

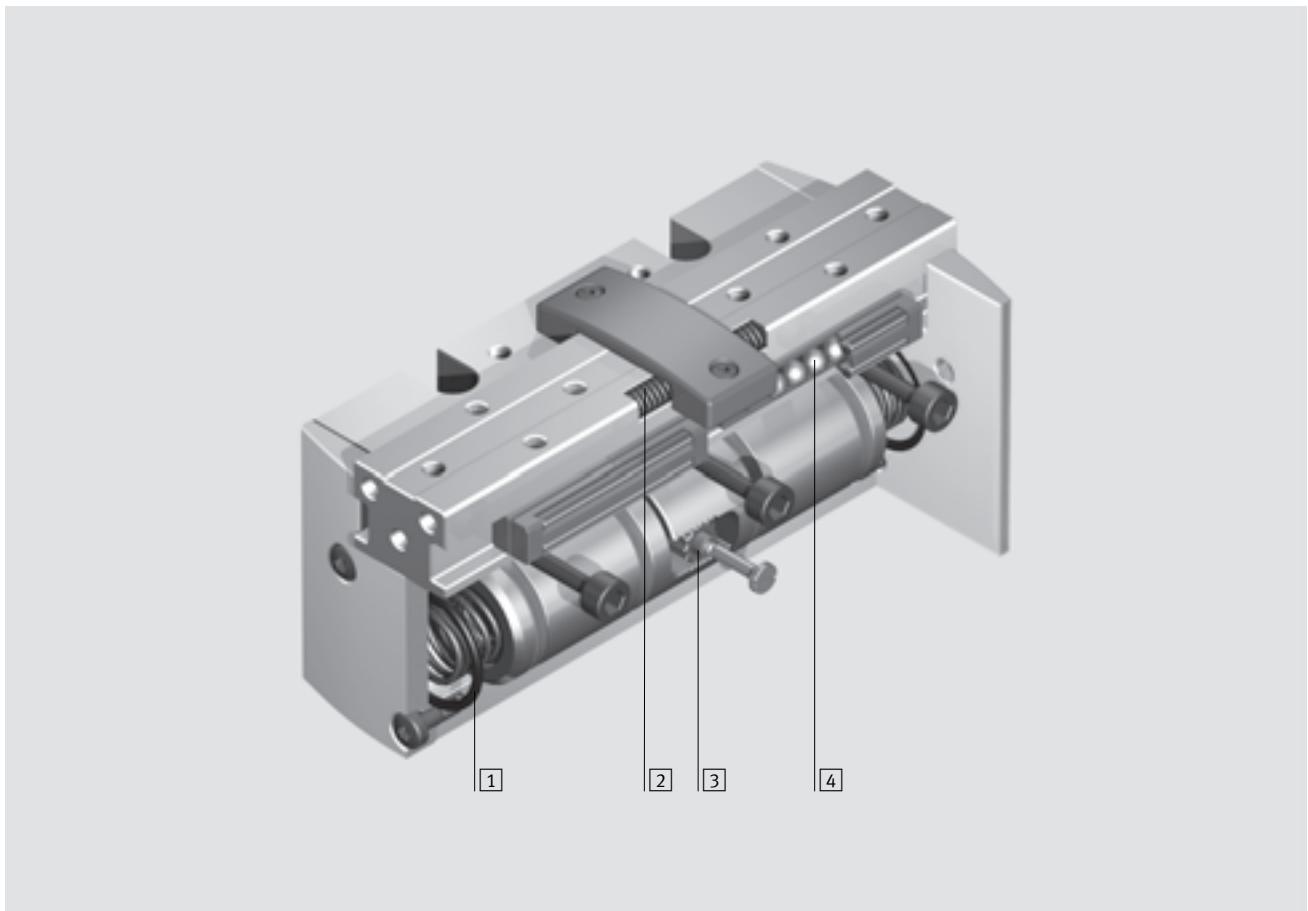
Parallel grippers HGPP, precision



Parallel grippers HGPP, precision

Key features

FESTO



At a glance

- Wide range of variants for greater flexibility:
 - Double-acting piston drive HGPP-...-A.
 - Compression springs for supporting or retaining gripper forces, or for use as a single-acting gripper with only one compressed air connection
 - High precision gripper jaw guide
 - External gripping
 - Internal gripping
 - Multiple compressed air connections
 - Integrated sensing electronics
 - Adaptable proximity sensor via mounting bracket
 - Highly flexible thanks to versatile attachment, mounting and applications options
 - Drives
 - Externally adaptable gripper fingers
 - Guide plate
- 1 Compression spring closes gripper jaws:
HGPP-...-G2
 - 2 Compression spring opens gripper jaws:
HGPP-...-G1
 - 3 Synchronisation element
 - 4 Backlash-free guide bearing

-  - Note

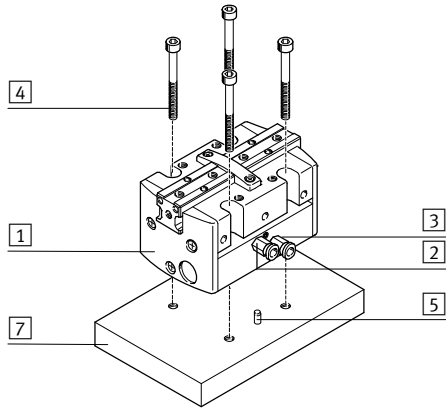
Sizing software
Gripper selection
→ www.festo.com

Parallel grippers HGPP, precision

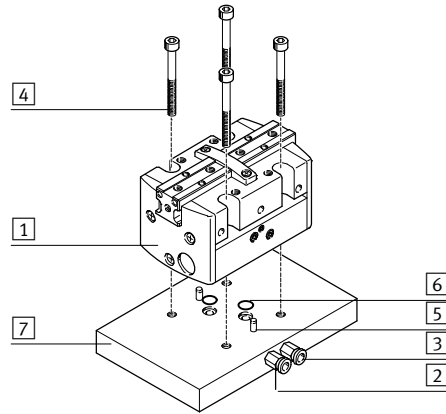
Features

Versatile air connections and mounting options

Supply port direct at the front,
direct mounting from above



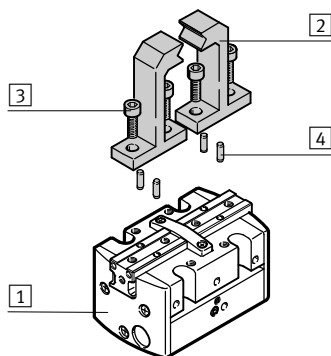
Supply port via adapter plate from underneath,
direct mounting from above



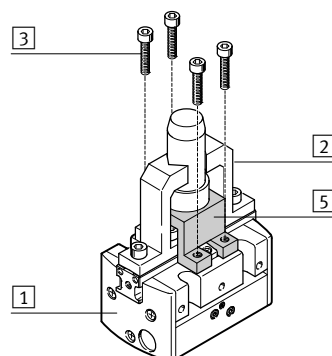
- 1 Parallel gripper
- 2 Compressed air connection, opening
- 3 Compressed air connection, closing
- 4 Mounting screws
- 5 Locating pins
- 6 O-rings
- 7 Plate (user-specific)

Range of applications (user-specific)

Attachment of external gripper fingers

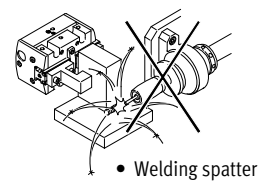
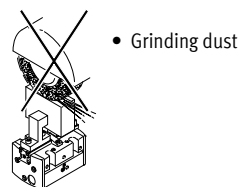
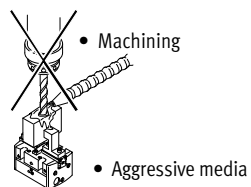


Used as guide plate



- 1 Parallel gripper
- 2 Gripper finger
- 3 Mounting screws
- 4 Locating pins
- 5 Guide plate

