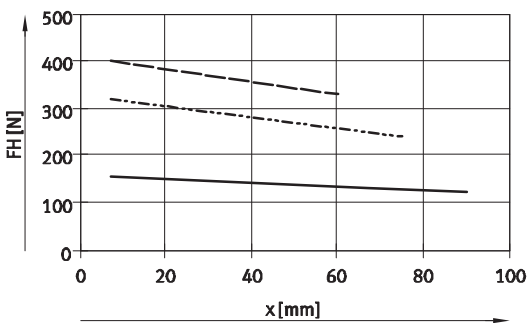
HGPD-25-A



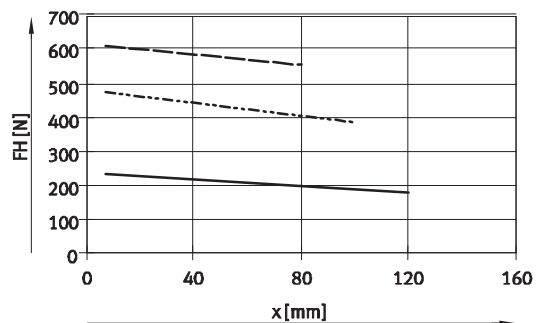
HGPD-35-A



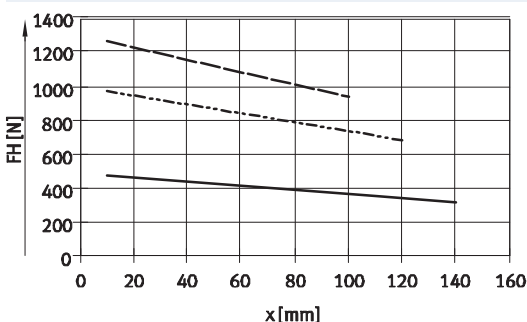
HGPD-40-A



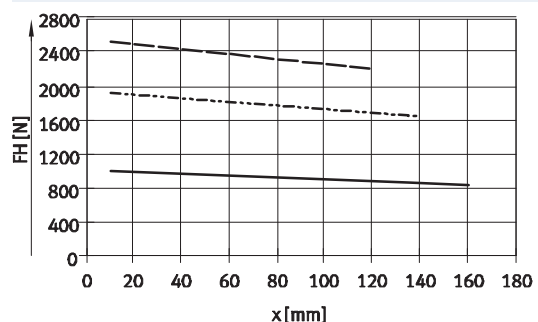
HGPD-50-A



HGPD-63-A



HGPD-80-A



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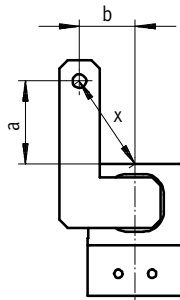
Technical data

Gripping force F_H per gripper jaw at 6 bar as a function of lever arm x and eccentricity a and b

The following formula must be used to calculate the lever arm x with eccentric gripping:

$$x = \sqrt{a^2 + b^2}$$

The gripping force F_H can be read from the graphs (→ 10) using the calculated value x .



Calculation example

Given:

Distance $a = 45$ mm

Distance $b = 40$ mm

To be calculated:

The gripping force at 6 bar, with an HGPD-40, used as an external gripper

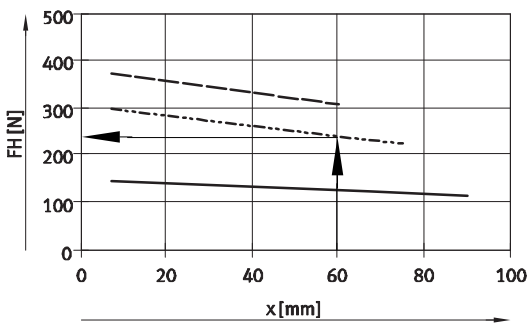
Procedure:

Calculating the lever arm x

$$x = \sqrt{45^2 + 40^2}$$

$$x = 60$$
 mm

The graph (→ 10) gives a value of $F_H = 240$ N for the gripping force.



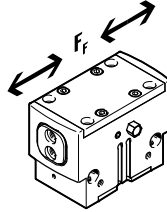
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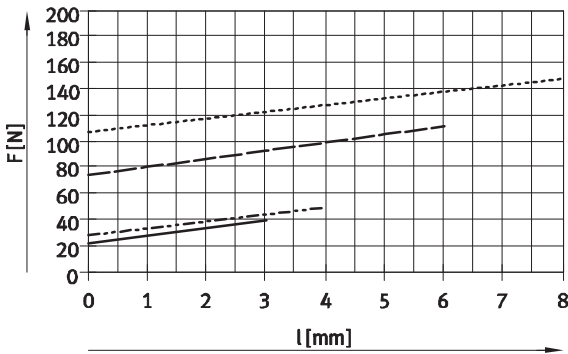
Spring force F_F as a function of size and gripper jaw stroke l

Gripping force retention for HGPD-...-G...

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

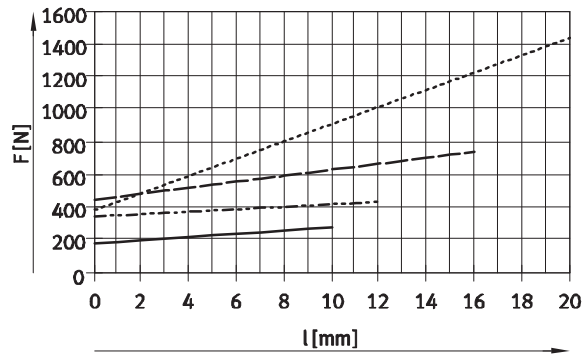


Size 16 ... 35



- HGPD-16-A-G
- - - - - HGPD-20-A-G
- HGPD-25-A-G
- - - - - HGPD-35-A-G

Size 40 ... 80



- HGPD-40-A-G
- - - - - HGPD-50-A-G
- HGPD-63-A-G
- - - - - HGPD-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_{Ftotal} .

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

| Gripping force retention | Size | F_{Ftotal} per gripper finger |
|--------------------------|--------------------------------|---------------------------------|
| G1 | 16 | $-0.25 \cdot x + 0.6 \cdot F_F$ |
| | 20 | $-0.25 \cdot x + 0.6 \cdot F_F$ |
| | 25 | $-0.65 \cdot x + 0.6 \cdot F_F$ |
| | 35 | $-0.75 \cdot x + 0.8 \cdot F_F$ |
| | 40 | $-0.7 \cdot x + 0.65 \cdot F_F$ |
| | 50 | $-0.8 \cdot x + 0.5 \cdot F_F$ |
| | 63 | $-0.8 \cdot x + 0.65 \cdot F_F$ |
| 80 | $-1.3 \cdot x + 0.6 \cdot F_F$ | |

| Gripping force retention | Size | F_{Ftotal} per gripper finger |
|--------------------------|------|---------------------------------|
| G2 | 16 | $-0.05 \cdot x + 0.6 \cdot F_F$ |
| | 20 | $-0.5 \cdot x + 0.6 \cdot F_F$ |
| | 25 | $-0.65 \cdot x + 0.6 \cdot F_F$ |
| | 35 | $-0.15 \cdot x + 0.8 \cdot F_F$ |
| | 40 | $-0.6 \cdot x + 0.65 \cdot F_F$ |
| | 50 | $-0.15 \cdot x + 0.5 \cdot F_F$ |
| | 63 | $-1 \cdot x + 0.65 \cdot F_F$ |
| | 80 | $-0.25 \cdot x + 0.6 \cdot F_F$ |

Determination of the actual gripping forces F_{Gr} for HGPD-...-G1 and HGPD-...-G2 as a function of application

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

- single-acting grippers

- grippers with supplementary gripping force and
- grippers with gripping force retention depending on requirements.

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

force (F_{Ftotal}) must be combined accordingly.

Application forces per gripper finger

| Single-acting | Supplementary gripping force | Gripping force retention |
|--|---|--|
| <ul style="list-style-type: none"> • Gripping with spring force: $F_{Gr} = F_{Ftotal}$ • Gripping with pressure force: $F_{Gr} = F_H - F_{Ftotal}$ | <ul style="list-style-type: none"> • Gripping with pressure and spring force: $F_{Gr} = F_H + F_{Ftotal}$ | <ul style="list-style-type: none"> • Gripping with spring force: $F_{Gr} = F_{Ftotal}$ |

Parallel grippers HGPD, sealed

Technical data

| Size [mm] | D13 | D14 | D15 | D16 ∅ h7 | D17 ∅ | D18 ∅ +0.2 | EE | EE1 | H1 | | H2 | | H3 | |
|--------------|------|------|-----|----------------|----------|------------------|------|-----|-------|-------------|------|------|------|------------|
| | | | | | | | | | ±0.05 | -G ±0.05 | | -G | ±0.1 | -G ±0.1 |
| 16 | M3 | M2.5 | M3 | - | - | - | M5 | M3 | 34 | 41.5 | 16.2 | 23.6 | 12 | 12 |
| 20 | M3 | M3 | M3 | 5 | 3.2 | 5 | M5 | M3 | 39 | 46 | 15 | 22 | 10 | 15 |
| 25 | M5 | M4 | M3 | 7 | 5.3 | 5 | M5 | M3 | 47.5 | 55.5 | 18 | 26 | 10 | 20 |
| 35 | M5 | M6 | M3 | 9 | 6.4 | 5 | M5 | M3 | 57.5 | 74 | 21.5 | 38 | 12 | 23.5 |
| 40 | M5 | M6 | M3 | 9 | 6.4 | 8 | M5 | M3 | 67 | 85 | 27 | 45 | 15 | 36 |
| 50 | M1/8 | M6 | M3 | 12 | 10.3 | 8 | G1/8 | M5 | 77.5 | 102.5 | 32 | 57 | 15 | 30 |
| 63 | M1/8 | M8 | M3 | 12 | 10.3 | 8 | G1/8 | M5 | 94 | 124 | 39 | 69 | 18 | 26 |
| 80 | M1/8 | M10 | M3 | 15 | 12.4 | 8 | G1/4 | M5 | 110 | 146 | 48 | 84 | 22 | 33 |

| Size [mm] | H4 ¹⁾ | | H5 | H6 ¹⁾ | H7 | H8 | | H9 | | H10 | H11 | | L1 | L2 ¹⁾ | L3 |
|--------------|------------------|------|-------|------------------|-------|------|------------|------|------------|------|------|------|------|------------------|------|
| | | -G | -0.02 | | -0.02 | ±0.1 | -G ±0.1 | ±0.1 | -G ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.05 | |
| 16 | 17.5 | 24.5 | 8.5 | 5 | 11 | 8.3 | 15.8 | - | - | - | 25.5 | 33 | 50 | 29 | 22 |
| 20 | 14.5 | 21.5 | - | 7 | 15 | 6.5 | 13.5 | - | - | - | 27.5 | 34.5 | 50 | 35 | 22.6 |
| 25 | 17.5 | 26 | - | 10 | 20.5 | - | - | 6 | 14 | 7 | 32 | 40 | 64 | 42 | 29 |
| 35 | 20 | 37.5 | - | 12 | 24 | - | - | 9.5 | 26 | 7 | 39.5 | 56 | 80 | 52 | 39 |
| 40 | 25 | 42.5 | - | 15 | 28.5 | - | - | 15 | 33 | 8 | 46 | 64 | 101 | 66 | 47.4 |
| 50 | 30 | 55 | - | 18 | 32 | - | - | 15.5 | 40.5 | 8 | 54.5 | 79.5 | 126 | 82 | 61 |
| 63 | 28 | 68 | - | 24 | 40 | - | - | 26 | 56 | 8 | 66 | 96 | 161 | 100 | 75 |
| 80 | 34 | 76 | - | 24 | 42 | - | - | 35 | 71 | 8 | 80 | 116 | 201 | 130 | 82 |