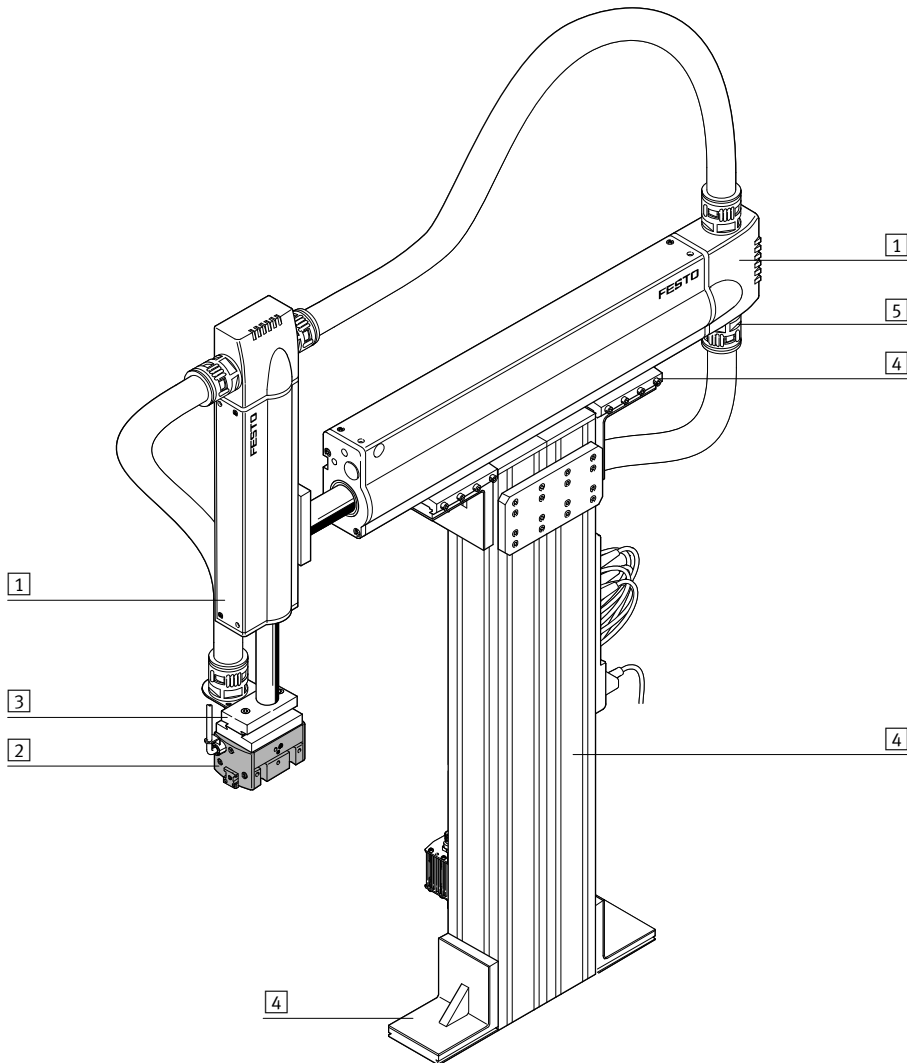
Note
Grippers are not suitable for the following, or for similar applications:



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System example

System product for handling and assembly technology

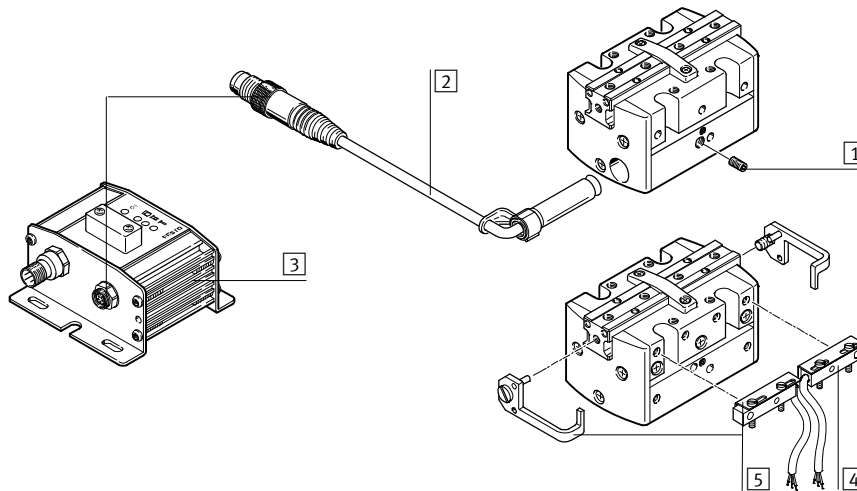


| System elements and accessories | | |
|---------------------------------|---------------------------|--|
| | Brief description | → Page/Internet |
| 1 | Drives | Wide range of combination options within handling and assembly technology drive |
| 2 | Gripper | Diverse variation options in handling and assembly technology gripper |
| 3 | Adapter | For drive/drive and drive/gripper connections adapter kit |
| 4 | Basic mounting components | Profiles and profile connections as well as profile/drive connections basic component |
| 5 | Installation components | For achieving a clear-cut, safe layout of electrical cables and tubing installation component |
| - | Axes | Diverse possible combinations in handling and assembly technology axes |
| - | Motors | Servo and stepper motors, with or without gearing motor |

Parallel grippers HGPP, precision

Peripherals overview and type codes

Peripherals overview



| Accessories | | | |
|-------------|------------------------------|---|----|
| | Brief description | → Page/Internet | |
| 1 | Threaded pin | For mounting proximity sensors SMH-S1 | – |
| 2 | Position sensor SMH-S1 | Can be integrated in the gripper | 14 |
| 3 | Evaluation unit SMH-AE1 | For proximity sensor SMH-S1, for sensing 3 positions | 14 |
| 4 | Proximity sensor SIES-Q5B | Can be assembled with mounting bracket HGPP-HWS-Q5 | 14 |
| 5 | Mounting bracket HGPP-HWS-Q5 | For mounting proximity sensors SIES-Q5B, comprising 1 bracket and 1 switch lug with mounting screws | 15 |
| – | Adapter kit HMSV, HAPG | Drive/gripper connections | 16 |

Type codes

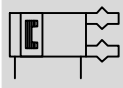
| | | | | | | | |
|------------------------------|----------------------|---|----|---|---|---|----|
| HGPP | | – | 16 | – | A | – | G1 |
| Type | | | | | | | |
| HGPP | Parallel gripper | | | | | | |
| Size | | | | | | | |
| Position sensing | | | | | | | |
| A | Via proximity sensor | | | | | | |
| Gripping force backup | | | | | | | |
| G1 | Opening | | | | | | |
| G2 | Closing | | | | | | |

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Technical data

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Function
Double-acting
HGPP-...-A



Single-acting or
with gripping force retention ...
... opening HGPP-...-G1



... closing HGPP-...-G2



-  Size
10 ... 32 mm
-  Stroke
4 ... 25 mm
-  www.festo.com
Wearing parts kits
→ 14



| General technical data | | | | | | | |
|---|-----------------|-------------------------------------|---------|-------|--------|-----------------------|-------|
| Size | 10 | 12 | 16 | 20 | 25 | 32 | |
| Design | Rack and pinion | | | | | | |
| Mode of operation | Double-acting | | | | | | |
| Gripper function | Parallel | | | | | | |
| Number of gripper jaws | 2 | | | | | | |
| Max. load per external gripper finger ¹⁾ | [g] | < 50 | < 100 | < 150 | < 200 | < 250 | < 300 |
| Stroke per gripper jaws | [mm] | 2 | 2.5 | 5 | 7.5 | 10 | 12.5 |
| Pneumatic connection | | M3 | | M5 | | G1/8/M5 ²⁾ | |
| Repetition accuracy ³⁾ | [mm] | < 0.02 | < 0.015 | | < 0.01 | < 0.02 | |
| Max. interchangeability | [mm] | 0.2 | | | | | |
| Max. gripper jaw backlash | [mm] | 0 | | | | | |
| Max. gripper jaw angular lash | [°] | 0 | | | | | |
| Max. operating frequency | [Hz] | 4 | | | | | |
| Centring precision | [mm] | < Ø 0.05 | | | | | |
| Position sensing | | For proximity sensing | | | | | |
| Type of mounting | | With through-hole and locating pin | | | | | |
| | | With female thread and locating pin | | | | | |

- 1) Valid for unthrottled operation
 - 2) Supply port on side G1/8; supply port on ground M5
 - 3) 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 | | |
|--|---------------------|--|
| Min. operating pressure | HGPP-...-A [bar] | 2 |
| | HGPP-...-G... [bar] | 5 |
| Max. operating pressure | [bar] | 8 |
| 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 requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating agents

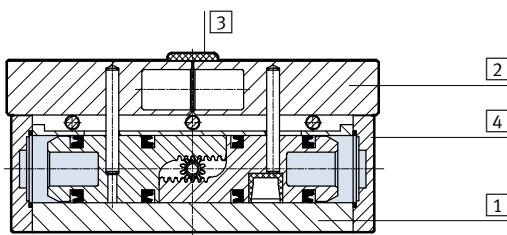
Parallel grippers HGPP, precision

Technical data

| Weights [g] | | | | | | |
|-------------|-----|-----|-----|-----|-----|-------|
| Size | 10 | 12 | 16 | 20 | 25 | 32 |
| HGPP-...A | 126 | 172 | 315 | 604 | 884 | 1,408 |
| HGPP-...G1 | 127 | 173 | 316 | 611 | 910 | 1,438 |
| HGPP-...G2 | 127 | 173 | 317 | 615 | 898 | 1,427 |