| Size [mm] | L4 | L5 | L6 | L7 | L8 ¹⁾ | L9 | L10 | L11 | L12 | L13 | L14 | L15 | T1 | T2 | T3 |
|--------------|------|------|------|------|------------------|------|-------|-------|------|-------|------|------|------|------|------|
| | ±0.5 | ±0.5 | ±0.1 | ±0.1 | | ±0.1 | ±0.05 | -0.02 | ±0.1 | ±0.02 | +0.1 | ±0.1 | min. | min. | min. |
| 16 | 58 | 52 | 6.5 | 20 | 29 | 36 | 5 | 10 | 10 | 20 | 6 | - | 3 | 5.5 | 5.5 |
| 20 | 60 | 52 | 7.5 | 24 | 35 | 44 | - | 14 | 10 | 24 | 6 | - | 3 | 5.5 | 5.5 |
| 25 | 78 | 66 | 11 | 31 | 42 | 52 | - | 18 | - | 20 | 7 | 12 | 3 | 6.7 | 5.5 |
| 35 | 98 | 82 | 11 | 40 | 52 | 64 | - | 22 | - | 40 | 7 | 15 | 3 | 6.5 | 5.5 |
| 40 | 122 | 102 | 11 | 49 | 66 | 81 | - | 28 | - | 50 | 10 | 19 | 4 | 6.5 | 6.5 |
| 50 | 151 | 127 | 11 | 63 | 82 | 101 | - | 32 | - | 60 | 10 | 24 | 4 | 6.5 | 8.5 |
| 63 | 194 | 162 | 11 | 74 | 100 | 126 | - | 40 | - | 76 | 10 | 42 | 4 | 6.5 | 8.5 |
| 80 | 242 | 202 | 11 | 82 | 130 | 154 | - | 45 | - | 100 | 10 | 56 | 5.5 | 6.5 | 10 |

| Size [mm] | T4 | | T5 | T6 | T7 | T8 | T9 | T10 | T11 | T12 | T13 | T14 | T15 | T16 | T17 |
|--------------|------|------------|------|------|----|------|------|------|------|------|------|------|------|------|------|
| | min. | -G min. | min. | min. | | min. | +0.1 | +0.1 | min. | +0.2 | +0.1 | +0.1 | min. | -0.3 | +0.1 |
| 16 | 5.5 | - | 5 | 3.5 | 14 | 4.5 | 2.6 | 1.3 | 4 | 19.8 | - | - | 5.5 | - | - |
| 20 | 6.5 | - | 5 | 5 | 18 | 4 | - | 1.3 | 5 | 3 | 1.3 | - | 5.5 | 1.2 | 0.6 |
| 25 | 10.5 | - | 6 | 5 | 13 | 4.5 | - | 1.6 | 6 | 4.1 | 1.6 | 1.6 | 6.7 | 1.4 | 0.6 |
| 35 | 8.5 | - | 7.9 | 5 | 16 | 4.5 | - | 1.6 | 6 | 4.1 | 2.1 | 1.6 | 6.5 | 1.9 | 0.6 |
| 40 | 12.5 | - | 7.9 | 5 | 28 | 6 | - | 2.1 | 7 | 5.1 | 2.1 | 2.1 | 6.5 | 1.9 | 1.1 |
| 50 | 12.5 | - | 10 | 5 | 24 | 6 | - | 2.6 | 8 | 6.1 | 2.6 | 2.6 | 6.5 | 2.4 | 1.1 |
| 63 | 12.5 | - | 12 | 5 | 27 | 6 | - | 2.6 | 8 | 4.5 | 2.6 | 2.6 | 6.5 | 2.4 | 1.1 |
| 80 | 12.4 | 15 | 15 | 5 | 41 | 10 | - | 2.6 | 10 | 5.5 | 3.1 | 3.1 | 6.5 | 2.9 | 1.1 |

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

Parallel grippers HGPD, sealed



Technical data

| Ordering data | | | | | | |
|---------------|---|-----------|--|--------------|----------|--------------|
| Size [mm] | Double-acting without compression spring | | Single-acting or with gripping force retention | | | |
| | Part No. | Type | Opening | | Closing | |
| | Part No. | Type | Part No. | Type | Part No. | Type |
| 16 | 1132936 | HGPD-16-A | 1132937 | HGPD-16-A-G1 | 1132938 | HGPD-16-A-G2 |
| 20 | 1132939 | HGPD-20-A | 1132940 | HGPD-20-A-G1 | 1132941 | HGPD-20-A-G2 |
| 25 | 1132942 | HGPD-25-A | 1132943 | HGPD-25-A-G1 | 1132944 | HGPD-25-A-G2 |
| 35 | 1132945 | HGPD-32-A | 1132946 | HGPD-32-A-G1 | 1132947 | HGPD-32-A-G2 |
| 40 | 1132948 | HGPD-40-A | 1132949 | HGPD-40-A-G1 | 1132950 | HGPD-40-A-G2 |
| 50 | 1132951 | HGPD-50-A | 1132952 | HGPD-50-A-G1 | 1132953 | HGPD-50-A-G2 |
| 63 | 1132954 | HGPD-63-A | 1132955 | HGPD-63-A-G1 | 1132956 | HGPD-63-A-G2 |
| 80 | 1132957 | HGPD-80-A | 1132958 | HGPD-80-A-G1 | 1132959 | HGPD-80-A-G2 |


Parallel grippers HGPD, sealed



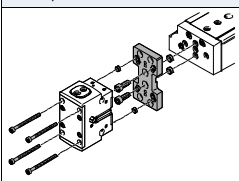
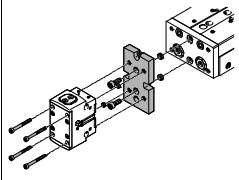
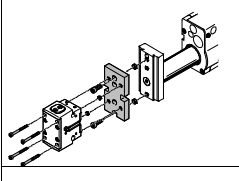
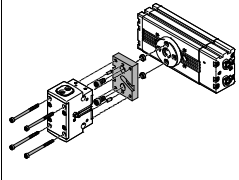
Accessories

FESTO

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 | | |
|---|----------------------|---------|---|---|--|------------|---------------------|
| Combination | Drive | Gripper | Mounting option | | Adapter kit | | |
| | | |  |  | CRC ¹⁾ | Part No. | Type |
|  | DGSL | HGPD | | | 2 | DHAA, HAPG | |
| | 8, 10 | 16, 20 | ■ | ■ | | 564957 | DHAA-G-G6-8-B8-16 |
| | 12, 16 | 16, 20 | ■ | ■ | | 564954 | DHAA-G-G6-16-B8-16 |
| | 12, 16 | 25 | ■ | ■ | | 564952 | DHAA-G-G6-16-B8-25 |
| | 20, 25 | 25, 35 | ■ | ■ | | 537175 | HAPG-79 |
| | 20, 25 | 40 | ■ | ■ | | 564951 | DHAA-G-G6-20-B8-40 |
|  | SLT | HGPD | | | 2 | DHAA, HAPG | |
| | 6 | 16 | - | ■ | | 537168 | HAPG-74 |
| | 10 | 16, 20 | - | ■ | | 564957 | DHAA-G-G6-8-B8-16 |
| | 16 | 16, 20 | - | ■ | | 564954 | DHAA-G-G6-16-B8-16 |
| | 16 | 25 | - | ■ | | 564952 | DHAA-G-G3-20-B11-25 |
| | 20 | 25, 35 | - | ■ | | 537175 | HAPG-79 |
| | 25 | 35 | - | ■ | | 564953 | DHAA-G-H2-20-B8-35 |
| | 25 | 40 | - | ■ | | 564951 | DHAA-G-G6-20-B8-40 |
|  | HMP | HGPD | | | 2 | DHAA, HAPG | |
| | 16 | 25 | - | ■ | | 537178 | HAPG-81 |
| | 20, 25 | 35 | - | ■ | | 564953 | DHAA-G-H2-20-B8-35 |
| | 20, 25 | 40 | - | ■ | | 537182 | HAPG-84 |
| | 25, 32 | 50 | - | ■ | | 537185 | HAPG-86 |
| | 32 | 63 | - | ■ | | 537187 | HAPG-87 |
|  | DRQD | HGPD | | | 2 | DHAA, HAPG | |
| | 12, 16 | 16 | ■ | ■ | | 564958 | DHAA-G-Q5-12-B8-16 |
| | 16 ²⁾ | 16, 20 | ■ | ■ | | 564959 | DHAA-G-Q5-16-B8-16 |
| | 12, 16 | 20 | ■ | ■ | | 564955 | DHAA-G-Q5-16-B8-20 |
| | 16, 20 | 25 | ■ | ■ | | 537181 | HAPG-SD2-25 |
| | 16, 20 ²⁾ | 25 | ■ | ■ | | 544642 | HAPG-SD2-48 |
| | 20, 25 | 35 | ■ | ■ | | 537173 | HAPG-SD2-23 |
| | 20 ²⁾ | 35 | ■ | ■ | | 544642 | HAPG-SD2-48 |
| | 25, 32 | 40 | ■ | ■ | | 537184 | HAPG-SD2-26 |
| | 32, 40 | 50 | ■ | ■ | | 564956 | DHAA-G-Q5-32-B8-50 |
| | 32 ³⁾ | 50 | ■ | ■ | | 544643 | HAPG-SD2-49 |
| 40, 50 | 63 | ■ | ■ | 537188 | HAPG-SD2-28 | | |

- 1) Corrosion resistance class 2 according to Festo standard 940 070
Components subject to moderate corrosion stress. 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.
- 2) In combination with DRQD-...-E422 (flanged shaft with energy through-feed).
- 3) In combination with DRQD-...-E444 (flanged shaft with energy through-feed).