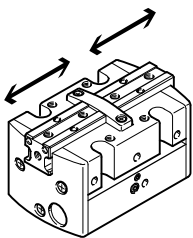
Materials

Sectional view



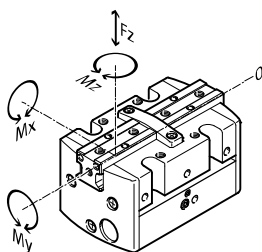
| Parallel gripper | | |
|------------------|------------------|---|
| 1 | Housing | Anodised aluminium |
| 2 | Gripper jaw | Nickel-plated aluminium |
| 3 | Cover cap | Polyacetate |
| 4 | Plug cap | Anodised aluminium |
| - | Note on material | Free of copper, PTFE and silicone Conforms to RoHS |

Gripping force [N] at 6 bar



| Size | 10 | 12 | 16 | 20 | 25 | 32 |
|--------------------------------|----|-----|-----|-----|-----|-----|
| Gripping force per gripper jaw | | | | | | |
| Opening | 40 | 58 | 102 | 170 | 250 | 415 |
| Closing | 40 | 58 | 102 | 170 | 250 | 415 |
| Total gripping force | | | | | | |
| Opening | 80 | 116 | 204 | 340 | 500 | 830 |
| Closing | 80 | 116 | 204 | 340 | 500 | 830 |

Characteristic load values at the gripper jaws



Indicated permissible forces and torques apply to a single gripper jaw. Static forces and torques relate to additional applied loads caused by the workpiece or external gripper fingers, as well as forces which occur

during handling. The zero co-ordinate line (gripper jaws point of rotation) must be taken into consideration for the calculation of torques. Additionally, max. permissible forces

which may be applied to the housing line (gripper jaws point of rotation) have been entered as well, which, for example, can be absorbed by a guide plate during pressing-in operations.

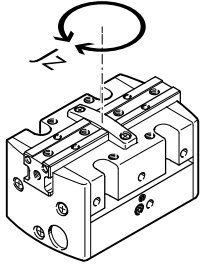
| Size | 10 | 12 | 16 | 20 | 25 | 32 | |
|---|------|-----|-----|-----|-----|-------|-------|
| Max. permissible force $F_{Z\text{Gripper jaws}}$ | [N] | 40 | 70 | 130 | 220 | 380 | 720 |
| Max. permissible force $F_{ZHousing}$ | [N] | 200 | 400 | 600 | 800 | 1,000 | 1,200 |
| Max. permissible torque M_x | [Nm] | 1.5 | 3 | 7 | 14 | 21 | 30 |
| Max. permissible torque M_y | [Nm] | 1.5 | 3 | 7 | 14 | 21 | 30 |
| Max. permissible torque M_z | [Nm] | 1.5 | 3 | 7 | 14 | 21 | 30 |

Parallel grippers HGPP, precision

Technical data



Mass moment of inertia [kgm²x10⁻⁴]



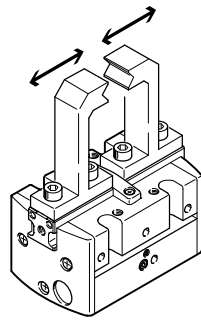
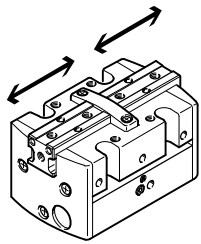
Mass moment of inertia [kgm²x10⁻⁴] for parallel grippers in relation to the central axis, without load.

| Size | 10 | 12 | 16 | 20 | 25 | 32 |
|------------|------|------|------|------|-------|-------|
| HGPP-...A | 0.43 | 0.73 | 2.39 | 6.22 | 16.68 | 38.34 |
| HGPP-...G1 | 0.45 | 0.76 | 2.58 | 6.71 | 17.45 | 39.21 |
| HGPP-...G2 | 0.43 | 0.74 | 2.45 | 6.27 | 16.85 | 38.63 |

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 with vertically mounted gripper and without external gripper fingers. Load [g] is increased if external gripper fingers are attached. This means that kinetic energy is also increased, as this is determined by gripper finger weight and velocity. If permissible kinetic energy is exceeded, various parts of the gripper may be damaged. This occurs when

the applied load reaches the end-position and the cushioning is only able to partially convert the kinetic energy into potential energy and heat energy. It thus becomes apparent that the indicated max. permissible applied load due to the external gripper fingers must be checked and maintained. The grippers must be throttled for greater applied loads. Opening and closing times must then be adjusted accordingly.

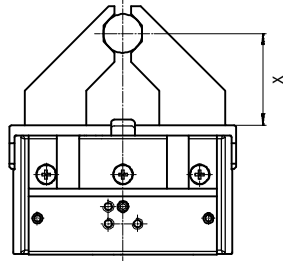
| Size | | 10 | 12 | 16 | 20 | 25 | 32 |
|--|---------|-----|-----|-----|-----|-----|-----|
| Without external gripper fingers | | | | | | | |
| HGPP-...A | Opening | 22 | 27 | 40 | 44 | 64 | 76 |
| | Closing | 34 | 40 | 53 | 59 | 92 | 110 |
| HGPP-...G1 | Opening | 24 | 30 | 34 | 45 | 58 | 64 |
| | Closing | 95 | 70 | 70 | 92 | 164 | 173 |
| HGPP-...G2 | Opening | 26 | 37 | 57 | 62 | 105 | 103 |
| | Closing | 32 | 40 | 46 | 58 | 90 | 101 |
| With external gripper fingers as a function of the load | | | | | | | |
| HGPP | 100 g | 100 | – | – | – | – | – |
| | 200 g | 200 | 100 | 50 | – | – | – |
| | 300 g | 300 | 200 | 100 | 50 | 100 | – |
| | 400 g | – | 300 | 200 | 100 | 150 | 100 |
| | 500 g | – | – | 300 | 200 | 200 | 150 |
| | 600 g | – | – | – | – | 300 | 250 |

Parallel grippers HGPP, precision

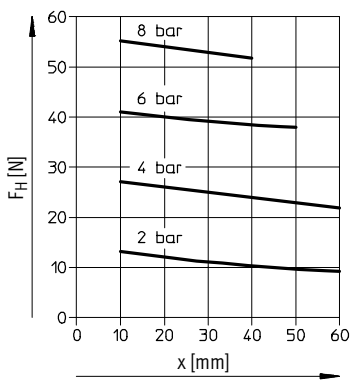
Technical data

Gripping force F_H as a function of operating pressure and the lever arm x

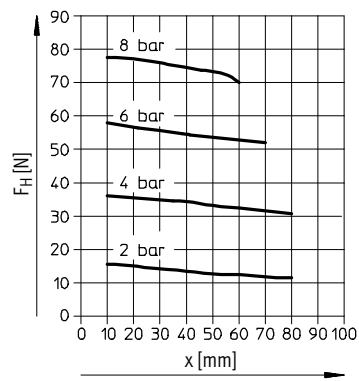
Gripping forces related to operating pressure and lever arm can be determined for the various sizes with the following graphs.



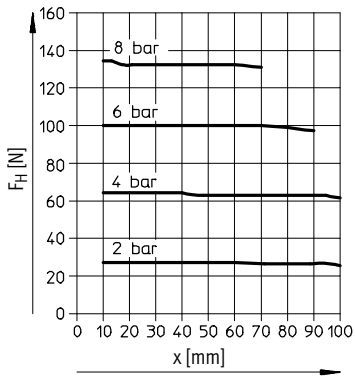
HGPP-10-A



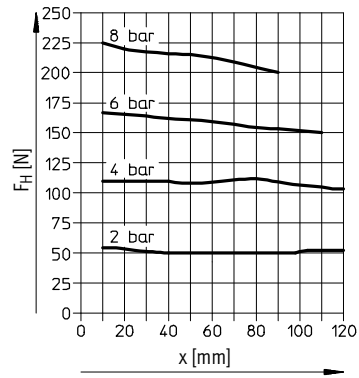
HGPP-12-A



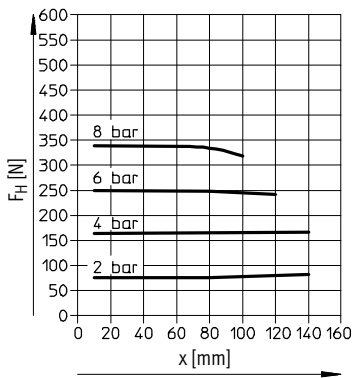
HGPP-16-A



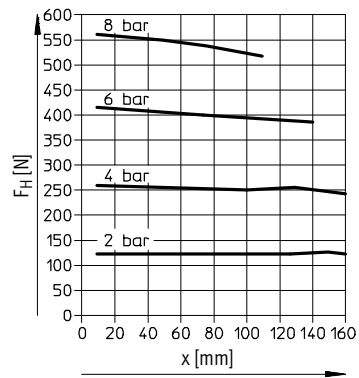
HGPP-20-A



HGPP-25-A



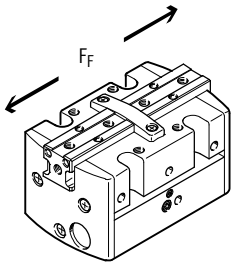
HGPP-32-A



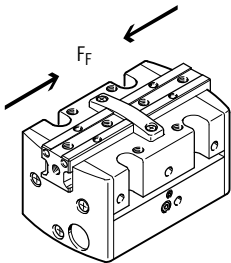
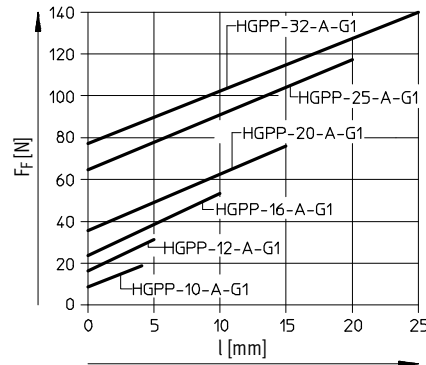
Parallel grippers HGPP, precision