Parallel grippers HGPD, sealed



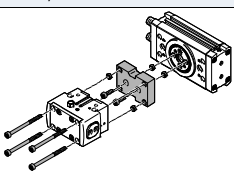
Accessories



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 | | |
|---|---------------|-----------------|---|---|--|----------|---------------------------|
| Combination | Drive Size | Gripper Size | Mounting option | | Adapter kit | | |
| | | |  |  | CRC ¹⁾ | Part No. | Type |
| | | | | | | | |
|  | DRRD | HGPD | | | DHAA | | |
| | 12 | 16 | ■ | ■ | 2 | 2449935 | DHAA-G-Q11-12-B12-16 |
| | 12 | 20 | ■ | ■ | | 2449945 | DHAA-G-Q11-12-B12-20 |
| | 16 | 16 | ■ | ■ | | 2091914 | DHAA-G-Q11-16-B12/B12G-16 |
| | 16 | 20 | ■ | ■ | | 2091205 | DHAA-G-Q11-16-B12-20 |
| | 16 | 25 | ■ | ■ | | 2090715 | DHAA-G-Q11-16-B12-25 |
| | 20 | 25 | ■ | ■ | | 2088381 | DHAA-G-Q11-20-B12-25 |
| | 20 | 35 | ■ | ■ | | 2088008 | DHAA-G-Q11-20-B12-35 |
| | 25 | 35 | ■ | ■ | | 1714646 | DHAA-G-Q11-25-B12-35 |
| | 25 | 40 | ■ | ■ | | 1715576 | DHAA-G-Q11-25-B12-40 |
| | 32 | 40 | ■ | ■ | | 2092197 | DHAA-G-Q11-32-B12-40 |
| | 35 | 40 | ■ | ■ | | 2114998 | DHAA-G-Q11-35-B12-40 |
| | 32 | 50 | ■ | ■ | | 2124051 | DHAA-G-Q11-32-B12-50 |
| | 35, 40 | 50 | ■ | ■ | | 2124346 | DHAA-G-Q11-35/40-B12-50 |
| | 40 | 63 | ■ | ■ | | 2125614 | DHAA-G-Q11-40-B12-63 |
| | 50 | 63 | ■ | ■ | | 2352692 | DHAA-G-Q11-50-B12-63 |
| | 50 | 80 | ■ | ■ | | 2412840 | DHAA-G-Q11-50-B12-80 |
| | DRRD | HGPD-...-G1/G2 | | | DHAA | | |
| | 12 | 16 | ■ | ■ | 2 | 2798991 | DHAA-G-Q11-12-B12G-16 |
| | 12 | 20 | ■ | ■ | | 2800963 | DHAA-G-Q11-12-B12G-20 |
| | 16 | 20 | ■ | ■ | | 2642948 | DHAA-G-Q11-16-B12G-20 |
| | 16 | 25 | ■ | ■ | | 2642941 | DHAA-G-Q11-16-B12G-25 |
| | 20 | 25 | ■ | ■ | | 2642953 | DHAA-G-Q11-20-B12G-25 |
| | 20 | 35 | ■ | ■ | | 2642961 | DHAA-G-Q11-20-B12G-35 |
| | 25 | 35 | ■ | ■ | | 2642962 | DHAA-G-Q11-25-B12G-35 |
| | 25 | 40 | ■ | ■ | | 2642966 | DHAA-G-Q11-25-B12G-40 |
| | 32 | 40 | ■ | ■ | | 2642967 | DHAA-G-Q11-32-B12G-40 |
| | 32 | 50 | ■ | ■ | | 2642969 | DHAA-G-Q11-32-B12G-50 |
| | 35 | 40 | ■ | ■ | | 2643047 | DHAA-G-Q11-35-B12G-40 |
| | 35, 40 | 50 | ■ | ■ | | 2643100 | DHAA-G-Q11-35/40-B12G-50 |
| | 40 | 63 | ■ | ■ | | 2643055 | DHAA-G-Q11-40-B12G-63 |
| | 50 | 63 | ■ | ■ | | 2643096 | DHAA-G-Q11-50-B12G-63 |
| | 50 | 80 | ■ | ■ | | 2643098 | DHAA-G-Q11-50-B12G-80 |

1) Corrosion resistance class 2 according to Festo standard 940 070
Components subject to moderate corrosion stress. 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.


Parallel grippers HGPD, sealed


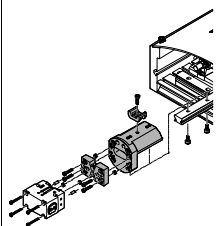
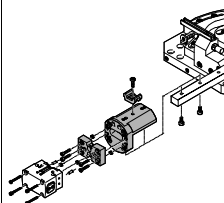
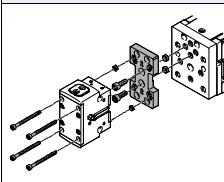
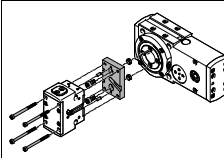
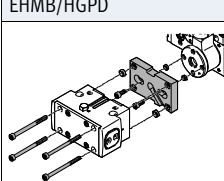
Accessories



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 | | |
|---|------------|---------|-----------------|------|-------------------|--|--------|---|
| Combination | Drive | Gripper | Mounting option | | Adapter kit | | | |
| | | | Size | Size | CRC ¹⁾ | Part No. | Type | |
| | | | | | | | |  |
|  | HSP | HGPD | | | 2 | DHAA, HAPG | 564957 | DHAA-G-G6-8-B8-16 |
| | 12 | 16 | ■ | – | | | 540881 | HAPG-70-B |
| | 16 | 16, 20 | ■ | – | | | 564957 | DHAA-G-G6-8-B8-16 |
| | 25 | 16, 20 | ■ | – | | | 540882 | HAPG-71-B |
| | | | | | | | 564957 | DHAA-G-G6-8-B8-16 |
| | | | | | | | 540883 | HAPG-72-B |
|  | HSW | HGPD | | | 2 | DHAA, HAPG | 564957 | DHAA-G-G6-8-B8-16 |
| | 12, 16 | 16 | ■ | – | | | 540882 | HAPG-71-B |
| | 16 | 20 | ■ | – | | | 564957 | DHAA-G-G6-8-B8-16 |
| | | | | | | | 540882 | HAPG-71-B |
|  | EGSL | HGPD | | | 2 | DHAA, HAPG | 564952 | DHAA-G-G6-16-B8-25 |
| | 45, 55 | 25 | ■ | ■ | | | 537175 | HAPG-79 |
| | 75 | 25, 35 | ■ | ■ | | | 564951 | DHAA-G-G6-20-B8-40 |
| | 75 | 40 | ■ | ■ | | | | |
|  | ERMB | HGPD | | | 2 | DHAA, HAPG | 537181 | HAPG-SD2-25 |
| | 20 | 25 | ■ | ■ | | | 537173 | HAPG-SD2-23 |
| | 20, 25 | 35 | ■ | ■ | | | 537184 | HAPG-SD2-26 |
| | 25, 32 | 40 | ■ | ■ | | | 564956 | DHAA-G-Q5-32-B8-50 |
| | 32 | 50 | ■ | ■ | | | | |
|  | EHMB | HGPD | | | 2 | DHAA, HAPG | 537184 | HAPG-SD2-26 |
| | 20 | 40 | ■ | ■ | | | 564956 | DHAA-G-Q5-32-B8-50 |
| | 20, 25, 32 | 50 | ■ | ■ | | | 537188 | HAPG-SD2-28 |
| | 25, 32 | 63 | ■ | ■ | | | | |

1) Corrosion resistance class 2 according to Festo standard 940 070
Components subject to moderate corrosion stress. 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.

Parallel grippers HGPD, sealed

Accessories

FESTO

Gripper jaw blank BUB-HGPD

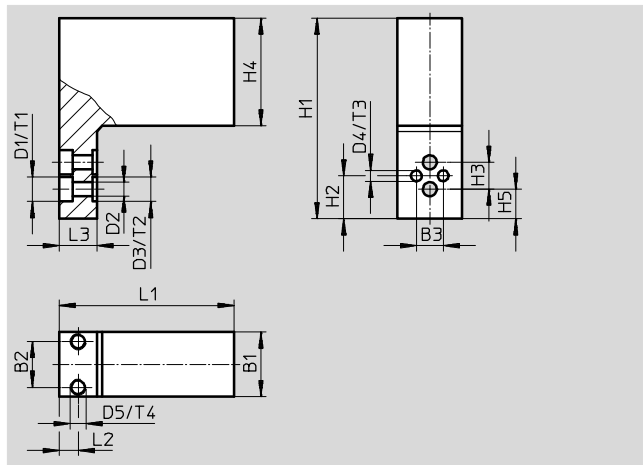
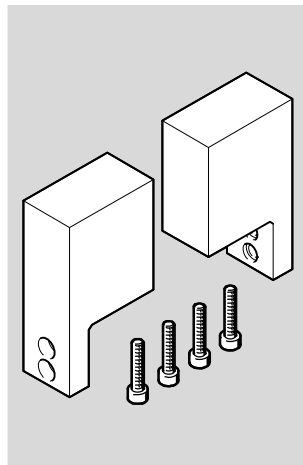
(scope of delivery: 2 pieces)

Material:

Wrought aluminium alloy

Free of copper and PTFE

RoHS-compliant



| Dimensions and ordering data | | | | | | | | |
|------------------------------|-------|-----|-------|----------|----------|---------|---------|----|
| For size | B1 | B2 | B3 | D1 | D2 | D3 | D4 | D5 |
| [mm] | ±0.05 | | ±0.01 | ∅ H13 | ∅ H13 | ∅ H8 | ∅ H7 | |
| 16 | 12 | 8.5 | 5 | 4.6 | 2.6 | - | 2 | M3 |
| 20 | 14 | 8.5 | - | 5.9 | 3.2 | 5 | - | M3 |
| 25 | 20 | 14 | - | 7.4 | 4.3 | 7 | - | M3 |
| 35 | 29 | 23 | - | 10.4 | 6.4 | 9 | - | M3 |
| 40 | 32 | 26 | - | 10.4 | 6.4 | 9 | - | M3 |
| 50 | 35 | 26 | - | 10.4 | 6.4 | 12 | - | M3 |
| 63 | 40 | 26 | - | 13.5 | 8.4 | 12 | - | M3 |
| 80 | 44 | 26 | - | 16.5 | 10.5 | 15 | - | M3 |

| For size | H1 | H2 | H3 | H4 | H5 | L1 | L2 | L3 |
|----------|-------|-------|-----------------------|------|-----|-------|------|----|
| [mm] | ±0.05 | ±0.02 | | | | ±0.05 | | |
| 16 | 37.3 | 8 | 5±0.1 | 20 | - | 32.5 | 3.5 | 7 |
| 20 | 59 | - | 7±0.01 ¹⁾ | 35 | 8 | 35.5 | 3 | 10 |
| 25 | 76 | - | 10±0.01 ¹⁾ | 49.5 | 4.5 | 44.5 | 4.5 | 12 |
| 35 | 92.5 | - | 12±0.01 ¹⁾ | 59 | 7.5 | 52.5 | 6 | 12 |
| 40 | 110 | - | 15±0.01 ¹⁾ | 73.5 | 6 | 62.5 | 6 | 12 |
| 50 | 144 | - | 18±0.01 ¹⁾ | 99 | 11 | 78 | 10 | 15 |
| 63 | 171.5 | - | 24±0.01 ¹⁾ | 119 | 10 | 98.5 | 10.5 | 15 |
| 80 | 198 | - | 24±0.01 ¹⁾ | 139 | 15 | 120.5 | 10 | 20 |

| For size | T1 | T2 | T3 | T4 | Weight per blank [g] | Part No. | Type |
|----------|------|------|------|----|----------------------|----------|-------------|
| [mm] | +0.1 | +0.1 | +0.1 | | | | |
| 16 | 2.5 | - | 2.1 | 4 | 25 | 1180947 | BUB-HGPD-16 |
| 20 | 3.1 | 1.3 | - | 5 | 57 | 1180948 | BUB-HGPD-20 |
| 25 | 4.2 | 1.6 | - | 5 | 138 | 1180949 | BUB-HGPD-25 |
| 35 | 6.2 | 2.1 | - | 5 | 278 | 1180950 | BUB-HGPD-35 |
| 40 | 6.2 | 2.1 | - | 5 | 445 | 1180951 | BUB-HGPD-40 |
| 50 | 6.2 | 2.6 | - | 5 | 814 | 1180952 | BUB-HGPD-50 |
| 63 | 8.2 | 2.6 | - | 5 | 1,340 | 1180953 | BUB-HGPD-63 |
| 80 | 10.2 | 3.1 | - | 5 | 2,170 | 1180954 | BUB-HGPD-80 |