Technical data

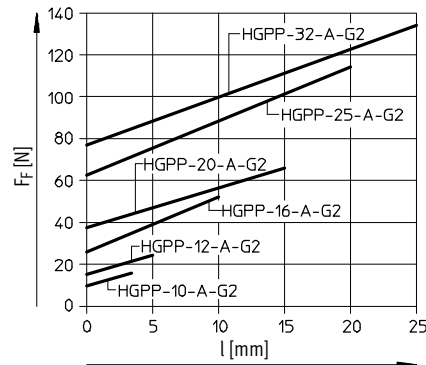
Spring force F_F as a function of the gripper size and overall stroke length l



Gripper retention force, opening: the spring forces F_F of the parallel gripper HGPP...-G1 can be determined from the following graphs.



Gripper retention force, closing: the spring forces F_F of the parallel gripper HGPP...-G2 can be determined from the following graphs.



Determination of actual gripping forces for HGPP...-G1 and HGPP...-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_{Gr} (per gripper jaw), gripping force (F_H) and spring force (F_F) must be combined accordingly.

Application

The resulting gripping force F_{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.

Single-acting

- Gripping with spring force:
 $F_{Gr} = F_F$
- Gripping with pressure force:
 $F_{Gr} = F_H - F_F$

Supplementary gripping force

- Gripping with pressure and spring force:
 $F_{Gr} = F_H + F_F$

Gripping force retention

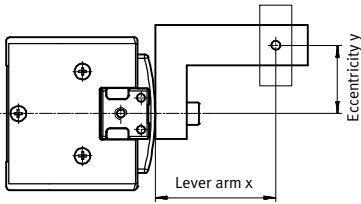
- Gripping with spring force:
 $F_{Gr} = F_F$

| | | Pressurised (in gripping action) | Unpressurised |
|------------|-------------------|----------------------------------|----------------|
| HGPP...-A | Internal gripping | $F_{Gr} = F_H$ | $F_{Gr} = 0$ |
| | External gripping | $F_{Gr} = F_H$ | $F_{Gr} = 0$ |
| HGPP...-G1 | Internal gripping | $F_{Gr} = F_H + F_F$ | $F_{Gr} = F_F$ |
| | External gripping | $F_{Gr} = F_H - F_F$ | $F_{Gr} = 0$ |
| HGPP...-G2 | Internal gripping | $F_{Gr} = F_H - F_F$ | $F_{Gr} = 0$ |
| | External gripping | $F_{Gr} = F_H + F_F$ | $F_{Gr} = F_F$ |

Parallel grippers HGPP, precision

Technical data

Gripping force F_H at 6 bar as a function of lever arm x and eccentricity y



Gripping forces at 6 bar dependent upon eccentric application of force and the maximum permissible off-centre point of force application can be determined for the various sizes using the following graphs.

Calculation example

Given:

Gripper HGPP-12-A

Lever arm $x = 20$ mm

Eccentricity $y = 22$ mm

To be found:

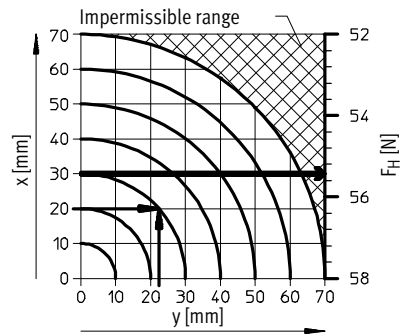
Gripping force at 6 bar

Procedure:

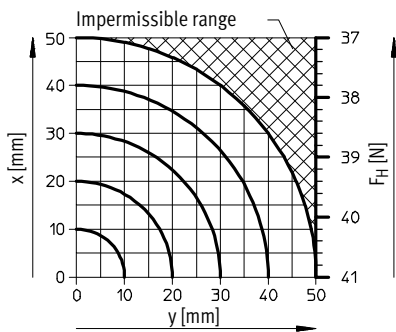
- Determine the intersection xy between lever arm x and eccentricity y in the graph for HGPP-12-A
- Draw an arc (with centre at origin) through intersection xy
- Determine the intersection between the arc and the X axis
- Read gripping force

Result:

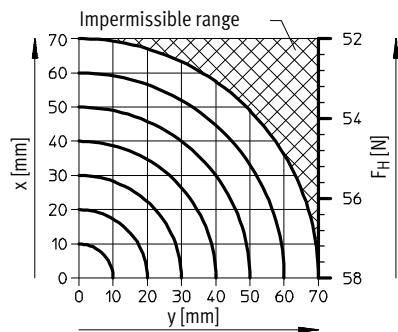
Gripping force = approx. 55 N



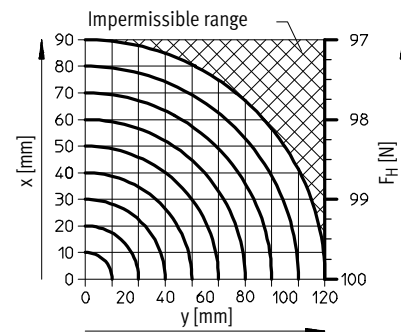
HGPP-10-A



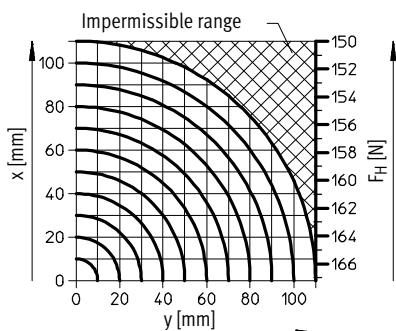
HGPP-12-A



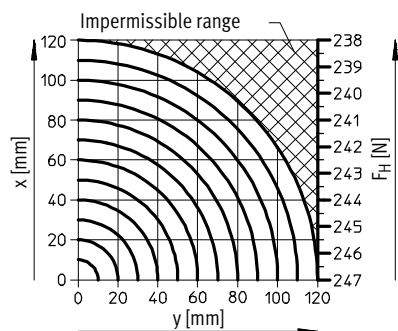
HGPP-16-A



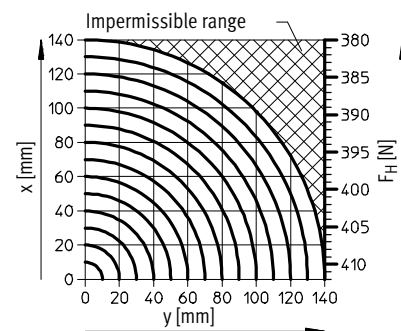
HGPP-20-A



HGPP-25-A



HGPP-32-A



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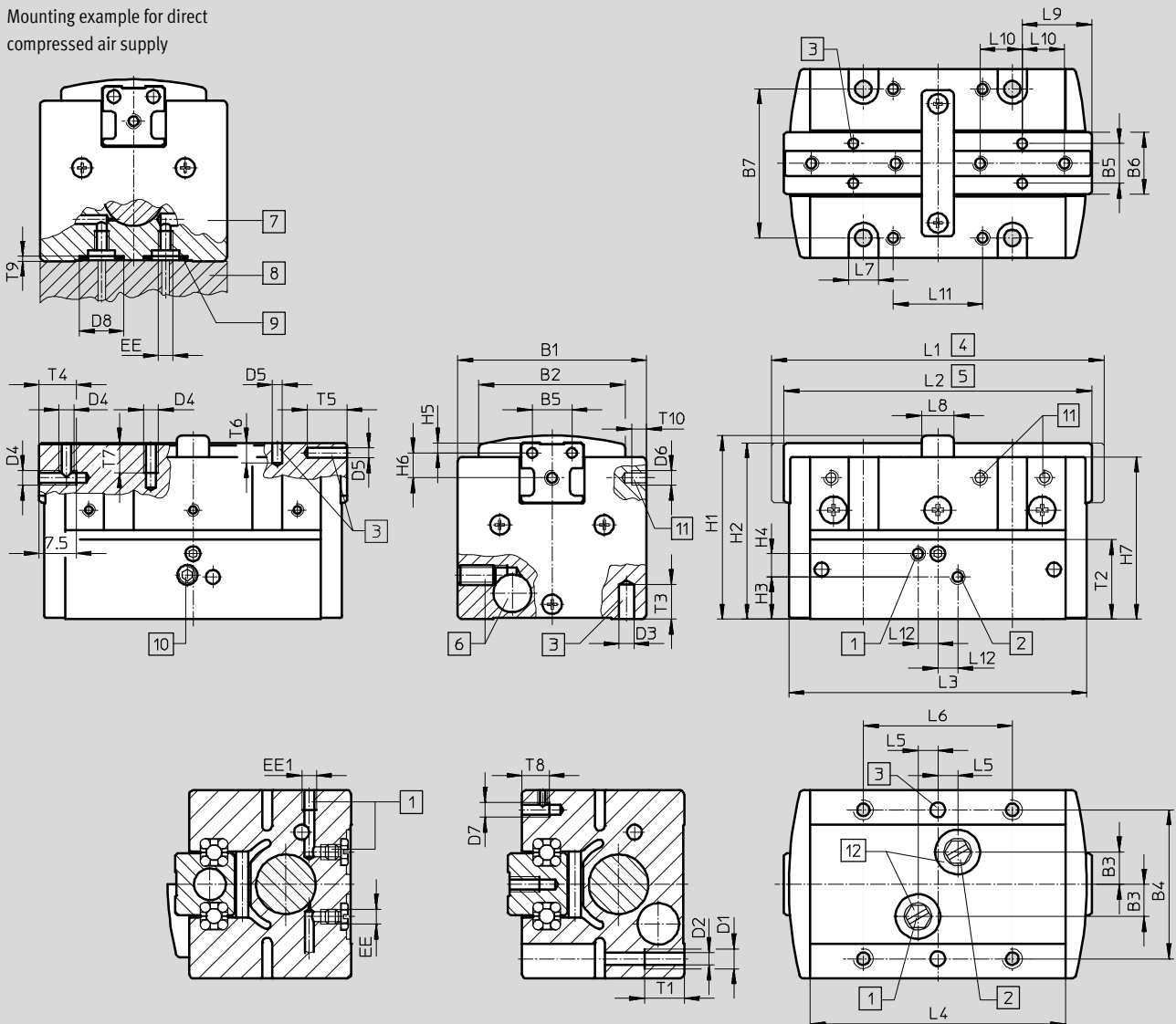
Technical data

FESTO

Dimensions

Download CAD data → www.festo.com

Mounting example for direct compressed air supply



- | | | | |
|--|--|---|--|
| <p>1 Compressed air connection, opening</p> <p>2 Compressed air connection, closing</p> <p>3 Hole for locating pin (Locating pins are not included in scope of delivery.)</p> <p>4 Gripper jaws open</p> | <p>5 Gripper jaws closed</p> <p>6 Hole for sensor kit</p> <p>7 Parallel gripper</p> <p>8 Adapter (e. g. customer-specific)</p> | <p>9 O-ring for parallel grippers: HGPP-10: \varnothing 5.5x1.5 HGPP-12: \varnothing 5.5x1.5 HGPP-16: \varnothing 8.13x1.78 HGPP-20: \varnothing 8.13x1.78 HGPP-25: \varnothing 8.13x1.78 HGPP-32: \varnothing 8.13x1.78 (Not included in scope of delivery)</p> | <p>10 Set screw for mounting position sensor SMH-S1</p> <p>11 Thread for securing the mounting bracket HGPP-HWS-Q5</p> <p>12 Supply ports on base sealed on delivery</p> |
|--|--|---|--|

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| Size | B1 | B2 | B3 | B4 ±0.02 ¹⁾ ±0.1 ²⁾ | B5 | B6 | B7 | D1 | D2 ∅ +0.1 |
|------|------|------|-------|---|-------|------|------|----|-----------------|
| [mm] | +0.3 | ±0.1 | ±0.05 | | ±0.02 | ±0.1 | ±0.1 | | |
| 10 | 33 | 26 | 6.5 | 27 | 8 | 12.5 | 27 | M4 | 3.3 |
| 12 | 38 | 29.5 | 6.5 | 30 | 8 | 12.5 | 30 | M4 | 3.3 |
| 16 | 42 | 30.5 | 8.5 | 32 | 10 | 16 | 32 | M4 | 3.3 |
| 20 | 48 | 36.5 | 10 | 40 | 12 | 20 | 40 | M5 | 4.2 |
| 25 | 55 | 42 | 12 | 45 | 15 | 25 | 45 | M6 | 5.1 |
| 32 | 62 | 45 | 14 | 52 | 18 | 30 | 52 | M6 | 5.1 |

| Size | D3 ∅ H8 | D4 | D5 ∅ H8 | D6 | D7 | D8 ∅ H11 | EE | EE1 | H1 |
|------|---------------|----|---------------|----|----|----------------|----|-------------------------------|----------------|
| [mm] | | | | | | | | | |
| 10 | 3 | M3 | 2 | M2 | M3 | 9 | M3 | M3 | 32.7 ±0.15 |
| 12 | 3 | M3 | 2 | M2 | M3 | 9 | M3 | M3 | 37 +0.3/-0.1 |
| 16 | 3 | M3 | 2.5 | M2 | M3 | 12.1 | M5 | M5 | 42.5 +0.4/-0.1 |
| 20 | 3 | M4 | 3 | M2 | M3 | 12.1 | M5 | M5 | 55.5 +0.4/-0.1 |
| 25 | 5 | M5 | 4 | M2 | M3 | 12.1 | M5 | M5 | 57.5 ±0.15 |
| 32 | 5 | M6 | 5 | M2 | M4 | 12.1 | M5 | G ¹ / ₈ | 68.6 ±0.15 |

| Size | H2 | H3 | H4 | H5 | H6 | H7 | L1 | L2 | L3 | L4 |
|------|-------|------------|------|-------|-------|------|-------|-------|-------|-------|
| [mm] | ±0.1 | | ±0.1 | ±0.02 | ±0.12 | -0.3 | ±0.5 | ±0.5 | ±0.25 | ±0.05 |
| 10 | 31.4 | 8.9 ±0.25 | 3.7 | 2 | 2.6 | 28.7 | 62 | 58 | 56 | 47.4 |
| 12 | 35.5 | 8.5 ±0.3 | 4.7 | 2 | 5 | 32.7 | 67 | 62 | 60 | 51.4 |
| 16 | 40.9 | 8.3 ±0.2 | 6.8 | 3 | 5 | 37.1 | 98 | 88 | 86 | 76 |
| 20 | 53.48 | 15.5 ±0.2 | 8 | 3 | 7 | 48.5 | 120 | 105 | 103 | 92 |
| 25 | 56 | 12.5 ±0.25 | 7.5 | 4 | 8 | 51 | 163 | 143 | 139.4 | 127.4 |
| 32 | 67 | 12.5 ±0.25 | 11 | 5 | 9 | 60.5 | 197.4 | 172.4 | 169.4 | 155.4 |

| Size | L5 | L6 | L7 | L8 | L9 | L10 | L11 | L12 | T1 |
|------|-------|------|----|------|-------|-------|------|-------|----|
| [mm] | ±0.05 | ±0.1 | | ±0.1 | ±0.02 | ±0.05 | ±0.1 | ±0.05 | |
| 10 | 5 | 27 | 6 | 6 | 13.5 | 7.5 | 15 | 4 | 8 |
| 12 | 4 | 30 | 6 | 6.5 | 14 | 8.5 | 18 | 4 | 8 |
| 16 | 6.5 | 40 | 6 | 12 | 17.5 | 11.5 | 24 | 6.5 | 10 |
| 20 | 7.5 | 40 | 8 | 18 | 21 | 13.5 | 26 | 7.5 | 12 |
| 25 | 12 | 45 | 9 | 22 | 29.8 | 17 | 28 | 12 | 12 |
| 32 | 15 | 52 | 9 | 27 | 33.5 | 20 | 35 | 15 | 12 |

| Size | T2 | T3 | T4 | T5 | T6 | T7 | T8 | T9 | T10 |
|------|-------|----|-----|----|-----|----|-----|------|-----|
| [mm] | | | | | | | | +0.1 | |
| 10 | 14.85 | 6 | 8 | 5 | 4 | 6 | 3.8 | 1 | 3 |
| 12 | 16 | 6 | 7.5 | 5 | 4 | 6 | 5.5 | 1 | 3 |
| 16 | 19.5 | 7 | 8 | 6 | 4.5 | 6 | 5 | 1.3 | 4 |
| 20 | 28.5 | 7 | 10 | 8 | 7 | 8 | 6 | 1.3 | 7 |
| 25 | 27 | 10 | 10 | 8 | 8 | 10 | 6 | 1.3 | 8 |
| 32 | 34.5 | 10 | 10 | 10 | 10 | 10 | 8 | 1.3 | 8 |