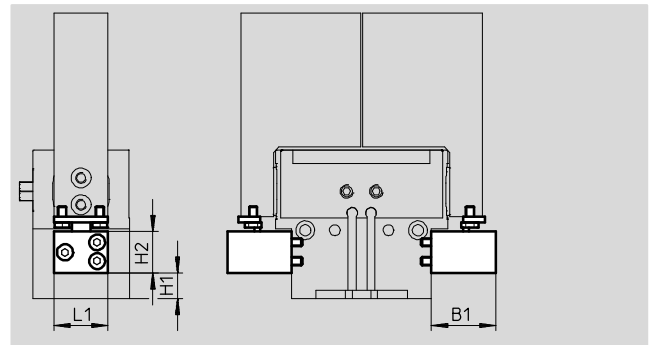
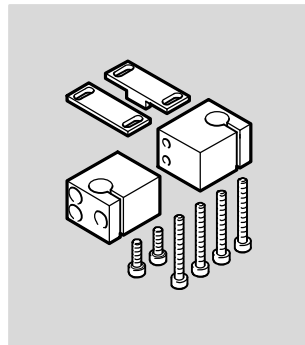
1) ±0.02 and ±0.01 applies to the centring D3
±0.1 applies to the through-holes D1 and D2

Parallel grippers HGPD, sealed

Accessories

Sensor bracket DASI
(scope of delivery: 1 piece)

Material:
Wrought aluminium alloy
RoHS-compliant



| Dimensions and ordering data | | | | | | | |
|------------------------------|----|------|------|------|----|--------|------------------------|
| For size | B1 | H1 | | H2 | L1 | Weight | Part No. Type |
| [mm] | | | -G | | | [g] | |
| 16 | 18 | 4.3 | 11.8 | 8 | 18 | 25 | 1435225 DASI-B12-16-S3 |
| 20 | 18 | 2.5 | 9.5 | 8 | 18 | 22 | 1435226 DASI-B12-20-S3 |
| 25 | 24 | 1.5 | 9.5 | 15.5 | 20 | 50 | 1435227 DASI-B12-25-S8 |
| 35 | 24 | 5 | 21.5 | 15.5 | 20 | 55 | 1435228 DASI-B12-35-S8 |
| 40 | 29 | 11.2 | 29.2 | 15.6 | 20 | 65 | 1435229 DASI-B12-40-S8 |
| 50 | 34 | 12 | 37 | 16 | 20 | 70 | 1435230 DASI-B12-50-S8 |
| 63 | 54 | 22 | 52 | 16 | 20 | 95 | 1435231 DASI-B12-63-S8 |
| 80 | 54 | 31 | 67 | 16 | 20 | 95 | 1435231 DASI-B12-63-S8 |


| Ordering data | | | | | | |
|-----------------------------|---------------|---|--|----------|---------|------------------|
| | For size [mm] | Description | Weight [g] | Part No. | Type | PU ¹⁾ |
| Centring pin/sleeve ZBS/ZBH | | | Technical data → Internet: zbh | | | |
| | 16 | For centring gripper jaw blanks/gripper fingers on the gripper jaws | 1 | 525273 | ZBS-2 | 10 |
| | 20 | | 1 | 189652 | ZBH-5 | |
| | 25 | | 1 | 186717 | ZBH-7 | |
| | 35, 40 | | 1 | 150927 | ZBH-9 | |
| | 50, 63 | | 1 | 189653 | ZBH-12 | |
| | 80 | | 3 | 191409 | ZBH-15 | |
| | 16, 20 | For centring the gripper when mounting | 1 | 189652 | ZBH-5 | |
| | 25, 35 | | 1 | 186717 | ZBH-7 | |
| | 40 | | 1 | 150927 | ZBH-9 | |
| | 50, 63, 80 | | 1 | 189653 | ZBH-12 | |
| Blanking plug B | | | Technical data → Internet: blanking plug | | | |
| | 16, 20 | For sealing the supply ports | 1 | 30979 | B-M3-S9 | 10 |
| | 25, 35, 40 | | 1 | 174308 | B-M5-B | |
| | 50, 63 | | 5 | 3568 | B-1/8 | |
| | 80 | | 15 | 3569 | B-1/4 | |


1) Packaging unit



Parallel grippers HGPD, sealed

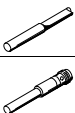
Accessories

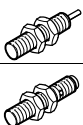
FESTO



| Proximity sensor for size 16 ... 35 | | | | | | |
|---|-----------------------------------|---|------------------|------------------|----------|--------------------------------|
| Ordering data – Proximity sensors for C-slot, magneto-resistive | | | | | | Technical data → Internet: smt |
| | Type of mounting | Electrical connection, connection direction | Switching output | Cable length [m] | Part No. | Type |
| N/O contact | | | | | | |
|  | Insertable in the slot lengthwise | Cable, 3-wire, lateral | PNP | 2.5 | 547862 | SMT-10G-PS-24V-E-2,5Q-OE |
| | | Plug M8x1, 3-pin, lateral | | 0.3 | 547863 | SMT-10G-PS-24V-E-0,3Q-M8D |

| Proximity sensor for size 40 ... 80 | | | | | | |
|---|-----------------------------------|---|------------------|------------------|----------|--------------------------------|
| Ordering data – Proximity sensors for T-slot, magneto-resistive | | | | | | Technical data → Internet: smt |
| | Type of mounting | Electrical connection, connection direction | Switching output | Cable length [m] | Part No. | Type |
| N/O contact | | | | | | |
|  | Insertable 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 |

| 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 | 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 | |

| Proximity sensor for size 16, 20 | | | | | | |
|---|-----------------------|-----|------------------|------------------|----------|---------------------------------|
| Ordering data – Proximity sensors 3 mm (round design), inductive | | | | | | Technical data → Internet: sieh |
| | Electrical connection | LED | Switching output | Cable length [m] | Part No. | Type |
| N/O contact | | | | | | |
|  | Cable, 3-wire | ■ | PNP | 2.5 | 538264 | SIEH-3B-PS-K-L |
| | Plug M8x1, 3-pin | ■ | PNP | – | 538263 | SIEH-3B-PS-S-L |

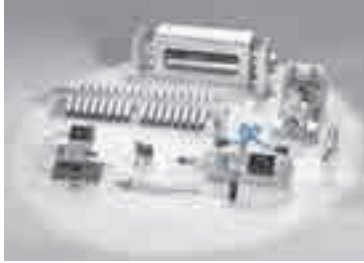
| Proximity sensor for size 25 ... 80 | | | | | | |
|---|-----------------------|-----|------------------|------------------|----------|---------------------------------|
| Ordering data – Proximity sensors M8 (round design), inductive | | | | | | Technical data → Internet: sien |
| | Electrical connection | LED | Switching output | Cable length [m] | Part No. | Type |
| N/O contact | | | | | | |
|  | Cable, 3-wire | ■ | PNP | 2.5 | 150386 | SIEN-M8B-PS-K-L |
| | Plug M8x1, 3-pin | ■ | PNP | – | 150387 | SIEN-M8B-PS-S-L |

| Ordering data – Connecting cables | | | | | | Technical data → Internet: nebu |
|---|------------------------------|------------------------------|------------------|----------|---------------------|---------------------------------|
| | Electrical connection, left | Electrical connection, right | Cable length [m] | Part No. | Type | |
|  | Straight socket, M8x1, 3-pin | Cable, open end, 3-wire | 2.5 | 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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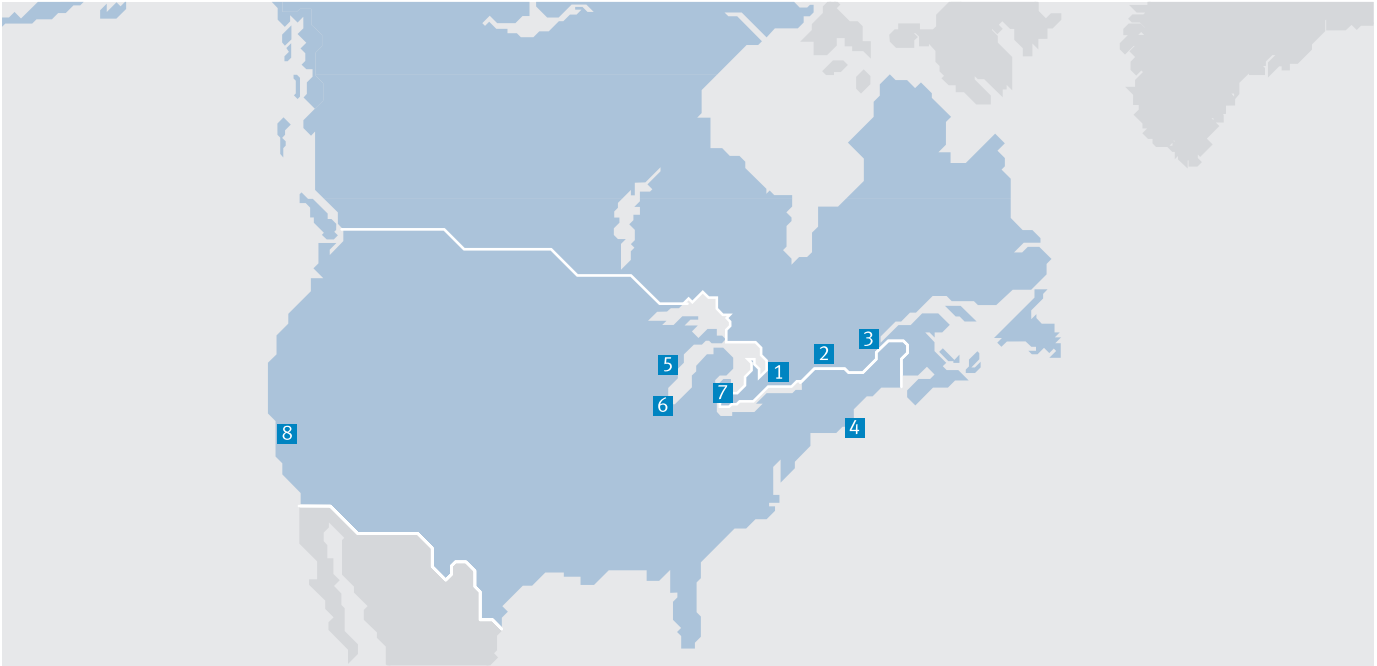


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