1) For locating hole

2) For thread and through-holes




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

Parallel grippers HGPP, precision

Ordering data and accessories

| Ordering data | | | | | |
|---------------|---|-----------|--|--------------|--------------------------|
| Size [mm] | Double-acting Without compression spring | | Single-acting or with gripping force retention | | |
| | Part No. | Type | Opening Part No. Type | | Closing Part No. Type |
| 10 | 525 658 | HGPP-10-A | 525 659 | HGPP-10-A-G1 | 525 660 HGPP-10-A-G2 |
| 12 | 187 867 | HGPP-12-A | 187 868 | HGPP-12-A-G1 | 187 869 HGPP-12-A-G2 |
| 16 | 187 870 | HGPP-16-A | 187 871 | HGPP-16-A-G1 | 187 872 HGPP-16-A-G2 |
| 20 | 187 873 | HGPP-20-A | 187 874 | HGPP-20-A-G1 | 187 875 HGPP-20-A-G2 |
| 25 | 525 661 | HGPP-25-A | 525 662 | HGPP-25-A-G1 | 525 663 HGPP-25-A-G2 |
| 32 | 525 664 | HGPP-32-A | 525 665 | HGPP-32-A-G1 | 525 666 HGPP-32-A-G2 |

| Ordering data – Wearing parts kits | | |
|------------------------------------|----------|---------|
| Size [mm] | Part No. | Type |
| 10 | 673 172 | HGPP-10 |
| 12 | 673 173 | HGPP-12 |
| 16 | 673 174 | HGPP-16 |
| 20 | 673 175 | HGPP-20 |
| 25 | 673 176 | HGPP-25 |
| 32 | 673 177 | HGPP-32 |

| Ordering data – Accessories | | | | |
|---|--------------|---------------|----------|------------------|
| | Size [mm] | Weight [g] | Part No. | Type |
| Position sensor SMH-S1 Technical data → Internet: smh-s1 | | | | |
|  | 10, 12 | 20 | 189 040 | SMH-S1-HGPP10/12 |
| | 16 | 20 | 189 041 | SMH-S1-HGPP16 |
| | 20, 25 | 20 | 189 042 | SMH-S1-HGPP20/25 |
| | 32 | 20 | 526 895 | SMH-S1-HGPP32 |
| Evaluation unit SMH-AE1 Technical data → Internet: smh-ae1 | | | | |
|  | 10 ... 32 | 170 | 175 708 | SMH-AE1-PS3-M12 |
| | | 170 | 175 709 | SMH-AE1-NS3-M12 |
| Proximity sensor SIES-Q5B Technical data → Internet: sies | | | | |
|  | 10 ... 32 | 22 | 178 291 | SIES-Q5B-PS-K-L |
| | | 22 | 174 549 | SIES-Q5B-PO-K-L |
| | | 22 | 178 290 | SIES-Q5B-NS-K-L |
| | | 22 | 174 548 | SIES-Q5B-NO-K-L |

Parallel grippers HGPP, precision

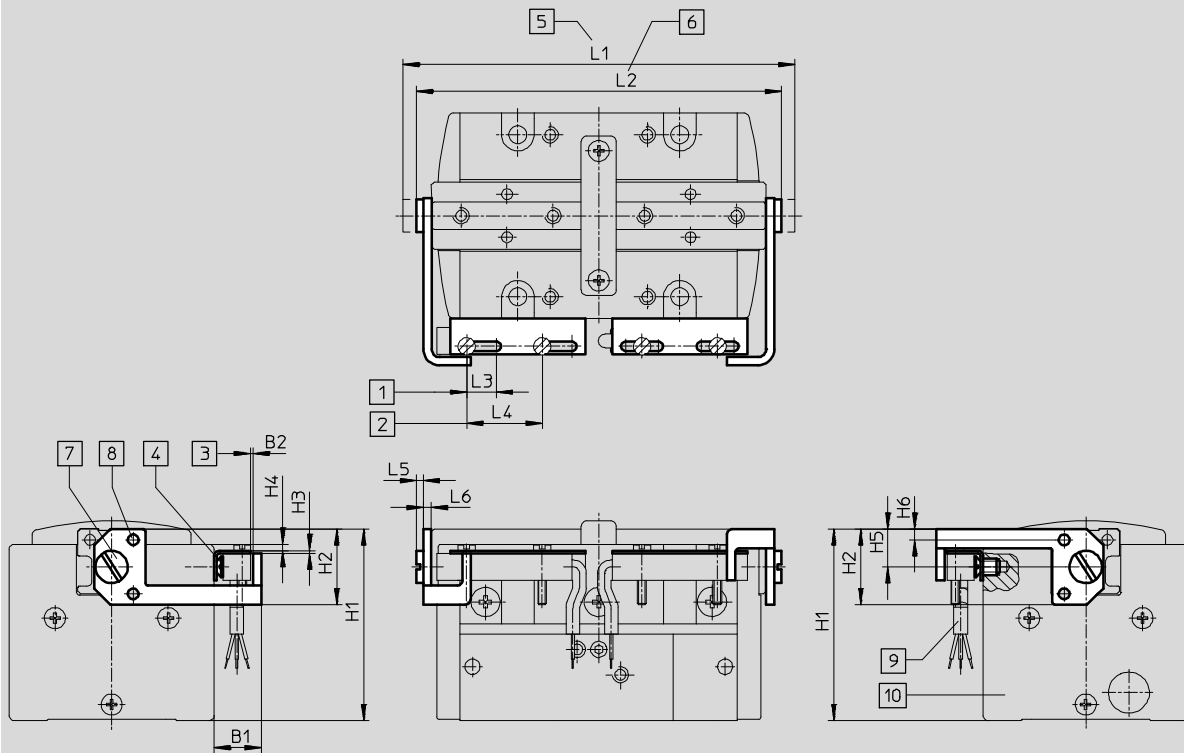
Accessories

FESTO

Dimensions – Mounting bracket

HGPP-HWS-Q5

Download CAD data → www.festo.com



- 1 Adjusting range for position sensing
- 2 Mounting space for proximity sensor SIES-Q5B
- 3 Switching distance
- 4 Mounting for sensor bracket
- 5 Gripper jaws position, open
- 6 Gripper jaws position, closed
- 7 Fixing screw for mounting bracket
- 8 Locating pin
- 9 Proximity sensor SIES-Q5B (to be ordered separately)
- 10 Parallel grippers HGPP

| For size | B1 | B2 | H1 | H2 | H3 | H4 | H5 | H6 |
|----------|-----|------|------|----|-----|-----|----|----|
| [mm] | | | | | | | | |
| 10 | 8.7 | 0.5 | 35.5 | 14 | 0.5 | 1.2 | 7 | 2 |
| 12 | 8.7 | 0.5 | 35.5 | 14 | 0.5 | 1.2 | 7 | 2 |
| 16 | 8.5 | 0.5 | 35.4 | 16 | 0.5 | 1.2 | 8 | 3 |
| 20 | 8.5 | 0.5 | 36 | 20 | 0.5 | 2 | 10 | 3 |
| 25 | 9.5 | 0.55 | 46.3 | 24 | 1 | 3.7 | 12 | 4 |
| 32 | 9.5 | 0.55 | 55.5 | 28 | 1 | 4 | 14 | 5 |

| For size | L1 | L2 | L3 | L4 | L5 | L6 | Weight | Part No. | Type |
|----------|-------|-------|-----|----|-----|-----|--------|----------|---------------|
| [mm] | | | | | | | [g] | | |
| 10 | 67.6 | 63.6 | 5.5 | 14 | 1.8 | 1.5 | 4.2 | 532 272 | HGPP-HWS-Q5-1 |
| 12 | 73.6 | 68.6 | 5.5 | 14 | 1.8 | 1.5 | 5.6 | 532 273 | HGPP-HWS-Q5-2 |
| 16 | 105.6 | 95.6 | 8.5 | 14 | 1.8 | 2 | 8.3 | 532 274 | HGPP-HWS-Q5-3 |
| 20 | 126.8 | 111.8 | 8.5 | 14 | 2.4 | 2 | 11.4 | 532 275 | HGPP-HWS-Q5-4 |
| 25 | 171 | 151 | 28 | 14 | 3 | 2 | 17.6 | 532 276 | HGPP-HWS-Q5-5 |
| 32 | 206.6 | 181.6 | 28 | 14 | 3.6 | 2 | 24.6 | 532 277 | HGPP-HWS-Q5-6 |

Parallel grippers HGPP, precision

Accessories

FESTO



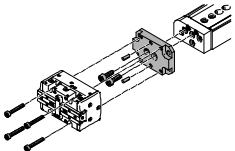
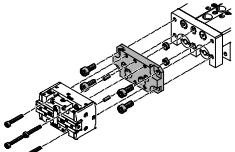
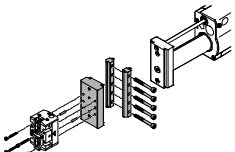
Adapter kit
HAPG, HMSV

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 |
| | | | | | | | |
|  | DGSL | HGPP | | | HAPG | | |
| | 8, 10 | 10 | ■ | ■ | 2 | 529017 | HAPG-57 |
| | 12, 16 | 10 | ■ | ■ | | 529018 | HAPG-58 |
| | 12, 16 | 12 | ■ | ■ | | 191266 | HAPG-48 |
| | 20, 25 | 12 | ■ | ■ | | 191267 | HAPG-49 |
| | 20, 25 | 16 | ■ | ■ | | 191269 | HAPG-51 |
| | 20, 25 | 20 | ■ | ■ | | 191270 | HAPG-52 |
| | | | | | | | |
|  | SLT | HGPP | | | HAPG | | |
| | 10 | 10 | ■ | – | 2 | 529017 | HAPG-57 |
| | 16 | 10 | ■ | – | | 529018 | HAPG-58 |
| | 16 | 12 | ■ | – | | 191266 | HAPG-48 |
| | 20 | 12 | ■ | – | | 191267 | HAPG-49 |
| | 20 | 16 | ■ | – | | 191268 | HAPG-50 |
| | 25 | 16 | ■ | – | | 191269 | HAPG-51 |
| | 25 | 20 | ■ | – | | 191270 | HAPG-52 |
| | | | | | | | |
|  | HMP | HGPP | | | HAPG, HMSV | | |
| | Direct mounting | | | | | | |
| | 16 | 12 | – | ■ | 2 | 191262 | HAPG-44 |
| | 16 | 16 | – | ■ | | 191263 | HAPG-45 |
| | 20, 25, 32 | 16 | – | ■ | | 191264 | HAPG-46 |
| | 25, 32 | 20 | – | ■ | | 191265 | HAPG-47 |
| | 25, 32 | 25 | – | ■ | | 529019 | HAPG-59 |
| | 32 | 32 | – | ■ | | 529020 | HAPG-61 |
| | | | | | | | |
| | Dovetail mounting | | | | | | |
| | 16 | 12 | – | ■ | 2 | 191262 | HAPG-44 |
| | | | – | ■ | | 177649 | HMSV-3 |
| | 16 | 16 | – | ■ | | 191263 | HAPG-45 |
| | | | – | ■ | | 177649 | HMSV-3 |
| | 20, 25 | 16 | – | ■ | | 191264 | HAPG-46 |
| | | | – | ■ | | 177653 | HMSV-7 |
| | 25 | 20 | – | ■ | | 191265 | HAPG-47 |
| | | | – | ■ | | 177653 | HMSV-7 |
| | 25, 32 | 25 | – | ■ | | 529019 | HAPG-59 |
| | | | – | ■ | | 177653 | HMSV-7 |
| 32 | 32 | – | ■ | 529020 | | HAPG-61 | |
| | | – | ■ | 177653 | | HMSV-7 | |

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 HGPP, precision

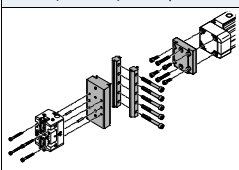
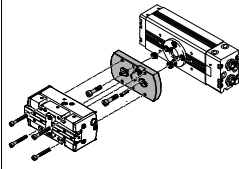
Accessories

FESTO

Adapter kit
HAPG, HMSV, HMVA

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 |
| | | | | | | | |
| DGP..., DGE..., DGEA/HGPP | DG... | HGPP | HAPG, HMSV, HMVA | | | | |
|  | 18 ²⁾ , 25 ³⁾ | 12 | ■ | ■ | 2 | 196788 | HMVA-DLA18/25 |
| | | | | | | 191262 | HAPG-44 |
| | | | | | | 177649 | HMSV-3 |
| | 18 ²⁾ , 25 ³⁾ | 16 | ■ | ■ | | 196788 | HMVA-DLA18/25 |
| | | | | | | 191263 | HAPG-45 |
| | | | | | | 177649 | HMSV-3 |
| | 40 ³⁾ | 16 | ■ | ■ | 196790 | HMVA-DLA40 | |
| | | | | | 191264 | HAPG-46 | |
| | | | | | 177653 | HMSV-7 | |
| | 40 ³⁾ | 20 | ■ | ■ | 196790 | HMVA-DLA40 | |
| | | | | | 191265 | HAPG-47 | |
| | | | | | 177653 | HMSV-7 | |
| | 40 ³⁾ | 25 | ■ | ■ | 196790 | HMVA-DLA40 | |
| | | | | | 529019 | HAPG-59 | |
| | | | | | 177653 | HMSV-7 | |
| | 40 ³⁾ | 32 | ■ | ■ | 196790 | HMVA-DLA40 | |
| | | | | | 529020 | HAPG-61 | |
| | | | | | 177653 | HMSV-7 | |
| DRQD/HGPP | DRQD | HGPP | HAPG | | | | |
|  | DRQD-...-FW | | | | | | |
| | 16 ⁴⁾ , 20 ⁴⁾ | 10 | ■ | ■ | 2 | 526023 | HAPG-SD2-17 |
| | 16 ⁴⁾ , 20 ⁴⁾ | 12 | ■ | ■ | | 191255 | HAPG-SD2-14 |
| | 20 ⁴⁾ , 25 ⁵⁾ | 16 | ■ | ■ | | 191256 | HAPG-SD2-15 |
| | 25 ⁵⁾ , 32 ⁵⁾ | 20 | ■ | ■ | | 191257 | HAPG-SD2-16 |
| | 32 ⁵⁾ , 40, 50 | 25 | ■ | ■ | | 526024 | HAPG-SD2-18 |
| | 40, 50 | 32 | ■ | ■ | | 526025 | HAPG-SD2-19 |
| | DRQD-...-ZW | | | | | | |
| | 16 | 12 | ■ | ■ | 2 | 191258 | HAPG-40 |
| | 20 | 12 | ■ | ■ | | 191259 | HAPG-41 |
| | 25 | 16 | ■ | ■ | | 191260 | HAPG-42 |
| | 32 | 20 | ■ | ■ | | 191261 | HAPG-43 |

- 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) Only for DGEA-...
- 3) Only for DGE-.../DGP...
- 4) Possible in combination with DRQD-...-E422 (flanged shaft with energy through-feed).
- 5) Possible in combination with DRQD-...-E444 (flanged shaft with energy through-feed).


Parallel grippers HGPP, precision



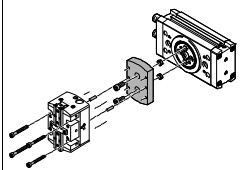
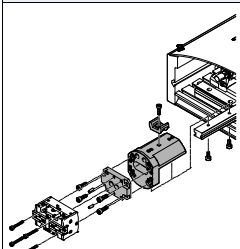
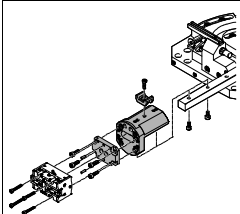
Accessories



Adapter kit
HAPG, DHAA

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 | HGPP | | | 2 | DHAA |
| | 16 | 10 | ■ | ■ | | 2157955 DHAA-G-Q11-16-B5-10 |
| | 16 | 12 | ■ | ■ | | 2154048 DHAA-G-Q11-16-B5-12 |
| | 20 | 10 | ■ | ■ | | 2158267 DHAA-G-Q11-20-B5-10 |
| | 20 | 12 | ■ | ■ | | 2152457 DHAA-G-Q11-20-B5-12 |
| | 20 | 16 | ■ | ■ | | 2152074 DHAA-G-Q11-20-B5-16 |
| | 25 | 16 | ■ | ■ | | 1722274 DHAA-G-Q11-25-B5-16 |
| | 25 | 20 | ■ | ■ | | 1722461 DHAA-G-Q11-25-B5-20 |
| | 32 | 20 | ■ | ■ | | 2177999 DHAA-G-Q11-32-B5-20 |
| | 32 | 25 | ■ | ■ | | 2180764 DHAA-G-Q11-32-B5-25 |
| | 35 | 25 | ■ | ■ | | 2180954 DHAA-G-Q11-35-B5-25 |
| | 35, 40 | 32 | ■ | ■ | | 2181855 DHAA-G-Q11-35/40-B5-32 |
|  | HSP | HGPP | | | 2 | HAPG |
| | 16 | 10 | ■ | – | | 529017 HAPG-57 540882 HAPG-71-B |
| | 25 | 10 | ■ | – | | 529017 HAPG-57 540883 HAPG-72-B |
| | 16 | 12 | ■ | – | | 191900 HAPG-54 540882 HAPG-71-B |
| | 25 | 12 | ■ | – | | 191900 HAPG-54 540883 HAPG-72-B |
| | 25 | 16 | ■ | – | | 191901 HAPG-55 540883 HAPG-72-B |
| | | | | | | |
|  | HSW | HGPP | | | 2 | HAPG |
| | 12, 16 | 10 | ■ | – | | 529017 HAPG-57 540882 HAPG-71-B |
| | 16 | 12 | ■ | – | | 191900 HAPG-54 540882 HAPG-71-B |
| | 16 | 16 | ■ | – | | 191901 HAPG-55 540882 HAPG-71-B |
| | | | | | | |

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 HGPP, precision



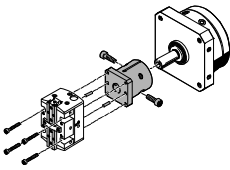
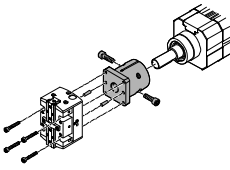
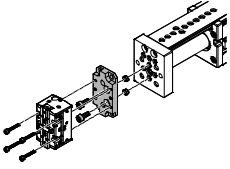
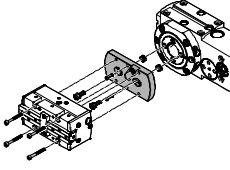
Accessories

FESTO

Adapter kit
HAPG, HMSV

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 | | CRC ¹⁾ | Part No. | Type | |
| | | |  |  | | | | |
|  | DSM | HGPP | | | HAPG | 2 | | |
| | 16 | 12 | ■ | ■ | | | 191258 | HAPG-40 |
| | 25 | 12 | ■ | ■ | | | 191259 | HAPG-41 |
| | 32 | 16 | ■ | ■ | | | 191260 | HAPG-42 |
| | 40 | 20 | ■ | ■ | | | 191261 | HAPG-43 |
|  | DSL | HGPP | | | HAPG | 2 | | |
| | 20 | 12 | ■ | ■ | | | 191258 | HAPG-40 |
| | 25 | 12 | ■ | ■ | | | 191259 | HAPG-41 |
| | 32 | 16 | ■ | ■ | | | 191260 | HAPG-42 |
| | 40 | 20 | ■ | ■ | | | 191261 | HAPG-43 |
|  | EGSL | HGPP | | | HAPG, HMSV | 2 | | |
| | 35 | 10 | ■ | ■ | | | 1088262 | HMSV-70 |
| | 45, 55 | 10 | ■ | ■ | | | 529017 | HAPG-57 |
| | 45, 55 | 12 | ■ | ■ | | | 529018 | HAPG-58 |
| | 75 | 12 | ■ | ■ | | | 191266 | HAPG-48 |
| | 75 | 16 | ■ | ■ | | | 191267 | HAPG-49 |
|  | ERMB | HGPP | | | HAPG | 2 | | |
| | 20 | 10 | ■ | ■ | | | 526023 | HAPG-SD2-17 |
| | 20 | 12 | ■ | ■ | | | 191255 | HAPG-SD2-14 |
| | 20, 25 | 16 | ■ | ■ | | | 191256 | HAPG-SD2-15 |
| | 25, 32 | 20 | ■ | ■ | | | 191257 | HAPG-SD2-16 |
| | 32 | 25 | ■ | ■ | | | 526024 | HAPG-SD2-18 |

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 HGPP, precision



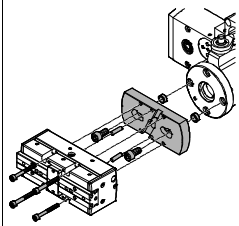
Accessories



**Adapter kit
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 | | Adapter kit | | | |
| | Size | Size | Mounting option | | CRC ¹⁾ | Part No. | Type |
| | | |  |  | | | |
|  | EHMB | HGPP | | | HAPG | | |
| | 20 | 20 | ■ | ■ | 2 | 191257 | HAPG-SD2-16 |
| | 20, 25, 32 | 25 | ■ | ■ | | 526024 | HAPG-SD2-18 |
| | 25, 32 | 32 | ■ | ■ | | 526025 | HAPG-SD2-19 |

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.

Product Range and Company Overview

A Complete Suite and Company Overview

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Complete custom engineered solutions



Custom Control Cabinets
Comprehensive engineering support and on-site services



Complete Systems
Shipment, stocking and storage services

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With a comprehensive line of more than 30,000 automation components, Festo is capable of solving the most complex automation requirements.



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Electromechanical actuators, motors, controllers & drivers



Pneumatics
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PLC's, operator interfaces, sensors and I/O devices

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Festo is a leading global manufacturer of pneumatic and electromechanical systems, components and controls for industrial automation, with more than 16,000 employees in 60 national headquarters serving more than 180 countries. For more than 80 years, Festo has continuously elevated the state of manufacturing with innovations and optimized motion control solutions that deliver higher performing, more profitable automated manufacturing and processing equipment. Our dedication to the advancement of automation extends beyond technology to the education and development of current and future automation and robotics designers with simulation tools, teaching programs, and on-site services.

Quality Assurance, ISO 9001 and ISO 14001 Certifications

Festo Corporation is committed to supply all Festo products and services that will meet or exceed our customers' requirements in product quality, delivery, customer service and satisfaction.

To meet this commitment, we strive to ensure a consistent, integrated, and systematic approach to management that will meet or exceed the requirements of the ISO 9001 standard for Quality Management and the ISO 14001 standard for Environmental Management.

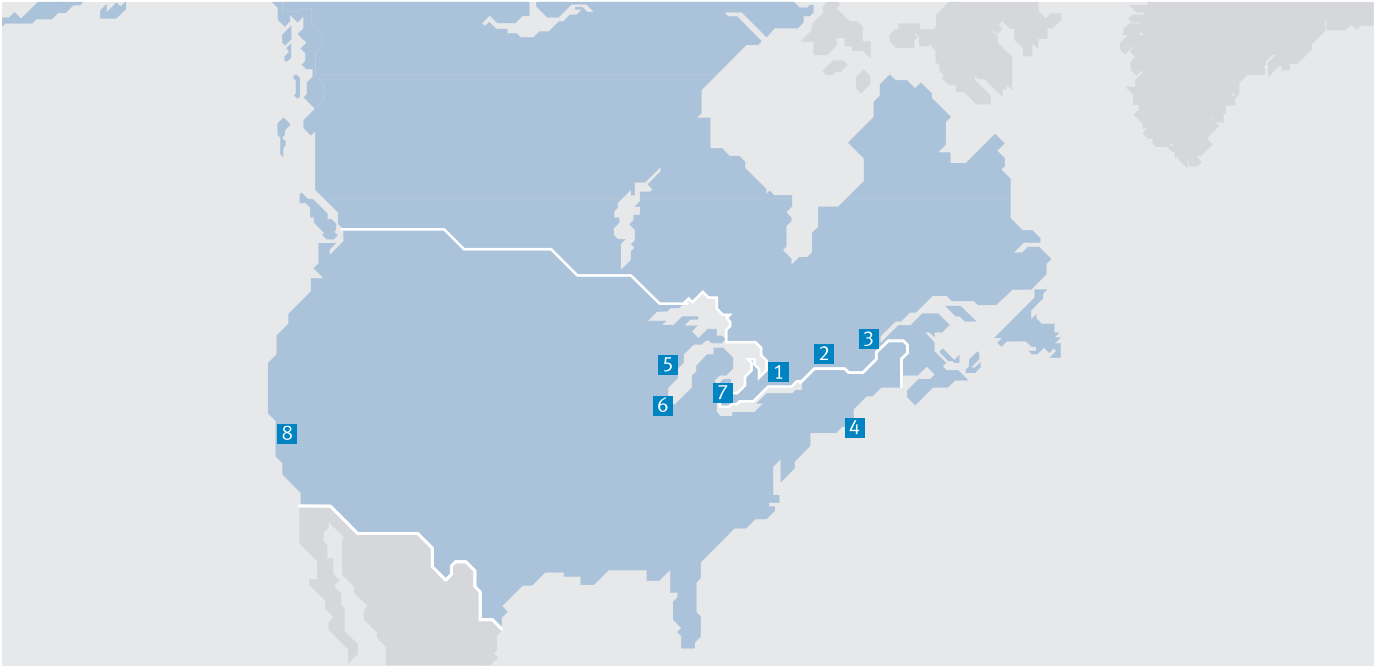


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